Threshold and its performance in urban settlement

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ABSTRACT

This study aims to investigate several elements as a form of threshold in the urban settlement. Threshold has the function of connectedness and separation, which is an integral part of spatial practice in urban settlements. That is how humans have the freedom to regulate their activities and space by using the threshold as connector or separator. In particular, this paper describes the elements function as a threshold for different conditions to connect and separate human roles and activities. The extent to which activities occur in a particular space and time in urban settlements is the key to determining the shape of the threshold. This paper presents an overview of the forms and performance of threshold that exist in urban settlements based on everyday practices. It not only discusses the function of elements as a threshold but also reveals the relationship between in-out of the everyday practice in urban settlements. The presence of thresholds in urban settlements is not only limited to physical elements. In this paper, we argue that the threshold element can produce a different performance due to the interacting activities between space and time. So that the understanding that connecting and separating cannot be seen as something fixed, but depends on other aspects that occur in everyday practice. This paper provides another understanding of the performance of thresholds in urban settlements, and this can be carried out in the development of a dynamic and transformative urban spatial design.

1. Introduction

Thresholds can be understood as an element which has a function of connection and separation [1]. Meanwhile, Boettger [2] argues that thresholds are the basic structural elements that allow us to pass and close. In architecture, thresholds have an essential role in understanding space because the existence of a threshold determines the relationship between spaces [3]. Boettger [2] argues that thresholds interrupt boundaries for the transition from one space to another.

The existence of a threshold as a basic element can be physical and non-physical [2]. The function of the threshold is the spatial configuration of the activity of entering, outing and as a boundary [3]. On the other hand, Popov & Ellison [4] argue that boundaries can change according to the activities that occur. It is flexible, can be redefined and renegotiated [5]–[7]. Hence, examining the threshold is not only from elements that are physical but also from how the presence of these objects can provide another understanding of the threshold perception.

In urban settlements, thresholds can be created not only in physical form, but various activities that exist in them will create transformative thresholds. Thresholds in urban settlements are closely related to the understanding of public and private spaces with different levels of publicity and privacy [8]. Meanwhile, in his writing, Barnstone [9] argues that thresholds can provide different spatial

experiences between individuals. Hence the threshold in urban settlements can be understood through various physical and non-physical forms.

This paper aims to explore how humans have the freedom to regulate their activities and space by using a threshold as a connector or a separator. Threshold marks change, shows a comparison, regulates and gives meaning to the act of crossing as an action that produces change [10]. In particular, this paper describes the function of elements threshold in urban settlements as thresholds in different conditions to connect and separate human roles and activities. The extent to which activities occur in a particular space and time in the urban settlements is the key to determining the performance of the threshold.

The performance of the threshold is the main discussion in this paper, by exploring the performance of the threshold in urban settlements to provide new insights regarding the connectedness of space in urban settlements, especially in Indonesia which has a unique everyday practice. We argue that by examining the performance of the threshold will provide a different understanding of the connectivity in urban settlements. Not only based on the physical elements, but also the activities that occur in it play a role in forming thresholds [5]–[7], [11].

The discussion in this paper consists of three parts; the first part is about the form of threshold in urban settlements, the second is the threshold performance in urban settlements, and the third is another perspektif of the threshold. Social activities in densely populated settlements such as exchanging greetings between the residents of the traversed houses and pedestrians create a feeling of kinship and build a friendship that is suitable with local Indonesian characteristics. Hence, making the urban settlement as intimate and warm, very different from the perspective of formal urban structures such as in the modern urban design approach. So that the understanding of the threshold becomes an opportunity to be explored further, where several settlements like this can be found in Indonesia, one of which is in Semarang, Central Java

2. Method

2.1. Threshold elements in urban settlement

Threshold is particularly interesting because it defines separateness and at the same time also suggests connectedness [12]. Some of the threshold elements in urban space include doors, stairs, or transitions that function as a marker for differences in space or connecting inside with an outside [3]. Meanwhile, in his writings, Simmel [1] exemplifies that a bridge is a form of an element that can connect two separate riverbanks while building a house with walls and doors is a form of separation from the natural unity of nature.

Popov & Ellison [4] argues that boundaries can shift according to the needs of space users, can be formed and disappear by adjusting to the user's needs. On the other hand, Smith [11]states that the body is a boundary-maker so that the boundary depends on the movements made by the bodies [6]. Including when the boundary will be penetrated, breached, and crossed. Meanwhile, the discussion about boundaries in urban areas is growing, so that the threshold requires further examination. The boundaries in urban space can be in the form of closed spaces and open spaces [13]. Meanwhile, [5] argues that the concept of boundaries in urban space can vary; it cannot be fixedly defined, depending on the context.

In the urban settlements, many are forced to live in narrow and limited land. So what often happens is the expansion of activities both from outside to inside and vice-versa [14]. The expansion of activity has led to a change in perspective on boundaries; in his writing, Attiwill [5] argues that boundaries do not have to be fixed elements. However, shadows and chalk strokes can create boundaries that can be changed at any time. Meanwhile, boundaries are also being understood by our perception of a place [15]. Hence, this certainly raises a threshold form that is not only limited to physical, such as doors, windows, walls, bridges, stairs and others.

This paper discusses the threshold in the context of urban settlement in Indonesia, where density makes the environment more intimate and the tendency to share space is high. Besides, social life in Indonesia has a peculiarity, namely a collective culture, where certain individual spaces are shared by others in their environment and converted into public spaces [14]. One of them is in the Bulustalan urban settlement in Semarang, where the density creates a high level of interaction and a collective

culture. In urban settlements at Bulustalan Semarang, there are three forms of doors connectedness as threshold elements with other elements as can be seen in Figure 1 This results in a blurred threshold. So that the urban settlements in Bulustalan Semarang become relevant to be selected as further case studies.

Fig. 1. Threshold Element in Bulustalan Urban Settlement

In urban settlements as above, it shows that the threshold can not only be seen through the physical element, but how the performance appears from the physical element of the threshold in certain conditions. The previous approach was that the threshold element is understood as a separate and connection [1], but with the conditions of typical urban settlements in Indonesia, it is necessary to trace the relationship between the threshold elements and the performance that occurs due to this connection, to produce an understanding of when the threshold conditions can be. seen as a link and a separator. Besides that, how is the relationship between activity, space and time on the performance threshold.

2.2. Physical aspect of threshold and its performance

Several physical threshold elements in urban settlements can be identified when the body enters or moves from one space to another. Every element has its own performance as a connector or separator [3]. The first one is the door which can be understood as a separator or connector between interior and exterior. The existence of a door as a threshold has more meaning because the door shows a complete difference in intention between in-out [1] so that the presence of the door causes a clear flow of connection and separation.

The focus of the study in Kampung Kota Bulustalan Semarang is based on the consideration that the existence of a threshold in the residential space has a distinctive character. Especially at the performance threshold in dense residential environments. Various forms of threshold relationships exist through spatial positions and practices. The diversity of forms of connectedness can be seen through position, flow, and daily practices.

The observation technique used to reveal the performance threshold in urban space is drawing and photography techniques. The documentation process through redrawing is carried out to show how the performance of various thresholds. Other data collection is carried out by interviewing the residential space users; this is intended to understand the perceptions and understanding of the users towards the threshold. All data were constructed and analyzed to obtain preliminary research findings.

The second one is the window, another threshold element which has different performance from the door. The basic role of the window is as a separator between inside and outside, it commonly used to see something outside [1]. However, its existence can also be understood as a connector when there is an activity that involves two places. Window elements can blur the threshold between inside and outside where the environment becomes part of the inside building [16]–[18].

The fence as the third threshold element can be seen as a form of territory marking, where homeowners build a fence to mark their territorial power. Serves as a separating element from something broad in nature, and forms securitization of something that is considered from outside its territory. The fourth one, a terrace can be understood as a threshold element in a city settlement, which functions as a separator or connector, and also can be understood as a transitional space between the interior and exterior. where displacement occurs [2]. The presence of passageway as the fifth element in urban settlements serves as a form of connection between spaces in urban settlements. The passageway can be understood as a threshold element because it has a function as a connector. There is no difference in the meaning in which direction a person crosses it because it functions as a link between spaces, similar to the bridge in Simmel's [1] writing.

This study discusses how the performance threshold in urban settlements is based on its elements and activities that occur everyday. The analysis was carried out based on observations of everyday practice related to the threshold function in urban settlements in Bulustalan Semarang - Central Java. This paper will explain the function of physical elements as thresholds in different conditions for connecting and separating human space and activities. Exploring everyday activity related to the performance of these elements to reveal the relationship between the in-out in everyday practice in the urban village settlements. To see the performance that occurs at the threshold, we focus on the relationship between space and activities that occur, not just examining the physical elements.

Our findings on the Bulustalan urban settlement in Semarang indicate that there are several forms of threshold that are influenced by different physical elements. Of the five physical threshold elements mentioned above, there are 11 forms of connection between these threshold elements. Namely: Door-Door, Door-Wall, Door-Window, Window-Window, Fence-Wall, Fence-Fence, Terrace-Terrace, Terrace-Door, Terrace-Fence, Passageways. The relationship between the physical elements of this threshold will specifically reveal the possibility of a performance threshold that appears in everyday activities.

2.3. Conditions in understanding threshold's performance

The five types of threshold elements mentioned above, namely: doors, windows, terraces, fences and passageways (Figure 2) have a function as separator and connector. The performance from these five elements can change according to the conditions taking place—the occurring conditions when the threshold element changes will result in a different performance.

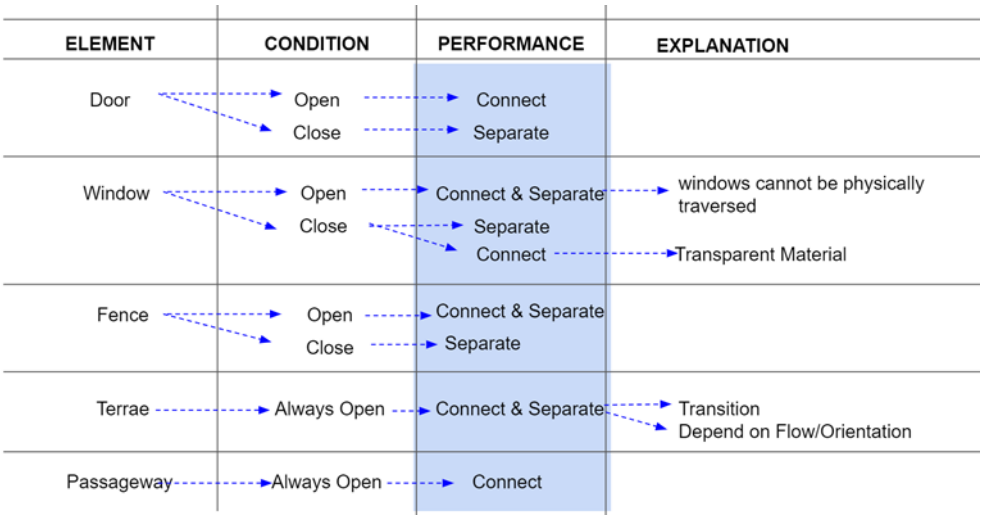

Fig. 2. The relationship between the threshold element and its performance

The performance that arises when the door opens is a connector, while if it is closed, it acts as a separator. Meanwhile, it is different for the window. When it is opened, it can become a link between inside and outside. However, it is also a separator for inside and outside. The connection is within the window frame, while the rest remains separate and can not be physically traversed. It will be different also in a closed condition when the window has transparent material, by this condition, the window has a connecting performance.

The performance of a fence element as a separator that limits the territory depends on the condition of the fence when it's opened and closed. When opened, it will provide a connecting performance, although there are still physical elements that provide a separating performance between territory. However, if the fence is closed, the performance that emerges is separating. Meanwhile, the condition of the terrace which is always open does have different performance, because it is a transitional space then it will always have the performance of separating and connecting, depending on the flow or orientation that occurs at that time. The threshold element in other urban settlements is a passageway, in its always open condition, so that its performance is connecting. The existence of this passageway is due to the purpose of uniting the two territories. Similar to the presence of a bridge in Simmel's writing.

Hence the different conditions that occur at the threshold element will affect the performance of the threshold. Several conditions create differences in performance threshold, including the material on the windows, the flow on the terrace and the condition of the windows. So that the performance threshold is not always understood as a connector or separator. It can be both or only one of them depending on the conditions. Meanwhile, when examining conditions that exist at the threshold in settlement of urban areas, will be explained further below.

3. Results and Discussion

The function of the threshold is understood as connectedness and separation [1]. However, there are different perceptions regarding when there is connection and when there is separation. The relationship between the occurring activity and the physical element of the threshold in a particular space and time has a role in the threshold function. Besides, the connection will create different performance. Boettger [2] argues that the original meaning of a threshold has been expanded in an architectural context. The term no longer simply refers to the physical journey of the entire body from one space to another. The possibility of combining space with technical equipment has created a new threshold. The connection between physical threshold elements in urban settlements will be further revealed.

3.1. Door

The door here will be discussed in an open state because if the door is closed, the door functions as a separator. As stated by Boettger [2], if a boundary is closed, those will be present are the outside and the inside. In contrast to the existence of an open door, because it can function as a separator or connector [1]. Because being at the threshold offers an ambiguous spatial experience [12].

Open doors facing each other can be understood as a form of connection between spaces, where one space and another can interact with each other and can be seen as a whole. In the first picture Figure 3 (a), there are different activities between the two houses, with the opening of the door and the interaction of residents at the same time it will cause the performance threshold to be continuous, not just separating and connecting. Also, the boundaries are blurred, no longer seen through an element. It can even be continuous with other activities that exist between the open doors.

In the second image Figure 3 (b), there are different threshold elements, namely doors and walls. The wall is a passive threshold element because it can be understood as a separator, not as a connector [9]. When there are no activities that occur in the same space and time, the door functions as a transition between interior and exterior [1], meanwhile, if there is an activity, both interior and exterior, there will be a connectedness performance between the two spaces. If two activities occur and are at the same time and interact, the performance that is created is connectedness, where the relationship takes place back and forth and continuously.

The third image Figure 3 (c) shows a different threshold element but has almost the same function, namely doors and windows. Doors and windows act as elements that can be conditioned to blur the boundaries between interior and exterior [16], [17]. Similar to the first picture, the existence of different activities between the two houses, with the door open and the resident interact at the same time interacting will cause a performance threshold to be connected, and the connection takes place back and forth and continuously. The difference is if the door is closed and the window is open, or vice versa, the performance that occurs is a connectedness to the inside-out flow and outside-in where only one connects, and the other separates from the exterior.

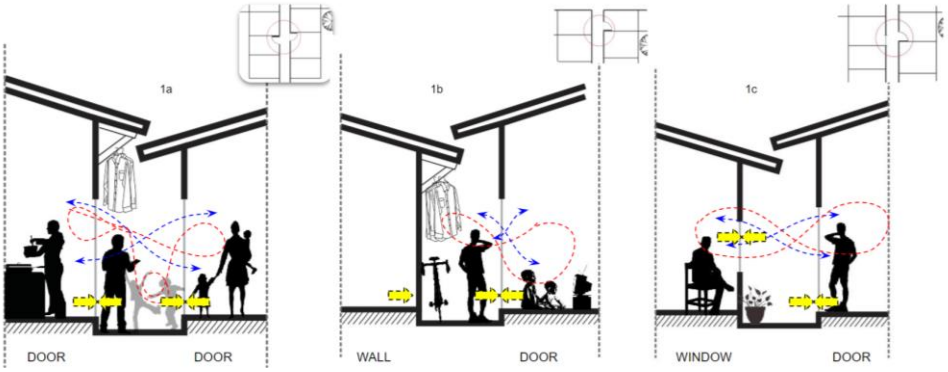

Fig. 3. Door performance

3.2. Window

There are two types of the connectedness of windows as threshold elements with other elements in the Bulustalan urban settlement, namely windows with walls and windows with windows as shown in Figure 4. In the first image (4a) there are different threshold elements, namely windows and walls, as previously explained that the wall is a passive threshold element because it can be understood as a separator, not as a connector [9]. When there is no activity occurring in the same space and time, the window functions as a transition between interior and exterior [1], meanwhile, if there is an activity, both at the interior and exterior, there will be a connectedness performance between the two spaces. If two activities occur and are at the same time, the performance that is created is connectedness taking place back and forth and continuously. In the second image (4b) there can be seen the threshold elements, namely windows and windows, when both are open, a connectedness will be established between spaces, where one space and another can interact with each other and can be seen as a unity. Even though it is limited and not as broad as the door, the performance threshold that is created is the same, namely separating or connecting. It can even be done continuously with other activities that are between the open doors.

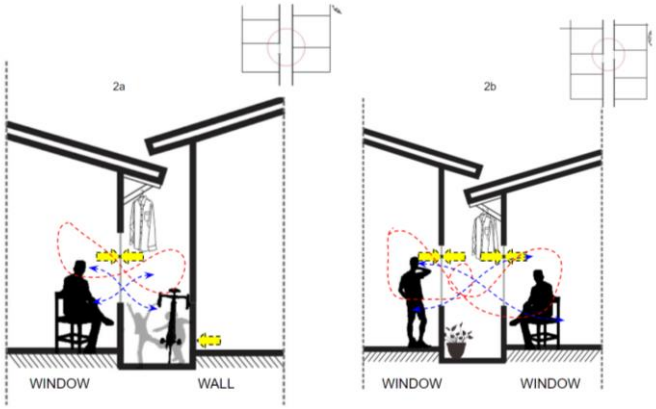

Fig. 4. Window performance

3.3. Terrace

The threshold element found in Bulustalan city settlements is the fence, which has two forms, namely fence with fence and fence with the wall as shown in Figure 5.

There are three forms of connection of the terrace as a threshold element with other elements found in urban settlements at Bulustalan Semarang. The terrace is a threshold element that can be understood as a transitional space where displacement occurs [2]. In the first figure (5a), it can be seen that there are different activities between the two houses, with the opening of the door and the interaction of residents at the same time, it will cause the threshold performance to become connecting. On the other hand, the terrace is present as a transitional space between interior and exterior, so that there are three layers of connectedness when the terrace appears as a threshold element with the transition performance.

The second figure (5b) shows the existence of two relationships between interior and exterior, which can be understood as separation and connectedness. The interaction of residents at the same time will cause the performance threshold to be connecting. There are even four layers of connection when the terrace appears as a threshold element with transition performance. Meanwhile, in the third figure (5c), it can be seen that there are two layers of connectedness that appear when the terrace as a threshold element with performance as a transition present. Continuity can only be seen from the interior to the exterior through the transition, namely the terrace. However, the role of the fence as a threshold is understood as a separator. It can not connect the activities that occur between two spaces so that the fence as a form of threshold has a separating performance.

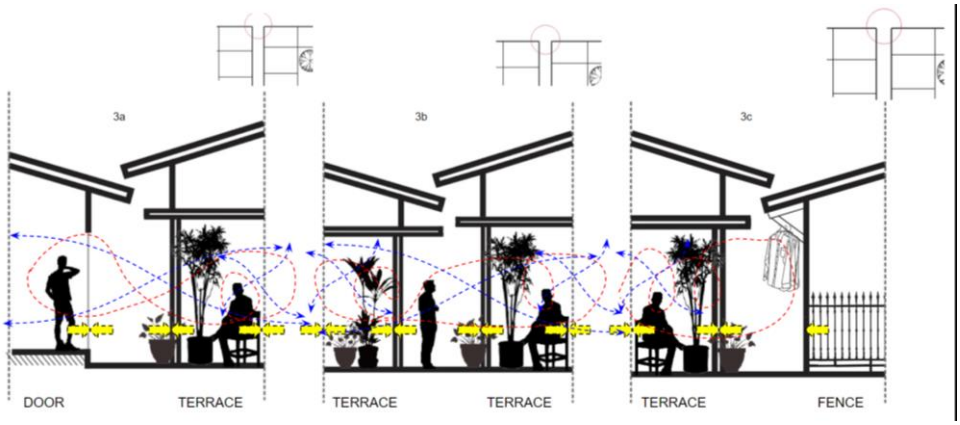

Fig. 5. Terrace performance

3.4. Fence

From the previous discussion, it can be seen that these two elements have similarities, where the wall is passive, while the fence is passive when closed, but when it is open, it can connect. In this paper, the fence is examined as a closed threshold element, so that it can be understood that fences and walls have the same performance. It is a separating element from something broad in nature (Figure 6).

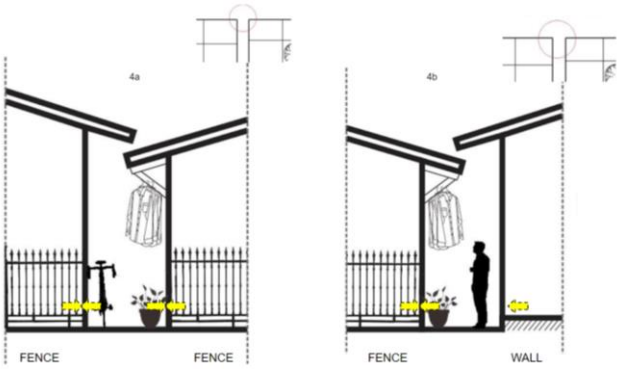

Fig. 6. Fence performance

3.5. Passageway

The following form of the threshold element found in urban settlements is a passageway. The existence of a passageway is a form of agreement that occurs in urban settlements, to connect one place to another. It is one of the peculiarities of urban settlements in Indonesia. The performance of this threshold element is connecting, does not separate, similar to the bridge described by Simmel (1994), that its presence is because it wants to connect two landmasses separated by rivers. The passageway is there to connect between spaces/places.

Hence when the threshold element is dealing with other elements will result in different functions, not just different connectivity and separation, but also the presence of human activities in space and time will cause different forms of performance as well.

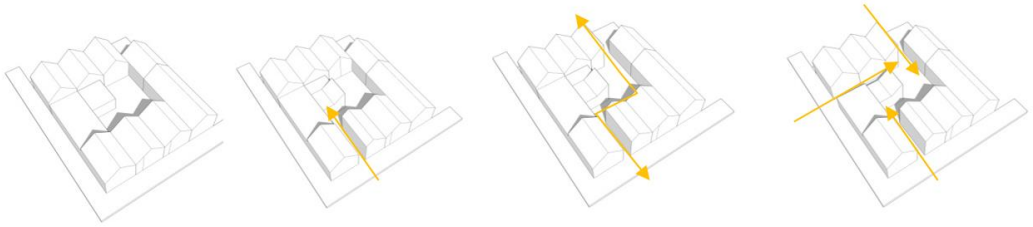

Fig. 7. Passageway performance

4. Conclusion

The performance that arises from the threshold element can change according to the conditions that occur in a particular space and time. Open and closed conditions influence the performance that arises from the threshold. However, different conditions also have a role in the emergence of the performance of these threshold elements where the material selection at the threshold element influences the form of performance that appears, in this case, especially on windows. Because the presence of the choice of window shape and material can affect the purpose of its presence, especially concerning boundaries, besides, flow can also play a role in the form of performance that emerges from the threshold element, especially on the terrace. The understanding of the threshold as a separating and connecting element can be expanded by understanding the conditions in which it becomes connected and when it becomes separated by seeing the conditions that occur.

On the other hand, the presence of a threshold in urban settlements is not only limited to one element, but also the emergence of a connection between threshold elements. Different connectedness will lead to different performances where the interaction between activities that occur in space and time has a role in the formation of the performance of the threshold. Stavrides [10] argues that this connection is the porosity of the threshold in the urban environment due to human activities. Threshold elements that are connected under certain conditions can become porosity that occurs due to human activities in space and time at the same time.

The phenomenon that occurs in urban settlements shows that continuity occurs when a form of threshold has more than one performance at the same time with the interaction between spaces that are being at boundaries by the threshold. Hence shows that the performance threshold is not only categorized into two things, namely a separator or a connector as expressed by [1]. One form of threshold that has double performance, both separating and connecting, has an essential role in creating continuity between spaces.

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Declarations

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