Urbano

MISCELÁNEA
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NOVIEMBRE 2024 / NÚMERO 50
ISSN IMPRESA: 0717 - 3997
ISSN ELECTRÓNICA: 0718 - 3607

50 Urbano

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REVISTA DEL DEPARTAMENTO DE PLANIFICACIÓN Y DISEÑO URBANO /
UNIVERSIDAD DEL BÍO - BÍO / CONCEPCIÓN / CHILE

UNIVERSIDAD DEL BIO BIO

FACULTAD de ARQUITECTURA CONSTRUCCIÓN y DISEÑO
UNIVERSIDAD DEL BIOBÍO

DEPARTAMENTO DE PLANIFICACIÓN Y DISEÑO URBANO

CONICYT Ministerio de Educación
Gobierno de Chile

Programa de Información Científica
Concurso Fondos de Publicación de Revistas Científicas 2018
Proyecto Código: FP180007

INDEXACIONES/indexation
Scopus, Scielo, Emerging Sources Citation Index, Redalyc, ERIHPLUS, DOAJ, EBSCO, AVERY Index, Latindex Catálogo 2.0, Dialnet, REDIB, REBIUN. URBANO forma parte de ARLA, Asociación de Revistas Latinoamericanas de Arquitectura.

Recibido: 20-09-2024
Aceptado: 26-09-2024

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REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 8 - 17
ISSN 0717 - 3997 / 0718 - 3607

WALKING RHYTHMS AND WALKABILITY IN INTERMEDIATE CITIES [1]

RITMOS DEL CAMINAR Y CAMINABILIDAD EN LAS CIUDADES INTERMEDIAS

SOLEDAD MARTÍNEZ-RODRÍGUEZ [2]

1 Article derived from the ANID - Fondecyt postdoctoral research N° 3200807 “Interweaving the city with the feet: geographies of daily walking in the context of the transformations of intermediate cities in southern Chile, the case of Osorno”.

2 Doctor in Human Geography and Anthropology.
Professor of the Faculty of Social Sciences and History, Universidad Diego Portales.
University of Los Lagos, Osorno, Chile.
https://orcid.org/0000-0002-5622-9440
soledad.martinez@mail.udp.cl

https://doi.org/10.22320/07183607.2024.27.50.01

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Las ciudades intermedias, caracterizadas por sus distancias más cortas, podrían proyectarse como espacios propicios para la adopción de modos de movilidad activa como la caminata. Sin embargo, la tendencia parece ser otra. Las más recientes encuestas de movilidad muestran una disminución de los viajes a pie y un aumento del uso del automóvil en varias ciudades intermedias chilenas. Este fenómeno plantea interrogantes sobre las experiencias que viven quienes caminan en ciudades intermedias para comprender por qué en estas ciudades que por sus distancias podrían ser evaluadas como caminables, caminar deja de ser una opción de movilidad cotidiana para la mayoría de las personas. Este artículo aborda esta pregunta con base en una investigación etnográfica realizada entre los años 2021 y 2022 en la ciudad de Osorno, región de Los Lagos, en la que se analizaron las experiencias pedestres de veinte habitantes de la ciudad. Un hallazgo relevante son las frecuentes disrupciones en los ritmos y en la sensación de continuidad que los participantes experimentan en sus trayectos y su impacto para la práctica cotidiana de caminar. A partir de esta observación se propone incorporar la noción de ritmo en el debate sobre la caminabilidad de las ciudades intermedias como un elemento valioso que permite poner el foco en las experiencias que tienen las personas al caminar y avanzar en la comprensión sobre qué hace que una ciudad sea caminable, pero también qué hace que quienes la habitan quieran caminarla. De esta manera, este artículo aporta al conocimiento de las experiencias pedestres en contextos no metropolitanos, a menudo ignorados dentro de los estudios del caminar urbano, enriqueciendo nuestra comprensión de la movilidad cotidiana en ciudades intermedias.

Palabras clave: movilidad pedestre, prácticas cotidianas, disrupciones, sensación de continuidad, Osorno

Intermediate cities, characterized by their shorter distances, could be projected as favorable spaces for adopting active means of mobility such as walking. However, the trend seems to be moving in another direction. The most recent mobility surveys show a decrease in people going for walks and an increase in car use in several intermediate Chilean cities. This phenomenon raises questions about the experiences of those who walk in intermediate cities to understand why these cities could be evaluated as walkable, as walking is no longer a daily mobility option for most people. This article addresses this question based on ethnographic research conducted between 2021 and 2022 in the city of Osorno, in the Los Lagos region, where pedestrian experiences of twenty inhabitants were analyzed. A relevant finding is the frequent disruptions in the rhythms and sense of continuity that participants experience in their trips and their impact on the daily walk. Based on this observation, the proposal is made to incorporate the notion of rhythm into the debate on the walkability of intermediate cities as a valuable element that allows focusing on the experiences that people have while walking and to make progress in the understanding of what makes a city walkable, and what makes its inhabitants want to walk it. In this way, this article contributes to knowledge of pedestrian experiences in non-metropolitan contexts, often ignored in urban walking studies, enriching our understanding of everyday mobility in intermediate cities.

Keywords: pedestrian mobility, daily practices, disruptions, sense of continuity, Osorno.

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I. INTRODUCTION

Walking is considered a sustainable means of mobility with almost universal access that does not generate negative externalities, benefits people's health, and contributes to having safer spaces (Ministry of Transport and Telecommunications of Chile, 2023). The concept of "walkability" has allowed areas such as urban planning, transportation studies, or urban design to consider "the extent to which characteristics of the built environment and land use may or may not be conducive to residents in the area walking for either leisure, exercise or recreation, to access services, or to travel to work" (Leslie et al., 2007, p.113). However, there is no consensus on the elements that ensure improved walkability (Forsyth, 2015), and measuring them requires a multidisciplinary approach (Hutabarat Lo, 2009). Although access to sidewalks, connectivity, density, and land use diversity are essential to encourage walking (Hutabarat Lo, 2009), they are not universal. Moreover, Arellana et al. (2019) have shown that road and public safety in Latin America are more relevant to walkability than conditions of the sidewalks and the attractiveness of spaces, which tend to stand out in North American and European cities.

In Chile, walkability studies have focused mainly on Santiago. In one of the studies, Berríos Álvarez and Greene Zúñiga (2020) identified that there are barriers that reduce the potentially walkable area, whether natural (rivers and hills), artificial (roads, underpasses/overpasses), or intangible (road safety or crime). For their part, Herrmann-Lunecke, Mora, and Véjares (2020) noted that broad sidewalks, trees, and mixed land use facilitate walking, while narrow sidewalks in poor conditions, intersections, motorized traffic, and vehicle noise inhibit it. Finally, when researching the relevance of walking for older people, Herrmann-Lunecke, Figueroa Martínez, and Parra Huerta (2022) revealed the obstacles that this group faces, such as sidewalks in poor conditions, dangerous intersections, and unattractive landscapes.

These studies show how walkability is useful for evaluating the built space's conditions. However, they consider walking as a behavior that responds to spatial attributes with a degree of independence from the social and psychological relationships between people and their environment (Battista & Manaugh, 2018), and even though there are places with spatial conditions for walking, people prefer not to do so. This problem is seen in intermediate cities**3** in Chile. It was thought intermediate cities, characterized by shorter distances, would encourage everyday walking. However, a different trend is seen, and although walking is an important mode of mobility for medium-low-income groups, especially for women working as caregivers (Herrmann-Lunecke, Mora & Sagaris, 2020), recent studies show car use trending up in intermediate cities and walking and public transport use heading in the opposite direction, where it is not districts with less poverty that have the highest rise (Maturana et al., 2022).

Why are cities whose built space has elements that encourage walkability, in practice, not walked? This article answers this question by considering the lived experience of walkers through ethnographic research carried out between 2021 and 2022 in the intermediate city of Osorno, where daily walking fell from 37% to 20% between 2003 and 2013, and car use increased from 20% to 43% (Road and Urban Transport Program: SECTRA, 2015). After analyzing the experiences of twenty people living in the city, the results show that the participants experience different disruptions in their walking rhythms that generate the feeling that walking is an outdated practice in several areas of Osorno. Based on this finding, a reflection is made on the uniqueness of walking in intermediate cities and the role of rhythm in encouraging its daily practice. Thus, it contributes to the understanding that walkability is not synonymous with walking and that the affective and sensory experiences of those who walk need to be considered if walking is to be promoted as a means of everyday mobility.

II. THEORETICAL FRAMEWORK

Rhythm as an expressive element of walking

To explore people's experiences when walking through the city on a daily basis, walking is understood not as a behavior but rather as an embodied social practice that is materially and socially co-constructed (Lee & Ingold, 2006; Middleton, 2010; Middleton, 2022). Walking is "a permanent relational achievement of entities that are social (meanings, emotions, affections) and material (human and non-human bodies, things, weather, sunlight)" (Waitt, Stratford & Harada, 2019, p. 2). To understand the experience of walking, it is necessary to consider the relationships that emerge among those who walk, the materiality of the places, the emotions, the feelings, and the meanings of those journeys.

3 The debate on how to refer to cities that are not metropolises or small towns is a topic under discussion. In Chile, these are usually regional or provincial capitals, excluding Santiago, Valparaíso, and Concepción (Maturana et al. 2017).

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In Chile, a line of work has been dedicated to exploring pedestrian experiences through qualitative research strategies. These studies mainly focus on the city of Santiago, exploring its aesthetic dimension (Avilés Arias, 2020), the influence of socio-spatial inequality (Martínez, 2022), gender (Adame Castillo, 2019; Pumarino, 2020), the attachment that emerges in the routes (Sandoval Luna, Greene & Di Masso, 2023), and how it is broken down into spaces for parenting and learning (Mora, 2018). Fewer works were found in other cities, which usually address the experience of walking as part of more extensive research on everyday mobility. These investigated and revealed the experiences of older people walking in the city of Valparaíso (Olivi, Fadda & Reyes, 2016), that walking implies increasingly less sociability in encounters with neighbors and proximity in Talca (Errázuriz Infante & Valdés de la Fuente, 2017) or that it allows creating meanings about the urban experience in the Coquimbo–La Serena conurbation (Vergara Álvarez & Concha Méndez, 2023).

This work focuses on rhythm, a constituent element of the walking experience that allows observing the relationships created between people and places. Ingold (2011) explains that a rhythmic activity is generated in tune with the environment. Without this, there is only a mechanical act, like that of the metronome, which marks the same pulse regardless of what is happening around it. When walking, the same step is never repeated; each step responds to the ever-changing conditions of places and one's body. Arguing in the same line, Lefebvre (2013) says that an essential aspect of rhythm is not just the repetition but the difference it contains. Rhythm, understood in this way, is a sensitive element (that can be perceived) that expresses the relationship of walkers with their environment (Martínez Rodríguez, 2019). The rhythm of those who walk feels like a flow when the body accompanies the traveled space. However, it becomes friction when facing an obstacle: the rhythm is broken, and walking becomes a test of physical and emotional endurance.

While other works have described how rhythms vary according to the purpose of the walks (Matos Wunderlich, 2008), this work explores how disruptions in walking rhythms say something about the experience of walking in an intermediate city. Vergunst (2010) says that "when walking, the body brings together material and social relationships and generates a rhythm that those who work on ethnography can listen to" (p.376). Through an ethnographic strategy, the experiences of those who walk are sought by participating in them, thus complementing the knowledge generated by the literature on walkability by exploring how the experiences lived in the spaces influence people to walk every day.

III. METHODOLOGY

This article presents the results of a broader ethnographic study on the changes in everyday walking practices in Osorno in response to its urban transformation in recent decades. The fieldwork was carried out in 2021 and 2022 when the researcher lived in Osorno for a year and a half to experience first-hand what it is like to move around the city on foot on a daily basis.

The ethnographic methodology consisted of proposing to people who lived in different parts of the city to walk with them on a route that they usually walk today and another that they would have walked every day in the past, 10 to 20 years ago. A call for participants was made using social networks, the University of Los Lagos communication channels, and social organizations. The routes were then recorded on video with a small bodycam. Each person was spoken to at least once before taking their routes (sometimes more) to build trust and understand their mobility practices and relationship with the city. 7 men and 13 women between 20 and 84 years old, whose names have been anonymized (pseudonyms are used), took part, exploring 10 current and 18 past routes. As this is an ethnographic research project, 20 people were considered sufficient. This was because the walks and conversations with participants from all the city's neighborhoods helped reach an information saturation point. The conversations while walking, interviews, and records of the field diaries provided the data that were analyzed thematically.

The fieldwork was carried out when quarantines were still being decreed due to the COVID-19 pandemic. This made it difficult to walk in person with people and required adapting the methodology. First of all, due to the initial difficulty in convening participants, the criterion of residing in Osorno was relaxed, and two people who grew up in Osorno, who no longer lived in the city but usually returned to visit their family, were included. Anthropologist Consuelo Robledo was hired as a field assistant to compensate for the delay; she collaborated by conducting interviews and walking the routes. Also, when people could not do the walks in person, they were done virtually. In these cases (7 of the 28 routes), people described their present and past routes in an online interview. The researchers then walked, recorded them, and reviewed the records with the people in a second online interview.

IV. RESULTS

Disruptions to the rhythm mark the walking experiences of the different people who participated in this research. These disruptions are combined analytically into the topics presented below.

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Figure 1. Rhythmic disruption by evoking traumatic events on the route from Ovejería to downtown Osorno along the train tracks. Source: Photograph from Consuelo Robledo's recording. Map taken from Google Maps. Preparation by the author.

Feeling of insecurity

The feeling of insecurity generates affective disruptions in people's journeys. Walking, feeling afraid, assessing whether or not someone approaching is a threat, and being aware of any noise or movement interrupts the pace of those walking. This is the case of a 28-year-old woman who lived in the Ovejeria sector as a teenager. She used to go to and from the city center along the train tracks. It only took fifteen minutes, and she enjoyed the walk: "It was quieter, fresh... I don't know, the air felt fresher." She stopped taking that section after experiencing harassment. The woman still lives in Ovejería, but walking downtown is no longer an option for her. The harassment she suffered while walking, and then also on public transport, restricted her daily mobility options:

> Ovejería is about ten to fifteen minutes from the center. It's really close, so I used to walk a lot. But I had, I started having... well, since high school, I started experiencing a lot of attacks in the street from men. If not there, on the bus. After that, it was practically just public transport, nothing else, collective taxis more than anything. And then I started driving, just using the car, nothing else, to avoid meeting people I didn't know. Because, as I told you, I had so much sexual harassment on the street (A 28-year-old woman who lives in Ovejería).

The experiences of harassment ended this walking route for her. She now avoids that place because when she walks there, this experience resonates with past events, making her feel distressed and interrupting her rhythm. This happened the day she was accompanied to walk her old route downtown from Ovejería along the train tracks (Figure 1). The two were walking and talking when a man walked by in the opposite direction. The woman suddenly fell silent, and once the man had moved away, she said: "Oh, it gives me chills when someone passes me here." These traumatic experiences have left marks on the routes that affect her rhythm when walking there again. Memories remain in the spaces and generate a feeling of being somewhere that feels dangerous and unwelcoming, and walking ceases to take place.

For other participants, insecurity is not a consequence of an experience but rather their interpretation of the places' atmospheres. Some participants admitted to feeling unsafe walking through downtown Osorno. Stories of robberies and the crowds caused by street trade create an atmosphere that makes them uneasy. A couple (aged close to 60) living in a central neighborhood for three decades stopped walking around it because they no longer felt relaxed. Younger people reported similar experiences. A 20-year-old woman who lived in Rahue Alto talked about her nervousness as she walked through the town center.

> "But the constant feeling I always have when I go out, most of the time, is like... the truth is that I always have to be attentive, anxious that something might happen. And I don't feel like I could do anything to stop it from happening. I just feel that constant fear."

People avoid these roads or walk along them quickly in response to these atmospheres. The walkable routes are reduced as people look for alternative paths or stop walking. A distance of fifteen minutes, considered walkable on the map, can be unwalkable in practice

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Figure 2. Relationship between walkers and large vehicles on Inés de Suárez Av./San Pablo Bridge. Source: Still obtained from recording a daily walk of the author. Map taken from Google Maps. Preparation by the author.

because the sensations people have there make them adjust their rhythm, making them walk fast, paying attention, and often no longer walking there.

Rhythmic regimes

The rhythms of those who walk become part of the "complex amalgam of rhythmicities" (Edensor, 2010, p. 71), which is the urban space where some rhythms predominate over others and define how a place is perceived. This is seen when walking along Osorno's main avenues, which connect to the city's access roads where large vehicles pass by, often carrying cargo at high speeds. This is the case of Inés de Suárez Avenue, part of the author's daily route to Bellavista Park. It is just a 15-minute walk that felt much longer because of the disruptive sensation that the vehicles' speed and dimensions caused for the body (Figure 2).

This experience shows that the rhythms of those walking are hard to keep in step with vehicles that introduce a scale of size and rhythm that overwhelms that of the walkers. Another 32-year-old woman who lives in the Rahue Alto area, tells of a similar experience when recalling the path she took from the Maximiliano Kolbe neighborhood to the Chuyaca Campus of the University of Los Lagos, located at the eastern exit of Osorno. The route passes along Julio Buschmann Avenue, an access road to the highway for high-speed vehicles. The woman talks about how her attention and rhythm changed in that section. "Of course, the other side was much calmer, more peaceful, more pleasant. This part [of the avenue] is where you have to move like a hare. As I said, you have to be aware of everything; you are jumpier."

In these cases, vehicular traffic rhythmically and sensorially dominates the space, generating feelings of vulnerability and distress for walkers. Walking then feels like an out-of-place practice, even if there is a sidewalk. If the sidewalk does not protect the walking bodies from the vehicles' speed, noise, and sizes, a rhythmic hierarchy is generated where the walkers are relegated to a second plane.

Disruptive materialities

The sidewalk and road materiality are also sources of breaks in pedestrian rhythms. A sidewalk in a poor or uneven state, or the lack of sidewalks, generates problematic disruptions, especially if the different physical abilities of those who walk are considered. In these cases, keeping a rhythm is achieved thanks to the walkers' efforts.

In Osorno, a city with short distances, one moves from one area to another in a few paces, which implies that the existence and quality of the sidewalks vary qualitatively, as the photograph shows in a stretch of less than 300 m (Figure 3).

Changes in the sidewalks require adapting the pace of the walk. They even limit the city that can be covered by people with walking difficulties or who need the assistance of some device. This is the case of an older man who was usually seen walking around the same block in the city center. The pavement of that section had been recently renewed; it was even and stable (Figure 4). His route was limited to that space. Although the surrounding sidewalks were paved, their texture did not give good support to his walker-assisted walking. He could not walk without great effort and risk on the narrow sidewalks with uneven

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Figure 3. Change in the sidewalk quality in less than 300 m on Av. Inés de Suárez (Ovejería sector). Source: Stills obtained from recording the author's daily walk. Map taken from Google Maps. Preparation by the author.

Figure 4. Seniors' walking is restricted to sidewalks that allow them to use a walker. Location: Av. Juan Mackenna between Lord Cochrane and Manuel Antonio Matta. Source: Photograph taken by the author on one of her daily walks. Map taken from Google Maps. Preparation by the author.

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Figure 5. The woman and her son, walking in a line along the verge from Las Quemas to Av. Diego de Almagro. Source: Still obtained from a recording made by Consuelo Robledo. Map made on Google Maps by the author where the participants' route is shown in blue and the location of the stills in red.

surfaces. For him, the walkable city was restricted to these few blocks, even though the city center can be considered "walkable" due to its density, land use diversity, and pedestrian access.

Another materiality that interferes with pedestrian rhythms is the absence of sidewalks. This is the case for the teenage son of a 47-year-old woman who lives in the Las Quemas area, who has to walk a section along the verge of the U-496 highway to access public transport. Walking along a verge is not unusual in intermediate cities where the city's edges are close to the most consolidated area. However, due to increased vehicular traffic in recent years, these situations increasingly require that the rhythm of those who walk is one of awareness. They are usually accelerated rhythms. If people walk with others, they have to walk in a row because there is no space to walk next to them. They are also paths that exclude, as they require optimal physical abilities to negotiate the vulnerability to which bodies are exposed (Figure 5).

V. DISCUSSION

As the literature on walkability indicates, whether people walk every day depends on elements of the built environment. However, this does not tell the whole story regarding what leads a city to be effectively walked by its inhabitants. This research suggests that walkers also need to feel continuity in their walks, i.e., that their rhythms can occur without significant disruptions. Rhythms are the coordinates "whereby inhabitants and visitors frame and organize the urban experience" (Amin & Thrift, 2002, p. 17). If continuity is not maintained, the walk becomes difficult because those who walk cannot organize their experiences and lose confidence in a path when it does not allow them to maintain their rhythms. The stories presented show situations where the environment is decoupled from the rhythms of those who walk. The daily repetition of these decoupling experiences has, as shown, the effect of closing routes even if they are evaluated as walkable from the perspective of the built space. People avoid them by moving around other places or stopping walking. The walkable city is reduced in the former, and in the latter, the city ceases to be walked.

An attraction of any bodily practice is fluidity, i.e., the ability to perform an activity while maintaining continuity. When the rhythm is broken, extra energy is mobilized to regain fluency. That effort is physical and also emotional. The cases above show that disruptions in walking rhythms generate sensations of not having anywhere to walk, which discourages people from usually taking these routes, i.e., they impact daily walking for those who learn that these routes stop them from keeping a rhythm. This finding corroborates what Middleton (2010) says in his research of walking practices in London: "(...) an area can be considered more walkable if pedestrians can walk on 'autopilot' and the fluidity of their movement is not interrupted by awareness of the bodily planes of their experience" (p. 591). Having the experience of fluency means that the awareness of the effort required to walk is a background thought, which helps to consolidate the habit of walking; therefore, places are walked more.

These findings allow us to better understand the role of building a rhythm in daily walking practice. Rhythm is a kind of score for the body that is learned and used depending on what happens in the space. Having the chance to use a known rhythm fluently, without major shocks, creates a repertoire where the body recognizes itself and creates a feeling of having a place to walk. Walking finds its place in

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space and can become an everyday practice. However, building a feeling of everyday life that allows people to walk again is more challenging in spaces where walkers' rhythms are constantly interrupted.

Maintaining a rhythm in any city, large or small, involves an effort and a negotiation with the rest of the rhythms that are complexly blended. However, in the intermediate city, the space changes in quality over short distances, which seems to generate more disruptions for pedestrian rhythms, and it is difficult to achieve an experience of walking in "autopilot" mode. In Osorno, within a few meters, those who walk find large access roads to the city, narrow bridges, train tracks, roads, large infrastructures such as silos and warehouses associated with productive activities, wastelands, and sidewalks that run out, among others. These elements make up a broken city for those walking:

> Yes, there are places to walk; there are beautiful places, but maybe we need to connect them more because Osorno is not that big. When you go to Santiago, Concepción, and maybe Valparaíso, you walk many blocks, and you don't realize how much you walk because everything seems more together. But here, I hear people say, "I walked a lot" because they walked from O'Higgins to Prat! And that was a lot, and that's not true; that's really little, right? (A 42-year-old woman from the Maximiliano Kolbe neighborhood).

This woman appreciates how the lack of regular experience gives the feeling that distances are greater and exemplifies this by contrasting her experience of walking in Osorno with that of walking in metropolitan cities. As she says, when "everything seems more together," you do not realize how much you walk, i.e., in "autopilot" mode, which helps cement a daily walking practice. Achieving a continuity of walking rhythms is an element to be considered to create cities where people want to walk and get used to walking. This is one of the challenges to making intermediate cities, besides being walkable, walked.

VI. CONCLUSIONS

This work contributes to the debate on walkability by arguing, based on ethnographic work, that everyday walking not only depends on the built space's conditions but also on the social, affective, and sensory experiences that are experienced when walking. Thus, it opens a conversation for research traditions on walking that do not usually dialog: one that seeks to define and measure the walkability of urban spaces and the one that explores walking as a social practice. In addition, it shows how walking in an intermediate city faces specific challenges, which opens the door to investigating whether the situations recorded in Osorno can be considered in other intermediate cities.

In particular, this work contributes to knowing more about the role of rhythm in the construction of daily walking practices. It suggests its consideration when evaluating the walkability of spaces, especially in intermediate cities, where pedestrian rhythms can be interrupted more frequently due to their size and morphological characteristics. It is emphasized that to make walking an everyday practice, it is essential that people can use a known rhythm that feels like walking in "autopilot" mode. When they do not have to pay special attention to the physical act of walking, people can devote themselves to other things during their walk, such as thinking, listening to music, talking on a phone, enjoying the environment, chatting with those accompanying them, etc. This reinforces the practice of walking and allows it to become daily once more.

VII. CONTRIBUTION OF AUTHORS CRediT:

Conceptualization, S.M.; Data curation, S.M.; Formal analysis, S.M.; Acquisition of financing, S.M.; Research, S.M.; Methodology, S.M.; Project management, S.M.; Resources, S.M.; Software; Supervision; Validation; Visualization; Writing – original draft, S.M.; Writing – revision and editing, S.M.

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IX. ACKNOWLEDGEMENTS

I would like to thank everyone who participated in this research for letting us walk with them and share their experiences and memories. My gratitude also goes to Consuelo Robledo and Luis Antonio Vásquez for their work and company that helped complete this research under the difficult conditions we experienced during the pandemic. I especially recognize the work of those who anonymously reviewed this article; I value their kind comments and suggestions that allowed me to improve this manuscript. Thank you for the time you generously gave, which probably added to the many tasks and demands of your academic and caregiving duties.

RITMOS DEL CAMINAR Y CAMINABILIDAD EN LAS CIUDADES INTERMEDIAS
SOLEDAD MARTÍNEZ-RODRÍGUEZ
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 8 - 17
ISSN 0717 - 3997 / 0718 - 3607

Recibido: 18-07-2024
Aceptado: 04-11-2024

DE PROLETARIOS A PROPIETARIOS, DE PROPIETARIOS A INVERSIONISTAS: UNA REFLEXIÓN SOBRE LAS TRANSFORMACIONES SOCIOESPACIALES DE LA VIVIENDA EN CHILE
JUAN CORREA-PARRA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 18 - 31
ISSN 0717 - 3997 / 0718 - 3607

FROM PROLETARIAN TO OWNERS, FROM OWNERS TO INVESTORS:

A REFLECTION ON THE SOCIO-SPATIAL TRANSFORMATION OF HOUSING IN CHILE [1]

DE PROLETARIOS A PROPIETARIOS, DE PROPIETARIOS A INVERSIONISTAS: UNA REFLEXIÓN SOBRE LAS TRANSFORMACIONES SOCIOESPACIALES DE LA VIVIENDA EN CHILE

JUAN CORREA-PARRA 2

1 Article derived from the research of the National Agency for Research and Development of Chile (ANID) National Doctoral Scholarship 2023 - 2026 and National Agency for Research and Development (ANID) Fondecyt Regular No 1241297 “Geography of the housing crisis: subsidiarization, informalization and contestation in cities of the north housing: subsidiarization, informalization and contestation in cities in the north, center and south of the country (Arica, La Serena-Coquimbo, Valparaíso and Concepción)”

2 Master in Urban Development
PhD student in Geography UC - Associate Researcher
Universidad de las Américas, Santiago, Chile.
https://orcid.org/0000-0002-0612-8780
jrcorrea@uc.cl

https://doi.org/10.22320/07183607.2024.27.50.02

La vivienda importa, no sólo como un garante de los derechos fundamentales de las personas, sino también como un espacio de desarrollo personal, afectivo y de inserción social, junto con el acceso a las diversas redes, oportunidades, bienes y servicios que ofrecen las ciudades. En los últimos años se ha generado una crisis global de acceso a la vivienda, catapultada por las lógicas neoliberales que han convertido a la ciudad en un espacio de especulación, a través de los mercados de vivienda.
En el caso chileno, las huellas de la dictadura siguen vigentes, a través de esta lógica de convertir el país de proletarios a propietarios, por medio de la visión de la vivienda como un bien de consumo. En los últimos años, esto se ha visto distorsionado por una nueva lógica de entender la vivienda como un activo financiero y, por lo tanto, convirtiendo a estos propietarios en inversionistas. Este estudio busca analizar los patrones socio espaciales de localización tanto de los conjuntos de viviendas sociales desarrollados entre los años 1974 y 2017, como los proyectos inmobiliarios con fines de inversión desarrollados desde 2010 hasta 2023. Los resultados dan cuenta de las profundas huellas que han dejado estas nuevas dinámicas de propietarios e inversionistas en los territorios de diversas ciudades chilenas y evidencian cómo la vivienda no es sólo un activo de inversión por excelencia, sino también un elemento de consolidación de las desigualdades socio espaciales.

Palabras clave: vivienda, financiarización, verticalización, desigualdad.

Housing matters not just as a guarantee of people's fundamental rights, but also as a space for personal and affective development and for social insertion, along with access to different networks, opportunities, goods, and services that cities offer. In the last few years, a global access to housing crisis has been created, catapulted by the neoliberal logic that has converted the city into a space for speculation through the housing markets. In the Chilean case, the fingerprints of the dictatorship remain alive through the logic of converting the country from proletarians into owners through a vision of housing as a consumer good. Recently, this has been distorted by a new logic of understanding housing as a financial asset, thus converting these owners into investors. This study analyzes the socio-spatial location patterns in the social housing complexes built between 1974 and 2017 and the property developments with an investment approach built from 2010 to 2023. The results show the profound imprint these new owner and investor dynamics have left on the different Chilean cities, evidencing that housing is not just an investment asset par excellence, but also an element that consolidates socio-spatial inequalities.

Keywords: housing, financialization, verticalization, inequality.

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I. INTRODUCTION

Housing is critical in reproducing diverse social and spatial inequalities and their persistence, especially in a global crisis regarding access (Gallent, 2019). This phenomenon has also been evidenced in Chile (Vergara-Perucich et al., 2020), where the housing financialization process has been fundamental (Green & Bentley, 2014), converting housing into a financial asset par excellence for capital reproduction in the financial markets (Delgadillo, 2021) and linking it to rising global wealth inequality (Piketty, 2014).

This complex relationship between housing and inequality is based not only on the perspective of its material condition or access and tenure but also on its role within the structure of opportunities in the city (Katzman, 1999). Housing facilitates families' (physical and social) mobility to access the different goods and services the city offers and their insertion into the social fabric of neighborhoods (James et al., 2022).

The transformation of housing from a social asset to a financial one has generated diverse socio-spatial transformations. The most noticeable is the urban landscape, where different players have taken positions. Their roles are no longer limited to construction and real estate companies but also banking, insurance, and investment agencies (Gasic, 2018; 2020) that, together with other players such as natural and legal persons, have fostered the capitalization of housing and urban land, exacerbating the asymmetry in housing markets (Andersen, 2002; Reynolds & Wulff, 2005; Hochstenbach & Arundel, 2021). This has generated diverse adverse effects such as increased residential segregation (Tammaru et al., 2020), population displacement (Hochstenbach & Van Gent, 2015), rising housing prices, difficulties in obtaining mortgages, and the continuous rise in wealth inequality based on an increased accumulation of housing in asset portfolios among certain groups of society (Arundel, 2017).

All this is inserted in urban financialization processes (Aalbers, 2008: 2020), understood as the movement of financial capital in the city and its different components, such as housing, public spaces, infrastructure, large urban projects, and even regional or local governance processes. As a result, the city has become a space for investment and financial speculation (De-Mattos, 2016; Shimbo & Rufino, 2019) where neither housing nor cities are built for those who need them but rather for those who can invest in them (Correa-Parra et al., 2023). Chilean cities are no strangers to these new dynamics and processes. These financialization processes have been felt in recent decades (Vergara-Perucich & Aguirre, 2019; Santana-Rivas, 2020; Daher, 2013), significantly affecting housing, both in its provision and access and in its conception as a financial asset. This has been reflected in how the discourse on the "dream of home ownership" (Jara, 2013; Cárcamo, 2023) today points towards the "democratization" of housing investments "that pay for themselves" (López-Morales & Orozco, 2019).

Starting from these concepts, this article seeks to generate a space for socio-spatial reflection on the following questions: How long has Chile been facing a logic of housing financialization? When did the dream of owning a house become the dream of being an investor? To do this, a spatial analysis of the evolution of housing locations in the main cities of Chile between 1974 and 2023 is proposed. Therein lies this hypothesis of the apparent transformations in location patterns of housing created for proletarians, which became the owners' housing and, today, have become the investors' housing. The aim is to look closer at these transformation processes for Santiago.

II. THEORETICAL FRAMEWORK

From proletarians to owners

"To make Chile a nation of owners and not of proletarians" (National Government Junta, 1974, p. 13). With this phrase, the National Government Junta, chaired by the dictator Augusto Pinochet (1973 to 1990), generated a discourse that would sustain many of the new public policies that would drive the country's development after the coup d'état that ended the Popular Unity government on September 11th, 1973. This discourse sought to create a more individualistic and economically rational subject, depoliticized with no hint of collectivity or organization (Cárcamo, 2023). This subject would seek their own well-being from their own effort without depending directly on the State and would become capable of operating in the market. An "entrepreneurial" subject whose rhetoric would have a robust anti-Marxist component, where the military, nationalist, and neoliberal logic was exalted, thus dismantling the proletarian discourse within the working class (Jara, 2013).

This gave way to an individualistic, Christian, anti-Marxist, and depoliticized Chilean society (Cárcamo, 2023), which was complemented by control and surveillance mechanisms that facilitated the Chilean state's transformation towards neoliberal logics, where the "entrepreneurial" subject would achieve their well-being on their own, without the need to resort to the collective, denying the proletariat. To leverage this process, the housing policy was a vital element that raised the discourse of "proletarians to owners" through the work of the Ministry of Housing and Urbanism (MINVU),

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where housing would no longer be a natural and inherent right, but rather an object that is accessed through savings (Rivera, 2012; Hidalgo, 2007). This way of building housing (and also cities) was supported strongly by the communication strategies of the time (written press, television, and radio) that began with the confraternity operations between 1976 and 1979, when the provision of new housing solutions and deeds to inhabitants of the old ***operaciones sitio*3** program was announced, with the promise of making them owners (Celedón, 2019), when the real goal was the disarticulation and atomization of the people.

This idea of transforming proletarians into owners had been devised by Pinochet's peer Francisco Franco in Spain, who also promoted an aggressive housing construction policy in the 1960s under the premise of "We do not want a Spain of proletarians but of owners [...] we aspire for housing to be owned by the person who lives there and that from limited income we move to the ideal of limited sale" (Fundación March, 2024). Social housing was a crucial element in the Spanish dictatorship's growth and in creating a process of accumulation (of owned housing) to guarantee a social order, which was also subject to control through debt (Di-Feliciantonio & Aalbers, 2018).

This use of housing as a political strategy for generating both a discourse and a climate of social stability was also seen in Chile, where the mass production of social housing during the dictatorship and later during the return to democracy spearheaded the reorganization of Chilean society, turning proletarians into owners (Borja, 2015). Today, this strategy continues to be the driving force behind MINVU-led policies, which maintain the logic of access to homeownership for the most vulnerable families to face a growing deficit of access to housing (Fuster-Farfán, 2018).

From owners to investors

The transformation of the discourse and the approach to Chilean housing policy from a right to a consumer good (Rivera, 2012; Hidalgo, 2005) is still in force today. The neoliberal logic rooted in the Chilean state has strengthened the "subsidiary machinery at the service of ownership" (Alvarado & Sandoval-Naval, 2024), which has consolidated an individualized housing policy focused on lower-income households.

On the other hand, and alongside the progress of this machinery that seeks to patent the lack of other social rights through ownership, new discourses have been generated under urban financialization processes (Fernández & Aalbers, 2019; Aalbers, 2020), which give housing a new perspective as an investment asset. This new approach is part of a financialization process where the financial sector has an increased prominence in different dimensions of the economy and public policy, entering with investment capital in different areas that previously were the exclusive domain of the State (such as education, housing, or health). This focuses on short-term gains versus long-term investments to increase productivity (Palley, 2013).

In Latin America, this process has been making noise in different cities across the region since 1990, converting real estate, such as land, urban land, construction, and especially mortgages, into high-interest actions for the financial markets (Delgadillo, 2021). The interest of real estate and financial capital in the city has become evident in the construction boom of large urban projects, urban renewal processes, large real estate projects, and social or private housing.

The city's financialization dynamics, primarily through real estate projects, have been essential in Chile (Cattaneo, 2011; Daher, 2013), as the entry of property investment funds under the 2001 capital markets reform facilitated the participation of large investment groups in housing production. This is evidenced, for example, by the high financial market share of insurers and banks in the housing market or even in leasing vacant land to secure their reserve (Gasic Klett, 2021). Meanwhile, the modifications of Law 18,815, which regulates investment funds, have fostered real estate investment funds (Vergara-Perucich, 2021).

The modifications and transformations of the housing and investment markets, both in the legal and financial structure, have substantially affected Chilean cities. They have transformed neighborhood morphology with the massification of real estate projects (Vicuña & Rivas, 2024) and the dynamics of market and territorial regulation (Vicuña & Urbina, 2023), generating new urban landscapes under the name of verticalization (Vergara-Vidal, 2017).

These real estate market financialization processes and the verticalization of their supply are intertwined with the financial market's deregulation processes (Santana-Rivas, 2020), modifications to the capital market or investment fund laws (Vergara-Perucich, 2021), and the interest of local governments to attract these new investment projects by modifying their territorial planning instruments (Vicuña & Moraga, 2021).

3 *Operaciones sitio* was a program of the Government of Eduardo Frei Montalva, in which people took out loans to acquire land with basic services.

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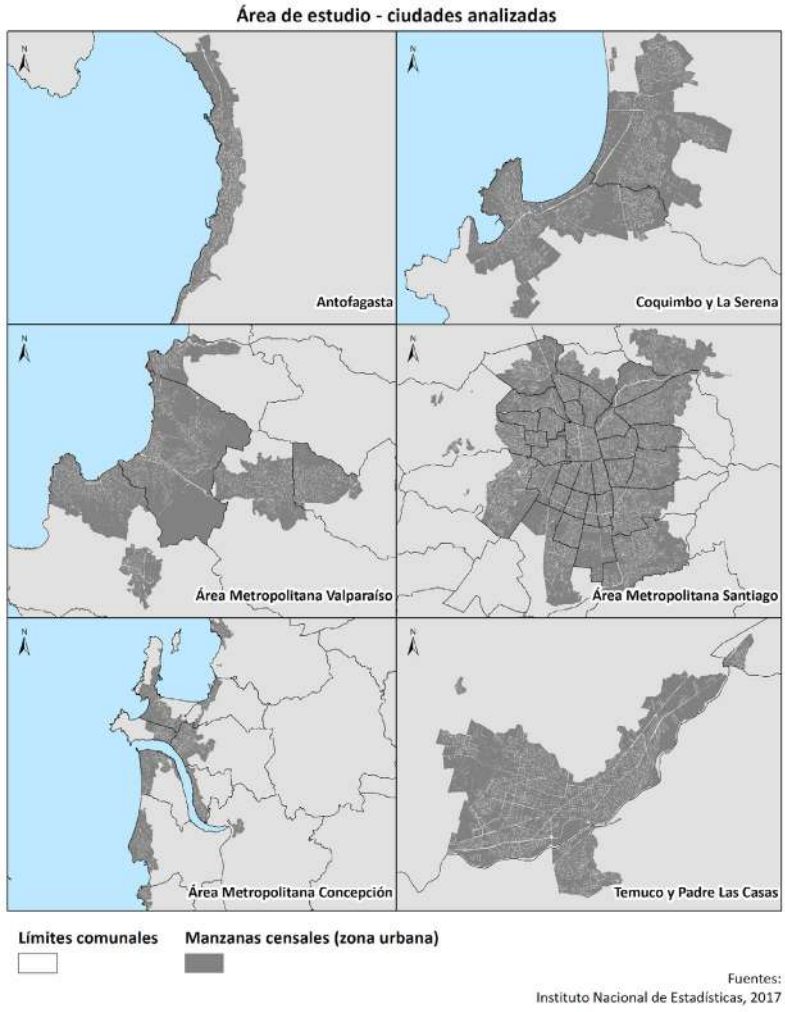

Figure 1. Location of the cities analyzed in this research. Source: Preparation by the author based on the National Institute of Statistics (INE, in Spanish), 2017.

Finally, an effect of these processes is the situation of the subsidiary housing policy, which today faces a severe shortage of available land due to rising land values (Gasic Klett et al., 2022) and a sustained increase in the quantitative housing deficit linked to increases in housing values, barriers to accessing mortgages, and incomes proportionally lower than the value of housing (Vergara-Perucich et al., 2020). The scenario has become even more complex since, due to financialization processes, different investment funds, legal entities, and natural persons have chosen to invest in housing, following the dynamics of buy-to-let (Bracke, 2021). In this practice, higher-income groups buy homes in lower-income sectors to obtain rent from their leases (Vergara-Perucich & Aguirre-Nuñez, 2019).

Based on these political, economic, and social processes, Chile has moved from the "dream of homeowning" to "investment in housing," where the property market and the State itself have been vital players in generating new mechanisms for attracting both middle-class and upper-class investors and thus generating a growing and speculative demand moving from proletarians and owners to speculators (López-Morales & Orozco, 2019).

III. CASE STUDY

In this study, six of the country's main cities, conurbations, and metropolitan areas were worked with: Antofagasta, Coquimbo

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and La Serena, the Valparaíso Metropolitan Area**4** (VMA), Santiago Metropolitan Area**5** (SMA), Concepción Metropolitan Area**6** (CMA), and the conurbation of Temuco and Padre Las Casas (Figure 1).

These cities are the six largest urban entities in the country and include 56 communes with a total population of 8,963,348 inhabitants (INE, 2017). According to records of the National Statistics Institute's (INE) population and housing census (2017), they represent 60.8% of the urban population and 48.5% of the total population.

IV. METHODOLOGY

This research uses a quantitative methodology, whose main objective is to demonstrate the geographical spatial transformations of housing in Chile between 1974 and 2023, linked to changes in the discourse on housing, from proletarians to owners, as well as from owners to investors. For this, two secondary research objectives were proposed:

- Analyzing the spatial distribution of social housing complexes developed for "owners" between 1974 and 2017.
- Analyzing the spatial distribution of high-rise housing projects linked to financialization processes between 2010 and 2023.

To achieve these objectives, a spatial and temporal analysis was made using geographic information systems (GIS) to locate and evidence the distribution of housing geographies for owners and investors. To identify the geographies of owners' homes linked to the housing policy from 1973 to the present, the official records of the social condominiums under co-ownership (MINVU, 2015) and the social housing list (MINVU, 2020) were used. With these lists, the location (both at a polygon level of the complex and its centroid to improve the graphical representation), the year of the building permit, and the total number of dwellings in each complex were determined.

On the other hand, official INE records regarding building permits issued and built between 2010 and 2023 were used to graph the geography of investor housing. For each permit, the location, the purpose of the permit (housing, mixed or non-housing), and the number of homes for that project were obtained. Since there is no official (public) record on whether those homes belong to natural or legal investors, the assumption was that high-rise housing projects tend to be more likely investment projects (Vergara-Perucich & Aguirre-Núñez, 2019). As a result, all building permits for housing or mixed purposes above or equal to 6 floors were identified and located.

Finally, the spatial patterns that both housing geographies draw in the six analyzed cities were analyzed to observe the political, social, and economic transformations that have occurred over time and to understand how these, in turn, relate to discourses on housing from a country of proletarians to owners to one of investors.

V. RESULTS

Spatial distribution of "owner" social housing complexes built between 1974 and 2017

Regarding the spatial effects of the subsidiary machinery of the Chilean housing policy, it is evident that using housing as a spearhead to transform Chilean society from a society of proletarians to one of owners has generated pretty relevant numbers because, from the records of MINVU's housing lists (2015, 2020), it is shown that between 1974 and 2017 the Chilean State built a total of 5,731 social housing complexes with 868,509 dwellings, through the Ministry's different housing programs. Of these 5,731 housing complexes, 3,258 are located in the six analyzed cities, comprising 438,990 dwellings (Figure 2). These complexes mainly follow the same concentration pattern in these cities' peripheries, as Tapia (2011) proposed for the case of Santiago.

This peripheral localization pattern, which is observed in all cities, particularly metropolitan areas, has strong roots in the land liberalization processes of 1979 (Rivera, 2012) and in the subsidiary logics implemented in the dictatorship and perfected during the ***Concertación*** governments (Rodríguez & Sugranyes, 2005). This is because the real estate companies leading these projects sought to maximize returns from the subsidy granted, where they opted to build large complexes (Figure 2 and Figure 3) on the city peripheries, on land lacking urban

4 The communes of Valparaíso, Viña del Mar, Concón, Villa Alemana, and Quilpué.
5 Communes of the province of Santiago (32) together with the communes of San Bernardo and Puente Alto.
6 The communes of Concepción, Chiguayante, Coronel, Hualpén, Hualqui, Lota, Penco, San Pedro de la Paz, Talcahuano, and Tomé.

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ISSN 0717 - 3997 / 0718 - 3607

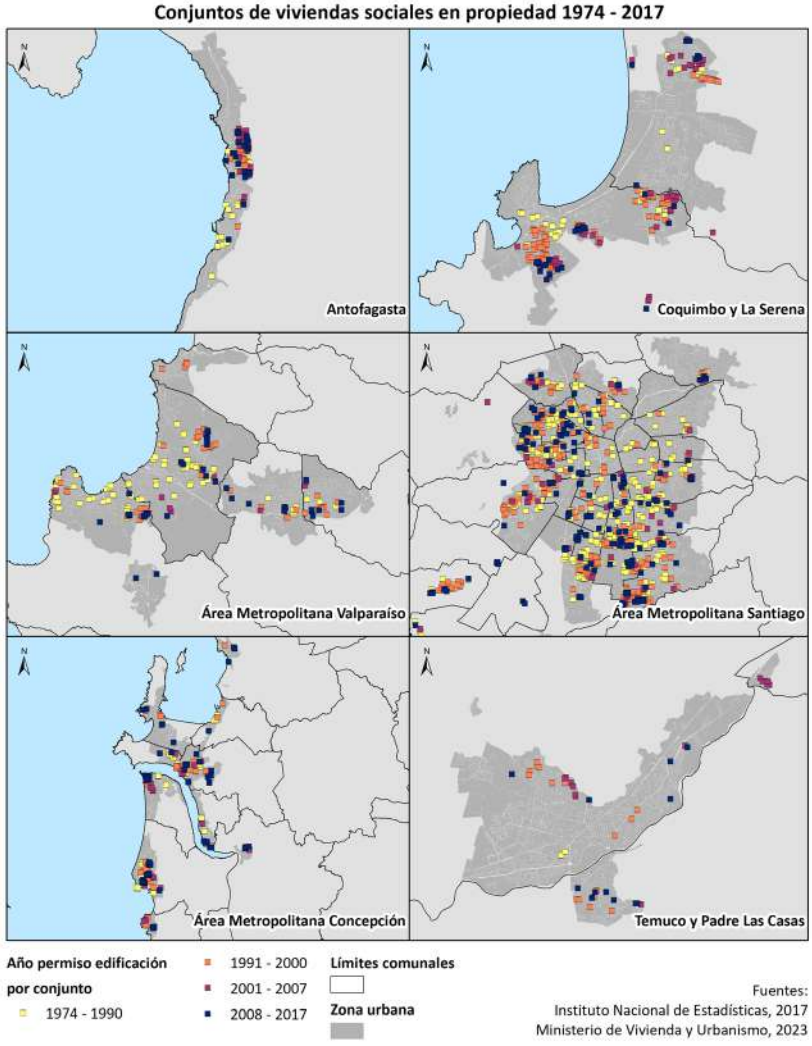

Figure 2. Location of social housing complexes by permit year (1974-2017). Source: Preparation by the author using MINVU 2015 and 2020.

value, and often in areas without public and private services (Ducci, 1997).

This has been the origin of the different urban conflicts that owners of these social housing units, referred to as "Those with a Roof," have had to face (Rodríguez & Sugranyes, 2005), as although they own a home (a roof), their situation of vulnerability and exclusion is still latent given the location far from city centers where the most significant opportunities and services are concentrated (Correa et al., 2020). This concentration of services has a centrifugal effect because it makes land values more expensive (Cortés & Iturra, 2019), making it impossible to develop social housing projects, which cannot compete with the purchasing power of private property development projects.

Similarly, Figure 3 shows how large social housing complexes, with more than 500 families, tend to be concentrated in specific sectors of the city peripheries, following the logic of land prices. Rojo-Mendoza and Alvarado (2023) in the city of Temuco and Herrera (2019) in the case of Antofagasta have shown this, where lower value (monetary and urban) places have been the historical destinations of social housing complexes.

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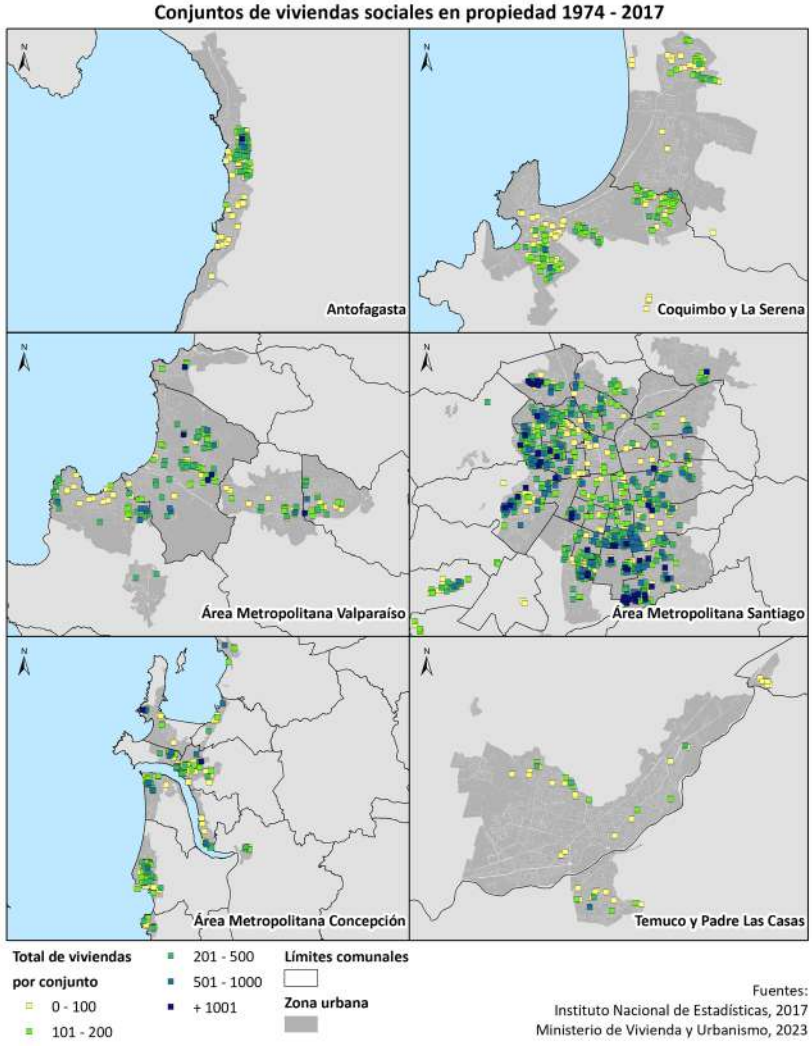

Figure 3. Location of social housing complexes according to total housing (1974-2017). Source: Preparation by the author using MINVU 2015 and 2020.

Location and concentration of high-rise housing, linked to financialization processes between 2010 and 2023

If the subsidiary housing machinery for owners transformed city peripheries, then housing investification followed the same path. A total of 3,473 projects were identified from the INE records on high-rise building permits (2024), with 642,866 homes built between 2010 and 2023, a period that covers a good part of the so-called "property boom" of many Chilean cities (Vergara-Perucich et al., 2023).

Of these 3,473 projects, almost 90% (equivalent to 582,409 homes) are in the six analyzed cities. Specifically, more than 60% of the projects and homes are located in the SMA, as illustrated in Figure 4. It shows that in the SMA, as well as the CMA and Temuco, the location pattern is centralized, from more effective locations to exploit the urban rents of sectors with better services (Vergara-Perucich et al., 2023), while in the other cities, the focus of verticalization has been on the coastal edge, enhancing the natural asset of a "sea view" where higher rents are expected from renting to tourists (Valdebenito et al., 2020). However, in La Serena and Antofagasta, the importance of mining as a catalyst for housing demand should not be overlooked (Rehner & Rodríguez-Leiva, 2017).

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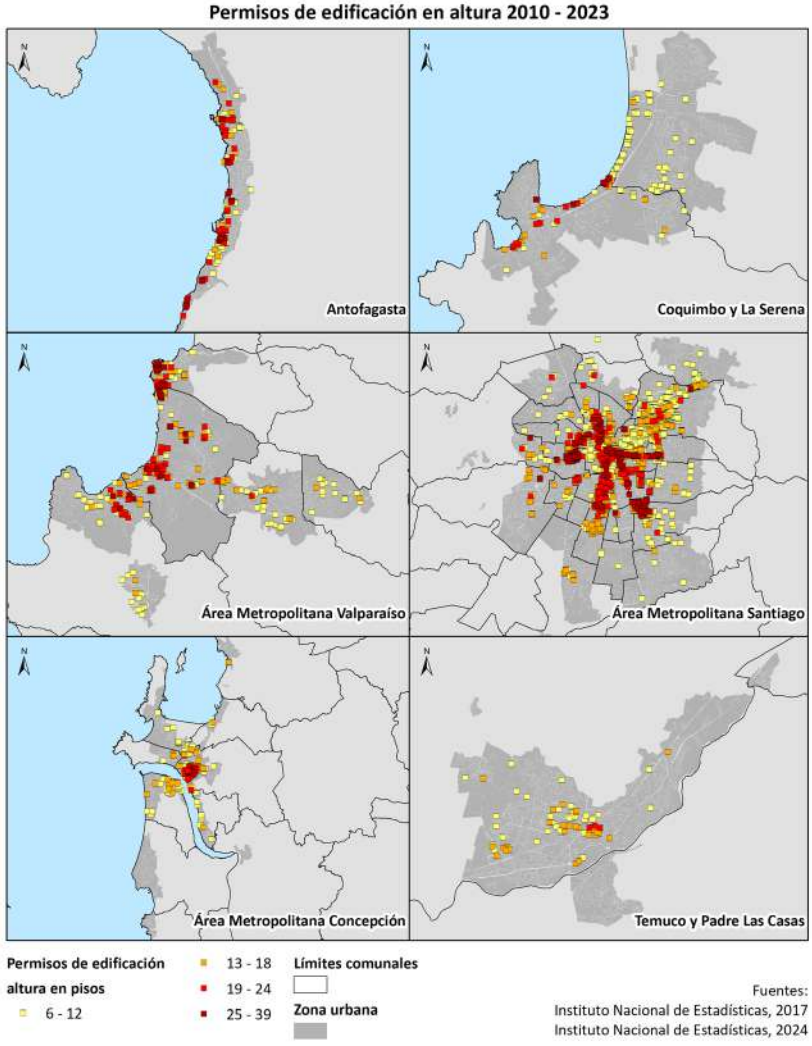

Figure 4. Location of high-rise building permits between 2010 and 2023. Source: Preparation by the author using INE, 2024

In fact, this same concentration of housing projects, both in coastal and central areas of the city, coincides with the higher density of built housing units. Figure 5 illustrates this, showing that in different cities, there are areas where larger projects are concentrated. This demonstrates the occupation strategies of different spaces with urban or natural attractions to achieve more profitable and attractive investments for future investors.

These location strategies primarily respond to how territorial planning instruments attract and favor this type of investment, as many municipalities see the opportunity for attracting more real estate capital in their instruments. In this way, they become less restrictive and, therefore, more attractive for the property development sector, despite the different long-term socio-territorial effects this may have (Orellana et al., 2017).

Finally, overlapping the geographies of the two housing patterns in neoliberal Chile, that of state-generated housing for new owners and that of the areas where real estate developments for investors are concentrated, outlines a pattern with a spatially inverse relationship where there are almost no areas of coexistence. This can be interpreted as a spatially polarized socio-economic pattern (Correa-Parra, 2024), as substantial price differences and clustered location in certain

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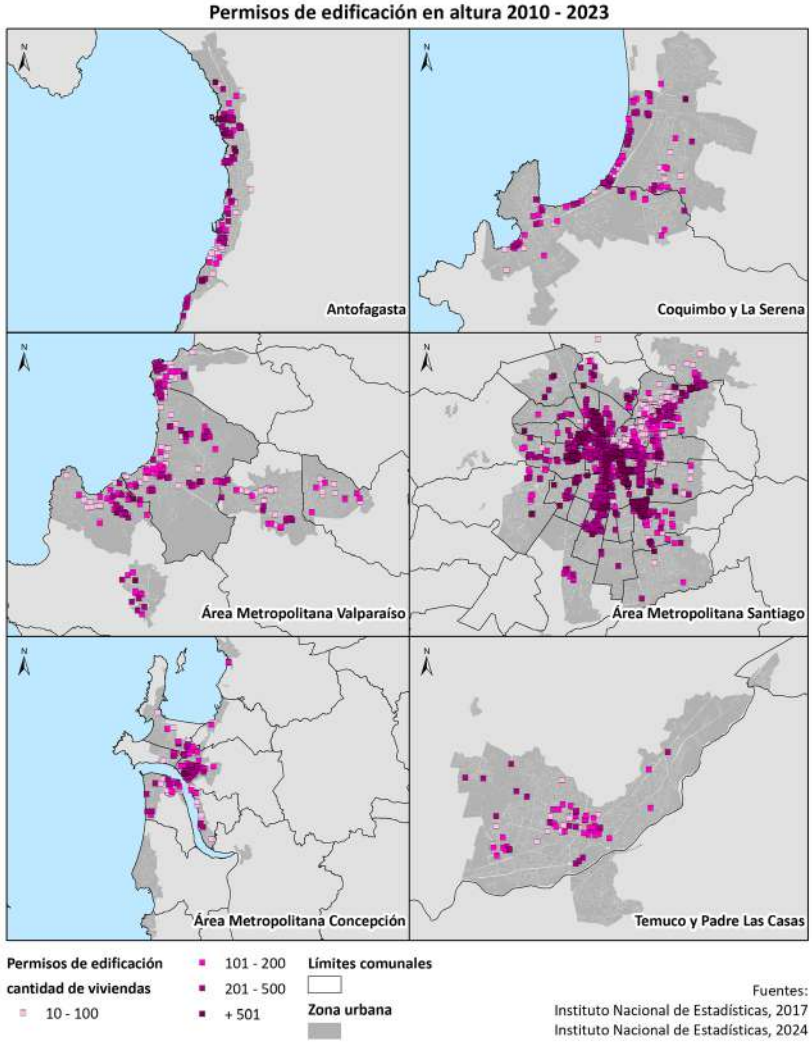

Figure 5. Location of high-rise building permits, considering the number of homes between 2010 and 2023. Source: Preparation by the author using INE, 2024.

territories would be evidence of the spatial polarization of the housing market (Hochstenbach & Arundel, 2021). In the Chilean cases, a robust spatial gap is observed, both in terms of location, production, and probably price, between housing built for the most vulnerable groups (in green in Figure 6) and those for the most affluent groups, especially for investment purposes (in purple).

VI. DISCUSSION

Focusing only on the figures, it can be said that MINVU made the dream of owning a home a reality for more than 800,000 families between 1974 and 2017. However, as Rodríguez and Sugranyes (2005) have suggested, this has been at the cost of both carrying a family debt (for the complexes built between 1974 and 2000) and living in complexes with little architectural and urban vision, relegated to the peripheries of cities.

On the other hand, if we review the last 13 years of production of the Chilean real estate market driven by financialization processes, it can be seen that a similar number of homes have been built, but with an increase in the access gap to housing itself. This is as just as others have documented: sustained growth of the housing market has

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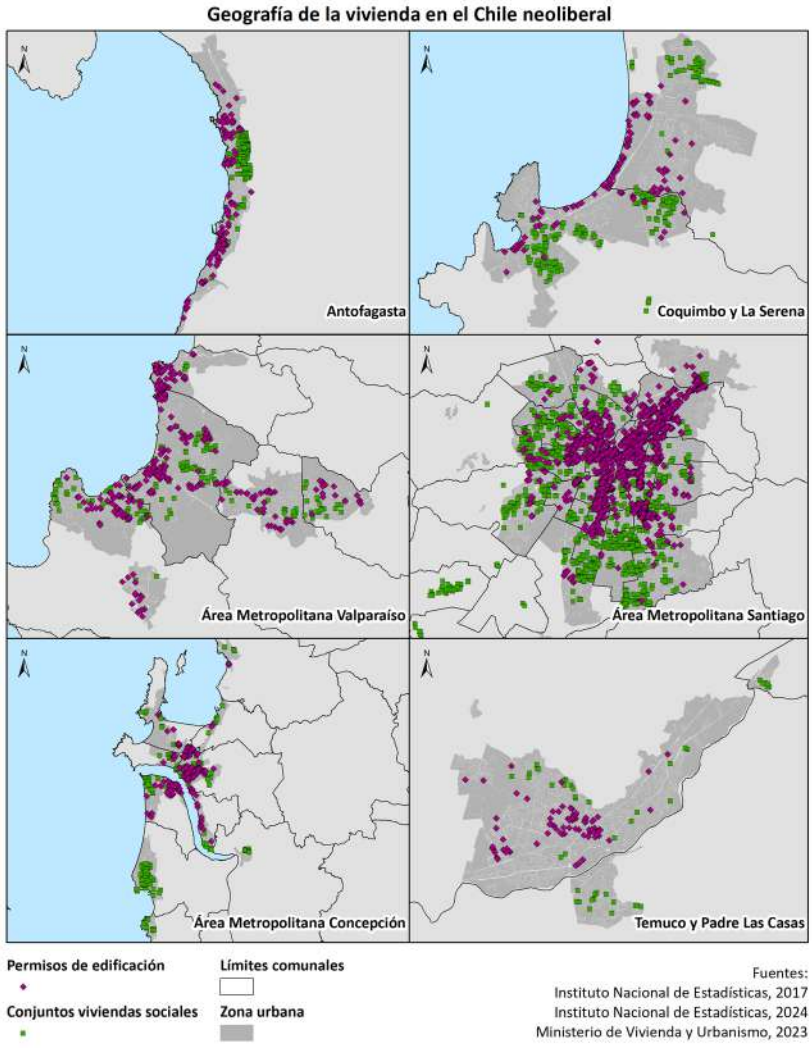

Figure 6. Configuration of the geography of housing in neoliberal Chile. Source: Preparation by the author based on INE, 2024, MINVU 2015 and 2020.

gone hand in hand with sharp rises in urban land prices and, therefore, of housing, but has not followed the relative increase in wages of Chilean workers (Vergara-Perucich et al., 2020).

These new homes, which mainly target those who want and can invest, have monopolized a large part of the central areas of the six cities analyzed, generating tremendous pressure not only for access to a roof but also for access to the sectors with the greatest provision of goods and services. This generates an increasingly higher income barrier, where not everyone has the same possibilities, complicating minorities, migrant households, and middle-class households that are "neither poor enough for the subsidy nor rich enough for the bank.".

In the six cities analyzed, it can be seen how both housing development niches have been developed in opposite sectors of the city, with a strong spatial contrast. Social life is relegated to the city's periphery or less attractive space. At the same time, property development, with a focus on investment, monopolizes the central spaces of the city, taking advantage of the high rents of well-located and equipped land (Correa-Parra et al., 2020). This has led to the creation of unequal urban spaces (Delgadillo, 2021) in Chilean cities with increased barriers to housing, as this socio-spatial polarization of the housing market also affects land and housing prices, and therefore, the possibilities of accessing it (Arundel & Hochstenbach, 2019).

This spatial polarization in the city accompanies the different social and economic transformation processes that neoliberalism has promoted in Chile, such as job precarization (which directly affects the low incomes of a significant portion of Chilean workers) and the dismantling of the Chilean state, along with a series of deregulations and liberalizations for housing and infrastructure (Kornbluth, 2021) that are seen in other spheres of Chileans' lives. This dismantling of the state apparatus in different social aspects, such as health, work, or social security, has exposed many Chileans to the uncertainties of a capitalist system that today is based on the dynamics of the financial market. This implies that a small group of society has decided to gamble their income (or wealth) on housing since they consider it an excellent product with no substitutes, practically inelastic demand, and a value that continues to increase. This makes housing extremely competitive against other speculative phenomena and ensures long-term rents, where one can cover the shortcomings caused by the failings of the state health, labor, and social security system (Vergara-Perucich & Aguirre-Nuñez, 2019).

VII. CONCLUSIONS

From a socio-spatial perspective, this research has analyzed how a discourse of owners and investors on housing was installed in Chile and how these discourses have generated socio-spatial transformations in its main cities.

The main results show sound socio-territorial effects, highlighting the strong contrast and spatial polarization of the housing markets by the State and the market. This has become a significant obstacle for recent governments (both from the left and the right-wing) that have struggled to reduce the housing deficit and the segregation and inequality of Chilean cities.

The results indicate that continuing to feed the reproduction of unequal urban space, maintain the substantial housing deficit, and build for those who want to invest and not for those who actually need it only exacerbates the gap between the haves and have-nots. This gap is not limited to income but wealth, where housing becomes the catalyst for the accumulation and exclusion of housing geographies for an important portion of our country.

All the processes described and analyzed in this work are articulated from and with the discourses of housing, from its view as a consumer good to its new position as an investment asset. The state and the market have built these discourses because both are relevant actors in the city's construction, especially housing provision. Thus, the housing discourse in Chile has been transformed from a country of proletarians to owners and from owners to investors.

This discourse has permeated both the roots (and territories) of Chilean society and much of the neoliberal discourse, which has transformed the aspirations of Chilean families at the cost of exploiting socio-economic inequalities. It has generated multiple socio-spatial barriers in the current crisis of access to housing. However, the question must be asked about how long the model can sustain these aspirations.

VIII. AUTHORS CONTRIBUTIONS CREDIT

Conceptualization, J. C. P.; Data curation, J. C. P.; Formal analysis, J. C. P.; Acquisition of financing J. C. P.; Research, J. C. P.; Methodology, J. C. P.; Project management, J. C. P.; Resources, J. C. P.; Software. J. C. P.; Supervision, J. C. P.; Validation, J. C. P.; Visualization, J. C. P.; Writing - original draft, J. C. P.; Writing - proofreading and editing, J. C. P.

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X. ACKNOWLEDGEMENTS

The author dedicates this article in memory of his father, Mr. Edison Correa Carrasco, who departed this world on October 13, 2024, while this article was being revised and corrected. Thank you, Dad, for teaching me from a very young age the importance of education as a driver of social change. Thanks to your effort today, I am studying for a doctorate to leave this world better than how you found it.

He is also grateful to the National Agency for Research and Development of Chile (ANID) for the national doctorate scholarship in 2023 to pursue his Doctoral studies in Geography at the Pontifical Catholic University of Chile. The National Research and Development Agency sponsored this article through the Regular Fondecyt Nº 1241297 «Geography of the housing crisis: subsidization, informalization, and response in cities of the north, center, and south of the country (Arica, La Serena-Coquimbo, Valparaíso and Concepción)."

Recibido: 12-06-2024
Aceptado: 09-11-2024

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PÁG. 32 - 47
ISSN 0717 - 3997 / 0718 - 3607

AESTHETICS OF RESISTANCE IN THE MIGRANT HABITAT

THE CASE OF THE LOS NOGALES NEIGHBORHOOD, ESTACIÓN CENTRAL, SANTIAGO, CHILE 1

ESTÉTICAS DE LA RESISTENCIA EN EL HÁBITAT MIGRANTE. EL CASO DE LA POBLACIÓN LOS NOGALES, ESTACIÓN CENTRAL, SANTIAGO, CHILE

BIANCA APOLINARIO-FARIA 2
LUIS CAMPOS-MEDINA 3

1 Article derived from the Fondecyt Regular project Nº 1210677 “Ethnographies of urban dispossession. Subjects, territories, resistances”

2 Master in Residential Habitat
Social Condominium Analyst,
Plans and Programs Department, SEREMI MINVU RM.
University of Chile - Ministry of Housing and Urbanism (MINVU), Santiago, Chile.
https://orcid.org/0000-0001-6281-0242
bianca.apolinario@ug.uchile.cl

3 Doctor in Sociology
Associated Professor, Housing Institute, Faculty of Architecture and Urban Planning
University of Chile, Santiago, Chile.
https://orcid.org/0000-0002-5157-4974
luiscampos@uchilefau.cl

https://doi.org/10.22320/07183607.2024.27.50.03

Con base en una concepción de la estética alejada de lo artístico y mucho más próxima a la vida diaria, la investigación que se presenta buscó entender de qué manera las expresiones materiales del hábitat migrante modifican la estética de los barrios y generan formas de resistencia al poder dominante en el territorio. La metodología consistió en la elaboración de un inventario espacializado de intervenciones estéticas en un caso de estudio de la ciudad de Santiago de Chile, el que fue confeccionado a partir de recorridos fotográficos barriales sistemáticos, mediante los que se generaron más de quinientas fotografías y cuatro registros audiovisuales. Este material fue analizado buscando patrones recurrentes de acuerdo con los lineamientos teóricos de la investigación con apoyo en la etnografía visual y sensorial. Los resultados se agrupan en cuatro dominios principales —la casa, la calle, el comercio fijo y el comercio ambulante— y revelan cómo las estéticas cotidianas transforman el entorno barrial y habilitan nuevas formas de intercambio y sociabilidad entre los habitantes del barrio. Se concluye que estas manifestaciones estéticas tejen puentes para la composición de comunidades y alteridades, generando dinámicas territoriales que desafían la homogeneidad impuesta en las ciudades, por lo que cobra plausibilidad entenderlas, no sólo como formas de hibridismo cultural, sino que como estéticas de la resistencia.

Palabras clave: migración, hábitat, resistencia, estética urbana.

Based on a conception of aesthetics outside the artistic and much closer to daily life, this research sought to understand how material expressions of the migrant habitat alter the aesthetics of neighborhoods and generate resistance to the dominant power in the territory. The methodology comprised preparing a spatialized inventory of aesthetic inventions in a case study in Santiago, Chile. This was done using systematic neighborhood photographic tours, generating more than five hundred photographs and four audiovisual records. This material was analyzed to look for recurring patterns using the research's theoretical guidelines and support from visual and sensory ethnography. The results are grouped into four main areas – the house, the street, the shops, and the street trade – revealing how daily aesthetics transform a neighborhood setting and enable new forms of exchange and sociability among its inhabitants. It is concluded that these aesthetic manifestations weave the composition of communities and alterities, generating territorial dynamics that challenge city-imposed homogeneity. Hence, plausibility is needed to understand them, not only as the means of cultural hybridism but also as resistance aesthetics.

Keywords: migration, habitat, resistance, urban aesthetics.

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I. INTRODUCTION

Chile has been an attractive destination for different international groups, with Latin American migration increasing steadily since the 1990s. In recent years, in addition to migration from neighboring countries such as Peru, Bolivia, and Argentina, there has been a rise in arrivals from geographically more distant nations such as Colombia, the Dominican Republic, Venezuela, and Haiti. In fact, according to the most recent data from the National Institute of Statistics (INE, in Spanish), in December 2022, approximately 1,625,074 foreign people resided in Chile. Venezuelans were the largest group, with 32.8%, followed by Peruvians, Colombians, and Haitians, with 15.4%, 11.7%, and 11.4%, respectively.

At a regional level, the Metropolitan Region is home to about 57.8% of the country's international migrant population. The Region of Antofagasta comes next, with 6.7%, slightly surpassing the Valparaíso Region, which has 6.1% (INE, 2022). This pattern has evidenced a "preference" for some cities and, within them, for specific residential areas, which has led to a marked diversity and spatial multiculturalism in certain urban sectors. In turn, these changes have affected the organizational dynamics of neighborhoods and the interactions between their inhabitants (Margarit & Bijit, 2014; Chan & Ramirez, 2020). In this context, the research question behind this study is: How do material expressions of the migrant habitat in the transnational framework modify the aesthetics of neighborhoods and, in particular, generate forms of resistance to the dominant power in the territory?

This research's hypothesis is based on the fact that the growing and constant presence of international migrants in the areas where they are concentrated has been transforming both the streets and the spaces they occupy. These transformations are manifested through different aesthetic expressions linked to the migrant habitat, particularly those in precarious conditions. These manifestations reflect the cultural identity of those who inhabit these spaces and can also be interpreted as forms of resistance migrant groups use to confront dynamics that impact their daily lives.

Despite the extensive literature on migration and social dynamics, how this aesthetics reflects identities and strategies to face exclusion and assimilation processes has not yet been sufficiently investigated. This research is vital in gaining a deeper understanding of how migrants influence the configuration of urban space through their everyday aesthetic practices. Indeed, making this aesthetic visible as a form of resistance opens a new field of analysis on the dynamics of power, inclusion, and exclusion in cities. Ultimately, the study contributes to understanding how new forms of coexistence and sociability are built in multicultural contexts, impacting the academic sphere and the design of fairer and more equitable cities.

The article is divided into eight sections. The first few introduce the migratory phenomenon in Chile and outline a theoretical framework that covers concepts such as daily resistance and the aesthetics of living. After this, the case study of the Los Nogales neighborhood is presented, analyzing on four scales: the house, the street, the formal trade, and the street trade. The research uses a methodology of visual, sensory, and multi-local ethnography. Finally, the results are presented, followed by a discussion and conclusions, where reflections are made about migrant aesthetics as forms of resistance that transform urban and social space.

II. THEORETICAL FRAMEWORK

The daily resistance

Current debates on the construction of transnational identities have increasingly focused on the phenomenon's geographical perspective (Guizardi et al., 2020), looking into significant changes in territories and their spatial characteristics. This perspective conceptualizes territories as a direct manifestation of identity, where diverse elements are revealed and intertwined, giving rise to hybrid or cross-cultural expressions. This hybridism of social identities has been understood as a form of resistance and reterritorialization to the extent that, through mixing, it makes new forms of identity-territorial construction emerge (Haesbaert, 2011) in contexts where forms of assimilation and incorporation without recognition are besieged.

In this sense, the everyday expressions of identity speak of the deployment of practices and the configuration of transnational spaces that reproduce ties with the country of origin and emerge as strategies that seek to evade the control of the city ordered in a hegemonic and assimilationist way. The notion of resistance emerges here as the active deployment of practices and ways of doing that oppose a model of cultural assimilation through the production of variations that go beyond the norm and destabilize the dominant meanings and interpretations in the urban space (Murcia, 2019).

In this variant of multiform daily practices and actions, resistance connects with transnational processes and, at the same time, agitates the sensitivities of those who inhabit the territory (Medina, 2022). The consequence is an intervention in the monopoly of the ways of appearing (Medina, 2022), expressed as an "art of difference" (Agier, 2008, p. 100) whose

consequence is the modification of the social, political, and urban spaces, capitalizing on the "porosity" of the territory (Márquez, 2013).

As Agier (2008, p.100) indicates, the "most intimate search for identity can thus take place in the light of day." These everyday gatherings constitute a "means of escaping from the order and planning of a city traversed by increasing forms of homogenization, segregation, and privatization of life" (Cruz et al., 2022, p.14) while possessing a material and territorial expression.

The aesthetics of living

Some authors have organized the varied aesthetic production of the 20th century into five well-differentiated conceptual areas: form, life, knowledge, feeling, and action/praxis (Hernández, 2007). The latter, in connection with culture and living, has opened up fields of study related to the city and urbanism that do not focus solely on the urban form, but rather expand the perspective towards social aspects and the construction of habitat by the inhabitants.

On the one hand, everyday aesthetics aspires to recognize how daily and habitual activities shape and produce the aesthetic (Melchionne, 2013; Silva et al., 2020). Therefore, it refers neither exclusively nor mainly to the end or elaborated products, but to the meaning of processes and activities whose components are gestures, identities, materiality, and senses.

On the other hand, social aesthetics focuses on "***those sectors of the city with particular economic and social characteristics that develop and consolidate over time, where different origins and ways of producing and expressing city coexist, often mixed***" (Hernández, 2007, p.15). It usually refers to sites of marginalized subjects and territories crossed by stigma, where self-management and self-construction of the habitat by its inhabitants predominate.

The perspective adopted here suggests that aesthetics is expressed in multiple ways and not limited to the visual. It becomes an interface of exchange and interaction reflected in the diversity of elements that make up the daily lives of a territory's inhabitants.

The analytical proposal of Mandoki (2001; 2006) is relevant because it makes the previous reflection operational. One of its theoretical foundations is the work of Rancière (2009), particularly concerning the ***distribution of the sensitive***. This author questions how our sensitive regimes are produced, composed, and sustained and the transformative potential that our practical actions have on them. The notion of "distribution of the sensitive" allows understanding the socio-political conformation of our attentional and perceptual capacities. In addition, it sheds light on the importance of the factors that affect our sensitivity in the configuration of our common world, our roles, and our capacities of action on it. In the opinion of Rancière, the ways of doing are ineluctably linked to the ways of being and the means of visibility.

An example of this is found in Rancière's (2020) reflection on landscape, where he suggests that it refers to a form that unifies the diversity of our sensory perceptions. In many cases, it challenges perceptual and aesthetic norms. Aside from contributing to the configuration of identity and community representation, it can also question them. Thus, contemplating the landscape often prompts action, inviting an experience that integrates aesthetics and politics.
Mandoki (2006) proposes a model of analysis that distinguishes two expressions of aesthetic phenomena understood as distinct and even antagonistic: art and the everyday. Focusing attention on the latter, the author proposes a model of applied aesthetics that becomes operational through a matrix where aspects of what she calls the rhetoric and dramatic converge (Mandoki, 2001).

The first one analyzes the prosaic and comprises four registers or channels of exchange of aesthetic statements: lexical, somatic, acoustic, and scopic. On the other hand, the dramatic aspect consists of attitudes, impulses, and energy shifts in aesthetic communication. It is ***dramatic*** because the term comes from action and acting and focuses on deploying energy in everyday life to produce sensitive effects. There are four modalities, proxemic, fluxion, kinetic, and emphatic, which analyze the impulse and intensity of the rhetorical formulation (Mandoki, 2006). Table 1 synthesizes the result of traversing the two described dimensions below.

II. CASE STUDY

The Los Nogales neighborhood is located in Santiago de Chile, in the southeast area of the Estación Central commune (Figure 1). Its boundaries are defined by Arzobispo Subercaseaux Street to the north, Hermanos Carrera to the south, the Central Highway to the east, and Guillermo Franke to the west (Figure 2).

The number of inhabitants in the Los Nogales Neighborhood is estimated to have been about 11,700 by 2017, of whom approximately 2,580 were migrants,

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		This is the "aesthetic function of language" characterized by the emphasis or care in the very form of a verbal message, whether oral or written: words, linguistic, and idiomatic codes.	This is manifested by listening to or making sounds, in general, be heard, whether human or animal voice, noise or music, and the whole range of the audible, even silence as sound in absentia.	What the body displays and its expressiveness through the gaze, posture, temperature, smell, countenance, and facial gestures in aesthetic enunciation.	Shown by constructing syntagms of spatial, visual, and objectual components. Visual and spatial artifacts. Styles of decoration and use of space.
	Rhetoric → Dramatic ↓	Lexical	Acoustics	Kinetic/somatic	Iconic/scopic
Use of space between individuals according to cultural conventions. Establishment of distances using enunciation that are not only physical or spatial in nature, but temporal, affective, material, or mental.	Proxemic	Lexical proxemic: Distances through language.	Acoustic proxemic: Distance from the usual speech.	Somatic proxemic: Body distance that we establish with respect to others. It consists of looking at the other or not, positioning oneself spatially near or far from the other, touching them or not, and in what way, smiling or being indifferent.	Scopic proxemic: Shown in long and short distances through artifacts or uses of space.
This focuses on dynamism, flexibility, solidity, permanence, or instability projected at a sensitive level.	Kinetics	Lexical kinetics: Form (verbosity or slowness when speaking), the content of the speech (predictable as slow, capricious, or surprising as dynamic).	Acoustic kinetics: Dynamism of variation of vocalizations or sonorizations.	Somatic kinetics: Dynamism or statism, lightness or heaviness in the body's movements.	Scopic kinetics: Stability or dynamism through the syntagmatic organization of objects and spaces.
The Greek emfatikós (energetic, strong) refers to the accent, focus, or energy intensity in a particular statement aspect or place.	Tonic/ emphatic	Lexical emphatic: Particular points of concentration of meaning and sense of verbal syntax.	Acoustic emphatic: It displays a force, intensity, and sonic emphasis that condenses the sense in one point more than in relation to others.	Somatic emphatic: Syntagma where more energy is invested and which is enhanced over the others.	Scopic emphatic: It is based on costumes, scenography, props, hairstyle, or makeup.
The term comes from the Latin fluxio, that which flows. It is used to describe the acts of retention or expulsion, of control or release, dilation and contraction of energy, time or matter in social exchange."	Pulse/ fluxion	Lexical fluxion: Expressive loquacity or its opposite, restraint and moderation.	Acoustic fluxion: Display or containment of sound emitted by the subject in a particular situation.	Somatic fluxion: Gestures and body movements that retain or expel energy.	Scopic fluxion: An impressive expansion of formal resources where the ornament seems to surpass the architectural support and reproduce wildly by itself.

Table 1. Matrix of dramatic-rhetorical couplings.Source: Prepared by the author based on Mandoki, 2001; 2006.

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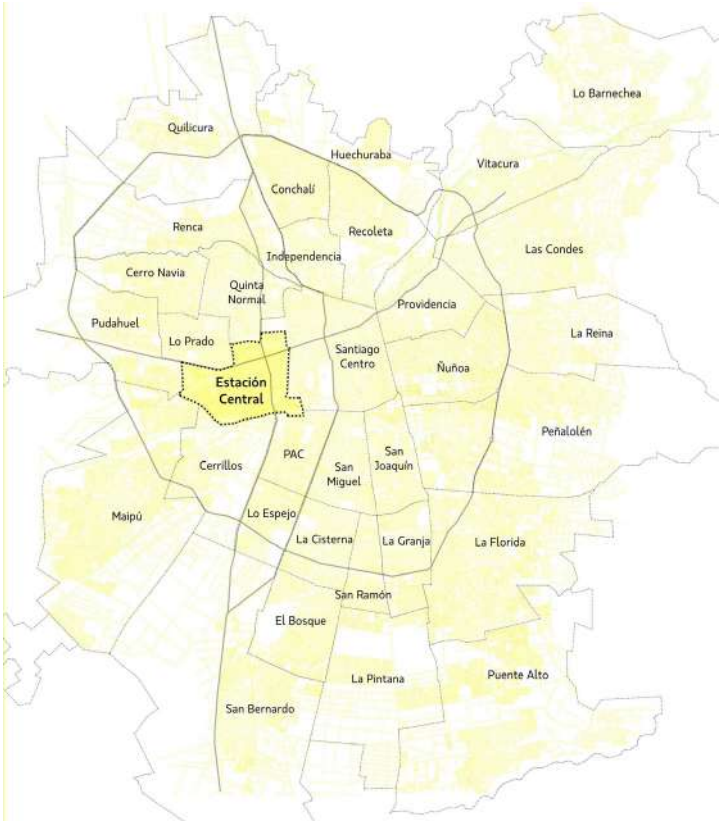

Figure 1. Location of the Estación Central commune in the city of Santiago. Source: Preparation by the authors.

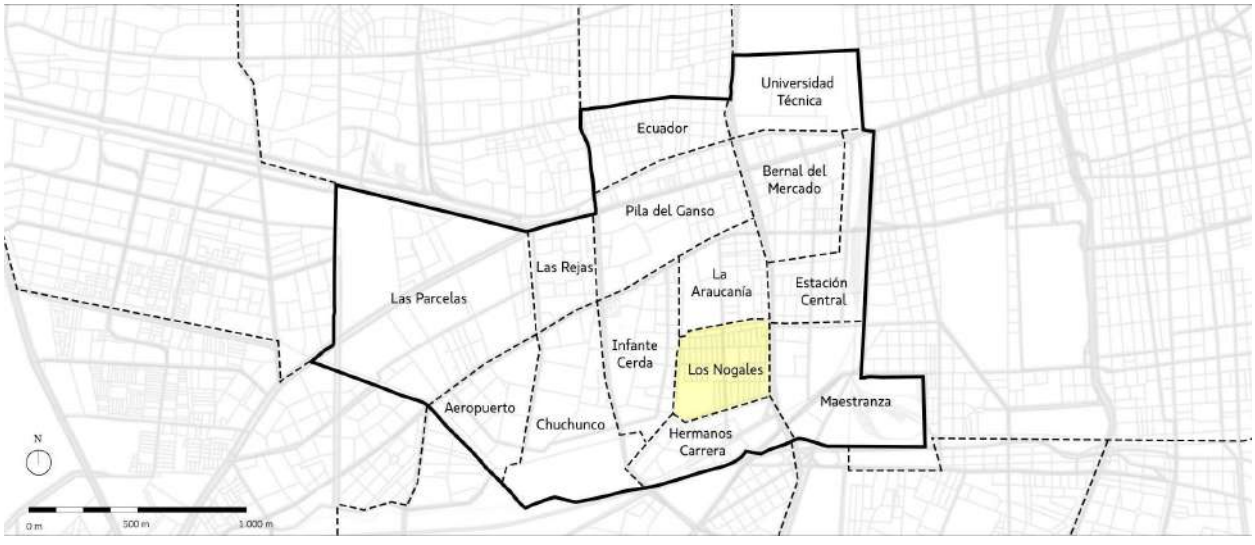

Figure 2. Location of the Los Nogales neighborhood in the commune of Estación Central. Source: Preparation by the authors.

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Figure 3. Levels of analysis of aesthetics of the resistances. Source: Preparation by the authors.

thus representing 22% of the sector's total population. Among migrants, the Haitian population constitutes more than 50% of the sector's inhabitants, followed by nationalities such as Peruvian and Dominican (INE, 2017).

The migrant concentration in this sector is mainly due to factors such as connectivity, given the proximity to public transport stations, shopping malls, and street markets; an active real estate market which, through the subdivision of housing and rooms, offers rentals to the migrant population; and community networks, mainly from the evangelical churches, adapted to the Creole language, which provide a meeting place and spiritual support for the Haitian population (Jiménez, 2017).

IV. METHODOLOGY

The research on resistance based on aesthetic conditions was carried out with an approach based on visual (Pink, 2001), sensory (Pink, 2009), and multilocal ethnography (Marcus, 2001). Visual ethnography, as a tool, is found within an emerging field of studies within anthropology, commonly with the predominant use of photographs. On the other hand, sensory ethnography is dedicated to exploring the perception and experience of places in everyday life, beyond the visual. Finally, multilocal ethnography conducts research transcending a single place, capturing the complexity of social interactions in diverse contexts.

For the study, five systematic photographic tours were made between October and December 2020 in the Los Nogales Neighborhood, in the commune of Estación Central, in the Metropolitan Region of Santiago. The routes included Manuel Rodríguez, Hermanos Carrera, Capitán Gálvez, and Veintiuno de Mayo streets, chosen for their high concentration of migrant population and the presence of shops and social activities relevant to the analysis. In addition, activity was recorded in the area's street market, given its central role in the commercial and social dynamics of the neighborhood. The choice of these spaces responds to their relevance as areas where everyday practices of aesthetic resistance are deployed, linked to social and commercial interaction.

The criteria for selecting the sample were mainly homes and commercial premises that displayed flags of other countries, such as the Peruvian, Dominican, Haitian, Colombian, and Venezuelan ones, as well as those with different and striking colors and where other accents and languages were heard, both in music and the conversations of residents and merchants. These elements were interpreted as visual and sound expressions of identity and cultural resistance in the public space.

A total of 575 photographs and 4 short-term audiovisual recordings captured the visual and acoustic information of the social encounters observed. This sample was chosen based on the direct observation of elements that reflect the territory's daily life and aesthetic dynamics, where the areas and activities that show forms of social interaction and resistance to dominant dynamics are prioritized.

The analysis of this material, carried out by the researchers, consisted of identifying recurrent aesthetic patterns linked to the use of space and the daily practices of the migrants. This analytical exercise allowed the classification of the observations into four scales of analysis: the house, the street, the formal trade, and the street trade (Figure 3). This classification was based on the need to separate the different contexts where the aesthetics of resistance were manifested to obtain a global understanding of the aesthetic dynamics in the territory and everyday life.

Each scale was analyzed according to the predominant aesthetic expressions observed in the photographs and audiovisual records. Subsequently, inventories of these expressions were prepared and located in neighborhood plans, allowing spatial visualization

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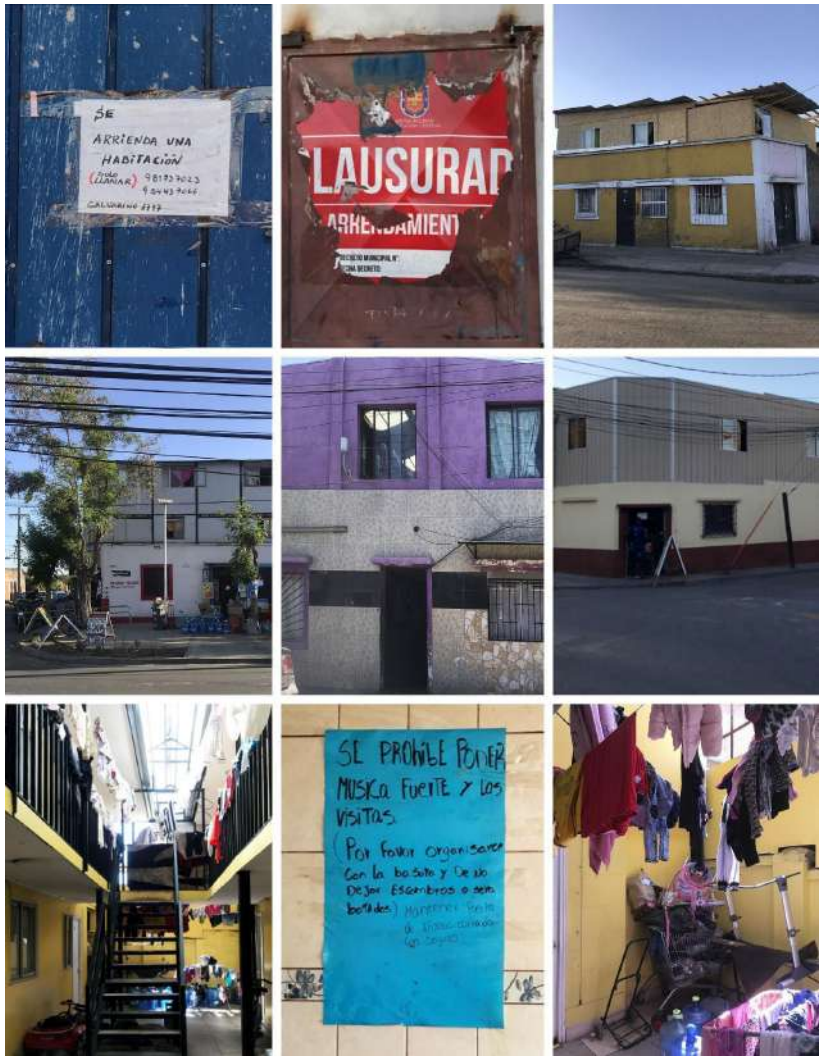

Figure 4. Aesthetics of resistance in the house. Source: Preparation by the authors.

of the analyzed phenomena. With this, the authors sought to understand the territorial character of resistance aesthetics, showing how they transform urban space and social dynamics. The research, as a whole, has an exploratory and inductive approach, which allows adapting the levels of analysis to the emerging observations of the fieldwork.

V. RESULTS

Inventory of a neighborhood tour

Based on the five tours carried out in the Los Nogales Neighborhood and the analysis of the photographs, a series of aesthetics of resistance present in the four areas of analysis were identified: the house, the street, the formal trade, and the street trade. These observations were classified using the dramatic-rhetorical matrix, which allowed organizing the different aesthetic manifestations according to their rhetorical (lexical, somatic, acoustic, and scopic) and dramatic (proxemic, fluxion, kinetic, and emphatic) dimensions.

The house

In this area, a significant transformation was observed in the homes where migrants used visual elements such as bright colors, a mixture of materials on the facades, and flags of their countries of origin. Informal extensions of the houses, rental signs, and the reuse of local materials to adapt to their

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Figure 5. Aesthetics of resistance in the street. Source: Preparation by the authors.

daily needs were also identified. These elements reflect both the appropriation of the residential space and a clear visual differentiation from the local environment (Figure 4).

In general, it was observed that in the practices related to living, there is a particular condition inscribed in the bodies, influenced by the cultural heritage, the experiences of the group, the traditions, and the individual experiences that condition the means of appropriation and use of the spaces. In this sense, not only the cultural heritage and their customs define the use of the spaces. As observed in the neighborhood, some elements prohibit and/or promote the occupation of some areas in the housing, transferring transnational practices to other spaces, mainly public ones.

The street

In the neighborhood's main streets, such as the Manuel Rodríguez and Capitán Gálvez intersection, multiple visual and sound interventions were observed that denote transnational practices. Among them, flags, posters, and graffiti displaying cultural symbols and messages of migrant vindication were recorded (Figure 5). In addition, the use of public space was identified for social gatherings where music and conversations in foreign languages, such as Creole and Spanish with Dominican and Venezuelan accents, predominated.

This social integration and segregation create patterns of appropriation of spaces, with codes based on nationalities.

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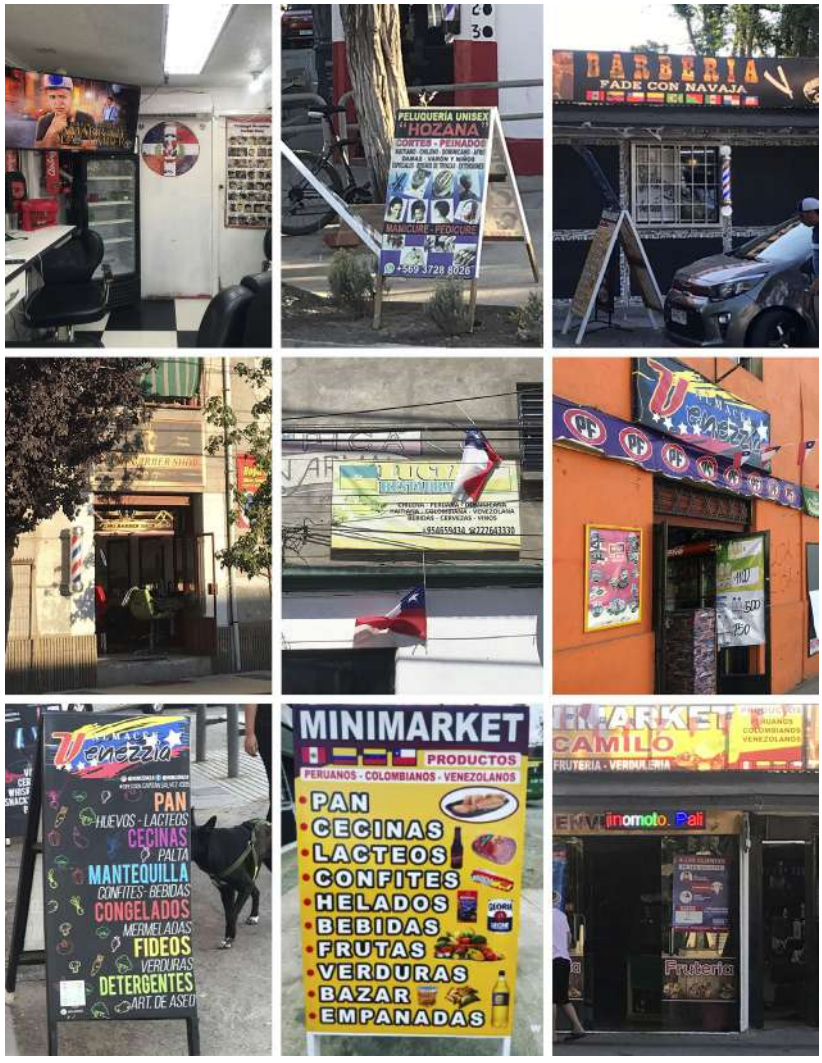

Figure 6. Aesthetics of resistance in the stores. Source: Preparation by the authors.

Understanding these elements can indicate migrants' integration and adaptation to local aesthetic representations.

The formal trade

A strong presence of transnational aesthetics was evident in the formal trade, particularly in barbershops, shops, and restaurants. The facades of these premises were adorned with bright colors and posters that highlighted the products and services for the migrant community. Graphics and decorations with flags were observed that alluded to the owner's countries of origin, while imported products reinforced the sense of cultural identity in the commercial space (Figure 6).

The visual elements convey messages that create selective invitation codes for national groups related to language, acoustics, and culinary aspects. This transnational trade, also considered an ethnic economy (López, 2021), facilitates multicultural coexistence and the dialogue of knowledge, which impacts the dynamics of coexistence at a neighborhood level and creates a new transnational community. These spaces are productive in expressing relationships that modify the communities of origin and those that host, promoting the construction of intercultural territories.

The street trade

In the street trade, vendors displayed typical products from their countries of origin in street markets and on street stalls. A wide

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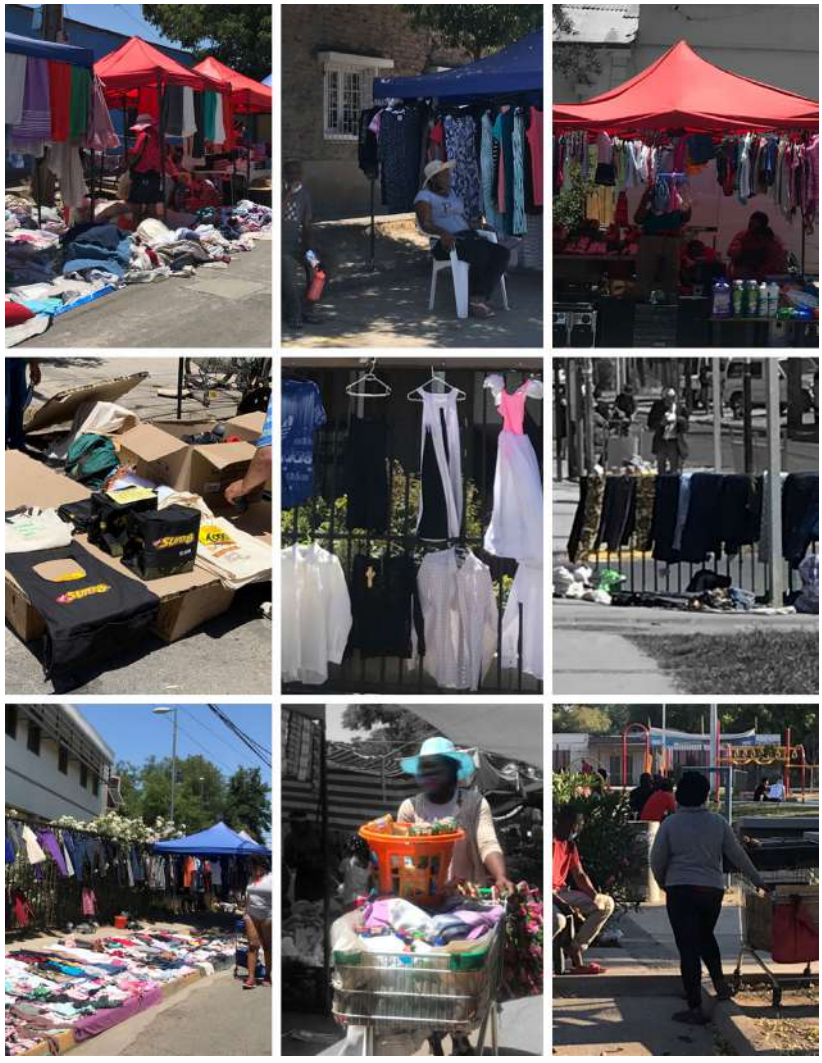

Figure 7. Aesthetics of resistance in the street trade. Source: Preparation by the authors.

variety of imported food and products that are not common in the local trade were recorded, which attracted both migrants and local residents (Figure 7). This type of trade is organized informally by temporarily occupying public spaces, which shows a flexible adaptation to local dynamics.

The importance of street trade and its aesthetics lies in its role as a survival strategy and a means to integrate into other commercial areas or spaces. Although they are mostly perceived as economic actions, they also express the search for recognition in the host society and new forms of sociability. In their territorial dimension, these are places of social interaction and exchange with diverse people, constantly attracting new migrants and configuring a ***factory of heterogeneity*** in constant dispute. These places generate new ways of living, inhabiting and producing the urban, reflecting the city's dynamics as a space in constant change and creation.

The territorialized aesthetics in the Los Nogales neighborhood in the commune of Estación Central

The superposition of the analyzed levels, as seen in Figure 8, reveals the territories' aesthetic diversity through their concentration and the existing relationships between each of them.

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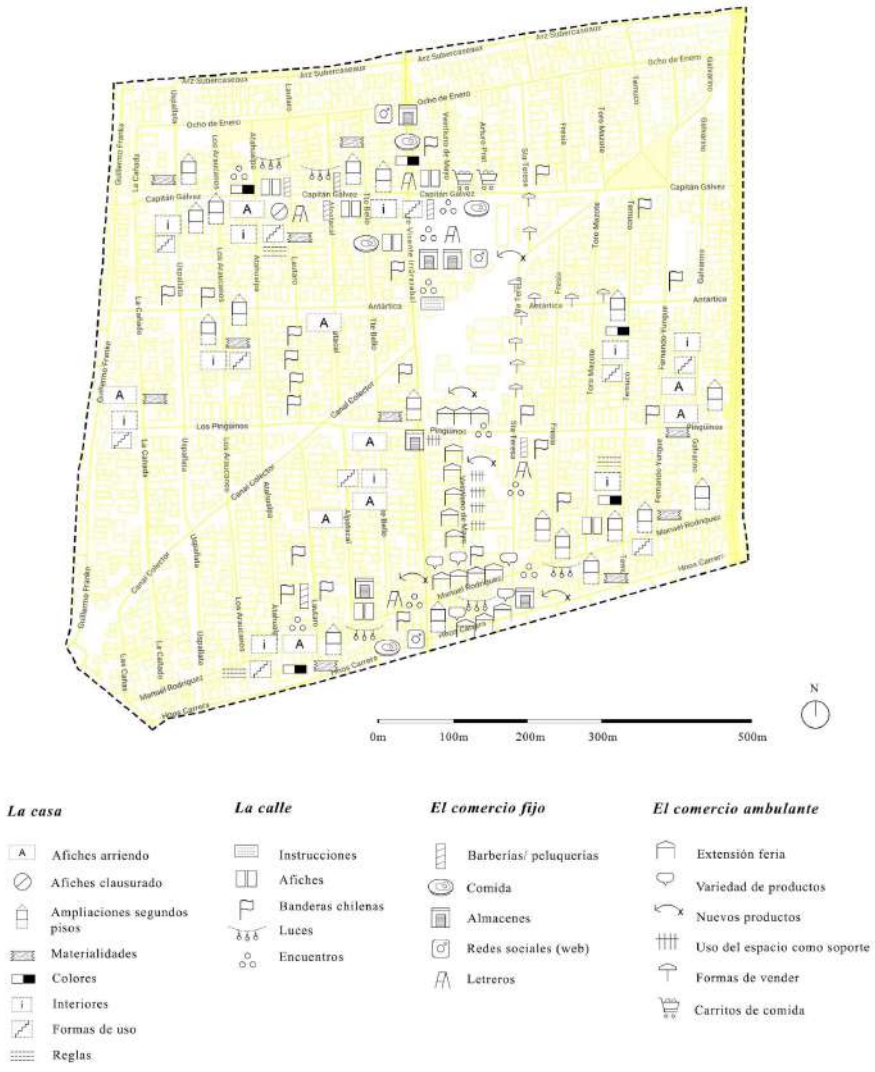

Figure 8. Territorialized Aesthetics in Los Nogales Neighborhood. Source: Preparation by the authors.

The applied aesthetics of resistance

The application of aesthetics as a model for analyzing dramatic-rhetorical couplings (Mandoki, 2001; 2006) allowed for the classification of the elements found in the territory according to their origin and the message they wish to communicate (Figure 9).

In the field of rhetoric, which considers the form and coherence of the message, lexical records were characterized by texts such as posters, signs, physical signs, or social networks. Although they have different communicative intentions (divided into the four lines of the dramatic), most of them highlight an international seal, where socio-cultural distances are marked through language, which in a convergent perspective has been called the "visual sonority of the walls" (Campos & Soto, 2016, p. 82).

The acoustic recordings are perceived mainly in the meeting places of the migrant population. Barbershops, in this case, play an important social role (Lara, 2020), with manifestations that include music, accents, or languages detected in these spaces. Facuse and Tham (2022) have highlighted the relevance of the affective and sensory components in the reception processes of migrant music, while the relevance of migrant population accents in the territory has been highlighted by Campos and Soto (2016). On the other hand, places considered as meeting

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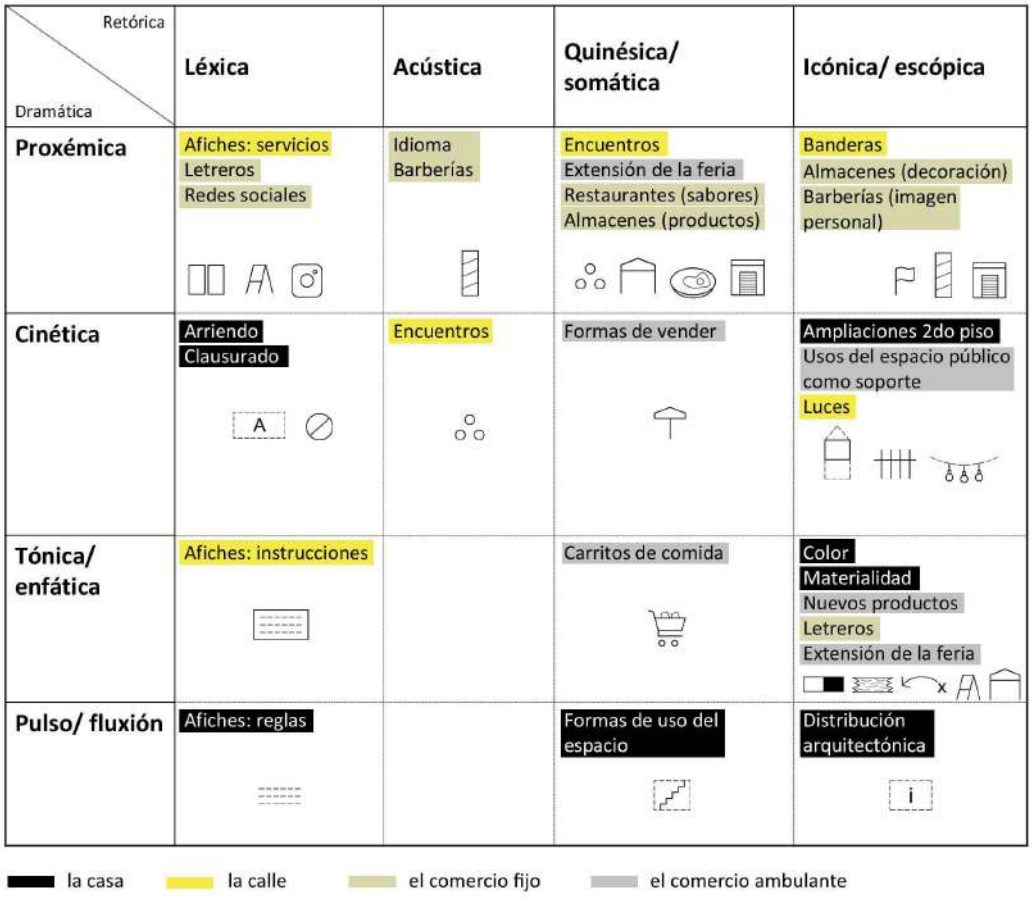

Figure 9. Dramatic-rhetorical couplings of resistance. Source: Preparation by the authors.

points, especially within collective housing, also generate the same perception regarding voices and music.

Kinesics/somatics includes classifications related to practices such as body language, gestures, postures, smells, and tastes[4], very much in line with what was addressed in the book "***Rutas migrantes en Chile. Habitar, festejar y trabajar***" (Migrant Routes in Chile. Living, Celebrating, and Working") (Imilán et al., 2016). Within this area is the street trade in its diverse modalities, which refers to the proxemic, kinetic, and emphatic, especially by the use of space in the street market and how this activity is carried out, as well as the aromas generated by the food stalls and the new flavors introduced into the trade. In addition, the stores consider the flavors to establish an approach to the culinary culture of the country of origin by selling imported products. At a street level, the meetings fall in the field of proxemic, which resonates with the approaches of Medina Gavilanes and Cano-Ciborro (2022). In the context of housing, somatics is related to the control exercised over bodies through the use of space. The iconic/scopic register covers most of the visual representations in the different fields of study. As for the proxemic, the established trade creates more distances for the public through images and nationalities. Regarding the emphatic register, the highlighted elements in this category stand out for their contrast with the environment where they are located. Here, classifications related to color, materiality, novel products in stores and markets, and commercial signs come into play. Finally, the architectural distribution, as a specific typology for rentals aimed at migrant groups, regulates the use of the spaces, observed not only in their design, but also in the rules of use, such as restrictions on visits and the prohibition of listening to music.

4 Although Mandoki does not refer to flavors within the analysis of applied aesthetics, these are integrated into somatics, as a sense, with the goal of addressing the classifications of resistance related to food.

In the dramatic, where the communicative intention stands out, the proxemic was considered the most relevant record in the analysis, as it evidences the distance not only at the physical level, but also socially and culturally between the different national groups.

Likewise, in kinetics, temporality and movement stand out both in ways of living and in social and commercial interactions. In this context, it is interesting to reflect on the inhabitants' temporality, life projection, and migratory project, as well as on ephemeral structures installed in public spaces to support social and commercial activities.

In the emphatic, the ability of the element to stand out above others was highlighted, mainly through difference. In the case of migration, this inscription underlines the status of migrants as "the other" by integrating into established socio-cultural patterns. This notion of ***otherness*** has been developed by authors who argue that it can be considered as the establishment of the borders of the national subject, who becomes part of the national collective of arrival without integrating completely, which exposes the limits of society through its presence (Tijoux & Palominos, 2015).

Finally, in the fluxion associated with the control and restriction of practices, characteristics related to the agency capacity of the migrant subject stand out, often linked to the loss of autonomy and identity. In this sense, the relationship between power and subordination between migrants and the native population is key to understanding the phenomena associated with precarious living conditions, social discrimination, occupying the lowest positions in the social structure, and social exclusion (Thayer, 2013). The aesthetic elements on this line, such as rules, uses of space, and architectural distribution, account for aspects that control lifestyles and position migrants in a situation of social vulnerability, often associated with a lack of opportunities.

VI. DISCUSSION

The transformations observed in the spaces where the migrant population is concentrated, which include homes, shops, and streets, show that everyday aesthetics act as forms of resistance to the dominant dynamics of the territory. This aesthetics not only reflects the cultural identities of migrants, but also creates new urban configurations that challenge the imposed homogeneity. In particular, the analysis shows that material expressions such as colors, flags, sounds, and commercial practices contribute significantly to strengthening community identities in a multicultural environment and the emergence of new sensitive modalities that remodel the everyday life of the neighborhood.

At the territorial level, the notion of everyday aesthetics reveals how migrants appropriate and transform urban space through different communicative forms that encompass the senses and use multiple supports and materials. These expressions not only allow adaptations for daily life, but also build bridges to construct identities and communities, influencing the ***sensitive regime*** of the local community, which is in line with the proposal of Rancière (2009).

Beyond the means of communication in the territory, the concept of prosaic aesthetics allowed looking closer at the intensity of these expressions and their capacity for territorial transformation from a dramatic-rhetorical perspective. Elements such as proxemics, kinetics, tonic/emphatic, and pulse/fluxion analogously reflect certain aspects of the migratory process: geographical and cultural distances, temporality/projection, difference/otherness, and control, respectively. This connection suggests a parallelism between the logic of prosaic aesthetics and the migratory experience, which offers a new perspective to understand how these sensitive dynamics contribute to the resistance and transformation of urban space, which also opens promising paths for future studies.

The hybridism that predominates in the studied territory reflects an identity-territorial construction that arises from the mixture and recreates the urban space, in tune with the ideas of Haesbaert (2011). This hybridism becomes an instrument of resistance, transforming an initially homogeneous and assimilationist context into a heterogeneous and multiform environment.

In this way, resistance to dedifferentiation acquires a central role from the perspective of everyday aesthetics. The aesthetic objects embodying this resistance — new colors, flags, materialities in the urban environment, smells, tastes, and social practices — become essential to understanding the dynamics that arise from the difference. In housing, meeting, and commerce spaces, proximity facilitates integration between and for migrant groups, establishing social codes that generate barriers, limits, or ***new frontiers*** in inhabiting, a tangible manifestation of the ***art of difference*** proposed by Agier (2008).

On the other hand, resistance to invisibility acts as a recognition strategy that seeks to counteract the pressures toward homogeneity and assimilation. Thus,

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there is an interest in survival and sociability behind the aesthetic manifestations linked to this resistance. In the migrant context, these expressions are closely related to street trade and the uses of public space for commercial activities, which, although precarious, configure a platform that facilitates an evident form of appearance in the neighborhood environment (Medina, 2022).

VII. CONCLUSIONS

The research showed that the diverse expressions of the migrant habitat can be conceptualized as everyday aesthetics of resistance, where its capacity to generate transformations in different planes of life and territorial organization stands out. These aesthetic manifestations modify the perception of the urban and neighborhood environment, enabling the emergence of new economic, social, and cultural dynamics through which migrants express their identity. They also create new forms of sociability. At the same time, this aesthetics connects with the places of origin of migrants, which contributes to diversity and interconnection between different communities.

The everyday aesthetics of migration not only reproduce, but also generate new transnational practices by forging connections between the country of origin and the host territory. In some cases, this phenomenon acquires an impulsive character oriented towards the search for ***identity roots*** or ***cultural values***, manifested in a series of material interventions that reduce the possibilities of cultural mixing. What is referred to as a ***hybridization of the common*** emerges as an interesting matter to address and look closer at, even though this process can have a dual effect. On the one hand, it can strengthen the sense of belonging and improve the group's social position in relation to other sectors. However, it can also have a negative effect by limiting contact and cultural exchange, which favors conservative attitudes and would encourage social isolation.

The aesthetics of resistance are characterized by their daily and stealthy deployment. Despite substantially modifying neighborhood life and the urban environment, they do so in a surreptitious way, which only becomes visible under the condition of a change of focus that pays attention to the more prosaic aspects of life because, through them, the territory is also interwoven, and the processes of appropriation and resignification of urban space take place.

Finally, although this research made it possible to identify and analyze in depth the aesthetics of resistance in the Los Nogales neighborhood, some aspects remain unaddressed that could open new lines of study. One of the unexplored topics is the relationship between these aesthetics and public policies related to urbanism and/or migration through a more detailed analysis of how these forms of resistance interact with local regulations or with government integration or migration control initiatives, which would be able to offer new perspectives on the role of migrants in shaping the city in the long term. In addition, it would be enriching to compare the aesthetics of resistance observed in Los Nogales with those of other migrant communities in different urban contexts, within Chile and in other countries, which would allow assessing whether these manifestations are a local phenomenon or if they are part of a broader pattern of urban reconfiguration in migratory contexts.

VIII. CREDIT AUTHOR CONTRIBUTIONS

Conceptualization, B.A. and L.C.; Data Curation, B.A.; Formal Analysis, B.A.; Funding Acquisition, L.C.; Research, B.A.; Methodology, B.A. and L.C.; Project Management, L.C.; Resources, B.A. and L.C.; Software, B.A.; Supervision, L.C.; Supervision, L.C. Project management, L.C.; Resources, B.A. and L.C.; Software, B.A.; Supervision, L.C.; Validation, B.A. and L.C.; Visualization, B.A.; Writing - original draft, B.A. and L.C.

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REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 32 - 47
ISSN 0717 - 3997 / 0718 - 3607

Recibido: 15-06-2024
Aceptado: 04-11-2024

PERSONAS MAYORES Y ESPACIOS COMUNES DE VIVIENDA COLECTIVA EN CHILE: DESAFÍOS PARA LOS INSTRUMENTOS NORMATIVOS E INDICATIVOS
MARIE GERALDINE HERRMANN-LUNECKE, CRISTHIAN FIGUEROA-MARTÍNEZ, ROXANA RÍOS-PETERS, ANTONIO ZUMELZU-SCHEELA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PAG. 48 - 59
ISSN 0717 - 3997 / 0718 - 3607

OLDER PEOPLE AND COMMON SPACES IN COLLECTIVE HOUSING IN CHILE:

CHALLENGES FOR REGULATORY AND INDICATIVE INSTRUMENTS [1]

PERSONAS MAYORES Y ESPACIOS COMUNES DE VIVIENDA COLECTIVA EN CHILE: DESAFÍOS PARA LOS INSTRUMENTOS NORMATIVOS E INDICATIVOS

MARIE GERALDINE HERRMANN-LUNECKE [2]
CRISTHIAN FIGUEROA-MARTÍNEZ [3]
ROXANNA RÍOS-PETERS [4]
ANTONIO ZUMELZU [5]

1 Artículo derivado de las investigaciones de ANID Fondecyt Regular Nº 1230127 “Hacia espacios comunitarios que promuevan prácticas cotidianas de mujeres en la vejez: un análisis desde la arquitectura en distintas tipologías de vivienda colectiva en Santiago, Chile”. y CEDEUS ANID/FONDAP Nº 1523A0004

2 Doctora en Urbanismo
Profesora Asociada, Departamento de Urbanismo
Universidad de Chile, Santiago, Chile.
http://orcid.org/0000-0003-0186-441X
mherrmann@uchile.cl

3 Doctorado en Estudios de Transporte
Profesor Asistente, Departamento de Planificación y Ordenamiento Territorial, Facultad de Ciencias de la Construcción y Ordenamiento Territorial - Investigador del Centro de Desarrollo Urbano Sustentable (CEDEUS)
Universidad Tecnológica Metropolitana, Santiago, Chile.
https://orcid.org/0000-0002-6399-8360
cafigueroa@utem.cl

4 Magíster en Desarrollo Urbano
Encargada Área de Vínculo Territorial, Unidad de Política y Práctica - Centro de Desarrollo Urbano Sustentable (CEDEUS)
Pontificia Universidad Católica de Chile, Santiago, Chile.
https://orcid.org/0009-0006-3626-3509
rrios1@uc.cl

5 Doctor en Planificación Urbana
Profesor Asociado Instituto de Arquitectura y Urbanismo
Universidad Austral de Chile, Valdivia, Chile.
https://orcid.org/0000-0003-0257-1766
antonio.zumelzu@uach.cl

https://doi.org/10.22320/07183607.2024.27.50.04

La población mundial está envejeciendo rápidamente, y se prevé que en Chile para el año 2050 una de cada tres personas tendrá 60 años o más. En este contexto, un desafío clave del diseño urbano y arquitectónico es promover entornos construidos que sean más amigables para la vejez. En general, las investigaciones sobre entornos construidos y vejez han tendido a enfocarse en el espacio público barrial y en la accesibilidad de hogares y residencias de adultos mayores, prestándose poca atención a los espacios comunes de las viviendas colectivas, que pueden ser lugares importantes para las actividades cotidianas de personas mayores. En este marco, la presente investigación tiene como objetivo analizar en qué medida los instrumentos normativos e indicativos en Chile consideran a las personas mayores en el diseño de los espacios comunes de la vivienda colectiva. Con este fin, se revisaron 3 tratados y convenciones, 10 instrumentos normativos y 7 instrumentos indicativos, a partir del software de análisis cualitativo atlas.ti. Los resultados muestran que en los instrumentos normativos los espacios comunes no están concebidos para funciones que vayan más allá de la circulación de personas. Son espacios que deben estar libres de obstáculos y cuyos atributos no acogen prácticas cotidianas que implican permanencia e interacción social. El análisis también evidencia que las personas mayores se encuentran ausentes en los instrumentos normativos. Los instrumentos indicativos, por el contrario, las reconocen y buscan resguardar sus derechos y su diversidad. Los hallazgos finalmente indican que se requieren esfuerzos para que los requerimientos de las personas mayores, que ya se han ido incorporando en los instrumentos indicativos, sean también integrados en el cuerpo de instrumentos normativos. Esto para promover un envejecimiento activo y permitirles a las personas mayores permanecer en sus viviendas y sus barrios.

Palabras clave: personas mayores, espacios comunes, vivienda amigable, accesibilidad

The world's population is aging rapidly, and in Chile, it is foreseen that one in three people will be 60 or over in 2050. In this context, a key challenge of urban and architectural design is promoting built environments that are friendly for old age. In general, research on built environments and old age has tended to focus on neighborhood public spaces and the accessibility of homes and residences for older adults, paying little attention to the common spaces of collective housing, which can be important places for the daily activities of older people. In this framework, this research aims to analyze the extent to which regulatory and indicative instruments in Chile consider older people in the design of collective housing common spaces. 3 treaties and conventions, 10 regulatory instruments, and 7 indicative instruments were reviewed for this, using the qualitative analysis software atlas.ti. The results show that common spaces are not conceived for purposes beyond people's circulation in the regulatory instruments. These are spaces that must be obstacle-free and whose features do not involve daily practices that entail social interaction or remaining in these. The analysis also shows that older people are absent from regulatory instruments. On the other hand, indicative instruments recognize and look to safeguard their rights and diversity. Finally, the findings indicate that efforts are needed so that the requirements of older people, which have been included in indicative instruments, are also integrated into regulatory instruments. This would promote active aging and allow older people to remain in their homes and neighborhoods.

Keywords: older people, common spaces, friendly housing, accessibility

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I. INTRODUCTION

A key challenge of urban design is to reconfigure and adapt our built environment to the needs of a rapidly aging population. How we design the built environments - from neighborhoods to housing - is fundamental to promoting "healthy aging," determining the levels of autonomy and dignity of people in old age (Garin et al., 2014). However, the vast majority of older people live in neighborhoods and homes whose designs and layouts do not consider their needs. This includes the collective housing complexes where older people currently live in Chile.

Collective housing complexes comprise a series of housing units linked by common spaces. These are for the entire community and can include hallways, staircases, elevators, common rooms, yards, and gardens, among others. They are particularly relevant for older people who tend to spend more time in their homes and residential surroundings (Yuen, 2019). In fact, recent evidence suggests that these are essential for the socio-spatial practices of older people (Henriquez, 2020; Mercader-Moyano ***et al***., 2020) and in crises such as the COVID-19 pandemic that affected the world between 2021 and 2022 (Herrmann-Lunecke ***et al***., 2022).

This research aims to analyze the extent to which Chile's regulatory and indicative instruments consider older people in the design of the common spaces of collective housing. To this end, three treaties and conventions ratified by Chile, ten regulatory instruments, and seven indicative instruments were reviewed using the qualitative analysis software ***Atlas.ti.***

This article is divided into four parts. The following section provides a brief theoretical framework on older people and common spaces of collective housing. Subsequently, the methodology, results, and discussion of the revision of the regulatory and indicative instruments that regulate the common spaces of collective housing in Chile are detailed. Finally, the conclusions and reflections on the challenges that regulatory and indicative instruments in Chile should address to promote more friendly residential environments for older people are presented.

II. THEORETICAL FRAMEWORK

Older people and human rights

The Organization of American States (OAS, 2015) defines older people as those who are 60 or older. However, older people are a very diverse group. They are mostly independent and have different capacities and needs, which vary according to their backgrounds, social networks, available resources, and the opportunities found in their regions, among other things (World Health Organization [WHO], 2015).

In Chile, older people are expected to comprise about a third of the population in thirty years. In this context, Chile has signed a series of agreements that ensure the rights, dignity, and well-being of older people (United Nations [UN], 2002; Economic Commission for Latin America and the Caribbean [ECLAC], 2022). However, older people in Chile suffer from several vulnerabilities (Adams, 2012; Abusleme & Caballero, 2014). According to the Undersecretary of Social Evaluation (2020), almost a quarter of older people (22%) in Chile currently suffer from multidimensional poverty. Similarly, the National Survey of Quality of Life in Old Age (PUC and Caja Los Andes, 2022) indicates that a significant group of older people in Chile have unsatisfied financial (41%), health (36%), and recreational (38%) needs.

Older people, the built environment, and common spaces of collective housing

The daily practices of older people occur in interaction with their built environment. However, homes and residential environments have not been designed to consider the needs and capabilities of people in old age. The same person's body is different when they are a child, adult, or elderly since their "dimensions and abilities vary at different stages, and this means people relate to their residential habitat differently in different periods of life" (Gaete-Reyes, 2017 p. 281). Many older people, especially at an advanced age, suffer from some mobility limitation or other physical, cognitive, or mental problems. For example, the over-65s suffer the most falls with fatal consequences, and they are susceptible to changes in level and pavements in poor condition. In the context of an aging population, environments should be created that adapt more to older people, accommodate their functional capacity in old age, and promote their daily practices, social participation, health, and safety (WHO, 2019). Thus, in the last two decades, numerous initiatives have been formulated to promote "active" and "healthy" aging in inclusive neighborhoods and housing that respond to the needs of older people (e.g., ***WHO Global Network for Age-Friendly Cities and Communities***).

In general, research on the built environment and old age tends to focus on the accessibility of homes (Wahl ***et al***., 2009; Gaete-Reyes, 2017) and neighborhood public spaces, where how the built environment affects the mobility of older people, especially walking, is analyzed (Graham ***et al***., 2018; Vecchio ***et al***., 2020; Herrmann-Lunecke ***et al***., 2022). Similarly, the relevance of the street and the public space for the care and participation of older people in society has been highlighted (Osorio-Parraguez ***et al***., 2019; Anigstein ***et al***., 2021). However, studies on older people and common spaces in collective housing are scarce.

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Recent research on common spaces in collective housing highlights their importance for community encounters (Chiarito, 2014; Franco, 2017; Franco, 2022). They are considered spaces of transition between the public and the private sphere (Schlack, 2007), intermediate spaces capable of hosting social activities (Montoro, 2012), and spaces that relate the scale of the intimate with the communal and the urban in different transition gradients (Franco, 2017). The common spaces of collective housing allow individual and/or community activities and have the potential to promote relationships and socialization among their inhabitants.

Common spaces are places that are key to older people's health, sociability, and integration (Henriquez, 2020). They can host various daily practices, such as physical activity (walking, physical conditioning), socialization (conversation with neighbors), rest (sitting), and care (play with children). However, existing research has tended to focus on common spaces of places dedicated exclusively to older people, such as senior residences (Andersson ***et al***., 2014; Jansson, 2020). The limited evidence on collective housing complexes suggests that common spaces tend not to accommodate the needs of older people and reduce the opportunities to age in place (Canham ***et al***., 2018; Mercader-Moyano ***et al***., 2020; Walsh ***et al***., 2017).

III. METHODOLOGY

This research aims to analyze to what extent Chile's regulatory and indicative instruments consider older people in the design of common collective housing spaces. For this, international commitments (treaties), regulatory instruments (laws, decrees, and regulations), and Chilean indicative instruments (manuals)

Classification	Instrument (Author)	Year (Update)
International treaties and commitments	Political Declaration and Madrid International Plan of Action on Ageing (UN)	2002
	Decree 162. Passes the Inter-American Convention on the Protection of the Human Rights of Older Persons (Ministry of Foreign Affairs)	2017
	Declaration of Santiago. Fifth Regional Intergovernmental Conference on Ageing and the Rights of Older Persons in Latin America and the Caribbean (ECLAC).	2022
Regulatory instruments	Decree 458. General Law of Urban Planning and Constructions (Ministry of Housing and Urban Planning)	1976 (2023)
	Decree 50, amending Decree 47. General Ordinance of Urban Planning and Constructions (Ministry of Housing and Urban Planning)	1992 (2023)
	Law 19828- Creates the National Service for Older People (Ministry General Secretariat of the Presidency)	2002
	National Policy for Older People (National Service for Older People)	2004
	Law 20.422. Equal Opportunities and Social Inclusion of People with Disabilities (Ministry of Planning)	2010
	Regulations of the Housing Solidarity Fund (Ministry of Housing and Urban Planning)	2012 (2020)
	National Urban Development Policy (Ministry of Housing and Urban Planning)	2014
	Exempt Resolution 1804. Approves technical guidelines, technical itemized annex on minimum conditions, and architectural program for the development of condominium projects of sheltered housing, or CVT, for older people (Ministry of Housing and Urban Planning)	2021
	Law 21.442 New Property Co-Ownership Law (Ministry of Housing and Urban Planning)	2022
	Exempt Resolution 721. Type of Co-Ownership Regulation (Ministry of Housing and Urban Planning)	2023
Indicative instruments	Design guide of residential spaces for older people (Ministry of Housing and Urban Planning)	2006
	Universal Accessibility Manual (Accessible City Corporation)	2010
	Universal Design in Public Space (Metropolitan Region Housing and Urban Planning Service)	2013
	Older People Fall Prevention Manual (Ministry of Health)	2015
	Guide to accessible solutions for public spaces and housing (Ministry of Housing and Urban Planning)	2018
	Supervised Housing Condominium Program (SENAMA)	2019
	Friendly Communes Program Technical Orientation Guide (SENAMA)	2021

Table 1. Documents analyzed and updated for 2024. Source: Preparation by the authors.

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Categories	Sub-categories	Codes (examples)
1. Older people (396) [according to treaties, regulatory instruments, and indicative instruments]	1.1. Denominations (287)	Older people (118), seniors (105), older adults (53), among others
	1.2. Capabilities and Functionality (73)	independence (32), autonomy (23), and self-validity (4), among others
	1.3. Rights (36)	human rights (33), right to the city (2), right to the territory (1)
2. Common spaces in collective housing (343) [according to regulatory instruments]	2.1. Denominations (70)	common goods or common domain (52), common spaces (3), public use spaces (1), common use premises (1), public use premises (3), and public service premises (4), among others
	2.2. Functions (12)	circulation (3), leisure (3), recreation (3), services (3)
	2.3. General characteristics (27)	accessible (9), safe (4), adapted (3), comfortable (2), usable (2), understandable (2), among others
	2.4. Uses (22)	green areas (8), equipment (6), roads (1), toilets (5), non-mechanized playgrounds with universal access (2)
	2.5. Physical-spatial elements (117)	accessible route (20), ramps (23), elevators (15), restrooms (6), and parking lots for people with disabilities (8), among others
	2.6. Characterization of residents (95)	people with disabilities (72), people with reduced mobility (10), children (1), women (1), among others
3. Senior-friendly common spaces in collective housing (307) [according to indicative instruments]	3.1. Denominations (47)	immediate environment (15), collective spaces (9), intermediate spaces (8), common spaces (4), among others
	3.2. Functions (5)	being (2), meeting (2), socializing (1)
	3.3. General characteristics (61)	suitable/appropriate (20), universally accessible (17), comprehensible (6), among others
	3.4. Uses (28)	social venues (4), multipurpose rooms (4), green areas (3), among others
	3.5. Physical-spatial elements (69)	accessible route (14), circulations (15), ramps (10), handrails or railing (7), among others
	3.6. Characterization of residents (97)	older people (49), older adults (36), older women (3), people with disabilities (2), among others
4. Daily practices of older people in common spaces of collective housing (28) [according to regulatory instruments and indicative instruments]	4.1. Permitted or restricted practices (7) [according to regulatory instruments]	bothersome noises (1), modifying or damaging common property (1), consumption and/or sale of alcohol and/or drugs (1), depositing garbage in unauthorized places (1), preventing free passage, access, or use (1), pet ownership (2)
	4.2. Practices of older people to be promoted (11) [according to indicative instruments]	cohabitation (5), socialization activities (2), physical activity (1), community activities (1), among others

Table 2. Codes and categories identified for 2024. Number of mentions in parentheses. Source: preparation by the authors.

that define public policies to contribute to the well-being of older people and regulate - or propose design guidelines for - common spaces in collective housing, were identified (Table 1).

The documents were then imported into the qualitative data analysis software ***atlas.ti*** (version 8.0) and fragments were identified that contained references to: i) older people, ii) common spaces of collective housing, iii) senior-friendly common spaces in collective housing, and iv) daily practices of older people in common spaces of collective housing. Then, the fragments were assigned codes, which were grouped into categories that formed a "tree-like" structure. As a result of this

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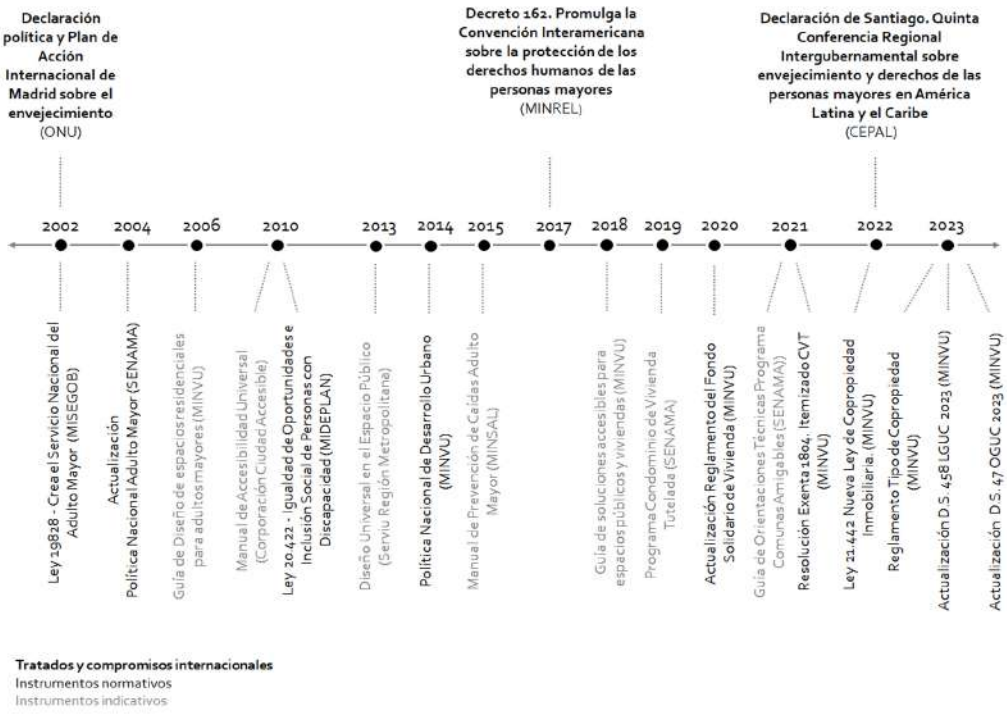

Figure 1. Timeline of analyzed documents, last update 2024. Source: Preparation by the authors.

process, 151 codes were identified, which were grouped into 4 categories and 17 subcategories (Table 2).

The analysis, similar to that employed in other works (Herrmann-Lunecke ***et al***., 2021), followed a discovery-oriented approach (Fossey ***et al***., 2002) and was refined in meetings between research team members. Finally, it is important to note that, due to the nature of the work, underlying beliefs or nuances that may be inferred from uncoded fragments could have been left out of the analysis.

IV. RESULTS AND DISCUSSION

Definitions of older people

The different documents analyzed name older people in multiple ways, the most frequent being "older people" (118 mentions), "seniors" (105 mentions), and "older adults" (53 mentions). The first two meanings are mainly found in international treaties and conventions signed by Chile that address population aging as a matter of public policy (e.g., Inter-American Convention on the Rights of Older Persons, Ministry of Foreign Affairs, 2017; Santiago Charter, ECLAC, 2022). These designations are also found in national indicative documents that are commonly cited and conform to the guidelines provided by treaties and conventions. The term "older adults," on the other hand, is used in documents that the National Service for Older Adults (SENAMA) has prepared, both regulatory (MISEGPRES, 2002) and indicative (SENAMA, 2021). The documents analyzed in this research show a transition from a language that is still "ageist" to one that recognizes older people as subjects of law. At the same time, they show how the treaties and conventions signed by Chile have permeated the regulatory instruments and have shaped others that, even of an indicative nature, clearly recognize the needs of older people (Figure 1).

Definitions and characteristics of the common spaces of collective housing according to Chilean regulations

In Chile, no binding or indicative documents regulate in detail the physical characteristics and uses of the common spaces of collective housing. Common spaces are broadly regulated by the General Law of Urbanism and Constructions (MINVU, 1976), the General Ordinance of Urbanism and Constructions (MINVU, 1992), which regulates constructions, and the New Property Co-Ownership Law (MINVU, 2022) regulates the cohabitation of a group of people who live in a community and share ownership over a property (co-ownership). The latter categorizes common spaces as "common goods" or "common domain goods" (52 mentions) and defines as common goods a variety of elements that include:

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Figure 2. Elements defined as "common domain goods" according to the regulations drawn up in 2023. Source: Preparation by the authors.

> The land on which the buildings, circulations, or green areas are located; the horizontal and vertical structural constructive elements, such as walls, facades, slabs, and roofs; the networks and facilities of basic services; the goods destined to service, leisure, and recreation; or the goods needed for the performance of roles by the contracted personnel; among others [...]. (MINVU, 2022, p. 2)

Meanwhile, the General Ordinance of Urban Planning and Constructions (MINVU, 1992) generally refers to common spaces. It does so in multiple ways, highlighting the following three meanings: spaces (common or public use), areas or zones (common and external use susceptible of being occupied by people), and enclosures (public use, common use, or public attention). This shows that in Chile's regulatory instruments, there is no clear definition of the common spaces that, as Figure 2 shows, are of a diverse nature and use.

The regulations also assign generic functions to common spaces, which include circulation, leisure, recreation, and services. Regarding their characteristics, the regulatory documents indicate that common spaces should be accessible, safe, adapted, comfortable, usable, and understandable (Figure 5). Likewise, the uses assigned to common spaces are also not specific. They are linked to the requirements that the rules request for new urbanization or construction (e.g., green areas, equipment, roads) and, particularly, to the accessibility of people with disability or reduced mobility (e.g., restrooms and non-mechanized playgrounds with universal access).

In practice, the regulatory instruments' main requirement for designing common collective housing spaces is accessibility for people with disabilities or reduced mobility (86 mentions). The relevance that is given to accessibility is embodied in the so-called "accessible route," which, as evidenced by the following fragment of the General Ordinance of Urbanism and Constructions (MINVU, 1992), defines many of the characteristics that the common spaces of collective housing should have:

> [The accessible route is a] free and continuous space [...] intended for the movement of people on a sidewalk, in a public space, or inside a building; free of obstacles, steps, or other barriers that hinder movement and the perception of it [...] suitable for the safe movement of all people. (MINVU, 1992, p. 15, updated version of 2023)

The accessible route appears for the first time in 2016 (MINVU, 2016). It is established as an empty volume of 2.1 m height by approximately 1.2-1.5 m width, length, and variable slope, and it defines at least three key aspects of common spaces. First, the accessible route specifies the circulations' minimum dimensions (minimum width and height). Secondly, it establishes the possible unevenness of those circulations and how they are resolved (ramps between 8% and 12% slope, depending on the length of the ramp). Third, the accessible route defines how housing

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Figure 3. Prohibited practices in common spaces of collective housing, photographs prepared in 2023. Source: Preparation by the authors.

units and common spaces are connected to each other (e.g., corridors) and the outside (e.g., accesses). Here, the standard pays special attention to the attributes and elements of elevators, restrooms, and parking lots for people with disabilities.

On the other hand, outdoor communal spaces, whether the accessible route or spaces that connect to it, tend to follow the design principles that govern public spaces, which are mainly oriented to movement. In this sense, this coincides with the findings of Herrmann-Lunecke ***et al.*** (2021), who point out that the body of binding instruments privileges movement over activities that involve permanence and consequently describe vertical elements or furniture as obstacles, though they could enrich the experience and comfort of the people occupying common spaces. Trees, for example, are mentioned when detailing the distance that should separate them from the accessible route and the arrangement of tree wells and irrigation dishes. In both cases, the purpose is to keep the circulation space free. In no fragment of the rules or indicative documents are the benefits mentioned that trees could have for permanence activities or, in bioclimatic terms, in common spaces.

Daily practices in the common spaces of collective housing according to Chilean regulations

The regulatory instruments have numerous references to people with disabilities (51 mentions) or with reduced mobility (10 mentions), which coincides with the relevance given to universal accessibility in the design of common spaces. On the contrary, references to older people as users of common spaces are very scarce in regulatory instruments. Only one fragment mentions older people when detailing adequate access to the cycle parking lots of collective housing (MINVU, 1992). Other vulnerable groups follow similar patterns and are rarely mentioned in regulatory documents. Children are mentioned in the same passage, which refers to older people, regarding cycle parking. At the same time, women are mentioned only once (Inclusion Law, MIDEPLAN, 2010), linked to the recognition of the particular vulnerability that women with disabilities have.

Possible daily practices in common spaces are rarely mentioned in the regulatory instruments and regulations that focus on the prohibitions of certain behaviors. Thus, the Co-Ownership Regulation (MINVU, 2023), which establishes the set of rights and obligations that occupants of collective housing have, indicates that prohibited practices are those that cause noise or are annoying, modify or damage common property, involve polluting the whole (e.g., accumulating garbage, dog feces) or selling or consuming illicit substances. The only indirectly protected/permitted practices are those associated with keeping and caring for pets or companion animals protected by law (MINVU, 2023). The regulatory instruments do not mention activities such as playing sports, caring for someone, or meeting neighbors. The analysis shows that cohabitation in the common spaces of collective housing is conceived in the regulatory instruments from an individual perspective and, as Figure 3 shows, from the prohibition. They are not designed as a collective aspect, and the fact that they are called "common" does not indicate that they allow the community to meet.

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Figure 4. A common space that allows socialization and meetings between older people. Prepared in 2023. Source: Preparation by the authors.

Friendly common spaces for older people in collective housing according to indicative instruments

In Chile, for almost two decades (although in a dispersed way), instruments have been developed that make recommendations on how spaces for older people should be designed, such as, for example, the Residential Spaces for Older People Design Guide (MINVU, 2006), the Older People Falls Prevention Manual (MINSAL, 2015), the Supervised Housing Unit Program Manual (SENAMA, 2019), the Friendly Communes Program Technical Guidelines (SENAMA, 2021) and Exempt Resolution 1804 Technical Itemized List MINVU Supervised Housing Condominiums (MINVU, 2021), the latter being the only binding instrument.

This body of instruments analyzed shows that there are advances in the conception of common spaces of housing and the role assigned to them for the life of older people. In this way, the words space and environment are frequently used for the denomination of common spaces, where the adjectives collective, intermediate, exterior, and common are associated with these places. The set of instruments analyzed recognizes common spaces as "mediators" between public and private (Schlack, 2007; Franco, 2017) and part of the nearby environment that is key for older people, to the extent that in old age, more time is spent at home and the spaces that are in their vicinity (Yuen, 2019). In line with the findings in the literature (Montoro, 2012), the indicative instruments argue that common spaces are crucial places for the well-being of older people:

> The immediate environment is one of the aspects that influences the level of satisfaction that the housing provides, since older people demand it to perform recreational and socialization activities. (MINVU, 2006, p. 9)

Universal accessibility is still relevant in how this group of documents conceives common spaces. Thus, the concept of an accessible route is literally present in recent documents (MINVU, 2021), but also implicitly in older documents (MINVU, 2006). The vast majority of the regulated elements and the definitions made about characteristics and dimensions coincide with those defined for the accessible route. However, the indicative instruments also highlight other elements that are very relevant for older people. Considering how the body's relationship with the environment changes with age (Gaete-Reyes, 2017), one of the frequently appearing elements is the handrail or railing, highlighting the need to have these support elements in indoor and outdoor circulation spaces. The minimum recommended dimensions for the circulations are also larger (1.5 m minimum width), indicating that two people should be allowed to pass simultaneously.

In addition to universal accessibility, the design of common housing spaces according to the indicative instruments should consider the citizens and physical safety of older people. Likewise, as Figure 5 shows, the characteristics assigned to common spaces are significantly more comprehensive when compared to the regulatory

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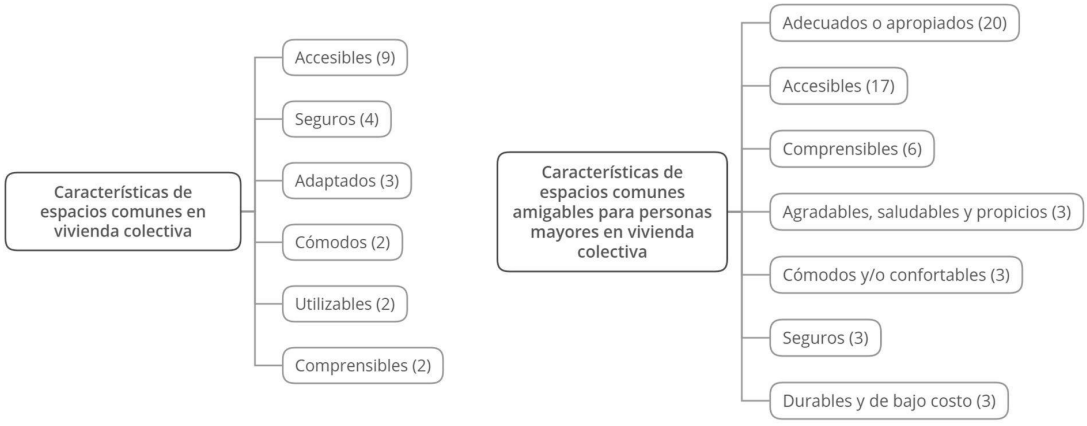

Figue 5. Comparison of the characteristics of common spaces of collective housing according to regulatory instruments (left) and characteristics of senior-friendly common spaces in collective housing, according to indicative instruments (right). Source: Preparation by the authors.

Figure 6. Comparison of the functions and uses of common spaces of collective housing according to regulatory instruments (left) and the functions and uses of senior-friendly common spaces in collective housing, according to indicative instruments (right). Source: Preparation by the authors.

instruments. The indicative instruments recommend that spaces for older people are suitable or appropriate for their particular needs and characteristics, universally accessible both in circulation and living spaces, understandable to facilitate spatial orientation, pleasant, healthy, and appropriate. The spaces for older people also have to be comfortable, in addition to adjusting to their physiological needs, safe to promote their use, durable and low-cost, and maintained to prolong their useful life.

In the revised indicative documents, older people are the protagonists of the common spaces. In line with existing studies (WHO, 2015), they are characterized as residents who may have different particularities that recognize diversity based on their different levels of dependence (independent, semi-independent, and dependent, 7 mentions), gender (older women, 3 mentions) and age range (young older adults and fourth age, 1 mention each).

The documents also recognize that common spaces should facilitate practices that promote connection, participation, integration, and socialization of older people in addition to serving circulation. As Figure 5 illustrates, the indicative instruments indicate as functions of common spaces, living, meeting, and socialization. In the same way, the suggested uses are more numerous than those in the regulatory documents, focused on group activities or contact with nature, and include social venues, multipurpose rooms, green areas, orchards, gardens, pergolas, and common patios.

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V. CONCLUSIONS

In the Chilean regulations, the common spaces of collective housing are not clearly defined. They are named in multiple ways and are part of a broad set of common domain goods. Similarly, the common spaces are not designed for roles that go beyond the circulation of people, making invisible the relevance of socio-spatial practices that imply permanence and social interaction. The focus on circulation has also reduced common spaces to places of passage that must be free of obstructions, and has reduced any element that could enrich them (e.g., trees, furniture) to "obstacles." This coincides with Herrmann-Lunecke ***et al***. (2021), who, studying pedestrian infrastructure with a similar methodological approach, concluded that Chilean regulations tend to strip spaces of amenities that could improve people's experience and daily life.

The results also show that older adults and other vulnerable groups, such as women and children, are absent from the regulatory instruments. On the contrary, the indicative instruments have followed the guidelines present in the agreements signed by Chile (UN, 2002; ECLAC, 2022), which recognize, on the one hand, older people, their rights, and their diversity (WHO, 2015) and highlight, on the other, the multiple roles that common spaces have (Schlack, 2007; Franco, 2017) and the relevance they have for the meeting and sociability of older people (Montoro, 2012). In this sense, the recommendations of indicative instruments, particularly regarding housing for older people, can be a good reference for developing housing regulations that promote age-friendly common spaces.

This study shows the need to update regulatory instruments to include the needs and rights of older people explicitly. Regulations associated with the design of common spaces should be reviewed to facilitate their use by older people. For example, a minimum of seats could be established in common spaces, handrails could be included in corridors of common spaces, and the minimum width of the accessible route could be increased to 1.5 m to allow the passage of two people, taking into consideration older people who walk with a caregiver. Integrating the requirements of older people into regulatory frameworks would not only improve their quality of life, but would also contribute to the social cohesion of communities. These efforts are crucial to promote healthy aging (Garin ***et al***., 2014) and allow older people to stay in their homes and neighborhoods (Canham ***et al***., 2018; Walsh ***et al***., 2017).

VII. CONTRIBUTIONS FROM CREDIT AUTHORS

Conceptualization, M.G.H.-L., A.Z.S.; Data curation, C.F.-M., PR; Formal analysis, M.G.H.-L., C.F.-M., PR; Acquisition of financing, M.G.H.-L.; Research, M.G.H.-L., C.F.-M., R.R.P., A.Z.S.; Methodology, M.G.H.-L., A.Z.S.; Project Management, M.G.H.-L.; Resources, M.G.H.-L.; Software, C.F.-M., R.R.P.; Supervision, M.G.H.-L.; Validation, M.G.H.-L., C.F.-M., R.R.P., A.Z.S.; Visualization, M.G.H.-L., C.F.-M., R.R.P.; Writing – draft original, M.G.H.-L., C.F.-M., R.R.P., A.Z.S.; Writing – revision and editing, M.G.H.-L., C.F.-M., R.R.P., A.Z.S.

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VIII. ACKNOWLEDGEMENTS

This research was funded by ANID Fondecyt Regular N°1230127. The authors are grateful for the support provided by CEDEUS, ANID/FONDAP 1523A0004.

Recibido: 30-08-2024
Aceptado: 09-11-2024

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PÁG. 60 - 71
ISSN 0717 - 3997 / 0718 - 3607

MILITARY SITES TODAY:

THE SYMBOLIC MILITARY SPACE IN MEGAPOLITAN LIMA, PERU [1]

LOS SITIOS MILITARES DE NUESTROS DÍAS: EL ESPACIO SIMBÓLICO MILITAR EN LIMA MEGAPOLITANA, PERÚ

GIOVANNA BALAREZO-ALBERCA [2]

1 The article was written as part of a doctoral thesis in progress entitled “The urban fragmentation of Lima Megapolitana. Case study: military installations, 2024”

2 Master in Architecture and Sustainability
Full Time Professor at the Faculty of Architecture, Peruvian University of Applied Sciences (UPC).
National University of Engineering, Lima, Peru.
https://orcid.org/0000-0001-8130-1363
giovanna.balarezo.a@uni.pe

https://doi.org/10.22320/07183607.2024.27.50.05

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El estudio analiza el impacto de las instalaciones militares en Lima Megapolitana en la configuración del espacio físico, simbólico y social de la ciudad. Focalizándose en la Base Aérea Las Palmas y el Complejo Militar de Chorrillos, la investigación examina cómo estos sitios delimitan el espacio urbano y afectan las dinámicas sociales, percepciones simbólicas y las relaciones de poder. Se utilizó un enfoque cualitativo basado en entrevistas semiestructuradas, observación y análisis documental, se explora el papel de las instalaciones militares en la construcción de la identidad urbana, la memoria colectiva y la cohesión comunitaria en la ciudad de Lima. Los hallazgos revelan percepciones diversas: mientras algunos perciben estos espacios como símbolos de protección, estabilidad y orden, otros los ven como agentes de segregación y control. Esta pluralidad de opiniones indica que las instalaciones militares cumplen una función compleja y multifacética en la ciudad, influenciada por el contexto social y cultural de los diferentes grupos involucrados.

Palabras clave: espacio social, espacio físico, amurallamiento, habitus militar

This study analyzes the impact of military facilities in Megapolitan Lima, considering the city's physical, symbolic, and social space configuration. This research focuses on the Las Palmas Air Force Base and the Chorrillos Military Base, examining how these sites demarcate the urban space and affect the social dynamics, symbolic perceptions, and power relations. Using a qualitative approach based on semi-structured interviews, observation, and document analysis, the role of military bases is explored in constructing urban identity, collective memory, and community cohesion in Lima. The findings reveal diverse perceptions. While some perceive these spaces as symbols of protection, stability, and order, others see them as agents of segregation and control. This plurality of opinions indicates that the military facilities fulfill a complex, multifaceted role in the city, influenced by the social and cultural context of the different groups involved.

Keywords: social space, physical space, immured spaces, military habitus.

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I. INTRODUCTION

Military facilities in urban environments have been of interest worldwide due to their significant influence on cities' physical, social, and symbolic structures (Bagaeen & Clark, 2016). Since the mid-twentieth century, Megapolitan Lima has experienced rapid population growth and urban expansion, contributing to an increasingly fragmented spatial development. In this context, military facilities predating the current urban configuration have notably influenced the city's spatial organization. An example of this phenomenon can be observed in Italy, where military installations played a crucial role in urban transformation during the country's unification process. As Camerin (2022a) highlighted in his analysis of the relocation of military facilities in Milan, these spaces not only modified the urban morphology, but also boosted the city's economic and social development. This approach illustrates how the evolution of military installations in Italy has influenced urban expansion and planning, similar to what is happening in Lima.

Despite their historical and physical prominence in Lima's urban fabric, military facilities have been consolidated as closed spaces restricted by perimeter walls. Since walls and cities have coexisted throughout history, it is essential to question whether these walls protect or separate. Walls not only represent belonging but also create it, intentionally structuring social relationships (Mubi Brighenti & Karholm, 2019). Consequently, this separation has led to the construction of physical barriers and the creation of symbolic divisions between the military and civilians. Jain (2023) emphasizes that symbolism is an essential part of human practice, pointing out that symbolic phenomena are not the result of the material and social environment where they develop, but also play a role in building it.

The concept of military facilities as ***closed spaces*** has been widely studied. At an international level, Camerin (2022b) describes these in Italy as ***immured spaces***, highlighting how military facilities, with their physical barriers, reinforce the separation between civil society and the military sphere. This enclosure not only creates a physical barrier, but also contributes to symbolic segregation, shaping social and urban relations (Camerin, 2022b). The military bases' uniqueness in the context of Lima, with its intrinsic military history and contemporary urban challenges, offers a unique opportunity to look closer at these dynamics. Although spatial segregation has been addressed in military contexts, few studies have analyzed how these barriers affect identity and collective memory in an urban environment as complex as Lima's.

This study focuses on two emblematic and adjoining cases: the Las Palmas Air Base and the Chorrillos Military Complex, both located in the city under study. The main objective is to analyze how the physical and symbolic walling of the military facilities in Megapolitan Lima contributes to the configuration of the symbolic space and to examine the influence of these elements on the social relations between the military and civilians, as well as on the urban identity and the collective memory of the city.

It is hypothesized that the presence of military facilities in Megapolitan Lima plays a significant role in the configuration of the urban environment. These affect both the structure of the physical space and the social and symbolic dynamics, with effects that vary depending on the perceptions and experiences of different social groups.

II. THEORETICAL FRAMEWORK

The symbolic space

The key concepts for compressing symbolic space are considered from a theoretical point of view and the perspective addressed in the research. Wacquant (2023) conceives it as a network of mental classifications and categories that guide how individuals and social groups perceive and understand the world. This concept not only organizes physical reality but also reflects the hierarchies and social distinctions present in a given context. According to Bourdieu (1998), symbolic space is manifested and concretized in social and physical space, influencing interactions and power relations. In essence, symbolic space functions as a mechanism that maintains or transforms social reality by categorizing people, objects, and activities, which is somewhat essential in the struggle to establish and consolidate dominant worldviews (Wacquant, 2023).

Symbolic space manifests around military facilities through diverse social and cultural dynamics that reflect the relations of power and control in the urban context. Following Bourdieu's (1998) theories, space is not merely a physical scenario but is imbued with meanings constructed and negotiated through social interactions.

Military facilities' symbolic construction is evidenced in their spatial organization, cultural practices, and representation of military authority. Their layout and structure transmit hierarchies and exclusions, turning the military presence into an instrument of control and surveillance over the civilian population, reinforcing the idea of security at the expense of individual freedoms. According to Vidal (1997), symbolic fragmentation implies the dissolution of the city's identity and the fragmentation of its representation.

The symbolism of space is also reflected in the public perception of these places. For some sections of the

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population, the setting may evoke feelings of oppression and fear; for others, it may symbolize order and stability. This game of meanings generates tensions, disputes, and resistance in how different social groups appropriate urban space, trying to redefine and re-signify it according to their needs and experiences.

The physical space

Physical space is understood as the built environment resulting from competitive efforts to acquire and control both material and ideal goods. According to Bourdieu (1998), this physical space is a tangible manifestation of social relations, where the hierarchies and distinctions in the social space are expressed concretely and symbolically. Thus, physical space is not simply an empty place, but a scenario formed by social actions and relationships, reflecting society's power dynamics and inequalities (Arizaga, 2021).

Spatial fragmentation refers to the physical separation or breakdown of the urban environment into fragments or small parts. This separation focuses on the physical barriers, obstacles, and boundaries that divide different urban areas (Landman, 2011; Kosak, 2018; Vidal-Koppmann, 2009). Walls are structures that fragment and demarcate spaces within urban environments. Their role ranges from protecting and securing certain areas to creating social and political divisions. Historically, walls have evolved from physical defenses for cities to instruments of social control and segregation. According to Mubi Brighenti and Karrholm (2019), urban walls in modern cities are closely associated with segregation, population control, and the search for security. Walls shape social interactions by establishing both visible and invisible boundaries that affect the flow of people and that, in this process, contribute to the creation of distinctions between public and private. Within the concept of "territoriality," walls are vital devices in the territorialization of space, influencing governance and power relations within cities (Mubi Brighenti & Karrholm, 2019). The ambiguity and duality of walls, acting simultaneously as instruments of protection and exclusion, make them key elements in understanding the complexity of urban life since they not only demarcate physical space, but also shape the dynamics of coexistence and social organization in contemporary cities (Stephenson & Zanotti, 2016).

The social space

Social space refers to how individuals' positions are organized and distributed within a hierarchical and complex social structure (Gutiérrez, 2012). This space is conceptualized as a system of differentiated social positions where power relations and inequality are evident (Cerón-Martínez, 2019). According to Bourdieu (1998), the social space can be understood as a set of autonomous fields that are grouped or distanced depending on their possession of different types of capital (economic, social, and cultural, among others) (Wacquant, 2017). It is not an empty place; it is produced and reproduced through social interactions and establishes different degrees of distance between social positions, which reveal hierarchies and power relations. These distances can be materially linked to the physical environment (physical space) and reflect individuals' mental classifications about their environment (symbolic space). Thus, social space is a field of struggles where the unequal distribution of capital determines who approaches or moves away from different goods and opportunities within society (Wacquant, 2017). In the context of military facilities, the social space is clearly observed in the internal organization of these institutions, where power hierarchies and social relations in the military sphere define the positions of its players (Giddens, 1986). These hierarchies also influence how military personnel interact with the adjoining civilian environment, generating symbolic and social distances reinforcing their authority and position in urban space (according to Bourdieu,1998; Giddens,1986). In addition, the surrounding civilian communities experience different degrees of inclusion or exclusion, depending on how they perceive and relate to these military spaces, which evidences the interconnection between the social, symbolic, and physical spaces. In this sense, the theory of the "weak ties" of Granovetter (1973) offers a valuable perspective to understanding these interactions between the players. Granovetter suggests that fragile bonds between individuals from different social groups, albeit weak ones, can play a fundamental role in generating interactions and information exchange, which contributes to the construction of social capital (Granovetter, 1973).

The habitus: the military sociology

Studies in military sociology approach military organization from two main perspectives (Villanueva, 2022). One of them, developed by Huntington (1981), considers the armed forces to be an independent and differentiated entity from civil society based on the specific nature of their profession and their training in the legitimate use of force. This approach examines the interactions and relationships between the civil and military spheres and will be the perspective adopted in this research. On the other hand, Janowitz (1960) proposes a different vision, where the military is seen as an integrated player within society, without being separated from the dynamics and analysis that affect the social whole. This view suggests that the armed forces do not operate in isolation, but are an active and participatory part of society (Villanueva, 2022). The Peruvian army has undergone two transformation processes. The first began with the arrival of the French mission, which involved significant changes in organizational culture, i.e., changes in beliefs, habits, values,

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Figure 1. Military Facilities: Las Palmas Air Base and the Chorrillos Military Complex. Source: Preparation by the authors based on Google Maps 2023

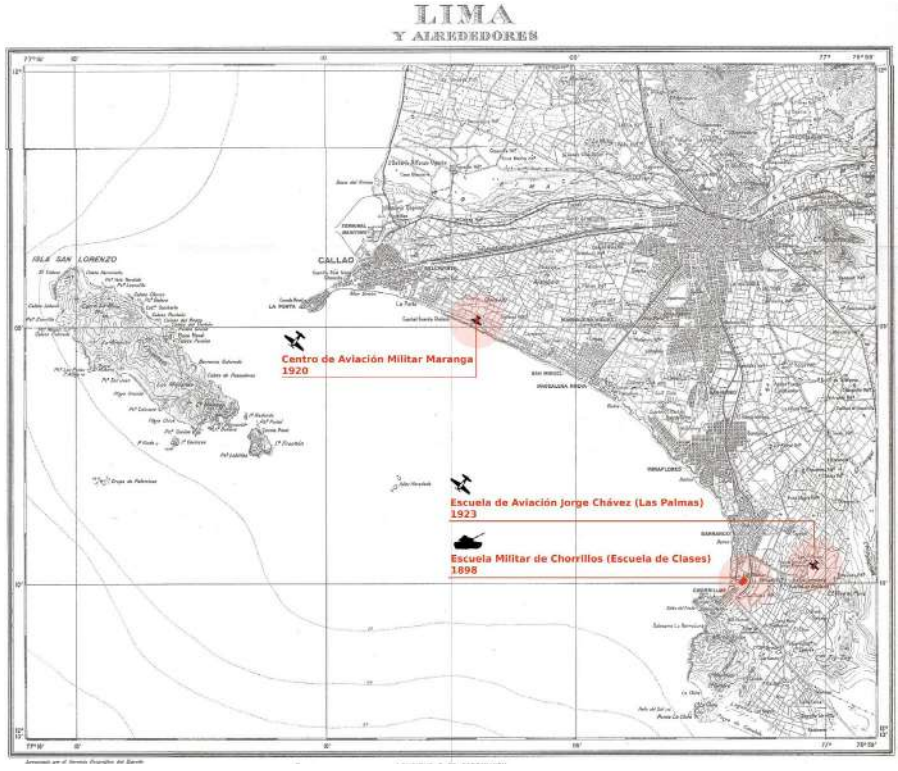

Figure 2. Plan of Lima and surroundings with the military facilities of the study in 1935. Source: Based on Plan #26 - The Lima Plans 1613-1983 of Günther Doering (1983).

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Figure 3. Streets around the Las Palmas Air Base. Source: Preparation by the author/author's archive

attitudes, and traditions (Sánchez Velásquez, 2023). Masterson (2001) showed that the French officers sent to Peru had vast colonial experience, reflected in Peru's military training. For Toche Medrano (2023), the Peruvian military adopted and operated under a paternalistic sense toward the indigenous population, undermining civil-military relations in the country from the beginning. Escalante (1995), for his part, states that the Armed Forces were an imported creation and disconnected from the Peruvian reality, which has, to a certain extent, continued over time.

III. CASE STUDY

This study analyzes two emblematic and adjoining cases: the Las Palmas Air Base (Peruvian Air Force) and the Chorrillos Military Complex (Peruvian Army). These cases encapsulate the complexity of the relationship between military and urban space in a historical, cultural, and strategic context. These cases offer a deep understanding of military spaces' inherent interactions and tensions in growing urban areas (Figure 1).

The Las Palmas Air Base

This belongs to the Peruvian Air Force (FAP) and is located in the districts of Surco and Chorrillos, to the south of Lima. The base was preceded by the Maranga Aviation Center in 1920 and moved to its current location in 1922. In 1923, it was founded together with the Jorge Chavez Aviation School (Figure 2) (Cárdenas Brou, 2019). The base occupies an approximate area of 281.22 hectares, spread over the districts.

Geographically, it borders to the north with Santiago de Surco Ave., the south with El Sol Ave., the east with Los Próceres Ave., and the west with República de Panamá Ave. Its strategic location within the city, 72 meters above sea level, is an important intersection between Lima and the main routes to the country's south.

The Chorrillos Military Complex

This is located in the Chorrillos district alongside the Las Palmas Air Base. This complex includes the Chorrillos Military School, the Army Education and Doctrine Command, and the Army Technical School. The Chorrillos Military School, founded on April 24th, 1898, during the government of Nicolás de Piérola, is one of the military institution's fundamental pillars within this complex. Over the years, its role and location have experienced significant changes until 1945, when its move to its current site next to the Army Instruction and Doctrine Command in the Chorrillos district took place. The military complex is connected to

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Figure 4. The walls of the Las Palmas Air Base and the Chorrillos Military Complex. Source: Preparation by the author/author's archive

main avenues, such as Escuela Militar Ave. and Huaylas Ave., covering an approximate area of 190.78 ha.

Walling and physical separation

Both military installations' walls and physical barriers represent the control and delimitation they exercise on urban land (Figure 3). Figure 4 highlights the walling in its diverse manifestations, emphasizing how these elements act as physical and symbolic barriers, reinforcing the separation between military and civilian spaces.

IV. METHODOLOGY

The research addresses a qualitative methodology based on interpretative methods to understand people, groups, and phenomena contextually. This methodology explores how individuals give meaning to their experiences, interpreting themselves, others, and their social environment (Ravitch & Mittenfelner Carl, 2020). It has a descriptive nature and uses techniques that support the objectives: the interviews capture the perceptions of the military, neighbors, and experts about the physical, social, and symbolic space of the military facilities; the observation records interactions and dynamics between the military and urban environment, identifying complementary patterns to the interviews; and the documentary analysis examines historical and urbanistic documents to understand the development and role of these spaces in the city and their current symbolic impact.

The interpretative orientation of the research focuses on the particular analysis of the symbolic space of the Las Palmas Air Base and the Chorrillos Military Complex from the perspective of local players to understand the existence of an external and internal reality that is valuable to be analyzed. The analysis unit comprises internal players- military personnel (3); and external players -the surrounding neighbors (8) and experts on the subject (3).

The delimitation of the study focuses on the immediate surroundings of the military facility. The sampling was conducted in the Surco district sector, specifically in the San Roque, San Gavino, and La Cruceta urbanizations, where military and civilian housing and cultural, educational, and commercial urban equipment predominate. To organize and analyze the data from the interviews, a map was made that visualizes the structure of the categories: physical, social, and symbolic space, along with their respective analysis categories, which can be seen in Figure 5, helping to identify relationships and emerging

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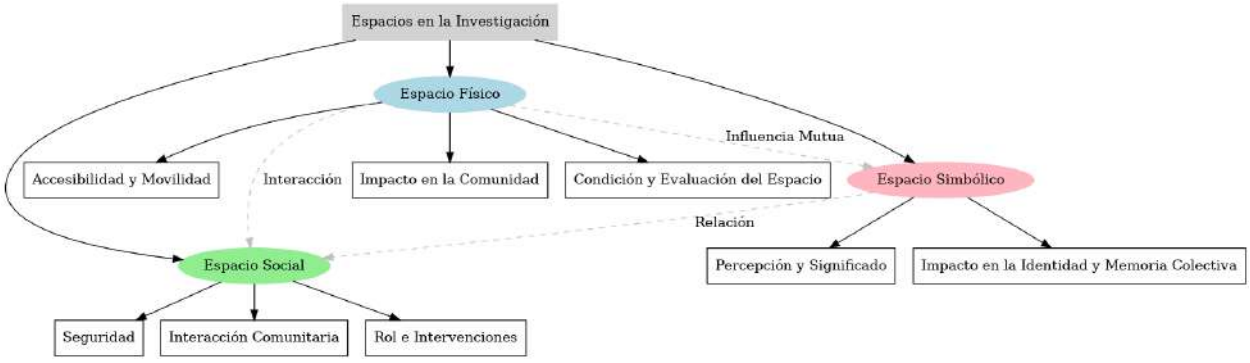

Figure 5. Structure of the categories and subcategories addressed in the research. Source: Preparation by the author

Space	Category	Experts	Military personnel	Local neighbors
Physical	Impact on the community	Perceive a moderate effect on mobility and access.	Consider that it provides security and order in the neighborhood.	It affects accessibility and local traffic.
	Condition and evaluation of the space	Point out limitations on access to surrounding areas.	Restricted access is necessary for security reasons.	They complain about the access limitations and noise of the training.
	Accessibility and mobility	They consider that the place affects urban mobility.	They believe that physical separation is crucial for safety.	They perceive physical barriers as obstacles to integration.
Symbolic	Perception and meaning	They see the facilities as symbols of defense.	They see the barracks as historical symbols of defense, emblems of sovereignty.	Mixed: Some see the barracks as symbols of exclusion and control, while others feel proud of their history.
	Impact on identity and collective memory	They believe they contribute to the place's local identity and collective memory.	They consider that the barracks strengthen the military and civil identity.	Mixed perceptions about their symbolic value in the city.
Social	Community interaction	They consider that there is little interaction with the civilian environment.	They mention limited community integration events.	They perceive the lack of activities that include civilians.
	Security	They believe that it increases the perception of security.	They believe the facilities deter criminal activity.	Mixed: Some feel safer, others feel isolated.
	Role and interventions	They suggest possible additional educational and cultural uses.	They consider it essential to maintain the military approach.	They propose converting parts of the facilities into common recreational spaces for the military and civilians.

Table 1. Results of the interviews with the different players. Source: Preparation by the author

patterns in the interviewees' answers and facilitating the process of interpreting the qualitative data.

The scientific rigor used in this research is based on interpretative validity. Most authors agree that it is vital that the case study design is done considering the criterion of triangulation (Stake, 1998). Triangulation is the possibility of contrasting different sources to make the information collected or interpreted less susceptible to error. The quality of qualitative research depends on the rigor, organization, and systematization with which it is carried out (Izcara, 2009).

V. RESULTS

Table 1 shows the players' perceptions (experts, military personnel, and local neighbors) on the impact of military facilities on physical, symbolic, and social spaces. In the physical

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Space	Category	Participant observation
Physical	Impact on the community	Gated communities, residential segregation (they self-exclude), military and civilian walls, a city without attributes.
	Condition and evaluation of the space	Restriction spaces, physical barriers (walling), cul de sac, surveillance, deterioration.
	Accessibility and mobility	Fragmentation, breaks in the urban fabric and flow, little accessibility, and difficult mobility between roads and adjoining districts.
Symbolic	Perception and meaning	Perceptions of power, exclusion, and control; perception of fear, distrust, and insecurity.
	Impact on identity and collective memory	The collective memory of military and defense historical space, linked to national history, is diluted in everyday life due to a lack of social interaction between the military and civilians.
Social	Community interaction	Very sporadic activities of social activation with the surrounding communities. Players share territories but not common issues. Indifference between the military and civilians.
	Security	The use of blind walls in military bases generates insecurity, and restricted access impacts social segregation.
	Role and interventions	Improve the perimeter of the enclosure, optimize the spatial quality and outreach, and promote dialog and joint solutions with neighbors.

Table 2. Results of the participant observations. Source: Preparation by the author

Space	Documents	Observations
Physical	Historical urban maps	The Las Palmas Air Base and the Chorrillos Military Complex were founded in agricultural areas. Rapid urbanization was consolidated around and/or on the edge of the facilities' walls.
Symbolic	Music, Military Narratives, Photos.	Stories of the military heroes of both the Air Force: José Abelardo Quiñonez (FAP), and the Peruvian Army: Francisco Bolognesi (EP), the Military March Music, and the National Anthem bring fond memories about the project under construction that is called Peru.
Social	Regulations Military Housing & Social Activities	Archives of the Military Magazine provide photos of social activities and military housing programs as a commitment to those who commit to military training.

Table 3. Documentary analysis. Source: Preparation by the author.

space, it is seen that experts perceive a moderate impact on mobility and accessibility, while military personnel consider these restrictions necessary for security. On the other hand, the neighbors express concern due to the limited access and the noise. Experts and military personnel see the facilities in the symbolic space as symbols of defense and sovereignty. However, neighbors have divided opinions: some see these places as elements of historical pride, while others perceive them as exclusionary. As for the social space, perceptions about security are mixed; although some consider that the facilities increase security, others perceive a lack of community interaction and suggest possible interventions to improve the relationship between the military and civilians. This diversity of opinions reflects the tensions and complexity of integrating military facilities into the urban fabric.

Table 2 presents the results obtained by participant observation. Closed communities and physical barriers (walls) were identified on both the military and civilian sides, contributing to spatial and social segregation in the urban environment. In terms of accessibility and mobility, a fragmentation of the urban fabric is evident. Symbolically, these facilities evoke perceptions of power and national defense, although this image is diluted in everyday life by scarce social interaction. The lack of integration activities reinforces the indifference between the military and civilians, suggesting the need to improve the relationship and foster meeting spaces.

Table 3 summarizes the documentary analysis, providing a historical and cultural context for military facilities in Lima. In the physical space, historical maps show how rapidly urban expansion surrounded the facilities, which previously were agricultural areas. Symbolically, documents such as narratives and photographs highlight national symbolism and heroic figures. In the social field, archives provide evidence of military housing programs and activities designed to strengthen commitment within the military community rather than with the general population, evidencing a limited integration into the urban social fabric.

VI. DISCUSSION

This research reveals diverse perceptions among the players about the impact of military facilities in Megapolitan Lima.

The physical space

There is tension between the perception of safety and accessibility restrictions. While military personnel and some experts consider physical restrictions are needed to maintain order and security, neighbors perceive these measures as obstacles that limit community integration. This finding coincides with those proposed by Mubi Brighenti and Karrholm (2019), who suggest that walls and physical barriers in urban environments not only provide a protective role, but also act as devices that reinforce power relations and social segregation. In this context, the walls or the walling of the military facilities in Megapolitan Lima significantly influence the organization of the surrounding urban space. They act as territorializing devices that not only delimit access to different areas of the city, but also affect social dynamics by creating both a physical and psychological barrier between "the civilian" and "the military." These visible and imposing structures reinforce a perception of insecurity or control, limiting the possibilities of interaction and social cohesion between the military and civilians.

The symbolic space

The mixed perceptions of the neighbors about the case study, ranging from seeing them as symbols of defense to considering them elements of exclusion, reflect the inherent tensions in the signifying of the space. These contrasting perceptions show how the symbolic space is a field of struggle where different social groups try to impose their vision of the world (Bourdieu, 1998). Military facilities, as symbols of authority and military power, not only reinforce established hierarchies, but also generate a duality of feelings ranging between pride and exclusion in the local community. Similarly, in the collective identity and memory of the city, the research reveals a division in how different

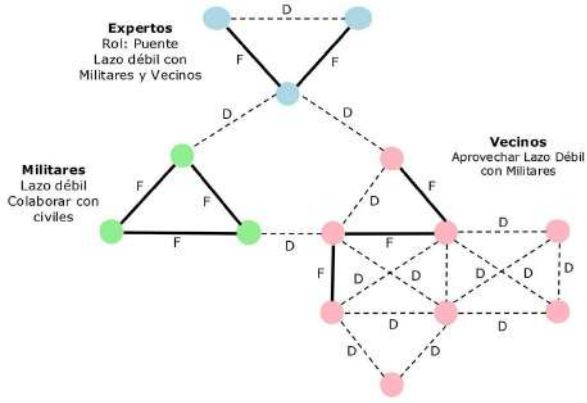

Figure 6. Weak and strong relationships between players: experts, military, and neighbors. Source: Own preparation based on the Strength of Weak Ties theory of Granovetter (1973).

social groups relate to these spaces. For some groups, such as neighbors who value the military presence for its sense of security, military bases are seen as symbols of sovereignty and national defense. However, for other sectors of the population, especially those who reside in their surroundings and experience access restrictions and limitations on their mobility, these facilities represent barriers of exclusion and control. This aligns with Bourdieu's (1998) notion of social space, where hierarchies and power relations are manifested through the physical structures that condition social interaction. This diversity of perceptions suggests that military facilities play a complex and multifaceted role in shaping Lima's urban identity.

The social space

The results indicate a mixed perception of the impact of military facilities on security. While some perceive that military sites increase security by deterring criminal activities, others feel these structures generate social isolation that limits community interaction. This reinforces the idea that the control of physical space by the military forces affects not only perceived security but also the possibilities of social cohesion and coexistence between the military and civilians, as suggested by the "theory of territorialization" (Mubi Brighenti & Karrholm, 2019). At the same time, the "strength of weak ties theory" of Granovetter (1973) also echoes in the results, showing how the links between the players - experts, the military, and neighbors - are limited but strategic to facilitate interaction. Experts, acting as bridges, allow a connection between military personnel and civilians, while weak ties between military and neighbors generate perceptions of distance and exclusion. However, these weak ties offer opportunities to develop new forms of interaction and cohesion, which could mitigate social isolation and improve coexistence between both groups (Figure 6).

VII. CONCLUSIONS

This study provides an opportunity to reflect on the role of military facilities in the urban fabric, not only in Lima but in a global context. These spaces' favorable physical conditions, such as their vast areas in densely populated cities, offer new perspectives on rethinking them as strategic pieces in sustainable urban development and social cohesion projects. The findings show that military facilities in Megapolitan Lima, such as the Las Palmas Air Base and the Chorrillos Military Complex, generate a multidimensional impact on the urban environment.

In the physical space, these facilities act as barriers that fragment the city and limit the interaction between the military and civilians, affecting urban mobility and accessibility to specific resources and services. This suggests the need to reconsider integrating these spaces into the urban fabric to promote greater social cohesion.

In the symbolic space, military facilities project an ambivalent message: for some, they represent security and protection, while for others, they symbolize exclusion and control. This duality reflects broader tensions in collective memory and urban identity, posing challenges to developing inclusive policies that recognize and negotiate these contrasting perceptions.

In the social space, the limited interactions between the military and the civilian community perpetuate symbolic and real distances, reinforcing social hierarchies. To improve social cohesion, it is vital to promote spaces for dialogue and shared activities that facilitate the integration of the military and civilians in a shared environment.

This study contributes to the international discussion on the role of military sites in urban areas, underlining the importance of considering both their physical integration and their impact on social cohesion and collective identity. The research raises the need for urban planning that contemplates not only the physical development but also the symbolic and social integration of these spaces, allowing military facilities to evolve in their role and adapt to contemporary urban realities. Regarding the future of these facilities, the Las Palmas Air Base has been publicly debated for its possible conversion to civilian use due to its limited role. However, the Peruvian Air Force defends its importance for natural emergencies. As for the Chorrillos Military School, there are no questions about its permanence, given its strong historical and urban roots in the city.

VIII. CREDIT AUTHOR CONTRIBUTIONS

Conceptualization, G.M.B.A.; Data Curation, G.M.B.A.; Formal Analysis, G.M.B.A.; Funding Acquisition, G.M.B.A.; Research, G.M.B.A.; Methodology, G.M.B.A.; Project Management, G. M.B.A.; Resources, G.M.B.A.; Software, G.M.B.A.; Supervision, G.M.B.A.; Validation, G.M.B.A.; Visualization, G.M.B.A.; Writing - original draft, G.M.B.A.; Writing - proofreading and editing, G.M.B.A.

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X. ACKNOWLEDGEMENTS

This article was developed as part of the "Research Development I" course in the Ph.D. program in Architecture of the National University of Engineering (UPG FAUA UNI) in Lima, Peru, 2024. I especially appreciate the advice of the architects, José Carlos Hayakawa Casas Ph.D. and Luis Elías Rodríguez Rivero Ph.D., who provided invaluable guidance during the process.

Recibido: 15-08-2024
Aceptado: 11-11-2024

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CAROLINA ROJAS-QUEZADA, PAULA VILLAGRA, FELIPE JORQUERA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
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ISSN 0717 - 3997 / 0718 - 3607

PERCEPTION OF BIOPHILIC VALUES IN THE ROCUANT ANDALIÉN WETLAND, METROPOLITAN AREA OF CONCEPCION,CHILE

PERCEPCIÓN DE VALORES BIOFÍLICOS EN EL HUMEDAL ROCUANT ANDALIÉN, ÁREA METROPOLITANA DE CONCEPCIÓN, CHILE

CAROLINA ROJAS-QUEZADA 2
PAULA VILLAGRA 3
FELIPE JORQUERA 4

1 Article derived from ANID FONDECYT research FONDECYT Nº 1190251 (2019-2024) “Effects of urbanization and accessibility in the Urban Wetlands of the metropolitan area of Concepción (URBANCOST II)” and ANID FONDAP 1522A0004 funding fund for centers of excellence in research.

2 Doctor in Cartography, GIS and Remote Sensing
Deputy Director of Research, Institute for Urban and Territorial Studies - Institute of Urban and Territorial Studies
Principal Researcher Center for Sustainable Urban Development
Pontifical Catholic University of Chile, Santiago, Chile.
https://orcid.org/0000-0001-9505-4252
carolina.rojas@uc.cl

3 Doctor in Architecture and Planning
Associate Professor, Institute of Environmental and Evolutionary Sciences, Faculty of Sciences
Austral University of Chile, Valdivia, Chile.
https://orcid.org/0000-0001-6428-3933
paula.villagra@uach.cl

4 Master in Human Settlements and the Environment
Doctoral Student in Architecture and Urban Studies, Faculty of Architecture, Design and Urban Studies
Pontifical Catholic University of Chile, Santiago, Chile.
https://orcid.org/0000-0003-1854-2994
fijorquera@uc.cl

https://doi.org/10.22320/07183607.2024.27.50.06

Este estudio analiza la percepción de valores biofílicos en el humedal Rocuant-Andalién, ubicado en el área metropolitana de Concepción, Chile y examina cómo estas percepciones varían según las tipologías de barrios. El objetivo principal es comprender cómo las diferentes características urbanísticas y sociodemográficas influyen en la valoración de este espacio natural. Para ello, se aplicó un cuestionario georreferenciado a 326 residentes de distintas tipologías de barrios, en el que se evaluó nueve tipos de valores biofílicos (utilitarista, naturalista, ecológico-científico, estético, simbólico, humanista, moralista, dominionista y negativista). Se utilizó un enfoque de Sistemas de Información Geográfica de Participación Pública (PPGIS) y el análisis de hot spot para identificar clústeres de percepción. Los resultados revelaron que las percepciones del humedal varían significativamente según la tipología de barrio, destacándose una mayor valoración de los valores utilitarios y estéticos en áreas de baja densidad. Se identificaron hotspots que indican áreas con alta valoración de ciertos valores biofílicos. La integración de PPGIS y los valores biofílicos demuestra cómo los patrones espaciales influyen en la percepción de los humedales urbanos. Los resultados sugieren que mejorar la infraestructura y la accesibilidad podría fortalecer la conexión de los residentes con estos espacios naturales. Los hallazgos subrayan la importancia de desarrollar políticas de conservación y planificación urbana que sean inclusivas y efectivas, para promover una percepción y gestión más favorable de los humedales urbanos.

Palabras clave: humedales urbanos, valores biofílicos, percepción ambiental, sistemas de información geográfica participativa, planificación urbana

This study analyzes the perception of biophilic values in the Rocuant-Andalién wetland, located in the Concepción Metropolitan Area, Chile, and examines how these perceptions vary according to neighborhood typologies. The main objective is to understand how different urban and sociodemographic characteristics influence the valuation of this natural space. For this purpose, a geo-referenced questionnaire was applied to 326 residents of different neighborhood typologies, assessing nine types of biophilic values (utilitarian, naturalistic, ecological-scientific, aesthetic, symbolic, humanistic, moralistic, dominionist, and negativist). A Public Participation Geographic Information Systems (PPGIS) approach and hot spot analysis were used to identify perception clusters. Results revealed that wetland perceptions vary significantly by neighborhood typology, with a higher valuation of utilitarian and aesthetic values in low-density areas standing out. Hotspots were identified that indicate areas with a high valuation of certain biophilic values. The integration of PPGIS and biophilic values demonstrates how spatial patterns influence the perception of urban wetlands. The results suggest that improving infrastructure and accessibility could strengthen residents' connections to these natural spaces. The findings underscore the importance of developing inclusive and effective conservation and urban planning policies to promote a more favorable perception and management of urban wetlands.

Keywords: urban wetlands, biophilic values, environmental perception, participatory geographic information systems, urban planning

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I. INTRODUCTION

Urban wetlands are vital ecosystems that provide multiple ecosystem services, such as hydrological regulation, biodiversity conservation, and mitigation of the effects of climate change (Mitsch & Gosselink, 2015). In the Latin American context, these ecosystems are increasingly facing pressure due to changes in land use and the lack of planning and conservation policies, resulting in a significant loss in size and ecological functionality (Rojas et al., 2019). In Chile, the interest in urban wetlands has driven environmental research in recent years (Hidalgo-Corrotea et al.,2023). However, social interaction with these natural spaces remains an emerging field that seeks to understand, through perception instruments, how urban design influences the valuation of natural spaces and their biodiversity. Urban wetlands are also recreational spaces; therefore, it is essential to understand how different urban communities value them (Villagra et al., 2024; Alikhani et al., 2021).

The Concepción Metropolitan Area, located in the Biobío region, Chile (Latitude 36º South - Longitude 73º West), is a laboratory in the study of urban wetlands. Despite this, perception studies have received limited attention (Villagra et al., 2024). In perception studies, the biophilia hypothesis and place-based approaches provide a practical, theoretical approach to understanding how people value natural environments. The biophilia hypothesis, proposed by Kellert and Wilson (1993), suggests that the values people assign to the natural environment reflect universal and functional expressions of dependence as a human species on the natural world. Kellert and Wilson (1993) classify these values into nine categories:

- Utilitarian: The value of nature for providing benefits of a material nature that can be useful.
- Naturalist: The value obtained from direct contact with nature, accompanied by exploration and curiosity that can evoke a sense of fascination, astonishment, and wonder.
- Ecologist-scientist: The value of obtaining satisfaction from the study of nature, which facilitates problem-solving and other cognitive functions.
- Aesthetics: The value that provides visual satisfaction and appeals to the beauty observed in nature.
- Symbolic: The value observed in natural symbols that provide a way to communicate and express our thoughts.
- Humanistic: The value observed in strong attachment to individual elements of the environment, most commonly animals.
- Moralistic: The value of feeling a strong sense of ethical responsibility and affiliation towards the natural world.
- Dominionist: The value that arouses the desire to dominate or control the natural environment.
- Negativist: The value obtained in environments that transmit negative feelings such as fear, aversion, and antipathy.

The biophilic values, together with the methodological approach of Public Participation Geographic Information Systems (hereinafter PPGIS), help understand how individuals from different neighborhoods in Metropolitan Concepción perceive the value of wetlands near their residences (Villagra et al., 2024). The PPGIS has been used to map perceptions associated with specific locations, wildlife conservation, and land use conflicts (Brown & Kyttä, 2014).

The Rocuant-Andalién wetland, located in the communes of Talcahuano and Penco, 15 km and 12 km from the city of Concepción, respectively, exemplifies the challenges and opportunities in coastal urban wetland conservation, especially since the Ministry of Environment recently created its management instruments (Management Plans). This study contributes to understanding how neighborhood typologies of their surroundings influence the perception of biophilic values in the Rocuant-Andalién wetland, which provides valuable information for sustainability in a Latin American urban context.

Specifically, a questionnaire was developed in three types of neighborhoods. The sample included 326 respondents, distributed proportionally according to the population size of each neighborhood typology. A spatial analysis was conducted to explore variations in the distribution of biophilic values (Villagra et al., 2024). By exploring the relationship between neighborhood typologies and the perception of wetlands, the aim is to highlight the importance of considering the diversity of urban and socio-economic contexts in formulating conservation policies. The hypothesis of this study is to confirm whether there are differences in the perception of biophilic values and if the urban surroundings and access to nature can explain these. Although this methodology was already used for the Los Batros wetland in the study by Villagra et al. (2024), on this occasion, a coastal wetland is explored that is not fully urbanized as the palustrine Los Batros wetland, whose densification presents more elements of planned urban design such as the "medium density fabric neighborhoods." In the Rocuant-Andalién wetlands, urbanization is dispersed and fragmented, and the area has been strongly impacted by floods, such as those of the 2010 tsunami. This influences the perception of the community's biophilic values. The findings of this study suggest that effective urban wetland management must consider and value these biophilic aspects in wetlands impacted by disasters from the people's perspective.

II. THEORETICAL FRAMEWORK

The value of perception in Urban Wetlands

Urban wetlands play crucial roles in maintaining human health and well-being. They are recreational and educational spaces that contribute to the urban populations' psychological and physical well-being (Rojas-Quezada et al., 2022; Villagra et al., 2024). These contributions have mainly been measured from perception studies,

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Neighborhood Typology	Low-Density Neighborhood Units	Medium-Density Neighborhood Units	Landscaped Housing
Sample N°	166	144	16
Population density (inhab/ha)	50.9	63.41	3.99
Housing density (house/ha)	19.26	19.73	1.41
Green area density (inhab/m2)	2.37m2/person	1.51m2/person	3.47m2/person
Description	Low-density neighborhoods with medium and lower-class single-family houses. Intermediate connection and transport networks in a regular state, close to industrial areas with a lack of infrastructure and facilities	These are medium-density residential neighborhoods with both new and old single-family homes and residential complexes. The area has suitable connectivity, and the roads are in regular to good condition, although there is a limited proportion of vegetation and green areas.	A medium—and low-density residential neighborhood with medium—and medium-high-class homes. There is excellent coverage of green areas. There is also good connectivity, with roads in good condition.
Type of Housing	Predominantly, one- or two-story single-family homes of acceptable to heterogeneous materiality.	Two-story single-family homes predominate, with a linear and semi-detached distribution, which include small back and front yards. Social housing blocks also have internal and external green areas, all with good materiality.	One or two-story single-family homes with backyards and good materiality.
Example			

Table 1. Definition of Neighborhood Typologies. Source: Preparation by the authors

which have mainly targeted the valuation of ecosystem services. People have valued cultural services most for their beneficial effects on everyday life (Alikhani et al., 2021). In urban design, perception changes by including natural elements, whether wetlands or streets with open, blue, and green spaces. This improves human interaction with their surroundings (Johnson et al., 2024; Sun et al., 2024). Also, the high valuation of nature depends on years of education and environmental awareness, which foster perceptions that promote the conservation and sustainable use of wetlands (Kaplowitz & Kerr, 2003; Rojas et al., 2017).

Biophilia reflects the inherent connection of humans with nature. Kellert and Wilson (1993) expand upon this hypothesis by identifying nine biophilic values that reflect how people perceive and value the natural environment. In line with the biophilia hypothesis, the perception of individuals towards nature is the product of an interaction between innate (genetic) and environmental factors of the setting (Gunnarsson & Hedblom, 2023). Therefore, the human connection with urban wetlands could be of a utilitarian, naturalistic, ecologistic-scientific, aesthetic, symbolic, humanistic, moralistic, dominionistic, and negativist nature, where each one captures a different aspect of the human-nature relationship (Kellert & Wilson, 1993).

In the case of wetlands, the perception of biophilic values recognizes the predominance of ecological-scientific and aesthetic values (Debbie & Green, 2013). However, in Latin American contexts, the perception of biophilic values depends on proximity, accessibility, and sociodemographic variables such as education and income, where neighborhoods with landscaped housing have a greater appreciation for aesthetic and humanist values (Villagra et al., 2024). Similarly, the diversity of urban wetlands, determined by the presence/absence of infrastructure, lighting, and visible water bodies, among other factors, conditions people's use of them (Villagra & Dobbie, 2014). Biophilic values are essential in these cases to understand how people interact with their natural environment. Consequently, the results contribute to developing effective environmental management policies by examining the human-nature relationship.

III. METHODOLOGY

PPGIS as a Tool for Participatory Planning

PPGIS has established itself as a valuable tool for mapping and analyzing community perceptions of natural environments,

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Figure 1.Neighborhoods adjoining the Rocuant Andalien Wetland. Communes of Talcahuano and Penco. a) El Morro, b) Las Salinas, c and d) Los Forjadores. Based on field records and Google Earth. Source: Preparation by the authors.

including urban wetlands, facilitating a deeper understanding of the interactions between the community and its natural environment (Brown & Kyttä, 2014).

First, the photointerpretation and fieldwork were carried out to map the characteristics of the wetland environment (1km radius). The surrounding neighborhoods were classified into three typologies: 1) Low-Density Neighborhood Units, 2) Medium-Density Neighborhood Units, and 3) Landscaped Housing. The following population and urban structure variables were used in the characterization: population density, housing density, density of green areas, and type of housing. (Table 1).

To identify the perception of the wetland's biophilia, a semi-structured survey was conducted based on a probabilistic sample of 326 households with a margin of error of 5%, a confidence level of 95%, and a p-value of 0.7 regarding the wetland's positive assessment as an area of ecological value. The 326 surveys were made one per household and are geographically distributed in the three neighborhood typologies: a) Low-Density Neighborhood Units (166 respondents), b) Medium-Density Neighborhood Units (144 respondents), and c) Landscaped Housing (16 respondents). The neighborhoods bordering the wetland (El Morro, Las Salinas, and Los Forjadores, Figure 1) in the Talcahuano and Penco communes are characterized by their medium-density and 2-story single-family homes. In the case of Talcahuano (El Morro and Las Salinas), the houses are separated by the street and sidewalk (Figure 1. a and b). The neighborhoods bordering the wetland in the commune of Penco (Villa Belén and Los Forjadores) are located at an elevation and have a panoramic view of the wetland (Figure 1. c and d).

The survey was conducted door-to-door with adults in three dimensions: spatial and sociocultural, comprising a characterization of the respondents' profiles, and perceptual. The latter starts with the question, "What is a wetland for you?" This has alternative definitions that represent the values: natural, spiritual, negative, and productive to continue with the list of specific phrases that

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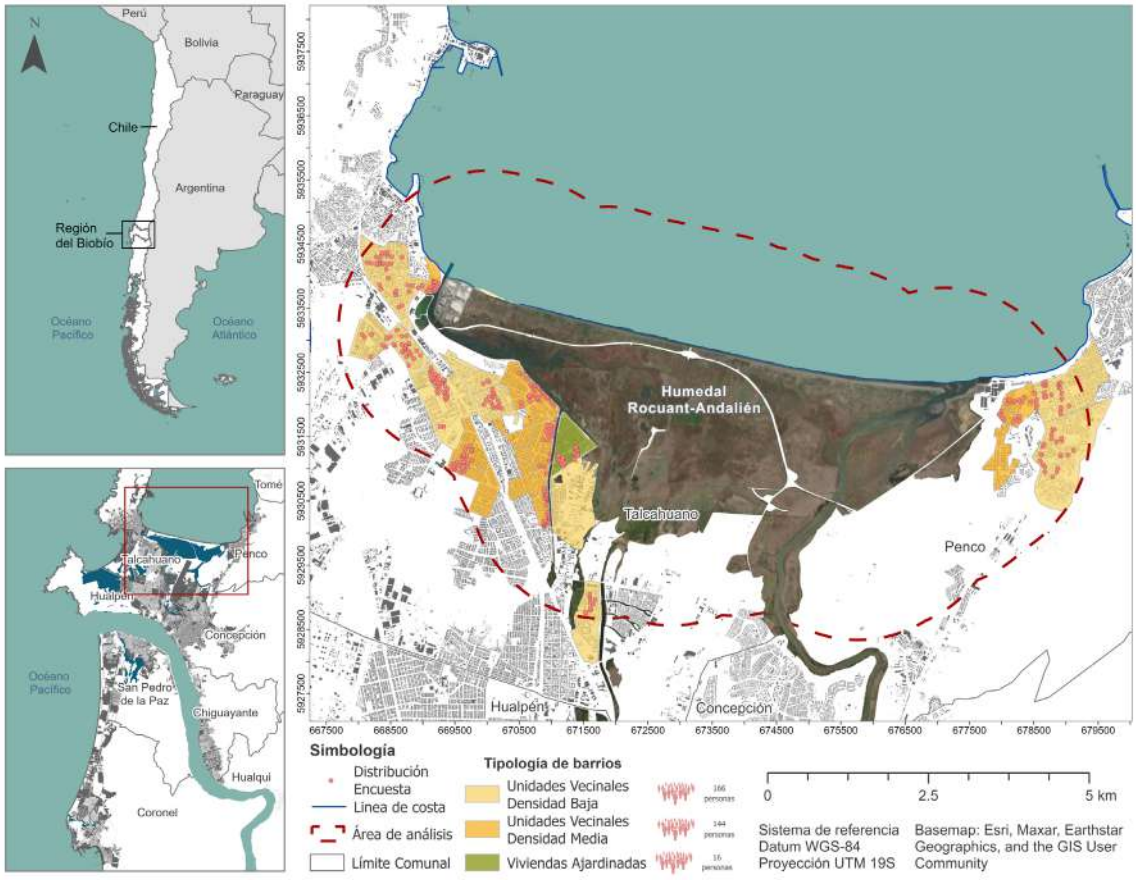

Figure 2. Neighborhood typology and georeferencing of the 326 surveys applied. Source: Preparation by the authors, 2024.

evaluate the nine biophilic values established by Kellert and Wilson (1993) with the Likert scale of 1-5, where 1 is "Strongly Disagree", 3 is "Neutral," and 5 is "Strongly Agree", that later for the cluster analysis were reclassified into 3 "Agree" "Neutral" and "Disagree" (Figure 2).

The geographical distribution of the survey responses was determined based on spatial analysis using the classification of the biophilia value:

1. Agree: All responses by biophilia typology that fall between the values of 1 and 2 are considered.
2. Neutral: All responses by biophilia typology equal to 3 are considered.
3. Disagreement: All responses by type of biophilia between 4 and 5 are considered.

With the biophilia classification, the values were clustered using "hot spot" analysis on a 300x300 m grid.

IV. RESULTS

Neighborhood categories and the effects on the meaning of the Rocuant-Andalién wetland

The survey's spatial analysis shows that, in all neighborhood typologies, about 70% of the population defines the wetland as a natural space. Figure 3 shows how different neighborhoods categorize the meaning of the wetland. Although most low- and medium-density neighborhood units categorize it as a natural space, many residents negatively perceive the wetland, 15.6% and 19.4%, respectively, in Talcahuano and Penco. The negative perception of the wetland is also highlighted with 25% of the "landscaped housing." This is followed by the productive meaning, perceived by 6% of the respondents of the "low-density neighborhood units" and "landscaped housing."

The following map in Figure 4 shows the spatial distribution of the purpose of visiting the wetland. In low-density

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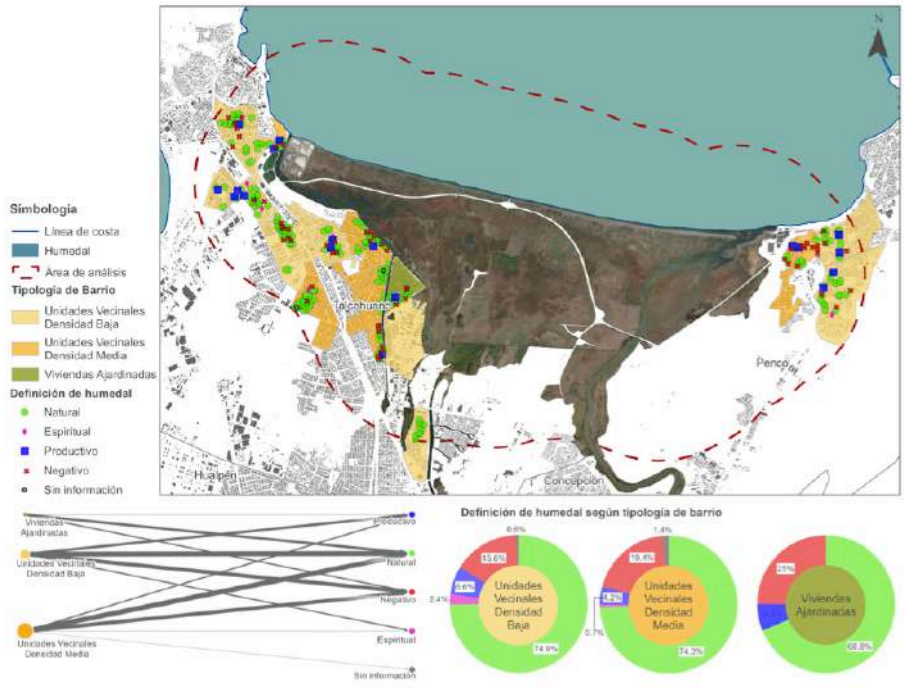

Figure 3. Spatial distribution of the meaning of the Rocuant-Andalién wetland. Source: Preparation by the authors, 2024. A Google Earth satellite image represents the wetland in all the figures.

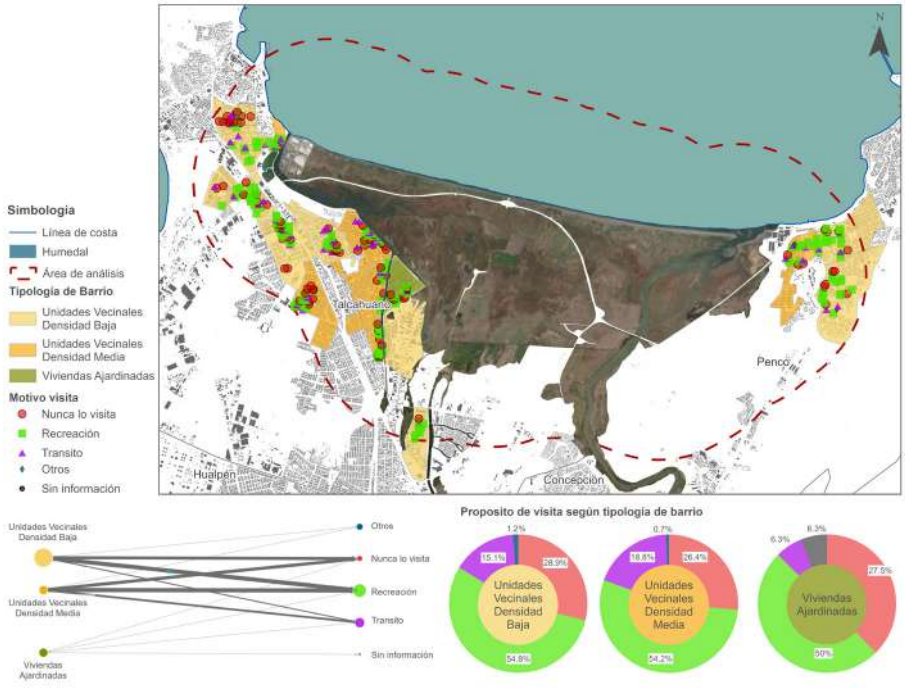

Figure 4. Purpose of the visit to the Rocuant-Andalién wetland. Source: Preparation by the authors, 2024.

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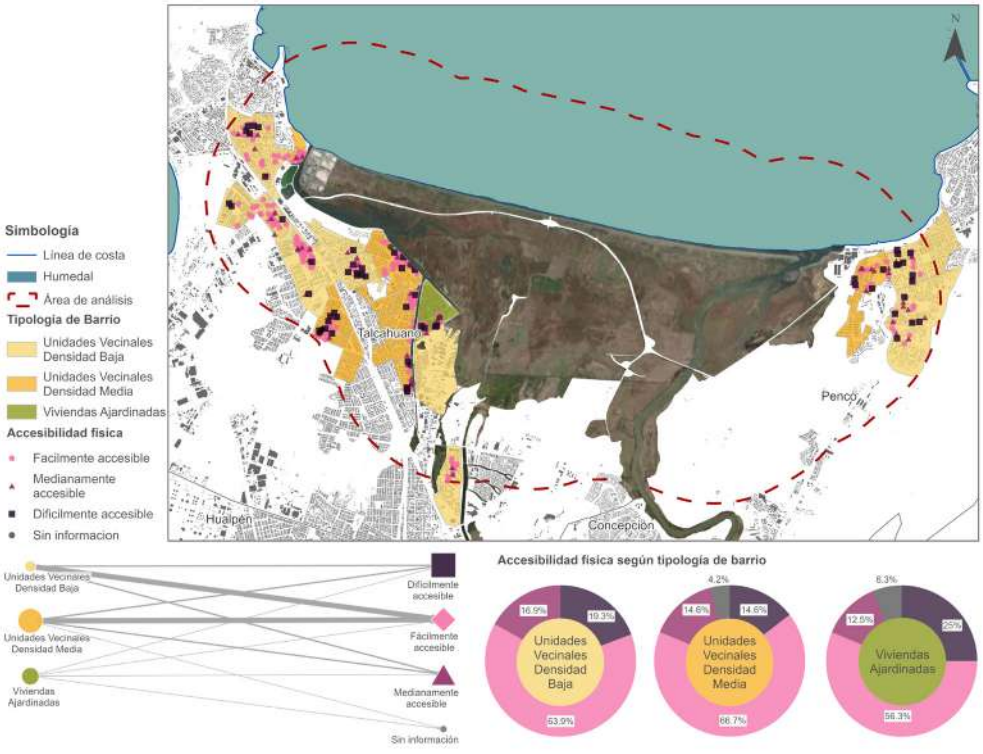

Figure 5. Spatial distribution regarding the perception of physical accessibility to the Rocuant-Andalién wetland. Source: Preparation by the authors, 2024.

neighborhood units, 54.8% of respondents visit the wetland for recreational purposes, highlighting its importance as a leisure space. However, 28.9% never visit it, indicating a disconnect with the natural space. In the medium-density neighborhood units, a high recreational use of 54.2% is also observed, followed by a transit use of 18.8%, which reflects their functional usefulness. On the other hand, 50% visit it for recreation in the landscaped housing, and 27.5% never visit it, the highest percentage of disconnection (Figure 3).

The spatial analysis of the perception of physical accessibility to the Rocuant-Andalién wetland reveals notable variations between the different types of neighborhoods. In low- and medium-density neighborhood units, most respondents (63.9% and 66.7%, respectively) consider the wetland to be easily accessible, although a percentage find it difficult to access (19.3% and 14.6%, respectively). On the other hand, residents of landscaped housing also consider it to be easily accessible, with 56.3%, while 12.5% find it to be moderately accessible and 25% consider access difficult (Figure 5).

Perceived Biophilic Values

The maps of Figures 6a, 6b, and 6c present the hotspots of biophilic values (utilitarian, naturalistic, scientific-ecological, aesthetic, symbolic, moralistic, dominionist, negativist, and humanist) perceived by the respondents in the area of influence of the Rocuant-Andalién wetland. The interpretation of these values is presented next, relating them to neighborhood typologies described in the methodology.

For the utilitarian value, a concentration of agreement responses is observed in the Talcahuano Norte area, particularly in low-density neighborhood units. This suggests that the residents of these areas see the wetland mainly as a helpful resource. In contrast, in the Penco area, identified as medium density, the neutral cluster stands out, indicating a more moderate valuation of the wetland in utilitarian terms. The naturalistic perception shows clusters according to the low-density neighborhoods in Talcahuano, indicating an appreciation of the wetland's nature. However, medium-density neighborhoods have clusters of disagreement, suggesting a lower assessment of the wetland's naturalistic aspects in these areas. The scientific-ecological perception reveals that low-density neighborhoods have clusters of agreement, although with a low Z score, indicating scattered responses. In contrast, neutral and disagreement valuations have high Z-scores, indicating well-defined hot spot clusters (Figure 6a).

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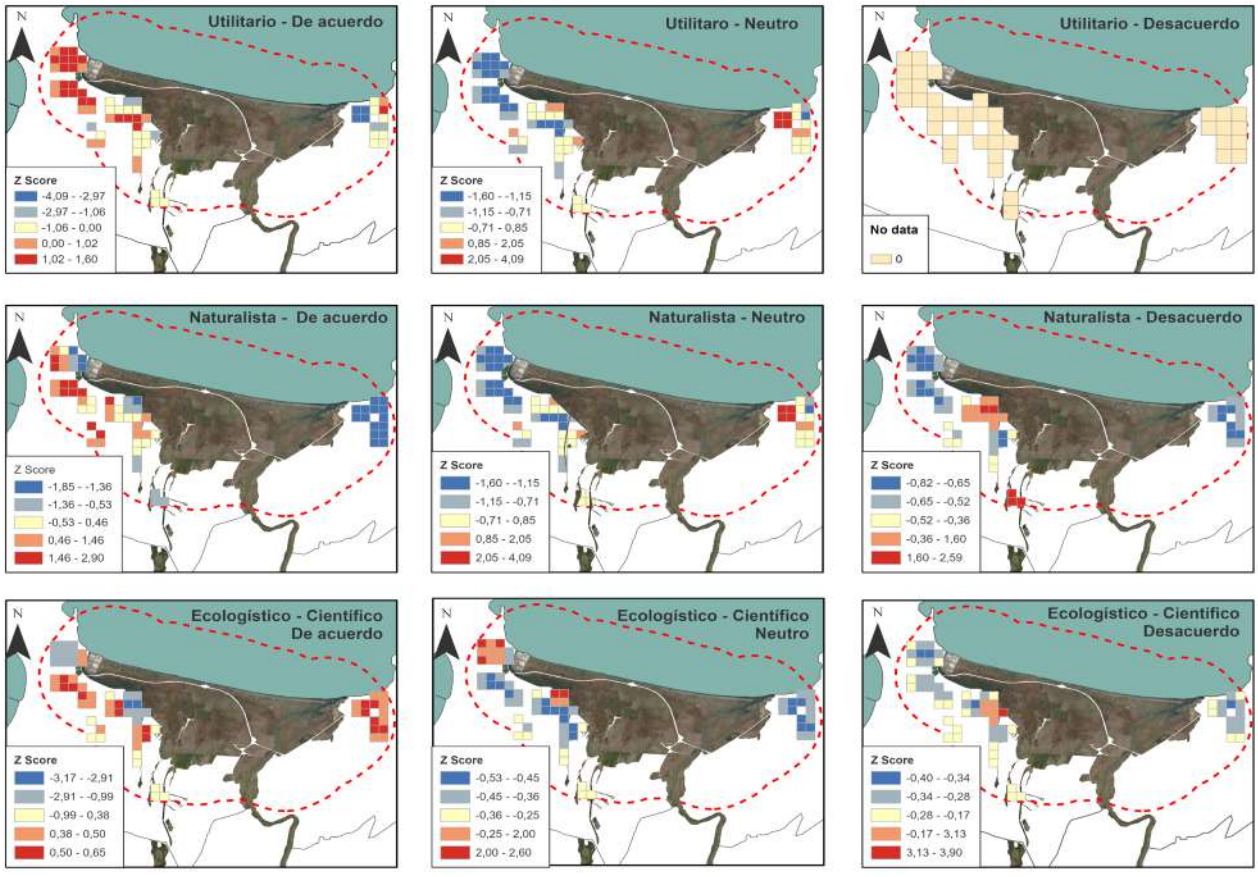

Figure 6a. Biophilia value clusters: Utilitarian, Naturalistic, and scientific-ecological. Source: Preparation by the authors, 2024.

In the aesthetic value, a concentration of agreement scores is observed in Talcahuano, especially in low-density neighborhoods, with positive Z scores indicating a strong agreement with the aesthetic value of the wetland. The neutral scores are scattered, but there is a slight concentration in the central part of the study area. Significant disagreement is found in the low-density neighborhoods of the northern sector of Talcahuano, with very negative Z-scores, especially in blue and dark gray. A pattern similar to the aesthetic value is observed in the symbolic value, with concentrations of agreement in low-density neighborhoods. The neutral scores are more dispersed, with a slight concentration on the landscaped dwellings.
For the moralistic value, the areas of agreement are mainly concentrated in the western and central parts of the wetland in both communes, with positive Z-scores. The neutral scores are pretty dispersed, while the areas of disagreement with the moralistic value are concentrated mainly in the low-density neighborhoods of Talcahuano Norte (Figure 6b).

In the Dominionist category, the areas with agreement scores are concentrated in the low-density neighborhoods. The Z-scores range from 0.62 to 1.68, indicating a high dominionist rating in these areas. The neutral scores are distributed in the central area corresponding to landscaped housing and part of medium density, with Z scores varying between -1.88 and 2.50, which evidences a moderate valuation. For the negativist value, the areas of agreement are more dispersed, but they are concentrated in the landscaped housing (Z-scores vary between 0.94 and 1.80). Neutral scores are well spread, with Z-scores ranging from -1.78 to 2.44. The areas of disagreement are concentrated mainly in the neighborhoods of medium and low density, with very negative Z-scores. In the humanistic category, the areas of agreement are concentrated in the central zone in the three neighborhood typologies, with positive but low Z-scores. The neutral scores are concentrated in the low-density neighborhoods of Talcahuano (Figure 6c).

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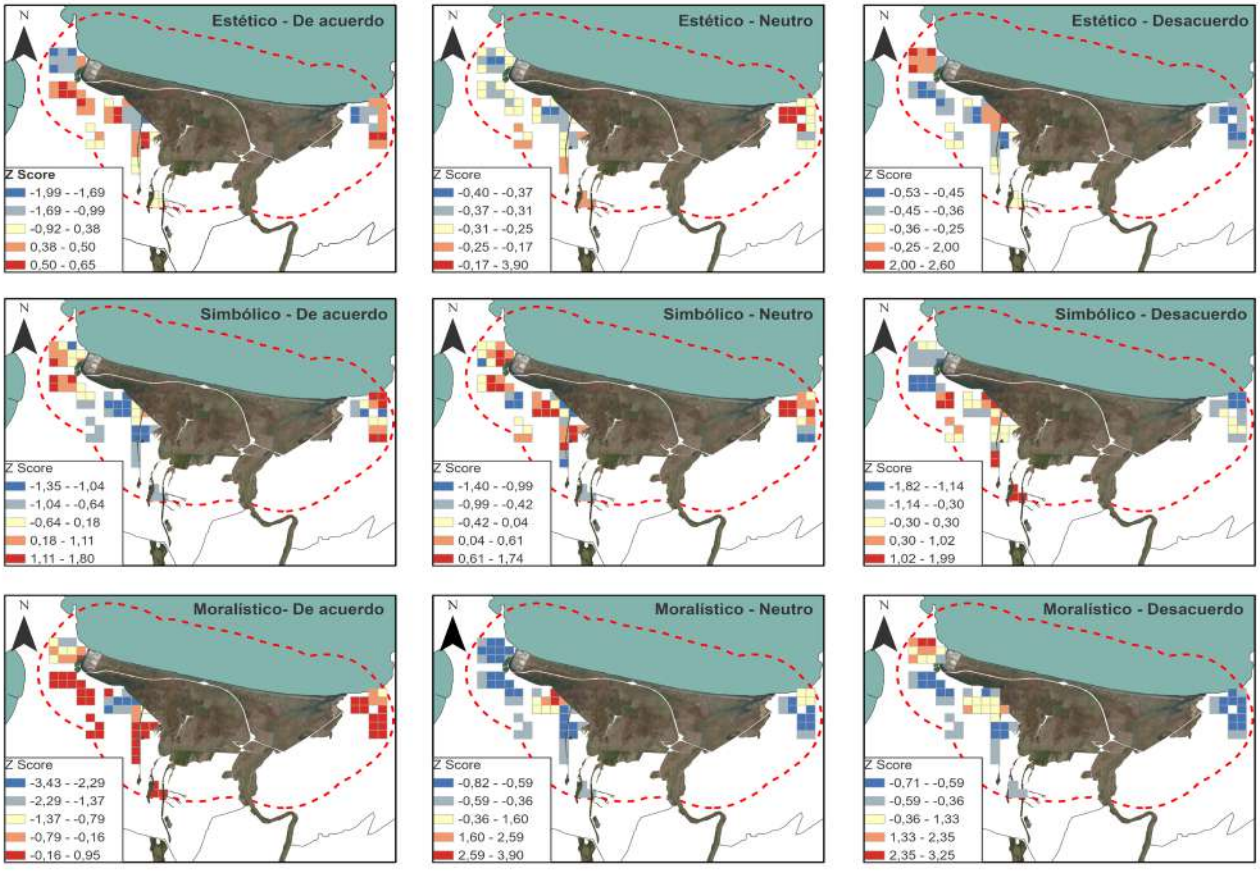

Figure 6b. Clusters of biophilia values: Aesthetic, Symbolic, and Moralistic. Source: Preparation by the authors, 2024.

V. DISCUSSION

Integrating biophilic values with the PPGIS method allowed showing how spatial patterns influence the perception of urban wetlands, as has already been demonstrated in the case of the Los Batros wetland in Concepción (Villagra et al., 2024). The spatial analysis results revealed that the distribution of the biophilic values varies according to the neighborhood typology. Identifying biophilic value hotspots facilitates the implementation of actions such as restoration and infrastructure to take advantage of health benefits and opportunities to live near nature and naturalize urban environments.

The "agree" hotspots in the low-density neighborhood units in Talcahuano Norte suggest that these residents perceive the wetland mainly as a helpful resource. The evidence highlights that the utilitarian values of ecosystems, such as the provision of resources and services, are highly valued in urban areas due to the need for multifunctional spaces (Brody et al., 2005). Utilitarian perception may be influenced by dependence on ecosystem services provided by wetlands, such as flood regulation and water provision (Mitsch & Gosselink, 2015; Rojas et al., 2017). For the naturalistic value, the "agree" in low-density neighborhoods in Talcahuano and the clusters of "disagree" in medium-density neighborhoods suggest a variable appreciation of the nature of the wetland. This indicates that the appreciation of naturalistic values may be influenced by the degree of connection with nature (Kaplowitz & Kerr, 2003). Areas with greater access to natural spaces tend to show a higher naturalistic valuation due to the possibility of interacting with biodiversity and enjoying its psychological and recreational benefits (Marselle et al., 2020). In addition, the results show that access to this wetland is adequate and easy, facilitating visiting the wetland and enhancing the demand for recreation infrastructure.

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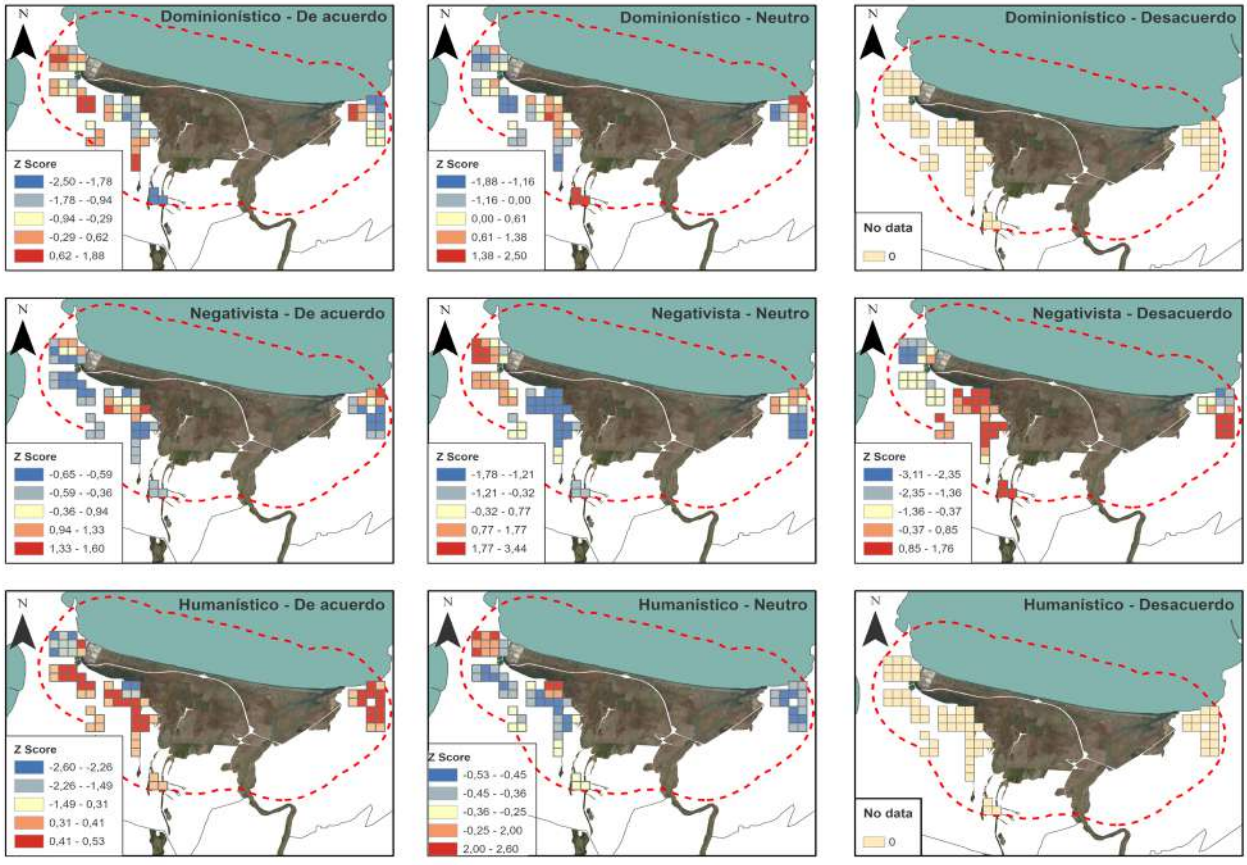

Figure 6c. Biophilia value clusters: Dominant, Negative, and Humanistic. Source: Preparation by the authors, 2024.

In the scientific-ecological values, the "agree" hotspots in low-density neighborhoods and the "disagree" hotspots in areas with high scores indicate scattered but significant responses. The scientific-ecological perception is related to the recognition of the value of wetlands for research and conservation (Brown, G., & Kyttä, 2014). Although this is recognized in the Los Batros Wetland (Villagra et al., 2024), in the Rocuant-Andalién wetland, the lack of valuation can be explained by the absence of educational activities, as an "agree" valuation is closely linked to the presence of educational institutions and environmental awareness programs in operation.

The aesthetic value shows a high level of agreement in low-density neighborhoods, which implies a recognition of scenic beauty and opportunities for recreation and contemplation (Rojas-Quezada et al., 2022). The high aesthetic valuation can be influenced by the visual quality of the landscape and the perception of tranquility and natural beauty (Kaplowitz & Kerr, 2003). While the "agree" values in the symbolic value were observed in low-density neighborhoods, the neutral scores of the same biophilic value in landscaped housing suggest a varied perception of the symbolic value. The variability in the perception of these values has been observed in previous studies, and it is related to cultural diversity and differences in the local history of communities (Nassauer, 2004).

The "agree" values in low-density neighborhoods are associated with the biophilic value of dominance, suggesting an ecosystem control attitude. This can become favorable if reflected in management actions where the community participates. As for the negative value, the "agree" hotspots in landscaped housing and the "disagree" areas in medium and low-density neighborhoods indicate a negative perception with spatial variability. Problems such as the lack of garbage

management and the perception of dangers often influence a lower perception of psychological benefits (Wyles et al., 2016). However, improvements in infrastructure and proper management can reduce negative perceptions (Villagra et al., 2024). This could be remedied if the Biobio Urban Wetlands Heritage Route, promoted by the Ministry of National Assets, is implemented because it would include proposals to locate signs and viewpoints, among other infrastructures. Finally, the humanist value presents agreement in the central area and the three neighborhood typologies, showing that people associate the wetland with their emotional and social well-being. The presence of accessible and well-managed green spaces can increase humanistic perception and improve the quality of urban life (Rojas-Quezada et al., 2022). Therefore, working in this line in the studied wetland would ensure a favorable perception that promotes its care and conservation.

VII. CONCLUSIONS

Understanding community perceptions and the biophilic values of wetlands is critical to developing inclusive and effective conservation and territorial planning policies. The PPGIS identified three trends.

Differentiation in biophilic values by neighborhood type. The perception of the Rocuant-Andalién wetland varies significantly depending on the type of neighborhood. Residents of low- and medium-density neighborhood units value the wetland for its utilitarian and aesthetic benefits. In contrast, residents of landscaped housing demonstrate a closer relationship with the wetland based on humanistic and naturalistic values. This differentiation suggests that urban and socio-demographic characteristics directly influence how natural spaces are perceived and the relationships that arise between humans and nature, highlighting the importance of considering these variations in urban wetland planning and management.

Accessibility and recreational uses: The perception of physical accessibility to the wetland varies between types of neighborhoods, with a higher proportion of residents of landscaped housing considering access as easy compared to those of low- and medium-density neighborhood units. Recreational uses of the wetland are predominant in all typologies, especially in low-density neighborhood units, where 54.8% of respondents visit it for recreational purposes. However, the notable disconnection of some residents, particularly in the landscaped housing, shows that 27.5% never visit it. This highlights the need to improve the access infrastructure and the urban fabric to promote a more equitable use of the wetland.

Biophilia assessment: The biophilic assessment of the Rocuant-Andalién wetland shows an evident spatial variability influenced by proximity and accessibility. Utilitarian and aesthetic values are predominantly appreciated in low-density neighborhood units, while naturalistic and humanistic values are more valued in landscaped housing. This variability in the biophilic assessment suggests that the integration of educational and environmental awareness programs, together with the improvement of infrastructure and accessibility, could strengthen the connection of residents with the wetland and promote a more positive and balanced perception of its multiple biophilic values.

As for the contribution to conservation policies, biophilic values can be considered in the territorial planning initiatives of the wetland management plans (PGI). Management plans should define conservation objects, which could be identified from perception instruments. Similarly, the management plans define certain threats. At the same time, the biophilic values PPGIS method helps to locate areas of conflict and generate consensus regarding biodiversity, facilitating a more inclusive management approach adapted to the needs and perceptions of the community.

VIII. CONTRIBUTION OF AUTHORS

Authors contribution: Conceptualization, C.R., P.V.; Data Curation, C.R., F.J.; Formal analysis, C.R., F.J.; Acquisition of financing, C.R.; Research, C.R., F.J., P.V.; Methodology, C.R., P.V.; Project management, C.R.; Resources, C.R.; Software, F.J.; Supervision, C.R., P.V.; Validation, C.R.; Visualization, F.J.; Writing – original draft, C.R., F.J.; Writing – revision and editing, C.R.

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Recibido: 10-10-2024
Aceptado: 11-11-2024

HABITAR DE EMERGENCIA:
UN HÁBITAT TRANSITORIO PARA TOMÉ (CHILE) TRAS EL DESASTRE
ALBERTO ÁLVAREZ-AGEA, PABLO BRIS-MARINO, FÉLIX BENDITO-MUÑOZ-DE-CUERVA, DANIEL MARTÍNEZ-DÍAZ
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 86 - 99
ISSN 0717 - 3997 / 0718 - 3607

EMERGENCY LIVING: A POST-DISASTER TRANSITIONAL HABITAT FOR TOMÉ (CHILE)

HABITAR DE EMERGENCIA: UN HÁBITAT TRANSITORIO PARA TOMÉ (CHILE) TRAS EL DESASTRE

ALBERTO ÁLVAREZ-AGEA 1
PABLO BRIS-MARINO 2
FÉLIX BENDITO-MUÑOZ-DE-CUERVA 3
DANIEL MARTÍNEZ-DÍAZ 4

1 Doctor in Advanced Architectural Projects
Assistant Professor, School of Engineering Fuenlabrada (URJC) -
Faculty of Architecture, Urbanism and Geography, Univeristy of Concepción
Rey Juan Carlos University, Madrid, Spain.
https://orcid.org/0000-0001-9754-4044
alberto.alvarez@urjc.es

2 Doctor of Architecture
Professor, Department of Mechanical Engineering, Chemistry and Industrial Design,
Technical School of Engineering and Industrial Design
Polytechnic University of Madrid, Madrid, Spain.
https://orcid.org/0000-0002-2980-3603
pablo.bmarino@upm.es

3 Doctor in Engineering and Production
Associate Professor, Technical School of Industrial Engineering and Design
Polytechnic University of Madrid, Madrid, Spain.
https://orcid.org/0000-0001-6527-3067
felix.bendito@upm.es

4 Doctor in Architecture
Permanent Professor, Technical School of Industrial Engineering and Design
Polytechnic University of Madrid, Madrid, Spain.
https://orcid.org/0009-0006-4098-7470
daniel.martinezd@upm.es

https://doi.org/10.22320/07183607.2024.27.50.07

Con el objetivo de extraer aprendizajes sobre la posibilidad de un hábitat transitorio surgido desde una planificación anterior al desastre y articulado por espacios compartidos que permitan, después del desastre, satisfacer las necesidades individuales y las comunitarias, se desarrolla un taller académico planteado en un enfoque de abajo hacia arriba centrado en el usuario. En este taller, a través de una etapa de análisis guiado por el estudio cualitativo de entrevistas a una muestra representativa de la población afectada y de una etapa de ideación guiada por ciclos de retroalimentación y corrección, se proponen configuraciones para el caso de estudio de la comuna de Tomé, en la Región del Bío-Bío, Chile, gravemente dañada por los incendios forestales que afectaron al país en el mes de febrero del año 2023. Frente a la imposición cuantitativa de soluciones tecnocráticas y universales, una planificación cualitativa de soluciones participadas y compartidas.

Palabras clave: hábitat, desastre, construcción para emergencia, vivienda, incendio forestal

An academic workshop was held using a user-focused bottom-up approach to learn lessons about the possibility of a transitory habitat using pre-disaster planning and shared spaces that allow, post-disaster, to meet individual and community needs. In this workshop, using analysis guided by the qualitative study of interviews with a representative sample of the affected population and an ideation stage guided by feedback and correction cycles, configurations are proposed for the case study of the commune of Tomé in the Bío-Bío Region, Chile, which was severely damaged by the forest fires that affected the country in February 2023. Qualitative planning of participatory and shared solutions was used, to face the quantitative imposition of technocratic and universal solutions.

Keywords: habitat, disaster, emergency construction, housing, forest fire

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I. INTRODUCTION

After a disaster, infrastructure damage can entail its destruction or inability to function satisfactorily. For housing, this generates a severe problem, namely the absence of a suitable place to live (Ashmore, Ferrer & Serra, 2010), transcending the loss of a building and involving the temporary or permanent displacement of those affected.

The response to this problem is part of disaster management (UNDRO, 1982). This must contemplate a suitable solution during the emergency phase immediately after the disaster — emergency housing— and during the recovery phase until a new satisfactory situation is reached — transitional housing—. In this response, along with the design of an appropriate housing layout, it is necessary to consider other factors, such as the availability of land and construction materials or the intervention of the authorities and the participation of the affected population (Burnell & Sanderson, 2011). In that sense, besides providing security, protection, and shelter**5**, the solutions must ensure a decent living (Barakat, 2003). For all these reasons, managing housing after a disaster is one of the most significant challenges for the international community's humanitarian response (Ashdown, 2011).

Regarding this problem, the population that has had their housing affected by disasters has increased considerably in recent decades, among other causes, due to the proliferation of settlements in vulnerable areas and the use of poor designs and precarious construction materials (McDonald, 2003). This increase has evidenced the authorities' inability to provide sufficient accommodations to cover the number of destroyed homes, which means that many housing solutions are solved without formal support (Wagemann, 2017a). As a result, post-disaster solutions to the housing problem are diverse (Sampo, 2013), from the provision of services for self-construction (Wagemann, 2017b), to the delivery of prefabricated housing (Bris & Bendito, 2019) depending on the physical, economic, social and cultural context, the magnitude and type of the disaster (Sphere Project, 2011) and the time interval considered (Al Asali, Wagemann & Ramage, 2019).

This article aims to show the lessons learned that contribute to the international debate on having a temporary dwelling through previous planning coordinated by relationship models between the public space and private space, which are capable of configuring shared spaces that, after the disaster, satisfy individual and community needs. Providing relationship models that are adaptable in their application to the affected location and that, when facing the quantitative imposition of universal technocratic solutions, involve bottom-up, user-centered, qualitative, and participatory planning. To this end, a workshop was held about a case study with students from the Master's Program in Management and Resilient Architecture for Disaster Risk Reduction (MAGAR, in Spanish) and national and international experts, with the resulting ***Emergency Dwelling: a Temporary Habitat for Tomé***.

II. THEORETICAL FRAMEWORK

Dwelling and individual and community needs

In ***Building, Dwelling, Thinking***, Martin Heidegger (1975) addresses the notion of dwelling as the way we mortals are in the world. A dwelling that is deployed in a ***building that cares*** and is associated with an essentiality that distinguishes it from a mere ***shelter that hosts***. In this essentiality, dwelling is existentially linked to the space in which one resides, and with this, the construction of spaces where living takes place is revealed as the motor of existence. Thus, for Heidegger, although buildings intended to serve as housing can provide accommodation - something reassuring and comforting - they must be able to guarantee ***the dwelling***, in an implicit criticism of the massive construction of accommodations that do not solve this condition (Guerra, 2012).

For his part, in ***A Theory About Human Motivation***, Abraham Maslow (1943) organizes human needs according to a psychological theory that ranks them pyramidally in different levels, with a base of physiological needs on which the needs of security, affiliation, recognition, and finally those of self-realization are located, in an ascending way. For Maslow, the gradual satisfaction of these needs is fundamental for the individual's development, thus becoming demands.

In addition to these individual needs, there are family and community needs associated with social interactions, responsibilities, and routines (Quaratntelli, 1995), as recognized by the World Health Organization, WHO, (1946) in the preamble of its constitution, which has a definition of health that includes the need for a state of complete physical, mental and social well-being.

5 Quantified by national and international standards established by different agencies and organizations.

Thus, it is possible to consider dwelling as a way of being in the world based on the care and satisfaction of individual physical and psychological needs and community relations.

The housing problem after the disaster. From emergency to transitional dwelling

In an emergency caused by a disaster, the possibility of the ***dwelling*** happening, satisfying the individual and the community's needs, is subject, to a greater or lesser extent, to the intensity of the disaster and the damage suffered by the infrastructure. Minimizing this is part of the goals of disaster management, specifically the post-disaster housing issue (UNDRO, 1982). Thus, having an appropriate housing solution is the first step to achieving a certain degree of normalcy in the affected people's lives (Kronenburg, 2011).

Since the 1970s, the approach to this problem and its associated terminology have been evolving, with different terms that are sometimes used interchangeably, generating coincidences and inconsistencies (Wagemann, 2017a). These include ***Emergency Shelter***, defined as a phase immediately after the disaster where the affected people find shelter for days while their usual daily routines are interrupted and which, due to its expected brevity, does not consider the need for regular food preparation or prolonged medical care (Quarantelli, 1995); ***Temporary Shelter***, defined as a place where people affected by a disaster reside for a short stay until more suitable housing is available and which must be accompanied by the provision of food, water, and medical care (Félix, Branco & Feio, 2013); ***Temporary Housing***, defined as accommodation where those affected temporarily reside while resuming their domestic tasks and daily activities (Quarantelli, 1995); and ***Transitional Shelter***, defined as a gradual process that provides shelter to affected families. This starts with the first support provided during the emergency and extends until land and reconstruction rights are obtained, which may take several years (Narymbaeva, 2012). It is also manifested as accommodation that provides a private, dignified, roofed living space and a safe and healthy environment for periods after a conflict or a natural disaster until a durable housing solution is achieved (Corsellis & Vitale, 2005).

This evolution in terminology has been associated with the temporary nature of the solution considered (Wagemann, 2017a). Thus, in the 1970s, ***Emergency Shelters and Small Dwellings*** were discussed, with accommodation mainly focused on disasters in rural areas. Later, in the early 1980s, there was talk of ***Shelter After Disaster***, in a period marked by the repercussions of design guides capable of influencing international policies. During the 1980s and 1990s, two milestones shifted the focus towards urban-scale disasters. The first is the publication by the UN (1982), the Emergencies Handbook, which defines standards that will be adopted internationally; the second is the differentiation made by Quarantelli (1995) of different phases in emergency housing: ***Emergency Shelter, Temporary Shelter, Temporary Housing and Permanent Housing***. Later, in the first decade of the 21st century, the nature of the different disasters marked the evolution of these concepts, displacing the concept of ***temporary shelter*** to ***transitional shelter*** and understanding that housing solutions are part of a process that does not imply a single stable state (Wagemann, 2017a).

As a result, nowadays, there are different ways to approach the transition from post-disaster ***emergency shelter*** to ***permanent housing***, considering the construction phases and strategies. These range from expandable cores to semi-permanent housing and from providing basic infrastructure services to plots to be occupied (Wagemann, 2017a). However, in all these cases, the objective is that temporary solutions should be part of the recovery process (Kronenburg, 2011). The transitional shelter should also be designed so that it can be improved and integrated as part of a permanent shelter, be reused for other purposes, be relocated from a temporary to a permanent location, be sold to generate income, or be reused for reconstruction processes (Narymbaeva, 2012). Regarding this recovery, and although the priority objective after a disaster is to provide shelter to those who have lost it, temporary housing should not only address issues such as reducing their vulnerability to diseases or health problems. However, it should provide a space that guarantees suitable protection, habitability, dignity, and privacy to achieve a certain degree of normalcy in the affected communities (OXFAM, 2004).

An alternative view to the post-disaster housing problem: participatory, processual, and local

Usually, the problem of shelter post-disaster is addressed after the disaster occurs and from a top-down technocratic approach, with decision-making from a few experts, politicians, or administrations based on the ***product***, with the definition of some serializable prototypes and universal, with the definition of global models (Bris & Bendito, 2019). However, faced with this approach, it is possible to adopt an alternative vision, changing the timing of disaster response planning. Instead of planning ***after***

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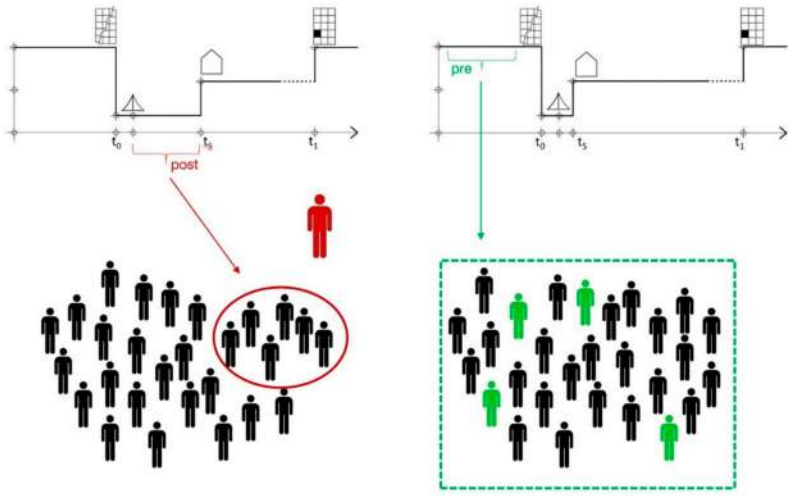

Figure 1. Post-disaster and pre-disaster approach. Source: Bris & Bendito, 2019.

the disaster, planning ***before the disaster***. This, although ***necessary,*** is ***insufficient***, as it cannot secure a better response by itself**6** and requires a bottom-up user-centered approach with a participatory design and a process with the definition of evolutionary models, local adaptation, and typologies adapted to the conditions.

Thus, when planning occurs ***post-disaster***, the needs of the target population are estimated quantitatively -affected people, surface area, manufacturing time, assembly and installation or construction- trusting that, by supplying minimal materials, those affected will resume their normal lives. A vision that generally considers the mere sum total of dwellings, with a matrix and undifferentiated distribution that does not prioritize spaces of social relationship (Shiozaki, Nishikawa & Deguchi, 2005). This makes those affected invisible, and they assume a passive position where they can only accept or reject the solution provided (Puliafito, 2010). On the contrary, when planning occurs ***before the disaster***, the possibility of having the opinion of potential users and other agents, experts, or specialists appears in the design of the shelter units' distribution, which contemplates spaces that enhance socialization and public life and combine a correct balance between the settlements and other population centers (Davidson et al., 2007; Fois & Forino, 2014). ***From the product to the process and from the technocratic to the participatory*** (Figure 1).

In addition, when planning occurs after a disaster, universally defined minimum standards are often applied that trust that the same thing can work in different places. This has been proven questionable (Bris, Bendito & Saint-Supéry, 2016) and can lead to the response's failure or rejection. However, when planning occurs before the disaster, it is possible to adapt the models and standards to the affected area and population's cultural, social, economic, demographic, geographical, and climatic conditions. ***From the global to the local.***

III. CASE STUDY

In the summer of 2023, the commune of Tomé, in the Biobío Region, Chile (36°37'02"S 72°57'27"W/-36.6171, -72.9575) was severely affected by wildfires, with more than 200 homes affected, affecting more than 300 people and razing more than 13,000 hectares**7**. Among the material losses, about 100 houses were completely destroyed, and the rest suffered severe partial damage in areas characterized by high rurality and high exposure to fire risk due to their location and materiality.

6 An example of this insufficiency is the case of Tohoku, Japan, where pre-disaster planning of temporary housing meant a significant reduction in response time and costs, but not a better habitat (Bris & Bendito, 2019).
7 https://www.biobiochile.cl/noticias/nacional/region-del-bio-bio/2023/02/04/incendios-forestales-en-tome-dejan-mas-de-200-hogares-damnificados-y-13-000-hectareas-arrasadas.shtml. Retrieved December 1, 2023.

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For Chile's Ministry of Housing and Urbanism (MINVU), it was necessary to complete the reconstruction quickly. It was also essential to do it correctly, providing a housing solution that was dignified and appropriate to the conditions of the territory and the target community**8**. The response to this emergency was to grant subsidies and provide housing solutions in the form of prefabricated industrialized housing without any adaptation to the affected areas and people. In addition, in the opinion of the beneficiaries interviewed in this research, the dwellings were undersized, had poor functionality, poor lighting and ventilation, and lack of privacy**9**. Thus, the result was the same despite the initial concern to provide solutions appropriate to local casuistry instead of the imposition of universal solutions.

IV. METHODOLOGY

Motivated by the University of Concepción's commitment to society, the Master's Degree in Management and Resilient Architecture for Disaster Risk Reduction (MAGAR) of the Faculty of Architecture, Urbanism, and Geography organized, in October 2023, in the Emergency Dwelling course, a workshop called ***A Transitional Habitat for Tomé*****10**, where the problem of emergency habitation was outlined from a bottom-up approach, focused on the user and the process.

The workshop considered two stages, analysis and ideation, and three scales, housing, neighborhood, and city, to enable relationship spaces that would allow community relations to be established after the disaster. For this, the participants were organized into two working groups**11** and assisted by a panel of expert advisors**12**.

In the first analysis stage, a study was made using a survey, an interview with 12 of those affected, and a documentary record of the housing solutions received after the disaster. The survey addressed the following basic data: name, age, occupation, marital status, family make-up, pets, date of entry into housing, home ownership, type of housing, materiality, modifications made to housing, and access to utilities. The interview considered three scales of analysis: ***City***, with the questions, which services do you use most frequently? And how close are these to your neighborhood? ***Neighborhood***, with the questions, what activities or places are most relevant to you in the neighborhood? How do you participate in your community? And do you have any support network? Finally, ***housing***, with the questions, what are the home dynamics like? What is your daily routine? Do you have a sense of belonging with your current home? Have community ties improved after the wildfires last summer? What values do you consider motivate your actions in the private and/or community sphere? In addition, the interview addressed their experience during the recovery process, from the moment before the disaster to the current situation, through the fire and emergency shelter.

The documentary record considered the location of the housing solution received, accompanied by its planimetric survey and a small photographic record. The work sample consisted of 12 people, chosen as a representative group of the affected community, and a qualitative test was applied to their responses to look closer at their subjective experience of the disaster and acquire a richer and more detailed knowledge of the phenomenon beyond the quantitative data of the means provided. At this stage, it was essential to establish a relationship of trust and understanding with the participants to transfer the results of their demands for private and public space to the ideation process through possible organizational charts.

In the second stage — ideation — the working groups considered the results of the analysis stage to systematize the relationship between private and public spaces in the three work scales: housing, grouping of housing, and grouping of housing groupings. This phase was carried out using a holistic design process articulated by successive proposal and feedback cycles, which included the advisory panel's critical assessment of the solutions formulated. Finally, the results were presented for joint and reasoned evaluation by the faculty and the expert panel as a validation mechanism for the proposals, considering the future needs of other users similar to those of the participants chosen as a representative sample of the affected population.

V. RESULTS

In the analysis stage, the sample interviewed by the first working group — group A— included six people: a

8 https://www.diarioconcepcion.cl/ciudad/2023/06/15/comienza-entrega-de-viviendas-definitivas-en-tome-a-damnificados-por-incendios-forestales.html. Retrieved December 1, 2023.
9 Answers extracted as stated by the people affected during the interviews conducted by the work teams.
10 The teaching team consisted of *..
11 Group A included * and Group B, *.
12 The expert advisors were *.

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Figure 2. Housing unit typologies received by the population affected by the disaster. Source: Preparation by the authors based on the information prepared in the workshop.
Figure 3. Proposal by Group A to extend the housing unit received. Source: Prepared by the authors based on the information prepared in the workshop.

pensioner (78 years old), a housewife (of uninformed age), a nanny (36 years old), a master builder (36 years old), an informal saleswoman (45 years old) and a hauler (55 years old), while the sample interviewed by the second working group —group B— included six other people: a student (7 years old), a housewife (48 years old), a housewife (73 years old), a carpenter (63 years old), a student (17 years old) and a housewife (40 years old). In these interviews, it was recorded that, after the disaster, those affected were housed in tents in emergency camps for 1 to 4 months until they received a housing solution, which in some cases was unsatisfactory and had to be replaced. Among the pre- and post-disaster community values taken from the interviews, respect, solidarity, honesty, commitment, and empathy appeared regularly. These were values that the interviewees recognized in social interaction at meetings in private living rooms and dining rooms, in community social clubs and churches, in family games, with friends in private backyards, and community competitions on public pitches and courts. The presence of meeting spaces thus becomes an essential condition for the design of a transient habitat.

Regarding the housing solutions received, two families interviewed by the first group received a 5 x 6 m house with an attached toilet module (Figure 2). The other family received a 5 x 5 m house with an attached toilet module (Figure 2). On the other hand, all three people interviewed by the second working group received the same 5 x 6 m module, with slight variations in orientation and interior distribution.

In the ideation stage, group A proposed a central layout defined by four housing units with the typologies received

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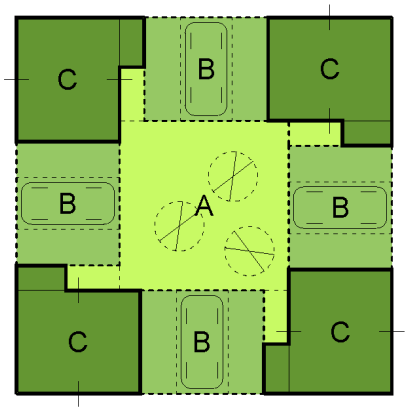

Figure 4. Grouping of housing units (C), extendable (B) into an intimate central area (A), Group A. Source: Prepared by the authors based on the information prepared in the workshop.

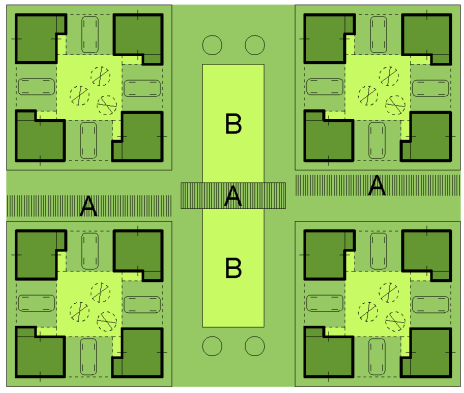

Figure 5. Grouping of groupings. Transitional spaces (A) and community spaces (B), Group A. Source: Prepared by the authors based on the information prepared in the workshop.

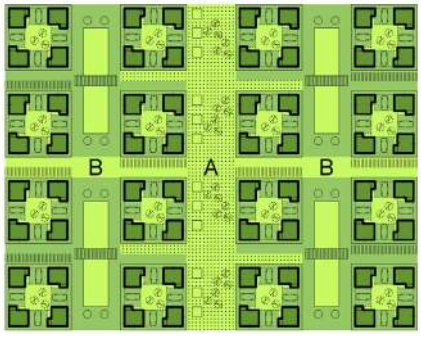

Figure 6. Grouping of groupings. Expansions of the corridor (A) and voids for collection (B), Group A. Source: Prepared by the authors based on the information prepared in the workshop.

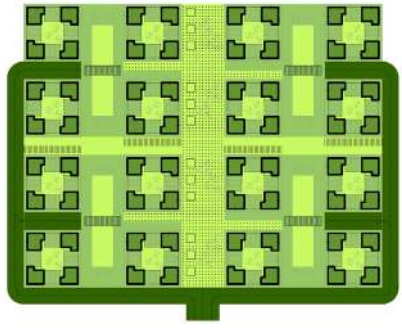

Figure 7. Grouping of groupings. Perimeter street and space up to the first central area. Group A. Source: Prepared by the authors based on the information prepared in the workshop

by those affected - considering a 3 x 5 m extension and incorporating modifications, such as a window facing the entrance to improve lighting and ventilation and a back door (Figure 3), distributed according to a matrix around a central protected space for everyday use, of approximately 50m^2 (Figure 4). This layout aims to promote a first approach among the relocated people, where their safe place is defined: an intimate central area for uses such as clotheslines and small vegetable gardens.

On an intermediate scale, the repetition of this central layout using a rectangular matrix defines a complex organized by transition public spaces, self-built shaded areas, and green corridors to host social activities for meeting, recreation, rest, and small commerce, and, at their intersection, quick collection spaces for the logistics of the housing complex (Figure 5). A macro module where the cohabiting groups coexist in a greater community.

On a larger scale, the groups of groupings are arranged along a central corridor as a public space that hosts different recreational activities and a small commercial area (Figure 6). An identity mediator of socialization between the different micro-communities that the shaded areas guide.

Finally, the settlement has a perimeter street to filter road access and encourage a walkable habitat (Figure 7).

Group B proposed a central layout defined by rows of 3 houses, which adopted the progressive housing solution used by Elemental in Villa Verde (Figure 8). It was also arranged considering a matrix around a centrally protected community space (Figure 9). Among the dwelling's design conditions is

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Figure 8. Housing unit designed by Elemental in Villa Verde and adopted by Group B. Source: Prepared by the authors based on Elemental's design.

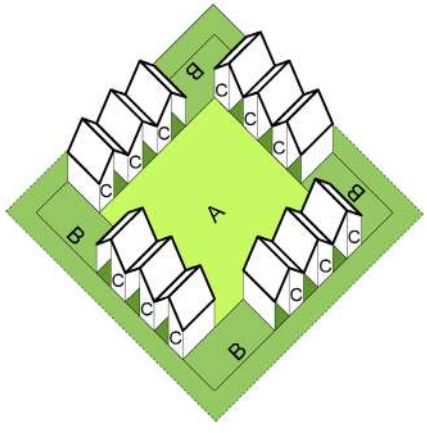

Figure 9. Grouping of extendable housing units (C) with shared spaces (B and A), Group B. Source: Prepared by the authors based on the information prepared in the workshop.

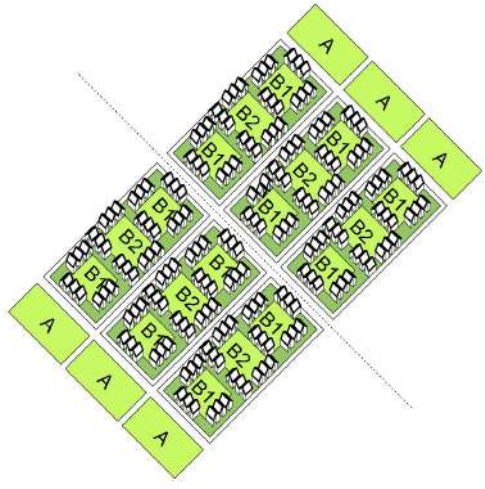

Figure 10. Grouping of groupings on an intersection with identity (A) and neighborhood (B) spaces, Group B. Source: Prepared by the authors based on the information prepared in the workshop.

the possibility of a controlled and self-built growth that considers extensions within a framework that maintains the typology, favoring a feeling of belonging and identity. The corners of these groupings are intended for community use areas.

The repetition of this layout follows a rectangular matrix that forms a complex organized by transversal corridors to some main intersections where public programs are located (Figure 10). In this way, it introduces collective spaces that serve a controlled number of family units to facilitate social agreements, a cooperative construction of the collective space that pursues community attachment on which a neighborhood identity is based, and diversification of collective spaces that enrich the social fabric.

Finally, when these results were presented in front of the panel of professors and expert advisors, it was seen that both proposals coincide in the shared approach that the housing builds a common space where social recognition is possible and allows a feeling of belonging to the community.

VI. DISCUSSION

The joint reading of the two teams' work made it possible to find some coincidences and certain shared aspects in the design of a transitional habitat that can be grouped into a series of common themes from which lessons can be taken for other experiences. Although some of these issues are implicit in the results, others emerge from comparative analysis and contrast with the international literature, such as modularity or the incorporation of domestic work spaces.

Starting from previous experience: Innovating from the known
Among the results obtained, the fact that the two proposals used pre-existing emergency housing solutions stands out: a single-slope roof type of the ***Un Techo para Chile*** program in one case and the progressive housing projected by Elemental in the other. This decision confirms the global nature of these solutions, implicitly validating them as it assumes their adequacy for the local conditions of Tomé. The innovation starts from the known, from the affirmation of previous contrasted experiences, to focus on the less explored and still unsatisfactory aspects of these scenarios: the relationship between their inhabitants. Moreover, it does so from a perspective that continues approaches to dwelling from the construction of those affected (Deprés, 1991; Kellett & Moore, 2003; Blunt & Dowling, 2006).

One field: Unit, grouping, and complex

As a consequence, the focus of the design shifted from the housing unit, the ***what***, to the relationship between the housing units, the ***how***, in a position aligned with contemporary approaches to architecture and urbanism that defend its organization as a field where its organization is the result of the relationships between the parties (Allen, 1997). This results in a dissolution of the traditional hierarchical schemes of ***background-figure***, in which the figure -the built - is defined by its contrast against a background - the unbuilt - in favor of a distribution where the background acquires the same relevance as the figure in the design process. In this way, the results reproduce the usual schemes of many new-build cities in Latin America - marked by the imposition of an abstract grid on the territory**13**-, and replicate an urban landscape rooted in local idiosyncrasies. However, this uniform arrangement has difficulties assuming the topography's conditions and is not at all practical for occupying areas with irregular perimeters.

The type: The general and the specific

The results of the two systems were developed by repeating the same type that is different in the subsequent appropriation by its occupants without considering a first adjustment that observes the different needs of the affected people. In addition, along with this same starting condition, the repetition of the same type in unequal orientations did not contemplate any adjustment for its position, thus hindering the sufficiency of the bioclimatic behavior ***of the type*** according to its place in the layout matrix. Consequently, the need to include design variables capable of solving the adequacy ***of the type*** to the needs of its occupants and the position in the whole is evident, allowing particularizing the general as an essential aspect in the design of the transitional housing (Felix et al., 2015)

Modularity: Building before the disaster

Both approaches incorporated a modular design. The first group used a prefabricated module built by assembling elements in a predefined package. The second used a mixed module with a construction that combines the on-site implementation of elements, placing the prefabricated elements. Both decisions made it possible to shorten the disaster response times, where part of the construction time was shifted to the pre-emergency phase. A choice that, however, is not without criticism, such as those that question aspects such as the decontextualization or neglect of local resources (Oliver, 1978) or those that point out the associated logistical and design problems (Davidson, Lizarralde & Johnson, 2008).

13 Based on the tradition of what is established by the Laws of the Indies.

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Time builds: Growth and transient permanence

In both configurations, the extension of the initially built type is foreseen, which places both solutions in the category of ***core houses***. In one case, there is an increase in surface area from adding another prefabricated module and, in the other, from a self-built use of the interstitial void between the units. In any case, in the two responses, voids are waiting for a future occupation, and solutions are undoubtedly framed within ***temporary housing***. Both proposals present transitional housing capable of becoming permanent, placing these formulas in ***transition-permanence*** marked by a constant evolution, in line with other ways of making housing outside the disaster (García-Huidobro, Torres & Tugas, 2008).

Productive habitat: Domestic workspaces

In both alternatives, spaces for economic activities were considered: spaces next to housing in one case and spaces incorporated into the housing in the other. This decision made it possible to understand the transitional habitat as a habitat that also needs to be productive. It includes generating sustained income that contributes to the affected population's economic recovery through domestic spaces intended for this purpose. This shows a necessary relationship between the productive and reproductive spaces (Lefebvre, 2013).

Social landscape: Spaces of relationship and community services

Both options considered shared spaces of relationship and meeting, setting up places for interaction to strengthen community bonds and the relationship of people in the habitat. The design of these spaces was approached on different scales through small ergonomic elements, such as urban furniture, intermediate conditioning elements, such as ***shaded areas***, and more prominent elements, such as the community services at the ends and intersections of the corridors. This aspect, important in both proposals, seeks to promote the relationship between the space of the private sphere and the public sphere, imbricating them in a fabric understood as a social landscape capable of constructing a shared identity (Case, 1996).

Low density: After as before

Both proposals showed a low density, which implies a reduced capacity to accommodate more people affected by the disaster. This is done either by considering exclusively one-story housing solutions, an aspect that facilitates self-builds and the transportation of prefabricated units, or by considering a disproportion concerning the usual relationship in these actions between housing spaces and public spaces. However, despite a lower use of the land occupied by both organizational charts compared to the usual emergency camps, this low density coincides with the traditional density of the peri-urban nuclei affected by the disaster, which means that if a permanence of the transient habitat is achieved, the new density would be similar to that before the disaster, avoiding the perception of something inhospitable, uncomfortable or even alienating (Blunt & Dowling, 2006).

Connection: With the outside and with the inside

As an end of the internal circulation network from the different kinds of corridors, which seek to enhance communication between residents, in each option, connection routes with nearby population centers were considered to allow access to different services and favor the exchange between these and the settlement. The perimeter nature of these connections sought to define a limit that would differentiate the settlement and enable gradual reduction of the road scale, limiting access to light vehicles and favoring interior areas for pedestrian use, spaces intended for quick collection, or areas for logistics activities. In this way, spaces of relationship, in this case of mobility and exchange, acquire a capital importance in the design of the habitat (Bris & Bendito, 2019).

Dignity: Improving on the past

The two proposals considered standards similar to or higher than before the disaster, as the affected homes often had substandard conditions and basic or precarious construction levels. In addition, the previous homes are exceeded in both models in community spaces due to an informal organization where the open spaces were residual and from areas not yet occupied by irregular layouts. With this, the possibility of understanding the disaster response as an opportunity to improve the previous reality is confirmed, but, above all, recognizing the need to recover the dignity of the people affected after the disaster (Barakat, 2003).

VII. CONCLUSIONS

The study of the proposals presented allowed extracting some reflections that can contribute to the debate on the possibility of a transitional emergency habitat articulated from pre-disaster planning and based on the importance of community spaces of relationship.

First, innovating from experience, starting from previous solutions that allow addressing the less satisfactory aspects of previous interventions and progressing with cumulative learning where efforts are focused on solving the worst resolved needs, such as the importance of community spaces of relationship. In this sense, it is essential to consider, with an equivalent relevance, the built spaces

and the spaces defined for them to achieve a shared identity. This implies considering the habitat a complex beyond a mere total of self-sufficient units.

Secondly, the work from a bottom-up approach allowed identifying the people with the habitat, facilitating their acceptance based on strategies such as using familiar typologies and urban layouts assumed as their own, which contribute to building community identity.

Thirdly, it is important to ensure daily living standards are as close as possible to those before the disaster, but mainly, that is acceptable as a permanent situation in cases of prolonged transition. Among these standards is the correct interrelation in the habitat to enhance the inhabitants' integration and avoid situations of exclusion.

Finally, it is relevant to include as a design variable the possibility of adapting the generic housing unit to the specific needs of those who inhabit it. This would allow a particularization of the general that encourages the construction of personal identity through acts of appropriation. With this possibility, incorporating the temporary and spatial dimensions is vital, as well as using empty spaces available for progressive occupation by self-builds or the arrangement of additional modules and the possibility of reallocating spaces.

VIII. CONTRIBUTION OF AUTHORS CREDIT

Authors contribution: Conceptualization, P.B., F.B.; Data curation, P.B., F.B., D.M.; Formal analysis, A.A.; Acquisition of financing A.A., D.M.; Research, P.B., F.B.; Methodology, P.B., F.B., D.M.; Project Management, A.A., D.M.; Resources, A.A., D.M.; Software. -; Supervision, A.A., D.M.; Validation, A.A., D.M.; Visualization, A.A., P.B.; Writing - original draft, A.A.; Writing - revision and editing, A.A.

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X. ACKNOWLEDGEMENTS

To the students Jorge Aedo, Natalia Candia, Daniel Caripán, Daniela Durán, Cristina Jara, José Manuel Olave and Valeria Recabarren.

To the experts Alejandro Sandoval, Catalina Soto, Alejandro Vergés and Boris Sáez.

To Elizabeth Wagemann.

Recibido: 30-04-2024
Aceptado: 26-11-2024

ANÁLISIS DE USOS EDIFICATORIOS Y POBLACIÓN
EN TRES ZONAS TÍPICAS URBANAS DE SANTIAGO
MATÍAS GONZALO LEAL-YÁÑEZ, MARÍA ISABEL LÓPEZ-MEZA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 100 - 113
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ANALYSIS OF BUILDING AND NEIGHBORHOOD USES IN THREE URBAN HERITAGE ZONES OF SANTIAGO

ANÁLISIS DE USOS EDIFICATORIOS Y POBLACIÓN EN TRES ZONAS TÍPICAS URBANAS DE SANTIAGO

MATÍAS GONZALO LEAL-YÁÑEZ 2
MARÍA ISABEL LÓPEZ-MEZA 3

1 Article derived from ANID research Núcleo Milenio Patrimonios [NuPats]" project code NCS2024_014 "Analysis of the typical zone instrument as a measure of protection of heritage neighborhoods from the case study of the Yungay-Brasil neighborhood in the commune of Santiago, Chile".

2 Master in Urbanism
Doctoral student in Architecture and Urbanism, University of Bío-Bío
Academic Coordinator School of Architecture
Gabriela Mistral University, Santiago, Chile.
https://orcid.org/0000-0002-9559-0837
matias.leal@ugm.cl

3 Doctor in Urban Development
Director of the Center for Territorial and Interdisciplinary Studies CETI
Millennium Nucleus Researcher NupatS ID NCS2024_014
University of Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0002-0942-9722
mlopez@ubiobio.cl

https://doi.org/10.22320/07183607.2024.27.50.08

La protección patrimonial en Chile, en los últimos 20 años, ha estado muy influenciada por los movimientos ciudadanos, quienes buscan mantener la identidad de sus barrios, Se utilizó el instrumento de Zona Típica, desde ahora ZT, como herramienta de protección. En principio, un objetivo central de estas acciones es mantener el destino habitacional como mecanismo para preservar el tejido social. Sin embargo, en diversas ZT las fachadas habitacionales ocultan una diversidad de usos. Esta situación genera dudas respecto a la efectividad de la herramienta normativa en relación con las aspiraciones de las comunidades. En este sentido, el objetivo de la investigación fue analizar los cambios en el carácter residencial de tres barrios tras su designación como ZT. Los métodos utilizados incluyeron registro en cartografía SIG de los usos de suelo para el año 2024 se utilizó información del Servicio de Impuestos Internos; estos datos se complementaron con datos de población de los Censos 2002 y 2017. Los resultados señalan que el instrumento ZT está lejos de garantizar la perseguida preservación del tejido social. Estas conclusiones enfatizan la importancia de repensar los instrumentos de protección del patrimonio en zonas pericentrales, de manera de apuntar a un equilibrio entre la atracción de la inversión y la deseada identidad barrial que persiguen las comunidades.

Palabras clave: zona típica, movimientos ciudadanos, usos de suelo, tejido social

Heritage protection in Chile, in the last 20 years, has been strongly influenced by citizen movements, who seek to maintain the identity of their neighborhoods. The Heritage Zone instrument, from now on, HZ, was used as a protection tool. In principle, a central objective of these actions is to maintain housing destination as a mechanism to preserve the social fabric. However, in several HZs, the housing facades conceal a diversity of uses. This situation raises doubts about the effectiveness of the regulatory tool in achieving the communities' aspirations. In this sense, this research aimed to analyze changes in the residential character of three neighborhoods after their designation as HZs. The methods used included registration in GIS mapping of land uses for 2024, where information from the Internal Revenue Service was used. These data were complemented by population data from the 2002 and 2017 Censuses. The results point out that the HZ instrument is far from guaranteeing the sought-after preservation of the social fabric. These conclusions emphasize the importance of rethinking heritage protection instruments in pericentral areas to strike a balance between attracting investment and the desired neighborhood identity sought by the communities.

Keywords: heritage zone, citizens' movements, land uses, social fabric

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I. INTRODUCTION

The protection of historical centers in Latin America began in the 1970s, to some extent as a reaction to the wave of architectural change that modernism brought. Legislation on the importance of heritage began, and city administration instruments were developed (Capron & Monnet, 2003). Cases such as the historic centers of Quito, Mexico City, or Buenos Aires became icons of what the new heritage protection laws should address, including their revitalization.

In this way, three types of intervention were implemented in several Latin American historical centers: the restoration of historic buildings, the housing policy, and the urban animation along with commercial development (Capron & Monnet, 2003). Both local and international policies backed these three aspects. Actors such as ICOMOS or UNESCO established different perspectives on understanding urban heritage and developed guidelines for its conservation. Despite these advances, in many municipalities, real estate and commercial pressure still prevails over the interest in preservation, which often does not go beyond tourism (Scarpaci Jr, 2002). This is how heritage protection has become subject to a superficial look in many historical centers globally. However, the importance of the historical monument is understood in a dissociated way from its functionality, and the emptying of buildings alters the interest that the building had at the time of its declaration (Durán, 2015).

Previous studies in the field of gentrification in central or pericentral urban areas of Latin America analyze gentrification associated with a variety of variables, such as the effect of real estate capital or migration processes (Catalan, 2020; Casgrain & Janoschka, 2013; Rasse et al., 2019; Rodríguez, 2021; 2021b). The research reviewed shows the controversial condition of the phenomenon. While Casgrain and Janoschka (2013), among others, emphasize the link between gentrification and socio-spatial exclusion, Rasse (et al., 2019) and Rodríguez (2021 and 2021b) conclude that displacement may or may not occur when these phenomena occur. Closer to this research are the studies that focus on processes associated with tourism and the application of conservation policies in the transformation of historic neighborhoods. Among these is the study of Cabrera-Jara (2019) for the case of Cuenca (Ecuador), based on previous studies, and that of Vargas-Villafuerte and Cuevas Calderón (2020), which analyzes forms of expulsion from public space in a historic neighborhood of Callao (Peru). Within this latter group, one of the few studies after 2019 that includes land use analysis, which was also conducted based on previous studies from 1981, 2007, and 2012, is that of Ettinger and Mercado (2019). The results indicate that, instead of touristification, the historic center of Morelia (Mexico) has been consolidated as a diversified area consistent with its status as an urban and regional center and that the observed depopulation would not be directly associated with gentrification but with a multiplicity of other variables. This article contributes to this discussion on the effects of patrimonialization on the phenomenon of gentrification by providing an integrated and comparative analysis of recent land use data, with changes in the number of residents for three historical neighborhoods in Santiago de Chile.

In the Chilean case, the National Monuments Council (CMN, in Spanish), created by Law 17,288 of 1970, applies the category of Heritage Zone (from now on, HZ). This is a protection figure whose purpose is to protect some areas' aesthetic, architectural, and historical values; "…***that stand out for their stylistic unity, materiality or constructive techniques".*** These are mainly areas around some historical monuments that are being protected. In practice, this instrument does not contain tools to ensure the designated neighborhoods' proper care or enhance their sustainability (Rojas, 2014).

According to CMN records, the Metropolitan Region of Santiago de Chile has 49 HZ, of which 19 are located in the municipality of Santiago, and most of the new ones are in pericentral sectors. Although the instrument protects them from the threat of demolition, new actors can exert pressure to change their land use. These agents see the opportunity to generate new neighborhood centers as a gateway to colonize attractive spaces for new residents (Schlack & Turnbull, 2009).

In this context, this article aims to analyze the changes in the residential character of three neighborhoods after their designation as HZ. The hypothesis is that, although the HZ instrument favors the preservation of the built fabric - by promoting tourism processes - it is not a suitable tool for preserving the social fabric of neighborhoods. The methodology is based on the comparative analysis of three HZs designated in the late 1990s and early 2000s, two promoted by citizen movements and a third by a state agency. The dynamics of land use change, housing density, and the change in the number of inhabitants between 2002 and 2017 were analyzed.

II. THEORETICAL FRAMEWORK

Heritage zones and their inclusion in the current urban fabric

The valorization of heritage in cultural or historical terms constitutes a renewal model that can generate a process of

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urban mobility. This originates from the changes in use inside the neighborhood and the attraction of new capital that promotes and encourages different actors to contribute to its maintenance (Schlack & Turnbull, 2011). Rojas (2014) promotes an idea of sustainable development for heritage that, with the arrival of new capital, not only enhances the neighborhood but also activates it, generating a change in the way of understanding the developments of these areas without necessarily displacing the residents who are agents of these movements (Leal-Yáñez & Inzulza-Contardo, 2018). According to Choay (2001), protecting the areas declared HZ by the State responds mainly to architecture-related aspects. This approach is confirmed in the Chilean case.

On the other hand, heritage zone declarations can potentially preserve not only the material but also the immaterial value of historical areas and the distinctive character of neighborhoods (Delgadillo, 2020). From this perspective, these declarations could play an essential role in consolidating spaces that support local cultural practices, preserving social networks in the territory, and strengthening community ties, especially in contexts of accelerated transformation (Lira & Vidal, 2022). From this perspective, the notion of a cultural neighborhood has been associated with neighborhood movements that promote its protection through struggle (Durán, 2015). In line with this approach -in the last twenty years in Chile - this instrument has been used by several social movements to "protect neighborhoods" (Leal-Yáñez & Inzulza-Contardo, 2018). According to Castells (1986), neighborhood movements are formed as a response to a situation that is perceived as threatening. In these cases, differences are generated between dominated and dominant sectors, the latter generating resistance while proposing solutions to face said dangers. These threats are mostly linked to urban restructuring processes associated with real estate interest and are framed in the global context of city commodification. This phenomenon would align with Sassen's (1991) proposal that cities have become another commodity within the capitalist market.

Rodríguez (2021) states that social change processes in pericentral areas are attributed to greater demand from different social classes, commonly associated with gentrification. Gentrified neighborhoods are those with a particular heritage content or tourist interest. This phenomenon of gentrification has usually been understood as a process where the original residents are displaced by new inhabitants with higher incomes (Inzulza & Galleguillos, 2014). Diverse research has addressed the occurrence of this phenomenon in cities' historical or urban centers, both Latin American and European (Hidalgo & Janoschka, 2014; Janoschka, 2002; Valencia Palacios, 2019). However, another type of gentrification can occur when land is converted from residential to commercial or other uses. In its initial phases, this phenomenon can be understood positively as it contributes to providing services (stores and others) to deprived neighborhoods, particularly in the context of cities inserted in the neoliberal model where private actors, in the absence of the State, determine the existence or lack of services (Harvey, 2005). However, this process of change, when accentuated, can also constitute a threat to neighborhood identity.

The common denominator among these neighborhoods is the real estate pressure marked by the obsolescence of the built fabric and territorial planning instruments that open opportunities to monetize the land, generating new sources of business in somewhat forgotten sectors (Carrión, 2005). In these cases, the real estate pressure is not exerted through the demolition and construction of new projects, but through tourism development. Thus begins a process of tourism that directly articulates the effects of heritage and this sector (Hiernaux & González, 2014). It is even described that tourism and gentrification, together, generate displacement and an increase in the properties' values (Navarro, 2016). In this sense, Janoschka (2016) talks about the need for inclusive policies that accompany the declarations of heritage zones to mitigate the adverse effects of gentrification and ensure that the heritage is accessible and meaningful to local communities.

III. METHODOLOGY

Firstly, a bibliographic analysis was carried out to identify emerging debates on how heritage protection has developed in the HZ of Santiago de Chile, particularly those related to citizen movements and gentrification phenomena observable in these areas. As part of this work, the CMN data was analyzed to identify the HZ in the municipality of Santiago, the year of the declaration, and the agent promoting the declaration.

The case studies were chosen considering neighborhoods with similar characteristics in terms of location and centrality in the commune, whose data since the declaration was old enough to observe urban dynamics after the declaration. On the other hand, examples of resident- and state-driven processes were included. In this way, the intention was to observe possible differences in the results of both processes, which could be attributable to social fabric preservation objectives, usually sought in the declarations of a citizen origin. This is how the following neighborhoods were chosen:

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HERITAGE ZONE	NAME	YEAR OF DECLARATION	DECLARED BY
1	Quinta Normal Park	1976-2009	STATE
2	London and Paris Streets Sector	1982-2018	STATE
3	Calle Dieciocho Sector	1983	STATE
4	Plaza de Armas, National Congress, and its surroundings	1986-2018	STATE
5	Enrique Concha y Toro Street sector	1989	STATE
6	Sector of the streets Nueva York, La Bolsa, and Club de la Unión. Including the Main Offices of Universidad de Chile	1989-2013	STATE
7	Casonas Av. República Sector	1992	STATE
8	Virginia Opazo Complex	1992	STATE
9	Pasaje República-General García Sector	1992	STATE
10	Santa Lucía-Mulato Gil de Castro-Parque Forestal Neighborhood	1996-1998	STATE
11	Lucrecia Valdés, Adriana Cousiño, Hurtado Rodríguez and Surrounding Streets	2000	STATE
12	Madrid Neighborhood	2000	STATE
13	Club Hípico-Parque O'Higgins Sector	2002	NEIGHBORHOOD
14	Calle Serrano Residential Complex	2003	STATE
15	Civic Neighborhood - Bulnes-Parque Almagro Intersection	2008	STATE
16	Sector delimited by Av. Viel, Av. Matta, Av. Rondizzoni and San Ignacio Street	2009	NEIGHBORHOOD
17	Sector indicated of the Yungay and Brasil neighborhoods of West Santiago	2009	NEIGHBORHOOD
18	Matta Sur Neighborhood	2016	NEIGHBORHOOD
19	Huemul Neighborhood	2016	NEIGHBORHOOD

Table 1. Heritage Zones of the commune of Santiago. Source: Preparation by the authors based on CMN data.

- Yungay-Brazil HZ, located in the western sector of the commune of Santiago. This sector mainly has one- and two-story buildings dating from the early 1900s. After the 1985 earthquake, with the 1994 Communal Development Plan, and before its declaration, buildings of fourteen or more floors began to be built. The HZ comprises a total of 117.34 hectares.
- Matta Viel HZ, located near O'Higgins Park between Viel, Rondizzoni, San Ignacio, and Manuel Antonio Matta streets. It is located in the south of the commune, close to O'Higgins Park and the Autopista Central highway. This sector mainly has a typology of modern housing complexes, with collective housing of one to four floors built by the state in the 1950s. The HZ comprises a total of 15.71 hectares.
- Santa Lucía-Mulato Gil de Castro-Parque Forestal HZ, located in the eastern part of the commune of Santiago, closest to the historic and foundational center. This sector has a significant presence of two to four-floor historical buildings built by well-known architects such as Luciano Kulscewsky. Protection has been sought to protect the characteristic architectural elements of the facades, especially. Additionally, the maximum permitted heights were limited through a regulatory change in the Municipal Regulatory Plan. The HZ comprises a surface area of 11.6 hectares.

After processes led by the residents, the first two neighborhoods were designated as HZ in 2009 to cope with the real estate market that was beginning to emerge in the vicinity of each sector. The last case was declared after a municipal initiative in 1996, and this was extended in 1998.

To analyze the relative importance of residential use compared to other uses, particularly commercial uses, the disaggregated land uses at the property level of the Internal Revenue Service's (SII, in Spanish) digital mapping platform, updated to 2022, were collected. The predominant uses in each case were identified by making land use graphs. The spatial distribution pattern of commercial and residential uses regarding the main roads and transport infrastructures was also analyzed from the maps.

The following analyses used data from the last census in Chile in 2017 to compare the higher or lower prevalence of HZs' residential character.

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Figure 1. Comparative image with the Heritage Zones of the commune of Santiago. Source: Preparation by the authors based on CMN data.

- An analysis of the population figures: the number and density of inhabitants and the number of dwellings. The data presented disaggregated at a block level, were added to obtain the total number of residents and dwellings in each polygon. For the housing density calculation, the total number of residents was divided by the total area of the polygon.
- An analysis of the distribution of inhabitants by block based on the ArcGIS software.
- A comparative analysis of the population figures of 2017 with those of the pre-census of 2012 from www.ide.cl. This was done to analyze variation trends in each HZ's population.

All the information used for the background construction was checked in March 2024.

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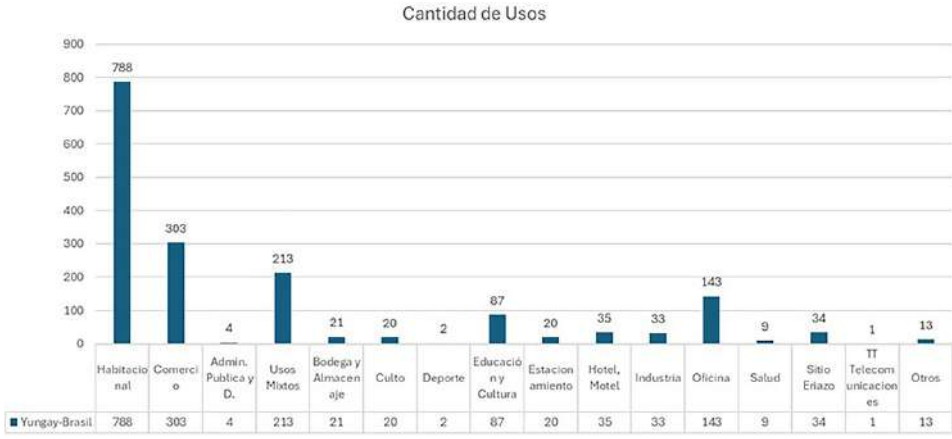

Figure 2. Yungay-Brasil Neighborhood Uses. Source: Preparation by the authors

IV. RESULTS

Origin of HZ declarations in the commune of Santiago

Heritage neighborhoods have been protected through state and neighborhood initiatives (Table 1). This directly affects how the perception of heritage in Chile has changed.

Of the commune's 19 HZs, 25% are neighborhoods declared by citizen movements. This is mainly because the upsurge of the neighborhood struggle has emerged in the last eleven years. Currently, the interest in protecting some areas against real estate pressures has become a constant not just in Santiago de Chile, but in many others in the country (Ducci, 2004). Figure 1 shows the location of the HZs in the communal context and the location of the three case studies in the western, eastern, and southern areas of the commune, respectively.

Land uses in the Yungay-Brasil neighborhood

Figure 2 shows the Yungay-Brasil Neighborhood Heritage Zone, where 1,726 properties are observed. The residential use has 788 lots, 45.65% of the total (Fig. 2). If the 213 properties classified as "mixed uses" are added, we reach 1,001 properties with housing use, i.e., 58%.

The commercial use of the neighborhood comes second, with a total of 303 properties, representing 17.55% of the total. At the spatial level, Figure 3 shows how this type of use is mainly concentrated on Ricardo Cumming Street and Brasil Ave. These two streets best represent the programmatic mix observed in the area, as they are the main avenues close to the metro station and characterize the neighborhood. Despite this, it can be

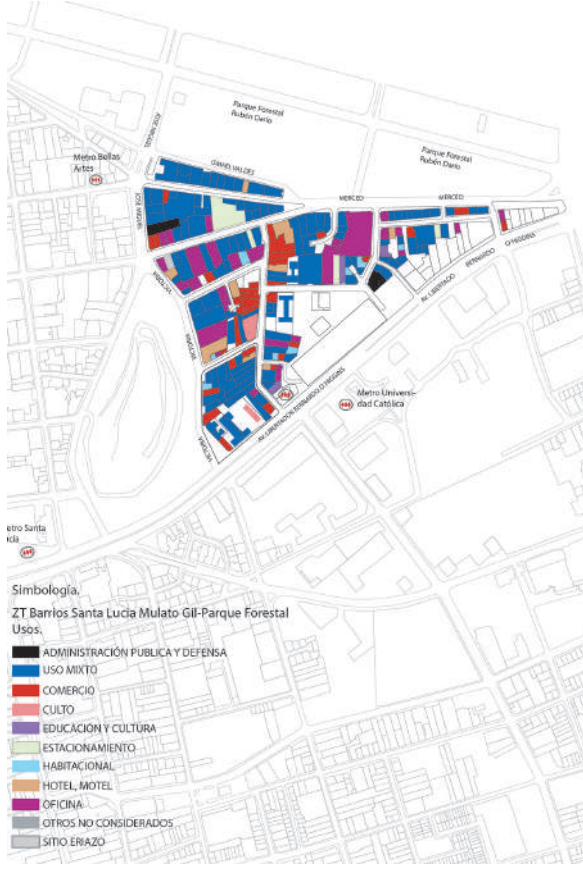

Figure 3. Mapping of destinations according to information from the Internal Revenue Service. Source: Preparation by the authors.

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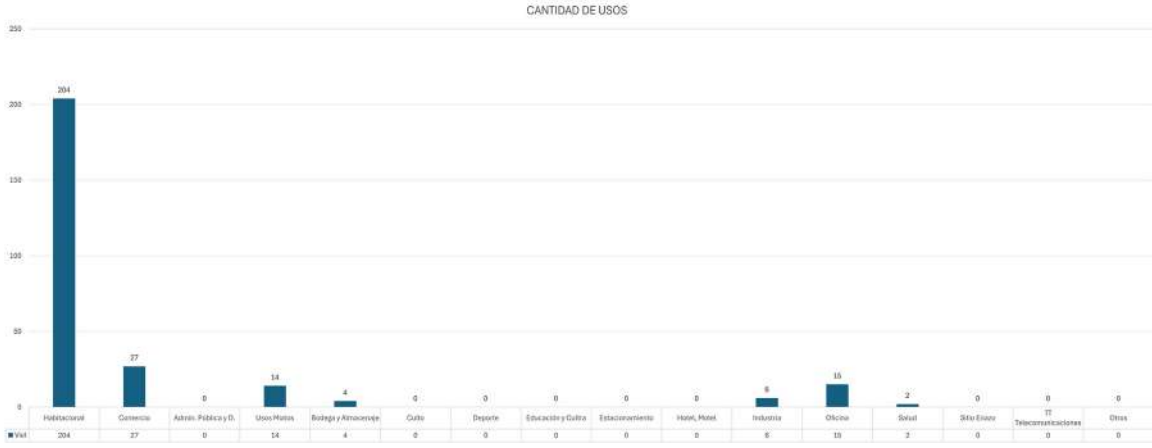

Figure 4. Distribution by number of uses. Source: Preparation by the authors.

appreciated that, at a block level, commercial use is present in all of them.

In the third position, offices are used in 143 properties, representing 8.25% of the lots in the neighborhood. As for the spatial distribution of this use, its proximity to the main avenues Ricardo Cumming, Brasil, and Alameda stands out, along with easy access to any of the five nearby metro stations. One of them is inserted in the HZ, the Cumming metro station (Line 5), which connects the Maipu sector with the southern area of the Metropolitan Region.

Land Uses - Matta Viel neighborhood

The Matta Viel neighborhood has 272 properties. In this case, Figure 4 shows that housing remains the majority use with 204 properties, i.e., 75% of the neighborhood's total lots. If this is added to mixed uses (14), the lots that include residential use reach 218, which represents 80% of the total properties.

The second most frequent use is commercial, which has 27 properties, 9.92% of the total lots in the neighborhood. Before analyzing the spatial distribution of these uses, it should be noted that this neighborhood is close to a highway and occupies only one block in width. Located near important roads and a metro station, commerce is distributed throughout the HZ. There are no points where there is a relevant concentration. On the contrary, commercial use manifests as a series of neighborhood-scale shops.

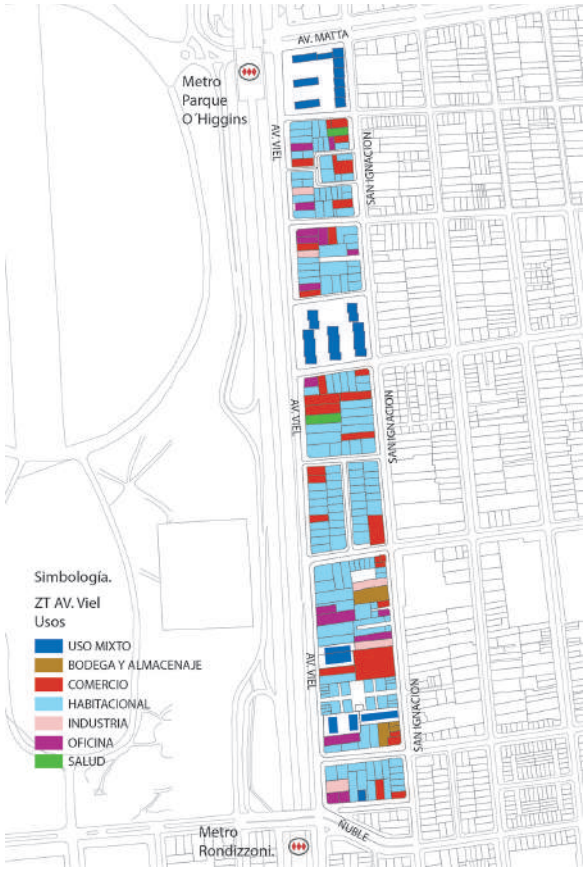

Figure 5. Mapping of destinations according to information from the Internal Revenue Service. Source: Preparation by the authors

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The third most gravitating use of the neighborhood is offices, with 15 properties representing 5.51%. Figure 5 shows how these uses are mainly located on the edges of the neighborhood, in the areas most connected to the Parque O'Higgins and Rondizzoni metro stations, on Line 2, which connects the northern and southern areas of the Metropolitan Region.

Land uses - Santa Lucía del Mulato Gil de Castro Typical Zone

Finally, the Santa Lucía del Mulato Gil de Castro Neighborhood, also known commercially as the Lastarria Neighborhood, has the most predominant commercial uses, consistent with its geographical location - the most central of the three - within the commune.

Out of 210 registered properties, 119 have mixed uses. From the observation on-site, commercial uses occur on the first floor and, in some cases, on the second, with the rest used as residential floors. 56.6% of the properties are like this. The distribution of this use is relatively homogeneous throughout the neighborhood, which is seen in each of the blocks, as shown in Figure 6.

Secondly, exclusively commercial use appears in 34 properties or 16.19% of the area's properties. These are located mainly along the main street, José Victorino Lastarria, and, to a lesser extent, in other areas near the Cerro Santa Lucía sector and Merced Street, located in the heart of Santiago in the Metropolitan Region.

Finally, and similarly to the other two neighborhoods observed, office use appears in third place. Twenty-six

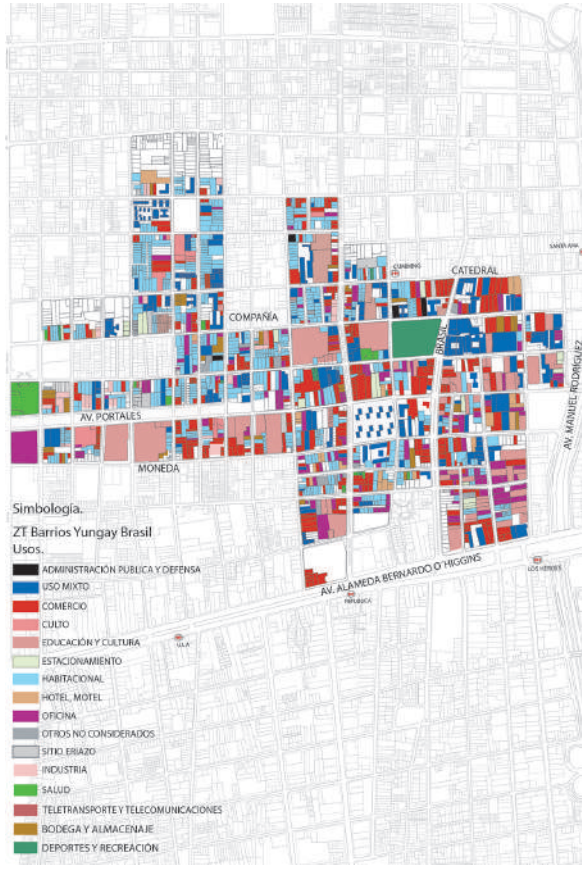

Figure 6. Mapping of uses according to information from the Internal Revenue Service. Source: Preparation by the authors.

	Habitacional	Comercio	Adm. Publica	Usos Mixtos	Bodega y Almacenaje	Culto	Deporte	Educación y Cultura	Estacionamiento	Hotel, Motel	Industria	Oficina	Salud	Sitio Eriazo	TI Telecomunicaciones	Otros
Yungay-Brasil	45,65%	17,55%	0,23%	12,34%	1,28%	1,15%	0,11%	5,04%	1,15%	2,02%	1,91%	8,28%	0,52%	1,96%	0,06%	0,75%
Viel	75%	9,95%	0,00%	5,14%	1,47%	0,00%	0,00%	0,00%	0,00%	0,00%	2,20%	5,54%	0,73%	0,00%	0,00%	0,00%
Lastarria	3,80%	16,19%	0,95%	56,60%	0,00%	0,95%	0,00%	1,90%	1,90%	3,80%	0,00%	12,49%	0,00%	0,95%	0,00%	0,47%

Figure 7. Comparative graph with the different percentages in the three neighborhoods. Source: Preparation by the authors.

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Neighborhood	Surface area (Ha)	Inhabitants (2017 Census)	Density (Inhab/Ha)	Number of Lots with Residential Use and Resid+ Mixed Use	Total Number of Dwellings	Number of Dwellings/ Lot (average)
Yungay	117.34	21,452	189	1,001	8,486	8
Matta Viel	15.71	2,007	125	218	808	4
Lastarria	11.6	8,376	722	127	6,140	48

Table 2. Comparison of the ratio of surfaces and inhabitants. Source: Preparation by the authors.

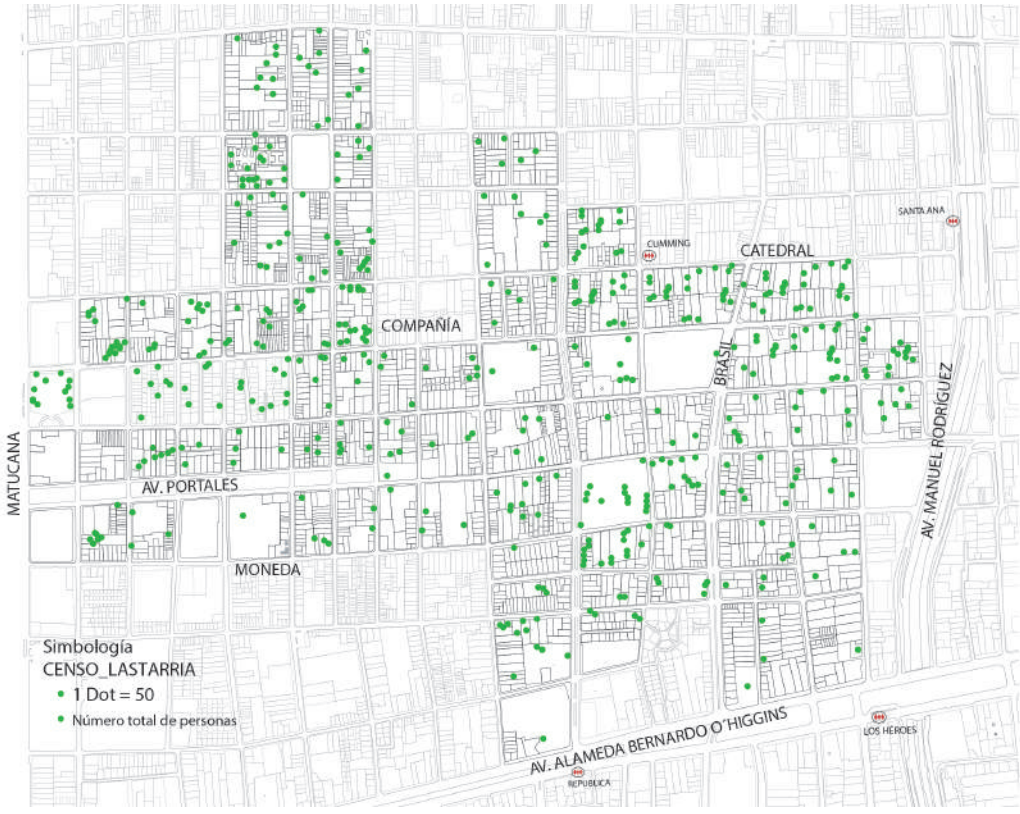

Figure 8. Comparison between distribution pattern of residents and distribution of land uses. Source: Preparation by the authors

properties have this use, representing 12.38% of the lots. This is consistent, as in Matta Viel, with the geographical location of the HZ within the municipality of Santiago since it has good connectivity and proximity to metro stations.

Figure 7 shows that the Matta-Viel neighborhood has the highest percentage of properties, with housing use for 75% of the protected area within the neighborhood. Yungay-Brazil has 45.65%, and Lastarria has 3%.

In summary, in the two HZs promoted by citizen agents (Yungay and Matta Viel), exclusively residential use remains relevant, clearly predominating over commercial. Commercial uses are important in both cases, although they are far from residential uses. It can be seen that commercial and office uses generally tend to be concentrated near main roads and transport infrastructures. This is how, in the Lastarria Neighborhood, residential use is practically irrelevant, with a clear predominance of mixed uses (commerce on the first floors and housing on the upper floors).

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Figure 9. Location of zones with the highest incidence of residents. Source: Preparation by the authors.

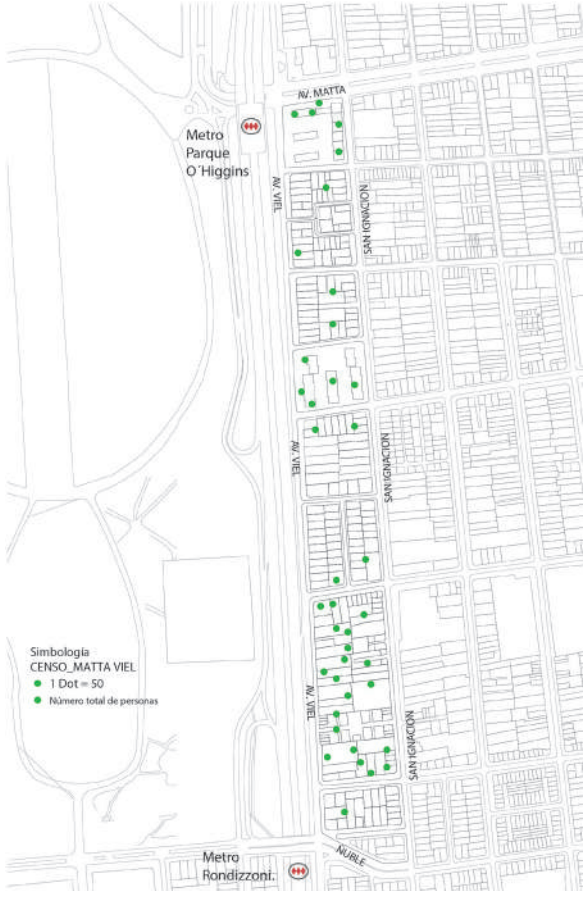

Figure 10. Location of areas that have a higher incidence of residents. Source: Preparation by the authors.

Analysis of inhabitants and land uses

On the other hand, as shown in Table 2, the 2017 Census data regarding the number of inhabitants show quite diverse situations in terms of the presence of residents in each area.

When comparing the population figures, it is seen that the Lastarria Neighborhood, despite having a clear predominance of commercial and tourist uses, has the highest housing density of the three neighborhoods; it is almost four times higher than the Yungay neighborhood and six times higher than Matta Viel. Thus, the average number of homes per lot in the Lastarria neighborhood is six times higher than the average number of homes per lot in the Yungay neighborhood and twelve times higher than the average number of families per lot in the Matta Viel Neighborhood. Likewise, it is observed that even though Matta Viel is more extensive in area than Lastarria, the latter has four times more inhabitants than Matta-Viel.

As for the distribution pattern of the inhabitants in Barrio Yungay, Figure 8 shows a higher concentration in two areas of the HZ: i) north of Portales Ave. and west of Manuel Rodríguez, and ii) in the surroundings of the intersection of Compañía Street with Brasil Ave. (Fig. 8). The first zone has a predominance of residential uses, and the second has a predominance of mixed uses. In contrast, commercial uses tend to approach more to the 'L' formed by the main roads Alameda Bernardo O'Higgins and Manuel Rodríguez, that is to say, to the areas of greater centrality within the polygon.

Figure 9 shows the distribution pattern of the inhabitants in the Lastarria neighborhood. The highest concentrations occur in the Cerro Santa Lucía and La Alameda intersection and between Merced Street and Parque Forestal. These blocks have mixed uses and consist of 4 to 5-story apartment buildings.

As for the inhabitant distribution pattern in the Matta Viel Neighborhood, Figure 10 shows a relatively homogeneous

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	2002 Census	2017 Census	Variation	% Variation
Yungay	12,545	21,452	8,907	71%
Matta-Viel	1,845	2,007	162	9%
Lastarria	12,750	8,376	-4,374	-34%
Commune of Santiago	200,792	404,495	203,703	101%

Table 3. Comparison of the number of inhabitants in the three HZs and the commune of Santiago in the period 2002-2017. Source: INE

MAIN USES	Yungay		Matta Viel		Lastarria	
	N°	%	N°	%	N°	%
Residential	788	46%	204	75%	8	4%
Mixed Use (Common Property)	213	12%	14	5%	119	57%
Residential + Mixed Use	1,001	58%	218	80%	127	57%
Commercial	303	18%	27	10%	34	16%
Commercial + Mixed Use	516	30%	41	15%	153	73%
Offices	143	8%	15	6%	26	12%
Other Uses	279		12		23	
Total Properties	1,726		272		210	

Table 4. Comparison of the number of lots by land use and the percentage that represents each one compared to the total lots of each HZ. Source: Preparation by the authors.

distribution within the HZ, with a slight increase at the edges near Ñuble and Matta streets.

In summary, the Lastarria HZ, despite having a lower percentage of properties with residential uses, has housing densities much higher than those observed in the other two HZs.

Analysis of the population variation in the period 2002-2017

In short, when reviewing the population variation in the three neighborhoods, it is observed that their growth was lower than that of the municipality of Santiago between 2002 and 2017. Only the Yungay neighborhood comes close to communal growth. In contrast, Matta Viel has much lower growth, and the Lastarria Neighborhood has a significant population decrease.

Cross-data analysis

The analysis shows a great diversity in terms of current land uses. The Matta Viel neighborhood is distinguished by being the only one with an important match between the citizen origin of the declaration and the predominant residential land uses (Table 4). On the other hand, the Yungay Neighborhood HZ has a 'mixed' character, given that although exclusively residential use continues to be predominant, less than 50% of the properties are. Thus, just by adding the mixed-use properties, residential use rises slightly above 50%, reaching 58% of the lots.

The Lastarria neighborhood is markedly in contrast with the Matta-Viel and Yungay neighborhoods. In this case, we see that there are practically no lots for exclusively residential use; this is how, although this use is present, it occurs mainly on the upper floors in properties with a first commercial floor. Thus if the exclusively commercial use is added to the mixed-use, the commercial lots total reaches 73% of the neighborhood. In summary, regarding the uses, it is a mainly commercial neighborhood of a bohemian character, with restaurants and other tourist and cultural uses.

On the other hand, it is seen that the Lastarria HZ also has the highest population density (Table 2). To understand this apparent paradox, it is relevant to incorporate the consideration of the constructed typology into the analysis. In the case of the Lastarria Neighborhood, it is composed of multi-story heritage buildings that, even when they change to residential use on the 1st and 2nd floors, it could be said that they "enable" the permanence of residential use on the upper floors. In contrast, in the Yungay and Matta-Viel neighborhoods, single-family homes

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with one or two stories are the predominant built typology. By changing the land use at the levels closest to the street level, there is no possibility of maintaining residential use. These results suggest that this has been the built typology, together with the HZ regulations that prevent demolition, that has made it possible to maintain the condition of the Lastarria Neighborhood as a place to live. In the same way, it could be deduced that the predominantly low-rise typology, together with the impossibility of demolishing, has made it challenging to maintain residential uses in the case of Yungay, where commercial uses have displaced them.

In summary, when reviewing the land use change data with the population data, the following is seen: The Matta Viel Neighborhood maintains the housing use, but loses population compared to other neighborhoods of Santiago. Although the Yungay Neighborhood loses housing land use in favor of mixed and commercial uses, of the three neighborhoods, it is the only one that maintains a population growth similar to the rest of the commune. Finally, the Lastarria Neighborhood loses housing use in favor of mixed and commercial uses and loses its residential population.

V. DISCUSSION

The cases studied are a type of neighborhood located in urban centers. While one of them (Barrio Lastarria) is an example of a State-promoted HZ, the other two are examples in which community organizations have promoted their designation as an HZ as a mechanism to "protect the neighborhoods" (Leal-Yáñez & Inzulza-Contardo, 2018).

In line with what has been pointed out in the theoretical framework on the effect of tourist/heritage value on the incorporation of commercial uses (Carrión, 2005; Hiernaux & González, 2014; Navarro, 2016; and Cabrera-Jara, 2019), the results show that in all three cases, there is a loss of residential land use in favor of commercial or mixed-use.

On the other hand, the scope of this change is very varied, being much more relevant in the Lastarria Neighborhood, which is the most central of the three cases analyzed. These results suggest that the HZ instrument alone is not a determining factor in the degree of residential use loss and that its effect is much more relevant in HZs of high centrality with respect to the commune and the main roads. Finally, the displacement of residents due to land use changes is only clearly evident in the case of the Lastarria Neighborhood, the only one that lost population from 2002-2017. However, it is important to emphasize that although the other two HZs do not lose inhabitants, they have lower demographic growth than the communal average. It is also relevant to point out that the gap varies significantly between one HZ and another, with this phenomenon being much more important in Matta Viel than in the case of Yungay.

These results coincide with those pointed out by Ettinger (2019) in that there would be no direct causal relationship between heritage policies and depopulation, and the latter would be due to a multiplicity of causes.

VI. CONCLUSIONS

The results provide important nuances about how the phenomenon of tourism development unfolds in the HZs and its impact on the residential character of the neighborhoods. The results suggest that the sectors most threatened by suffering processes that displace the inhabitants are those where the situation of heritage neighborhoods is accompanied by high centrality and proximity to main roads or mass transport infrastructures, among other things.

Based on these results, future research should look closer at the analysis of the combined effect of the HZ instrument with the variables indicated below. Firstly, the impact of the original typology and, in particular, the potential of medium-rise buildings to preserve the residential content of heritage neighborhoods. Secondly, the impact of the greater or lesser centrality and accessibility of neighborhoods in this respect.

The results suggest that HZs, although powerful tools for conserving the built fabric, should also be flexible enough to adapt to contemporary challenges, such as touristification or obsolescence, without compromising community vitality. In this sense, it is vital to develop more integrated strategies that allow for differentiated zoning according to the particular characteristics of each neighborhood. This includes implementing management models that actively involve local communities in decision-making on land use and investments, ensuring that the designation of HZ is not a barrier to development but an opportunity to create a sustainable balance between heritage, neighborhood identity, and economic growth.

VIII. CONTRIBUTION OF AUTHORS CREDIT

Conceptualization, M.L.Y.; Data curation, M.L.Y.; Formal analysis, M.L.Y.; Obtaining financing, M.L.Y.; Research, M.L.Y.; Methodology, M.L.Y.; Project management, M.L.Y.; Resources, M.L.Y.; Software, M.L.Y.; Supervision, M.L.M.; Validation, M.L.M; Visualization, M.L.Y.; Writing – original draft, M.L.Y.; Writing, review and edition, M.L.M.

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COLUMNAS DE OPINIÓN
IVÁN CARTES-SIADE
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 114
ISSN 0717 - 3997 / 0718 - 3607

NATURALEZA Y CIUDAD, EN TIEMPOS DE CAMBIO CLIMÁTICO

DR. IVÁN CARTES 1

Para François Choay un árbol urbano aislado es equivalente a una planta en un macetero, la cual, si no se riega y cuida, está destinada a morir. Esta mirada debe ponernos en alerta y hacernos repensar el papel que pueden desempeñar los sistemas verdes y los corredores biológicos en las ciudades y en la relación con su hinterland. Este enfoque relega definitivamente su función estética y paisajística más deficitaria y contradictoria, la cual es la más difícil de mantener y conciliar con el ambiente construido e incoherente, y posiciona el enfoque de la naturaleza como medio para combatir los retos globales, como el cambio climático, a escala local.

Como resultado del aumento de las temperaturas, los fenómenos y los desastres, provocados entrópicamente, dejan de ser locales y se elevan a escala global. En el año 2010, una nube de ceniza con material particulado que provenía de un volcán en Islandia obligó a suspender el tráfico aéreo europeo. Las cenizas se elevaron a una altura de 11 kilómetros, con serias amenazas de daño para los motores de aeronaves. Esto afectó la movilidad de millones de personas. Ahora, en octubre 2024, la Dana que afectó Valencia, en España, ha dejado 211 víctimas y pérdidas económicas y materiales cuantiosas, registrando 411 l/m2, equivalentes a lo que corresponde el agua caída de un año, en tan solo 2 días. El ciclo hidrológico ha cambiado y ha acelerado las emergencias planetarias. También han hecho fallar los sistemas predictivos, y las ciudades se enfrentan a problemas exponenciales de exceso de agua o sequía.

En la actualidad, es bastante común hablar de una era urbana, en la cual en el año 2021 la tasa de urbanización llegó al 56,4%, con ciudades expandidas y donde la población rural dejó de crecer en 2017. Históricamente, la tasa de urbanización había crecido linealmente hasta 1.800 al 7,3 %, pero con la revolución industrial creció de 16,4 en 1.900 a 46,8% en el 2.000, lo cual dejó en evidencia el crecimiento exponencial por las expectativas de vida mejoradas que ofrecían las ciudades.

Todo ello indica que el gran reto del desarrollo urbano es ahora, y será en el futuro, el modo en cómo las ciudades se relacionan con la naturaleza, cómo su rediseño disminuye los impactos ambientales en el territorio y cómo se adapta y mitiga los efectos del cambio climático. Para ello, es necesario reconsiderar las condiciones primigenias de lugar en el que la ciudad se ubicó, readecuar las infraestructuras y morfologías urbanas a la geografía del territorio en el que se asienta, y rediseñar el espacio público mediante soluciones basadas en la naturaleza que mitiguen las emisiones y se adapten para reducir las islas de calor.

En ese sentido, no es de extrañar que el 65% de las 169 metas de los 17 Objetivos de Desarrollo Sostenible (ODS) tengan relación directa con la administración local y regional, involucrando las áreas urbanas que concentran las acciones masivas y de impacto continuo. En definitiva, la solución pasa por la acción urbana, que tendrá un rol primordial en un futuro cada vez más inmediato como escenario central de cambio y que necesariamente deberá incorporar el factor de la naturaleza en el camino hacia un desarrollo sustentable y equilibrado

1 Doctor en Urbanismo
Director del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0003-3911-2221
icartes@ubiobio.cl

COLUMNAS DE OPINIÓN
HÉCTOR GAETE-FERES
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 115
ISSN 0717 - 3997 / 0718 - 3607

POLÍTICAS PÚBLICAS URBANAS Y MODELOS ECONÓMICOS

DR. ARQ. HÉCTOR GAETE FERES 2

Hay una relación en principio biunívoca y/o de predeterminación entre ambos componentes según sea el marco de valores y principios que sustente los modelos y el rol que se busca ejerzan las políticas públicas. Ambos componentes, a su vez, están supeditados a los arreglos socio-político-culturales que la sociedad se ha dado a través de su constitución política. Este asunto resulta esencial, aunque, sin embargo, ha recibido escasa atención en urbanismo. Por ello, se esboza aquí el problema.

Se distinguen tres modelos: neoclásico, keynesiano y de economía política urbana. Todos ellos ofrecen propuestas en cuatro dimensiones: rol del Estado, determinación de precios en grados de competencia en la producción, rol del sector privado y distribución de los ingresos y recursos.

El neoclásico se caracteriza por ofrecer un Estado subsidiario, libre competencia, sector privado como principal motor de la economía y distribución de recursos según la producción y participación en el capital (Smith, 1776). Sin embargo, este modelo, en su expresión dominante en 40 años de globalización, ha derivado hacia condiciones extremas conociéndose como modelo neoliberal (Theodore et al., 2009). Por ello, ha sido criticado por no abordar adecuadamente las desigualdades sociales y los fallos del mercado que pueden surgir en contextos urbanos (Rodríguez-Pose & Storper, 2020; Gaete-Feres, 2003)

El modelo keynesiano propone un rol más activo del Estado como conductor del desarrollo, competencia regulada, sector privado proveedor y productor de bienes y servicios. En ese sentido, buscan una mejor distribución de los beneficios del crecimiento económico para un desarrollo más equitativo e inclusivo (Keynes, 1936; Sassen, 2021).

Por su parte, el modelo de economía política urbana busca mayor intervención del Estado en el equilibrio de la economía, integra elementos de ambos modelos anteriores con diversos énfasis y en que las relaciones de poder de los grupos sociales en que se organiza la sociedad tienen un rol estratégico en la definición de las políticas públicas urbanas (Harvey, 1989). Finalmente, los modelos de gobernanza urbana constituyen una corriente emergente, que busca la participación inclusiva de diversos actores y la colaboración (Pierre, 2005).

Derivada de la constitución política, donde se expresan los acuerdos esenciales de la sociedad, emergen las diversas políticas públicas sectoriales. Por tanto, el espacio de lo posible para formular políticas urbanas dependerá del tipo y alcance de los consensos que los grupos hayan sido capaces de elevar a la categoría de fundamentales. No hay otra forma legítima en democracia.

En la experiencia chilena, no hay espacio para garantizar el derecho a la vivienda, ni al espacio público porque esa garantía obligaría al Estado a proveerla y permitiría a las personas exigirla y/o demandarla en los tribunales de justicia. Ello ocurre porque en la constitución actualmente vigente heredada, en lo esencial, de la dictadura no existen esos derechos, no es posible demandarlos por cuanto serían inconstitucionales.

El caso chileno es también paradigmático porque, a nivel constitucional, el Estado ejerce un rol subsidiario y el modelo económico, con el sector privado como principal gestor, rige por sobre las políticas públicas.

El tipo de modelos económicos y el alcance de las políticas públicas están subordinadas a los acuerdos sociales alcanzados en la constitución política y, en casos extremos como Chile, las políticas están subordinadas al modelo, incluida la urbana.

2 Doctor en Gestión y Valoración Urbana
Académico del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0003-2901-9410
hgaete@ubiobio.cl

COLUMNAS DE OPINIÓN
SERGIO BAERISWYL RADA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
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EL DILEMA HABITACIONAL DE LAS CIUDADES

DR. ARQ. SERGIO BAERISWYL RADA 3

Uno de los problemas más grandes que enfrenta la sociedad contemporánea es el acceso a la vivienda, que constituye un derecho humano. Según ONU Hábitat a nivel global 2.800 millones de personas experimentan algún tipo de insuficiencia de vivienda y casi 1.100 millones viven en la marginalidad. La vivienda es un problema global y en el caso de Chile 640 mil hogares no cuentan con una, aproximadamente 10% de la población.

Existe evidencia que parte del desafío estriba en los cambios de nuestra estructura social y económica. Por ejemplo, el aumento del número de los hogares que supera la producción de viviendas, lo que se traduce en una brecha cada día más grande entre el déficit y la capacidad del sistema público para reducirlo. La transición demográfica explicaría también este fenómeno que, en el caso de Chile, muestra una gran presencia de hogares unipersonales (33% del déficit), con un fenómeno migratorio intenso (26%) y con mayoría de hogares con jefaturas femenina (51%). Las dificultades para enfrentar estos cambios, topan además con problemas de acceso al suelo y un aumento considerable del costo de la vivienda.

Los efectos de este problema en las ciudades son un aumento sin control de la informalidad habitacional y urbana. La imposibilidad de las familias para acceder a una vivienda a través de conductos regulares, las obliga resolver el problema en asentamientos informales que, aun cuando no cuentan con servicios, ni infraestructura básica, ni derechos a la propiedad, surgen como una opción real de acceso a la vivienda. En la actualidad, 114.000 residen en campamentos informales según datos de Techo Chile de 2023.

Esta compleja realidad debería emplazar a las formas tradicionales de planificación urbana en Chile, las cuales se han mantenido al margen del problema del déficit habitacional. En efecto, la planificación de las ciudades chilenas se ha basado históricamente en la definición de un marco regulatorio con enfoque tradicionalmente morfológico y sin inclusión de medidas para facilitar la vivienda asequible. Esto no sólo representa un desacople entre las políticas habitacionales estatales y los planes urbanísticos, sino también en forma recurrente en un obstáculo, que genera grandes conflictos y reduce la efectividad de acceso al suelo para viviendas de interés público.

La magnitud del déficit habitacional debe representar un imperativo ético y social de primer orden en la planificación urbana, y avanzar hacia un mayor compromiso que no renuncie a sus objetivos funcionales, ambientales, patrimoniales y morfológicos, pero que incluya un mayor sustrato de responsabilidad del diseño que facilite el acceso a la vivienda de interés público.

Sólo el año 2022, y a través de la Ley N° 21.450 sobre Integración Social, fue posible por la insistencia del Consejo Nacional de Desarrollo Urbano incluir en esta la obligatoriedad de incorporar en los planes reguladores la dimensión del déficit habitacional mediante incentivos y resguardos normativos. Esto puede ser un primer paso que permita avanzar en una reconceptualización de la planificación, resignificando uno de los objetivos esenciales de la ciudad: es arbitrar todo tipo de medidas urbanísticas para garantizar el derecho a la vivienda.

3 Doctor en Urbanismo
Académico del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0001-7478-1178
sbaeriswyl@ubiobio.cl

COLUMNAS DE OPINIÓN
M. ISABEL LÓPEZ MEZA,
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
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LOS DESAFÍOS DE LA PROTECCIÓN DE PATRIMONIO

DRA. ARQ. M.ISABEL LÓPEZ MEZA 4

Dentro de los desafíos institucionales del Estado chileno para la protección del patrimonio pueden nombrarse dos eslabones claves: la Ley de Patrimonio y la Política de Educación Patrimonial.

Con respecto a la primero, los progresos en esta materia han quedado marcados por la falta de avance tras las mejoras planteadas al proyecto de ley el año 2023, como resultado de la Consulta Ciudadana y la Consulta Previa a los Pueblos Indígenas y Tribal Afrodescendiente chileno. De esta manera, desde el punto de vista de la gestión, anhelados progresos, tales como el empoderamiento de las regiones en la gestión de su patrimonio, la inclusión de representantes de los pueblos indígenas o el mejoramiento de las herramientas de gestión de esta herencia, siguen en compás de espera.

Por otra parte, desde el punto de vista de la esencia de lo que significa la noción de patrimonio, se sigue actuando bajo el amparo -o desamparo- de una ley anacrónica y que, de acuerdo con una opinión ampliamente compartida, no se hace cargo de la evolución de esta noción a nivel global. Se trata de una ley aún atada a una visión monumentalista del patrimonio que no recoge adecuadamente las perspectivas actuales, mucho más heterogéneas, y en las que se entrecruzan de manera inextricable las concepciones-antes extremadamente binarias-de: patrimonio construido en oposición al patrimonio natural, o de patrimonio tangible en oposición al legado cultural intangible. No sólo estas oposiciones han sido ampliamente rebatidas tanto desde la discusión teórica como desde la sociedad civil, sino que también el proceso mediante el cual se define qué es lo que se designa como patrimonio lleva tiempo siendo cuestionado desde los territorios. Se cuestiona la prevalencia de ciertas narrativas tradicionales "oficiales" en desmedro de otras narrativas emergentes y/o subalternas tales como los sitios de memoria o la herencia de los pueblos ancestrales, entre otros.

Con respecto a la Política de Educación Patrimonial, esta ha sido definida en el documento "Educación Patrimonial Miradas y Trayectorias" (Ministerio de las Culturas, las Artes y el Patrimonio, 2020) como una experiencia de enseñanza y aprendizaje en la cual el patrimonio es la fuente primaria de información. Resulta fundamental que la nueva ley -desde un enfoque relacional- contribuya no sólo a ampliar la aún escasa presencia de la Educación Patrimonial en el currículum nacional, si no que la fortalezca también en los contextos informales, contribuyendo por estas dos vías a desarrollar una reflexión crítica sobre el patrimonio que instale los debates antes mencionados entre las nuevas generaciones.

El camino ha sido difícil y pedregoso. A pesar de ello, resulta clave reconocer la importancia de que estas dos políticas públicas se complementen y refuercen entre sí. De ahí la importancia de seguir empujando desde todos los espacios (academia, sociedad civil, instituciones, etc.) el desplazamiento de estos cambios de paradigma desde los márgenes y hacia una renovada institucionalidad.

4 Doctora en Urbanismo
Académica del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño.
Directora Centro Estudios Territoriales Interdisciplinares.
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0002-0942-9722
mlopez@ubiobio.cl

COLUMNAS DE OPINIÓN
FRANCISCO SABATINI DOWNEY IGNACIO BISBAL GRANDAL
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ISSN 0717 - 3997 / 0718 - 3607

LA CIUDAD AL SERVICIO DEL CAPITAL INMOBILIARIO

FRANCISCO SABATINI DOWNEY 5, IGNACIO BISBAL GRANDAL 6

Hace unos años, al mudarnos a vivir a Concepción e integrarnos al cuerpo de profesores de la Universidad del Bío-Bío en 2014 y 2018 respectivamente, un colega nos ofreció una explicación clave acerca de la ruptura del orden urbanístico que representaban las altas torres de departamentos construidas en el centro de Concepción: "La economía estaba mal, por lo que había que liberar las (normas sobre) alturas de las edificaciones".

Tal justificación, iríamos descubriendo, se acoplaba con lo que en un artículo reciente**7** sobre el alza de los precios de la vivienda en Concepción llamamos la "historia oficial": Las regulaciones urbanas crean escasez artificial de suelo haciendo subir el precio de éste y, con ello, el de la vivienda. Por lo mismo, relajar o suprimir dichas regulaciones (normas de uso del suelo, de edificación y prohibiciones), especialmente cuando la economía está en crisis, permite el libre funcionamiento de los mercados de suelo y de inmuebles y, por cierto, estimula el crecimiento económico.

Este es, por lo demás, un argumento "global" esgrimido por fuentes prestigiosas de corte económico liberal como la revista inglesa *The Economist* y el economista urbano Edward Glaeser de la Universidad de Harvard.

Pero la "historia oficial" está haciendo agua. Ni *The Economist* ni los economistas del *mainstream* nos están proveyendo de explicaciones razonables para los precios exorbitantes de la vivienda hoy en el mundo. Sus explicaciones no son ni consistentes con la teoría económica (de cualquier orientación que ésta sea) ni con el análisis de datos. Partamos por lo último: múltiples trabajos cuantitativos presentan o buscan presentar la correlación estadística entre alzas de los precios de la vivienda y de los terrenos como respaldo científico de que el crecimiento de los precios del suelo es causa de la inflación de los precios de la vivienda. Sin embargo, con los mismos datos es posible argumentar al revés, esto es, que el alza de los precios de la vivienda (acicateada por haber devenido la vivienda en un importante activo financiero, tal vez el principal hoy en el mundo) es causa del aumento de los precios de los terrenos.

En relación a los análisis que presentan la correlación entre precio de vivienda y precio de suelo, los estudios *mainstream* contradicen los propios argumentos neoliberales canónicos de Milton Friedman. También contradicen los de muchos otros destacados economistas de distinto pensamiento, como Adam Smith, David Ricardo, Alfred Marshall y Paul Krugman, que entienden los precios del suelo como renta y no como costo y que apoyan la aplicación de impuestos al suelo, en parte porque no se traspasan a precio.

Pero la "historia oficial" todavía rinde excedentes, aunque no buenas explicaciones. La rigurosidad teórica disminuye cuando muchos de estos argumentos se tuercen en favor de los intereses económicos, especialmente cuando hay crisis financieras. La ciencia de la economía se desliza hacia los argumentos sofistas que ha denunciado el mismo precursor del liberalismo, John Stuart Mill, quien escrutó la "falacia de causa falsa", consistente justamente en presentar una correlación como causalidad.

Además de soportada en argumentos falaces, la "historia oficial", siempre amenazada por la inestabilidad financiera propia de

5 Doctor en Planificación Urbana
Académico del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0001-8745-0052
fsabatini@ubiobio.cl

6 Doctor en Urbanismo
Académico del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0002-8304-2040
ibisbal@ubiobio.cl

7 Sabatini, F; Bisbal, I; Aguirre, C; Pérez, E. (2024 -en prensa). ¿Por qué suben los precios de la vivienda en Concepción, Chile? La historia oficial y sus grietas. Madrid: Revista Ciudad y Territorio; Estudios Territoriales.

esta época, recurre constantemente a las presiones políticas y al centralismo, como acaba de comprobarse en la aprobación del Decreto Supremo N° 33 del Ministerio de Vivienda y Urbanismo de Chile. Mientras tanto, los esfuerzos reguladores fracasan.

Efectivamente, la resistencia a las torres de departamentos de los vecinos de los barrios y de los municipios actuando en su mandato, han llevado a regulaciones locales como la de fijar alturas máximas. Estas medidas reducen el precio de los terrenos y representan menoscabos a las rentas que pueden obtener propietarios del suelo y promotores inmobiliarios con sus proyectos en esos lugares.

El capital inmobiliario presiona a las autoridades para aprobar leyes o normas que permitan doblarle la mano a vecinos, municipios y ciudadanos. La calidad de vida en los barrios y el patrimonio arquitectónico y urbanístico de la ciudad no son tenidos en cuenta. Los municipios deben ser persuadidos, debilitados o doblegados. Así ocurrió en el barrio de Estación Central en Santiago donde el alcalde se negó a tener plan regulador, haciendo posible los "guetos verticales", estupendos negocios inmobiliarios a costa de la calidad de vida y a costa de la ciudad. La ley N° 21450 sobre integración social en la planificación urbana, gestión de suelo y plan de emergencia habitacional que permite incentivos como construir torres de departamentos más altas que los límites normativos a cambio de una proporción de viviendas "con subsidio" y a partir de una definición centralista de "áreas de integración social", también pone la ciudad y los ciudadanos al servicio del negocio inmobiliario.

Y, en estos días, el gobierno nacional ha modificado la Ley General de Urbanismo y Construcciones mediante el anteriormente referido Decreto Supremo N° 33, para prorrogar así por 18 meses más la vigencia de los permisos de edificación que no hubieren iniciado sus obras a la fecha de promulgación del señalado decreto. Buscando contrarrestar las torres que se han expandido a otros barrios de Concepción, la Municipalidad, apoyada en un largo proceso de participación ciudadana y de debate público entre 2018 y 2021, logró reducir las alturas permitidas. Sin embargo, las empresas que corrieron a aprobar permisos con la norma licenciosa de antes, hoy podrán hacer sus proyectos a costa de la ciudad aplicando el nuevo decreto. Mediante un golpe de centralismo y presión corporativa se borra ese trabajo y se vuelve a imponer la razón mercantil: hay que soltar las densidades porque la economía está en crisis.

En suma, el principal desafío de desarrollo urbano que enfrenta Concepción, como muchas otras ciudades en el mundo, tiene una importante dimensión académica: dar con explicaciones para la crisis actual de la vivienda (déficit habitacional y precios exorbitantes) que los economistas del *mainstream* no han podido o no han querido dar. También es parte del desafío saber vincularse como académicos con la comunidad para ayudarle a hacer frente a los intereses corporativos y del centralismo político que amenazan nuestra ciudad y las ciudades en general.

La construcción de viviendas en altura y el número de hogares en campamentos, allegados o tugurizados crecen a la par. No parece lógico ni racional. Lo que los une y vuelve coherentes, sin embargo, es el avance del capital inmobiliario en la acumulación de rentas de la tierra.

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FRANCISCO SABATINI DOWNEY IGNACIO BISBAL GRANDAL
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FRANCISCO NÚÑEZ CERDA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 120
ISSN 0717 - 3997 / 0718 - 3607

LOS APORTES DE LA BIG DATA Y LA INTELIGENCIA ARTIFICIAL AL DISEÑO DE UNA MOVILIDAD SOSTENIBLE

DR. ARQ. FRANCISCO NÚÑEZ CERDA 8

Uno de los desafíos más importantes para las ciudades durante el siglo XXI es lograr una movilidad y accesibilidad urbana sostenible, en un marco con cada vez una mayor cantidad y variedad de actividad esenciales para el funcionamiento urbano desarrolladas por sus habitantes. Estas actividades se realizan en entornos físicos, sociales y ambientales, en los cuales cada uno de los participantes de la movilidad generan y son afectados por externalidades negativas, como la contaminación y la congestión, así como por otros factores que actúan como barreras a la movilidad y accesibilidad, afectando la salud física, mental, el bienestar social y la calidad de vida.

Así, el fenómeno de la movilidad se ha complejizado, lo que contempla una gran variedad de variables sociales, urbanas, técnicas y económicas con múltiples relaciones entre sí, dando origen a grandes volúmenes de información que no siempre es aprovechada.

Por otra parte, para diseñar una movilidad eficiente es imprescindible disponer de información completa y actualizada que soporte la toma de decisiones, no basadas solamente en las tradicionales encuestas de origen y destino, ya que estas no son capaces de recoger por su extensión y frecuencia datos, motivaciones, experiencias, sensaciones, percepciones, satisfacción, entre otras, asociadas a los desplazamientos de los ciudadanos. En este contexto, toda información posteriormente debe ser procesada y explicada a efecto de fortalecer los enfoques de la *movilidad como un servicio* (MaaS, en inglés).

En relación con lo anterior, aparece el aporte de la recolección y procesamiento masivos de datos (Big Data) y la inteligencia artificial (IA) no solo para realizar ajustes oferta-demanda en tiempo real, sino también para explicar y predecir comportamientos sociales y humanos de los ciudadanos afectados por una gran variedad de estímulos en sus desplazamientos. La Big Data utiliza en su recolección de datos contadores, cámaras, telefonía, GPS, sensores en las vías, toda información que será ordenada y procesada mediante algoritmos inteligentes. Desde el punto de vista de la IA, el notable avance en este último tiempo en temas de procesamiento de datos, texto, imágenes y videos proporciona herramientas indispensables en términos de algoritmos y procesamiento de datos de distintas fuentes, para poder "percibir" nuestro entorno de una manara cada vez más precisa (Thayyib). Los avances en visión computacional posibilitan la detección, el seguimiento y, sobre todo, la interpretación de las imágenes de una manera muy sensible como lo hace el análisis humano. Particularmente en este último tiempo, la potenciación del análisis de BD y la analítica de datos por medio de inteligencia artificial está potenciando extraordinariamente la compresión de nuestro entorno. Por otro lado, el avance en técnicas de aprendizaje profundo, y particularmente de estructuras como los "transformers", posibilitan la generación de máquinas capaces de realizar análisis con comportamientos y desempeños muy superiores a los logrados con técnicas tradicionales.

Estas técnicas aportan con grandes y representativas muestras de datos históricos y en tiempo real continuamente accesibles y modelos explicativos y predictivos de movilidad en permanente aprendizaje que recogen la variedad y variabilidad de los actores y entornos. Esto posibilita y potencia técnicas tales como el geomarketing social, de manera que permita diseñar una movilidad cada vez más cercana a las personas.

8 Doctor en Gestión y Valoración Urbana
Académico del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño.
Director del Laboratorio de Economía Espacial.
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0002-2238-3861
fnunez@ubiobio.cl

COLUMNAS DE OPINIÓN
AARON NAPADENSKY PASTENE
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 121
ISSN 0717 - 3997 / 0718 - 3607

DE LOS LÍMITES DE LA CIUDAD A LA CIUDAD SIN LÍMITES

DR. AARON NAPADENSKY PASTENE [9]

Este es un tiempo donde muchos de los dualismos cartesianos, reforzados en la modernidad, están siendo cuestionados: norte-sur, femenino-masculino, urbano-rural, local-global, sociedad-naturaleza. Son todas dicotomías constantemente interrogadas, tanto en su real aporte a la comprensión de nuestro mundo, como en su, no siempre evidente, rol performativo sobre precisamente ese mundo que buscan develar.

Así, surgen las preguntas de hasta qué punto poner límites a las ciudades ha resultado efectivo y eficaz para restringir el crecimiento urbano y proteger la naturaleza, junto a al de hasta dónde tiene sentido la permanente lucha entre quienes buscan, sin mucho éxito, contener la ciudad y quienes persiguen su expansión. Mi impresión es que la persistencia de este instrumento de planificación urbana ha ayudado a reforzar la idea de una ciudad disociada de la naturaleza. Una ciudad que, fundada en una suerte de hoja en blanco, inicia ahí donde termina la naturaleza, misma que termina donde comienza la ciudad. Así, naturaleza y ciudad se nos presentan como dos mundos opuestos y separados por este límite imaginario. Este otorga de facto una cierta licencia para obviar la naturaleza y entregar atribuciones para su devastación ecosistémica, cuando del interior del límite urbano se trata, todo en nombre de la urbanización y el progreso. Y fuera de este, no habría que regular, puesto que es una suerte de reino de la naturaleza.

Además, el límite urbano, en tanto instrumento de la planificación urbana, ha sido y sigue siendo parte de un esquema de orden y conocimiento modernista que, como tal, tiene su origen en una ruptura radical con la historia y la tradición. Soportando y proyectando el desarrollismo neoliberal, vinculando, por una parte, poder y conocimiento, pero por otra, produciendo simplificaciones, ausencias y exclusiones, y circunscribiendo todo intento de regulación y normativa al interior del límite urbano, dejando muchas veces el extrarradio al arbitrio de los procesos de acumulación capitalista.

Entonces, ¿por qué no eliminar los limites urbanos? Esto permitiría reemplazarlos por límites ecosistémicos, que coincidentes con cuencas y subcuencas hidrográficas, adapten y condicionen nuestras socio-estructuras a las preexistencias ambientales y geomorfológicas del territorio, proyectando así, bio-ciudades sin límites ficticios, donde la urbanización no es restringida, sino condicionada a un contexto en el cual, ciudad y naturaleza, tenderían a ser, ambiental, social, política y administrativamente coherentes.

Este cambio, en sus distintas escalas, podría establecer mejores condiciones para el despliegue de políticas económicas, sociales, ambientales y de infraestructuras, sinérgicas, concatenadas y pertinentes. Pero, especialmente, nos ayudaría a asumir, como dijo Mumford, que la ciudad no está en la naturaleza, sino que forma parte de esta.

Esto no es un desafío menor, y todo cambio en la luz del faro, desestabiliza la navegación, pero si esto promete una ruta más segura ¿no tendría sentido?

9 Doctor en Estudios Urbanos
Académico del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño.
Director del Laboratorio de Estudios Urbanos.
Universidad del Bío-Bío, Concepción, Chile
https://orcid.org/0000-0002-8851-7201
anapaden@ubiobio.cl

COLUMNAS DE OPINIÓN
ELÍAS ALBORNOZ DEL VALLE
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 122
ISSN 0717 - 3997 / 0718 - 3607

SOSTENIBILIDAD SOCIAL Y PLANIFICACIÓN URBANA EN LA ERA DIGITAL

DR. ELÍAS ALBORNOZ DEL VALLE 10

El imaginario colectivo generalmente suele asociar una ciudad moderna con alta densidad urbana, altos flujos de actividad concentrada en centralidades y movimiento constante entre diversos agentes. Esta visión ha impulsado un modelo de desarrollo centrado en maximizar el tráfico, construyendo grandes infraestructuras que permiten la movilización masiva. Así, se ha simplificado funcionalmente la complejidad del tejido urbano, fragmentando la ciudad en centros distantes entre sí, en un ir y venir que parece ignorar las percepciones, emociones y sensaciones generadas en las personas. Sin embargo, existen otras formas de hacer ciudad, como señalaba Theo Crosby en "Architecture: city sense", el tráfico no es lo más importante, lo realmente importante es cómo vive la gente. En este sentido, es clave evaluar qué quieren y necesitan los ciudadanos para mejorar su bienestar, pues quizá solo la reducción del tiempo que se emplea en este ir y venir a través del paisaje urbano no sea tan importante, cuando la insatisfacción con el transitar cotidiano por la ciudad moderna y sus elementos, podría estar afectando negativamente el bienestar mental de las personas.

Paralelamente, la planificación urbana debería estar a la vanguardia con el uso de tecnologías digitales modernas, no abrazarlas por el mero hecho de hacerlo, sino porque, como profesión – y campo de investigación científica-, se debe abrir camino hacia estas nuevas formas, como indica Hudson-Smith & Shakeri en su editorial para "Urban Planning". Estas soluciones cambian la relación entre planificadores y los datos, abriendo nuevas oportunidades para la toma de decisiones objetivas y al diseño participativo basado análisis cuantitativos. Por lo tanto, producto de la transformación digital, los enfoques modernos para el diseño urbano tienden a ser más comunicativos y participativos. El uso de estas herramientas para simular escenarios urbanos basados en percepciones ciudadanas es una aproximación novedosa, más aún si se incorporan modelos basados en agentes (ABM). Este método ya ha sido aceptado como válido en la experimentación con sociedades artificiales y está siendo utilizado por videojuegos de simulación de ciudades.

Simular con videojuegos motiva a comprender fenómenos complejos, permitiendo experimentar estrategias de diseño urbano, analizar impactos en cómo vive y responde a estos cambios una sociedad simulada, evaluando ex ante propuestas sostenibles que orienten soluciones a problemáticas ciudadanas reales. Por ahora, el serious gaming está en fases iniciales para comparar cuantitativamente escenarios virtuales, ya que, aún no utilizan datos en tiempo real a diferencia de gemelos virtuales y GIS basados en ABM. Aun así, estas últimas tecnologías también tienen desventajas y su mitigación implica abordar desafíos que garanticen una comunicación intersectorial, lo que implica un proceso a mediano y largo plazo, complejo de abordar y financiar en el Sur Global. Esto ofrece oportunidades para profundizar pruebas de concepto con videojuegos: evaluaciones de escenarios urbanos construidos de forma participativa, analizando el impacto de estos nuevos diseños, a partir de consulta ciudadana, en simuladores urbanos con soporte geográfico real. Con el uso científico de videojuegos de simulación urbana basados en ABM, profesionales e investigadores disminuirían incertidumbres en un corto plazo, volcando proyectos potenciales para evaluar su viabilidad e impactos sistémicos para la sociedad antes de ejecutarlos, sin la necesidad de software GIS y/o gemelos urbanos. Simular diseños urbanos percibidos y orientados a satisfacer necesidades reales, sin duda aportarían a un desarrollo urbano moderno y socialmente sostenible.

10 Doctor en Arquitectura y Urbanismo
Profesional investigador del Laboratorio de Economía Espacial
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0002-2305-4306
ealborno@ubiobio.cl

COLUMNAS DE OPINIÓN
IVÁN CARTES-SIADE, ANA ZAZO-MORATALLA
REVISTA URBANO Nº 50 / NOVIEMBRE 2024 - ABRIL 2025
PÁG. 123
ISSN 0717 - 3997 / 0718 - 3607

LA PLANIFICACIÓN DE LA RESILIENCIA ANTE INCENDIOS FORESTALES EN LA INTERFAZ URBANO-RURAL

DR. IVÁN CARTES 11, DRA. ANA ZAZO 12

En la región del Biobío, el 31 de diciembre 2011 se desató uno de los mayores incendios forestales nacionales y se propago exponencialmente en los primeros días del año 2012, con más de 1.000 damnificados, y 224 viviendas destruidas y se quemaron 28.000 ha de bosque nativo, con pérdidas materiales de más de 2.000 millones de pesos. En enero de 2024 se desató una ola de calor que provocó incendios en 6 regiones de Chile. La presidencia declaró estado de emergencia en Valparaíso y Marga-Marga, atendiendo la gravedad del desastre, con 132 víctimas fatales, 125 lesionados y 21.979 damnificados y/o afectados y 7.200 viviendas dañadas.

En un país en dónde la industria forestal es una de las mayores potencias económicas del país y en una región como la del Biobío, en donde la cifra total de plantaciones forestales se eleva al 26,42% de la superficie regional, resulta inminente que la planificación urbana incorpore esta dimensión para aumentar la resiliencia, principalmente en las áreas de interfaz urbano-rural.

En la actualidad, la matriz productiva forestal regula las plantaciones, pero no se hace cargo de generar áreas de mitigación en las áreas de proximidad a espacios urbanos. Por su parte, la planificación urbana, y en concreto el instrumento normativo que es el Plan Regulador Comunal, no tiene competencias fuera del límite urbano. Esto ha llegado a generar situaciones en las que la línea imaginaria del límite municipal se convierte en un borde entre dos realidades de alta densidad, sin un umbral o faja de transición entre ambos que permita reducir la vulnerabilidad ante incendios forestales.

Dado este escenario de desastres e impactos urbanos se desarrolló un programa denominado Plan de Resiliencia Urbana en la Interfaz Rural (PRUIR) con el Gobierno Regional del Biobío durante el periodo 2017-2018 que permitió extraer algunas conclusiones que debieran ser incorporadas a la planificación urbana para aumentar la resiliencia urbana. En ese sentido los resultados apuntaron a que las ciudades son menos vulnerables ante incendios forestales cuando son compactas, tienen sus límites definidos, tienen sus infraestructuras críticas lejos del borde urbano, poseen cuerpos de agua y vías de evacuación, existe un plan de prevención conocido por la población y cuando existe una adecuada interfaz urbano-rural diseñada como cortafuego en función de la pendiente.

Debido a la incapacidad de la planificación de regular aquello que se encuentra fuera del límite urbano, una de las soluciones identificadas pasaba por la posibilidad de ampliar los límites urbanos en aquellos ámbitos en los que la urbanización llega al borde o donde existen infraestructuras críticas, para gestionar una nueva franja urbana verde de amortiguación, otra alternativa es que el Plan Regional de Ordenamiento Territorial (PROT) se haga cargo de identificar esta amenaza en áreas urbanas. En la actualidad, se encuentra en debate las futuras competencias de SERNAFOR y sus potenciales acciones en materia planes de manejo que puedan aplicarse a las franjas urbano-rurales para la mitigación de los riesgos de incendios forestales. Sin embargo, estos planes deben entenderse como complementos y no como sustitutos de las necesarias medidas de diseño y regulación que desde la planificación urbana y territorial deben asumirse como reto para reducir la vulnerabilidad urbana.

11 Doctor en Urbanismo
Director del Departamento de planificación y diseño urbano, Facultad de Arquitectura, Construcción y Diseño
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0003-3911-2221
icartes@ubiobio.cl

12 Doctora en Sostenibilidad Urbana
Editora Revista Urbano.
Universidad del Bío-Bío, Concepción, Chile.
https://orcid.org/0000-0003-1912-9448
azazo@ubiobio.cl