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Research Article

Senses and movement-experience of streets

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Abstract
Movement-experience is a concept that encompasses the relationship, communication, and interaction between the sense, space, and time. This research aims to examine streets as a medium for experiential movement by analyzing sensory, activity, and physical space variables, conducted with a mixed method that combines quantitative and qualitative approaches. These variables include visual, auditory, and olfactory sensations, user activities like standing, sitting, and walking, and physical features such as pavement width, number of trees, number of barriers, and building height. To collect data, 48 walks were conducted on Mevlana Street at different times and days, resulting 768 time-space sections. The variables were recorded and analyzed using advanced data analysis techniques, and descriptive statistics were generated. The study then explored the relationships between time-activity, time-experience, space-activity, space-experience, and activity-experience using multi-factor variance analysis. Based on the findings, this study proposes innovative design and planning criteria for streets that incorporate a multisensory approach to enhance the experiential quality of urban environments.

Keywords: Activity, Experience, Movement, Senses, Street

Extended Abstract

Introduction: Life denotes the ongoing interaction and communication between humans, their surroundings, and the passage of time, occurring in both natural and human-made environments. As the individual engages in various activities such as walking, stopping, and drinking tea, they realize that everything in their environment is in motion, and time inexorably moves forward, shaping the continuity of life. The universe itself is dynamic and sentient. If the city is perceived in its instantaneous state as a photograph, it becomes clear that the elements within the frame are constantly changing. Within a mere second, these elements shift and evolve, mirroring life's dynamic nature. The familiar parts of the urban environment, including buildings, streets, avenues, and landscape elements, undergo a continuous transformation: deterioration, renewal, maintenance, vitality, and eventual decay, all influenced by time. One of the fundamental aspects contributing to the preservation of life is the interaction and communication exhibited through human spatial movement and the subsequent experience of spatial surroundings. The perception and interaction with the physical dimensions of space define human existence. The perception of spatial awareness arises due to the cerebral processing of sensory information acquired through the five sensory organs. Within this particular context, the perception of spatiality is shaped through the cognitive processing of sensory information acquired through visual, auditory, gustatory, tactile, and olfactory modalities. Simultaneously, humans are constantly in motion within the realm of space. Walking, running, sitting, and standing all indicate an individual's spatial position and physical capabilities.

Purpose and scope: This study aims to examine life in space, focusing on human interaction and communication within the context of space exploration. This interaction encompasses how individuals live, perceive, and experience space. The concept of movement experience plays a crucial role in defining this interaction. Additionally, this study seeks to propose a model and methodology for understanding movement experience. To achieve these objectives, the physical space on Mevlâna Street was conducted, human activities in that area were identified, and experiential criteria were established. With this framework, it was attempted to examine life on the streets.

Method: This study used a mixed-method approach to analyze street life. The methodology included data collection techniques such as documentation, recording, and experiential walks. The laser scanner was used to scan the street, generating a point cloud of the street. Plans, sections, and elevations of the street were created based on the point cloud data. Sixteen space sections of equal route length were delineated to account for changes in the street's form. The study areas were determined based on the fixed route length or variations in the street's shape. Parameters such as sidewalk width changes, tree count, obstacles, and building height changes were noted along with cross-sections and views. The researcher visited the street multiple times on specific dates between 8th August 2018 and 19th September 2018, specifically targeting weekdays and excluding rainy days. They also conducted observations during specific time periods: 10:00-10:20, 14:00-14:20, and 20:00-20:20, totaling 48 observations by walking along the predetermined route. The recordings were made using a "Goprohero Black 5" camera set at an eye level of 1.65 meters. A methodology was proposed based on examining variables by multiplying space-time sections in Mevlâna Street, which was selected as the study area. Additionally, variables related to odor experience were marked in space-time sections. The categorical variables of physical space, such as pavement type (fixed, variable, squared), tree count, obstacles, and building height (fixed, variable, squared) were evaluated categorically. Numeric evaluations included total people count and counts for standing, sitting, and walking individuals. Sound presence (nature, music, human, mechanical, transportation) and smell categories (nature, food, garbage, emission, synthetic, cleaning, industry) were also evaluated. Tactile experience was excluded due to the constant data. The data of 768 space-time sections with different variables were analyzed using the SPSS program. Initially, frequency tables were prepared, followed by obtaining statistical findings on time-activity relationships through multi-category ANOVA analysis.

Findings and conclusion: When analyzing the statistical findings regarding the time-activity relationship, it was observed that the street experiences its highest intensity of use at noon. However, there is a numerical decrease compared to the morning and noon hours. The number of walking users takes average values close to each other even if the sidewalk movement on the street differs. The number of standing users increases in fixed sidewalk movement. The number of seated users is higher where the buildings are set back, and the sidewalk becomes a square. Trees are essential urban elements for streets. The number of standing and sitting users is concentrated where there are more trees. When the relationship between sidewalk movement and spatial experience is examined, it is seen that the smell of nature is more common on squared sidewalks, and the sound of nature is more common on fixed sidewalks. On the other hand, the smell of garbage and the smell of cleanliness increase in space sections with variable sidewalks. The presence of natural sounds, such as those from nature or music, significantly influences street activity. For instance, spaces with natural sounds on Mevlana Street attract more seated users. Conversely, areas with music attract higher numbers of standing and walking users. The scent of nature also contributes to users stopping and sitting on the streets. Statistical analysis reveals that parts of the space lacking natural odors have higher numbers of walking users. Furthermore, the presence of food odor on Mevlana Street correlates significantly with standing users but less so with seated users.

Keywords: Activity, Experience, Movement, Senses, Street

INTRODUCTION

Streets are characterized by their dynamic nature and serve numerous functions beyond their primary function as transportation infrastructure. Thwaites et al. (2020: 296) argue that streets are crucial elements in shaping the character and identity of a city and have significant social, cultural, and economic values. Streets can be perceived as an extension of the indoor space, where the pedestrian acts as an active participant moving from the entrance to the center of the external room (Palipane, 2017: 55). According to Jacobs (1993: 49), the primary purpose of streets is to facilitate movement, and well-designed streets promote user engagement by incorporating diverse semantic and conceptual qualities. These qualities include rhythm, activity, illusion, mystery, charm, sociability, comfort, and safety. The value of a street is dependent on its ability to accommodate all these qualities and offer pedestrians a variety of experiences.

A well-designed and well-managed street can add to a city's economic and cultural vitality and general quality of life. Sociability, usage and activity, live ability for all, a sense of space, safety, comfort, traffic speed,

physical space, human scale, art, attraction, proximity, morphology, and permeability are all used to evaluate the streets as variables of urban space (Appleyard, 1980; Biddulph & Council, 2012; Bosselmann et al., 1999; Burton & Mitchel, 2006; Dumbaugh, 2005; Ewing & Clemente, 2013; Khoshkholghi, 2011; Momtaz & Elsemary, 2015; Tibbalds, 1992). While certain variables provide quantitative and measurable data, such as traffic speed or proximity, others explore the urban environment through the subjective experiences of its users.

The concept of movement experience establishes the relationship between street activities, the senses, and physical space. Movement is the visible manifestation of time (Lefebvre, 1974: 95). It can be managed and directed (Merleau-Ponty, 1996: 32). Mobility fictionalizes the relationship between the city and the body, fills the space, and is related to identity (Kwan, 2013: 94). In the book *Architecture and Movement the Dynamic Experience of Buildings and Landscapes* by Peter Blundell Jones and Mark Meagher (2015: 1), movement experience appears for the first time. It analyzes the relationship between architecture and movement through a collection of articles written by authors. The movement in the book corresponds to the time variable, walking, and actions in the space.

According to White (1999: 186), this experience includes belongingness and is associated with approach, participation, invitation, and leaving. The experience created by the movement is the continuation of memories, hopes, desires, feelings, preferences, choices, and activities. Lefebvre (1974: 231) determined three fundamental moments when he questioned the process of space production according to social relations. These moments are perceived space, conceived space, and lived space. Lefebvre utilized perceived space to denote spatial practice, conceived space to represent representations of space, and lived space to embody the experience of space. Similarly, following Lefebvre's ideas, Montgomery (1998: 98) constructed a model based on activity, form, and image to analyze urban environments. These three criteria converge to shape the urban landscape. As a component of the movement experience, the physical space (if the streets are considered urban rooms) consists of ground, pedestrian road, motor road, landscape, urban equipment, building facades, and sky. The character of the physical space shows itself through these elements' size, color, texture, number, and organization on the street.

Gehl and Svarre (2013: 2) considered street design as the structure of the pedestrian system, the design of buildings, spaces, or edges associated with the pedestrian system, and detailing the pedestrian environment. Organizing the pedestrian structure and movement is necessary to design the life between the buildings. It should also be designed for human behavior, such as walking, standing, and sitting. As a component of the movement experience, the space experience consists of senses (seeing, hearing, tasting, touching, and smelling), which provide data for human beings to build reality in their mind. When the users experience space effectively, they perceive its physical characteristics like form, color, volume, size, and design features such as beauty, balance, coordination, and hierarchy.

Furthermore, space experience includes the reality of seven sensory experiences (Pallasmaa, 2006: 28) that are interrelated and, at the same time, intermingled. However, it also consists of a complex phenomenology (Lentini & Decortis, 2010: 407) that covers geographical, sensory, and human criteria. To illustrate that, geometric, geographic, sensory, cultural, personal, and relational experiences constitute the space experience (Lentini & Decortis, 2010: 413). The relationship between experience and space is also evaluated in terms of distance between people (Gifford, 1983: 170), placemaking (Perdikogianni, 2007: 02), and socio-spatial understanding of urban street edges (Thwaites et al., 2020: 296). According to Cullen (1961: 7), the user experiences a single building as architecture, but an artistic experience is formed when the buildings come together. If the characteristics of the visual experience are examined, the sense organ is the eye, the data received is the light, the transfer type is the light, the activity of the sense organ is an open and closed eye, the activity of the environment is the perspective, the type of action is control, the depth of perception and its direction is linear perspective (Naghizade & Ostadi, 2014: 60).

Color, shape, volume, size, density, visual richness, visual coordination, imaginability, subjectivity, and consistency with nature are the characteristics of urban space that are perceived with the sense of vision (Naghizade & Ostadi, 2014: 60). The visual sense is affected by void, distance, light quality, color, shape, and tactile elements. According to Gehl (2010: 41), our sensory system moving from the horizontal is the key to space. However, different activities in the street (such as sitting, stopping, and eating) diversify the street

experience. Unlike visual experience, sound experience creates spaces with undefined limits. Furthermore, it is an unsettled experience that we cannot focus on (Porteous, 1996: 33). In addition, the sound experience includes the relationship between the emotional environment and the activity (Diaconu, 2011) and acoustic communication (Truax, 1984: 58). The sounds in the city, human voice, nature sound, music sound, transport sound, and mechanical sound can be examined through different classifications (Aiello et al., 2016: 1). Sound walks are one of the methods applied to examine the sound experience in urban space. Moreover, Radicchi (2017: 70) has created a guideline for performing sound walks by determining the criteria for location, duration, diversity of participants, route, assessment points, visual deprivation, and technical equipment. The smell experience contains less information and more emotion when compared to the sound experience, and it is not fully formed. It is temporary and uncontrolled (Porteous, 1996: 35). Topozmia examines the relationship between smell and space (Drobnick, 2002: 31). If we review the characteristics of the smell experience, the sense organ is the nose, the data received is the smell, and the transfer type is the air. Sense organ becomes effective with scent receptors. The universe is the entire smell of space.

The characteristics of urban space experienced through the sense of smell are the presence of natural elements, cleanliness, air pollution, memory, sense of space, and spatial continuity (Naghizade & Ostadi, 2014: 53). Mc Lean (2017: 143), in her research where she mapped the smells in Amsterdam, encounters in the city smells such as waffles, flowers, woody, sweet, dry resin, leaves and fresh rain, fish, coffee, spices, laundry, old books, cigarettes, canals and chocolates. Quercia and others (2015) obtained their user experience from social media to map their olfactory environment. They classified urban scents as metro, animal, cleaning, tobacco, synthetic, emission, garbage, food, nature, and industry. Gustatory experience is more subjective than others. In gustatory experience, the sense organ is the tongue and mouth, the received data is the taste and aroma, and the transfer type is the mouth through the characteristics of the taste experience. The sense organ becomes effective with taste receptors. It is subjective and formed by action. It is necessary to concentrate on taste (Naghizade & Ostadi, 2014: 60). Since the assessment of taste experience is subjective, it is excluded from the research. Walking on any street, the user experiences the floor material, the handrail by climbing staircases, and the urban space when sitting. Naghizade and Ostadi (2014: 60) divide the tactile experience into four groups according to the type and nature. The adjectives are hot/cold, wet/dry, softness / hard, and smooth/rough. Skin is directly and indirectly receptive to physical stimulants. They determine the distinctive features of tactile experience as antiquity, detailedness, interactivity, personality, directness, and acceptability (Naghizade & Ostadi, 2014: 60). The sense organ is the skin, and the data received is the temperature, humidity, and pressure through the characteristics of the tactile experience. It is direct and subjective, formed by action and reaction. Temperature, humidity, wall material, surface flexibility, stability, continuity of movement, and climatic comfort are the characteristics of urban space experienced through the tactile sense (Naghizade & Ostadi, 2014: 60). The research also excludes the tactile experience (Table 1).

The activity originates from the movement of individuals on the street, as seen within the context of the movement experience. White (1999: 185) states that designers design some roads for vehicular movement. Several factors influence life on the streets, including the demographic features of the users, the volume, direction, and speed of walkability, the presence of showcases, and the availability of eating and drinking establishments. Additionally, temporal cycles also have a role in shaping street activity. Furthermore, Tibbalds (1992: 34) has argued that appealing urban areas provide prospects for mixed-use development and a variety of activities.

Furthermore, researchers analyze movement experience with various sights and perspectives. Tibbalds (1992: 33) examined the mixed-use aspect of the activity, while White (1999: 185) focused on the routes involved. Bosselmann et al. (1999: 168) explored the relationship between activity and boulevard safety. Paasch (2015: 50) investigated the spatial dimension of the activity, while Sepe (2010: 229) examined its legibility. Gehl and Svarre (2013: 17) studied the relationship between activity requirements, and Biddulph & Council (2012: 178) explored the connection between street guides and activity. Lastly, Momtaz and Elsemary (2015: 74) suggested enhancing the activity. Gehl and Svarre (2013: 16) identified walking, standing, and sitting as discretionary activities, as seen in Table 1. The movement experience literature chart was used as a guide in determining the variables and method of the study.

Table 1. Movement Experience Literature Chart

Movement Experience Literature Chart			
Physical Space		(Tibbalds, 1992)	physical features
		(Moughtin, 1992)	urban
		(Paasch, 2015)	ground and light
		(Marshall, 2005)	physical features
		(Burton & Mitchel, 2006)	connectivity, form, material
		(Halu, 2010)	characteristic of space
		(Kost and Nohn, 2011)	physical features
		(NACTO, 2011)	pedestrian way
		(Gehl & Svarre, 2013)	characteristic of facade
		(DMURS, 2012)	physical features
		(Ewing and Clemente, 2013)	Form and sensorial qualification
		(Nasution et al., 2014)	physical features
		(Harvey and Aultman-Hall, 2016)	physical features, usage, art
		(Ercan and Belge, 2017)	pedestrian priority physical features
Space Experience	Experience	(Cullen, 1961)	movement and streets
		(Tuan, 1977)	space experience
		(Gifford, 1983)	Interpersonal distance and experience
		(Merleau-Ponty, 1996).	Body-space
		(Pallasmaa, 2006)	the necessity of seven sensory experiences
		(Lentini and Decortis, 2010)	five experience criteria
		(Temple, 2013)	experience in urban space
	Visual	(Nasar, 1984)	visual street experience
		(Porteous, 1996)	visual experience
		(Gehl, 2010)	horizontal sensory system
		(Naghizade and Ostadi, 2014)	visual experience variables
		(Noland et al., 2017)	visual experience with gaze-tracking technology
		(Simpson, 2018)	visual experience with gaze-tracking technology
	Auditory	(Westerkamp, 1974)	sound walking
		(Truax, 1984)	acoustic communication
		(Adams et al., 2008)	sound walking
		(Hong et al., 2010)	sound walking
		(Diaconu, 2011)	relationship between sensory environment and activity
		(Paquette and McCartney, 2012)	sound walking
		(Naghizade and Ostadi, 2014)	variables of urban space perceived by sound
		(Staśko, 2015)	sound walking
		(Aiello et al., 2016)	sound taxonomy
		(Radicchi, 2017)	sound walking guide
		(Porteous, 1996)	smell
	Olfactory	(Drobnick, 2002)	toposmia
		(Naghizade and Ostadi, 2014)	olfactory variables of urban space
		(Quercia et al., 2015)	olfactory taxonomy
		(McLean, 2017)	smell maps
		(Naghizade and Ostadi, 2014)	properties of gustatory experience
	Gustatory	(Diaconu, 2011)	tactile experience
	Tactile	(Naghizade and Ostadi, 2014)	tactile experience
		(Tibbalds, 1992)	mixed-use and activity
Activity		(White, 1999)	route and activity
		(Bosselmann et al., 1999)	activity and safety on the Boulevard
		(Paasch, 2015)	space of activity
		(Sepe, 2010)	legibility of activity
		(NACTO, 2011)	streets suitable for walking, running, cycling, dancing
		(Gehl and Svarre, 2013)	activity requirement relationship
		(Biddulph and Council, 2012)	street manual and activity
		(Sepe and Pitt, 2013)	legibility
		(Momtaz and Elsemary, 2015)	activity suggestion

MATERIAL AND METHOD

User experience creates street space, so this research employs a mixed method that combines quantitative and qualitative approaches. As a result of the literature study, physical space, activity, space experience, and time were determined as variables for examining the streets. The movement experience method, which analyzes life on the streets, comprises three phases. The initial phase involves a literature review. The second phase consists of the creation of the movement experience. The conclusion is the third phase. Figure 2 shows the many phases of the method. Mevlâna Street is the transportation route between Alaâdin Hill and Mevlâna Türbeönü Square. It is one of the urban backbones in Konya. When analyzing the historical process, Mevlana Street holds significant importance. There are historical buildings and religious locations. Mevlâna Street is also home to historical landmarks like İplikci Mosque, Şerafeddin Mosque, and the Konya Governorship Building. Analyzing local government policy shows that the objective is to transform Mevlana Street into a pedestrian and bicycle-friendly street. These are the reasons for Mevlâna Street to be the case area for this research. Mevlâna Street was scanned with a laser scanner, and a point cloud of the street was obtained. From the point cloud, the street's site plan, section, and silhouettes were drawn. The street was experienced on 14.05.2018 through walks in three different periods. The camera recorded the action at a height of 165 cm and reported. This experience research was conducted to determine possible differences before the case study. After determination, the street was experienced and recorded forty-eight times in sixteen days and three periods in August and September. The reason for choosing these months is that these are the months when bad weather conditions, festivals and extreme situations do not occur for the street experience.

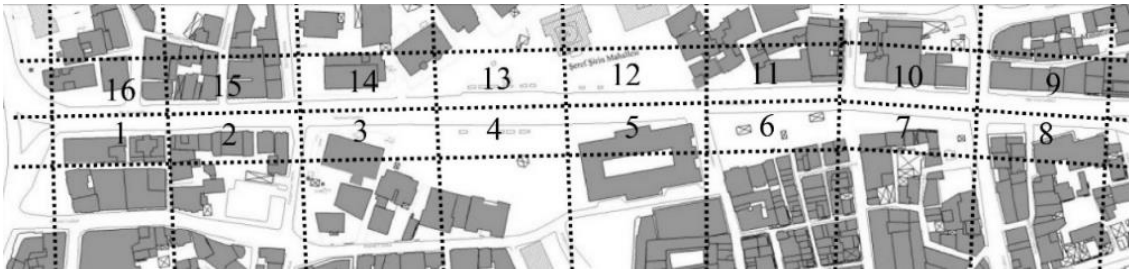


Figure 1. Space areas for the application of the model

To examine the videos and reports, the street plan was divided into 16 parts (Figure 1). Multi-category analysis of variance with different variables was done using 768 time-space sections and 17664 data. In statistical data, the space is categorical, the activity is numerical, and the experience is categorically evaluated (Figure 2). Space-activity, space-experience, and activity-experience relationships were examined according to statistical outputs. The theoretical dimension of the research consists of the production of the space, livability, life, lived space, physical space, activity, movement, and experience. The production of space is summarized by "perceived space, conceived space, and lived space," which are the three principal moments of Lefebvre (1974: 231). Street life, as a sub-heading of livability, consists of perceived space (experience), conceived space (physical space), and lived space (activity). In this research, the conceived space is considered a physical space. The sidewalk width, the number of trees, obstacles, and building height were determined as physical space variables. The number of standing, sitting, and walking users were determined as activity variables. Sense of seeing, smell, and hearing were accepted as the criteria of space experience-the experience of seeing forms the physical space of the street. Nature, human, mechanical, transport, and music sounds, which are the main topics of urban sound taxonomy in hearing experience, were included in this research. In smelling experience, nature, food, garbage, emissions, synthetics, cleaning, and industry odors, which are the main topics in urban odor taxonomy, were covered by this research. The tactile experience was constant (Figure 1, 2).

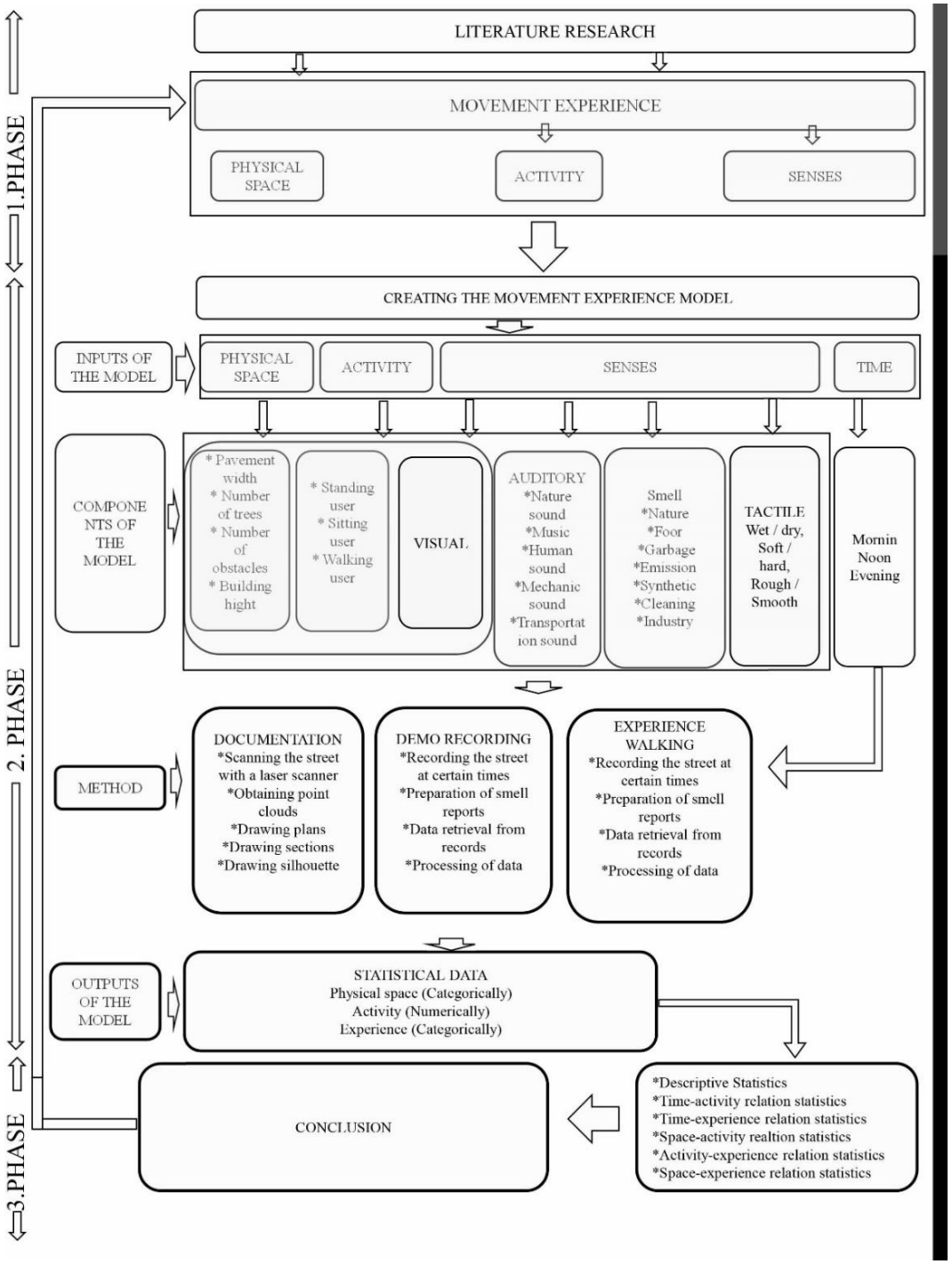
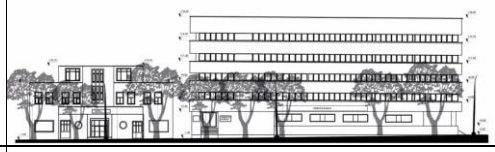
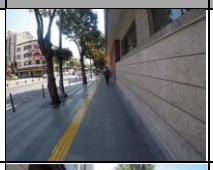
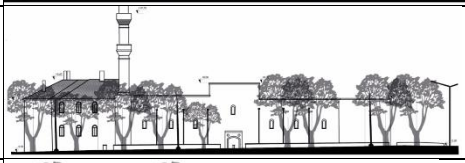
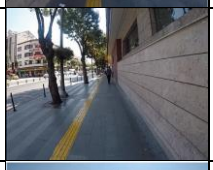
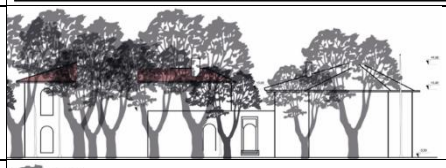
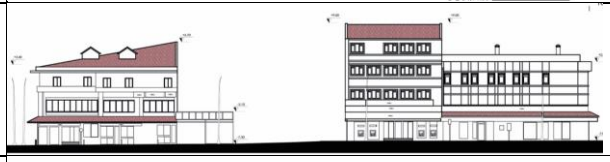
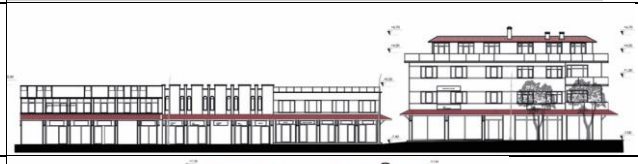


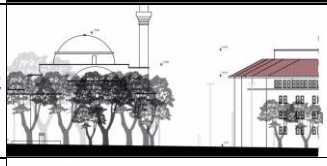
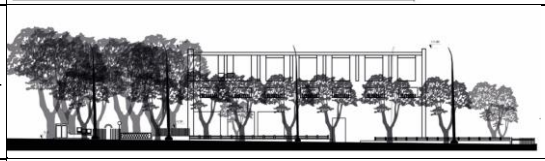
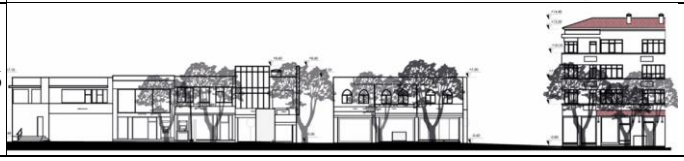
Figure 2. Movement experience flow chart

FINDINGS AND RESULTS: SENSES, ACTIVITIES, AND PHYSICAL SPACE

Mevlâna Street is along the transportation route between Alaâdin Hill and Mevlana Tomb Square in Konya. Due to its historical course, Mevlâna Street is prominent in Konya as a critical backbone and primary artery. Figure 3 shows plans, facades, photos, pavement width number of trees, number of obstacle and building hights of Mevlâna Street.

Table 2. Mevlana Street physical characteristics (space, pavement width change, tree number, obstacle number, building height change) table (c: constant, ch: changeable, s: square, no: absence of building)

Area	Facades	Photos	Pavement width	Trees	Obstacles	Building height
1			c	8	6	ch
2			c	11	7	ch
3			ch	9	3	c
4			s	43	2	no
5			c	5	0	c
6			s	0	5	ch
7			s	1	6	ch
8			c	2	5	ch
9			c	5	0	c

10			c	2	4	c
11			ch	2	0	ch
12			s	16	2	no
13			c	28	0	no
14			c	30	0	c
15			c	8	5	c
16			s	8	1	no

The walking path encompasses many establishments, including government offices, commercial establishments, and houses of worship. The path under question encompasses many notable historical structures, including the İplikci Mosque, Şerafettin Mosque, and the Konya Governorship Palace. The choice of this specific street as a case study is grounded in its historical attributes and importance in urban transportation. The street plan is partitioned into sixteen distinct sections to facilitate the implementation of the model, as seen in Figure 3. The determination of areas is based on distinct characteristics of the spaces, and each area is subdivided in a manner that aims to achieve a relatively similar walking distance. The variable representing pavement width is classified into three categories: constant, changeable, and square, as seen in Figure 3. It becomes evident that sections 1, 2, 9, 10, 13, 14, and 15 have a consistent pavement width throughout-the pavement width in sections 3, 5, 8, and 11 exhibits variability. The architectural structures are not situated in a parallel alignment with the roadway but form various angles related to the street. The buildings in sections 4, 6, 7, 12, and 16 are intentionally set back to form urban squares. The quantification of tree abundance inside street areas is determined, and spatial regions are classified based on tree count categories (0, absence of trees, 1-5 trees, 6-10 trees, 10-20 trees, and 20 or more trees). The number of obstacles in the sections on Mevlâna Street was determined and coded (no obstacle, 1-5, 6-10) categorically. When sections are examined, obstacles inappropriately located through the pavement route are lighting elements, electrical panels, and pontoons. Building height coding was made in three categories (no building, constant, and changeable). Table 2 shows that the buildings in space sections 4, 12, 13, and 16 are back to form squares. The buildings come together at the same eaves level in space areas 3, 5, 10, 14, and 15. Whereas in space areas 1, 2, 6, 7, 8, 9, and 11, the buildings have come together at the different eaves levels.

Time-Activity Relation

Time (10:00-10:20, 14:00-14:20, and 20:00-20:20) was determined as the independent variable, and the number of standings, sitting, and walking users was determined as the dependent variable. In the case study, which lasted 16 days, 48 periods were obtained. Sixteen sections and 748 time-space sections were evaluated. When the statistical outputs of the time-activity relation are examined ($p = 0.00$), significant connections are observed between time and the standing, sitting, and walking user. It is seen that the users who stand at noon (14:00-14:20) in the specified time are more than the users in other specified periods. It is seen that the intensity decreases in the evening time. It is seen in Figure 4 that the average value of the number of sitting users is 5.1289 at noon. The density of the number of sitting users, just like the number of standing users, decreased in the evening. When the number of walking users is examined, it is seen that it increases at noon. The number of sitting and standing users decreased in the specified time in the evening similarly (Figure 3).

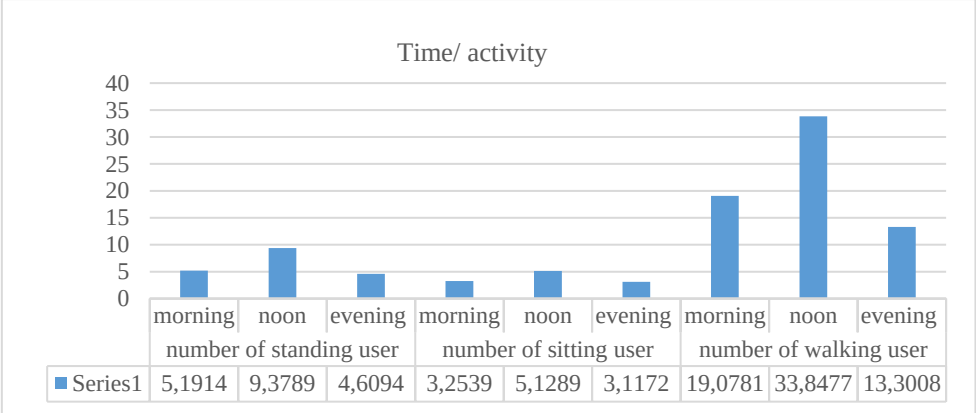


Figure 3. Descriptive statistical outputs of time interval, standing user, sitting user, and walking user

Time-Experience Relation

Spatial time sections contain the presence of human and transport sounds. The street has synthetic and industrial odors. The researchers determined significant connections between the music sound, garbage odor, cleaning odor, and time. Researcher do not detect significant connections with other variables. The music was in the morning and noon but not in the evening. The researchers detected garbage odor at the specified time in the evening. The morning and noon had no smell of garbage. The researcher felt the smell of cleaning in the morning and noon but did not feel it at the specified time in the evening (Figure 4).

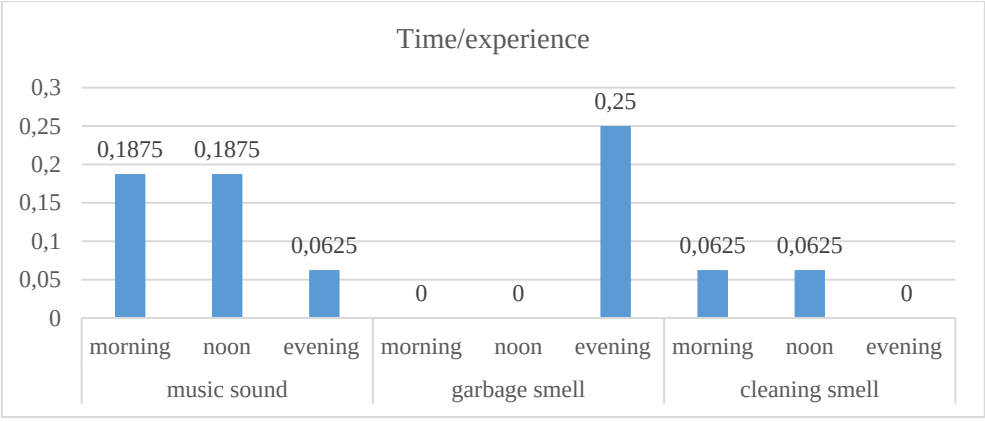


Figure 4. Descriptive statistical outputs of time experience relation

Space-Activity Relation

The relation between the number of standing, sitting, and walking users and street areas, pavement width, number of trees, number of obstacles, and building height were examined. The number of standing and sitting users was at most in section 13 and was at least in section 14. In 13, the pavement width is constant, with 28

trees. There are historical buildings in this section. The highest number of walking users was in 7. Significant relationships were found when the pavement width change and the number of standing, sitting, and walking users were examined. Figure 7. shows that the number of standing users is higher in the constant pavement width. The number of sitting users was more on the squared pavement width. As for walking users, average values close to each other were determined in three pavement widths. While standing users increase in space area with more than 20 trees, walking users increase in space area with no trees and 1-5 trees. The number of sitting users increased in places without obstacles. It was observed that the number of walking users increased in sections with 6-10 obstacles. It was seen that the number of standing and sitting users generally increased in the spaces where the pavement is square (Figure 5).

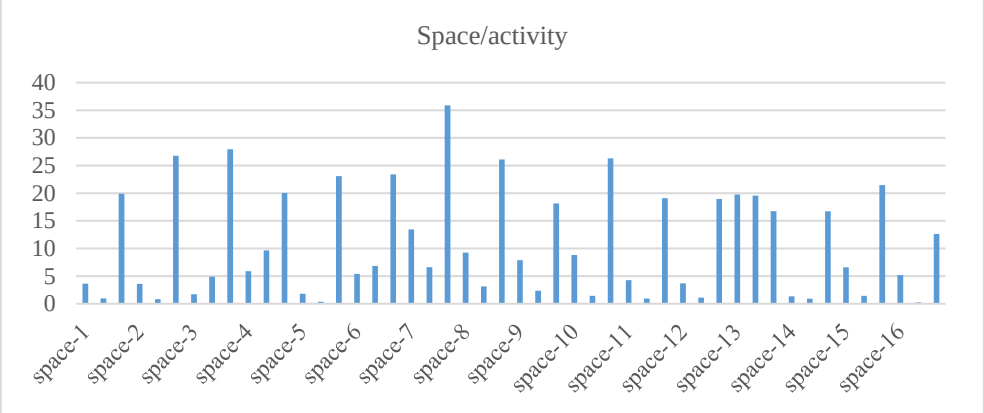


Figure 5. Descriptive statistical outputs of the relation between space area and the number of standing, sitting, and walking users

Activity-Experience Relation

The relation between the number of standing, sitting, and walking users and street areas, pavement width, Activity-space experience relation statistical outputs were obtained by examining the relations between the number of standing users, number of sitting users, number of walking users, and nature sound, music sound, human voice, mechanical sound, transport sound, nature smell, food smell, garbage smell, emission smell, synthetic smell cleaning smell and industrial smell variables (Figure 6).

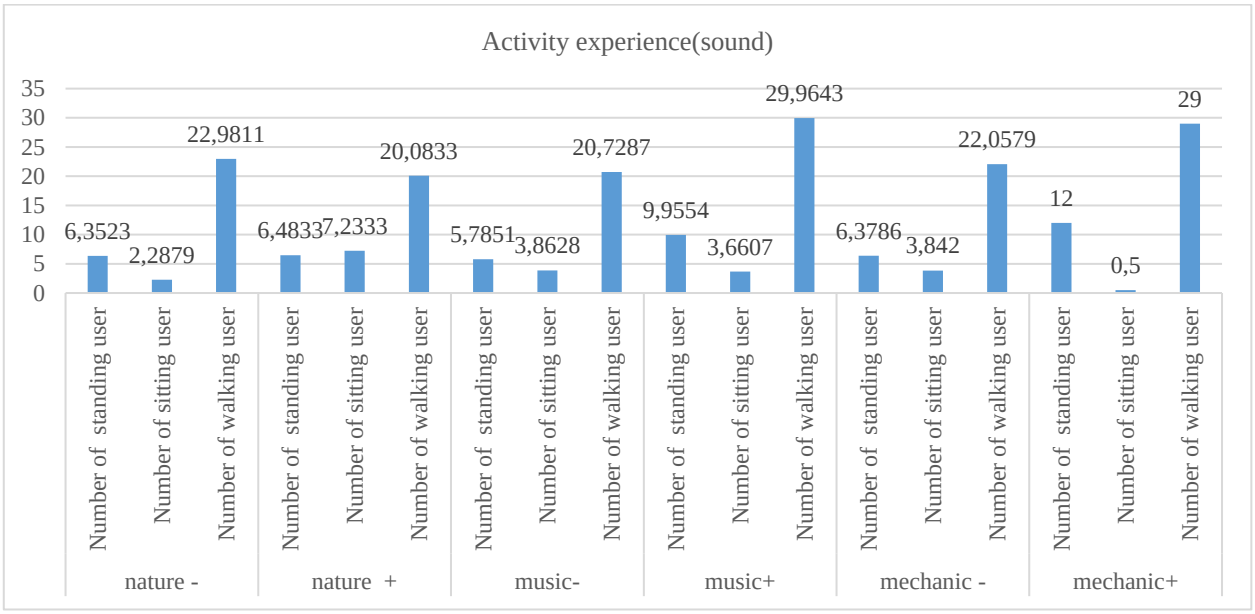


Figure 6. Descriptive statistical outputs of the relation sound experience with the number of standing, sitting, and walking users

Significant connections were found between the number of users sitting and walking and the sound of nature. The number of sitting users was high in places where the sound of nature was present. Walking users' number was high in places with no natural sound. When the relationship between activity and experience was examined, significant connections were found between the presence of nature smell and the number of standing, walking, and sitting users. The number of users standing and sitting where the smell of nature was known is higher than in the other sections. The number of users sitting and walking in places with no garbage smell is higher than in spaces with a garbage smell (Figure 7).

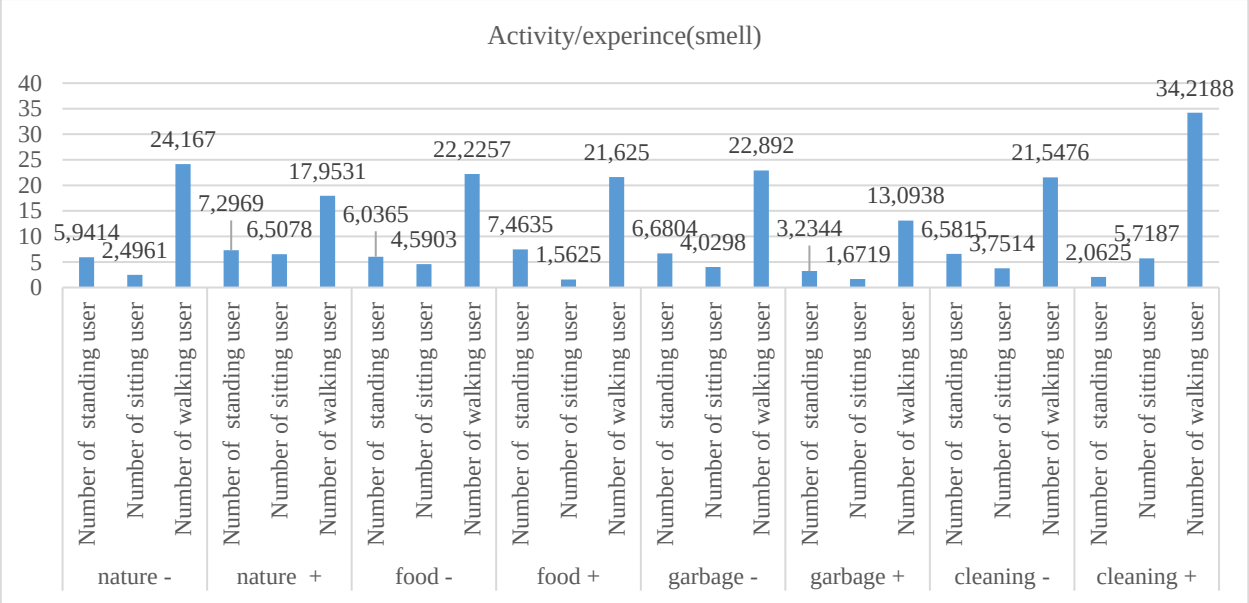


Figure 7. Descriptive statistical outputs of the relation smell experience with the number of standing, sitting, and walking users

CONCLUSION

Movement-experience is a concept that expresses the relation, communication, and interaction between sense, space, and time. If communication and interaction can be read correctly, streets are experienced with more sense organs, and Jacobs' -great streets- are formed. In this context, space is formed by time factors, physically, socially, and in a perceptual way. Streets are also composed of physical, perceptual-experience, social activity, and time, which are factors arising from the production of spaces. Experience is related to livability, but it is more about what is here now rather than what will exist in the future, such as sustainability. A subjective experience is formed. This experience tells a different story than what qualitative economic data tells.

This study starts with the belief that this formation can be read with the experience of movement and creates a quantitative study with the data obtained. More multisensory-focused streets hold all senses activities during different periods of the day. It is thought that the number of users in the evening will be increased by diversifying the opening and closing hours of the functions in the streets. At the same time, usage should be diversified through different functions in the streets in the evening. Increasing the number of users will also bring solutions to problems such as security. By diversifying the pavement width on the streets, planning and design proposals can be made to include parks and squares in the streets. The characteristic of the space on the pedestrian axis should offer the user different possibilities along with the activity and space experience. Widths should be designed in a suitable way for the user. Obstacles in pedestrian flow should be removed, or uninterrupted routes should be provided through proper arrangements. In any planning decision on the streets, the continuity of the existing pedestrian axis should be ensured. Pedestrian axes used in common with motor vehicles should not be recommended. Natural barriers should be created in the traffic flow, and opportunities should be created for the user to stand and sit. Nature sound and nature smell are essential components in street design. Users want to sit and stand in places where there is nature. For this reason, streets should be designed in integration with nature, and policies to increase green should be implemented in existing streets.

The sound of music is also one of the variables that determines street production. The sound of music as an artistic activity should be added to the streets. Thus, streets which would satisfy and please the user should be created. Places serving food and beverages on the streets should be gathered in certain areas. Suitable seating areas should be designed for food and beverage areas. The smell of garbage should be prevented and not felt on the street. Local governments should propose solutions to collect the garbage. The case study on Mevlana Street can provide data to local governments, urban planners, and architects. By digitally mapping the physical space, analyzing movement patterns, identifying activities, and exploring experiential criteria, this study aims to streamline information processes such as research, archiving, and scanning. This model can be applied to other streets as well.

Authors' Contributions

The authors contributed equally to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

The study does not need an ethics committee approval certificate.

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