Ancestral Intelligence for a CPTED Sustainable Intervention in Villa Andes del Sur, Chile

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Abstract

The following article describes the application of the CPTED methodology, from a Third Generation CPTED approach, in a neighbourhood called Villa Andes del Sur, located in the communal limit between the Municipality of Puente Alto and La Florida, in the metropolitan region of Santiago de Chile, during 2021-2022. This villa has struggled the past two years with theft, extreme COVID consequences and social stigmatization.

Third Generation CPTED (Mihinjac and Saville, 2019) incorporates principles such as Sustainability and Public Health Sustainability into the principles of natural surveillance, natural access control, territorial reinforcement, maintenance, and community participation from First and Second Generation CPTED. The principle of "community participation" was never included as a specific principle of First Generation CPTED, it was only adopted that way within the Latin American region. This article will describe how the CPTED project of Villa Andes del Sur, activated what is mentioned in anthropological literature as AI[1] (Ancestral

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[1] Evolution of human intelligence. (2022, September 7). From *Wikipedia*.
https://en.wikipedia.org/wiki/Evolution_of_human_intelligence

Intelligence). AI is defined as the ability to access and store information linked to survival process in the context of human evolution through the lengthy process of change by which people originated from their ancestors. Scientific evidence shows that the physical and behavioral traits shared by all people originated from their ancestors and evolved over a period of approximately six million years. Linked to this idea is the concept that, distinct from the social brain hypothesis (Dunbar, 2009), cultural intelligence (known as the cultural brain hypothesis), dictates that human brain size, cognitive ability and intelligence has increased over generations due to cultural information from a mechanism known as social learning.[2]

Cultural intelligence could explain why elderly people in a difficult and challenging COVID scenario manage to reduce the perception of insecurity, crimes of opportunity and increase community cohesion (in addition to female empowerment of the grandmothers of the Villa Andes del Sur).

In this implementation, CPTED is outlined as the new Ancestral Intelligence given that the community is mainly composed of older female adults and the close relationship that exists in the transfer of ancestral wisdom and intelligence from grandmothers to their children and grandchildren, especially in relation to the sustainability principle of Third Generation CPTED.

Keywords: CPTED Third Generation, Ancestral Intelligence (AI), crime, extreme COVID context, social stigmatization

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[2] The hypothesis also predicts a positive correlation between species with a higher dependency and more frequent opportunities for social learning and overall cognitive ability. This is because social learning allows species to develop cultural skills and strategies for survival. In this way it can be theorized that heavily cultural species should in theory be more intelligent.

Introduction

The perception of insecurity as well as the high and growing criminal opportunity in the cities of Chile, especially in its capital, Santiago, is one of the greatest concerns of its population. This situation is in line with what is observed in other Latin American cities[3] that have the highest rates of homicides, among other crimes. Nevertheless, Chile has the lowest homicide rate in the Latin American Region.

One of the communes[4] with the greatest urban security challenges is the Puente Alto commune in Santiago de Chile. This commune has more than 850,000 inhabitants according to the last national census and since 2000 it has been an active laboratory of the CPTED methodology applied by the CPTED Region ICA Chapter team. The CPTED intervention in Puente Alto has combined First Generation, Second Generation, and Third Generation CPTED.

Despite the long history of CPTED interventions in Puente Alto, the political situation in Chile has increased criminal opportunity, which has impacted the criminogenic environment of Puente Alto. The year 2019 saw a social explosion in Chile, a violent consequence of the rise in costs of subway tickets.[5] This caused the Chilean President of that time to almost resign his post in the face of strong demonstrations and acts of terrorism such as bombs, fire, and explosions in subway stations in the country.

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[3] https://es.statista.com/estadisticas/1271238/america-latina-y-el-caribe-tasa-de-homicidios-intencionales-por-pais/

[4] A "commune" in the Latin American context is roughly equal to a "county" or "municipality".

[5] https://en.wikipedia.org/wiki/2019%E2%80%932022_Chilean_protests

A constituent process was agreed to make changes to the Constitution, which in July 2022 has already delivered the new draft for consideration by the citizens in a plebiscite on September 4, 2022. As a result of this democratic process, 63% of the Chilean population rejected the Constitutional proposal. At the same time, communities in Chile, including Puente Alto, faced the global COVID pandemic, which affected the health, economic, and emotional stability of the inhabitants.

As an intervention to support vulnerable groups, Mayor Germán Codina from Puente Alto, with more than 850.000 inhabitants, asked an ICA Chapter[6] called the CPTED Region team in July 2021, led by Dr. Macarena Rau, to support (with a complete cycle of a CPTED Project), a population on the border between Puente Alto and Florida called Villa Andes del Sur. The main demographic characteristic of this community is that it is composed mostly of older adults.

The CPTED process from July 2021 to October 2022 included both field experience and research making it possible to expand the idea of Artificial Intelligence (AI) – in contrast to Ancestral Intelligence (AI) – of elderly people from a cultural intelligence point of view, explained below. The community of older adults not only managed to reorganize itself during a catastrophic and emotional situation, but it also has been able to provide support and assistance to other communities in Puente Alto. This was done without support from technology or artificial intelligence, such as video surveillance with facial recognition AI software. That was primarily due to bureaucratic reasons (the tenders took a long time for the

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[6] The International CPTED Association is the global voice for professional CPTED and has chapters around the world, including throughout Latin America. See https://cpted.net/Umbrella-Initiative

installation of video surveillance cameras) in Villa Andes del Sur. That meant the community relied on ancestral wisdom from members of the community.

Literature Review

Numerous bibliographical sources were reviewed as part of preparing and implementing the CPTED Master Plan for the Villa Andes del Sur in Puente Alto.

The first key research source was the Manual de Espacios Urbanos Seguros (Rau et al., 2003), still available on the Ministry of Housing webpage. That provided information on First Generation CPTED and the principles of natural surveillance, natural access control, territorial reinforcement and maintenance. This publication was the first in Chile to describe CPTED (termed "the CPTED methodology" in Latin America), and it also provides concrete examples of positive and negative practices of CPTED in social housing environments. Unfortunately, this manual does not formally include Second Generation CPTED.

A second publication contributing to the analysis was the INVI article of the year 2008 (Rau & Castillo, 2008) in which the design of spaces was studied in relation to residential and housing typologies with wide visual fields for enhancing increase natural surveillance.

A third relevant publication was an article about fear perception in residential settings (Rau V., Cartes, Gatica, & Pascoe, 2018). This article highlighted the principle of community participation, which an integral competent of CPTED practice embedded in Second Generation CPTED. The article not only describes the relevance of Second Generation CPTED but also presents research on the perception of insecurity in vulnerable communities in Latin America through self-administered surveys.

A study of a CPTED masterplan was also useful to examine a local municipal CPTED intervention. It was called the *"City & Security communities and citizens' rights in the co-production of security"* (Vanderschueren, Suárez, Assiago, & Tinoco, 2020). This study considers the idea of local governance and co-production of security in the Villa Andes del Sur CPTED Masterplan.

Form a participatory diagnosis process, the CPTED article *"Tercera Generación: Diagnóstico de Percepción Infantil la Nube de los Sueños"* (Rau V., 2021) provided insight into the was the *Cloud of Dreams* methodology, in particular the role of the dreaming process in children and adults especially where the mental health of community members has been impacted, as occurred during COVID with Villa Andes del Sur.

Another article providing insight introduced a new CPTED theory called, *"Third-Generation Crime Prevention Through Environmental Design (CPTED)"* (Mihinjac and Saville, 2019). The authors further developed some of the original concepts of CPTED pioneer C. Ray Jeffery and then constructed a holistic and comprehensive vision combining First and Second Generation CPTED into an integrative model called Third Generation CPTED. It incorporates the search for habitability through principles such as economic, social, and environmental sustainability and public health sustainability, aspects that have become critically important during the COVID pandemic, especially in relation to mental health.

Considering Ancestral Intelligence, the Latin American placemaking and collective work concept known as the "Minga" was examined. The "Minga" is an alternative practice and representation that takes place in a specific place and time, fostering collective action and the political mobilization of indigenous peoples throughout the Andes Mountain range. It is also

known as "minka" (mink'a from the Quechua minccacun: "to request help by promising something"), and it is a pre-Columbian tradition of community or voluntary collective work for purposes of social utility or of a reciprocal nature that is well known also in Chile and currently in force in several Latin American countries. The article *"La Minga: un instrumento vivo para el Desarrollo Comunitario"* (Obando, 2015) describes the concept: "Minga raises an issue between what is meant by community processes and an approach to the concepts of community, cultural imaginary, and ancestral values, the same that can become a clear and credible tool [for social] alternative wellness.*"*

Expanding on the Ancestral Intelligence concept, the book *Wenumapu* (Pozo Menares & Canio Llanquinao, 2014) describes the native Mapuche cosmogony of Chile, and the relevance of preserving the wisdom of the elders connected to the cycle of life and the earth. This concept of Circle of Wise Elders was used in the design of the CPTED master plan in Villa Andes del Sur. This happened at the beginning of the intervention in July 2021 when the group Circle of Wise Elders was created as management group for the CPTED intervention. The Circle of Wise Elders also are the same as those who run the neighbourhood association in Andes del Sur.

Finally, the last book consulted describes the relevance of community rites to reinforce collective identity and collaboration. This is how Tonathiu Garza describes it in his book *"Naciendo a la vida: Mezcalito y Temazcal"* (Garza, 2017). In ancient Mexico, the use of the temazcal[7] and sacred plants were used in initiation rituals. Currently, these rituals have unfortunately lost their sacred character and their real purpose. "Nacimiento a la vida" is an

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[7] An indigenous form of "sweat lodge" in Latin America. See: https://en.wikipedia.org/wiki/Temazcal

autobiographical story where the author narrates a close encounter with the pre-Hispanic world that seems to have been lost but that, through the temazcal and the sacred plants, remains in force. This ancient perspective was considered within the CPTED Master Plan in Villa Andes del Sur. It will be described later.

Methodology

In Villa Andes del Sur, the aim was to implement a complete cycle of the CPTED project; this is a four-phase process including diagnostic, design, implementation, and evaluation phases in a participatory context.
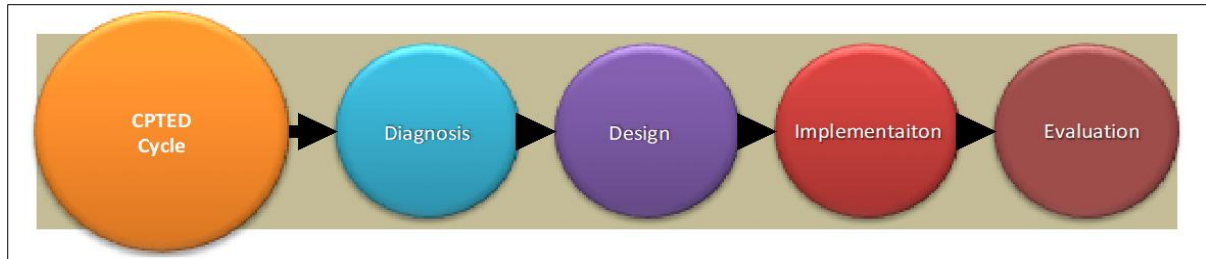
Figure 1

CPTED Principles from an Hispanic Approach

Figure 2

Hispanic CPTED Project Cycle

This LAC CPTED approach has been used in the Hispanic Region since 2000. In July 2021, the CPTED diagnosis began in Villa Andes del Sur with the municipal team of the Public Security Directorate led by Mrs. Olga González del Riego and Dr. Macarena Rau Vargas. To carry out the diagnosis, several diagnostic instruments were applied to obtain both primary and secondary information.

To collect secondary information, data was obtained from the police to verify the criminal profile of the neighbourhood. Instruments were then applied to collect primary information directly from the community, such as Security Exploratory March, (a Safety Audit process done with the community walking around the neighborhood), urban security surveys called ESU, and direct CPTED observations, among others described below.

Description and criminal profile of Villa Andes del Sur

<u>Location</u>

Villa Andes del Sur is in the northern sector of Puente Alto, in Santiago-Chile bordering La Florida, to the west with Av. Concha y Toro. It has an abundant flow of private vehicles and public transport. Towards the south-west of the avenue is the Elisa Correa Metro station (on average 19,100 tickets are validated per business day according to the Metro Community

Relations Department). It also includes supermarkets, minor stores, and a service centre and to the east it borders other sections of Villa Andes del Sur.

Sociodemographic characterization

According to data from the 2017 Census, the area registers a total population of 3,104 people (53% women and 47% men), 987 households, 670 dwellings.[8] Educationally, 72% of the population have secondary school or higher education (24% technical;18% university). Demographically, the composition by age is 35% elderly (60 or older), 27% between 30 to 59 years old and 38% between 0 to 29 years old.

Land Uses

The Villa is mainly residential, with the presence of minor businesses inside, schools on its outer edges, it has seven green areas (small to medium size), these with games/exercise machines inside and two multi-courts (one alone and one integrated to the previous equipment).

Figure 3

Villa Andes del Sur I Map – Stage I & Green Areas (Cádiz, 2020)

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[8] INE. Censo Población Chilena. 2017.

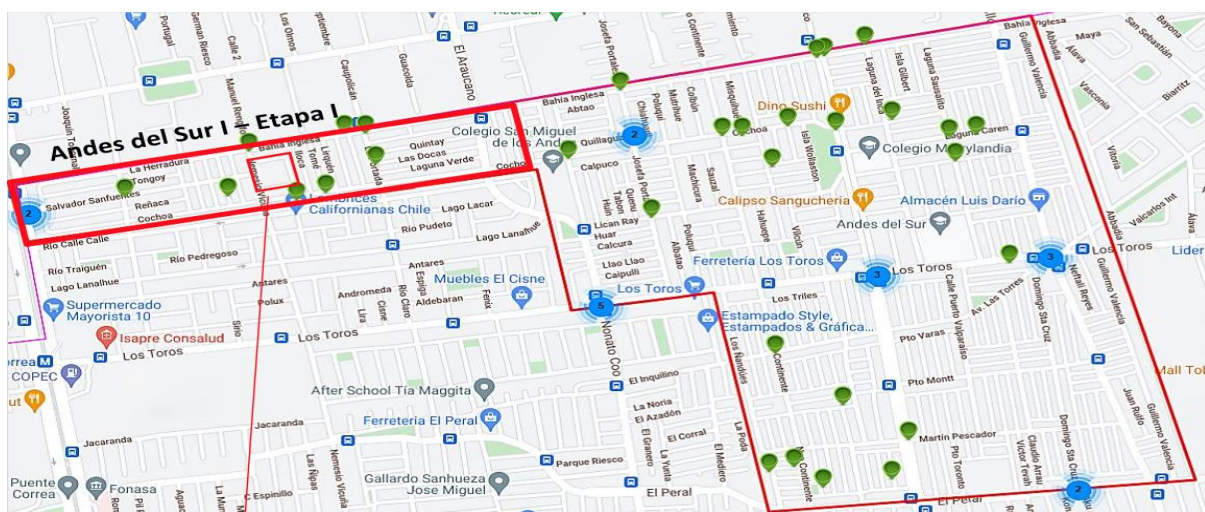**Robbery with violence in Villa Andes del Sur (2020)**

Among the different crimes registered in the Villa Andes del Sur sector, robbery with violence or intimidation registers a greater number of police cases (complaints + arrests) for 2020, concentrating from Los Toros Street to the north (see map below). For this research the complaints and arrest records were combined because of the lack of training in the local police team. The total robbery cases included:

- 95% occurring on public roads and the remaining in private homes, mainly during the afternoon/night and early morning

- 22% between 4:00 p.m. and 7:59 p.m.

- 34% between 8:00 p.m. and 11:00 p.m. and 00:59 hours

- 17% between 04:00 a.m. - 07:59 hours a.m.

Specifically for Andes del Sur, registered cases are concentrated around the axis of Nemesio Vicuña, La Portada, Bahía Inglesa and Cochoa streets (see map above).

Figure 4

Setting the Environment Problems Like Robbery, Alcohol Consumption, Drug Dealing Using GPS software (Cádiz, 2020)

Although the composition for this sector is varied, the above could indirectly generate some problems. The green area contains exercise machines, accompanied by a multi-court, as well as commercial premises of various kinds and a liquor store.

The configuration of the sector could allow hiding places for criminals, facilitating their escape, etc., hindering their natural surveillance.

Table 1

Crime Percentages in Police Quadrant N270, Andes del Sur Villa (2020) (Opazo, 2020)

Crime in Police Quadrant N270 (2020)	PUENTE ALTO-CHILE
ROBBERY WITH VIOLENCE	27%
VEHICLES THEFT	25%
THEFT	10%
INJURY	11%
PROPERTY ROBBERY	7%
CAR ROBBERY	7%
HOMICIDE	0.2%

Urban layout

Villa Andes del Sur is spatially organized around Salvador San Fuentes Street through closed passages with a few small squares. It has a neighbourhood headquarters and a court that, due to the COVID pandemic during 2020, remained closed and only began to function in July 2021 when the CPTED strategy began.

A few squares were filled with vandalism and graffiti during the pandemic period, as well as garbage, which greatly increased the perception of insecurity among older adults who remained locked up in their homes until July 2021.

Figure 5

Street Commerce and Houses in Salvador San Fuentes Street

Figure 6

Square in the Beginning of Salvador San Fuentes Street with Graffiti

Figure 7

Lack of Street Lighting Increases Fear Perception of the Community

Figure 8

Exploratory Security March at daytime in Salvador San Fuentes Street

An Exploratory Security March was carried out with residents of the sector day and night to assess their environmental perception of the environment and interesting results were obtained.

Figure 9

Exploratory Security March at Night-time in Villa Andes del Sur

Data Collection

Figure 10

Are There Small, Confined Places Where One Can Be Hidden From the Sight of Others?

21.- ¿Existen lugares pequeños y confinados donde uno puede estar escondido de la vista de otros?

6 respuestas

- SÍ
- NO
- Sí ¿Cuáles?

66,7%

33,3%

Figure 11

At Night in Busy Places are Lights Turned Off?

17.- De noche, en los lugares transitados, ¿Hay luminarias apagadas?
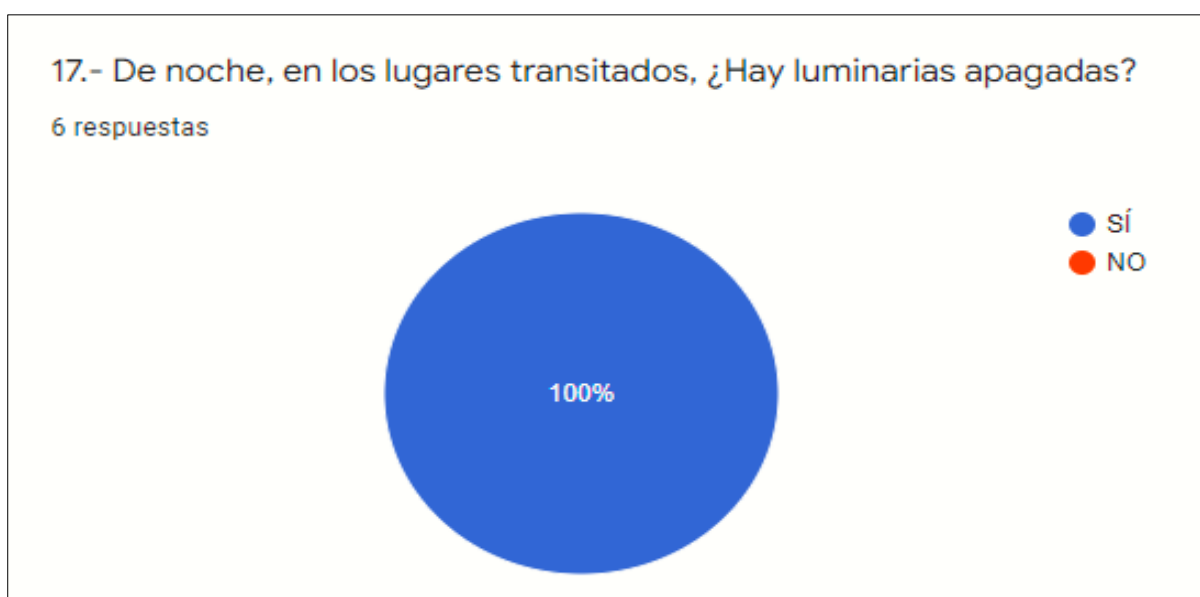
6 respuestas

- SÍ
- NO

100%

Figure 12

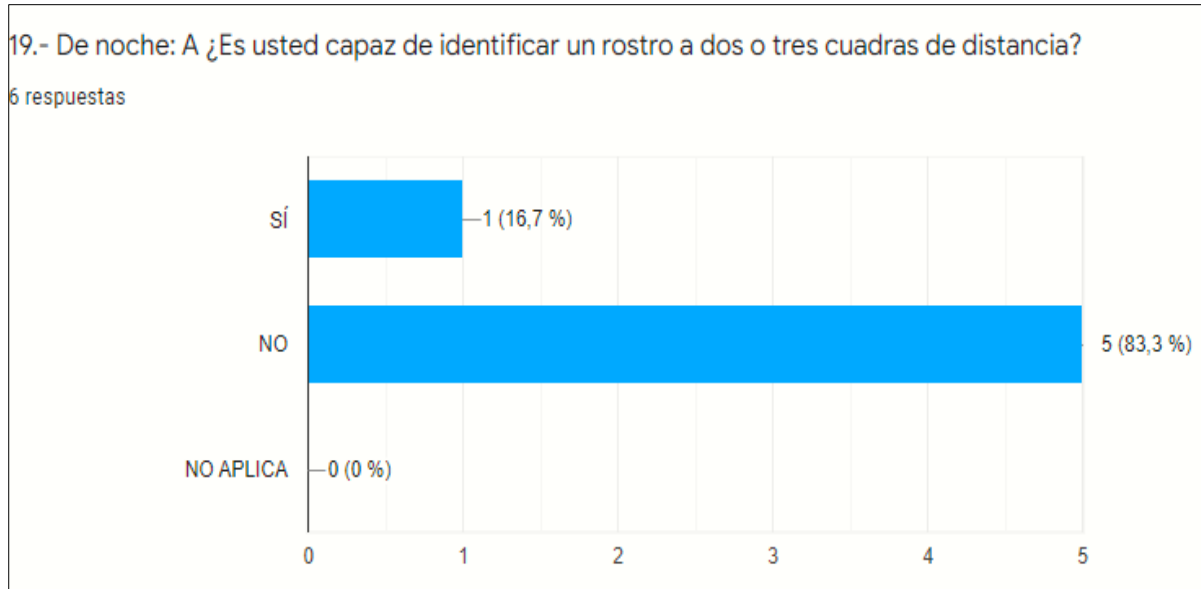*At Night, Are You Able to Identify a Face Two or Three Blocks Away?*

Figure 13

Are There Potentially Dangerous Places?

Cloud of Dreams method

Another diagnostic instrument applied was the Cloud of Dreams with children and elderly.

Figure 14

The Cloud of Dreams Workshop in Villa Andes del Sur

Figure 15

This Drawing of a Candle in Dark Tones Shows the Author's Mourning Situation Due to the Death of his Father due to COVID Infection

Figure 16

This Drawing of Joaquín Escobar Shows the Need for Children to Play Again After Being Locked Up for More Than 18 Months due to COVID Restrictions

Repetition of elements

Seven analysis filters were applied to the sample of drawings and the repetition of elements in the total sample was measured, highlighting the need for contact with nature and games.

Results

The problem in Villa Andes del Sur

After analysing all the evidence and information collected in the CPTED diagnosis, a number of specific problems were identified:

- crime: robbery, incivilities (litter, graffiti etc.),

- lack of urban management/maintenance (cleaning and public lighting), and

- feelings of insecurity.

To be relevant to Third Generation CPTED, it was necessary to consider each principle directly:

a) **Public health sustainability**: the mental health of older residents after COVID will be treated with activities to increase art in public space, identity and a sense of belonging

b) **Environmental sustainability**: different activities of gardening will be taught to the older residents in Andes del Sur so they can grow their own vegetables and fruits

c) **Economic sustainability**: different workshops of art and crafts will be taught such as mosaics so they can earn money selling the products of their arts and crafts

d) **Social sustainability**: this aspect is key for the CPTED Plan and integrates activities to increase social cohesion among old people and younger members of the community.

The CPTED Masterplan for Villa Andes del Sur

Following this diagnosis, it was proposed that the community should develop a CPTED Master Plan to accomplish the following goals:

- To reduce criminal spatial vulnerability by the maintenance and order of public space,

- To increase the levels of habitability and mental health of the community, and

- To increase the levels of social cohesion, especially in the group of older adults.

This Master Plan will have several trust-building components including the construction of a community mosaic that tells the founding history of the neighbourhood considering the memory of the grandparents. To increase levels of comfort and wellbeing, one expected outcome is to increase social cohesion among elderly residents and from them to their families. To accomplish this, the Department of Culture and Public Safety of the Municipality started training workshops for grandmothers in the Mosaic technique for beginners.

In the first meetings there were not many grandmothers since the trust for the activity had not yet been created. Eventually, after three months of persistence, results improved with more activities in addition to a mosaic led by the President of the Neighbourhood Council, Mrs. Carolina Cancino. She, along with a group of elder citizens supporting her, were resilient and they were able to guide her community and provided support the CPTED Master Plan since its inception.

Leadership

It is interesting to reflect on the leadership of Mrs. Carolina Cancino from the perspective of a Minga and Temazcal and the Circle of Wise Elders. Mrs. Carolina Cancino, and other Elders in Villa Andes de Sur, believe that the collective work of the grandmothers in the community should be based on exchange and mutual support. Many of the grandmothers sell handicrafts and by working in the community mosaic they can display their handicrafts at a neighbourhood venue. Ultimately, it is a win-win community entrepreneurship model.

This approach is very similar to that of the ancestral "Mingas" of the native peoples of the Andes, where values and actions are exchanged for collective well-being in a sense of self-realization and transcendence. In some ways, this is similar to the focus on internal psychological/emotional environments for residents as suggested in the public health concept in Third Generation CPTED.

Rather than put attention to the external physical and social environments, Third Generation CPTED deals with the internal psychological/emotional environment of human behaviour. It is based on expansive new research on triggers of neurological and emotional patterns. (The International CPTED Association, 2022)

Figure 17

Timeline of Villa Andes del Sur in Mosaics

In this sense, the value exchange for collective well-being by elders in Villa Andes del Sur is similar to Third Generation CPTED strategies.

Figure 18

Elderly People From Andes del Sur in the Mosaic Training Workshop

Another aspect of Mrs. Carolina Cancino's leadership together with all the elderlies that support her leadership is to have community rites of passage that are relevant to trigger collective identity. One of these rites was a memory workshop where the grandmothers remembered important and historical moments in their process of populating Villa Andes del

Sur. These are like what is stated in the Temazcal rites where it is argued that community culture is built from these collective rites.

The conclusion is that by explicitly stating the history and experiences of (older) people in a neighbourhood, and sharing with others in the community, is a strategy that will result in more social cohesion between all residents.

Discussion and Conclusions

Based on the results of this CPTED participatory diagnosis as a first step in the process of implementing the Master Plan, we define Ancestral Intelligence as the ability to face community crises with an optimization of the results. This is modulated by the wisdom obtained from life experiences of the elderly people in Villa Andes del Sur.

It is interesting to contrast the Ancestral Intelligence emerging from the wisdom of age and experience of people in the community with the urban security in the technologies offered through Artificial Intelligence such as CCTV facial recognition. The precise definition of Artificial Intelligence is subject to much discussion, much of it confusing.[9] One dictionary alone, for example, gives four definitions of Artificial Intelligence:

- An area of study in the field of computer science. Artificial intelligence is concerned with the development of computers able to engage in human-like thought processes such as learning, reasoning, and self-correction.

- The concept that machines can be improved to assume some capabilities normally thought to be like human intelligence such as learning, adapting, self-correction, etc.

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[9] See, for example, https://www.ie.edu/insights/articles/why-the-term-artificial-intelligence-is-misleading/

- The extension of human intelligence through the use of computers, as in times past physical power was extended through the use of mechanical tools.

- In a restricted sense, the study of techniques to use computers more effectively by improved programming techniques. (The New International Webster's Comprehensive Dictionary of the English Language, Encyclopaedic Edition, cited in Kok et al., 2002).

The definitions have also changed in the course of time, due to rapid development in the technology. More recent definitions include, "imitating intelligent human behavior", which is already a much clearer definition.

Examples of Ancestral Intelligence in this study are varied. For example, we can describe one incident when the Circle of Wise Elders organized themselves with limited funding and bought an old ambulance to recover critical patients from COVID and bring them to hospital. Examples also include: uniting rather than dividing community forces; knowing how to ask for help when necessary; enjoy the present moment and life with small celebrations that give an important meaning to the concept of community such as birthdays, Christmas parties, trips to the beach, among others. Other examples of Ancestral Intelligence include establishing clear limits regarding undesired behaviours by young people during of the use of community sports fields.

Artificial intelligence or/and ancient intelligence

When the participatory diagnosis began in Andes del Sur, the elderly community urgently requested the installation of more video surveillance cameras and, if possible, facial recognition. This was one of the largest requests that the community made to the municipal team.

At the public level, it takes a long time to bid for the hiring of cameras with facial recognition, especial in the post-COVID context. This gave time for the CPTED Master Plan to advance, to address aspects of mental health and community cohesion first. It is important to note that the elderly residents sometimes came up with answers that were impractical (costly CCTV with facial recognition), when asked how to obtain a cohesive, healthy, safe and secure neighbourhood. Hence, simply asking, What do you want? in a survey is an ineffective approach. Policymakers should take more time, consider the local cultural context, avoid 'quick and dirty' methods of participation.

As the CPTED process of participatory community mosaics progressed, the community's level of joy and self-realization increased, and they stopped requesting support and installation of video surveillance cameras. Their environmental needs regarding urban security changed.

Therefore, it is worthwhile to ask if Ancestral Intelligence and Participatory Intelligence in a CPTED strategy is more important, and effective, than Artificial Intelligence security technology? Or is it more effective to combine them together?

Elderly wisdom for community leadership

The strong leadership of Mrs. Carolina Cancino supported by many old people in the Villa has been a major success factor, especially considering the success and recovery of mental health by the grandparents in the case study. But what would happen if that leadership did not exist within that Ancient Intelligence? Would we have to create it or encourage it within community members for a successful CPTED intervention?

These reflections leave such questions open as research questions for future case studies. Especially important for future study in urban security is whether Ancient Intelligence or Artificial Intelligence (or both) will produce better results in reducing crime and fear of crime during projects that incorporate First, Second and Third Generation CPTED.

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