Study of Theory Based on Security at Silimo Settlement in The Baliem Valley of Papua

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Abstract

In the Baliem Valley, Papua, the tradition of tribal wars in the culture of the Hubula tribe in the past is related to the concept of site selection, spatial planning, and building form in the Silimo settlement. The problem in this study is how the selection of location, spatial planning, building form, and territoriality become the concept of security in a traditional settlement. The purpose of the study was to determine the security concept in traditional Silimo settlements, consisting of site selection, spatial planning, building form, and territoriality based on security theory in settlements. In answering the problem of this research, the researchers use qualitative research methods. The researchers also use a phenomenological approach to explain or reveal the meaning of concepts or phenomena of experience based on the awareness that occurs in several individuals related to security in the Silimo settlement. The theories used in this research are the security theory in crime prevention and the theory of defensible space. The result of this research is that security theory can explain that the selection of location, spatial planning, and building form in the Silimo settlement of the Hubula Tribe in the Baliem Jayawijaya Valley was built based on the traditional conception of security. The concept of security in the Silimo settlement can be realized by: 1) The concept of territory as a defense space and territory as a territory of power; 2) The concept of space as a personal space and a public space: 3) The concept of Kinship, confederation, norms, customary rituals, which become the Patterns and Concepts of Space and Building Forms and Constructions are forms of Social Relations, Natural Relations and Ancestral Relations, to actualize a security system in Silimo settlement.

1.   Introduction

Typically, traditional houses in Indonesia have patterns, structures, and space forms determined and controlled by the culture that grows and develops in people's lives. The spatial planning that is formed and arranged intends to fulfill 2 (two) needs at once, namely the need to address physical functions in the form of profane activities and the need to address psychological needs in the form of sacred cosmological activities. Spaces traditionally have their respective roles and purposes that synergistically support each other to achieve a balance in the function of the house as a place to live that can provide physical and mental comfort for its occupants (Salipu & Santoso, 2014). Cohen A.P (1985) stated in Nurmaningtyas & Utomo (2015) that the essential factor in the shape and pattern of the house is the religious or belief factor. Even in traditional societies, it tends to be a dominant factor compared to other factors. House was also considered a microcosm of the whole universe. Each element that makes up the house symbolizes a specific one of the universe.

Traditional buildings in Papua Province are very diverse in each cultural area due to differences in geographical location and topography (natural environment), social environment, and sacred environment. The forms of coastal architecture in Papua are Rumsram in Biak, Kariwari in Jayapura, and Jew (bachelor's house) in Asmat. In the highlands, there is the Silimo Settlement of the Dani (Hubula) tribe in the Baliem Valley and the Central Mountains Region. In summary, the forms of settlements and traditional architecture in Papua can be explained as follows: *First*, the Rumsram Traditional House is the traditional house of Biak Numfor on the North Coast of Papua. Rumsram has a sacred function related to initiation ceremonies (a ceremony for growing boys). Rumsam also has a social purpose as a place to learn and educate boys to seek and develop practical skills, such as carving, making shields and boats, and other making skills. The structure of the Rumsram traditional house, which reaches 8 meters in height, is in the form of a 2-story building. The first floor without walls (open) and only visible building columns is a function of adaptability to the tropical-climate environment with a hot and humid climate. The shape of the roof of this Rumsram is like the back of a turtle. It has two doors, on at the front and one at the back. It also has several windows. The tribe builds a stilt house of Rumsram on seawater, which shows the relationship between the house and the livelihoods of the Biak people, who use boats to look for fish and other marine products.

Second, the Kariwari Traditional House ('Mau' house) is the traditional house of the Tobati-Enggros tribe who live in Youtefa Bay, Jayapura City. Kariwari is a specific house for boys who are about 12 years old. It also has social, sacred functions and adaptability to the tropical natural environment and is used for traditional processions of initiation as a holy and social function. Children use the house to learn life skills such as making boats and tools, carving, and fighting. In addition, they also study some knowledge and life experience and how to earn a living to become men who are brave and responsible. The traditional Kariwari house has an octagonal pyramid shape and is about 15 meters high, consisting of three floors. The tribe uses each floor for different purposes. They use the lowest floor for the study area of the young boys and the second floor for the meeting room of tribal leaders and chiefs, as well as the boys' bed. And the third floor (as a place to store heirlooms) is also used for meditation and praying to ancestors to be given physical and emotional strength.

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M. Amir Salipu, Anggia R. Nurmaningtyas, Mercy T. Zebua, Imam Santoso

Third, the Jew Traditional House is also known as the Asmat tribe's bachelor house. The form of this Jew traditional house is a stilt house with a length of about 25 meters and a width of about 10 meters lining up straight at the entrance to the Jew. According to Mansoben (1995), "In the Jew, there are several fireplaces (furnaces) which symbolize the number of families who own the Jew. The number of fireplaces in a Jew is the same as families in a small clan unit. In the center of the Jew, there are several common fireplaces. The young people gather around the fireplace to listen to advice and stories about their ancestors from their parents. The social function of the Jew house is as a place for young people to live, where adults gather to decide matters related to war, marriage, and traditional parties. Jew's house also functions as a place for educating boys and storing sacred objects for the clan branch." The sacred function in Jew is as a place of initiation ceremony for boys. The Jew building is in the form of a house on stilts. The tribe uses ironed wood as the pillars of the building. And then, they plug the ironed wood into the swampy soil so that the structure of the Jew's house lasts a long time. The joint of the house structure with the tie technique uses rattan rope as a fastener for the entire Jew structure. The connection with the tie technique used is an adaptation to natural conditions and ways of building houses in a traditional society.

Fourth is the Silimo settlement of the Hubula tribe in the Baliem Valley, Jayawijaya Papua. The location of Jayawijaya Regency is at an altitude of 1,500-2,500 meters above sea level. The average air temperature in 2017 was 19.70°C, and the minimum temperature at night reached 13.4°C. The climatic condition in the Central Mountains area is cold at night, causing the Honai houses (Pilamo and Ebe-ai) to be equipped with a stove on the first floor to warm the room. The size of the Pilamo plan is about 5 m in diameter, and the height of the house is less than 3 m. The Honai house roof form is a semi-circle covered with reeds. The house walls are made of wood and only given one door without windows to reduce cold air entering the house. Another consideration due to the cosmological belief of the Hubula tribe is that there is interference from spirits if the house has a window hole. There are two floors in the male Honai (Pilamo) house, the first floor is for daily activities and ritual meetings, and there is a stove in the middle to light a fire as heating. Meanwhile, the second floor is for storing sacred objects (sacred functions) and as a bed for adult men.

The four traditional building forms above represent the tribes in the four cultural areas in Papua Province. Yet, the only traditional buildings still preserved are the Jew buildings in Asmat and Silimo in the Baliem Valley. People can no longer find the original buildings of Kariwari and Rumsram. Thus, people's knowledge about the structure of the building is lost because it is only passed down orally and in practice. The Kariwari Building (Tobati Village, Yotefa Bay, Jayapura City) and the Rumsram building (Biak Numfor Island) disappeared because the missionaries (protestants) considered the places as idolatry and sexual perversion that was contrary to the teachings of Protestant Christianity (Kamma, F.C. 1980 and Kamma, F.C. 1994). We still can find the original Jew buildings on the South Coast of Papua and the Silimo Settlement in the Central Mountains of Papua. Although the old tribe used them for initiation activities, there was no demolition. The missionaries destroyed many sacred objects stored in these traditional buildings because they were considered idolatrous. Due to the consideration of the authenticity of the building that researchers can still observe and the close distance from Jayapura City to the Central Mountains, the researchers chose the Silimo settlement as the object of study on traditional Papuan buildings. Another consideration is that the Baliem

Valley is known for its tribal war traditions that affect the site location, the settlement patterns, and the shape of the buildings.

According to Mamberaku (2009), the traditional community of the Hubula tribe bases its choice of a settlement location on three considerations, namely economy, security, and mythology. The first consideration is the economy, especially the food economy. This consideration concerns the ease of nature in providing opportunities, especially the basic needs of food for the residents' survival. The second consideration is security, especially the existence of a natural environment to protect and defend themselves from enemy attacks. Adaptation to environmental conditions is the main factor for traditional societies to survive, including adaptation to a culture that occurs in the Hubula tribe. The tribal war, a tradition of the *Hubula* tribe in the past, is no longer justified by the government. However, the traditional form of the Silimo settlement is still an application of the concept of defense for security, which has similarities with the site selection of traditional ones in other places that apply defense architecture. The security concept in settlements is not only found in a traditional one such as Silimo but also in a modern one described by Gardiner (1978), Stollard (1991), and Cozens et al., (2005). The third consideration is about mythology belief. It relates to the permit to occupy the location used to build Silimo by planting a stick of wood for one night. If the wood did not tilt or fall, then according to the understanding of the Hubula people, their ancestors would allow them to build Silimo, consisting of Pilamo (male Honai) and other buildings in that place. Norms become a reference in acting for traditional communities, which can be in the forms of customary rules, ceremonies, or rituals and myths related to mythology and belief from the ancestors. The rituals performed in the house refer to harmony with nature and cosmology.

Traditional settlement (Silimo) is a system in the unitary life of the Hubula community that is in direct contact with the natural, social, and sacred environment. The natural, social, and ancestral relations describe the relationship between each aspect. These three aspects constitute an environment that influences each other as a security system in the Silimo settlement (Salipu & Zebua, 2021). The social, cultural, environmental, and technological aspects closely relate to layout patterns and forms of traditional settlements. Architectural forms as part of culture are sourced and developed from old architecture, including ancient settlements already existed in the cultural environment. Social, cultural, economic, and technological changes gradually affect traditional settlements, starting from the aspect of the form, layout pattern, and spatial layout of the settlements, resulting in the shapes and plans of the current building arrangement. The geographical and topographical locations of both coastal and highland areas influence the various forms, layout patterns, and spatial plannings of traditional settlements in Indonesia.

This research aim was to determine the selection of location, spatial planning, building form, and territoriality consideration as a security concept for traditional Silimo settlements in the Baliem Valley, Papua. Researchers can also apply this research to other ones. The study of security theory and defensible space theory to explain the concept of security for the traditional settlements of the Silimo of the Hubula tribe in the Baliem Valley, Papua, which has a culture of tribal wars in the past, was conducted for the first time. Therefore, the researchers expect that it could fill in the gaps others have not explored to provide originality to the study and contribute to the topic of traditional settlements.

2. Literature Review

Crime Prevention through Environment Design (CPTED)

Rand (1979) states four theories in crime prevention through environmental design: social control, enclose/access control, criminal justice, and defensible space. This conception of security builds upon the premise that many housing complexes have side effects which are sometimes unwanted yet unavoidable. Therefore it is necessary to develop guidelines to avoid crime by unknown persons having close physical contact (Stollard, 1991). Several aspects of Crime Prevention through Environment Design (CPTED) are:

a. Social control. It shows that foreigners are vulnerable to crime because they can enter public places. Therefore, public place uses must be subject to natural or passive oversight in the form of communal control to prevent criminal acts by unknown persons (Stollard, 1991). Natural surveillance is a design concept intended so the community can observe any foreigner from many points of view. We can generally apply this concept to parking areas and entrances to houses, the position of doors and windows directly connected visually to roads and parking areas, open pedestrians, vehicle garages that are easy to see, and bright enough lighting at night (Wizaka, 2012).

b. Enclose/access control is the traditional approach to security design. If a community or apartment building provides good security, it will increase the chances of direct social interaction with the community. Therefore, we can reduce alien access and crime. The environment can be designed to prevent criminal access (Stollard, 1991). Access control can be in the form of a fence that limits private and public areas. The community must provide a good concept of security by setting up a system of social interaction that takes place both within the community and with the community outside. This system aims to reduce the possibility of foreigners gaining access and committing crimes. This conception intended to lessen the crime possibility by inhibiting access to the object of the crime and creating a perception for foreigners who intend to commit a crime of the risks faced if he commits the crime. We can apply this concept to designs of roads, gates, main entrances, and side doors of buildings indicating the difference between public and private areas and the paths passed through by the public (Wizaka, 2012).

c. Criminal justice, this approach focuses on the security guard's presence as the main deterrent to crime. It may mean crime prevention through the presence of men as security guards. Settlement design focuses on providing a pass that provides optimal access for security checks. Streets are marked strictly to provide clear access that allows the security guards to pass through all areas.

d. Defensible space, this approach suggests that crime is less likely when a physical space frames potential anti-social acts under surveillance. The effect of the defensive guard as a social control mechanism increases when they know each other or when some common territorial markers link them. This theory further suggests that would-be criminals are more reluctant to commit crimes in areas deemed to be under the technical influence of the surrounding community. It implicitly suggests that several crimes occur spontaneously following opportunities that existed in anonymous settings.

Based on the descriptions above, the researchers will use the aspects of Crime Prevention Through Environment Design (CPTED), namely: social control, enclose/access control, criminal justice, and defensible space, to examine the concept of security for the Silimo settlement, whether the researchers can find all these aspects in the security concept for the Hubula tribe.

Defensible Space

The focus of the defensible space concept closest to the realm of architectural science is the concept issued by the architect and planologist Oscar Newman. This concept contains the idea of crime prevention and neighborhood safety, which he wrote in his first book titled: Design Guidelines for Creating Defensible Space in 1972 (Gantini, 2014). Oscar Newman (1972) used the term defensible space to describe a residential environment designed in such a way as to allow households to monitor and be responsible for the area in which they live. Newman proposes three elements of good design to promote networks of social control. According to him, urbanization, population pressures, and new building techniques have eroded social control networks. The three steps are:

a. The creation of a territorial area (territoriality). Territoriality is a primary aspect of creating defensible space (Gardiner, 1978). Territoriality intends to show the clarity of the boundaries of private, public, and semi-public spaces and the clarity of identity in an area or environment (Laurens, 2006). Buildings and grounds division into zones of influence to prevent outsiders from entering and encourage residents to defend their territory (Stollard, 1991). Territoriality can also bore a meaning for a claim to space belonging to a person or group of persons where control and defense have resulted from the encroachment of boundaries. It is a social interaction actualized in the environment and their efforts to keep it safe from the disturbance of others. An action can be seen as a violation if someone interferes with the territoriality of others (Muhyi et al., 2019). Several studies related to territoriality are Intan et al. (2014), Burhanuddin et al. (2015), Amalia & Amal (2018), Susanti et al., (2020). Meanwhile, research on the Hubula tribe that applies the territory concept is Salipu (2020) , Salipu & Zebua (2021).

b. Surveillance, a building design to facilitate the observation of the concerned area (Stollard, 1991). Natural surveillance can also be defined as the ability to observe public space in a residential environment so that everyone who occupies it has a feeling of being under a state of supervision (Newman 1972 in Muhyi et al., 2019). By creating natural surveillance, people can reduce crime rates even if the occupants are inside or outside the home and do not require security devices or the role of security forces. Supervision/surveillance aims to provide risk considerations for potential perpetrators to be kept track of, identified, and arrested (B. Poyner, 1983 in Santoso et al., 2018);

c. Image and milieu, public housing design to avoid stigma; image is the impression that results from the physical appearance of the building or residential environment. Crime starts if the stigma invites destruction (Newman, 1972 in Muhyi et al., 2019). The alignment of housing projects with safe zones in adjacent territories. The milieu is other surroundings that exist in our environment related to security factors of crime, such as the proximity of the surroundings to the police station area, the presence of security posts, and others.

In addition to Rand's CPTED theory, Newman's theory of defensible space in the form of territoriality creation, surveillance, image, and milieu, will be used to examine the concept of security in the form of defensible space in the Silimo settlement.

3. Method

The method applied in this research is a qualitative method with a phenomenological approach. It examines how community members structure and reshape the nature of everyday life. The emphasis is on how people who relate to objects of experience understand and interact with these objects as 'things' separated from the researcher.

Research Location

The research was carried out in Pisugi District, Jayawijaya Regency, Papua Province. The researchers chose this district because (1) Pisugi District is a traditional area that is still maintained today and declared as one of the traditional tourism development areas in Jayawijaya Regency, and its location is still quite close to the district capital in Wamena City, (2) All Hubula people in the Baliem Valley characterize the same culture, based on cultural classification, Hubula culture can be categorized into the simple culture, (3) Pisugi District is one of the areas that has a mummy, namely the Aikima Mummy, located at the entrance to Pabuma Village. In the past, this area was a communal land owned by the Wililhiman confederation, one of the larger confederations besides the Walalua confederation in the Baliem Valley. The location of the Silimo Kumugima settlement in Pabuma Village, Pisugi District, Jayawijaya Regency is as follows:
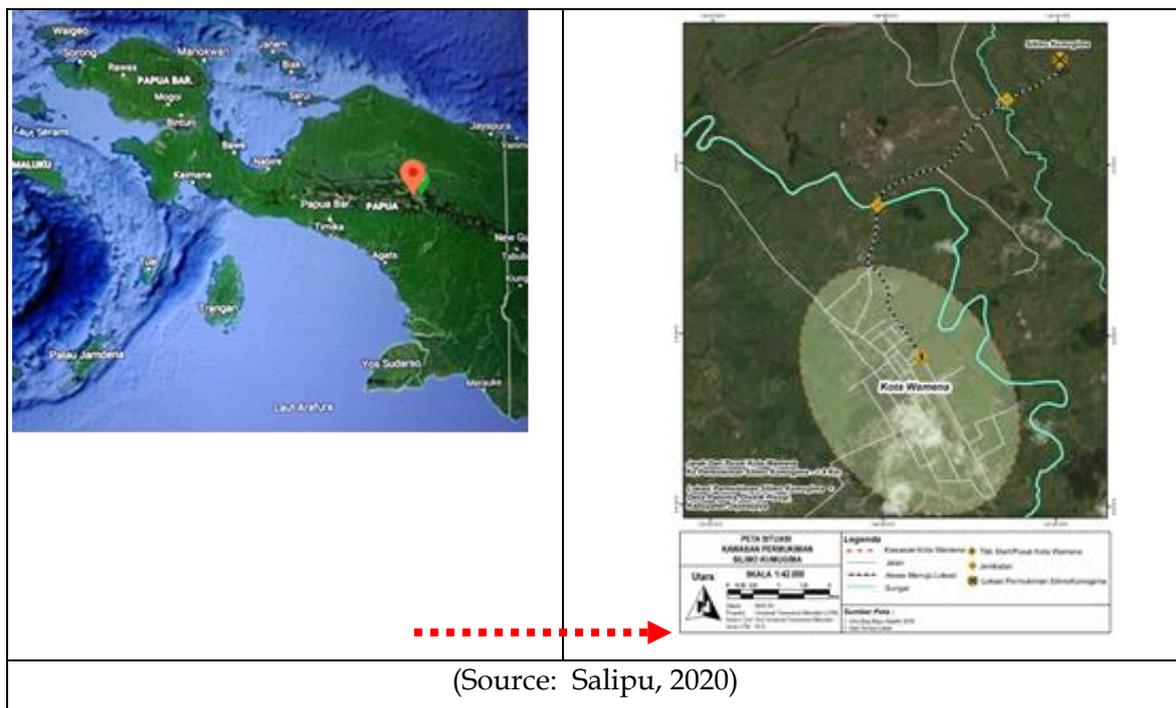

(Source: Salipu, 2020)

Figure 1. Research location in Pisugi District, Jayawijaya Regency, Papua.

Figure 1 above shows the research location which is 8 km from the city of Wamena, the capital city of Jayawijaya Regency, Papua. The location of the Silimo Kumugima settlement as the research location is in the following areas of the Wililhiman-Walalua confederation:

Figure 2. The location of Silimo Settlement in Wililhiman-Walalua confederation, in Pabuma
Village, Pisugi District, Jayawijaya Regency, Papua
Source: Google Earth (2020)

Data Collection

Data collection in phenomenological research described by Hasbiansyah (2008) is through in-depth interviews with research subjects. Therefore, in the study at the Silimo Kumugima Settlement in Pisugi District, Jayawijaya Regency, data collection was obtained from in-depth interviews and recorded so that the results of the interviews were intact. The completeness of the data is strengthened by using participant observation techniques, document searches, and others. The researchers base the determination of choosing the key informants on the knowledge that they own of the socio-cultural system of the Hubula people. As cultural actors of the Hubula people, key informants can have the status of community leaders, traditional leaders, and state civil servants. The list of key informants interviewed in this study is as follows:

Table 1.1. List of Key Informants in Silimo Settlement

No.	Informant Initial	Gender	Residence	Role in tribe/ government	Age
1.	AW	Male	Silimo Punaima	Frontliner in Tribal War	75 years old
2.	WW	Male	Silimo Yalogon	Frontliner in Tribal War	73 years old
3.	AW	Male	Silimo Yalogon	Frontliner in Tribal War	72 years old
4.	DH	Male	Silimo Punaima	Tribe Figure	44 years old
5.	KW	Male	Silimo Kumugima	Tribe Figure	45 years old
6.	NW	Male	Silimo Kumugima	Tribe Figure	37 years old
7.	PH	Male	Silimo Kumugima	Tribe Chief	31 years old
8.	AH	Male	Silimo Kumugima	Tribe Figure	34 years old
9.	IW	Male	Silimo Kumugima	Young Tribe Figure	39 years old
10.	HH	Male	Silimo Suroba Suroba Village	Tribe Chief	55 years old
11.	AW	Female	Silimo Kumugima	Female Tribe Figure	48 thn
12.	AW	Male	Pabuma Village	Head of Finance, Pabuma Village	36 years old

No.	Informant Initial	Gender	Residence	Role in tribe/ government	Age
13.	SW	Female	Silimo Punaima	Female Tribe Figure	41 years old
14.	AH	Female	Silimo Kumugima	Female Tribe Figure	40 years old
15.	LW	Male	Pisugi Village	Head of Finance, Pisugi District	45 years old
16.	AK	Male	Silimo Suroba Suroba Village	Secretary, Suroba Village	39 years old

Table 1.1 above shows the residences of key informants spread over 3 villages: Pabuma Village, Suroba Village, and Pisugi Village. The three villages represent 7 villages in Pisugi District: 1). Pisugi Village is the capital of Pisugi District, 2). Kumugima Village, and 3). Suroba Village is a traditional village that has several Silimo settlements.

The researchers performed the observations by involving the key informants in resident activities. It is beneficial to obtain actual data about some elements such as the form, layout, spatial planning, settlement, livelihood systems, mapping, the activity pattern of residents in the Silimo settlement, and various other activities related to the Hubula people. In addition, observations also relate to the structuring pattern of the Silimo settlement, materials, structures, and forms of buildings as artifacts, as well as environmental conditions, including the distance of the garden from the Silimo Kumugima settlement.

Research Variable

Based on the descriptions above, the researchers will use the aspects of Crime Prevention Through Environment Design (CPTED), namely: social control, enclose/access control, criminal justice, and defensible space, in examining the concept of security for the Silimo settlement, whether the researchers can find these aspects in the security concept for the Hubula tribe. In addition to Rand's CPTED theory, Newman's theory of defensible space in the form of territoriality creation, surveillance, image, and milieu, are aspects that the researchers will use to examine security concepts in the form of defensible space in the Silimo settlement.

Data Analysis

The steps of data analysis are: 1) Organizing all the data about the phenomena of experience researchers have collected; 2) Reading the data in its entirety and making notes on the data that are considered important, then encoding the data; 3) Finding and classifying the meaning of the statement felt by the respondent by doing horizontality (meaning that each statement was initially treated as having the same value); 4) Collecting the statement into a unit of meaning, then writing a description about how the experience occurred; 5) Developing an overall description of the phenomenon to find the essence of the phenomenon. Then the researchers develop a textual description (about the phenomenon that occurs in the respondent) and a structural description (which explains how the phenomenon occurs); 6) Provide a narrative explanation of the essence of the phenomenon under study and get the meaning of the respondent's experience regarding the phenomenon. Furthermore, the researchers drew conclusions that must be carried out using verification so that there is no doubt about the decision produced until the conclusions.

4.   **Results and Discussions**

Crime Prevention Through Environment Design (CPTED)

Social Control

Togetherness is essential for the Hubula tribe in the Baliem Valley. Silimo, a place to live together in the Hubula tribal community, has a system of arrangement strongly influenced by the behavior of social relations, both among nuclear families and extended families such as those in the Silimo settlement. Based on the findings in the field, both through interviews and observations, it turns out that the life of the Hubula tribal community related to the Silimo settlement is quite complex. It includes the rules outlined by the culture concerned with the division of tasks and responsibilities of men as security guards and women as food providers.

According to the explanation of Swasono et al. (2014), the task of men is to maintain the security and safety for all residents of Silimo, while women are in charge of logistics, namely meeting the necessities of life by providing food and preserving the survival of the clan and being a social ladder for husbands. The Silimo spatial arrangement reflects the cultural view of the Hubula tribe that divides the tasks of men and women. Hubula tribe places Pilamo in the same direction of the gate (mokarai) so that the men who maintain the security can see the enemy who comes. The division of labor between men and women is a form of social control.

Figure 3. Left, the layout of Silimo Settlement. Right, the stone burning event in the Silimo area as a form of social control over the implementation of ceremony to welcome guests.

Source: Field research results, 2020

Figure 4. Interview in Silimo's kitchen as a public space.
Source: Field research results, 2020

Access Control

The fence, also called Leget in the language of the Hubula tribe, is an element of the Silimo complex building. It surrounds Silimo with one entrance called "holakola." According to informant PH, to make a good Silimo, the entrance (holakola) must be perpendicular to the pilamo (male honai). The pilamo position, which is perpendicular to the Silimo entrance gate, has been traditionally arranged since the time of the ancestors of the Hubula tribe. The goal is that everyone who comes and enters the Silimo complex can be seen first by the men so that they know whether those who enter Silimo are relatives or enemies.
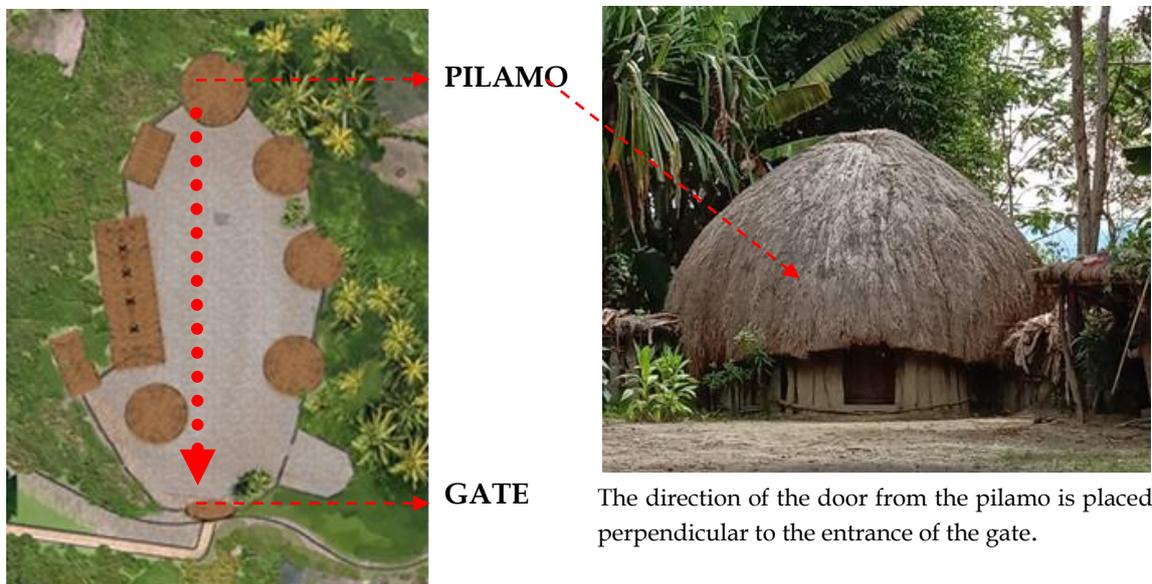
PILAMO

GATE

The direction of the door from the pilamo is placed perpendicular to the entrance of the gate.

Figure 5. *Silimo* Settlement in *Baliem* Valley, Jayawijaya
Source: Field study results, 2020

Criminal Justice

As explained by Heider (2017), the cause of tribal wars in the Baliem Valley was due to woman seizures and pig stealing. It is in line with the study (Swasono et al., 2014), which explains that conflicts between members of one clan and another often occur for various reasons, including disputes over land ownership between several tribes and the seizure of women. Currently, tribal wars are not allowed, so the punishment for offenses such as disturbing women and stealing pigs is to pay a fine using the pig as a means of payment. The penalty in the form of giving away pigs for the Hubula people is a criminal justice to provide a deterrent effect.

Defensible Space

The defensible space in the Silimo settlement is in the form of installing a two-layer fence around Silimo. The men will supervise the entrance for anyone who walks through the gate. The gate placement at the end of the settlement allows residents to observe who enters Silimo. This approach suggests that crime is less likely when a physical space frames potential anti-social acts under surveillance. The residents will carefully monitor guests who are not relatives and do not live in the Silimo environment. From Ebe-ai (female honai), residents can observe anyone who passes by their residence. This theory further suggests that would-be criminals are more reluctant to commit crimes within Silimo settlements considered to be under the technical influence of the occupants. However, there are certain times when it is possible for violations to occur, namely when the female occupants are in the garden until late afternoon and the men are collecting wood or doing activities outside the Silimo settlement. The researchers found that some Silimo were empty during the day because the residents carried out activities outside the Silimo Settlement environment.

Defensible Space Theory

Territoriality

Territory as a spatial element serves as a territorial instinct, for the need for a constant and essential "place" identity. Although it results in different ways depending on how people define territory and an ideal environment, the situation will be very different if we assume instincts are not present in humans because one of the fundamental functions of the house is a territory (Rapaport, 1969). Fence, or Leget in the language of the Hubula tribe, is a territory marker.

The structuring concept of Silimo must meet the primary aspect of creating a defensible space which is a two-layer fence as a marker of territory (Gardiner, 1978). Territoriality serves as a tool to show the clarity of the boundaries of private, public, and semi-public spaces and the clarity of identity in an area or environment (Laurens, 2006). We can observe the structuring concept of Silimo surrounded by a two-layer fence as a marker of territoriality in the following spatial drawings on Silimo:
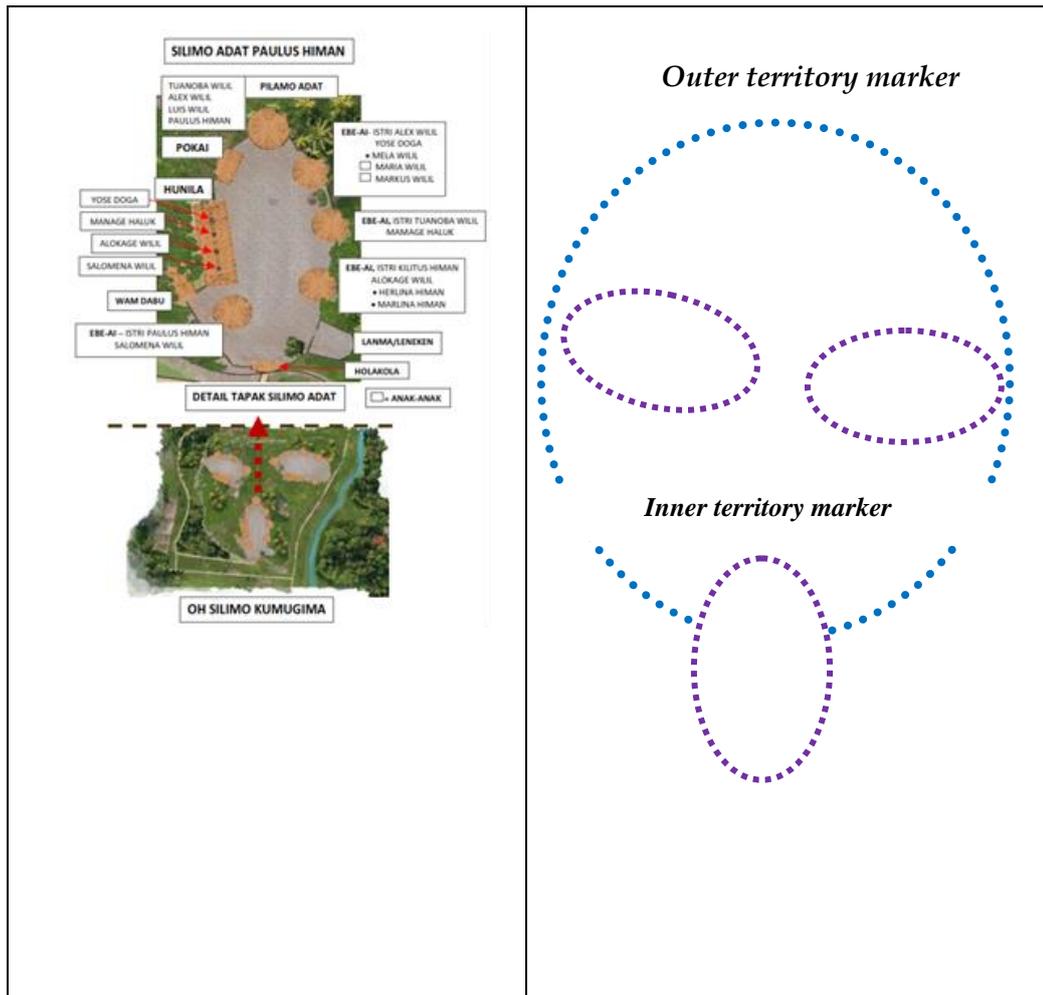
Figure 6. Two-layer fence as a territory marker in *Silimo*
Source: Field study results, 2020

4.2.2. Surveillance

The gate supervised by the men inside Silimo is the only access to enter Silimo. The goal is that everyone who comes and enters the Silimo complex can be seen first by the men, so they know whether those who enter Silimo are relatives or enemies who attacked. The direction of the Pilamo door facing the gate as a surveillance-oriented building mass management pattern is a building design application to facilitate observations of the related area (Stollard, 1991). Natural surveillance can also mean the ability to observe public spaces in the Silimo environment so that everyone who occupies it has a feeling of being under a state of supervision (Newman 1972 in Muhyi et al., 2019).

Figure 7. Fence and Gate Arrangement for the Silimo Kumugima Settlement. Source: Field study results, 2020

Image and Milieu

The settlement design is to avoid stigma, the impression resulting from the physical appearance of a building or residential environment. Crime initiates if the stigma invites weakness in the security system (Newman, 1972 in Muhyi et al., 2019). The application of building alignment in the Silimo settlement is an image concept of defensible space. A fence surrounds each Silimo in the first layer. And the outside of the three Silimo is also surrounded by a second-layer fence as a territory marker. The milieu is other surroundings existing around our environment related to the security factors such as the proximity between the environment and the presence of the security posts. In the case of the Silimo Settlement, the placement of a gate parallel to the Pilamo door as a form of access control marks the milieu.
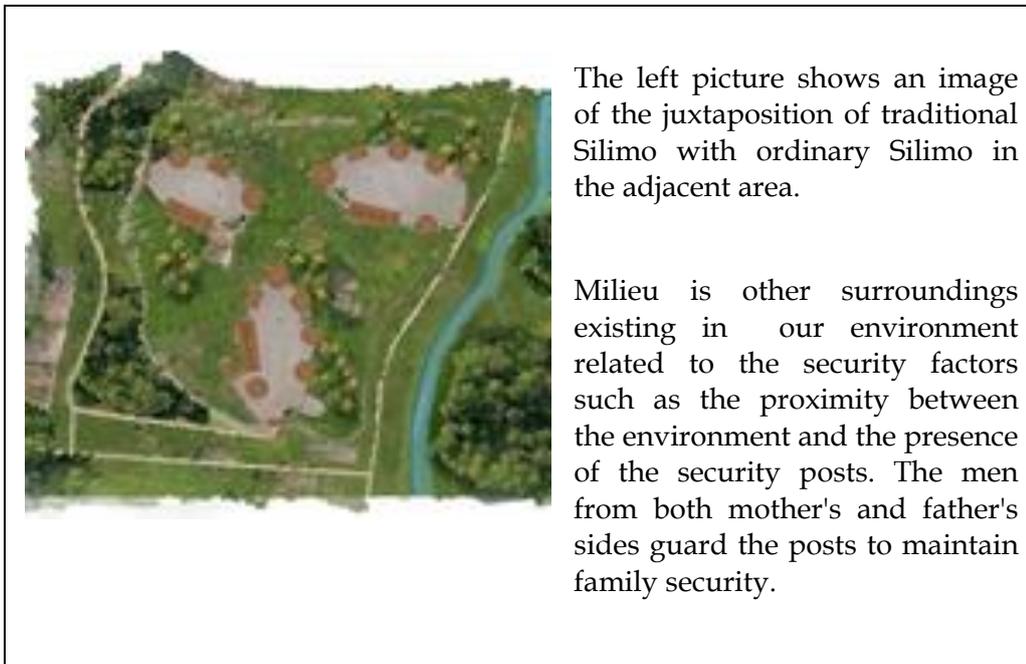
The left picture shows an image of the juxtaposition of traditional Silimo with ordinary Silimo in the adjacent area.

Milieu is other surroundings existing in our environment related to the security factors such as the proximity between the environment and the presence of the security posts. The men from both mother's and father's sides guard the posts to maintain family security.

Figure 8. Silimo arrangement in a location consisting of 3 Silimo as a form of defense by placing the entrance area or the location of the gate on the outside.
Source: Field study results, 2020

5. Conclusion

The Hubula Tribe has implemented the concept of CPTED, as expressed by Rand (1979), through environmental design, namely: social control; enclose/access control; criminal justice; and defensible space in building a security-based Silimo Settlement. It offers an argument that the concept of security for traditional settlements in areas prone to tribal wars in the past applies the CPTED concept completely. The CPTED conception that uses modern equipment for both access control and surveillance with CCTV is a form traditionally regulated in customary rules by using elements of the human body and dexterity. In the past, the concept of CCTV was what was said to be an instinctive human instinct (that every living thing must have an instinctive attitude to defend itself).

In the concept of defensible space from Newman (1972), which consists of a territorial area creation, territoriality is the primary aspect of creating defensible space (Gardiner, 1978). People perform surveillance of building design to facilitate observation of the related area. Natural surveillance means the ability to observe public spaces in a residential environment so that everyone who occupies it has a feeling of being under a state of surveillance. Image and Milieu, public housing design is to avoid stigma; image is the impression that results from the physical appearance of the building or residential environment. Crime starts if the stigma invites destruction (Newman, 1972 in Muhyi et al., 2019). The alignment of the housing project with the safety zone in the adjacent area depicted in the Silimo site shows a row of buildings arranged to monitor people passing through the house to Pilamo (male honai). The milieu is other surroundings existing in our environment related to security factors of crime, such as the proximity of the surroundings to the police station area, the presence of security posts, and others.

Traditional tribes had applied Rand's (1979) and Newman's (1971) conceptions of CPTED long before they developed the concepts. The concept of security in traditional settlements is still valid but is developing according to the level of development of emerging crimes.

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