

Submitted: January 5, 2016 / Revised: March 22, 2016 / Accepted: April 20, 2016

# Junior Primary Greek School Pupils' Perceptions of the City's Public Open Spaces and Especially of the Urban Square: A Case Study 

Nikoletta PAPAGEORGIOU ${ }^{1}$<br>National and Kapodistrian University of Athens, GREECE<br>Apostolia GALANI ${ }^{2}$<br>National and Kapodistrian University of Athens, GREECE<br>Evangelia MAVRIKAKI ${ }^{3}$<br>National and Kapodistrian University of Athens, GREECE


#### Abstract

This work - part of a wider project aimed at engaging first year primary school pupils in public open-space design - explores the perceptions of junior primary school children as to the urban square. Data collection tools comprised semi-structured interviews, sketches and storytelling via puppet-animation. Our findings have shown that - according to the perceptions of the children - the square displays the advantages and disadvantages of public open spaces both structurally and in terms of its layout, while its functions are linked to children's play, leisure, events and socialization. Factors that adversely affect visits to public squares include delinquency, xenophobia, limited space and poor design.


## Keywords

Geography, Environmental Education, Pupils’ Perceptions, City Square, City Planning

[^0]The term "public open space" describes a wide concept that consists of a variety of spaces within the urban environment that are freely and easily accessible to the wider community, "regardless of size, design or physical features and generally intended for amenity or recreation." (Kwasek, 2014, p. 7). Open public spaces encompass parks, plazas, sidewalks, shopping malls, community centres and schoolyards (Altman \& Zube, 1989; Carr et al., 1992).

An urban square is a part of a city's public open-spaces, commonly found in the heart of a traditional town. Its crucial role is to foster sense of community by facilitating chance encounters between neighbors (Talen, 2000). In literature we find the term public square with other names as town square, city square, public square, piazza, plaza, etc. Designed to fit amongst its buildings and streets, it encourages citizens of all ages to use it, it strengthens their social interactions and relations, eases the stress of everyday life whilst highlighting the policies that focus on public space functionality, and consequently those which enable the state to care for its citizens. Therefore, public squares should be designed and constructed based on specialized studies so as to take into account issues of safety, accessibility, surrounding structures (residential construction, streets, sidewalks, other open spaces, etc.) as well as area-specific environmental conditions (light, wind, rainfall, humidity, etc.) (City of Vancouver, 1992). In recent years many European countries have implemented efforts to redesign existing squares, conforming to modern urban design specifications. For example, in Denmark architects and city planners work taking into account the wishes and needs of citizens to create traffic spaces for pedestrians and cyclists, as well as spaces for leisure, sports, outdoor gyms, skateboard parks and playgrounds (Danish Architecture Center, 2009).

A public square "conveys", and expresses the culture of the people who experience it. As Farnsley et al. (2004, p. 154) mention it happening to other cities, "neighborhoods and districts have political dimensions as well as these social and spatial ones" (p. 154) Athens is not an exception. Often - owing to the faster pace of daily life - people living in big cities do not have the time to feel, to communicate and to act in public open spaces. In such a hectic context, for the best part of the day, a square is perceived as "a place of leisure". In some cities, it is often the case that a specific use of the square is predominant over others. Thus, a square may be characterized as a place for commercial and business transactions, restricting any other type of activity, whilst the lack of sports grounds in some big cities in Greece may turn the square to a playground or soccer field, depriving older age groups of their right to use the space for their own needs (Kapetanios, 2010). The definition of public square adopted for this study was informed by Kapetanios' description of Greek public squares as well as by the relevant Greek policies that relate to the Public Square design feature (Ministry of Reconstruction of Production, Environment \& Energy) -i.e. the emphasis of this definition is on public access, rather than public ownership or management, it is accessible by members of the public, fosters resident interaction and opportunities for contact and proximity, has trees that provide shade, a water feature (e.g. pond, lake), playground, a religious temple, recreational facilities and other amenities for neighbors and their kids.

Children are part of a city. During their first years, they experience space by organizing their life and activities in the units of their immediate surroundings (home, neighborhood). Thus, space is structured through a "system of spaces" which at first may seem fragmented and cut-off from the others, but gradually solidifies in a single uniform structure.

For inner-city children, a square acts as an "oasis". It offers a wide range of stimuli that promote their emotional and mental development (Atmatzakis, 2007). Free play in a square or a playground fosters the imagination and creative thinking of children, contributes to the overall development of their personality (Gillian \& Thompson, 2004), enhances their ability to express emotions and ideas, and develop their language skills. While playing, children explore, share knowledge and interact with a wide range of age groups. To them, the square constitutes a multi-sensory safe space, characterized by the discreet presence of parents. Yawkey and Bakawa-Evenson (1997) indicate the specifications for outdoor play areas: size should range between 7 m 2 and $18,5 \mathrm{~m} 2$ per child, it should be safe from any potential risks, the infrastructure for toilets and water supply should be available, and the railing should enable visibility from the inside but deter climbing over. Playgrounds especially those encouraging adventures have been promoted also for their social qualities (Staempfli, 2009).

According to recent research (Al-Arasi, 2013) conducted in the International School of Enschede in Netherlands among 67 school students 10-11 year old, the square ranks first in the list of the urban public spaces children prefer. The researcher suggests that this is the case because children feel safe there, they meet their friends, they watch skateboard competitions and play. Restaurants and shops around the square offer them opportunity for diverse activities, such as eating and shopping. Younger children say they prefer the square because it is usually close to videogame stores, candy and cake shops, fast-food outlets, etc. On the other hand, children list trash and litter, thieves, strangers, noise and drunks as negative aspects of public squares, whereas younger children find the noise from events and celebrations annoying.

Besides preferences and fears, what other spatial representations, ideas and relations does the word "square" evoke in school-aged children? Is it a special, distinctive place, associated with specific activities and memories or is it just another space in the multitude of urban spaces? Do younger school-aged children observe the square and its happenings or are they indifferent to it? Do they go into detail to illustrate or describe it and if so, to what extent do they represent the real or other imaginary worlds?

## Purpose of the Study

This study constitutes the first part of a wider project on the contribution of children to the design of public spaces (Galani, 2014). The literature enrichment on children's perceptions of issues related to urban spaces, the necessity to record these views as a factor affecting contemporary urban design, the achievement of educational targets pertaining to environmental and geography education, as well as to the development of cultivated and aware citizens, were some of its underlying factors of the broader project.

The research question posed when designing this study was: What are the perceptions of first-grade students on the urban square? This question led to the following sub-questions:

- What are children's perceptions of the natural and man-made elements of the square?
- What part does the square play in children's everyday life?
- Does the square please the aesthetic sensibilities of children?
- Does the square satisfy the children's needs for communication, play and fun?


## Methodology

## Study Sample

In this qualitative case-study survey, the study sample comprises 18 children ( 8 boys and 10 girls) who are first-grade students, i.e. aged at least 6 years old, in the 15 th Elementary School of Athens, in the neighborhood of Kolonaki, in Greece (figure 1). Children who follow the program of 15th school live in Kolonaki neighborhood, which means that their everyday activities take place around the place they live. Kolonaki is a densely populated area of higher-income residents (given that Kolonaki is amongst the area with high ratable real-estate values). This "healthy" neighborhood lying along the foot of Lycabetus hill has three urban squares in the area surrounding the school: Filiki Eteria Square, Deksameni Square and Eleftherias Square.

Out of these three squares, the Deksameni Square was selected as a case-study, on the basis of the following criteria:
I. The distance between the square and the school (catchment area),
II. Infrastructure for children's activities,
III. Other criteria (the historical and cultural identity of the square, proximity of the square to children's houses, frequency of visits, etc.).
The catchment area (circles in the form of isochronous curves) of a square has been defined at approximately 500 m for adults (Delladetsimas, 2009). Therefore, we used Deksameni Square, Filiki Eteria Square and Eleftherias Square (Figure 1) as points of reference to draw catchment areas for each. Their radius was 250 m , a distance which is easily accessible to children, since it is the equivalent of a 10 -minute walk.


Figure 1. The map shows the squares in the neighborhood of Kolonaki. The circles depict their catchment areas: (1) Deksameni square, (2) Filiki Eteria square and (3) Eleftherias square. (Mac/Photoshop 937X541 pixels /.tif)

When the catchment areas had been drawn, it was concluded that:

- Deksameni and Filiki Eteria squares are closer to the students' homes than Eleftherias Square (satisfies criterion I).
- Although Deksameni square is very close to Filiki Eteria square (as shown in Figure 1 the catchment areas of the two overlap to a great extent), the former has an infrastructure geared for activities and play (playground, open space for cycling, set well back from the street) gathering the children of the neighbourhood while Philiki Eteria square is smaller, has only benches and is rounded by roads (satisfies criterion II).
- Additionally, it is a place of immense historic and cultural interest: the square is the site of the ruins of Hadrian's Aqueduct and Reservoir (130-140BC), which for centuries supplied water to Athens, as well as a small coffee shop which served as the meeting place of many Greek artists and intellectuals, such as the poets K. Varnalis and A. Sikelianos, the writers A. Papadiamantis, N. Kazantzakis, E. Alexiou and many others (satisfies criterion III).
This particular area sample was selected not only because it comprised all the desirable characteristics (urban center, densely-populated area, etc.) as described above, but also because the researchers had easy access to the student population (convenient sample - one of them was the teacher of the participants).


## Data Collection

To conduct the research and ensure a thorough data collection, we used a triangulation of methods (Cohen, Manion \& Morrison, 2000). More specifically, we used semi-structured interviews, storytelling via puppet-animation and sketches and these methods were used not far away one from another - the whole data collection
lasted about three months. This combination of different methods enables a visual and oral contact with study subjects, thus allowing us to understand the complexities of the relationship between children and urban environments (Lehman-Frisch, Authier \& Dufaux, 2012) and ensures the validity of the study.

As the participants were parts of vulnerable groups (children) the researchers paid special considerations in Ethical issues (Hill, 2005). The objectives of the research and the purpose of each task that was taken with the children were communicated with the school's principal, the teachers of the school, and the legal guardians of students. Researchers also got the consent for taking videos, pictures, interviews of the legal guardian of each child and the informed consent of the children themselves to participate in this study. To ensure the anonymity, researchers gave numbers to children's work/ illustrations and they used pseudonyms when presenting children's interviews. They also avoided showing children's faces in photos taken during the project or posting their photos on Internet sites.

Semi-structured interviews. Semi-structured interviews are considered a suitable tool for small-sample studies, since they ratify and complement information derived from other sources (Laforest, 2009). Interviewees are able to offer their individual interpretations and descriptions, using their own conceptual categories (Loukopoulos, 2008). The interviews were conducted in the school classroom during school hours, in the form of conversation in a relaxed setting and were videotaped. Children were accustomed to being videotaped; therefore, the presence of the camera did not negatively impact the interviews. Before starting the interviews we asked students to name the square they visit most often. All students ( $100 \%$ ) referred that Deksameni square was the square they spend their time because of the proximity to their houses and the existence of the playground. The questions, on which the young students were asked to express their views and experiences, were as follows:
I. What is a square? What does the word "square" mean to you?
II. Do you often visit the square? With whom do you go there?
III. What do you and your parents/ your mother do at the square? (The question was adapted to the children's answer to question 2.)
IV. Is there anything you do not like about the square?

Respectively, these questions aimed to:

- Illustrate the students' notions about the square (dialectic relation between people and space),
- Identify the frequency of visits which in turn would highlight the users' frequent contact with, and experience of, the space in question,
- Record the reasons why children visit the square and consequently the needs it covers,
- Record the activities preferred by students and their caregivers while at the square, in order to highlight the different use of the square by adults and children,
- Identify any square elements that do not satisfy the aesthetic sensibilities and needs of the students.

Puppet-animation storytelling. The second research tool that we used was storytelling via puppet animation. Drama, and puppetry in particular, enable children to express their feelings and ideas, since they identify with the puppets and transport themselves to an imaginary place. The improvised role-playing subjects presented by children are derived from their everyday life and their experiences (Vitsou, 2011). In Natural Sciences in particular, the use of puppets can effortlessly introduce students to scientific thought (Keogh et al. 2008) and new knowledge. Sometimes it even leads to a cognitive conflict, since puppets lack the prestige of teachers and thus encourage students to express their own ideas (Simon et al. 2008; Exarchopoulou et al. 2003). Aiming to encourage children to express their ideas, the researchers gave them Playmobil figures, which they were then asked to transform into imaginary "characters" with a specific name, appearance, voice and character, using play dough (Figure 2). In this case, as children are not "themselves" in the history they create, it is more possible to freely express their own ideas (Van Velsor, 2004) and therefore get valid data (Sieber, 2012). For the animation, each student presented his or her puppet to the others and narrated a story, starting with the phrase "[The character] was at Deksameni Square...".


Figure 2. Playmobil figures acquire new traits and are transformed into "characters". Added elements are made out of play dough. The children create and narrate stories about the square starring the Playmobil figures they created. (Mac/Photoshop 2953X1592 pixels /.tif)

Sketching. The third research data collection tool used was sketching. Drawing and sketching foster the expression of ideas and communication (Forbus et al., 2011), sharpen critical skills, cultivate mapping skills, reinforce memorization, as well as the processing of information and the drawing of conclusions. In the fields of Natural Sciences and Environmental Education, sketching in combination with interviews are often used as a means of exploring the perceptions of children on natural science or
environmental concepts they have been taught (Ehrlén, 2009; Kose, 2008; Strommen, 1995; Tsevreni, 2008). Sketching was a complementary means of expression for students, through which they were able to describe the surroundings of the square in detail. One teaching hour was required to create the sketches. During this time, the students were encouraged by the researchers to enrich their sketches with as many elements as possible. The children's drawings were studied only in terms of their references to the area of the square and were not interpreted in terms of their colors, line strength etc.

The qualitative content analysis method (Berelson, 1952; Weber, 1990) was used to analyze the data collected from the three research tools. The "meaning unit" or the "theme" was defined as the unit of analysis (Zagkos et al., 2007) and the definition of the categories was carried out according to grounded or emergent process (inductive). In order to carry out this content analysis we followed the steps described by Mavrikaki, Antonatou \& Kyridis, 2012):

- Definition of the categories: The content of the interviews, narrations and sketches was interpreted in such a way so as to enable the categorization of references in corresponding subject groups, depending on their frequency of repetition. Having determined the subject categories for every tool, we moved to the next step.
- Testing of the content validity: A group of two experts (academics) evaluated the semantic validity of the categories that derived from the texts and the appropriate modifications were made.
- Testing of the coding on sample of the data: Two coders were called upon to code a sample of the data (three interviews, three sketches and three narrations) based on the emergent categories, in order to, first of all, test the consistency of the coding. Each coder was asked to identify meaning units in the sample and then classifying them in a specific category.
- Assessment of accuracy of reliability: The degree of consistency between the two coders was identified as $86 \%$ and, as such, deemed acceptable (Landis \& Koch 1977). After discussing any differences and agreeing on the way forward, they proceeded to analyze the whole sample.
- Coding of the whole sample.
- Assessment of the achieved reliability: The degree of reliability between the two coders reached $96 \%$.


## Findings

## Interview Analysis

Data derived from students' interviews were very interesting. In the question "What is a square?", children described the man-made environment or the natural environment of the square. They referred to the square as a recreation place that offers opportunities for themselves to play with their friends and for their parents to meet people. In the following examples children's own words are used:

Kostas: "...it [the square] has many fountains, cars, statues and many shops", Helen: "...is a big space where you can cycle, mmm, it has many flowers...".

Catherine: "The square is a big place (she makes an oval shape with her hands) where you can play, do different things, run and... and the cars, it may have kiosks, rocks, all kinds of things, you can sit down and drink something."

According to the children's statements, parents or those accompanying them to the square, seldom, if ever, engage in the children's playing. It seems that they just supervise whilst either having a coffee or sitting on a bench. On the contrary, children spend most of their visit to the square playing and meeting friends:

Peter: "Ummmm... My brother and I, we go... ummmm... we go down the slide (stops) ummmm... we also go on the swings and my mom has a coffee if she finds a coffee place around there."

Lilian: "...Ummm sometimes my friend Krinio comes to the square and we ride our
scooters, we play hide-and-seek and tag and my mum sits on a bench and waits for me..."

Maria: "When I go to Deksameni square, umm... I play umm..., with ... sometimes I meet my friend Zenia... We play tag, we ride the seesaw, play on the swings and we do many other things."

Nick: "When I go to the square with my mum, with my friends... we play tag and hide- and-seek. Sometimes we take a ball along to play football..."

However, half of the children stated that they rarely visit the square and only 6 out of the 18 children stated that they visited the square often. Children listed graffiti on statues, rubbish, animal faeces and cigarette stubs as things that offend their aesthetic sensibilities:

Catherine:"I don't like how they have smeared Papadiamantis' eyes [the statue of a Greek writer located in the square and bearing signs of vandalism in the eyes]."

Maria: "...cigarette stubs... they are strewn all over the place..."
Nick: "...dog poo..."

## They also expressed their wish for more green areas:

Kostas: "...I would love more green areas in the square."

## Analysis of Storytelling

When the children were asked to invent stories, most had the square as a starting point and place of action (as they had been asked to do). Their narrations included besides the basic characteristics of their "character" - descriptions of the environment of the square (natural and manmade), the different activities that they perform there as well as the relationships they developed with other people using the square, while one child touched upon the issue of xenophobia (i.e. Niki's words below). In many stories, the action was not completed in the course of a single day but stretched over the following narrated day as well. Figure 3, presents the thematic categories that were developed during the content analysis of children's stories along with their frequency.


Figure 3. The thematic categories - along with their frequency - that emerged by the content analysis of children's stories. (The map was constructed using MindMeister)
Examples of children's narratives are given below.
Nick: "His name is Jason. I made him a helmet aaaaaand so-some rollerblades. One afternoon... he we-went to Deksameni Square and met his friends and asked them, ...asked them if they wanted to rollerblade together. "Hey, guys, do you want to go rollerblading?" and then Jason started rollerblading but the cleaning lady was there cleaning the square and he slipped and fell. And then he said that he couldn't rollerblade anymore and left the square but the following day... when he came to the square he met his friends again but they were playing with another little boy and he asked him to teach him how to rollerblade. "Can I learn from you how to rollerblade?", "Yes". And they rollerbladed together. And... and he didn't know that little boy and he asked "What's your name?". And he said his name was Ulysses. And then Ulysses left... and and then... while he was rollerblading he tripped on a cockroach and yelled "Hey, cockroach, stop". And then the cockroach, it it... ....something, it told him something. It said something in his ear "psssssss, brrrrlllll, teeteeteetee". However... the cockroach was... but he saw the cockroach, he was puzzled, it was green with four legs... Should I say what the cockroach said? It was an alien. It was an alien cockroach. But I can't say it... I can't say it in Greek because I don't know... OK. "nicnicnicnicnicnic". Then the cockroach came to his house but it did not appear as a cockroach, as a green circle... that was how it appeared. And then it showed him a page from his book that there is a comet (sic) that has a "kuantonio" [imaginary word] and it explained to him what the "kuantonio" means, that you are going to be huge and very powerful with the "kuantonio". And then... the... the cockroach got into that spaceship with Jason. Jason followed it and then and then it sh-showed him everything there was in the spaceship and they became friends and Jason became an astronaut when he grew up. The end."
Peter: "Ummmm his name is Nick. He is a police officer. Ummm it was night and he went to a square. And he saw a thief. And he started chasing him. And then... and then... he called the other police officers on the phone. Come, please come, police officers... and ummm the other police officers came (...) and they caught the thief and... the square was no longer as scary. And everyone lived happily ever after this."
Helen: "It was the afternoon. And she wanted to go... to the square. But when she went... it started to rain. Ohhhh nooo, it's raining, I'd better go home. And she went home... and she was upset "I didn't get to stay at the square" (pretends to cry). Then... it stopped raining and
she went to the square. Ah! Great! It stopped raining! And I can go to the square! And she went to the square and she was happy. And she got an ice-cream and she played with her friends. Mmm yummy ice-cream! Why don't I go and play with my friends."
Kostas: "His name is Nikolas... One time... he went to Deksameni Square. And as he was riding his scooter he bumped into $a . .$. rock and he fell and hurt his arm. And then his mum... called the doctor. And then... they came to take him. To take him to the hospital."
Niki: "...And she wanted to play, she was there, she had..., Deksameni Square was wonderful and she wanted to play with something... well... Suddenly a children from another country [she said the word "xenos"] arrived... and she talked to her using strange words.... "How are you?" [she said this sentence in English]. And after... after that.... she did not say a word to the stranger... and she left..."
As we can see from Figure 3 "Relationships" was the thematic category with the most references (34). Children realize that the square is a place where they have a chance to interact with each other, meet their friends, express their feelings and solve possible misunderstandings. The description of their "character" and the activities they take part in the square were the next mostly referred thematic categories ( 30 and 26 respectively). Most of the references to "playing" (11) regarded unorganized playing explaining the need of children (mostly children of the big urban sites) for unorganized playing and free time. Some also referred to accidents that happen in the square (e.g."...fell and hurt his arm") but also to events that take place in the square such as a concert (e.g. "...there was a music band and people..."). Criminality was also mentioned, probably because of parents' conversations overheard by children or by cases they watch in television. Finally, children described the place (the square) some of them referring to the weather conditions (in Greece, as people are mostly used to "good weather" in case of rain or generally bad conditions avoid getting outdoors, e.g. "...it's raining, I'd better go home..."), some of them made use of imaginary places and only one of them referred to plants (for the phenomenon of plant blindness see also Allen, 2003 and Hoekstra, 2000).

## Sketch analysis

In their sketches, the children depict the natural and man-made environment of the square and the children who play in it. Circled in Figures 4 and 5, are presented some of the units which were coded and counted in the sketch analysis. More specifically, elements of the natural environment were identified (birds, grass, trees, dogs) and also man-made environment elements (houses, streets, cars, statues, a fountain, a coffee shop, benches). Sketches also include the presence of humans (a man selling ice-cream, children playing, etc.). More details about the thematic categories that emerged during the analysis of the sketches and their frequency are presented in Figure 6.


Figure 4. The Square through the eyes of the children (Mac/Photoshop 2333X1670 pixels /.tif)


Figure 5. Children's sketches, with the elements included in the study circled. (Mac / Photoshop 2333X1670 pixels /.tif)


Figure 6. The thematic categories - along with their frequencies that emerged from the content analysis of children's sketches about the "square". (The map was constructed using MindMeister).

As it is obvious from Figure 6 children mostly drew characteristics of the natural environment of the square ( 85 references). It is interesting that in their sketches they included plants ( 25 references) something that they did not do in their stories. That can be explained because probably they are used to drawing plants whenever they are asked to draw a picture of a place. They also drew abiotic characteristics of the environment (sun, rocks etc.) and animals such as pets, birds on the trees etc. Humans were presented in almost each child's sketch ( 16 references). Children also sketched the manmade environment (e.g. buildings in the square, signs, fences along with vehicles such as bicycles). Playing activities were also a major thematic category ( 21 references) into which children also paid more attention to free games ( 13 references) showing again their need for free playing e.g ball playing, jumping rope etc.

## Conclusions and Discussion

Although many interpretations and conclusions could have been derived from processing the research data, this study focuses on the interviews and narrations of the children, as well as on their sketches, in order to illustrate how they perceive the square as a concept and a space. Comparing the conclusions of this study to the outcomes of other studies concerned with the urban environment in general, the city, the neighborhood and the urban public spaces (Al-Arasi, 2013; Gillian and Thompson 2004; Spencer and Blades, 2006; Veitch, Salmon and Ball 2007), we can assert that this study delves deeper, by exclusively focusing on the square, while at the same time it adds to the aforementioned studies, by complementing and enriching the limited literature on the subject.

For children, the square as a space features specific characteristics whilst, as a concept, it is closely related to their everyday life. In more detail:

## Characteristics of the Square

- The square as an open public space: Children classify the square as an open urban public space and perceive that, as an open space, it is affected by weather conditions, which as a consequence affects the frequency of their visits to it. As a public space, it satisfies their own needs.
- The architectural aspect of the square: Pupils seem to recognize, recall and depict in their drawings typical elements of the square in terms of its shape, layout and functions. These elements are realistic (very close to the design suggested by the square's architects and designers) without any added imaginary elements.
- The natural and man-made environment of the square: The students identify and depict elements of both the natural and the man-made environment: inanimate matter (rocks, dirt, sun, clouds, sky), animate objects (animals, plants, people), the structured environment (buildings, streets, houses, stores), vehicles (cars, subway, streetcars) and special structures (benches, statues, ponds, playgrounds, basketball courts).


## The Role of the Square for the Children

Analysis of the results (see also Figures 3 and 6) illustrates that the square fulfils many distinct roles in the children's lives, ones that are closely related to their emotional and mental development, their socialization and their leisure.

- A space for play: Through the eyes of the children, the square appears as a space suitable for various forms of play, such as free play (solitary or in groups), i.e. ball games, tag, hide-and-seek, riding bicycles and scooters, jumping rope etc., as well as for playing in a playground, should there be one, i.e. on seesaws, swings, slides, etc.
- A space for leisure: Based on our recordings, the square is a space of leisure both for children and adults (children also referred to their parents' activities), offering many alternatives, such as strolling, shopping, relaxing on a bench or a coffee shop, etc. This element is in line with the Spencer and Blades (2006) study, according to which children do not wish for special places in the city, for their exclusive use. On the contrary, they prefer public spaces where they can meet and interact with diverse age and cultural groups.
- A space for events and happenings: Based on the children's answers, we conclude that the square is a space for a wide range of events, such as concerts, parties and social solidarity activities.
- A space for social interactions: The outcomes of our study highlight the importance of the social role the square plays in the lives of the pupils, since it serves as a "haunt" for the meeting of friends and other peers with whom they develop social and interpersonal relationships through play, as is also documented in the studies of Al-Arasi (2013), Spencer and Blades (2006), Veitch, Salmon and Ball (2007).
It should also be stressed that the greater percentage of the participants in the study ( $50 \%$ ) does not visit the square very often ( 8 out of the 16 children stated that they rarely visit the square and only 6 said that they did this often, whereas 2 children said that they were not able to answer) an element also verified by Al-Arasi (2013), Poveda et al. (2007), Veitch, Salmon and Ball (2007).

Some of these researchers note that the deeper reasons that impel children to rarely visit the square are rooted in the hectic pace of everyday life, the lack of free time, the constraints imposed by parents due to their work, the social aspects of the city,
inadequate play structures, the lack of cleanliness, the absence of local parks and squares, as well as the negligent urban design. The children's perceptions, as they were recorded by the study, indirectly verify some of these assumptions. It seems that the children's aesthetic sensibilities are offended by the lack of cleanliness (cigarette stubs), the vandalism of statues, the lack of green spaces. Additionally, students mention their limited free time (e.g. "when mummy or daddy can take me there" or "when I am done with my homework").

Finally, the mentions of accidents and crime in or around the square, which may also serve as inhibitors to the frequency of visits, are consistent with the study of Al-Arasi (2013), who stress that public spaces should meet appropriate standards so that citizens, and primarily children, should feel safe.

## Implications for Research

This study could prove useful to those involved in the design of public spaces, since the analysis of data highlights the perception of the users themselves (the children) in issues pertaining to failures in the design of the square. At the same time, consistently with the views of Hart (2013), Matthews (2001), Sutton and Kemp (2002), it feeds the education process with subjects and activities that may be incorporated in Curricula to assist in the development of astute citizens, via the participation of children in environmental planning, even from their school years, whilst also proposing a methodology for investigating the views of students via a combination of diverse research tools.

In conclusion, given that the study focused more on the analysis of the content of the narrations and sketches of children living in an urban environment, we would suggest that it can serve as the starting point for further analyses and discussions by groups of scientists in other disciplines (sociologists, psychologists, etc.), as well as a starting point for the undertaking of similar studies in a larger population sample, in different age groups of visitors with diverse expectations of the space, or in groups of children who live and grow up in non-urban environments, as it is quite possible that in a nonurban setting, the square may play a very different role in the lives of children.

## References

Al-Arasi, H. A. (2013). A Study on Children's perception of their local living environment. Graduate Dissertation, Faculty of Geoinformation Science and Earth Observation of the University of Twente, Netherlands, Retrieved from http://www.itc.n1//ibrary/papers_ 2013/msc/upm/alarasi.pdf.

Allen, W. (2003). Plant blindness. BioScience, 53(10), 926.
Altman, I. and Zube, E.H. (1989). Public places and spaces, Vol. 10, Plenum Press, New York doi: 10.1007/978-1-4684-5601-1.

Atmatzakis, K. (2007). Pedi, pachnidi ke anaptyksi [Child, play and growth], BA thesis, Physiotherapy Department, TEI of Thessaloniki, Thessaloniki.
Berelson, B. (1952). Content analysis in communication research. New York: The Free Press.

City of Vancouver, Land Use and Development Policies and Guidelines. (1992). Plaza design guidelines. Retrieved from http://vancouver.ca/docs/planning/plaza-design-guidelines-1992-november-17.pdf.

Cohen, L., L. Manion, and Morrison, K. (2000). Research Methods in Education [5th edt] London: Routledge Falmer.
Danish Architecture Centre. (2009). Architectural Exhibition: "New Urban Spaces" - "Future works and urban spaces". Retrieved from http://www.dac.dk/.

Delladetsimas, P.M. (2009). E Asfales Poles [Safe Cities] Sextant Eds. Athens.
Ehrlén, K. (2009). "Drawings as representations of children's conceptions." International Journal of Science Education, 31 (1), 41-57. doi:10.1080/09500690701630455

Exarchopoulou, E., Vamvakidou, I. Kyridis, A. Mavrikaki, E. and Bessas, D. (2003). E symboli tu kuklotheatru stin Agogi Hygeas kata ten Proscholeki helikea. To Paradegma tes diatrofes [The contribution of puppet theatre in Pre-schoolers' Health Education. The case study of diet] Sychroni Ekpaideusi, 132-133: 39-46.
Farnsley, A. E., \& Demerath, N. J., Diamond, E., Mapes, M.L., \& Wedam, E. (2004). Sacred Circles, Public Squares: The Multicentering of American Religion. Indiana, In.: The Polis Center, Indiana University Press.

Forbus, K., J. Usher, A. Lovett, K. Lockwood, \& Wetzel, J. (2011). "Cogsketch: Sketch understanding for cognitive science research and for education." Topics in Cognitive Science 3 (4): 648-666. doi:10.1111/j.1756-8765.2011.01149.

Galani, A. (2014). Ta pedia geo-graphun: Mia meleti gia tin plateah Deksamenis sto choro keh sto chrono [Children's geographies: A study about Deksameni square in space and time] in Honorary edited volume for Professor Emeritus A. Katsikis University of Ioannina.
Gillian, Th., and Thompson, G. (2004). "A Child's Place: Why environment matters to children", Green Alliance/Demos, Retrieved from http://www.greenalliance.org.uk/.
Carr, S. Francis, M. Rivlin, L.G., \& Stone A.M. (1992). Public space, Cambridge University Press, Cambridge.

Hart, R. A. (2013). Children's participation: The theory and practice of involving young citizens in community development and environmental care. Routledge.

Hill, M. (2005). Ethical considerations in researching children's experiences, In D. Hogan \& S. Greene (Eds.), Researching Children's Experience: Approaches and Methods. London: SAGE.

Hoekstra, B. (2000). Plant blindness - The ultimate challenge to botanists. The American Biology Teacher, 62(2), 82-83.

Kapetanios, A. (2010). Silent Squares-Part A, Retrieved from http://www.greekarchitects. gr/gr/home.

Keogh, B., S. Naylor, J. Maloney, and Simon, S. (2008). "Puppets and engagement in science: a case study." Nordina, 4 (2), 142-150.

Kose, S. (2008). "Diagnosing student misconceptions: Using drawings as a research method." World Applied Sciences Journal, 3 (2), 283-293.
Kwasek, R. (2014). Streets with soul, Study tour. Municipal Engineers Foundation.

Laforest J. (2009). "Guide to Organizing Semi-Structured Interviews with Key Informant" Retrieved from www.inspq.qc.ca.

Landis, J. R., and Koch, G. G. (1977). "The measurement of observer agreement for categorical data." Biometrics, 33 (1): 159-174. doi: 10.2307/2529310.

Lehman-Frisch, S., J-Y. Authier, and Dufaux, F. (2012). "'Draw me your neighborhood’: a gentrified Paris neighborhood through its children's eyes." Children's Geographies, 10 (1), 17-34. doi: 10.1080/14733285.2011.638175.

Loukopoulos, A. (2008). E esagogi kenotomion sto scholeoh keh o rolos tu Diefthindi: E Apotelesmatikotita tis eveliktis zonis diathematikon keh dimiurgikon drastiriotiton [The innovative school and the role of principal: The effectiveness of interdisciplinary and creative activities], doctoral dissertation, PTDE, School of Humanities and Sociology, University of Patra.

Mavrikaki, E., Antonatou, C. and Kyridis, A. (2012). "Greek Senior High School Students’ Perceptions about Science and the Scientific Community as These Appear in the Mass Media." Journal of Studies in Education, 2(4), 32-46. doi: http://dx.doi.org/ 10.5296/jse.v2i4.2270.

Matthews, M. H. (2001). Children and community regeneration: creating better neighbourhoods. London: Save the Children.
Ministry of Reconstruction of Production, Environment \& Energy, retrieved from http://www.ypeka.gr/Default.aspx?tabid=38\&gcsQuery=\�\�\�\�\� \%B1\% CF\%84\%CE\%B5\%CE\%AF\%CE\%B5\%CF\%82.

Poveda, D., Casla, M., Messina, C., Morgade, M., Rujas, I., Pulido, L., and Cuevas, I. (2007). "The after school routines of literature-devoted urban children." Children's Geographies, 5 (4), 423-441. doi: 10.1080/14733280701631890.

Sieber, J. (2012). The ethics of Social Research: Fieldwork, Regulation and Publication. NY: Springer-Verlag.
Simon, S., Naylor, S., Keogh, B., Maloney, J., and Downing, B. (2008). "Puppets promoting engagement and talk in science." International Journal of Science Education 30 (9): 1229-1248. doi: 10.1080/09500690701474037.

Spencer, C., Blades, M. (eds) (2006). Children and their environments: Learning, using and designing spaces. Cambridge University Press.

Staempfli, M., (2009). Reintroducing adventure into children's outdoor play environments. Environment and Behavior, 41 (2), 268-280.
Sutton, S. E., and Kemp, S. P. (2002). "Children as partners in neighborhood placemaking: lessons from intergenerational design charrettes." Journal of Environmental Psychology, 22(1), 171-189. doi:10.1006/jevp. 2001.02

Strommen, E. (1995). "Lions and tigers and bears, oh my! Children's conceptions of forests and their inhabitants." Journal of Research in Science Teaching, 32(7), 683-698. doi: 10.1002/tea. 3660320704

Talen E. (2000). Measuring the public realm: A preliminary assessment of the link between public space and sense of community, Journal of Architectural and Planning Research, 17, 344-360.

Tsevreni, I. (2008). Megalonodas stin Athina: Ena programma perivalodikis ekpaidefsis gia the symetochi ton pedion steh diamorfosi tu perivalodos tus [Growing in Athens": An Environmental Education programme for children's collaboration in development of their environment], School of Architecture, EMP, Athens.

Van Velsor, P. (2004). Revisiting basic counselling skills with children. Journal of Counselling and Development, 82(3), 313-319.
Veitch, J. Salmon, J. and Ball, K. (2007). "Children's perceptions of the use of public open spaces for active free-play." Children's geographies,5(4), 409-422. doi: http://dx.doi.org/10.1080/14733280701631874.

Vitsou, M. (2011). Eh proagogi tes phonologikis enimerotetas ton nipion meso tu kuklotheatru sta tmimata ekmathisis ellinikis glossas tes Stokcholmes [The development of infants’ phonological awareness in Greek learning courses in Stockholm] International Conference Arts and Education, Athens, May 6-8.

Weber, R.P. (1990). Basic content analysis, quantitative applications in the social sciences. Sage Publications, Inc, Beverly Hills, CA 19: 24-26.
Yawkey, T.D., and Bakawa-Evenson, L. (1977). "Planning for play in programs for young children." Child Care Quarterly, 6(4), 259-268. doi: 10.1007/BF01554246.

Zagkos, C., Kyridis, A. Golia, P. and Vamvakidou, I. (2007). "Greek University Students Describe the Role of Greece in the Balkans: From Equality to Superiority." Nationalities Papers, 35(2), 341-367. doi:10.1080/00905990701254383.

## Biographical Statements

Niki PAPAGEORGIOU is an MSc student in the Department of Primary Education of National and Kapodistrian University of Athens. As part of her master's thesis Niki studied the primary school pupils' perceptions of the city's public open spaces. She is currently working as a Science Teacher and as a Teacher of Dramatic Play at "Pik2pik" theatrical team.

Apostolia GALANI is Lecturer of Teaching Geography and Earth Sciences in the Department of Primary Education of National and Kapodistrian University of Athens. She is also a member of the Laboratory of Science Teaching, Epistemology and Educational Technology of the National and Kapodistrian University of Athens. For more than ten years she have been working in Pedagogical Institute of Greece as a national curriculum developer for geography and Earth Sciences and as a member of the P.I. committee for the evaluation of Geographical maps. She has published more than 13 books (in Greek), more than 12 papers in national refereed journals as well as international and national refereed conference proceedings and she took part in 6 national and international research projects. Her main research interests are: a) the transformation of the geography content into school knowledge; b) the design of teaching-learning sequences on several areas of geography knowledge; c) the multimodal representation of geography concepts; d) interactive maps and AR games; e) children and design of urban community spaces using new technologies.

Evangelia MAVRIKAKI is an Assistant Professor in the Faculty of Primary Education of the National and Kapodistrian University of Athens, Greece. She has authored or coauthored many articles or chapters in Greek and International Journals or books and she is the author-coauthor of 15 books and 86 Greek and International papers, chapters in books or proceedings. Her research interests focus in Biology Teaching and Environmental and Health Education. She is a member of the editorial board of reviewers of the Global Journal of Health Science and she has served as a member of the editorial review board for the Journal of Elementary Science Education (since 2010 embedded in Journal of Science Teacher Education). She is also an elected member of the executive board - of the Pan-Hellenic Association of BioScientists and a member of the Laboratory of Science Teaching, Epistemology and Educational Technology of the National and Kapodistrian University of Athens.


[^0]:    ${ }^{1}$ MSc Student, National and Kapodistrian University of Athens, Department of Primary Education, Athens, Greece, E-mail: nikolettapapageorgiou[at]yahoo.gr
    ${ }^{2}$ Corresponding author: Lecturer in Teaching Geography and Earth Sciences, National and Kapodistrian University of Athens, Department of Primary Education, 13A Navarinou str., 4th floor, office 5, Athens, Greece, E-mail: ligalani[at]jprimedu.uoa.gr
    ${ }^{3}$ Assistant Professor in Biology and Health Education, National and Kapodistrian University of Athens, Department of Primary Education, 13A Navarinou str., 4th floor, office 5, Athens, Greece, E-mail: emavrikaki[at]primedu.uoa.gr

