

Housing choice behavior: where is it rooted?

Maia Ozdemir, MS

Abstract — In result of global changes like globalization, technologic development and increasing migration, the world population becomes more and more homogeneous but countries local populations, in contrast, become more heterogeneous often causing problems and rising questions for political debates. One of the most significant factors of migrants' wellbeing is proper housing. So, there is a growing body of different housing studies but interdisciplinary research with applying, for example, psychological approach, are clearly insufficient. The current research attempts to expand upon previous studies based on user-values – housing attribute relationship, into investigating the effects of Maslow's hierarchy of needs and three biological formations in human's brain on residential space attribute preferences for three different cultural groups, namely, Czech, Turkish and Russian.

Keywords— housing choice, cultural housing preferences, evolution, hierarchy of needs, triune brain

I. Making connections

Housing choice is one of the most important in human life. People always shaped environment around since the time of early civilization when the first simple buildings were erected from mud. Building structures became the setting for conducting everyday routines and chores, places where people spent their entire lives. Every civilization had its own way of building structures to meet all needs of the group, including cultural, ritual and other needs.

Housing as a residential space may be of different types with different meanings and names. The meanings range from the basic shelter to “Being-at-home-in-the-world” (HARRISON, 2007). Heidegger sees building and dwelling as two sides of the same coin. To dwell means to build and building is how we constitute our dwelling (HEIDEGGER, 1978). According to Rose (2012), dwelling does not designate a passive condition but a mode of human practice (ROSE, 2012). Latimer (2009) shows that what people “keep” affect their experience of dwelling; so, that the way in which “home” is created and made reflects differences in cultural means (LATIMER & MUNRO, 2009).

Rapoport (1981) defines the concept of a dwelling as a system of settings in which a certain set of activities takes place, and classifies features of the dwelling into three types: fixed-feature elements, semi-fixed-feature elements and non-fixed-feature elements. Fixed features' changes are rarely and slow, but they may be subjects to surficial treatments like decoration and finishing. Structural elements like walls and floors are in this category. Often the fixed features are under the control of codes and regulations (RAPOPORT, Identity and

environment: A cross-cultural perspective, 1981). As it was argued by Ahrentzen (2002), fixed features are more likely to reflect social, organizational, cultural, and institutional meanings rather than those of the individual (AHRENTZEN, 2002). Semi-fixed features may be changed quickly and easily. They include furniture, soft furnishing such as carpets, and personal objects like photograph frames, and carry meanings to the occupiers by printing the identity onto the place (BECKER & CONIGLIO, 1975). Non-fixed features include activities that take place in the dwelling and communicate with occupier's social status (LEAVITT & LOUKAITOU-SIDERIS, 1995).

Banham (2007) and Oliver (2006a) suggested classification of residential spaces into three levels namely shelter, house, and home; and a home is much more than a physical structure, it represents deep social structures (BANHAM, 2007) (OLIVER, The cultural context of shelter provision, 2006a). Bachelard (1994) argued that personal factors such as intimacy, daydreams, imagination, and memories affect the establishment of a home (BACHELARD, 1994).

As a center of human life and a place of the highest comfort level dwelling has to be a stock of cultural attributes. Even if the modern diversity of dwelling components gives a feeling of the disappearing of the traditional home scheme, there are inherited cultural basics evolved through thousands of years as a fitness-enhancing home style for the certain cultural group. According to Rapoport (1969), the house is not just a structure, nor a shelter, but an institution influenced by the cultural milieu to which it belongs (RAPOPORT, House Form and Culture, 1969). Number of studies revealed the relations between housing preferences and culture. Most of all was conducted in US because of historically shaped multicultural environment. For example, Mendez (2005) pointed that building industry and government are required to provide a housing model supporting increasing multiculturalism (MENDEZ, 2005). Jabareen in his study revealed the relations between culture and housing preferences in Gaza City with empirical analysis. Based on 1,269 face-to-face interviews with adults in the city, this study concluded that housing preferences in Gaza were determined by components of culture (JABAREEN, 2005).

The official authority to shape the environment nowadays is given to the professional architects. They have the license to organize the form and structure of buildings that enable the carrying out certain functions according to needs of the occupants. So, the performance of built environment depends on the ability of the architects to make appropriate decisions regarding the needs of the end users. Architectural scientists in 80th made the first attempts of research on relation of human motivation factors to housing design but their several studies

Maia Ozdemir, MS (Author)

UTB in Zlin
Czech Republic

remained clearly insufficient. For example, Norberg-Schulz (1985) stressed inability of current houses to fully satisfy the needs of residents particularly in terms of figural quality and spatial images (NORBERG-SCHULZ, 1985). Bachelard (1994) mentioned a lack of meaningful forms in modern houses (BACHELARD, 1994). According to Rapoport (2000), culture is determinant of a user's housing preferences and choices (RAPOPORT, Theory, culture and housing, 2000). Oliver (2006) either highlighted necessity of vernacular architecture that implicates local culture on housing design (OLIVER, 2006). Slight increase in number of studies in this area in last few years shows growing awareness in architectural community of importance of implication humans motivation factors in housing design. Jusan (2010) considered person-environment congruence (PEC) central in creating a sense of home (JUSAN, 2010). Zavei & Jusan investigated consequences of ignoring human motivational factors in housing provision and advised using Maslow's hierarchy of needs in housing design process. The authors blamed modern life styles and related social facts for critical psychopathological consequence called "uprootedness" in result of the lack of attention to human motivations in the housing provision process. According to Zavei & Jusan (2012), house has become an economic product, and consideration of humanistic aspects of a living environment has gradually decreased (ZAVEI & JUSAN, 2012). The reasons and consequences of ignoring these factors in build environment design are shown below (Pic.1).

PICTURE 1

Current situation on Russian housing market is a clear example of consumers' dissatisfaction. Nowadays constructors in Russia with adopted at post-soviet years foreign construction technologies and standards have solved the cultural problem by selling housing without finishing, at the rough construction stage. According to Moscow Construction Company TopDom, most of new housing in Moscow is being sold as just rough supporting walls without any finishing (TopDom). As it was also pointed in Smartnews by Vlasova (2013), according to statistics, 81% of sold in Novosibirsk region new housing was sold as a rough construction (VLASOVA). Russian homebuyers' preference of rough construction housing shows their dissatisfaction with finished standard housing offers.

As behavior and motivation are inter-related concepts, famous Maslow's hierarchy of needs is very helpful in interpreting people's and, particularly, homebuyers' behavior.

a) Maslow

Maslow (1970) considered culture as a reflection of a person's motivations in response to the effects of external agents imposed from natural and built environment (MASLOW, 1970) (Pic. 2).

PICTURE 2

According to Maslow (1970), there are five levels of cognitive needs, including physiological, safety, belongingness – love, esteem needs, and the need for self-actualization. Gratifying these basic needs in equal measure leads to formation a perfect and healthy man, thwarting the response to these needs leads to psychopathological results. Maslow (1970) considered these basic needs as the origins of every humanistic issue (MASLOW, 1970). As soon as a certain needs are gratified people will aspire to go up to upper level of cognitive needs. Zavei & Jusan (2012) argued that understanding these basic needs is also vital in the context of providing housing (ZAVEI & JUSAN, 2012). Several studies investigated link between Maslow's hierarchy of needs and built environment. Israel (2003) used "Sociogram exercise" technique based on Maslow's hierarchy of needs for drawing a map of a user's childhood living spaces for identification of the character of a place from the users' environmental roots and imagination (ISRAEL, 2003). However, the technique hardly may be applicable if the end users are not known such as in mass housing projects. McCray and Day (1977) suggested that user's satisfaction in a house depends on economic or social status, which are higher psychological expectations but urban public housing units can only provide for the physiological needs of the residents (MACCRAY & DAY, 1977).

The questions raised might be why physiological needs come first and belonging needs come second; what are the mechanisms of their dominating in consumer behavior and how strong is their influence to consumer decision-making process? The answer would likely be found in cognitive biology and evolutionary brain development as this knowledge would allow a systematic understanding of customer brain's architecture.

Culture developed parallel with evolutionary development of human brain, so a short historical outlook will contribute to better understanding of the cultural genesis.

B. Evolution

Evolutionary psychology is one of biological approach to study of human behavior. Evolutionary psychologists consider brain as a computer designed by natural selection, its every program is a result of adaptation that produced a behavior allowed our ancestors to survive. They believe, that every human behavior is best explained in terms of underlying psychological mechanisms that are adaptations. Switching research focus from programs run by brain to physical parts of brain gets the study to area of neurobiology, and allows understanding of evolutionary development of modern human brain. Bonding neurophysiology to psychology, every neuron, that is a physical particle of brain, has its cortical map that is a beginning of brain's virtual area for running programs. The process of creating new traits is based on repetition. If two nearby neurons are being stimulated simultaneously for a certain time their cortical maps may become one. This phenomenon is called synaptic pruning. So, for evolutionary brain development our ancestors must be exposed to certain

conditions for a long in evolution terms time. That was possible if, for example, they moved to a different geographical region. Historical outlook would be beneficial for our study of brain development. According to Darwin, all species have one ancestor and the same inheritance (DARWIN, 2004). So the first species interesting for our study were species of Reptiles with R-complex, the best psychological mechanism of that period. R-complex had been developed as the most economic mechanism that allowed Reptiles to be the first dominant group in the world for many million years. It consisted of ready programs for solving some problems, so it wasn't necessary to waste energy to solve a problem every time. There was always a ready algorithm. The most primitive possible human ancestor was Australopithecine with volume of brain less than 500 cc. Scientists assume that the changes in Australopithecine's DNA were caused by radiation as a result of volcanic activity in East Africa 6 million years ago. In result, Australopithecine's brain started to develop and the next step of evolution, the first recognizably human-like hominid *Homo habilis* with significantly larger volume of 600 cc had appeared 2.4 million years ago. Extra volume of *Homo Habilis*' brain made possible start of evolving over old reptilian brain stem and cerebellum of another layer of the brain contained Amygdala and limbic system that allowed solutions of totally different tasks bonded to childcare. This part of the brain also is in charge of emotional expression. Modern brain still has these old parts in its structure. The first early human *Homo Erectus* had a volume of brain about 1000 cubic centimeters, so it was ready for developing the most complex part of our brain, Neo-cortex. Also, according to paleoanthropologist Richard G. Klein, further brain development might start because of mutation of gene *FOXP-2*. "A change in brain function about 50,000 years ago could explain why modern Africans subsequently expanded to Eurasia" (KLEIN, 2003). So, the period when according to the most widely accepted "Out of Africa" Hypothesis, *Homo erectus* was spreading across the world, was the time of further developing of the Limbic part and evolving of Neo-cortex. It was a period when early human groups had to adapt to new environments, so their brain structures started to differ at the layers of still developing Limbic and newly evolving basic parts of Neo-cortex. Thus, brains of modern humans from different cultural groups start to differ at the layers of Limbic and deep Neo-cortex structures; and the older and deeper structures the stronger their influence to human behavior.

Neuroscientist McLean and his Triune Brain Theory is interesting for this study because it contains all three parts of the brain. Triune Brain concept represents brain's hierarchical organization from the evolutionary point of view. According to the Theory, there are Protoreptilian, paleomammalian, neomammalian formations in our brain, so, our brain consists of three parts, oldest is R-complex, second is Emotional brain and the youngest is Neo-cortex. "The human psych encephalon has evolved and expanded to its great size while retaining the features of three basic evolutionary formations

that reflect an ancestral relationship to reptiles, early mammals, and recent mammals. Radically different in structure and chemistry, and in evolutionary sense countless generations apart, the three formations constitute a hierarchy of three brains in one – a triune brain" (MACLEAN, 1982).

Reptilian brain or R-complex is made up mostly of the upper brain stem; and involved in instinctive and reflexive behaviors. Wrapped around this core Emotional brain consist of Limbic system structures and is responsible for emotion and motivation. It is involved mostly in parent-child emotional bond and prolonged care of youth. Neo-cortex, the outer part of the brain, is responsible for mental functions such as rational thinking, analysis, language, learning and consciousness. The triune brain parts are shown at the Picture 3.

PICTURE 3

Three levels of residential space, suggested by previous studies, correspond to levels of Maslow's pyramid structure which can be simplified to three levels as physiological needs, safety and belonging needs and esteem and self-actualization needs. Indeed, while shelter provides just place for sleep and eat, house, as a place for life spending additionally has to provide safety and functionality for routine chores. Home, as a symbol of owner's success, represents owner's ID and social status.

Also, it would be interesting to relate three biological formations in human's brain, which are evolutionary periods representatives according to McLean's Triune Brain Theory, to layers of needs in Maslow's pyramid and types of residential space. Indeed, humans had different needs at different periods of evolution. For example, *Homo Habilis* hardly had a need for a safe cave, basic shelter was everything he needed; similarly, *Homo Erectus* didn't need a creative decorated home but a safe big cave was all he needs. Just *Homo Sapiens* has a need for home decoration and self-expression, *Homo Erectus* and *Homo Habilis* didn't have a brain part evolved enough to be able to do it.

The question raised is: if culture is the main determinant of people's housing preferences is it possible to identify a different housing preferences structure based on Maslow's pyramid and evolutionary developed brain parts for different cultural groups, for example, Czech, Turkish and Russian? It will be helpful in identifying operable definitions in architectural design and marketing strategy. Ozdemir (2013) used technique similar to one used by Israel (2003) for identifying housing preferences in Czech Republic, Turkey and Russia. Similarly she used homeowners' childhood memories picked up during in-depth interviews for identification of preferred characteristics of residential space for certain groups of respondents. As a result, she found core category with three subcategories of preferred characteristics for each group; these were Nature (Wood, Garden, Yellow) for Czech group, Cleanliness (Big House, Light-Well/White, Simple Furniture) for Turkish and Heat (Small House, Oven, Warm Colors) for Russian groups (OZDEMIR, 2013). The

author of this research is attempting to expand upon previous studies based on user-values – housing attribute relationship, into investigating the effects of Maslow’s hierarchy of needs and three biological formations in human’s brain on customers’ residential space attribute preferences.

II. Maslow-McLean model in housing

Author of the current research related cultural categories found by Ozdemir (2013) to Maslow and McLean theories. The results are shown at the Table 1.

TABLE 1

As it could be inferred from the table above, Shelter, as a basic physiological need, has its roots in the oldest and deepest brain layer that accounts for the strongest influence on human behavior and home choice particularly. Once this need becomes relatively satisfied, the next levels needs, House and, later, Home, start to emerge gradually. Their influence powers, however, are less than Shelter’s influence power; and relate to brain layer’s depth they are rooted in. Columns and rows are interrelated to each other and within themselves. Columns have an ascending order; every upper part includes either all down parts. Every row has a common characteristic among its parts, for example, a common characteristic within the second row is family: every part concentrates on it.

Three levels of residential space, together with levels of needs and evolutionary periods, are useful for product segmentation strategy on housing market; moreover, it is already widely used by marketing specialists. Usually housing products are divided to standard and luxury categories that allow identifying consumer segments with different income levels and thus, preferences. The categories may differ across countries; for example, in Russia because of large stock of Soviet era poor quality block mass housing most of which may be considered as Shelter, there are different renovation styles for converting it into various categories of housing. Elite renovation housing is included to luxury category that may be considered as Home, Western-style and cosmetic renovation housing may be referred to House level, and rest of standard old mass housing with poor quality and functionality may be attributed to Shelter.

Czech housing stock also includes Panelaks block mass housing as Soviet era heritage, small housing consisting of just one room without any bathroom and/or kitchen is quite common and clearly may be classified as Shelter.

Shelter level of housing may be hardly found in Turkey, with exception of social housing such as homeless shelters and dormitories. The reason lays in historical Government policy and Housing Law. Historically, there was insufficiency of large-scale housing projects in Turkey. A key element in mass housing development, Mass Housing Law with Housing Development Fund, was effective just about a decade since its

first adaptation in 1981 and till major economic and political challenges in 1993. Small constructors were more customers oriented with individual small-scale projects that allowed maintaining of traditional housing style. So, housing in Turkey may be divided into two categories, Standard and Luxury.

Relating Maslow’s statement to housing market, as soon as needs for Shelter are gratified home users will aspire to go up to House level of cognitive needs and after it to the highest level of needs, that is Home. Thus, every level of residential space includes all lower levels as well. So, rich Russian customer beside of under floor heating system will still look for small rooms and well-insulated plastic windows in opposite to Czech who will still prefer wooden windows with plenty of fresh air and Turkish who will still look for white tiles and spacious rooms.

III. Concluding comments

Every person is unique but have common cultural heritage with a certain group of others. The group members live in similar type of housing, like similar food and similar way of dressing, have similar holidays and way of having fun. These factors keep the person calm and content. If the person moves to another group she adopts environment to these factors. Turkish migrant, for example, will adopt a pipe to WC and complain that the house is difficult for cleaning, Czech will decorate the house with plants, and Russian will use carpets and more furniture. Domestic housing market became more complex because of migration. Nowadays, every company should consider itself in multicultural market and act accordingly. Steady increasing migrants’ population also places significant demands on all services generally and housing services particularly. Migrant employees may need different work place and way of communication that allow them to work with dedication. Migrants form a new lucrative housing market and companies willing to profit on it should create innovative housing model according to their cultural requirements. Companies interested in capitalizing on this lucrative market must recognize cultural housing preferences of their customers and develop housing models accordingly. However, conservative nature of construction industry and some its features like need for certification that significantly slows down innovation speed, make the process of new housing model development difficult. Architects often focus on quantity and reduction of construction costs as well as saving the time. The steps should be taken by changing housing policies at the level of government to more immigrants friendly. Immigrants’ satisfaction will result in better contribution to host economy that is the main point in current political debates.

The results of this study are just a top of an iceberg, but may serve as a motivation for the future research related to cultural impact to consumer behavior. These investigations will contribute to understanding of immigrants’ needs for developing more friendly environment and therefore, increasing quality of life for all members of society.

References

- AHRENTZENSocio-behavioral qualities of the built environment WestportGreenwood Press2002
- BACHELARD*The poetics of space*BostonBeacon Press 1994
- BANHAMA home is not a house54-61New York:Routledge2007
- BECKERCONIGLIO*Environmental messages: Personalization and territory*USAHumanitas1975
- DARWIN*The Descent of Man, London: Penguin, 1877/2004.* 2LondonPenguin2004
- HARRISONThe space between us: opening remarks on the concept of dwelling*Environment and Planning D: Society and Space* 252007625-647
- HEIDEGGER*Building Dwelling Thinking*NYHarper&Row1978
- ISRAEL*Some place like home: Using design psychology to create ideal place*New YorkJohn Wiley & Sons2003
- JABAREENCulture and housing preferences in a developing city*Environment and Behavior*372005134-146
- JUSAN*Renovation for personalization: A development arm for sustainable housing*SkudaiUTM press2010
- KLEINWhither the Neanderthals? *Science* 7 March 2003: Vol. 299 no. 5612 *Science*299March2003
- LATIMERMUNROKeeping & Dwelling Relational Extension, the Idea of Home, and Otherness*Space and Culture*122009317-331
- LEAVITTLOUKAITOU-SIDERISA decent home and a suitable environment: Dilemmas of public housing residents in Los Angeles*Journal of Architectural and Planning research*121995221-239
- MACCRAVDAYHousing related values, aspirations, satisfactions as indicators of housing needs*Family and consumer sciences research journal*51977244-254
- MACLEANOn the origin and progressive evolution of the triune brain291-316NYPlenum Press1982
- MASLOW*Motivation and personality*New YorkHarper and Row 1970
- MENDEZLatino New Urbanism: Building on Cultural preferences*Opolis*1200533-48
- NORBERG-SCHULZ*The concept of dwelling: On the way to figurative dwelling*MilanoNew york: Rizzoli International1985
- OLIVER*Built to meet needs: Cultural issues in vernacular architecture*ItalyArchitectural press2006
- OLIVERThe cultural context of shelter provision185-197ItalyArchitectural press2006a
- OZDEMIRTell me your ethnicity and I will tell you what you are: Culture as a key factor of creativity in business*International Journal of Knowledge, Innovation & Entrepreneurship*12013185-198
- RAPOPORT*House Form and Culture*New JerseyPrentice-Hall1969
- RAPOPORTIdentity and environment: A cross-cultural perspective6-35LondonCroom Helm1981
- RAPOPORTTheory, culture and housing*Housing, theory and society*172000145-165
- ROSEDWelling as marking and claiming*Environment and Planning D: Society and Space* 302012757-771

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Construction<http://www.topdom.ru/cons7/5.htm>

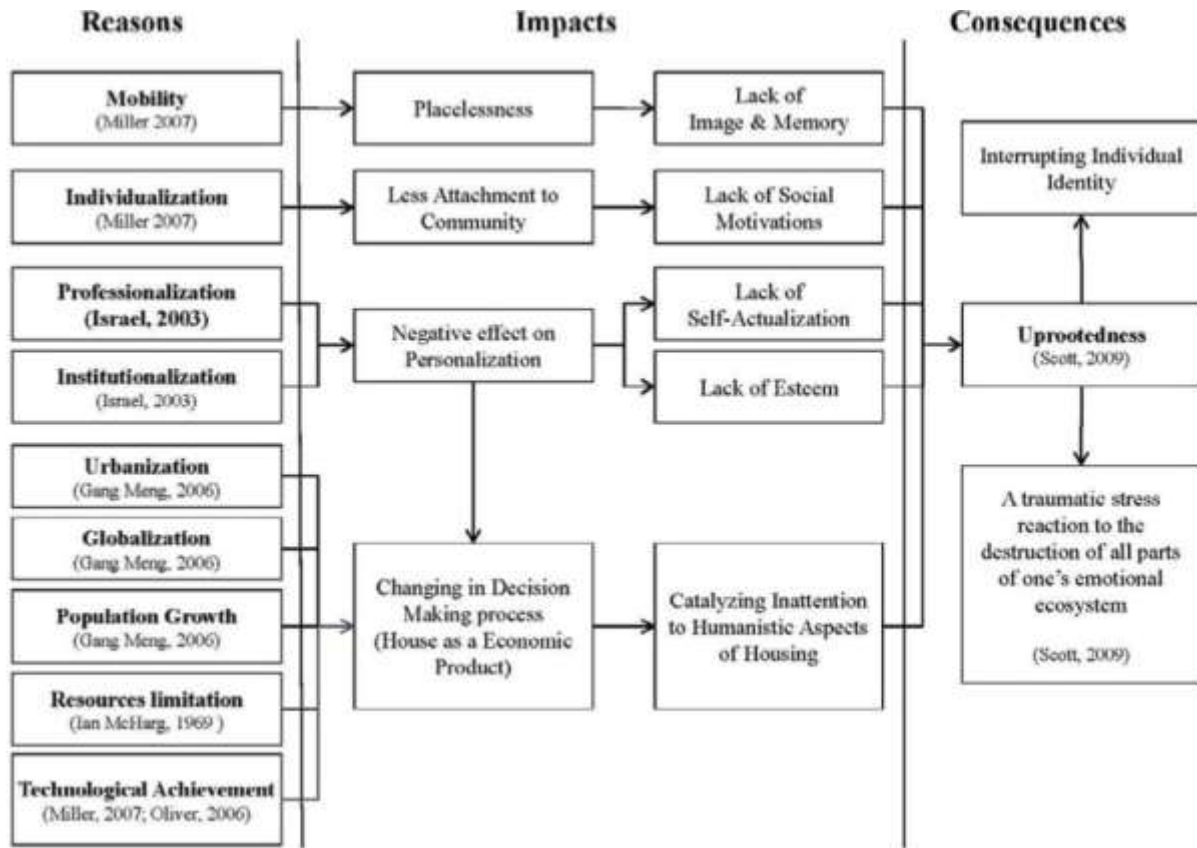
VLASOVA*Smartnews*<http://smartnews.ru/regions/novosibirsk/6470.html>

ZAVEIJUSANExploring Housing Attributes Selection based on Maslow's Hierarchy of Needs *Procedia - Social and Behavioral Sciences* MalaysiaElsevier2012311 – 319

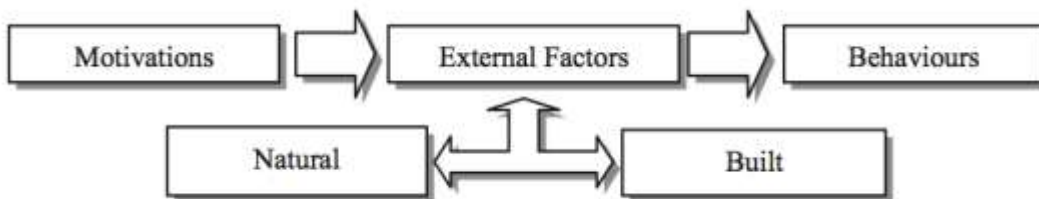
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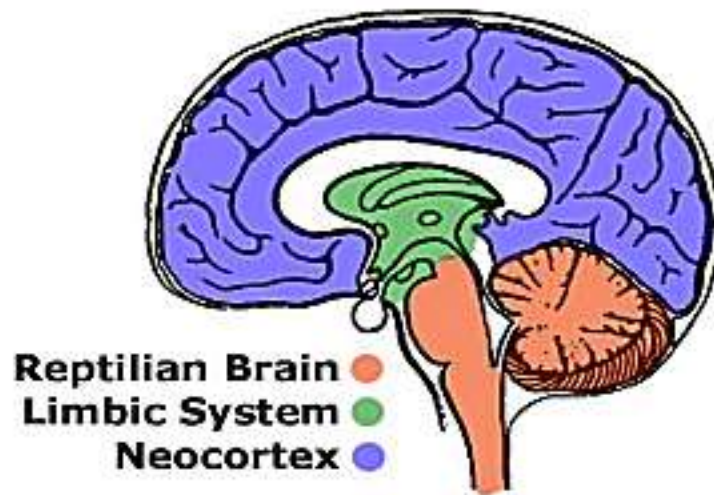
“As soon as needs for Shelter are gratified home users will aspire to go up to House level of cognitive needs and after it to the highest level of needs, that is Home. Thus, every level of residential space includes all lower levels as well. So, wealthy Russian customer beside of under floor heating system will still look for small rooms and well-insulated plastic windows in opposite to Czech who will still prefer wooden windows with plenty of fresh air and Turkish who will still look for white tiles and spacious rooms.”



Picture 1: Origins of inattention to human motivational factors in built environment and its consequences (ZAVEI & JUSAN, 2012)






Picture 2: Motivation-behavior transition (MASLOW, 1970)



Picture 3: Parts of the Triune Brain (www.joegirard.ca, 2014)

Table 1: Integration of cultural categories for three target groups in Maslow-McLean model

	Levels of cognitive needs	Parts of Brain with period of evolving	Levels of residential space	Czech Republic (Nature)	Turkey (Cleanliness)	Russia (Heat)
1	 <p>Self-actualization</p> <p>Esteem</p>	<p>Neo-cortex</p> <p>Thinking, analysis, learning</p> <p>400.000 years ago</p> <p>Homo Sapience</p>	<p>Home:</p> <p>Symbol of success</p> <p>Abstract ID (Luxury, Elite renovation)</p>	<p>“Forest house”, full natural view, glass walls</p>	<p>Creative abstract image of cleanliness, special lighting system, huge house with plenty of spacious rooms</p>	<p>Under floor heating system, sauna, fireplace, feather carpets</p>
2	 <p>Love/Belonging</p> <p>Safety</p>	<p>Emotional Brain (Limbic system)</p> <p>Emotion and motivation; child care</p> <p>1.9 million years ago</p> <p>Homo Erectus</p>	<p>House:</p> <p>Comfort, practice</p> <p>Family wellbeing (Western-style, Cosmetic renovation)</p>	<p>Private house, garden, big windows, fireplace</p>	<p>Spacious rooms, easy cleaning, few furniture, light-well, big windows, convenient plumbing</p>	<p>Hot water system, carpets, plastic windows</p>
3	 <p>Physiological</p>	<p>R-complex (upper brain stem)</p> <p>Reflects and instincts; survival</p> <p>2.4 million years ago</p> <p>Homo Habilis</p>	<p>Dwelling (Shelter):</p> <p>Survival necessity (Studio, Standard)</p>	<p>Fresh air, wood, trees</p>	<p>Tiles, white, running water, sewage</p>	<p>Heat insulation, small room, source of heat</p>

Source: Author’s elaboration (2014)