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Houses in Transformation Search for the Implicit Reasons



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Houses in Transformation

Search for the Implicit Reasons



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To my wife Naznin, my daughter Zahra, and my son Zohaib

Preface

This book is a continuation of my previous book "Living with Transformation." While the previous one discussed the physical behavioral patterns of the transformations in self-built houses, this book focuses on the reasons behind the transformation incidents. Starting with the explicit reasons, it did not stop there. An ethnographic study unveiled some very significant implicit reasons that usually remain oblivious behind the explicit ones. Cultural norms vary from context to context. In some cultures, the norms are more explicit, while in some others they are not. In the context of Dhaka City, which represents a city of the developing world, cultural norms are still very much oblivious. At the superfluous level, one may not be aware of them. However, this ethnographic study tried to dig deep and extracted some of those norms through the study of the transformations of their houses, which gives some insight to the readers about the culture.

Malaysia, 2013

Tareef Hayat Khan

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Abstract

This book searched for the reasons behind spontaneous transformation in self-built houses in the context of developing countries. The self-built houses in the City of Dhaka experience spontaneous transformation in abundance. There had been searches for reasons behind this phenomenon, especially in the context of developing countries around the world. This book started with the same notion with a context-specific approach. However, an ethnographic approach unveiled another dimension in search for the reasons behind transformation. It gradually tried to unfold the implicit reasons that are usually obscured by the explicit ones. It would take the reader through a journey after which spontaneous transformation in housing might no longer appear only as a physical concern in the built environment, but a tacit socio-cultural phenomenon that reveals the struggles and hustles of everyday life of ordinary households.

Chapter 1 Explicit Reasons Behind Housing Transformation

Abstract Transformation in housing has been studied substantially in different contexts. The reasons behind transformation are manifold. However, there are certain patterns that are specific in the contexts of developing countries. This chapter accumulates several of those reasons from different literature and supplements with the ones gathered during the study in the context of Dhaka City. Combined with the behavioral patterns during the transformations, the reasons categorized into building and partition level, tries to give a more comprehensive picture of the transformations in the self-built houses.

Keywords Self-built houses • Dhaka city • Transformation • Explicit reasons • Behavioral patterns

1.1 Introduction

Transformation is an integral part of inhabitation. Houses transform in various patterns and degrees depending on the authority the users are given. There are different levels of control on which the stakeholders play as actors. For example, in the case of rented houses, tenants are most likely to have authority only to transform their furniture layouts, but owners change the partition walls as well. However, the building footprint can be controlled by authorities such as City corporations. Therefore, actors like tenants, owners, and City Corporations act on different levels in the hierarchy. The degree of control or the actual boundary of authority can vary from context to context. From previous research, it was found that self-built houses around the world show abundance of transformation incidents (Khan 2014). Due to the fact that governments of developing countries face the problem of limited resources in solving housing demand, self-built houses appear more there. Therefore, transformation incidents are more common in various degrees in developing countries.

There have been several notable studies on transformation of houses. Tipple (2000) showed different reasons behind transformations in tenant-oriented houses, while Seek (1983) explored similar issues in user-oriented houses. Hakim (1986) and Davis (1999) showed various patterns of transformation in self-built houses. Khan (2014) has accumulated different patterns of transformations in the context of self-built houses in Dhaka City, and categorized different physical behavioral patterns of such transformations.

However, previous studies mostly focused on a general inquiry on the reasons of transformations, which appeared to be quite straightforward and shallow. With practical experience on living in these neighborhoods for decades, this author had the sense that only the physical behavioral patterns or these explicit reasons of transformations may not reflect the whole story behind transformations. So this study went one step further into the investigation. A comprehensive ethnographic study on the owners of self-built houses in Dhaka City based upon the experience in living there unfolded a totally new level of findings. It showed that explicit reasons behind transformation often obscure several significant implicit reasons, which are often deeply rooted with the context-specific social or cultural norms. The actors or stakeholders are often in a state of denial if they were asked about the implicit reasons. This study is about digging deep into the implicit reasons, which in many cases possess the power to make the explicit reasons appear diminutive.

1.2 Explicit Reasons

However, before jumping to search for the implicit reasons, it was still worthy to accumulate the explicit reasons. It is not only to enrich the list developed by other scholars, but also to create a platform upon which the implicit reasons could be investigated. The explicit reasons were accumulated through formal structured questionnaires and divided into several established categories from the existing literature. However, context-specific reasons helped to develop some new categories as well.

Two major categories of explicit reasons were found. The first one resulted from within the family and was defined as **internal reasons** of transformation, while the others resulted from outside the family, and was categorized as **external reasons**.

1.2.1 Internal Explicit Reasons

There were three subcategories of internal reasons:

1. The first was the *Demographic issues* characterized by the effect of sequential development of different life cycle stages of the family such as children getting

1.2 Explicit Reasons

older, looking for new design solutions, increase in number of households, etc. These findings were supported by Seek (1983) before.

- 2. The second was the *Economic issues* such as the need to increase rental income in order to sustain financial state or to meet financial problems, the need to incorporate home-based enterprises, and lack of fund at hand needed to build the total structure in one phase, etc. These were also supported by Tipple (2000) before.
- 3. The third was the *Miscellaneous issues* including transformations needed to contain commodities (such as car, storage spaces, etc.) resulting from demands of newer housing consumptions, to overcome cramped conditions, or to take advantage of better building services. This one was context specific, and was not common in previous studies.

1.2.2 External Explicit Reasons

The other major category of external reasons generated from outside the family and is defined as **external reasons**. There are three subcategories inside it:

- 1. The first subcategory was the *Qualitative issues* such as the need for status or identity in order to live with pride within the neighborhood, to follow neighbor's behavior implying non-codified actions. These reasons were also mentioned by different researchers as a process towards developing community bonding within neighborhoods (Hakim 1986; Davis 1999).
- 2. The second was the *Physical issues* mostly related with site, such as to respond to changes in building regulations, to utilize previously unused land, or to exploit from the benefit of alteration of access roads or plot sizes, etc. This one was context specific. The changes in the building regulations mainly inflicted them.
- 3. The last subcategory was concerned with the *Change of ownership* as new owners often transformed according to their needs, which were different from the previous owners/users. This was mentioned in different studies, but not as a specific reason for transformation.

Table 1.2 shows a percentage of transformation incidents categorized under these explicit reasons just to show which reasons are more frequent than others. To relate with the physical patterns of transformation associated with these transformations, the matrix borrowed the categories of transformations mentioned in Khan (2014). For convenience, their abbreviations were described once more in Table 1.1.

At this point it was evident that in this matrix, there was no clear relationship between the physical behavioral patterns of transformation and the explicit reasons. Most of the reasons showed association with most of the patterns. Statistical methods could be handy to dig out some sort of correlations, but it was felt that while a syntactic relationship could be drawn, it was not the answer the researcher was looking for. A semantic relationship might be the one that could enlighten

Table 1.1 Nomenclature c	clature of physical behavioral pat	of physical behavioral patterns of housing transformation		
Level	Transformation		Associated partition level transformation	tion
Building level	Vertical Addition: VA	Permanent: VA_P		
		Temporary: VA_T	Same layout: (sl)	
			Virtual internal redesign: (irv)	
			Virtual subdivision: (sub _v)	
	Horizontal Addition: HA	Permanent: HA_P	Expansion: (exp)	
		Temporary: HA_T	Addition: (add)	
		Balcony Transformation: HA_BT	Expansion: (exp)	
Partition level	Internal Alteration: IA	Permanent: IA_P	Expansion: (exp)	
			Reduction: (red)	
			Internal redesign: (ir)	
			Subdivision: (sub)	Upper floor: (sub _{uf})
				Ground floor: (subgf)
		Temporary: IA_T	Subdivision: (sub)	Sharing: (sub _{share})

Source	Explicit reasons				Behavioral patterns of	tterns of	Associated IA
	Issues		Detail reasons		transformation	_	
Internal: 83 % Demographic		31 %	31 % Increase in number of households	2 %	HA_BT	I	exp
			Children getting older, so need for	31 %	VA_P	27 %	irv
			newer spaces		HA_T	6%	add
					IA_P	67 %	exp, ir (4:1)
			Better exploitation of spaces	67 %	VA_P	28 %	irv
					VA_T	3 %	irv
					HA_P	6%	exp
					HA_BT	34 %	exp
					IA_P	28 %	exp, ir (2:1)
	Economic	62~%	62 % Lack of fund at hand	52 %	VA_P	% 06	ir_v , sl, sub_v (3:2:1)
					HA_P	10~%	exp
			To increase rental income	40 %	VA_P	15 %	ir _v , sub _v (2:1)
					VA_T	21 %	irv
					HA_T	10~%	add
					IA (sub)	54 %	sub _{uf} , sub _{gf} , sub _{sha} (1:1:1)
			To accommodate home-based	8 %	HA_BT	12 %	exp
			enterprises (off, sho)		HA_T	38 %	add (as shop)
					IA	50 ~%	ir I
	Miscellaneous	<i>3%</i> ∠⁄′	To accommodate car	55 %	HA_T	33 %	add
	consumptions				IA	99 %	ir, red (3:1)
			To accommodate storage space	45 %	VA_T	I	irv

1.2 Explicit Reasons

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Table 1.2 (continued)	ntinued)							j
Source	Explicit reasons				Behavioral patterns of	ns of	Associated IA	
	Issues		Detail reasons		transformation			I
External: 17 % Qualitative		10 ~%	10 % To follow neighbor's trend	100 % VA_T	VA_T	I	irv	l l
		87 %	Respond to changes in building regulations	15 %	HA_P	I	exp	
					HA_T	I	add	
			To utilize previously unused land 63 % VA_P	63 %	VA_P	$18 \ \%$	irv	
					HA_P	47 %	exp	
					HA_T	29 %	add	
					IA	6~%	ir	
			To exploit the reshaping of streets or plots 22 %	22 %	VA_P	67 %	irv	
					HA_T	33 %	add	
		3 %	3 % To adjust to new owner's demands		IA	Ι	п.	
	ownership							
	,							I

(Source Author)

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1.2 Explicit Reasons

more about the transformation stories. That is the point when the methodology of this research shifted its paradigms. It adopted the ethnographic method instead of a formal questionnaire survey. Being a part of the community, the author claimed to become a participant observer, and a trustworthy person to conduct informal interview sessions with owners to find out the inner stories behind the transformations. The search for the implicit reasons began through an ethnographic journey.

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Chapter 2 Beyond the Explicit Lies the Implicit

Abstract This chapter gives the hint of shifting the paradigm of the research. From a rather straightforward questionnaire survey, it adopted the ethnographic method and searched for something implicit that no formal data collection method can offer. The data came in stories, and the findings started to emerge as themes. A theme matrix is shown at the end to give the reader a preview of what to expect later on.

Keywords Ethnography • Explicit reasons • Implicit reasons • Transformation • Theme analysis

2.1 Ethnography as the Method of Study

Ethnographic method of study may not necessarily follow any consistent step-bystep guideline. Different ethnographers have described their methods which vary significantly. However, one thing they all emphasized is the trustworthiness of the researcher in the community. If the researcher cannot be trusted, the collected information may not be acceptable. Most researchers also agreed that being a member of community is a privilege for such research, especially during data collection and interpretation, though gradually becoming a part of them for the purpose of the research can also work significantly. Considering the classical basic methods of research, which are Data Collection, Documentation, Analysis, and Interpretation, ethnographic studies may not follow a systematic path or cycle of work flow (Spradley 1980). Many researchers emphasized that for qualitative research such as ethnography, a straightforward pathway may not be recommendable. Therefore, researchers derive their own method or steps according to the need of the research.

For this study, it started with a straight-line path of data collection, documentation, analysis, and interpretation. However, at the end of this path, the objectives were reset, and another cycle was conducted, with a change in technics.



Fig. 2.1 An example of cyclic method of Analysis (Source Author)

For example, a structured questionnaire searching for explicit reasons during the second cycle was replaced by informal interviews when search for implicit reasons became objective during the third cycle. Theoretically, these cycles can go on and on, however, this research continued one more cycle after finding implicit reasons when it categorized them into certain themes that concluded it. Figure 2.1 gives an idea of the methodological framework of the research. The figure also shows that the cycles can be stopped at a certain point depending on the researcher's decision, and umbrella statements can be drawn to conclude the study (shown in dotted circle in the center).

A "Domain Analysis" was carried out by Khan (2014) in search of behavioral patterns of transformation. It discovered several domains, which consisted of themes to describe the transformation incidents. These themes were related to the physical behavioral patterns of transformation. As a continuation of that study, explicit reasons of transformation were identified in Chap. 1. However, the relationship between the explicit reasons and the behavioral patterns appeared non-conclusive and in fact insignificant, when search for the implicit reasons began. Therefore, such attempts were not made further.

However, it was tempting to relate particular transformation incidents to explicit and implicit reasons. This is in order to find whether there can be any consistent relationship between explicit and implicit reasons. This was done at the end of the study after constructing the themes and domains of implicit reasons.

	Domain	Themes
Major	Exercise of power and control	2
	Emergent learning	4
	Management techniques	7
	Post-mature-family concerns	2
Minor	Transformation has symbolic expression	3
	Sociocultural norms	1
	Mid-family crisis	4
Meta	The whole history reflects the gradual change of values of life as it matures	1

Table 2.1 Implicit theme and domain matrix

(Source Author)

2.2 Theme Matrix

The themes were initially categorized according to their frequency. The major themes were those that occurred frequently, and the minor ones were those that were less frequent but had the potential to be extremely significant. Finally, meta-themes were identified as those that were related to the whole history of transformation of the houses. A list of the domains are shown here (Table 2.1), which can give the reader a preview of the chapters to follow.

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Chapter 3 Major Themes

Abstract Major themes were extracted from those transformations that occurred more frequently in different family stages of households. Because of frequency, they already demanded more attention. However, a deeper investigation showed that they are very much significant as well. To get a better understanding, several themes were grouped under bigger domains. Four domains of major implicit themes were discussed in this chapter.

Keywords Implicit themes • Emergent learning • Exercise of control • Management technics • Family stages

3.1 Domain 1: Emergent Learning: 2 Themes

3.1.1 Emergent Knowledge is Significant and is Developed Incrementally

Emergent knowledge refers to the practice of acquiring knowledge by letting it emerge from an interaction with the parties involved (Cavallo 2000). He insists that institutional knowledge, which is termed as "grammar of school" by Tyack and Cuban (1995) deeply hold the organizational system of knowledge but allows only certain expressions as legitimate, and renders some expressions nonsensical if they deviate from the underlying system. But when in cases where desired changes cannot be reliably foreseen, and the particular domain is computationally too complex, and thus relies on the understanding and the development of the people involved, rigid institutional knowledge needs to be supplemented by emergent knowledge. Thus when a "blueprint" is exposed to its intrinsic shortcomings, it is not the question of abrogation of that knowledge, but to improvise within the structure of the blueprint, so that the emerging knowledge can also be consistent within a core set of principles.

Emergent knowledge in these neighborhoods have developed through various sources. Some of them can be traced back to "school thinking" too, though most

of the knowledge comes from "cultural learning". The quality of architecture in self-built neighborhoods are such that people are involved here for the best part of their lives, they don't live here temporarily so that they need to be involved here. And whenever people are involved in the interaction, knowledge starts to emerge. That can be of immense value, and is developed through generations.

3.1.2 Learning is Only from a Trusted Person

The chart in Table 3.1 shows owners' overwhelming dependency on the people around for any kind of help during designing a new layout, or transforming a layout. They sometimes tended to verify it with professionals "if" they were around "by chance." Otherwise, they borrowed knowledge from different groups of people living or working close to them. These included masons, contractors, neighbors with previous experience, close relatives, or salesmen. They didn't actually need to be experts on these issues, but they needed to be trustworthy. When knowledge was required, there was nothing more important than gaining it from a trusted person, whatever the level of knowledge that can be. Table 3.1 shows the sources of knowledge.

In fact this notion synchronized with some very basic human behavior. The owners needed help in the design process, but it was not the knowledge but the delivery of knowledge that seemed to be important for them. They often complained that professionals were not sympathetic enough about their affordability or ability. But most importantly, sometimes professionals seemed to undermine their intellectual ability which hurt them most. A man of wisdom can be rejected with all his wisdom if there are traces of disrespect while delivering. So it is not whether the owners were in need of the "best" available knowledge, but the "best way" they could get that knowledge. And no other than a trusted person could deliver that in an effective way, no matter what the formal base of knowledge that person had.

3.2 Domain 2: Exercise of Power and Control: 4 Themes

3.2.1 Exploiting Loopholes of Building Bylaws are Not Seen as Violation

Building bylaws are necessary to develop a healthy coexistence of built forms. In dense neighborhoods with self-built houses, they are even more significant.

Table 3.1 Dependency for decisions	Knowledge gained from professional architects Knowledge gained from lesser professionals (mason, contactors, etc.)	3 % 12 %
	Knowledge gained from non-professionals	85 %

Source Author

However, the level of tolerance from the authority also plays a vital role in executing the bylaws properly. High tolerance can encourage violations.

Different examples of violation of regulations were found in the self-built neighborhoods in Dhaka City in the form of:

- Overstepping the boundary lines was common as houses occupy sections of the road.
- Balconies projected outside the setback area and gradually transformed into habitable spaces.
- Roofs tend to project in all possible directions in upper floors to capture more space.
- Addition of temporary structures at rooftop, as that did not count as an extra floor.

All of these seemed to have one very basic thing in common. The owners did not consider them as violation (Fig. 3.1).



(Key: 'Year'_'Floor level'_'n'th number of transformation for that particular floor)





This example shows some of those instances. Its sides at east and west were projected from the level of ground floor column line, the balconies were projected and later transformed into toilets, one extra floor was added to the top floor only at the back side (arrow shows the point of view), and the columns at the east actually overstepping more space than allowed, as it occupies a part of the access road.

Fig. 3.1 Exploiting loopholes in bylaws (Source Author)

3.2.2 People Follow Neighbors Not Only to Have Advantages, but Also to Bar Them from Getting Advantages

The neighborly behavior was defined in this study as the behavioral patterns of transformation, which is influenced by neighbor's actions. Sometimes they pose discomfort to each other, sometimes to the authority. However, they are seen as an automatic generation due to living inside the neighborhood. Usually, if an individual does not gain any extra territorial advantage with a particular neighborly behavior, the others might not follow that. But if an individual does gain any, the others will definitely follow that. The examples of balcony projection, roof projection, etc., are examples of such actions (Fig. 3.2).

The whole scenario does not mean that people are not aware that what is a threat to a neighbor is also a threat to them. But the added territorial gain is tempting. That is why the building authority needs to step up at a certain level to prevent these actions. Tolerance to violation to a certain extent might be acceptable, but there must be strict guidelines to determine the level of tolerance, so that violations do not pose serious threats to healthy urban coexistence of buildings.

3.2.3 People Test the Tolerance of Building Authorities as Much and as Often as Possible

From Habraken (1998)'s concept of territorial control, we get the idea that one is free to act within one's own territory. When one crosses the boundary and starts to act on an upper level, it tests the level of tolerance from the actors at the upper level. If the level of tolerance is high, actors at lower level would continue to



The projected balconies and the projected sides of the buildings create an unhealthy juggle of buildings, difficult for maintenance, and hazardous in case of fire.

Fig. 3.2 The consequence of collective violation of particular regulations (Source Author)

violate the boundary more often, and to a greater degree. Sometimes, the actors at upper level may wait or be sympathetic to a certain extent unless their own freedom is under threat. If they cannot identify that point, it can create disorder at the upper level. The job of the actors at upper level is to be strict enough to put an end to the freedom the actors at lower level can enjoy due to certain limits of tolerance. For self-built neighborhoods, it is sometimes acceptable to allow a certain level of tolerance to the housing transformations. But the building authority, which is the actor at upper level, should be strict enough to prevent unhealthy growth (Fig. 3.3).

In these neighborhoods, the "side projection" action had posed a real threat to the environment, but the "balcony projection" act did not. This is because for the former, two buildings can come dangerously close in terms of maintenance or fire hazard issues, but for the latter they do not. Thus, one can presume that building authorities should be stricter on the first act, and might be a bit more tolerant on the second. However, any such act should be identified and given its necessary importance by the authority.

3.2.4 Exercise of Control and Power Do Not Need to Be Overly Noticed

Some other violations may not be so dangerous as the previous and do not pose significant threat to the physical environment of the neighborhood even collectively. However, individuals tend to hide them from being noticed. For example, the rooftop additions which can be considered as legal as long as the roofs of these



The pictures show a vase with a plant, and a series of vases marking the roadside. An irregular element such as a plant has certain limit to grow freely, but not indefinitely. First the vase would limit its growth, then there can be trimming to control its spread, and finally, the series of such vases would give the impression of a regular urban element where the freedom of the growth of the plant is controlled from the upper level of control of the vase

Fig. 3.3 Freedom to individuals at lower level, yet discipline at upper level (Source Author)



These examples show the different ways how the owners have tried to hide the rooftop additions as much as possible from the main access road. The first one occupied very little space, the second one around half, and the last one nearly three-fourth of the total available floor area. Considering the fact that they need to be close to the stair case for their accessibility, they are still trying to be away from the road front.

Fig. 3.4 Location of rooftop additions (Source Author)

additions are constructed with temporary materials (such as wood, corrugated iron sheets, etc.). However, owners tend to do it usually at the backside of the roof so that they are not utterly visible from the front (Fig. 3.4).

This point accentuates another important implicit behavior. People try not to be identified when they are violating regulations. These people are ordinary people. It is not expected that they would like to become utterly noticed for a behavior, and being criticized in the community or by the authority. They want their aspirations to be fulfilled in terms of small-scale gaining more rental income, gaining more habitable space, but doing it unnoticed. Of course, one cannot be completely unnoticed, but the attitude is obvious.

3.3 Domain 3: Management Techniques: 7 Themes

3.3.1 People are Always in Search for More

Aspiring for more is a natural phenomenon. One can argue that it comes from greed, others can say it comes from the attitude to try to keep oneself secure from the unforeseen future. Life is full of uncertainties. People tend to store food, clothing, medication, or such, either for themselves or for future generations. In case of housing, this characteristic is obvious as well. Trying to acquire as much space as possible in different ways, and trying to increase rental income in different methods are two major ways to do that. For the former, owners search for more space to have a little more luxury at a certain stage of life. For the latter, owners show more urgency to increase the number of rental units whether by adding new units or subdividing bigger ones, and this happens usually at the later stage of life. To be specific, the mature stage aspires for more space, and the post-mature stage aspires for more money (See Table 4.1 for definition of 'Family Stages'). However, this theme was countered by certain examples where owners tried to increase space even at post-mature stages, and it was mainly to accommodate married children who often come to visit (Fig. 3.5).

The important finding was that owners aspire to have more space during mature family stage, and then it diminishes during post-mature family stage. But the aspiration to have more money continues to increase, or stabilizes during post-mature family stage, but does not decrease (Fig. 3.6).

3.3.2 Balconies Provide One of the Best Resources for Future Use

Most of these buildings were constructed before 1984, after which an improved building regulation came into act. Before that, one of the major flaws was the



In 1996, the owner used to occupy the whole of first floor, but after 2004 they occupied only around two-third of the ground floor. In 1996, the family was still in 'mature' stage. The sons were not still married away. Gradually, they married and started to live abroad. So there is no real necessity to maintain such a big space. Also they do not like to climb up the stairs because of old age. So they moved down, and occupied only two-third of the ground floor. It showed that aspiration for enjoying most from life is more important in the middle ages, rather than in old ages.

Fig. 3.5 Space occupation depends on the stage of the family (Source Author)



The shops were rented out from the very beginning. The ground floor was initially one unit, but later on it was subdivided with one very small independent unit, and then the other part had another entry from the other road, and the rooms were rented to individual persons who shared the toilet, and used to cook inside the rooms by themselves. The aspiration is here to increase the rental income as the family passed to post-mature stage.

Fig. 3.6 Transformation is significantly dependent on aspiration for more rental income (*Source* Author)

absence of strict setback rules. By 1984, the setback rules were modified, but there was another significant flaw about the balconies. The projected balconies were exempted from being counted as floor area, so people always used to project balconies over the mandatory setback line, and later converted into habitable spaces. Once transformed into habitable spaces, which was already a violation of the law, there was no proper inspection to take action against it. It can be referred to either as a negligence, or high level of tolerance from authority. However, this was corrected during the modification in 2006, when projections beyond setback was prohibited. To avoid confusion, in this section, balcony and verandah expressed two situations. The former is the projected one, while the latter is not (Fig. 3.7), though in other parts of the book, they expressed similar notions.

Balconies mostly transformed into toilets, kitchens, or stores. However, if more space was available there were examples that they were converted into small bedrooms or study rooms as well (Figs. 3.8 and 3.9).



Fig. 3.7 Conceptual difference between balcony and verandah for this section (Source Author)



In this example, the owner had a wide verandah at the front. In the early stage of the house, he had the luxury to rent it as one flat in each floor. Later on, the housing consumptions changed, and he decided to increase rental income and divided the floors into two units. The third floor was not an exception. However, one problem for subdividing a previously one unit into two or more was associated with the lack of enough toilets or kitchens. However, verandahs provide excellent opportunity to overcome that problem.

Fig. 3.8 Transformations of balconies (Source Author)

3.3.3 Phases in Construction Allow Effective Management of Available Fund, Leisure Time, and Own Control

Carmon (2002) has iterated one interesting phenomenon about the management of construction of own house for lower income people. People with higher income can have the luxury to engage a contractor for their house, or they can buy an apartment with a higher price where the cost for management of construction by the developer is included. Since the owners in self-built neighborhoods are less affluent, they cannot often afford to engage a contractor, or hire professional property managers to take care of the building maintenance or supervise future



This owner had projected the balcony beyond the setback line. After 22 years of inhabitation, the family was crossing from mature to post-mature stage. There was a necessity for an additional toilet as the number of family members increased, and owners grew older. The best option was to convert part of the balcony into a toilet

Fig. 3.9 Balconies are frequently transformed into toilets (Source Author)

constructions. Rather, they spend their leisure time to manage the construction and maintenance job. However, these owners are not usually bothered by the difference in the quality of the work that might appear, since the difference in the money saved from not hiring professionals is probably much more significant to them. Figure 3.9 showed such an example.

Besides saving money by using leisure time, the other significant reason for self-management is to exercise "control." Self-management gives the owner the control over the whole process. The owners can determine the pace of their work, they can pause during any stage, and they can restart when they have enough time or money (Fig. 3.10).

Here, some important aspects were identified which are within the owners' control during self-management:

- 1. The amount of time for daily supervision.
- 2. How much work to be done at a certain stretch.
- 3. The decision to pause in case of emergency, which might not always be lack of funds.
- 4. If there is lack of fund, the freedom to pause at any time, giving priority to other household needs.

Though heavily depending on affluence, self-management gives the owner satisfaction and confidence, which is hard to get through works delivered by contractors or developers.

3.3.4 Roof is Considered as the Only Place for Recreation and Other Pastimes

In these closely dense neighborhoods, there is not much space left for recreation such as open fields, or indoor playing facilities. Unlike some other countries, public



This owner possessed this land from his father. He did not live there, but lived nearby in a flat in his fatherin-law's house. He started construction in 1990 with enough fund to construct all the four aspired floors. He used to explain to the masons the daily works, and went to the office. After he came back in the afternoon, he spent several hours in the construction site. Anyway, he had a heart-attack when he was casting the roof of first floor. He recovered, but needed rest for several months. So he decided to stop the work as he had no other to supervise. In order to have the flow of rental return, he decided to cast only the front part of the first floor for the time being. It was done with very minimal supervision and very quickly. Then he had a break of three years until he fully recovered, and later he went on to complete all the four stories.

Fig. 3.10 Examples of self-management in the construction process (Source Author)

authorities fail to preserve some land for public recreational facilities. Therefore, houses construct the entire of the neighborhoods. However, people try to find their own way out, and one of them is to use rooftops. Since they are mostly four- or five-storied buildings, the number of people to use a particular rooftop is not many. The only issue might be climbing up the stairs as most of them do not have elevators. In several cases, rooftop additions occupy part of the roof, but owners try to preserve part of it, mainly the frontal part of it for recreational purposes.

However, owners tend to control the access to the roof, mainly because of safety reasons so that intruders or burglars do not break into the building through the rooftop. So usually there is limited access for tenants in terms of time. However, on a lazy afternoon, this is a nice place for kids who can enjoy the last sunlight of the day, or for the housewives to gather and chit-chat. It also serves as a place for drying clothes during the morning and noon. There are cases where rooftops were also used for gardening, or sometimes a sitting area for few elderly people. The neighboring roofs are sometimes so close that people can also chit-chat from one roof to another. That is why these days most owners try to use rooftop as much as possible as an attractive place, and keep it clean and hygienic (Fig. 3.11).



Different examples of roofs show various attempts to make it attractive

Fig. 3.11 Roof as a recreation space (Source Author)

3.3.5 Increasing the Number of Rental Units is Important for Increase in Income, but Increasing Their Standard is Not That Important

At post-mature stage, owners use their houses mostly as a means to increase rental income. The demographic factors settle down during the mature family stage, and the economic factors become more and more important. The huge investment for the construction is expected to give fruits in course of time, and there is no other way than to increase rental income. The most practiced method is of course to increase the number of rental units. It can be done by adding floors. But once the aspired number of floor is reached, different methods of subdivision takes place in order to increase the number of rental units (Fig. 3.12).

All the different methods showed here are with the same purpose of increasing rental income. Sometimes one single house or one particular flat may experience several times of this kind of transformations. However, there is another similarity with them. In all cases, the space standard has been decreased in various ways, which implied that owners are eager to increase rental income, but are miserly to provide better space standards or living standards to the tenants.

3.3.6 Construction is a Hazard and Attempts are There to Minimize or Avoid it

Construction work is hazardous. Harmful particles such as cement, sand, and brick chips, create health risks when they are extensively exposed to people. This can happen both during construction and if the materials are stored in a particular place for a long time. In these houses, there is not much space left to store the construction materials, so sometimes they are stored in space of everyday usage, such as corridors, entry lobby, setback areas, etc. Thus, a house where any construction



Method no. 1: Dividing an existing unit into more, with non-repeatable entry at ground floor: Here, a (3B+1L+1K+1T) flat has been reduced to one (1L/B+1K+1T) flat and another (1L+1B+1K+1T) flat. The service rooms were not touched. The smaller flat had only one room, which suffered from privacy problem. The other flat, already handicapped by complex circulation, had some dead zones which could only be used as storage space.



(Key: B= Bedroom, L= Living Room, D= Dining, K= Kitchen, T= Toilet, V= Verandah)

Method no. 2: Dividing an existing unit into more, with repeatable situation in upper floors: Here, two southern flats were divided into four flats. A (1L/D+3B+1K+2T+2V) flat had been divided into one (1L/D+2B+1K+1T+1V) and another into (1L/B+1K+1T+1V) flat. Commercially attractive, but according to space standards, they suffered. The previous L/D room was much reduced and was accessed through an unattractive passage. The verandah in the smaller flat was still there, but actually it served as a circulation space for the small kitchen and toilet, transformed from the previous verandah itself.

Fig. 3.12 Subdivision increases the number of units, but not necessarily the space standards (*Source* Author)

work is in progress is a hazardous place for the owner, for the tenants, and for the neighbors as well. So owners tend to minimize construction duration if it is unavoidable.

Usually, someone has to take the responsibility for the management of the work, and it is generally the owner, his wife, or their children or very close relatives or trusted ones; and they have to do that simultaneously with their daily routine works. So often we can see some sort of urgency in these works, so that the work can be finished within a minimum time. In case of transformations, the owners try to adopt particular solutions where the construction time and amount of work is minimal, which may be far more ideal. But there is a tradeoff between those ideal solutions and those that are less hazardous and quicker (Fig. 3.13).



Method no. 3: Dividing an existing unit into more, with repeatable situation in upper floors (virtual i.e. the new layout is applied when new floor is added): Here, the owner had a new layout of 3 units when he constructed the new floor. Within the same floor area in the lower floor, it had only one flat. The 1L+1D+3B+1K+3T+1S+3V flat had become one 1L/D+1B+1K+1T+1S+2V, one 1L/D+1B+1K+1T+1, and one 1L/B+1B+1K+1T+1V flat. The most to suffer was the third one (East side), which had a passage to travel before entering. The kitchen space is also a very much neglected one. It also creates fire hazard at the entry point. The passage itself is robbing off some privacy from the second unit.



Method no. 4: Not physically dividing an unit, but let individual families share the whole flat with shared services: Here: one 1L+1D+2B+1K+2T+2V apparently well solved flat had been rented to three individual

Fig. 3.12 (continued)

families. The total income from one flat was 5,000 Taka, and it then started fetching (3 X 2,500) or 7,500 Taka with a 50% increase, which meant a lot to the owner. One family was lucky enough to have its own toilet, while the other two shared the other toilet. Anyway, all the three shared the kitchen, and the dining room. When asked about cooking queue, the tenants said that they had solved it by fixing time schedule.



Method no. 5: Not physically dividing, renting to individual persons sharing bedrooms as well as service facilities: Here, it is a rather downgrade situation than the last one. In this case usually single migrants start living in rooms shared by similar other people. Often called 'bachelor's quarters' or with a more common term 'mess', people share the toilets and kitchens. Sometimes there is no separate kitchen, and tenants cook inside their bedroom. But however, as mentioned, the total number of tenants fetch much more rental money than it could have been from a single tenant.





Initially the first floor had two units. When the owner moved in, it was transformed into one unit, just making an internal connection between the two units (a). Later on, the owner needed less space, and wanted to rent out some part. So the opening was closed again, and a new door was created at the left of the bedroom at midsouth (b). The door at the right was just kept closed, and locked, to separate the tenant's unit. Still later, the owner moved to ground floor, so the original division returned, but no construction was done, just the right door was opened, and the left door was closed and locked (c). The example showed how easily one unit can be divided, and again reunited. The minimum construction remains the more priority over the other priorities such as better circulation, privacy in terms of noise infiltration etc.

Fig. 3.13 Examples showing evidence of minimum or zero construction in transformation (*Source* Author)

3.3.7 Money at Hand is Utterly Significant

Self-management is one important issue in these transformations. The owner wants to be in control of the whole process. However, we cannot ignore the obvious fact that after all the owner needs money for the work even though one can manage time, and establish authority. There have been many cases when a house has been transformed incrementally toward its aspired state just because the money at hand was not enough to complete at one stretch (Fig. 3.14).

A house is a lifelong aspiration for owners, and the money involved here is absolutely most important for them. No risk is taken if there is not enough money at hand.



Initially this house was tin-shed. The first construction was one single room (Circled). Then it became a two room unit. It transformed into one longitudinal section, before finally becoming the complete floor. The owner was a simple clerk with moderate income. He lived in the tin-shed for a while. When he decided to construct the permanent floor, he did not have enough money even to complete one floor. But he never gave up. Every two years, he used to get a bonus. He decided to invest that in the house. In 1980 he could only build one single room. He still kept the tin-sheds and rented them out, so they also provided some savings. In two-years-time, he was able to add one more room to the previous one. By then he had four children, so he needed more rooms. But he did not have enough money. He had to wait for another two years when he was able to complete the western half of the total floor. He moved into the southern part. The idea was to keep the tin-sheds as long as possible in order to get more savings through rental income. Finally in 1996 he was able to finish the whole ground floor.

Fig. 3.14 Money plays a crucial role in transformation decisions (Source Author)


The living room was initially 4.39m X 3.64m. When transformed after 15 years, the living room moved to a newer place with a relatively smaller dimension of 4.52m X 1.84m. The new dining room measured a meager width of 1.52m. The owner built the house in 1979 at a time when his three daughters were in childhood. During the next decade he did not have to worry about the house since there was no immediate need to transform. When the daughters got married one by one, they often came to visit with family, and stayed in their parents' home for days. The need for more rooms was knocking. Moreover, there was some space left at the back of the plot due to some unclear idea of setback rules (the subsequent setback rule came to act in 1984). So he decided to increase the floor space by adding one more row of columns at the back. He could have easily kept the living and bedrooms at their locations, but he felt that the necessity of a big living room is not that much anymore. Rather, bigger bedrooms are much desired as daughters visit often, and stay for a while. So the space, previously used as kitchen with a width of just 1.84m was converted to living room. Actually it worked as a passage through to the kitchen and dining as well. The dining was a meager 1.52m wide. He could have easily joined these two rooms to make a bigger living/ dining, but the necessity of privacy in the dining room was more important than a bigger size living-dining room. Thus we find some very unusual size of rooms, but justified by the needs of the family when it crossed from one stage to another.

Fig. 3.15 Examples showing interesting solutions during post-mature family stage (Source Author)

3.4 Domain 4: Post-mature Family Concerns: 2 Themes

3.4.1 Standards in Post-mature Family Stage are More Relaxed Than in Earlier Stages

The evolution from young family stage to mature family stage towards post-mature family stage seems to have some permanent imprints on different values. One of them related to this study was the concept of size and shape of rooms. There seemed to be some notable changes in the level of acceptance regarding the dimensions of different rooms. The following example showed one such incident (Fig. 3.15).

In Post-mature family stage, the dimension of rooms does not appear to be very important at all, especially those concerning aging parents. They try to find a solution where the more important requirements are fulfilled. In early stages of family, the activities revolve around the parents, but gradually it shifts toward the necessity of grown-up children, and their demands. Thus, a biggest master bed or a huge living room is not at the top of the priority list in post-mature stage. Rather, more number of rooms, bigger bedrooms for children, etc., becomes much more important. For that reason, after transformations, we can see how the dimensions change to which would have been unacceptable under usual circumstances during young family or mature family stages.



The Western unit in third floor was a two bedroom flat, which was converted to a one bedroom flat according to the needs of the elder son. But it was again transformed back to its original form in 2004 when the son left the house and went abroad. The elder son previously lived in the first floor in the smaller (Eastern) unit. When they were expecting their first child, they needed a bigger unit, and he persuaded his parents to have a transformation in the third floor, where the two bedrooms were joined together to make a bigger bedroom, in order to have a bigger space for the child to grow up. It was definitely not a very acceptable situation for the parents as their authoritative power was challenged, but they could not oppose to the situation. But their clear disagreement was evident as soon as the son's family went abroad and the unit was transformed back to the previous situation immediately afterwards.

Fig. 3.16 Grown-up and married children have influences on transformation decisions (Source Author)



Ground floor was initially occupied totally by the owner. The first and second floor had identical floor plans. The third floor was constructed only when the eldest daughter decided to move back in after marriage. The ground floor accommodated his full family of three sons and four daughters during mature stage. As children grew up and got married one after another, different solutions appeared. The first development was to let the eldest son live at the smaller unit (Northern) at first floor. Later on, the two other sons were let to stay separately in the smaller unit at ground floor. However, the second son moved to another city for job, and one room was always kept locked for him at the ground floor. Thus, the owner lived occupying the whole Southern part of the ground floor. The daughters were married away, but there were enough rooms in the ground floor if they visited their parents on occasions. The youngest daughter was still unmarried during the study. However, the eldest daughter asked her parents that she would like to rent a flat to live there, but not together with the parents. The owner initially did not plan to cast the third floor because of lack of money, but considered the situation as emergency, and decided to construct part of the third floor. It was designed according to the needs of the daughter. She asked for three bedrooms. The other floors had two bedrooms in the southern unit. However, the owner had to construct all the walls, since it is a brick foundation building, and cast the whole roof as he found it dangerous to make joints in the roof if necessity arises later on. This cost him some extra money, but he had to do that for the sake of the demand of the daughter.



Front elevation expressing the various layouts

Fig. 3.17 Married son and married daughters show different influences on transformations (Source Author)

3.4.2 Grown-up Children Gather More Authority Over Parents at Post-mature Family Stages

One more notion is closely related to the previous one. Not only do parents start reorganizing spaces through transformation during the changes in the stages in family, but also the children gather more authority over parents on transformation decisions. It happens not only in case of sons who bring in brides to the house, but also in case of daughters who were married away as they appear to have strong connection with the parents in the form of short or long stay visits. However, the balance swings back and forth depending on particular situations (Fig. 3.16).

Another example is shown next, this time the influence was from the married daughter (Fig. 3.17).

The children, after they have grown up and have their own family, the balance of authority in the family starts to shift toward them. The parents still hold the key for any decisions, but they know at the back of their mind that under particular circumstances, they would also have to bow to the needs of grown-up children, especially married ones. Though sons are supposed to have more influence since they traditionally tend to live with the parents at least in the initial stage after marriage, married daughters who traditionally leave parents' home after marriage also show enough influence on transformation decisions, though sometimes not in the most revealing way.

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Chapter 4 Minor Themes

Abstract Minor themes were those that occurred less frequently. Some of them even appeared only in one instance. However, considering the impact they had on the respective households, minor themes were not at all negligible. The minor themes were grouped under three domains. These domains expressed inner self of the owners in sublime ways.

Keywords Minor themes • Symbolic expression • Sociocultural norms • Midlife crisis

4.1 Domain 1: Transformation Has Symbolic Expressions: 3 Themes

4.1.1 Ideal or Not, People Tend to Repeat Incidents Which They Experienced Before

There were several transformation incidents that occurred only because owners had similar experiences before, and not because they were ideal to be repeated. The following example showed evidence of this notion (Fig. 4.1).

In a more ideal situation a permanent and temporary structure should not coexist, especially at rooftop, since there are practices to cast the total roof once at a time. However, depending on the demand of the situation, exceptions can happen. And that can happen easily if the owners trace back similar experiences in their past. In this case the past experience refers to living in a situation where permanent and temporary structures coexisted, though it might have been at ground floor open land. The whole situation seems to move to rooftop, and symbolically reflected his past.



When the second floor was constructed, only half of the floor could be finished because lack of fund. The owner's son still wanted to get some extra rental income and constructed rooftop additions at the Eastern part of the second floor terrace. It was only in 2005, that the rest of the floor (South Western part) was constructed, but the temporary sheds co-existed. The interesting co-existence of the owner's flat (SW), the temporary sheds (SE), and the smaller tenants' flats (N) were at the same floor sharing the same staircase lobby. The temporary sheds were rented out to lower income tenants, where three families occupied three individual rooms with one shared toilet and kitchen space. At the other end (N), there were three tenants who occupied three individual flats. The rents were much higher here. Finally, the owner started living on the SW corner, which was designed as the lower floor of a duplex. The upper floor was constructed later in 2008. So, here we see the con-habitation of different income groups Asked if it created any social problem, the owner's son defended himself by citing his own experience in living in tin-sheds. He also mentioned that now he can exercise his authority on lesser tenants, which he once experienced being a lesser tenant in the past.

Fig. 4.1 Temporary rooftop additions reflect images of past experience of owners (Source Author)

4.1.2 Transformation Offers Chances to Fulfill Lifelong Aspirations

With the same example, there were two more interesting findings. They were related to achieving lifelong aspirations. In this case, living in a duplex house and showing own design skills were the two aspirations (Fig. 4.2).

While starving to fulfill such aspirations, sometimes, quality does not matter. What matters more is whether they have been achieved or not. The satisfaction is all that matters. One can argue whether the taste of the individuals should be improved, or whether individual's knowledge level can be enhanced through collective efforts from institutional infrastructures so that one's life's aspirations



Living in a duplex had been the owner's son's lifelong aspiration. Lack of money at hand prevented him to construct both floors (level 3 and 4) at one stretch, but finally he did at last after a three year break in 2008. Though hardly visible as located deep in the neighborhood, he tried his own ideas to decorate his unit. It did not match with the other parts of the building, as we can see un-plastered brick surface, tin-sheds, and incomplete facades. But that did not seem to stop him from achieving his aspirations.

Fig. 4.2 Self-expression determines many small but significant decisions (Source Author)

can be shaped and reshaped toward more mature ways. However, whatever that level of maturity reaches, individual taste would remain varied, and these transformations are expected to continue to reflect such aspirations, maybe just the degree or pattern would be changed.

4.1.3 Owners Take Chances to Show Off Own Skills

Owners often try to show off own skills. Own houses give them the perfect premise to exercise that.

The owners may not always be master craftsmen, nor might they be good designers. However, whatever minimal knowledge or sense of design or aesthetics they might have, the aspiration of showing off what they have does possess immense value. One might have the impression that it was so ridiculously simple an achievement to be boasted of, but in reality this achievement was not to be underestimated as long as the owner's self-satisfaction is concerned. People want recognition (Glasser 1998). Through these minimal efforts, the owners continue to search for that recognition (Figs. 4.2, 4.3).



This staircase had a very small inclined surface in plan. The 45 degree angle was symmetrical at both sides. The owner explained that as his own idea. He was proud enough to show that as an evidence of his own creativity.

Fig. 4.3 Owners' skills find an outlet through their own buildings (Source Author)

4.2 Domain 2: Imported Sociocultural Norms: 1 Theme

4.2.1 Mixed Standard of Tenancy is Normal to Owners Who Had Similar Experience

Sociocultural Norms were operationally defined in this study as behavioral patterns in the built forms and spaces of the houses during their development and transformation, not the behavior patter of people. As many other cities in developing countries, Dhaka is a city of migrants. They are mainly economic migrants and few are educational migrants. When they migrate they bring in memories from experiences which have certain values. These memories help them to make decisions in various phases of life while they try to settle in the new atmosphere in the cities. They cannot cope with the pace of urban life from the beginning. Those who can catch up quickly, reshape their values. Others stick to the old values desperately. The ability not to be able to catch up with the urban pace makes them emotionally bonded with the old values, but can make them lagging behind the urban generations that came before them. Often a collective lagging desperately tries to establish an apparently non-suitable norm. However, there are examples that they can even be recognized in the urban setup in some future. That is how physical environment as well as values in a particular urban area are shaped and reshaped depending on the balance between existing urban norms and the ones that were migrated. One of such norms reflected below is such that it is borrowed from the owners' past experience (Fig. 4.4).



The owner of this house built tin-shed in 1964. In conventional tin-shed houses in the countryside, rooms are arranged in a row, one person or family can live in one room, with a toilet and kitchen shared by all, located outside. He himself had experience of living in such environment. When he replaced the tin-shed permanent structure (only ground floor) in 1977 as a two-unit flat (one big and one small), he occupied the bigger unit. But when he constructed the first floor, he did not repeat the design. Rather he designed 2 small units, and a third section with individual rentable rooms that can share kitchen and toilet (shaded in figure), an idea he referred back to his own experience from the past. Even the tenants, who themselves were recent migrants to city, seemed to accept such solutions as it did not conflict much with their experiences either.

Fig. 4.4 Past experience plays a significant part in designing spaces (Source Author)

4.3 Domain 3: Midlife Family Crisis: 4 Themes

The term midlife family crisis is defined here as the crisis households face when parents reach their midlife. However, whether it should be defined as a crisis similar to a more popular notion of "midlife crisis," is arguable. Lachman (2001) insisted that though aging in general can bring about psychological, emotional, or personality changes, to blame only the middle age as the crisis phase is a rather one-sided

Approximate age group	Stage of family	Status of children	
20–30	Young couple	No children	
30-40	Young	All children below 18 years of age	
40-50	Mature-1	At least one child is adult	
50-60	Mature-2	At least one child is married	
60–70	Post-mature	All children are married	
70–80	Old couple/single	All children left/one partner passed away	
80–90	Extended family	Old parents move to children's place	

Table 4.1 Stages in family

Source Author

view. There can also be reassessment or reflection time during this period which can be stated as opposite to what "crisis" is meant in general. The same can be stated on midlife family crisis. It may not reflect a term with negative impression. Rather, it might reflect a state in the family stage where newer demands need to be respected and housing transformation decisions might reflect them as well.

Following Seek's (1983) categorization of family stages, it was modified contextually in this study. Here the categories were as follows which conformed to the data extracted from the sample (Table 4.1).

The difference between young or mature family-1 from mature family-2 is that family structures change here more frequently in the latter. For example, in mature family-2 stage, when children get married, households grow older. The demography of family changes, the married children start to play roles differently than when they were part of the family before marriage. Conflicts arise more often. Though most of these cases might be trivial, the way they are handled become more significant than ever, as these decisions might have long-term effects in the family. However, transition period between any two phases can be crucial as well.

Several conflicts mentioned below were extracted from the study that showed their influence on making housing decisions.

- Conflict between adult children (whether married or not) and parents' opinions.
- Gradual disintegration in family makes the parents more flexible in their opinions.
- Children's opinions get more and more influential as family crosses one stage and other.
- Housing decisions start to take longer thought process in later stages as more parties get involved.

The term "crisis" may be too harsh to represent the later stages of family life, but obviously it refers to a notion where decisions cannot be exactly predicted, because of the sudden dramatic incidents that might occur. Despres (2005) expressed this notion as the tension between the emerging needs of growing children for their independence and the current connection with parents. Arguments and conflicts are an inevitable part of family life, and they do not threaten the coexistence of members if handled with enough sympathy and tolerance from all participants. However, they have the power to leave their mark, and in this study, different transformation incidents reflected such marks.

From the study, it was found that young families or mature-1 families do most of the vertical additions, while in mature-2 phase, people usually do internal alterations. It was also found that though mature-1 stage faces challenges in housing decisions from adult children, more severe and more permanent conflicts generate when children marry, that is, in the mature-2 or post-mature phase. There was also a difference between a son getting married, and a daughter getting married. Conventionally, daughters move out with husbands after marriage. However, sons traditionally bring in the bride and start living with their parents in the same house. Our study showed two interesting situations.

Situation 1: Adult or married children live in the same flat with parents.

- 1. The more conventional practice (but certainly less popular these days) of married son starting living at the same flat with parents, therefore internal alteration is necessary.
- 2. The adult unmarried son, unlike most of the adult unmarried daughters, needs some extra space for his added activities.
- 3. Besides these two situations, there is one other situation where transformation in owner occupied flat is necessary. The daughter(s) who are married away, might need to visit parents' home from time to time, so the owner occupied flat needs to be transformed to adjust to such situations.

Situation 2: Married children live in a separate flat from parents.

- 1. There have been several cases when daughters return to the parents' homes with their husband and family, not as dependents, but as a separate family (usually renting a unit with the son-in-law as the formal tenant).
- 2. Sons were often seen to be living in the same house after marriage. Sometimes with the parents' family, sometimes separately in different flats. If they lived separately, even though they exercised authorities in the form of internal alteration, they were unlikely to pay their parents in the form of rent.

As mentioned, these transformations are reflections of that "crisis," originated from conflicts in decisions between adult or married children with parents. In young family stage, when the children are young, parents have more authority to control them. Inside the house, they also have territorial control over the children. It is not the same when the family reaches mature-1 and over. Children demand and gain more territorial control over their parents in the house. This territorial control is not physical or spatial like a door or a wall that can distinguish the boundaries. It is more psychological, which is expressed mostly through behaviors. Transformation incidents are just one way to express the resultant line of action of a particular incident of conflict in physical terms. There can be other modes of expressions such as changing of clothing style, food habit, daily routine, etc. Social researchers are always curious to investigate other expressions. The situations extracted in this study are just a few of many of this kind.

One incident more obvious than the others is the marriage of sons, when a new adult, i.e., the bride, is added to the family who has immediate difficulty to locate

where the control line is. Parents also face similar difficulty to decide whether to continue with the same line of control, or to change it. Social scientists will definitely try to find out the result with their behaviors. However, this study interpreted them through patterns of transformations.

The following themes emerged from this particular notion of midlife family crisis.

4.3.1 Midlife Family Crisis Generate Interesting Solutions

The tension starts with the quest for territorial control. Sometimes there are invisible separations between the son's new family and the parents' family. It can be termed as a transitional phase before formal separation. In next phases, when other brothers marry, more invisible and formal separations can occur (Fig. 4.5).

From the example, the gradual delivery of territorial control in the house from the parents toward grown-up children was observed. They let the control relax gradually so that they could still enjoy some sort of control throughout even though the degree became reduced. Even that gradually diminishing control was felt by



In 1973, when the first floor was first designed for the whole family of three brothers, only two bedrooms were sufficient. The kitchen was at the North-West corner which was unusually big. The location of the living room also was not exactly ideal. However, two brothers shared the smaller bedroom, while parents and the youngest son shared the big Master bed. The elder brother married in 1980 and occupied the Southern bed, while the other two brothers shared bed in the Living room. By 1985, the elder brother already had one son, and demanded more territorial control. The Southern verandah was transformed into a kitchen, and the big bedroom was divided into two bedrooms. The big verandah at the East was transformed into a dining and another kitchen. The primary kitchen turned into a bedroom. The elder brother used the South bed room, the North-West bedroom, the living room on the West, and the small kitchen exclusively together as a separate flat. The younger brothers shared one room and the parents moved into the Eastern bedroom. Parents' kitchen served themselves and the two brothers. The main living room also served for the main family. But there was no formal separation in terms of doors. But from the main door onwards, the two dotted lines refer to a zone from where the family disintegrated into two parts.

Fig. 4.5 Example shows interesting mid-family solutions (Source Author)

them to be necessary to live with a satisfaction, to live with a meaning. After all, it is the parents who constructed the house in a certain past, raised the children, and guided them to their lives. It was not very easy to let all the control go away all of a sudden. It needed transition. The informal separation at the beginning was that kind of transition. At a certain point, parents realized that neither they nor the elder son gained much from informal separation. So, then came the formal one. At the end, it was not exactly who gained how much control, but since they held the attitude to live in the same house, they sorted out the methods together.

4.3.2 Family Disintegrates in Slow Gradual Phases

In the same example above, the family gradually disintegrated during the mature and post-mature phase. From a young couple toward mature stage, family becomes integrated with strong bonding between parents and children. After marriage of children, studies show that the disintegration process starts. The pattern or degree can vary, but it is inevitable, and transformation incidents are one way to reflect that.

With marriage of children, obviously a demographic change takes place. However, the boundaries of territorial control are also reshaped as authority moves from parents to the grown-up children. From this example, it is shown invisibly at the beginning, then it becomes too obvious. If the family members cooperate, a gradual shift of control can help keep the disintegration under a controlled pace. Otherwise, undesirables can happen.

There were also different impacts between marriages of sons and daughters. Sons tend to inflict bigger impact and it was seen through the higher degree of transformation. If they continued to stay within the family after marriage, some notable transformations happened, such as toilet relocation, kitchen upgrading, resizing, or dividing. If they occupied another flat separately, they tended to modify to some extent before occupying it.

In case of daughters, the transformations usually did not happen so acutely. Usually there were two situations also. In the first situation, the daughters were married away, and they occasionally visited their parents, and stayed for a while (a day, a week, or a month). So there was necessity to have some flexible space in the house, so that they could be used when daughter(s) visited, but could be used for other purposes while they were away. In this case, parents still held more authority in transforming some spaces. For the second situation, daughters came back to rent a flat in their parents' house. In this case, it was found that the demand of daughters was much less than the son's.

In most cases, the most dominant implicit reason related to the territorial control was the conflict between daughter-in-law and mother. In case of married son continuing to live within the family, the daughter-in-law as a new member in the family feels the most tension to establish her territorial control in the new place. It is expressed through numerous incidents of transformation. While in the daughter's case, the daughter and son-in-law demand less. This is probably due to

the traditional context, daughters returning to father's house with family might reflect son-in-law's last resort, and his demands remain low. However, exceptions are there in every situation.

Thus transformation can tell the story how the family builds up and then gradually breaks into parts. The example in Fig. 4.6 shows the larger effects inflicted by the sons. In the following example, the effects inflicted by daughters



The parents started learning faster from that incident. Eventually, they decide to divide all the floors into two. The main reason was that, if the sons got separated one by one, they would soon demand one separate floor each. As there was only one unit in each floor, there would be no rental income after a while. But if the floors were divided into two units, sons could take one unit, and another could still be rented. In the next few years the following development occurred. When the second brother married, the elder brother moved into the bigger unit at second floor, while the second brother occupied the West side of the first floor, just as his elder brother used for a while. When the younger brother married, the second brother moved into the smaller unit at second floor, and the younger brother started living with his family in the first floor, sharing it with the parents but with that individual separation zone.



There were other incidents happening too. The father died in 1990. The mother still lived at the first floor side by side with the youngest son. The sons decided that rental income is too small. Though actually planned for 4 floors, but they together constructed the fourth floor. That was the only floor which was entirely occupied by tenants. Later in 1998, the top of the porch was also transformed into a rentable unit for a small family. When the mother died in 2003, the elder brother moved into the bigger unit of first floor, side by side with younger brother. This is because he had difficulties to climb up two floors as he got old. The second brother moved to the bigger part of the same floor. The younger brother planned to move into the bigger side of the third floor.

Fig. 4.6 Territorial control with or without formal physical boundaries (Source Author)

were shown, which was negligible. Here, one daughter came back after 8 years of marriage along with her husband and two children. They actually paid rent through the son-in-law. Previously, when the daughter used to visit her parents, they stayed in the first floor with the parents. But when she moved in, they were given a complete flat. The amount of rent was less than what other tenants paid in other floors, but it was practical to receive money from daughter's family as the parents used to live on the rental income.

The implicit story told even more about the situation. The daughter came back only when the she started working as her kids got older. The daughter wanted to keep the children with her parents while going out. In many cases, the same implicit reasons were found behind daughters coming back. It seemed like women were more comfortable to keep their children with their parents instead of the husband's parents. So, whenever they were starting job, they tried to be closer to their parents, and the most convenient situation was to live in their parent's house. It saved time, it gave more sense of security, and it boosted the psychological comfort of the daughter's family as well. However, the daughter did not ask for any big transformation in the house, except for some minor maintenance (Fig. 4.7).



The four floors of this house were constructed simultaneously. The owner occupied the first floor from the beginning (1981). His two daughters and one son lived together until marriage of the daughters. However, one daughter came back to live in the second floor since 1998. However, it had been 10 years since the study was conducted, but there was no transformation inside.

Fig. 4.7 Difference between the influence of sons and daughters (Source Author)

4.3.3 Emergency Situations Often Bring in Unprecedented Solutions

Disintegration inside family is an inevitable process. Adulthood and marriage of children inflict some major changes in the family structure. It is reflected in many ways. Transformation is just one of them. Disintegration does not always bring in separation with its name. But the previous examples show that some families try not to make it too obvious, some families wait for the inevitable. There are also some who do not want it to happen, but eventually succumb. This following example showed such an incident (Fig. 4.8).

The tension for the territorial control between the mother and the daughter-inlaw started in this family after the elder son's marriage. The mother was continuing her control and the kitchen was her zone. The daughters did not have a problem with that, or they had found a way to cope with that. However, the daughter-in-law was a new member, and she was looking for her boundary of territorial control. At the preliminary stage, a separate living room and toilet identified her zone, where she could entertain guests from her family. However, conflict arose when priority issues appeared while preparing food for the family or for the daughter-in-law's guests. Initially it was within limit of tolerance from both. However, after the baby was born, and when the daughter-in-law needed more access and control in the kitchen, the conflict between mother and daughter-in-law became more and more exposed. At a certain point, the son told the father that he would want to leave the house.



The owner built the first floor for himself in 1988, and his four children were all young at that time. In 2003, the eldest son married, and had a child in 2005. The huge floor area was more than enough as it has 8 bedrooms, one huge family space with formal dining, one big living room, and one small dining room for informal dining. Most of the beds were located at the South, and the eldest son himself lived in one of those beds. But after marriage, he needed a separate living room for his own guests, and also wanted to be close to the main entrance. For two years, everybody shared the same kitchen. After that, the daughter-in-law demanded a separate kitchen as she had to have continuous access to the kitchen for preparing food for the kid, which she could not do while the kitchen was occupied for the needs of the family members. Apparently there happened a simple solution. The big kitchen was divided into two by building a partition. However, the implicit story told some deeper reasons.

Fig. 4.8 Emergency situations need quick solutions, not ideal ones (Source Author)

Though at the beginning, the father did not understand the gravity of the situation, and was insisting to continue to share the kitchen, later he understood that in that way he was going to lose his son's family. That gave him more insight into how his house would become empty if the same situation occurred after other son's marriages. Therefore, a simple partition wall in the kitchen appeared. The smaller one could not be argued to be ideal regarding its dimensions, but that solved the issue, at least for the moment.

4.3.4 A Small Outcome May Have Huge Thought Process Behind

This can be inferred from the previous example as well. However, one more example is shown here to highlight this theme. Demands from grown-up children and their marriage brings in unprecedented situations, which need to be solved in an unprecedented manner. The outcome might be very little, but the amount of time to make the decision is not trivial. The thought process involved is not insignificant either (Figs. 4.9, 4.10).



The actual space was a two unit in one floor. The South unit was occupied by the owner, and the North part was rented out. The owner has three daughters and the son was the youngest of all. His daughters often visited him and stayed for a couple of days. When it was only one, or even two daughters married out, the current space layout was okay to accommodate them. They could just fit in for a couple of days somewhere in the house. But when all the three daughters were married, and the daughters had kids, then the space seemed too tight, especially on occasions such as religious festival 'Eid-ul'Fitr', when all three daughters visited simultaneously and stayed for days. Then there was a need to expand the area of his flat. Unlike the previous case, this was not a matter of ultimate urgency. So he got enough time to think different options. First of all he thought about the potential spaces to transform.

Fig. 4.9 Actual layout showing details (Source Author)



The first potential space to transform was the dining space in the middle. He had the idea that the middle part should be included with his unit. However, other options influenced his primary decision as well.



There are some other reasons that might arise as well that could also instigate a lot of thought processes. Some of them involved several options before making an apparently small outcome. The following example showed one of those instances (Figs. 4.11, 4.12, 4.13).

The last option was considered with great importance (Fig. 4.13).

The decision was actually between "more number of rooms" and "more rental income." Initially the first one was winning, but the more time the owner gave to



Fig. 4.11 The first option (Source Author)



Fig. 4.12 The second option (Source Author)



Fig. 4.13 The third option (Source Author)



Fig. 4.14 Final decision (Source Author)

the issue, the economic benefit became more significant. Finally, the solution was to give "just enough" space for the daughters while the owner still can get the most available rental income. To sort out the additional problem with toilet, one more toilet was constructed in the balcony in the southwest corner (Fig. 4.13).

Therefore, a rather simple looking solution still had a very long thread of thought process. This is similar to what professionals do during making decisions. The quality of the decision may vary, but the value of such decision after that long thought process cannot be undermined (Fig. 4.14).

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Chapter 5 Meta-Themes

Abstract Meta-themes evolved from the whole history of the events. In this study, the whole history of transformations of houses showed one dominant implicit theme. It was the reflection of the gradual evolution of the household itself. Like the life story of a human being, the transformations unveiled different stages of the household, how it grew and how it started to disintegrate.

Keywords Meta-theme · Values of life · Stages of family

5.1 The Whole History of Transformation Reflects the Gradual Change of Values in Life

The total history of the transformation of the houses gave different indications of different contextual values. Going through the life history of the household, it helped to understand how the values built up, and then the connection between the transformation decisions and the values could be discovered. At first glance, it was often tough to rationalize many transformation incidents. However, deep down below, the implicit world showed how the values were linked with them and how the transformations together reflect a greater meaning to life itself.

With the following example, taking each step of transformations of the house, one can follow through the life history as if reading through a novel. Every single transformation incident possessed immense value. Therefore, it is easily understandable how much significance the total history of a house could possess. This house had gone through no less than 16 transformations in the last 20 years.

For the convenience of the reader, only the part of the actual vignette (thick description of events) is mentioned in the following figures. However, it could well describe the essence of the story.

The first stage was in 1989, when only the ground floor was constructed as two rentable units. The owner was not living there at that time. The next two floors were added when funds allowed it in 1992. The owner planned to move in after his



The first stage was in 1989, when only ground floor was constructed as two rentable units. Owner was not living there at that time. The next two floors were added when fund allowed in 1992. The owner planned to move in after his retirement in 1996. The final floor was constructed in 1995 and the owner moved at first floor in 1996. Some detailing in plan was visible in the final floor which differed from lower floors learnt from previous experiences. The first floor was transformed into one unit to accommodate the two grown up sons. It was done with just one opening in the middle (circle). The married daughter lived in front unit in second floor, who returned to parent's house after several years of marriage.



The elder son married and occupied the rear unit of the second floor. The owner did not need the whole of the

Fig. 5.1 The series of transformations in a particular house (Source Author)

retirement in 1996. The final floor was constructed in 1995 and the owner moved in to the first floor in 1996. Some detailing in plan was visible in the final floor which differed from the lower floors learnt from previous experiences. The first floor was transformed into one unit to accommodate the two grown-up sons. It was done with just one opening in the middle (circle). The married daughter lived in first floor any more, and the opening between two units was closed. Rental income was ensured by releasing a smaller part in first floor at the front (shaded). The owner bought a car, and an extra toilet was constructed at the N-E side for the resident driver (circle). The owners elder son opened an office at ground floor in 1997, so the size of the rental unit at ground floor was reduced. One extra room was built at the roof for in-house maid in 1997 howing dependency on maid, as owner entered post-mature stage and getting older.



The owner moved to ground floor in 2000 in order to avoid climbing stairs as they grew older. It also helped he owner to control the main entrance gate for different socialization purposes such as checking activity of tenants, responding to daily necessities in the likes of postman, garbage collection etc. The ground floor circulation was complicated though, because no direct connection was made between the two units as was done in first floor. The first floor was again divided into two rental units as it was early before. Some renovation occurred in 2002 at third floor as elder son wanted to make more space for the newborn child. The inevitable connection in ground floor took place in 2002 to ease out circulation between living and dining space (circle).



Fig. 5.1 (continued)

the front unit in the second floor, who returned to her parent's house after several years of marriage.

The elder son married and occupied the rear unit of the second floor. The owner did not need the whole of the first floor any more, and the opening between the two units was closed. Rental income was ensured by releasing a smaller part in the first floor at the front (shaded). The owner bought a car, and an extra toilet was constructed in the northeast for the resident driver (circle). The owner's elder son opened an office in the ground floor in 1997, so the size of the rental unit in the ground floor was reduced. One extra room was built on the roof for the in-house



The younger son got married and went abroad in 2003, and the owner felt no need for car any more. It was sold, and the driver's toilet was no longer needed, and left unused from 2004. The elder son also went abroad in 2004, and the office at ground floor was not needed any more. So the front part was again rented as a unit (shaded). The third floor was back to its original design after the elder son left. There was a need for an extra toilet for the parents, and the driver's toilet was transformed as an attached toilet in 2008. The sons often visited home, and the owner decided to have an extra room for them, that would provide accommodation in future. So, the tenants' unit was again included in the parent's unit at ground floor in 2009, and later on the Guest bed and Living room were switched so that a there was a larger living room.

Fig. 5.1 (continued)

maid in 1997 showing dependency on maid, as owner entered post-mature stage and was getting older.

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The younger son got married and went abroad in 2003, and the owner felt no need for the car any more. It was sold, and the driver's toilet was no longer needed, and left unused from 2004. The elder son also went abroad in 2004, and the office in the ground floor was not needed any more. So the front part was again rented as a unit (shaded). The third floor was back to its original design after the elder son left. There was a need for an extra toilet for the parents, and the driver's toilet was transformed as an attached toilet in 2008. The sons often visited home, and the owner decided to have an extra room for them that would provide accommodation in future. So the tenants' unit was again included in the parent's unit at ground floor in 2009, and later on the guest bed and living room were switched so that there was a larger living room (Fig. 5.1).

From the study it was found that owners usually build their house during the mature stage. The history of transformation is actually the history of the family converting from a mature stage to post-mature stage. The houses showed expansions like a family expands during mature stage, and then they showed contraction as a family does from mature stage to post-mature stage.

Chapter 6 Conclusion

Abstract This chapter is not just a formal conclusion. It attempts to find a relationship between the explicit reasons and the implicit reasons. Considering the transformation incidents as the effect and the reasons as the cause, it was tempting to find such correlation. However, interestingly, it did not show any straightforward correlation. It again showed the complicated nature of human behavior, for which social scientists always struggle to find clues. Transformation incidents appeared to be just another method of expressing that complexity, a phenomenon that itself is the beauty of human life.

Keywords Theme analysis • Domain analysis • Explicit themes • Implicit themes • Ethnography

This study tried to explore the reasons behind transformations in housing beyond the explicit world. Previous studies showed several obvious explicit reasons behind them which were stated in Chap. 1. However, deeply mixing with these people, it was found that transformation incidents bring in a lot of emotional decisions. People also tend to disguise it with the explicit reasons, and often are in a state of denial if they are asked about the influence of some implicit reasons. Explicit reasons have their own themes, which can be grouped into several domains as shown in Chap. 1. In a simple situation, each explicit theme could have been a response to an implicit theme, whether or not they are hidden or denied. However, the interesting point was that several explicit themes could be related to a particular implicit reason. Moreover, more than one implicit reason could lead to a particular explicit theme. Furthermore, explicit reasons could not be correlated with the transformation patterns. That led to conclude that transformation patterns cannot clearly correlate with explicit reasons, nor do they correlate with implicit reasons. For example, addition of an extra toilet can be the result of several explicit reasons such as demographic, or economic, and the implicit reasons behind those can be many more, such as grown-up children's demand, search for territorial control. etc.

A diagrammatic approach might explain things further. Let us consider there are domains that belong to the "explicit" world, and there are domains that belong

to the "implicit" world. Explicit domains are made up of several explicit reasons which can be termed as explicit themes, while implicit domains are made up of implicit themes. So there are two sets of domains $(D_{i = 1 - n}, D_{j = 1 - p})$, and two sets of themes $(T_{i=2})$, i.e., T_{W1} and T_{W2} (where, D = Domain, T = Theme, W = World). More than one theme in W_1 can belong to a particular domain of W_1 . The simple matrix may look like as in Table 6.1, where any particular explicit theme is directly related to a particular implicit theme. In this case, even though exact same themes in both worlds may not make up particular domains in two worlds, the level of complexity between the relationships of themes is not that high as a particular explicit theme is produced by a particular implicit theme.

Figure 6.1 shows the diagrammatic expression of the relationship between the themes in the two worlds had it been a simple relationship.

However, things are not so simple in the real world. The same domain representing a set of themes in W_1 may not represent the same set of corresponding themes from W_2 which are in a straight-line relationship with the explicit themes. Not only that, the themes belonging to a particular set of themes in W_1 can be diffused to create newer and newer domains in W_2 . Thus, the relationship can become more complicated as in Fig. 6.2.

The domain size (bigger or smaller) in this diagram does not represent whether it is a major or minor theme as the frequency of incidents is hypothesized to make little influence in this study. Frequency loses its significance in W_2 even more, as one single implicit theme can be highly significant than some other which occurred many times.

As emphasized before, the goal of an ethnographic research is to discover cultural patterns people use in order to organize their behavior, to make and use objects, to arrange space, and to make sense out of their experience (Spradley 1980). Here in this study, the behaviors were expressed through the action of Spontaneous Transformation. However, they were only the physical expressions of

Explicit world (W_1)		Implicit world (W_2)		
Theme	Domain	Domain	Theme	
Characteristics of ST	D_i , (i = 1 - n)	Dj, (j = 1 - p)	Reasons behind ST	
T _{W1} 1	D _{W1} 1	D _{W2} 1	T _{W2} 1	
T _{W1} 2			T _{W2} 2	
T _{W1} 3			T _{W2} 3	
$T_{W1}4$	D _{W1} 2	D _{W2} 2	$T_{W2}4$	
T _{W1} 5			T _{W2} 5	
T _{W1} 6	D _{W1} 3	D _{W2} 3	T _{W2} 6	
T _{W1} 7			T _{W2} 7	
T _{W1} 8		D _{W2} 4	T _{W2} 8	
T _{W1} 9			T _{W2} 9	
T _{W1} 10			T _{W2} 10	

Table 6.1 A simple relationship between domains and themes of explicit and implicit worlds Explicit world (W_{i})

(Source Author)



Fig. 6.1 Simple straight-line relationship between explicit and implicit themes (Source Author)

built forms, and not the behavior of people who are responsible for those transformations. Therefore, there was the search for the reasons behind those transformations. While the explicit ones helped to make a quick scan of human behaviors which had similarity among different contexts of the world, the implicit reasons tried to dig deeper and find out the context-specific cultural patterns prevailing among this particular group of people.

Implicit means the untold stories. Behind every explicit there are some untold stories. While in some cultures, the implicits are gradually accepted to become explicit, other cultures may prefer to keep them as implicit. From the experience of this study, it was found that people in this particular context prefer to keep many implicits. Though one might argue whether they are in a state of denial where the implicit reasons help to secure their integrity, others might argue that these implicits can actually open up if they are approached in a culturally and socially accepted way through a gradual process. This ethnographic study tried to make that kind of approach. Once the implicit cultural norms are disclosed, they need to be respected. Only then there is more chance that the apparently invisible implicit



Fig. 6.2 Hypothetical relationship between explicit and implicit themes in real world (*Source* Author)

world opens up. That can ease out the pressure of individuals and help them participate collectively to build up a healthy environment, be it social, cultural, or a physical environment.

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Glossary

- **Self-built House (SBH)** Different from a more popular similar concept of selfhelp houses, self-built houses do not necessarily imply people building their houses literally with their own hands, but usually hiring masons, or small contractors for the construction of different technical aspects of the house, if not a single contractor is not hired for the management of construction for the whole house. The house is defined as a permanent construction generally of multiple stories, with usually more than one flat in each floor, and the owner occupying one or more flats and renting out the others. The construction is managed by the owners, by using their leisure time, thus no formal developers are used to manage the construction. These houses are usually the basic shelter in the city for the owner.
- **Transformation** Transformation is defined as the process of adding, altering, or extending *SBH* by using permanent or temporary construction materials. In this study, transformation is essentially owner-controlled.
- **Owner** Owner is defined as the one who owns a particular *SBH* including the land. The owner's household usually lives in part of the house, for example, one unit or more, and the rest of the house if left, is rented to tenants. In some cases, there can be more than one owner, for example, brothers inheriting part of the building.
- **Tenant** Tenants are defined as the ones who rent a particular flat/apartment or in some cases, particular rooms in the *SBH*s, but having no authority to change any partition walls of the house. Usually they have to accept the owner's decision while transformation takes place.
- **Owner-Oriented House** Owner-oriented house is defined as a *SBH* where the owner is the sole inhabitant of the whole house, be it single, or multi storied, single unit, or multi-flat.
- **Tenant-Oriented House** Tenant-oriented houses are defined as a *SBH* where the owner is completely absent in the house, and there can be one or more tenants inhabiting the house. In some extraordinary cases, the tenants might have the authority to transform the house.

- **Owner–Tenant-Oriented House** Owner–tenant-oriented houses are those where owner and tenant co-habit in the same *SBH*, with owner living in a particular part of the house, and responsible for the management of the whole house. The tenants live without having authority to change any part of the house.
- **Formal Settlement** Formal settlement in this study is defined as a collective noun for houses made of permanent construction materials, thus referring to those houses that are supposed to be built for long-term inhabitation.
- **Informal Settlement** Informal settlement in this study is defined as a collective noun for houses made of temporary construction materials, thus referring to those houses that are supposed to be built for temporary inhabitation, but is subject to easy demolition (example: slum, squatter, shanty).
- **Formal Housing** Formal housing is defined as part of formal settlements, where public or private enterprises are responsible for constructing and developing houses as a commodity, whether subsidized or sold as a consumer product, thus generally built on a larger scale than just a single house or flat. However, in specific cases, a single house also can be formal if it is worthy as a consumer product, especially targeted at higher income groups.
- **Informal Housing** Informal housing is defined as part of formal settlements, but with no public or private enterprises being responsible for constructing and developing them as a commodity. Acting within legal building regulations, these houses are products of individual owner's involvement with or without engaging a formal contractor to manage. Usually they are not considered as a commodity, but as the basic shelter of the owner.
- **Private Sector** Private sector is defined as enterprises other than public sector, which produces houses (both formal and informal housing). For the formal housing, private sector are developers who produce houses as a consumer product, and for the informal housing, they are individual landowners who build their individual houses with or without a formal contractor.
- **Public Sector** Public sector is defined as agencies directly connected to the government or the different formal subdivisions of power in a society, which formally produces houses not as a commodity, but provides subsidies to citizens or members of the society with an attitude of welfare.
- **Developer** Developers are defined as agents, individuals, or company that invest and manage the whole construction project, and are usually involved in activities where housing is considered as consumer goods.
- **Contractor** Contractors are defined as agents or company, that do not invest, but manage the whole or part of the construction of a house. They can be engaged by individuals in the informal sector, or by developers in formal sectors, both in the public and private sectors.