

The Behavior – Milieu Synomorphy of Communal Space in Desa Adat Tenganan Pegringsingan Bali Indonesia

Wanita Subadra Abioso, Sugeng Triyadi

Department of Architecture, School of Architecture, Planning and Policy Development, Bandung Institute of Technology, Bandung, Indonesia

Email address:

itaabioso@unikom.ac.id (W. S. Abioso), sugeng_triyadi@yahoo.com (S. Triyadi)

To cite this article:

Wanita Subadra Abioso, Sugeng Triyadi. The Behavior – Milieu Synomorphy of Communal Space in Desa Adat Tenganan Pegringsingan Bali Indonesia. *International Journal of Architecture, Arts and Applications*. Vol. 3, No. 2, 2017, pp. 11-20.

doi: 10.11648/j.ijaaa.20170302.11

Received: February 22, 2017; **Accepted:** March 4, 2017; **Published:** March 24, 2017

Abstract: Since hundreds of years ago, people of vernacular traditional *Desa* (Village) *Adat* (Custom) Tenganan Pegringsingan in Bali Indonesia, perform ritual activities throughout the year besides their non-ritual daily activities, in *desa* communal space. The activities mostly ritual, have been performed as manifestation of *desa* people life philosophy called “the cycle of life”, and based on their principles of mutual cooperation and togetherness called “*sangkep*”. It is not only the activities, but configuration and the lay out of buildings on communal space of *desa*, considered as persistent as well. In the context of spatial-behavior study, constellation between the activities, *desa* people, and the use of spaces, shown as a group of many standing pattern of behaviors-physical milieux, in other words circumjacent of physical milieu to standing pattern of behavior and vice versa occur, determine the behavior setting. It is known that the objective of cultural structure can be achieved, when interdependency between standing pattern of behavior with the physical milieu in a setting behavior occurs, called synomorph. The constellation indicates also correlation between behavior-milieu with *sangkep*, mostly with physical milieu in particular. This possibility comes up since most of buildings, other than housing compound residential units, were designed without or with half full building envelopes then a large amount of continuous space being formed by process of permeation of outdoor spaces into interior space of buildings. Based on those facts this paper is intended to discover the behavior-milieu synomorphy of traditional vernacular village Tenganan Pegringsingan behavior setting. Qualitative research as a source of universal method applied for assessment of whole objects, while descriptive analytical method applied for structuring in order to perform primary and secondary data concerning activities, *desa* people, and use of spaces. The spatial-behavior theory applied to assess *desa* communal space, in order to see the effectiveness of behavior-milieu of the communal space through the synomorphy of them. The results can give a new perspective of behavior-milieu synomorphy of different behavior setting, for all this time it has always been in the non-vernacular traditional perspective. Besides to reveal its correlation with *sangkep*, then the possibilities of evolving the behavior-milieu synomorphy of behavior setting with the more dynamic or endurable physical milieu.

Keywords: Behavior-Milieu, Communal Space, Sangkep, Synomorphy, Tenganan Pegringsingan

1. Introduction

Spatial-behavior studies, particularly standing pattern of behavior-physical milieu synomorphy of behavior setting, all this time has been applied in the non-traditional vernacular one. According to Rapoport theory, *Desa* (Village) *Adat* (Custom) Tenganan Pegringsingan in Bali Indonesia, including in folk tradition, vernacular architecture, and has vernacular-traditional character [2]. Since hundreds of years ago, people of

vernacular-traditional village Tenganan Pegringsingan in Bali Indonesia, perform ritual activities throughout the year besides their non-ritual daily activities, in *desa* communal space.

The activities mostly ritual, have been performed as manifestation of *desa* people life philosophy called “the cycle of life”, and based on their principles of mutual cooperation and togetherness called “*sangkep*”. It is not only the activities, but configuration and lay out of buildings on communal space of *desa*, considered as persistent as well. In

one side, the constellation between the activities, *desa* people, and the use of spaces, shown as a group of many standing pattern of behaviors–physical milieu, in other words circumjacent of all physical milieu to their respective standing pattern of behaviors and vice versa occur, then determined the behavior settings that consist of some standing pattern of behaviors. In the other side, the objective of cultural structure can be achieved when interdependency occurs between standing pattern of behavior with the physical milieu in a setting behavior [5]. Based on those facts, the behavior–milieu synomorphy of behavior setting considered as one of the best ways to analyze the constellation between the mentioned activities, *desa* people, and the use of spaces.

This study is intended to figure out group of behavior–milieu synomorphies within *desa* communal space behavior setting, in order to see the effectiveness of use of communal space. Furthermore in order to discover correlation between behavior–milieu synomorphies within communal space with principles of *desa* people's life, mutual cooperation and togetherness called *sangkep*.

In the context of architecture, vernacular refers to indigenous architecture that means in space and time does not imitate from another place [7]. Traditional building differed into grand design tradition and folk tradition. Grand design tradition such as monumental buildings, intend to impress group of people who have the patron power, elite group of designers, and artists who have expertise in designing. While folk tradition translates the unself-consciousness which is correlated with needs, value, desires, dream, and people spirit, into physics as cultural representation [2]. Folk tradition itself differed into primitive architecture and vernacular architecture. Furthermore, based on characters vernacular architecture differed into vernacular–traditional architecture and vernacular–modern architecture. In case of *desa* Tenganan Pegringsingan, *desa* considered including in folk tradition architecture, vernacular architecture, and traditional–vernacular architecture.

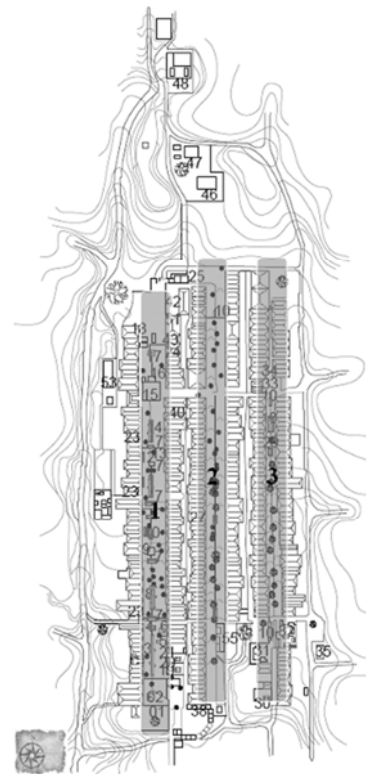
Desa Tenganan Pegringsingan, located \pm 85 km distant from east side of Denpasar, the capital of Bali Province, and \pm 17 km distant from Amlapura the capital of District Karangasem. *Desa* comprised by 3 *banjar* (alignment), that span along *kaja* (north) – *kelod* (selatan) orientation: 1. *Banjar Kauh* (west alignment); 2. *Banjar Tengah* (middle alignment); 3. *Banjar Kangin/ Pande* (East/ skilled person alignment). Each *banjar* contains religious, non–religious buildings, and linier terraced open space *kaja–kelod* (north–south), Figure 1.

Communal space of folk village has been idealized by planners as crescive community design, one of best communal space designs which is exemplified by the folk village. It consists of communal organization at all level, and designed by its habitants and their leaders and not by outsiders [5]. According to Lang criterion communal space of *desa* Tenganan Pegringsingan considered as one of them. In etymology term, communal space regards as a place embrace shared activities of group of people within a region or community. In communal living term, communal is understood as sharing way of life activities, which is carried out by group

of people voluntarily, with conviction that it would be better if they are living together than individually. In the context of community, group is more important than individual interest. In *desa* Tenganan Pegringsingan, ritual activities should be obligately performed based on *awig–awig* (guideline book), while non–ritual activities can be performed voluntarily.

Desa Tenganan Pegringsingan embraces ritual and non–ritual activities, that performed as manifestation of *desa* people's life philosophy known as the cycle of life, which is generated by the law of purity. And also based on mutual cooperation and togetherness principles, called *sangkep*. The cycle of life in action, manifested into 46 rituals consist of the drama of life and death rituals and the growing into society rituals [11], besides non–ritual activities. All rituals held throughout the year by the *desa* people in communal space.

The behavior stated above is short term of standing pattern of behavior of *desa* people, comprehended as a discrete behavior entity with specific spatial–temporal coordinates, and is not characteristic of the particular individuals (Schoggen, 1989). While milieu of physical milieu comprehended as the phenomenon of non behavioral and also referred to as soma (body as distinct from mind) of a behavior setting, such as buildings, roads, or natural features like hills and lakes. As mentioned earlier, synomorphy comprehended as state of interdependency between standing pattern of behavior with physical milieu of behavior setting. In other words physical milieu circumjacent to the behavior that means surrounding behavior. In similar way, physical milieu surrounding standing pattern of behavior and vice versa.



Source: Desa Adat Document, 2013

Figure 1. Layout Desa Adat (Pakraman) Tenganan Pegringsingan Bali Indonesia.

The objectives of this study are to show how behavior–milieu synomorphy in traditional vernacular behavior setting effectively occurs, particularly in *desa* Tenganan Pegringsingan, along with some benefits and support to the principles of *desa* life. The results can give a new perspective of behavior–milieu synomorphy of different behavior setting, for all this time this has always been in the non–vernacular milieu perspective. The constellation of activities, *desa* people, and space used that manifested into behavior–milieu synomorphy with continuous space formed in every single building can enrich. Besides that is to reveal behavior–milieu synomorphy correlation with *sangkep*, and the possibilities to evolve the behavior–milieu synomorphy of behavior setting with more dynamic or endurable physical milieu.

2. Methodology

Qualitative research as a source of universal method applied for assessment of whole objects, while descriptive analytical method applied for structuring in order to perform primary and secondary data in regard with ritual and non–ritual activities, groups of *desa* people carry out the rituals, and use of spaces.

As mentioned in introduction, cultural structure can be achieved when interdependency occurs between standing pattern of behavior and physical milieu of behavior setting, called synomorph [8]. The fact of embracing many activities either ritual or non–ritual, involving many *desa* people, and using many different spaces, *desa* Tenganan Pegringsingan faces quite complicated constellation of the 3 elements. Based on those extents, communal space of *desa* would be best analyzed based on behavior–milieu synomorphy of behavior setting, in order to see the effectiveness of *desa* behavior setting. Furthermore in order to see distinction of the 3 elements within the constellation, since this occurs in vernacular traditional behavior setting *desa* Tenganan Pegringsingan. Physical milieu along with standing pattern of behavior, synomorphy, and a certain period of time perfecting what is meant by behavior setting [5].

3. Discussion and Results

As mentioned in methodology, communal space of *desa* would be best analyzed based on behavior–milieu synomorphy of behavior setting, in order to see the effectiveness of the communal space. Furthermore in order to see distinction of the 3 elements within the constellation, since this occurs in vernacular traditional behavior setting. In fact, *desa* has 46 *usaba* (ritual) activities that have to be performed throughout the 12 *sasih* (month) in a year, among their non–ritual daily activities including preparation of rituals and tourists activities. There are many *desa* people group such as *krama desa* (group of married people); *klian desa/ adat* (top level of *krama desa*); *krama desa muani* (male); *krama desa luh* (female); male and female teenagers, *daha*, a group of young female that has performed a certain ritual to be ready for endogamy marriage; *truna*, a group of

young male that has performed a certain ritual to be ready for endogamy marriage; and ordinary *desa* people, that carry out the ritual and non–ritual activities. And *desa* has very vast outdoor space which surrounds every single building, so that the continuous space created in almost buildings and their respective yards.

Behavior setting theory was developed by Roger Barker and Herbert Wright between the 1940s and 1960s at the Midwest Psychological Field Station, Oskaloosa, Kansas. As small–scale social systems, behavior settings comprised people and physical elements organised to support a routine program of actions within specifiable place–time boundaries. They are an behavior–environment unit which Barker considered to occur naturally, but later Uhrs Fuhrer considered to occur culturally. Behavior settings are understood to have social and cultural properties linked to the intended purposes of the setting, the kind of people using it, and the recurring activities and associated outcomes. The fit between the actions of people and arrangements of physical objects within a setting is called behavior–environment synomorphy [7]. In other words behavior–milieu synomorphy.

Communal space of *desa* Tenganan Pegringsingan as behavior setting consists of some standing pattern of behaviors and physical milieu. A standing pattern of behavior is a discrete behavior entity with specific spatial–temporal coordinates, and is not characteristic of the particular individual [8]. In the context of communal space of *desa*, patterns formed including in sitting position of *krama desa* in several rituals held in Bale Agung (The Biggest Bale in *desa*); sitting position of *krama desa* in a ritual in front of Pura Puseh (Puseh Temple); traditional dancing position of sacred dance *Rejang*, Figure 2., sacred dance *Abwang Peteng*, *Abwang Lemah*, *Abwang Ngis* in Bale Agung (Pura) Yard; traditional battle (mekare–kare) using thorny *Pandan* leaves and shield made of Rattan or *Ata* rod. The battles are called *Mekare–Kare* symbolic in Bale Agung (Pura) and Bale Petemu Kelod, *Mekare–Kare Petemu Kaja*, *Mekare–Kare Petemu Tengah* (*Pengrame*), all of the battle held in front of all *Petemu* buildings, *Kaja*, *Tengah*, and *Kelod*; and in many other smaller rituals.



Source: Author

Figure 3. Bale Agung (Pura) building without envelops and transparent interface.

Physical milieu comprehended as the phenomenon of non behavioral and also referred to soma (body as distinct from mind) of a behavior setting, such as buildings, roads, or natural features like hills and lakes. Most of buildings in *desa* Tenganan Pegriingsingan, other than housing compound residential units, were designed without or with half full building envelopes, Figure 3. So that there are many possibilities to form continuous spaces, in other words permeation of outdoor space into interior space vastly occur [11]. The permeation occur either in visual, aural, or activity way, so that shift and the exchange spaces running smoothly as if the continuous spaces are not unity of separated spaces. Furthermore, enclosure quality of continuous spaces enhanced by sounds of traditional music playing such as *Gamelan* (Set of traditional music) *Slonding*, *Gamelan Gambang*, *Gamelan Ganjur*, *Gamelan Gong*, and private *gamelan* set that cheer the atmosphere either a ritual is being held or not. In similar way natural scents emerge from vegetation, soil, grass, and other natural elements also enhance the enclosure.



Source: Author

Figure 2. Standing Pattern of Behavior; Rejang Sacred Dance, children, teenagers, an *daha*, In front of Bale Agung (Pura).

Table 1. below listing all custom and sacred rituals must be performed in every month throughout a year, and percentage of buildings and its yards in communal space which forming continuous space. Daily activities of *desa* people also carried out in communal space, besides within their housing compound residential units. The spaces are linear terraced open space *kaja-kelod* and buildings i.e. *Bale Kencan*, *Bale Banjar*, and *Bale Wantilan*. The law of purity determines the ritual handling of *desa*, its stages and holy object which are cleansed by means of purification, and kept from bad influences by means of exorcisms. Ritual ability of *krama desa* participating in all performances of their respective groups depends on their purity and being unharmed as well [11]. Both parts of the life cycle, the drama of life and death and the growing into society, has been attained into ritual activities that embrace custom and sacred rituals.

Groups of *desa* people that carry out ritual activities are a group of *krama desa* (married couples) whom trusted by *desa* people to manage *desa* side by side with *dinas* (government organization) people. Only *krama desa* considered in pure condition allowed to perform the drama of life and death

rituals. There are 4 (four) requirements must fulfill by *krama desa* in order to be able to participate in ritual performances, *krama desa* must be: 1. of the right lineage and birth; 2. obey the rules of village endogamy marriage; 3. pure through rituals of purification at birth or in early childhood; 4. and must have crossed several thresholds to the attainment of ritual capability and competence within initiation rites and phases.

Krama desa and other *desa* people of *Banjar Kauh* and *Banjar Tengah* perform the drama of life and death rituals; while female and male children and teenagers including *daha* and *truna* perform the growing into society rituals. *Daha* is a group of young female that has performed a certain ritual to be ready for endogamy marriage, while *truna* is a group of young male that has performed a certain ritual besides have to carry out a kind of school of life called *muran truna*, to be ready for endogamy marriage. The younger married couple on the list consecutively will replace a couple of *krama desa* due to a death of one side of married couple or there are married couple which have their children get married. *Desa* people of Tenganan Pegriingsingan considered as egalitarian society since they do not embrace *kasta* (social stratification) like the rest of Bali Hindu people. However there are still differences between *krama desa* of *Banjar Kauh* and *Banjar Tengah* with *krama desa* of *Banjar Kangin* in regard with participating rituals. People of *Banjar Kangin/ Pande* participate viewer rituals than *krama desa* and people of *Banjar Tengah* and *Kauh*.

Synomorph is a stage when interdependency occurs between standing pattern of behavior of people and physical milieu of behavior setting, in this case between *desa* people and communal space, and at this stage cultural structure can be achieved. The occurring of synomorphy of each activity involving *desa* people and part of communal space in fact supported by *awig-awig* book (guideline for *desa* people). *Awig-awig* has made everything in permanent condition either the standing pattern of behavior or the physical milieu. For example the sitting position of *krama desa* considered as standing pattern of behavior has permanent position in every ritual activity involving them, while the physical milieu for instance buildings such as Bale Agung (Pura), Bale Petemu Kaja-Tengah-Kelod, and yards such as Pura Puseh yard has firm shape area but accommodate the standing pattern of behavior of *krama desa* in accordance.

Sangkepan process to gain *sangkep* (mutual cooperation and togetherness) condition, applied in two ways. Firstly as the basis of all activities and secondly in symbolic way that held by *krama desa muani* and *krama desa luh* at the end of every ritual in Bale Agung (Pura) and Pura Puseh yard. Unity in way of permeating some outdoor spaces into interior spaces through transparent interfaces creating continuous spaces, Figure 4. Besides to gain the more spacious and larger space in any ritual activity, it indicates as well that there are some efforts to accommodate *sangkepan* processes. *Sangkep* achieved by unite *desa* people of rituals held outdoor and *desa* people of rituals held in interior spaces, along with their respective embedded behaviors. To that extent *desa* people

able to improve their quality of relationship either in a certain standing pattern of behavior or not in a certain order. Physical milieu, outdoor space part of communal space in particular, has more endurance for always be able to accommodate the number of *desa* people, *krama desa* in exception, in every ritual activity that always changing.



Source: Ashihara (1981)

Figure 4. Outdoor space (exterior order) permeates into interior space (enclosed).

Synomorphies occur in communal space of *desa* Tenganan Pegringsingan are not merely to show interdependency between standing pattern of behaviors of *desa* people and physical milieu of communal space, moreover show that the synomorphies supported and locked by regulations stated in *buku awig-awig* (guideline book). Furthermore, the forming of continuous space has several benefits, besides able to support the process of *sangkepan* by uniting *desa* people either in visual, aural, and/ or movement ways. In this case, physical milieu outdoor space in particular, has high endurance since it can always alternately accommodate between the activities with some different groups of *desa* people and with some different standing pattern of behaviors. Besides we can see the flexibility of outdoor space, we can see behavior-milieu synomorphy still can be achieved due to the interdependency between standing pattern of behaviors and physical milieu are not intact. In this case, can we considered the outdoor space as an endurance agent, or called them as dynamic or endurable physical milieu, so that theoretically we can evolve “the standing pattern of behavior-dynamic and endurable physical milieu synomorphy” of a behavior setting.

Table 1. Ritual Activity, The Spaces Used, and Continuous Space Formation.

I.	USABA SASIH KASA (1st. Month Rituals)		Spaces Used	Space Phenomenon
1.	Usaba Sasih Kasa Day 1 – Full Moon Ritual	The Drama of Life and Death rituals	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units • Bale Agung (Pura) Bale • Linear Terraced Open Space <i>Kaja-Kelod</i> (North-South) 	n.a
2.	Usaba Sasih Kasa Day 2 – Procession of effigies back to Bale Agung from Pura (temple) Puseh.		Idem dito	n.a
3.	Usaba Sasih Kasa Day 3 – Ritual at Bale Agung accompanied by sacred Rejang dance.	The Growing into Society (<i>daha</i> and <i>truna</i>) rituals	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units • Bale Agung (Pura) • Linear Terraced Open Space <i>Kaja-Kelod</i> • Bale Petemu Kaja 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Agung (Pura) + yard • Bale Petemu Kaja + yard 75% of used spaces
4.	Usaba Sasih Kasa Day 4 – <i>Sangkepan</i> meeting and ritual at Bale Agung (Pura) + <i>Ngundang</i> ritual		Idem dito + Bale Petemu Tengah substitutes Bale Petemu Kaja	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Agung (Pura) + yard • Bale Petemu Tengah + yard 75% of used spaces
I.	USABA SASIH KASA (1st. Month Rituals)		Spaces Used	Space Phenomenon
5.	Usaba Sasih Kasa Day 5 (last day) – Ritual at Bale Agung (Pura) + Procession of effigies back to Pura Puseh from Bale Agung + Procession <i>Nyunggi Dewa</i> to Pura Puseh	The Growing into Society (<i>daha</i> and <i>truna</i>) rituals	Idem dito + Bale Petemu Kelod substitutes Bale Petemu Tengah	Permeation: <ul style="list-style-type: none"> • Idem dito + Bale Petemu Kelod substitute Bale Petemu Tengah 75% of used spaces
6.	Procession <i>Abwang Peteng</i> and <i>Rejang</i> (sacred dance) + Meeting at Subak <i>Daha</i> called <i>Midian</i> .		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units • Bale Agung (Pura) • Linear Terraced Open Space <i>Kaja-Kelod</i> 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Agung (Pura) + yard 66,66 % of used spaces
7.	Procession <i>Abwang Lemah</i> and <i>Rejang</i> (sacred dance)		Idem dito	66,66 % of used spaces
II.	USABA SASIH KARO (2nd. Month Rituals)			

I.	<i>USABA SASIH KASA</i> (1st. Month Rituals)		Spaces Used	Space Phenomenon
1.	Usaba Sasih Karo Day 1 – Meeting Ritual at Pura Besaka called <i>Neduh + Tabuh Rah</i> (Cock Fighting without bet) at Bale Wantilan.	The Drama of Life and Death	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Besaka • Wantilan 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences. • Pura Besaka + yard • Bale Wantilan + yard 75% of used spaces
2.	Usaba Sasih Karo Day 2 – Meeting Ritual at Pura Batan Cagi called <i>Neduh + Tabuh Rah</i> (three pairs Cock Fighting without bet) at Bale Wantilan.		Idem dito + Pura Batan Cagi substitutes Pura Besaka	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences. • Pura Batan Cagi + yard • Bale Wantilan + yard 75% of used spaces
III.	<i>USABA SASIH KETELU</i> (3rd. Month Rituals)			
1.	Usaba Sasih Ketelu Day 1 – Full Moon Ritual, praying at Pura Gaduh and other pura.	The Drama of Life and Death	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Gaduh • Other pura 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Gaduh + yard 75% of used spaces
2.	Usaba Sasih Ketelu Day 2 – Procession <i>truna</i> playing Selonding Orchestra in front of <i>Subak Daha</i> + followed by <i>Abwang</i> sacred dance + playing <i>Bale Ganjur</i> (a kind of traditional orchestra) around village.	The Growing into Society (<i>daha</i> and <i>truna</i>)	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Subak Daha 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Subak Daha + yard 66,66% of used spaces
3.	Usaba Sasih Ketelu Day 3 – Prayers at every temple + <i>Truna</i> playing Selonding Orchestra around village + <i>Daha Abwang</i> sacred dance in front of Subak Daha.		Idem dito	Idem dito 66,66% of used spaces
IV.	<i>USABA SASIH KAPAT</i> (4th. Month Rituals)			
1.	Usaba Sasih Kapat only 1 Day – Full Moon ceremony at Pura Dalem Pangastulan or Pura Anyar.	The Drama of Life and Death ritual	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Dalem Pangastulan or Pura Anyar. 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residence • Pura Anyar + yard 66,66% of used spaces
V.	<i>USABA SASIH SAMBAH</i> (5th. Month Rituals)			
1.	Usaba Sasih Sambah Day 1 – <i>Mamiut</i> ritual at every temple in Pura Yeh Santi, one of main temple in desa. Request Lords blessing.	The Drama of Life and Death rituals	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Yeh Santi 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Yeh Santi + yard 66,66% of used spaces
2.	Usaba Sasih Sambah Day 2 – Ritual <i>Usaba Sembangan</i> – Mark of beginning of Usaba Sasih Sambah, event in Pura Puseh Sembangan including meeting ritual of <i>krama desa</i> and <i>gumi pulangan</i> .		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Puseh 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 66,66% of used spaces
3.	Usaba Sasih Sambah Day 3 – Ritual <i>Mati Ombo Sanghyang</i> (Holy Buffalo Sacrifation), Bale Agung + <i>Abwang Ngis</i> sacred dance, Bale Agung.		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Agung 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Agung + yard 66,66% of used spaces
4.	Usaba Sasih Sambah Day 4 – The last day of <i>Mati Ombo Sanghyang</i> ritual, Pura Raja Purana + <i>Ancient Wheel Swing</i> , Linear Terraced Open Space <i>Kaja–Kelod</i> + Slonding Orchestra, Bale Petemu.	The Growing into Society rituals	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Raja Purana • Bale Petemu 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Raja Purana + yard • Bale Petemu + yard 75% of used spaces
5.	Usaba Sasih Sambah Day 5 – <i>Pebani</i> ritual, Kayehan Kaja + Pray at Batu Keben and Pura Telaga + Ceremony accepting boys to be <i>truna</i> , village.		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Batu keben • Pura Telaga 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Batu Keben + yard • Pura Telaga 75% of used spaces

I.	USABA SASIH KASA (1st. Month Rituals)	Spaces Used	Space Phenomenon
6.	Usaba Sasih Sambah Day 6 – <i>Purnama</i> Full Moon ritual for <i>daha</i> + Meeting for <i>truna</i> + <i>Daha</i> and <i>truna</i> swinging together on ancient swing wheel + <i>Medaha</i> ceremony accepting girls to be <i>daha</i> , village.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences 50% of used spaces
7.	Usaba Sasih Sambah Day 7 – <i>Mulan Saat</i> or <i>Hud Apisan</i> for women + Main ceremony, <i>Abwang</i> sacred dance, Bale Agung (Pura).	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Agung (Pura) 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 66,66% of used spaces
8.	Usaba Sasih Sambah Day 8 – <i>Mulan Daha</i> ritual, <i>Abwang</i> sacred dance for <i>daha</i> , Bale Petemu Kaja, Bale Petemu Tengah, Bale Petemu Kelod + <i>Truna</i> , Bale Petemu Kelod.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Petemu Kaja – Tengah – kelod. • Bale Petemu Kelod 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Petemu + yard • Bale Petemu kelod + yard 75% of used spaces
9.	Usaba Sasih Sambah Day 9 – <i>Ngelawad</i> ritual, Bale Petemu Kelod, Pura Puseh, Pura Petung, Pura Batan Cagi.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Petemu Kelod, Pura Puseh, Pura Petung, Pura Batan Cagi 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 836% of used spaces
10.	Usaba Sasih Sambah Day 10 – <i>Muran Desa</i> purification and sacrificial ceremonies ritual, Bale Agung (Pura).	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Agung (Pura) 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Agung (Pura) + yard 66,66% of used spaces
11.	Usaba Sasih Sambah Day 11 – <i>Maling–malingan</i> ritual, Bale Agung (Pura) + <i>Mapunjungan</i> ceremony, <i>daha</i> and <i>truna</i> , Bale Petemu + <i>Abwang</i> sacred dance, Bale Petemu yard.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Agung (Pura), Bale Petemu 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 75% of used spaces
12.	Usaba Sasih Sambah Day 12 – <i>Mabwang Kala</i> ritual (exorcizing evil spirits), <i>Abwang</i> sacred dance, Bale Petemu + Chanting holy hymns, Bale Petemu.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Petemu 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 66,66% of used spaces
13.	Usaba Sasih Sambah Day 13 – <i>Mekare–Kare</i> (traditional battle or duel) between groups using thorny Pandanus leaves symbolic at Bale Agung (Pura).	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Agung (Pura) 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 66,66% of used spaces
14.	Usaba Sasih Sambah Day 14 – <i>Muran Truna</i> , various activities done by <i>truna</i> , selecting <i>daha</i> to be their respective partners for attending series of rituals and ceremonies, village.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard 50% of used spaces
15.	Usaba Sasih Sambah Day 15 – <i>Mekare–Kare</i> (traditional battle or duel) between groups using thorny Pandanus leaves symbolic at Bale Petemu Kelod + <i>Daha</i> , female teenagers, little girls, swinging on Ancient Wheel Swing + Praying at Pura Banjar.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Petemu Kelod 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Petemu Kelod + yard 66,66% of used spaces
16.	Usaba Sasih Sambah Day 16 – <i>Mekare–Kare</i> (traditional battle or duel) between groups using thorny Pandanus leaves in front of Bale Petemu Kaja + <i>Daha</i> and <i>truna</i> pray in some temples + <i>Daha</i> and <i>truna</i> meeting ceremony in with young coconuts offerings.	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Petemu Kaja 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard • 66,66% of used spaces

The Growing
into Society
rituals

I.	USABA SASIH KASA (1st. Month Rituals)		Spaces Used	Space Phenomenon
17.	Usaba Sasih Sambah Day 17 – <i>Mekare–Kare Petemu Tengah (Pengrame)</i> (traditional battle or duel) between groups using thorny Pandanus leaves in front of Gong Orchestra around village, Bale Petemu tengah and yard + Chanting hymns and Rejang sacred dance and Keris sacred dance.		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Petemu Tengah 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Bale Petemu Tengah + yard 66,66% of used spaces
18.	Usaba Sasih Sambah Day 18 – <i>Rejang</i> sacred dance, Slonding Orchestra, Pura Banjar + Pig roasting, Abwang sacred dance, Subak Daha.		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> • Pura Banjar • Subak Daha 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Banjar + yard • 50% of used spaces
19.	Usaba Sasih Sambah Day 19 – <i>Nyajah</i> closing ceremony, attended by all villagers as a whole according to respective social functions in the community <i>desa</i> Tenganan Pegriingsingan.	The Drama of Life and Death rituals	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences • Pura Puseh + yard • 50% of used spaces
VI.	USABA SASIH KENEM (6th. Month Rituals)			
1.	Usaba Sasih Kenem Day 1 – Full Moon ceremony at Pura Ujung and Pura Asak + Praying in Pura Katimaha	The Drama of Life and Death rituals	<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> 	<ul style="list-style-type: none"> • Within <i>krama desa</i> housing compound residence • Pura Gaduh with its yard 75% of spaces use
2.	Usaba Sasih Kenem Day 2 – <i>Mesanggah Jumu</i> ritual in front of every <i>krama desa</i> residence + Ceremony and meeting at Bale Agung (Pura).		<ul style="list-style-type: none"> • <i>Krama desa</i> housing compound residential units. • Linear Terraced Open Space <i>Kaja–Kelod</i> 	
VII.	USABA SASIH KEPITU (7th. Month Rituals)			
1.	Usaba Sasih Kepitu Day 1 – <i>Mesanggah Tengah</i> , ritual in front of every house entrance of <i>krama desa</i> residence + Ceremony and meeting at Bale Agung (Pura).	The Drama of Life and Death rituals	<ul style="list-style-type: none"> • <i>Kerama Desa</i> Residences, Linear Terraced Open Space <i>Kaja–Kelod</i> (North–South), other buildings including Bale Agung (Pura)<i>Krama desa</i> residences • Linear Terraced Open Space <i>Kaja–Kelod</i> • Bale Agung (Pura) 	Continuous space – permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residential units • Pura Gaduh with its yard 75% of spaces use
2.	Usaba Sasih Kepitu Day 2 – <i>Muhu–muhu</i> ritual in front of every house entrance of <i>krama desa</i> residence + Ceremony and meeting at Bale Agung (Pura) up to afternoon + <i>Memedi–memedian</i> (symbolic of <i>butha kala</i> or devil) ritual, exorcising underworld spirit away.			
VIII.	USABA SASIH KOLU (8th. Month Rituals)			
1.	<i>Mesanggah Gedebong, daha</i> and <i>truna</i> , <i>krama desa</i> residential units, Pura Gaduh, Bale Agung, <i>daha</i> , Subak Daha.	The Drama of Life and Death rituals + The Growing into Society	<ul style="list-style-type: none"> • <i>Krama Desa</i> housing compound residential units. • Linear terraced open space <i>kaja–kelod</i>. 	Continuous space – permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residential units • Bale kencana + yard • Pura Gaduh + yard • Bale Petemu + yard • Bale Agung (Pura) + yard 71% of spaces use
2.	<i>Mesabatan Bongkot</i> Day 1, <i>truna</i> meeting, Bale Petemu, <i>daha</i> chanting hymne, Subak Daha, Slonding Orchestra.		<ul style="list-style-type: none"> • Bale kencana • Pura Gaduh 	
3.	<i>Mesabatan Bongkot</i> Day 2 – <i>Idem Dito</i>		<ul style="list-style-type: none"> • Subak Daha • Bale Petemu 	
4.	Full Moon ritual and last day of <i>Mesabatan Bongkot</i> Day 3, Slonding Orchestra.		<ul style="list-style-type: none"> • Bale Agung (Pura) 	
IX.	USABA SASIH KESANGA (The 9th. Month ritual)			
1.	Ritual Meeting, Pura Gaduh. Prior, <i>daha</i> pray in Candidasa Beach.	The Drama of Life and Death ritual	<ul style="list-style-type: none"> • <i>Krama Desa</i> housing compound residential units. • Candidasa Beach • Linear terraced open space • Pura Gaduh 	Permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residences. • Pura Gaduh + yard 50% of spaces used
X.	USABA SASIH KEDASA (The 10th. Month rituals)			
1.	<i>Mapag</i> (Welcoming) Ceremony, meeting and praying on stage near Bale Agung (Pura), Gambang Orchestra.	The Drama of Life and Death rituals	<ul style="list-style-type: none"> • <i>Krama Desa</i> housing compound residential units. • Linear terraced open space <i>kaja–kelod</i>. 	Continuous space – permeation: <ul style="list-style-type: none"> • Within <i>krama desa</i> residential unit • Pura Dadia Daging Bale Agung + yard 75% of spaces used
2.	The closing of Usaba Kedasa, Full Moon Ceremony, Pura Dadia Daging Bale Agung anniversary celebration, prayers at some temples.		<ul style="list-style-type: none"> • Pura Dadia Daging Bale Agung 	
3.	Celebrating Pura Dadia Daging Bale Agung anniversary.			

I.	USABA SASIH KASA (1st. Month Rituals)		Spaces Used	Space Phenomenon
XI.	USABA SASIH DESTA (The 11th. Month rituals)			
1.	Pura Dulun Suarga anniversary celebration, Gambang Orchestra.	The Drama of	• <i>Krama Desa</i> housing compound residential units.	Continuous space–permeation: • Within <i>krama desa</i> residential units • Pura Dulun Suarga with its yard 66,66% of space used
2.	Idem dito	Life and Death rituals	• Linear terraced open space <i>kaja–kelod</i> .	
3.	Idem dito + every family presents offering.		• Pura Dulun Suarga	
XII.	USABA SASIH SADA (The 12th. Month Rituals)			
1.	Usaba Sasih Sada Day 1 – Sign of the 12th. month ritual. Commenced with Pura (Temple) Jero anniversary celebration.		• <i>Krama Desa</i> housing compound residential units. • Linear terraced open space <i>kj–kl</i> • Pura (Temple) Jero	• Within <i>krama desa</i> residential units • Pura Jero with its yard 66,66% of space used
2.	Usaba Sasih Sada Day 2 – Main ritual, Pura Jero, all adherents in finest traditional dress, Gambang Orchestra.	The Drama of Life and Death rituals	Idem dito	Idem dito 66,66% of space used
3.	Usaba Sasih Sada Day 3 – Last ritual Usaba Sasih Sada, Pura Jero, dieties back to Subak Pemaksana (Agricultural temple), ended by special event for elderly member.		Idem dito + Subak Pemaksan	Idem dito + Subak Pemaksan + yard 75% of space used

4. Conclusions

Behavior–milieu of behavior–milieu synomorphy, is short term of standing pattern of behavior–physical milieu. While the synomorphy of behavior–milieu is a condition when interdependency occurs between behavior and milieu forming best behavior setting. In case of *desa* Tenganan Pegringsingan, the constellation between activities, *desa* people, and space used which quite complex, considered will be best analyzed by behavior–physical synomorphy theory. Interdependencies occur between behaviors of groups of *desa* people whom carried out the activities, with physical milieu of spaces used. The results has shown the effectiveness of all parts of communal space as behavior settings. In other words standing pattern of behaviors fit in all physical milieu parts of communal space. All activities along with *desa* people behaviors can be best accommodated in physical milieu of all parts of communal space.

The results shows other benefits in regard with the transparent interfaces of non or half full building envelopes and vast open space owned by *desa*. Permeation of outdoor space into interior space occurs in almost buildings and the yards of communal space of *desa*, creating continuous space. The creating of continuous spaces, is not merely to sum the volume of both outdoor and interior spaces. The continuous spaces that merged interior and outdoor spaces either visually and/ or in way of movement activity through transparent interfaces, makes possibilities all ritual activities can always be accommodated physically. In case there are ritual activities with separated sub activities has to be held together in the same time, or in case there are ritual activities need more space when the *desa* people of rituals exceeded.

As earlier mentioned, permeating outdoor space into interior space through the transparent interfaces creating continuous spaces. The table 1. above shows percentage of continuous space formations in communal space of *desa* Tenganan Pegringsingan in regard with ritual activities. Besides gain the more spacious communal space in any ritual

activity, it indicates as well there are some efforts to accommodate *sangkepan* process to gain *sangkep* (mutual cooperation and togetherness) condition. *Sangkep* can be achieved by uniting *desa* people of rituals that must be held outdoor and *desa* people of rituals that must be held in interior spaces, along with their respective embedded behaviors. To that extent the *desa* people can increase their quality of relationship, either in a certain standing pattern of behavior or not in any kind of order.

In the context of *desa* Tenganan Pegringsingan, the communal space as behavior setting has many physical milieu particularly outdoor spaces. The outdoor spaces have high endurance since always be able to accommodate the alternating activities with some different groups of *desa* people and with some different standing pattern of behaviors. Besides we can see the flexibility of the outdoor spaces in this case, behavior–milieu synomorphy still can be achieved due to the interdependency between standing pattern of behaviors and physical milieu are not intact. Furthermore, in this case can the outdoor spaces as an endurable agent be called dynamic or endurable physical milieu, so we can evolve the theory of behavior–dynamic or endurable milieu synomorphy.

References

- [1] A. Mohamed El Husseinya and A. Aly El Husseinyb, Integration of Static and Dynamic Spaces in Historic Cairo: A community spirit that may vanish, Procedia Social and Behavioral Science, AicE-Bs 2012 Cairo ASIA Pacific International Conference on Environment–Behavior Studies Mercure Le Sphinx Cairo Hotel, Giza, Egypt, 31 October–2 November 2012.
- [2] A. Rapoport, “House Form and Culture”, Prentice–Hall, Inc. 1969.
- [3] D. Schaumann, N. Putievsky Pilosof, K. Date and Y. E. Kalay, “A Study of Human Behavior Simulation in Architectural Design for Healthcare Facilities”, Ann Ist Super Sanità | Vol. 52, No. 1: 24–32 DOI: 10.4415/ANN_16_01_07, 2016.

- [4] H. Heft, J. Hoch, T. Edmunds, and J. Weeks, "Can the Identity of a Behavior Setting Be Perceived Through Patterns of Joint Action? An Investigation of Place Perception", *Behav. Sci.* 2014, 4, 371–393; doi:10.3390/bs4040371, 2014.
- [5] J. Lang, "Creating arhitectural theory, the role of behavioral sciences in environmental design", New York: Van Nostrand Reinhold Company Inc., 1987.
- [6] Lisa de Rooij, "The Perceived Safety and Spatial Behaviour in Three Different Neighbourhoods in Rotterdam", Akkelies van Nes: University College Bergen & Department of Urbanism, Faculty of Architecture, Delft University of Technology, 2015.
- [7] P. Memmott and C. Keys, "Translating the Design of Behaviour Settings for Aboriginal Well-Being", Proceedings of the Society of Architectural Historians, Australia and New Zealand Vol. 31 edited by Christoph Schnoor (Auckland, New Zealand SAHANZ and Unitec ePress; and Gold Coast, Queensland: SAHANZ), 2014.
- [8] P. Schoggen, "Behavior settings: a revision and extension of Roger G. Barker's ecological psychology", Stanford California: Standford University Press, 1989, pp 147–190.
- [9] S. Provica and NK. Folicb, "Visual perception of public open spaces in niksic", *Procedia Social and Behavioral Science, AicE-Bs 2012 Cairo ASIA Pacific International Conference on Environment–Behavior Studies Mercure Le Sphinx Cairo Hotel, Giza, Egypt, 2012*
- [10] S. Triyadi and AH. Siregar, "Lesson learnt from vernacular houses of rurukan and tonsealama at minahasa to cope the earthquake", *Journal Asian Transactions on Science & Technology (ATST ISSN: 2221-4283) Volume 01 Issue 05 Nov 2011.*
- [11] U. Ramseyer, "The Theatre of Universe, Ritual and Art in Tenganan Pegringsingan Bali, Denpasar, 2009.
- [12] Y. Ashihara, "Exterior design in architecture, revised edition", New York: Van Nostrand Reinhold Company Inc., 1981.