How children create their space for play?

John Freddy Bobby Saragih, Michael Tedja
Architecture Department, Faculty of Engineering, Bina Nusantara University.
Jakarta, Indonesia 11480

Corresponding author: bsaragih@binus.edu

Abstract. The phenomenon of children’s play in the urban area in Indonesia has experienced a shift; they are often seen playing in the street, sidewalk and drainage. This shift raises the question: what is interesting about the space, so that they use it as a space for play? There are metaphysical based of space that can be grasped by children senses when they utilize that particular space. This qualitative research based involving children aged between 6 and 12 years found that spatial manifestation; such as freedom, excitement and surprise are the main motivations when they use the space as their playing area.

Keywords: Play, Children, Space, Spatial manifestation

1. Background
The dominance of architectural research is still in favor on physical based of space and only exteriority, no exception the research on children playing space. For architects, children playing space research is explaining about the physical based of space, more on the shape, dimension, surface and color even tend to use specified standard as a parameter as contained in Standard and Adventure Playground [1]. But, when that physical based knowledge is not fully able to explain a phenomenon, then the things which are not physical (material culture) with the metaphysical approach (non material culture) which is the result of design thought that is not directly related to physical objects observed [2] is expected to be able explaining the phenomenon. Therefore, the metaphysical approach is one of the strategies to understand the other space like street, sidewalk, and drainage which are often used by children to play.

Daniel Campo in his book mentions that accidental playground is a playground that occurs undersigned and unplanned and could not have been designed or planned for [3]. The fact shows that the emergence of that phenomenon has been implicated in most of the urban areas in Indonesia. Several qualitative research based on the Child Perceptions Regarding City Environment concluded that most children are not satisfied with their current playground environment, this dissatisfaction is visible from the children playing behavior that often use street, sidewalk, and drainage as their playing space [4]. In fact, the Symptom of dissatisfaction with current children playground is not only
dominated by children who live in urban areas, but also children who live in suburban areas that possess the same playing behavior. A research on Accommodation of the Needs of Children Space in Formal Housing that use quantitative method to the 27 elementary school age children at Perumnas II Depok and Perumnas Indraprasta II Bogor, has found that approximately 50% of respondents were less satisfied with the playing facilities, approximately 60% of children prefer to play on the streets and 56% of children are likely to use the street or front yard of their house as a place to play [5]. The same phenomenon is also found in another sub urban area, Perumnas II Tangerang, with qualitative method the research that focuses on the Life of Children in Perumnas Tangerang and its Relation to the Option of Playgrounds found the fact that children's play activities has shifted from playing on the playground which has been provided into playing in the streets or front yard [6].

The change of children's play behavior is not only found in children who lives in the cities in Indonesia, but also in several cities in other countries. In the UK, research on housing estates in the mid 1990 found that children tended to play on the street [7]. Two surveys, carried out in 2001 found that children played out on the street more often than anywhere else, even if this was not always their preferred playing space. Seymour Gold found that many places in some residential area in California are no longer used by children to play [8]. There are several factors behind that phenomenon, one of them is the short period of playing time owned by the children, such as between school and lunch time or some time before dinner, so that, these factors make them likely to play on an empty field around the house, the house front yard or on the sidewalk in front of the house. The children are certainly not stupid to go far away just to play for a while [8]. The shift of children playing from provided play spatial is also influenced by social factor, rivalry in the struggle for play space between children and adult and physical factor, condition of play space that is unable to meet the needs of children play [6]. Not only that, by using the Ecological Model [9] focuses on interrelationships between living creatures with their environment found three patterns interaction that influence children to play outdoor, which are individuals, social and physical environments [10].

2. Research Problem and Methodology
This research was conducted by involving children who live in Medang Lestari Housing Tangerang whereas that housing complex has been equipped with common facilities, such as sport field, children's playground and several other facilities. Extracting information was conducted by the direct observation and interview method. Periodic observation focuses on children who play in the street, sidewalk, and drainage. While interviews were conducted either individual or group that aims to understand more about the experience of playing and space they use for play.

Based on the data, children in District 02 of Medang Lestari housing have a tendency to use street, sidewalk and drainage as their playing space. The change in playing behavior becomes interesting to understand, therefore, the purpose of this research is to understand the backgrounds that influence children to attend and play in that particular space. Since this research is an architecture research, the study is focused more on the spatial manifestation which affecting children when making an agreement to use the space.

This study focuses on the effort to find out more on the meaning of individual experience of the presence of children in a space. Experience is something subjective that derive from an existed phenomenon. Appropriate research design in order to achieve the expected goals is qualitative research. Meanwhile, to achieve the research goal which is to build a substantive theory about the space used by the children to play, the right method to be applied is the Grounded Theory. The number of informants in this research is not a major thing, but the information obtained from several informants that dug up deeply and repeatedly (within a certain time period) will become more important, until the information obtained is saturated (no new information obtained) [11].
3. Deconstruction The Idea of Play
Plato and Aristotle interpreted the concept of playing as an activity that has practical value and act as a media to improve certain skills and abilities in children. The term practice is defined as doing, active, that have meaning as part of a work, even lead to physical work. Attempts to explain the concept of playing continues to grow, Herbert Spencer, describes it as Surplus Energy. Play is the result of surplus energy that exists because the young are freed from the business of self-preservation through the activities of their parents. Karl Groos, describes it as a preparation for adulthood, Maurice Lazaru, a poet, summed up play as recreation that have purpose to restore energy that has been drained while working. While G. Stanley Hall, a psychologist, describes play as recapitulation energy.

Meanwhile, in terms of culture, Johan Huizinga, in his book, Homo Ludens explains the meaning of play with the introduction of two things related namely paidia and agon. Paidia is freedom, enthusiasm, spontaneity, excitement, and passion. While agon, which is the root word of agony, reflects on the presence of contestation and conflict, agon has a meaning of something that is taken more seriously, have rules and aims to find a winner, as is the case in the contest [12]. From several studies above shows that the understanding of the concept of playing is still focused on the things as a laboring physic.

The concept of playing was still a controversial discussion and do not yet have a clear meaning, the problem with play is that we are unclear as to what it is, what it is good for, how it is originated and how it evolve [13]. No behavior has proved more ill-defined, elusive, controversial and even unfashionable than play [14]. Play has such diverse meanings, so the understanding of play tends to rely on fields that use it. Not only that, the dichotomy plays as a verb or a noun is still continues, `perhaps play is best used as an adverb; not as a name of a class of activities, nor as distinguished by the accompanying mood, but to describe how and under what conditions an action is performed” [15].

In the psychology that have many review about playing there is an understanding of play as part of personality development, where in it the individual learns to stimulate the senses, learn to use the muscle, coordinating the views and movements, until finally get a new skill which is done through the material of water, sand, clay used [16]. It is undeniable that the dominant paradigm still favors and considers playing as part of a physical activity that is highly dependent on the play spatial. The understanding of play is more aligned to the things that are laboring physics.

But in contrast to the theories above, the understanding or meaning of play for children are: 1. Intrinsically motivated, 2. Freely chosen, 3. Pleasurable, 4. Non literal, 5. Actively engaged [17]. Play is about having fun, being with friends being outdoors, choosing freely, not working, pretending, enacting fantasy and drama and playing games. Furthermore, we learn that is not about preparing for the future [18]. When referring to the etymology of the word, the English word play, with root playe (Middle English) and plega (Old English) that has meaning to frolic [19]. Frolic itself is interpreted as joyous and cheerfully that means happy, full of joy or events that give rise to joy which is represented as something that is associated with feeling or psychic. In the local language, playing have different writing, in Javanese play is written as dolan that means ngenggar-enggarati, the word ngenggar-enggarati has a meaning njenengkeati (to please), ati means telenging rasa kabatinan ingmanengsya (associated with human soul) [20].

Referring to the understanding of Hughes and Smith and understand the meaning of the world play and dolan, it is clear that play is more related to the things that are psychological than physical. Playing is part of the laboring mind.

4. Research Result
During the research process, there are more than 20 informants involved and the average age is between 6 and 12 years. However, in the advanced process, this study focuses only on 10 informants with the aged between 9 and 12 years. The underlying reasons for this selection to 10 informants are: (1) Have time to do the interview, (2) Able to explain well and in order and (3) Often engage in play. Data collection was conducted through in-depth interviews conducted for more than 1 year by referring to the 25 questions. To see the consistency of the answers, each question will be asked back
at some subsequent period, until the answer from informants thought as sufficient and no new information is obtained. Interview questions are grouped into several sections, namely 1. The perception of play. 2. The perception of the playground. 3. Their attitude towards the playground. In addition to interviews, the data collection process was also carried out by observation. Data obtained from the observation process is in the form of play behavioral observations that could be seen by naked eye, this observation aims to see consistency between the answers or statements from informants with emergent behavior. The analysis process is done through the analysis of coding to any statements made by the children.

4.1. Play Indicators

The main thing done by researcher before doing the research process, is to make sure beforehand that the children who are the subjects of the research conducted in District 02 of Medang Lestari Housing really in the situation to play. From the observations for a year found a few phenomena that appear when children play.

a. Laugh, the expression that often seen when playing is laughing, there are so many trigger of laughter when playing, one of them is when one of the children made a mistake or something happened out of the habit. “…when playing sometimes we laugh…happy…” (Reza, boy, 12 years old). A theory reveals that laughter acts as a sign of play [15].

![Figure 1](image1.jpg)

**Figure 1.** Some children are seen laughing when they played

b. Repeatedly, the phenomenon that also usually seen at the time of play is these activities often carried out repeatedly, especially in the use of play spatial. This repetitive behavior seems to arise because the children feel something fun on the playing space they use, so the space is considered as something that can provide a pleasant experience next time, which is why children tend to come and use the same play location repeatedly. This is similar to a theory which states, something fun potential to be repeated [21].

![Figure 2](image2.jpg)

**Figure 2.** Children use it repeatedly
4.2. Reason to Play
From a number of interviews conducted, it is implied that the majority of informants have experience negative emotions such as boredom and loneliness in their daily lives so that their main reason to play are to "... refreshing otak (refreshing the brain) ..." (Fadil, boy, 10 years old) or "...nyegerin pikiran (refreshing mind) (Reza, boy, 12 years old). Some of the factors that cause the negative emotions are the factor of limited resources to play at home, the demands of parents in household chores, solid daily routine every day and peers invitation that perceived as demands that must be fulfilled in order to be accepted by the peer group.

| Children Words | Factors | Emotions |
|----------------|---------|----------|
| "...bored at home...there is no game...just watching television..." (... di rumah bosan... nggakadapermainan... paling Cumanonton TV...) | Technical | Bored |
| "...is not good to be at home...being ordered to do errands...bored..." (...kalau di rumah nggakenak...,disuruh-suruh...bosan...) | Family | Bored |
| "...bored...home alone..." (...bosan, di rumahsendiri...) | Technical | Loneliness |
| "...the playstation has broken..." (... PS nyasudahrusak...) | Social | Bored |
| "...want to play with friend..." (...bermainsamateeman ...) | Technical | Bored |
| "...the internet at home is slow..." (...internet di rumahlemah...) | |

From some of these informants also obtained information about the emergence of a change in the feelings they felt after playing which is the emergence of pleasure feeling, "... habis main itu seger..., senang..." (... it feels fresh..., happy..., after playing") (Fadil, boy, 10 years), "...setelah main itu enak..." ("...it feels good after playing ...") (Reza, boy, 10 years). Simple expression conveyed by some informants implies that the play is not merely about something physical, but rather the things that are in mind, but for children to play is something that is capable of causing pleasure to them (fun).

4.3. Spatial Manifestation
When referring to the etymology of the word play which is an attempt to achieve joy or refer to the play indicators namely laugh and recurrent, and refers to the reason of play expressed by children to refresh the mind, it is clear that there is no relationship between the sense of excitement generated during and after play with the play spatial. The phenomenon of play in children showed that for children playing activities can be done anywhere and anytime.

However, not without reason when children are present and play in the street, sidewalk, drainage or other spatial. There is spatial manifestation that causing them to attend and play in that spatial. From the result of observation and interviews, matters related to spatial metaphysical even more be the main reason for children to use the spatial as play spatial compared to physical reason as it dominant paradigm approach that often visualize play spatial to be very scalable, standardized and highly quantitative, whose presence is recognized by attributes: size, shape, color, location.
Spatial: Freedom

Based on observations in the research area, it was found that there are factors that exist in spatial and environment that encourages children to limit their presence to use the spatial as play spatial. From the interviews, it appears that for children the limiting obstacles can be (1) spatial (physical), in the form of a rough surface that often causes them to get injured during the play (2) social, in the form of competition between age (3) rules, can be standard rules which was implemented by the local government and (4) environment, can be trees, electric wires, parked vehicles, etc.

Table 2. Children reason to play

| Children Words                                                                 | Coding                  | Attitude and Responses to Spatial | Keyword                        | Factor                     |
|--------------------------------------------------------------------------------|-------------------------|-----------------------------------|--------------------------------|---------------------------|
| "...The field is a bit uneven, if fall makes bleed..."                         | Spatial Obstacles       |                                   |                                |                           |
| "...The field near the gutter, if the ball is kicked for away it is likely to..."| Spatial Obstacles       |                                   |                                |                           |
| "...Fear to hit the glass, hit the lamp... The lamp is rather short... (badminton field lamp)" | Spatial Environment Obstacles | Avoid and reduce also switch to other spatial | Spatial that does not have the physical and non-physical boundaries | Freedom                   |
| "...Whenever in the field is not really good, likely being ordered..."         | Social Environment Obstacles |                                |                                |                           |
| "...Ordered to buy cigarettes, drinks, food in the shop..."                   | Social Environment Obstacles |                                |                                |                           |
| "...If does not want likely to be forced, bullied... lowered the pants, the clothes get hung" | Social Environment Obstacles |                                |                                |                           |

When referring to that table, it can be seen that the play spatial that have been provided by the local government, either in the form of field or playground tend to have more factors that perceived by children as a matter limiting their play activities, in other words the spatial does not give freedom for children to use it. It is inversely proportional to the unplanned spatial as play spatial, such as roads, sidewalks, drainage or rice fields. Those spatial give freedom for children to use it. While from the results of the interview is seen that for children the element of freedom in the spatial have stronger attraction to encourage children to be present in that spatial to conduct their activities, especially to play. Thus, this feeling of freedom becomes one of the triggers for the presence of children playing in the street, sidewalk, drainage or other spatial.

Spatial: Excitement and Surprise

In addition to the factors mentioned above, informants in this research even have their own argument when they decided to use the unplanned play spatial (accidental playground), for children the available play spatial (planned and semi-planned) no longer has an interesting challenge. They did not find new things that appealing from the spatial; everything seemed familiar so it becomes less attractive to be selected as their play spatial. "... If children feel the playground does not meet their interest then they will go somewhere else to find the 'excitement as well as other challenges and often they find it in delinquent activities and anti-social..." [22]. Meanwhile unplanned playground, children feel something different, the spatial able to bring new challenges, both derived from the spatial itself or from non-spatial.
Table 3. Spatial manifestation regarding to excitement

| Children Words                                                                 | Coding          | Attitude and Responses to Spatial | Keyword | Factor     |
|--------------------------------------------------------------------------------|-----------------|-----------------------------------|---------|------------|
| "...near rice fields... playing soccer on the mud... exciting... if fall does not hurt" | Executive Spatial Stimuli | Enjoy and tend to repeat doing it in the same spatial | The spatial able to satisfy the curiosity | Excitement |
| "...when Friday usually fishing in tendril tree, many fish... really exciting..." | Executive Spatial Stimuli |                                   |         |            |
| "...Inside park is fun... can hide... there are many cars... so can hide..."    | Executive Spatial Stimuli |                                   |         |            |
| "...very exciting... can hide without being discovered"                         | Executive Spatial Stimuli |                                   |         |            |
| "...In front of house play soccer with Danor, Audi, Deka, Devi and Deka..."   | Executive Spatial Stimuli |                                   |         |            |

These challenges become spatial stimuli that can arouse the curiosity of children that encourages them to be present at the place with the motivation to answer the children curiosity.

Table 4. Spatial Manifestation regarding to Surprise

| Children Words                                                                 | Coding                                                                 | Attitude and Responses to Spatial | Keyword | Factor     |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------|---------|------------|
| "...near rice fields... playing soccer on the mud... exciting... if fall does not hurt" | Spatial stimulus are always changing (the changing surface because of rain) |                                   |         |            |
| "...when Friday usually fishing in tendril tree, many fish... really exciting..." | Spatial environment stimuli are always changing (water movement and fish earned) |                                   |         |            |
| "...Inside park is fun... can hide... there are many cars... so can hide..."    | Executive spatial stimuli (car position that frequently moved)          |                                   |         |            |
| "...very exciting... can hide without being discovered"                         | Executive spatial stimuli (car position that frequently moved)          |                                   |         |            |
| "...In front of house play soccer with Danor, Audi, Deka, Devi and Deka..."   | Executive spatial stimuli (passing car, player strategy when avoid moving car) |                                   |         |            |

In other words the excitement and surprise factor that appears on spatial when children play can be a trigger for their presence in the spatial. Different from dimension, distance and surface conditions, excitement is based on psychological factors. Etymologically the word excited has the meaning very happy and enthusiastic because something good is going to happen. Research in the field proves that there are some things that cause children to feel excitement when playing in the spatial namely the
change in color of the water in the waterways or change of the type of fish, the movement of the ball as it avoid the vehicle when they are playing soccer in the street, discoloration, water movement and small fish in the waterways. Those excitements are present because of the changes that occur during the play, and the change evokes emotions (verb: stimulate or give rise to a reaction or emotion).

5. Conclusion
Metaphysical thinking is a theory about things outside of the physical or the existence (reality) presents not as physical. Descartes [23] states that generally, the understanding of space is divided into two, namely: objective materialistic and spiritualistic subjective. Objective materialistic is a space that is considered as something that contains palpable reality and this understanding ultimately deliver architecture to be more on the things that are physical and measurable. Meanwhile, spiritualistic subjective is where space presents in human perception.

In relation to the play, where the understanding of play is more often interpreted as laboring mind that aims to achieve joy becomes a new dimension in understanding the spatial formed, the presence of children in an unusual space, such as street, sidewalk and drainage, making it a play space as 'the new form', which exists out of what is more believed by the world of architecture. The play space in the previous paradigm see the space in physical approach and highly quantitative, so that the presence of children in a space is more because of the shape, dimension, color and location of the space. Therefore, this research found a rival paradigm that see a play space with qualitative-based metaphysical approach, where the child's choice present in a space to play more because of factors related to 'mind' such as a feeling of freedom, excitement and surprise who manifested by the space.

References
[1] B. Fjeldsted, "Standard Versus 'Adventure' Playground," Journal of the Canadian Association for Young Children, 1978.
[2] T. Y. Harjoko, "Fenomena bentuk dan wujud arsitektural," NALARs, vol. 10, no. 2, pp. 131-154, 2011.
[3] D. Campo, The accidental playground :Brooklyn waterfront narratives of the undesigned and unplanned, New York: Fordham University Press, 2013.
[4] H. Patilima, "Persepsi anak mengenai lingkungan kota," Dept. Kajian Pengembangan Perkotaan UI, Jakarta, 2004.
[5] N. Zara, "Akomodasi kebutuhan ruang anak pada perumahan formal," Jurusan Arsitektur UI, Depok, 2002.
[6] J. B. Saragih, "Kehidupan anak di Perumnas Tangerang dan hubungannya dengan pilihan tempat bermain," Dept. Kajian Pengembangan Perkotaan UI, Jakarta, 2005.
[7] R. Wheway and A. Millward, "Child's Play: Facilitating play on housing estates," Chartered Institute of Housing, London, 1997.
[8] J. Laurens, Arsitektur dan perilaku manusia, Jakarta: Grasindo, 2005.
[9] N. Owen, E. Leslie, J. Salmon and M. Fotheringham, "Environmental Determinants of Physical Activity and Sedentary Behavior," Exercise and Sport Sciences Reviews, 2000.
[10] N. F. Aziz and I. Said, "The trends and influential factors of children's use of outdoor environments: A review," Asian Journal of Environment Behavior Studies, pp. 2-5, 2011.
[11] J. W. Cresswel, Qualitative inquiry and research design: choosing among five approaches, California: Sage Publication, 2002.
[12] R. Caillois, The definition of play and the clasification of games, Massachutes: The MIT Press, 2006.
[13] M. Burghardt, The Genesis of Animal Play: Testing the limit, Cambridge: MIT Press, 2005.
[14] E. Wilson, Sociobiology: The new synthesis, Cambridge: Harvard University Press, 175.
[15] S. Millar, The psychology of play, London: Penguin Books, Ltd, 1977.
[16] E. B. Hurlock, Child Growth and Development, New York: Mc Graw Hill, 1978.
[17] F. P. Hughes, Play and development, California: Sage Publications, 2010.
[18] B. S. Smith, The ambiguity of play, Cambridge: Harvard University Press, 2001.
[19] E. Patridge, Origins: A short etymological dictionary of modern English, London: Routledge, 1966.
[20] W. Purwadarminta, Baoesastra djawa, Batavia: Mattrschappij Groningen, 1939.
[21] S. Freud, Beyond the pleasure principle, London: Penguin Classic, 2003.
[22] R. Djuwita and C. Feriyanto, "Perbandingan pola bermain anak di rumah susun dan rumah datar," Jurusan Arsitektur UI, Depok, 1987.
[23] D. Damajani, "Gejala ruang ketiga (third space) di kota Bandung: Paradoks dalam ruang publik urban kontemporer," Jurusan Arsitektur ITB, Bandung, 2008.