

## Research Article

# Redefining borders in the contested territory between San Pedro and San Andres Cholula

Ruben Garnica-Monroy<sup>1</sup>

1. School of Architecture Art and Design, Tec de Monterrey, Monterrey, Mexico

In Mexico's fourth largest metropolitan area, Puebla, two towns have disputed their political and social boundaries since pre-Columbian times: San Pedro Cholula and San Andres Cholula. For the last four decades, the urban landscape and the inhabitant's daily lives have changed rapidly for these municipalities, and consequently, some boundaries might have changed also. Still, San Pedro is the traditional town, preserving its cultural heritage, whilst San Andres is synonymous with modern high-end real estate development.

This article focuses on the definition of the new borders of these two municipalities and its impact on local inhabitants. First, the concept of borders is defined to then analyse the existing socio-spatial characteristics, and urban policies, in both municipalities. A combination of geospatial data, official documents, urban codes, and news reports helped to identify and understand the diversity of these borders, their effects in San Pedro and San Andres Cholula, and the consequences for their residents. By mapping and overlaying these results, critical areas with significant impact for both territories were determined.

Finally, this article establishes the identified borders as strategic tools for the urban design and planning of a community.

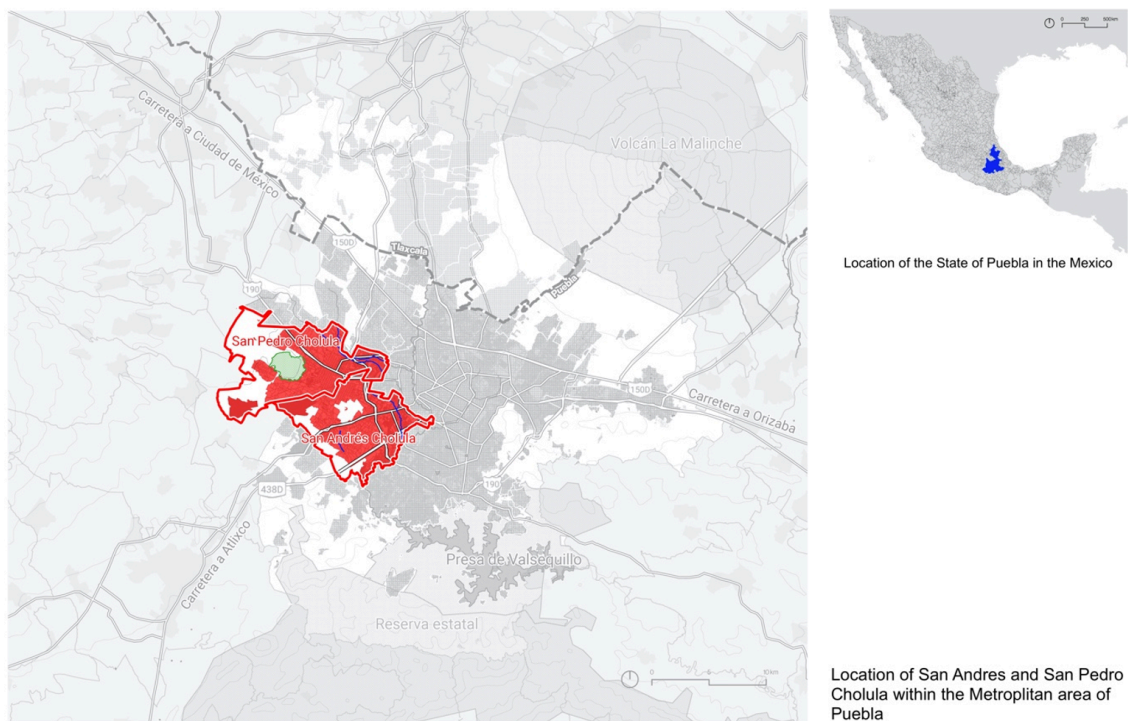
Corresponding author: Ruben Garnica-Monroy, [rumonroy@tec.mx](mailto:rumonroy@tec.mx)

## The contested territory of Cholula

San Pedro Cholula and San Andres Cholula are two of the most important municipalities of the Metropolitan Area of Puebla - Tlaxcala (Mexico's fourth largest city, with almost three million

inhabitants in 39 municipalities) due to their proximity to the central urban area of Puebla (see Figure 1). The Cholulas<sup>1</sup> function as the western border of the metropolitan area of Puebla. It is their administrative territory which works as the threshold between the urban / built and the rural. Both town centres occupy a small part of each municipality, since most of the territory is composed of other smaller towns with their own cultures, community centres, traditions, and festivities.

In the 1990s, the city of Puebla began its transformation from a textile city into an automotive industry city. These changes implied that the city began growing in population but mostly, in land area<sup>2</sup>. As often happens when this type of growth takes place, nearby smaller towns and villages were absorbed, thereby radically changing the urban landscape and the daily lives of local inhabitants.



**Figure 1.** Location of San Pedro Cholula and San Andres Cholula in the Metropolitan Area of Puebla - Tlaxcala. The darker grey represents the urban / built area in the territory. Map by Gabriela Preisser Roca & Youngjin Yoo.

In the case of the Cholulas, this phenomena is older than the above-mentioned background. This dates to the establishment of two important pre-Hispanic groups in the area: the Olmec - Xicalancas and later the Toltec - Chichimecs. The latter were under the domination of the former. With the

passing of time, the Toltec – Chichimecs grew stronger until they defeated the Olmec – Xicalancas, who took refuge south of the Tlachihualtepetl pyramid, where they were able to preserve their identity.

In 1519, after the conquest, to manage the territory, San Pedro (then called San Gabriel) was granted the category of city, integrating San Andres in this denomination, although both cultures continued to maintain their differences (Bouchan Gómez & Sandoval Xiqui, 2015, p. 26). Therefore, two independent convents were established and the gateway to the Plaza de la Concordia was built in 1573, which was the first visual border between the two municipalities. Later, with the secularisation that took place between 1640 – 1641, San Andres separated from the city of San Pedro to form an independent municipality. However, San Pedro and San Andres remained small, but dependent socially and economically (being agriculture their most important activity), because the former included most of the urban, religious, and commercial activities, whilst the latter had most of the agricultural space to work.

Another two events took place between 1985 and 1994 that had a significant impact on the Cholulas. In 1985, an “earthquake compelled migratory movement from Mexico City to surrounding mid-size cities triggering changes in their socio-economic structure and causing spatial expansion of their territories” (Gutiérrez Juárez et al., 2022, p. 1). This started to change Cholulas’ rural landscape into an important educational, economic, touristic, and residential zone. The second event, in 1992, had a more serious impact on the territory. There was a big shift in land tenure regulations, especially in the *ejido*<sup>3</sup>, because the owners of this communal agricultural land were given the possibility to sell it. Before these legal changes were made most of the rural areas in Mexico – and of course the Cholulas were not an exception – were under a regime of land tenure. After 1994, great extensions of the agricultural land surrounding the cities became available for real-estate developer and local authorities for a very low price. In the case of the Cholulas, the changes happened really fast: San Andres, where most of the land was available, developed a very ambitious urban development plan called *Angelópolis plus-plan*, supported by the authorities and executed by real-estate developers, with new areas for high-end services and residential neighbourhoods. A “piece of a cosmopolitan global city”, as it has been referred to (Gutiérrez Juárez et al., 2022, p. 2). San Pedro’s urban plan was completely different. It preserved the urban and cultural landscape that gave it its identity.

Nonetheless, despite the political-administrative division and the apparent contrasting urban landscape, neither San Pedro nor San Andres seem different or separated in the perception of their

everyday inhabitants and visitors. This is mainly due to the morphological continuity of the urban grid, and the big distance – 7.3 km in straight line – between the historical Cholula (urban area of and around San Pedro) and the neoliberal Cholula (mostly along the Atlixcayotl highway that connects Puebla with Atlixco<sup>4</sup>).

Besides the political-administrative division of the Cholulas, there are very subtle divisions in the territory that create boundaries in the cultural landscape. There are eighteen *barrios*<sup>5</sup> in the Cholulas determined by the “areas of influence” of the most important churches. Therefore, it was considered that by looking at some demographics and infrastructural differences and similarities in the *barrios* of both municipalities, as well as the municipal differences, especially regarding the public policies and urban planning, it would be easier to identify some significant borders.

## **Borders and boundaries: meaning and significance**

Before looking closely at these *barrios* and how we could redefine them, we had to have a clear understanding of what a boundary is. This section will briefly define the concept and the properties considered to identify borders in the Cholulas’ territory.

As mentioned in the first paragraphs of this text, the Cholulas are clear evidence of the dichotomical condition of the territory. Broadly speaking, it can be seen in two different ways: 1) the land use is either agricultural or residential or 2) it is a piece of a global city with contemporary high-rise buildings and contemporary services, where the car is the main mode of transportation, or a city with a huge cultural heritage to be preserved, with more traditional infrastructure, where the people can move using bicycles or walking. But what interests us are the subtle differences of the *barrios*, that characterize the area within the administrative borders of the two municipalities and give them their own unique character. or characteristics that take place within the borders that provoke uniqueness in the territory.

There is no way we can separate the socio-cultural concept of boundaries from the geographical spheres, therefore, the boundaries are socio-spatial devices to recognize its uniqueness. As Vis (2018) proposes, conceptualising these *devices*, we are able to connect the human interaction (the social sphere) with the built environment and observe it as mapped data, to then, converted into what we will understand as the *built boundaries*, providing “intelligibility, habitability and a sense of

(biographical) familiarity through our participation in their continued constitution and development” (p. 106).

As architects, we consider that the territory is the instrument that serves to make visible and tangible the social structures, as for example Hillier & Hanson (1984) and Sanchez Ayala (2015) affirm. To visualise and understand the territory it is necessary to identify the limits, borders, and boundaries. If “location within a territory determines belonging or membership to a group” (Sacks in Sánchez Ayala, 2015, p. 176) therefore, to understand any fragment of the territory, we need to have clarity about its boundaries and its relation to other parts of the territory as well as if one is inside or outside of it (Sánchez Ayala, 2015).

A very important notion Sanchez Ayala (2015, p. 176) notes is the difference between the concepts border and boundary, which are very close terms. He says that the difference relies on the scale. Whilst the boundary can be understood as the dividing line, the border is the immediate region contiguous to the boundary. In a more philosophical / phenomenological perspective (Smith & Varzi, 2000), the boundary could be also defined as the *bona fide boundary* because it refers to the physical boundary. The border is the *fiat boundary* because it is induced through human demarcation, a product of physical activities. In a methodological sense, the boundary helps us to define in a more precise way the analytical unit in the territory, whereas the border is the area where the observable information i.e., the physical properties, and spatial data is (Vis, 2018, p. 117).

This study will be looking at both types of boundaries in San Pedro and San Andres: the *bona fide* boundaries<sup>6</sup> will help us to analyse the territory to find the *fiat* boundaries, which were the ones this research is most interested because of it could be useful to develop research, design, planning techniques to identify, observe, and observe the possible borders and boundaries a community lives in.

We confirm the idea that a border is a fluid concept due to social, spatial, and temporary conditions, as Jones proposes (in Vis, 2018, p. 105), and we can affirm that the physical manifestations of the boundaries might be transformed, the rationale will remain. The border can defined as a spatial division due to the individual or collective value attached, based on the ideology and social conscience. Therefore, its significance takes place in the moment in which it represents an individual or collective ideology. We observe that time and ideological and social changes bring about constant changes to the borders, both in the physical manifestation and in the function or meaning, but the idea and the divisive influence they have on people's behaviour remains despite their apparent evolution. Another

feature that reinforces the idea of fluidity is the permeability and flexibility of the *bona fide* boundary, depending on legal, geographical, historical, economic, and ideological factors (Blake, 2005).

To be able to distinguish between the boundaries and borders, it was also considered three conditions for this research: dichotomy, overlapping and subjectivity.

We consider the boundary as the element that symbolizes the dichotomic condition of the territory and the society that inhabits it. Each border has qualities or characteristics that are more significant than others, but always are having conflicts with the other, that is, the dichotomous element, in a tangible or intangible way, and this produce disruptive dynamics in the territory.

Boundaries and borders do not have an intrinsic meaning but meanings are assigned to them by each individual or a society living in or nearby the territory. This can result in the generation of more barriers, e.g. gender-wise, racial, economical, or religious, and in some cases, like the intersectionality, in their overlapping. Thus, both the physical and ideological conditions assigned to boundaries and borders produce a chain that makes them even more complex.

To better understand the concept of overlapping, we must address the fact that sometimes borders are not easily recognisable at first glance. A border is understood as a barrier that derives from social, cultural, political, or economic ideologies. Its manifestations can evolve to encompass different domains, such as cultural, social, political, psychological, economic, to name a few. By recognising and understanding the complexity of ideologically derived (intangible) and physical (tangible) borders, they add to what was initially identified as an physical or political-administrative boundary. Resulting in an extensive number of boundaries, it is in this way that a more complex and complete picture emerges of how the overlapping borders relate to each other and how they operate.

Although the effects of the boundaries and borders are either subtle, e.g. men-only spaces, or very evident, like a church or a gated community, it is not possible to deny the fact that there is a social imaginary <sup>7</sup>that naturally binds visions and ideologies in the community, as Aguilera-Martinez and Sarmiento-Valdes (2019) propose.

However, within this social imaginary there are individual nuances that provide a sense of identity. The personal thoughts and experiences are influenced by the social imaginary, plus the individual's experience and interpretation of each one's particular social, cultural and physical context. This leads to the understanding that when observing and living on the borders, the consequences they generate

affect society in very different ways, varying from person to person or from social group to social group.

Trying to make an absolute conceptualisation of the border or the boundary and to perfectly portray the inhabitants' behaviour would not only be an idle effort, but would be practically impossible due to the changing nature of the border and its content, and possibly from the boundary. The purpose of describing these characteristics here, is to facilitate the identification of borders and boundaries and to be able to implement appropriate design or planning strategies when it is necessary to intervene the space to improve the daily lives of local inhabitants.

## **Critical borders in Cholula**

To be able to identify the existing borders in both San Pedro and San Andres Cholula, we decided to look at them through two “lenses”: the provision of basic urban services to the population, especially vulnerable populations, and the application of public policies in each of the municipalities. We mapped<sup>8</sup> each of the observed factors to create what we called “critical polygons” maps. Then we combined the maps and verified our findings with visits to the studied area. We then analysed the content of each of the critical polygons (as a border), and matched the areas with the *barrios* they encompass, and thanks to the analysis carried out previously, we were able to make a diagnosis of each critical polygon observed.

This diagnosis helps us to understand how a urban design or planning intervention would have a significant -positive or negative- impact on a system of interdependent variables that generate borders in the area. It also serves as a guide to determine the type of intervention could be made in the critical polygon in question by the community, authorities or other type of organizations (public or private).

### ***The socio-spatial phenomenon***

For this part, we began mapping (at a block level) the available information from the National Institute of Geography and Statistics - INEGI -: the 2020 Census' (INEGI, 2021b), and the cartography (INEGI, 2021a). Then, we decided to look at particular factors that might define the quality of life and the greater or lesser amount of possibilities to achieve individual goals of the inhabitants. These factors are “spatially represented” by specific services, infrastructure, and modes of transportation,

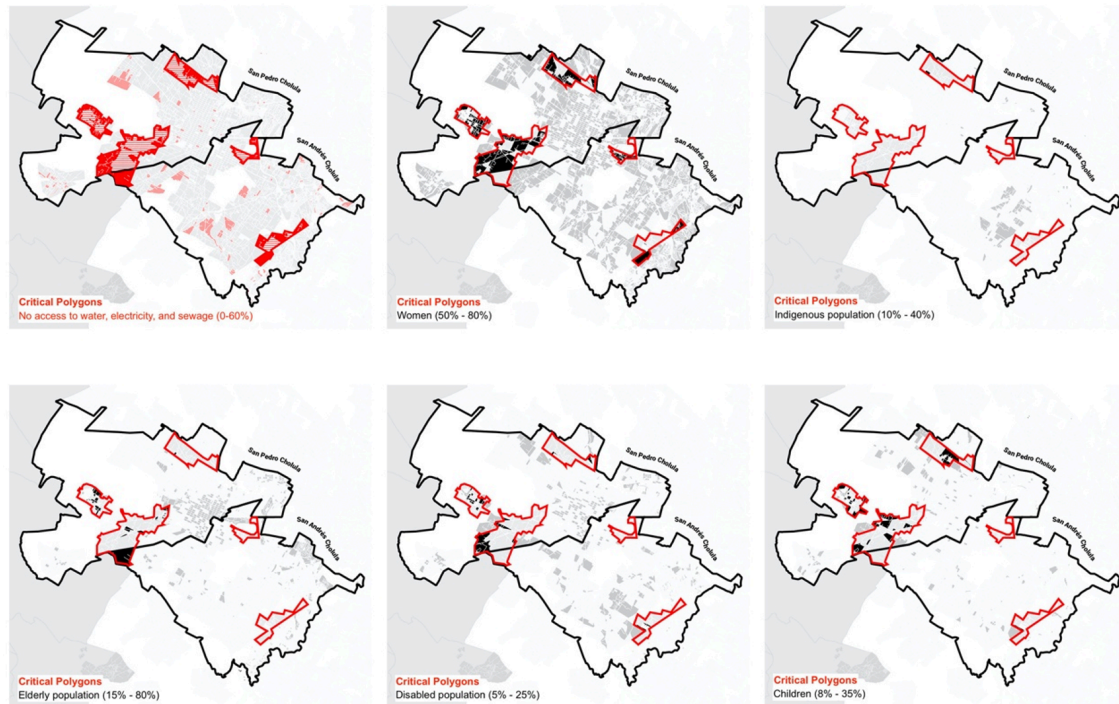
which combined with demographic data, observing the vulnerable population, i.e., children, women, and indigenous people.

All data observed is the one that is used for the Index of Social Risk, calculated by the National Council for the Evaluation of Social Policy - CONEVAL -. The main indicators are divided into four areas: a) Basic services in the house, e.g., availability of: drinking water, sewage, and electricity; b) Access to basic public services, e.g. education / illiteracy, and access to public health facilities; c) Public infrastructure, e.g. blocks without sidewalks or ramps; d) Access to public transportation or cyclist infrastructure (CONEVAL, n.d.).

After looking at these variables, we draw polygons where there was no or almost no access to these services<sup>9</sup> so we could identify “hotspots” or “desert areas”. Then we did an overlap to see if they coincide with the presence of the vulnerable population (see Figures 2, 3 & 4). We obtained what we called a “unified critical map” (see Figure 6) for the two municipalities of Cholula, which helped us to observe the tendency of the borders to function as complex systems manifesting themselves in different aspects of the inhabitant’s everyday life.

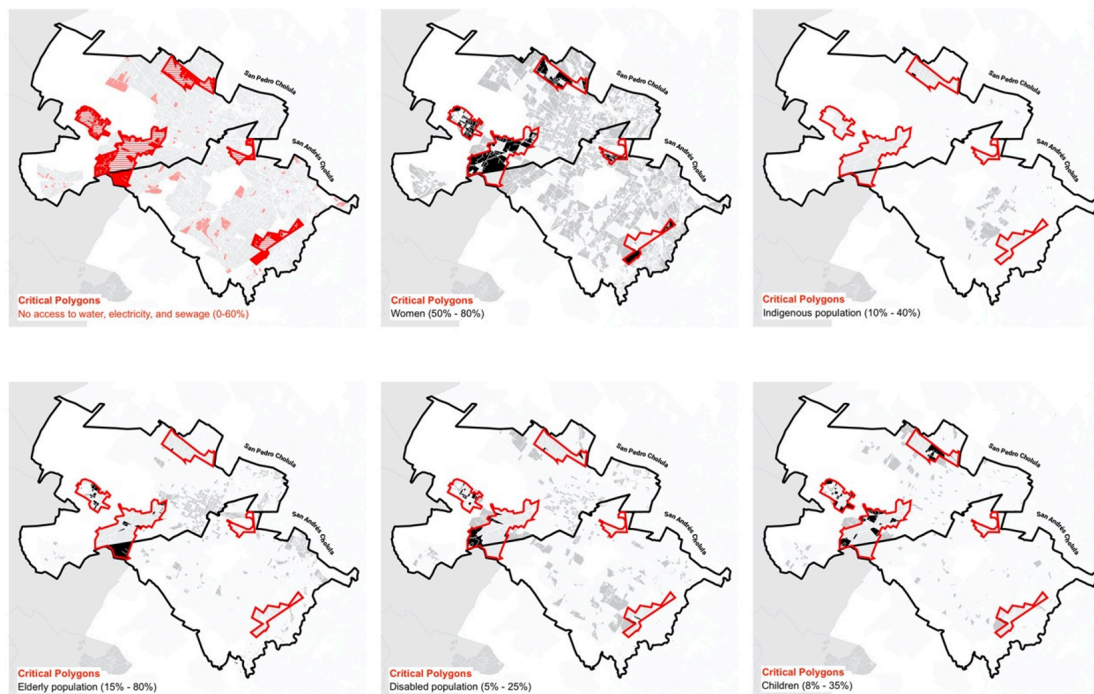
Our results, variable per variable, are the following. In terms of a lack of services, we identified five borders in our study area, being the largest and most critical in the west part of both municipalities, where most of the vulnerable populations live. The barrios are San Gregorio Zacapecpan and San Luis Tehiloyocan. These are followed by a polygon in the north part of San Pedro, in San Gabriel Ometoxtla





**Figure 2.** Set of maps showing the relationship between lack of access to services and vulnerable populations. Maps by Marisol Gala López, Rubén A González Hernández, and Luisa Fernanda Medina Martínez.

Regarding the lack of infrastructure, we mapped the blocks that do not have access to three basic services: basic education, a health-care centre, and food markets. The results are obvious for towns like San Pedro and San Andres: the further the population lives from the centre, the lesser the access to these services (see Figure 3). Unfortunately, the polygons are significantly larger than the ones related to services, but we could identify that once more the San Gregorio Zacapecpan and San Luis Tehiloyocan's polygon is the largest, followed by San Antonio Cacalotepec, located in the southern part of San Andres and very close to the area where high-rise buildings are located along the Atlixcayotl highway.

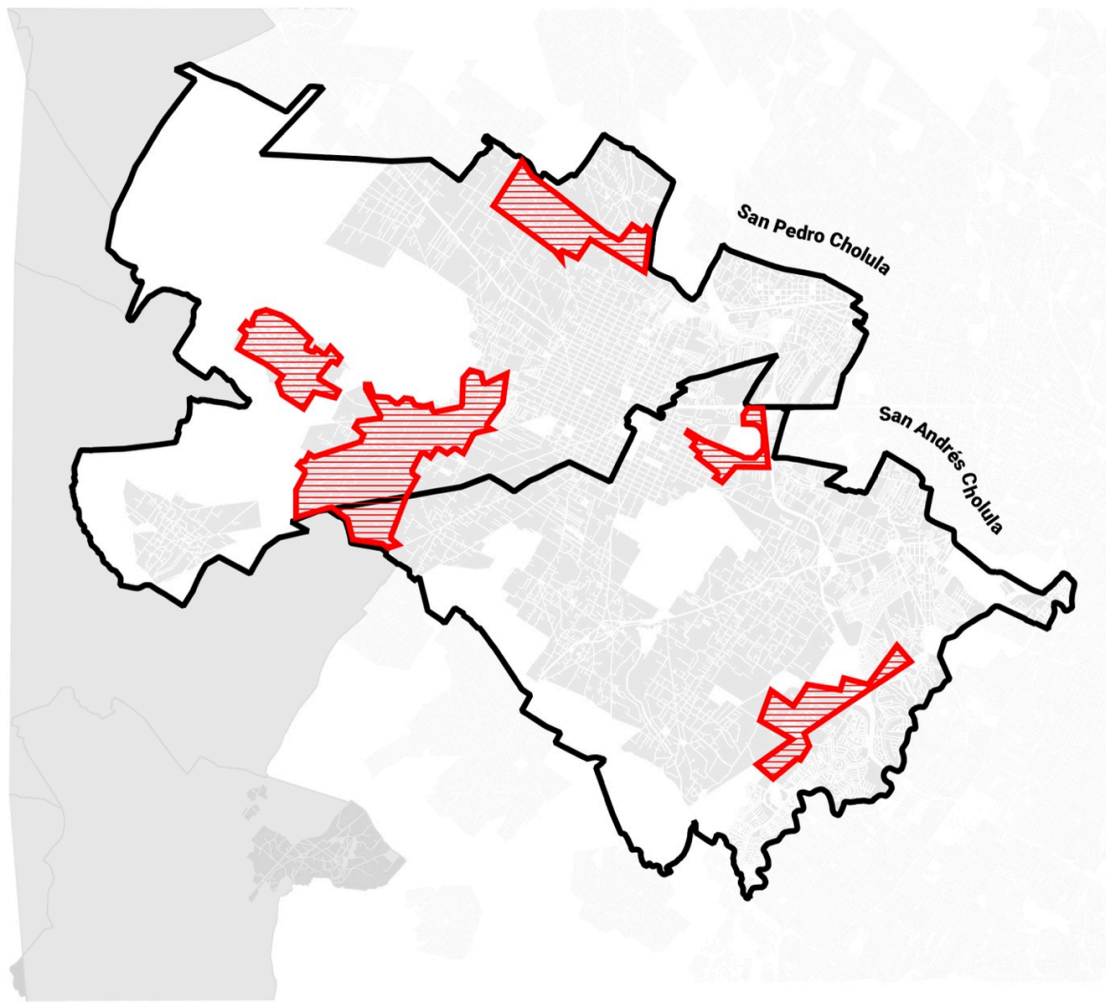


**Figure 3.** Set of maps showing the relationship between lack of infrastructure and vulnerable populations.

Maps by Marisol Gala López, Rubén A González Hernández, and Luisa Fernanda Medina Martínez.

When we looked at the households with access to public transportation and bicycle lanes, we noticed that only the centre of San Pedro has access to these services. If we add to this condition the absence of built sidewalks and ramps for wheelchair users, the mobility situation gets even worse all around the territory.

Finally, when the “unified critical map” was created (see Figure 4), we were able to identify new borders within our territory where there is no access to basic urban services, infrastructure and transportation, a strong presence of vulnerable population. Five critical polygons and *barrios* were identified, three in San Pedro: San Gabriel Ometoxtila, San Francisco Coapa, and Santa María Acuexcomac, one in San Andrés: San Antonio Cacalotepec, and the largest, which is in both municipalities and merges two *barrios*: San Gregorio Zacapecpan and San Luis Tehiloyocan.



**Figure 4.** Unified critical map for the socio-territorial conditions. Map by Gabriela Preisser Roca & Youngjin Yoo.

### *Public policies*

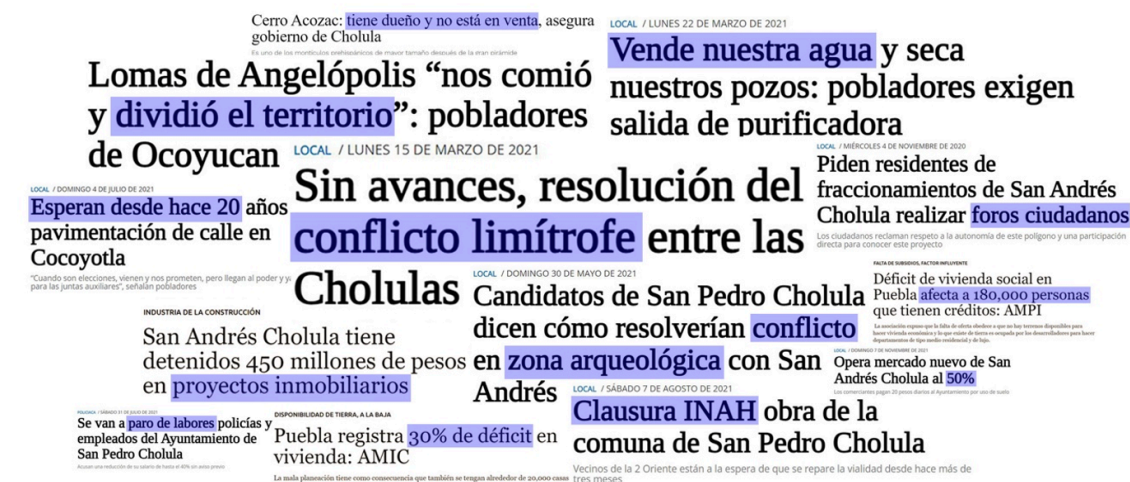
It must be understood that policies are present in every second of a society's life. Moreover, policies have a direct relationship and impact on socio-territorial issues, e.g. a car-oriented mobility policy has a spatial impact on the urban fabric because streets will have to have the capacity to move a determined number of cars moving through it, favouring those who own or move by car, while other types of mobility (pedestrian, wheelchairs, bicycle lanes, and transit) could be not considered in the street design, affecting to the population that prefer or need to move using these modes.

The method used for this section, where we analyzed the influence of public policies on the manifestation of borders, was divided into two: the first was to research news, articles and opinions of the citizens of both Cholulas, and the second was to review the Municipal Urban Development Plans of San Andres and San Pedro, due to the non-existence of a metropolitan authority or plan<sup>10</sup>. The purpose of this revision was to get a broad picture of what might be happening in terms of governance, and what the citizens' opinion.

The news items were collected from various digital newspapers, in search of different opinions and positions to have a picture as complete as possible. After collecting the news items, a filter was created to keep those with recent dates and topics that had a relevant impact for this research within the municipalities, such as public works, disagreements between the population and the local government, the relationship of transnational companies with the municipality, and more.

For the second part of this section, the municipal development plans of both municipalities were reviewed. They were reviewed with an emphasis on the prototypes, strategies, and objectives<sup>11</sup> in different areas such as public security, environmental and urban development and economic development, among others.

When analysing the above-mentioned news items, a repetition of some themes was noted, such as the population's dissatisfaction with access to water, the privatisation of land and natural resources, increasing insecurity, and boundary conflicts between the two municipalities (see Figure 5).



**Figure 5.** Collage of examples of headlines of newspapers showing different types of conflicts in both municipalities. Image by Mariana Gutiérrez Terán & J. Iván Sánchez León.

After observing the repetition of topics in the news items, they were organised into three groups or categories: lack of cooperation between municipalities, privatisation of resources, and inconsistency between the development plan and reality. In this way, the three most relevant political boundaries within San Andres and San Pedro Cholula could be identified. In the following paragraphs, each of these three boundaries and their spatial and intangible effects will be shown in detail.

#### a. Lack of cooperation

Due to the contiguity of the urban area and the lack of signage or landmarks, the administrative boundary between the two municipalities is quite blurred in the territory, which causes the perpetuation of political and historical conflicts between municipalities and has, therefore generated an attitude of non-collaboration and competition between them. Observing this, we identified this area as the first border.

The most relevant effects of this border within the municipalities are:

- The inhabitants are always confused in which regulations to follow, because for them it is not obvious the political boundary of each municipality. This effect is even stronger around the polygon of the Great Pyramid of Cholula, as well as the areas of San Luis Tehuiloyocan and Lázaro Cárdenas, belonging to San Andres, while on the San Pedro side, the *barrios* of Jesús and La Magdalena.
- The inhabitants of the neighbourhoods located within these confusing limits between both municipalities do not know which municipality to go to solve problems, generating conflicts between what and who should be in charge, especially when related to urban services and infrastructure.
- Unfinished or unattended urban infrastructure works, such as some streets in both municipalities that are not refurbished due to conflicts between the INAH<sup>12</sup> and the municipality, have a direct effect in some boundaries, limiting the mobility of the inhabitants, and
- The boundaries between the two municipalities and the state capital, Puebla de Zaragoza, also tend to be not clear, making the regulation of where intervention can take place difficult to clarify. Workers from the municipality of Puebla end up working in one of the Cholulas' and vice versa, causing problems with the authorities of each municipality, like to supplant responsibilities or creating a void for which no one takes responsibility for.

Each of these points generate small borders that superimposed one on top of the other, reflect



each other spatially and thus creating a border that restricts the desired social development and economic growth of both Cholulas.

b. Privatisation of land and natural resources

The second border encountered is related to the privatisation of land and water in the municipalities. There is a long-standing constant in terms of the housing deficit, caused by the privatisation of *ejidos*, because most of the land has been acquired by real-estate developers to build new high-end gated communities as well as shopping centres, due to their location. In addition, there is the problem of the lack of water for the people of both municipalities, partly caused by the extraction of this resource from the local aquifers by real-estate developers and some transnational companies (mostly related to the business of selling bottled water or producing beverages), leaving most of the population without water supply.

More clearly, these spatial and intangible effects are listed:

- High-end housing and shopping malls occupy the well-located areas acquired from the *ejidos*, causing the displacement of the low-income population to parts of the city farther away from good urban infrastructure and services.
- The Acozac hill and a public park area within the municipality of San Pedro are closed to the public, because since 2020 there is a legal dispute between the municipality and a person who reclaimed them as his property. Governments have neglected the importance of what once helped to form both Cholulas, diminished job opportunities and have too many regulations in the face of proposals that the inhabitants ask for.

c. Inconsistency between the Urban Development plans and reality.

Both municipal urban development plans were reviewed and compared with the news items previously studied. While revising these, some of our questions were solved regarding what was happening and whether the objectives set out in the plans had been met.

After investigating what was happening, a comparative table was made for each of the Development Plans. Each Plan is divided into the following axes: public safety and value, territorial development, and environment and economic development. These axes are then divided into “prototypes” with a specific approach and strategies to meet the predetermined objective of each one. Below are the comparative tables 1a and 1b, which illustrate the results of the Development Plans and contrast the observed axes that with the reality in both municipalities.

Within the comparative table it can be seen how each of the observed differences between what

the Development Plan states and reality relates to the main border. Similarly, it is possible to note the existence of a dichotomy that is formed in some cases, such as the issue of water privatisation, where the authority is capable to guarantee the provision of water for the inhabitants nor the industry. As mentioned in the comparative table for the municipality of San Pedro, water and sanitation should have been guaranteed for the entire population, although the reality is different. On the one hand, the inhabitants protest to demand water, and on the other hand, there are transnational companies with significant profits.

Municipal Development Plan	Reality
Axis 1. 1.10. Public Safety. Promote peaceful and inclusive societies for sustainable development, facilitate access to justice for everybody, and build effective and inclusive accountable institutions at all levels.	According to the State Prosecutor's Office, San Pedro's crime rate has been increasing, with an average of 65 crimes per day so far in 2021. San Pedro is one of the municipalities in the state with the highest crime rate.
Axis 4. C4.5 Urban planning and development. Making cities and human settlements inclusive, safe, resilient and sustainable.	In San Matías Cocoyotla, still waiting for the main avenue to be fixed, nowadays it is muddy and waterlogged. The City Council has informed several times that this avenue was already favoured with a paving project and it has never happened.
Axis 3. 3.1. Public Services. Ensure the availability and sustainable water management and sanitation for all.	Residents protested for the permanent closure of Bonafont because they claim that their wells are drying up. The law has not been applied to guarantee that the citizens of the municipality have water and that the transnational companies do not run out of resources.
Axis 1.2 Strengthening the democratic culture 1.2.4 Strengthen government transparency and openness, as a means to enforce their rights and strengthen citizenship.	The budget destined for advertising was diverted to ghost companies and contracts that were not executed. This generates distrust among citizens and widens the gap between the government and the community.

**Table 1a.** Comparative table between San Pedro Cholula's municipality's development plan and reality.

Municipal Development Plan	Reality
Axis 4. Prototype 15. Public Safety with value, which has as a particular strategy the implementation of prevention, surveillance and immediate response actions of police intelligence.	San Andres registered the worst insecurity rate in 2021 in the metropolitan area. It started 2021 as the municipality in the metropolitan area with the highest crime rate per 10,000 inhabitants.
Axis 1. Prototype 8. Improve the infrastructure, equipment and connectivity conditions of our human settlements, through the recognition of modern and traditional urbanisation, without detriment to identity, for the sustainable development of communities.	Unfinished public projects that are delivered as finished. A specific case is the Municipal Market in San Andres Cholula. A work with a federal budget that was awarded without a bidding process with a budget of 35 million pesos.
Axis 5. Prototype 19. To guarantee the health and strength of local public finances, as well as the responsible, honest and transparent use of public resources.	There are irregularities in the official advertising expenditure of the municipality. Official expenses within the official transparency page are incomplete from 2018 to 2021. Having more than 3 million pesos undeclared.
Axis 4. Prototype 14. Implement mechanisms of surveillance and observance of procedures, regulations and acts of municipal authorities that guarantee respect for individual and collective human rights.	The illegal way of extracting water by transnational companies was growing to the point that the inhabitants protested to stop and to request an adjustment in the Municipal Regulation for Water Safety.

**Table 1b.** Comparative table between San Andres Cholula's municipality's development plan and reality.

**Table 1.** Comparative table between the urban development plans from San Pedro and San Andres and the reality according to news.

Finally, we set ourselves the task of spatialising these phenomena. The unified critical map for the political conditions' points include the privatisation of public spaces, the places where the border conflict is most evident and some areas where there are irregularities in terms of public works and infrastructure (Figure 6). A constant that we can observe is that most of these critical zones are in the



limits between municipalities; not only between the two Cholulas, but also with other municipalities such as Puebla at the east or Juan C. Bonilla in the north.

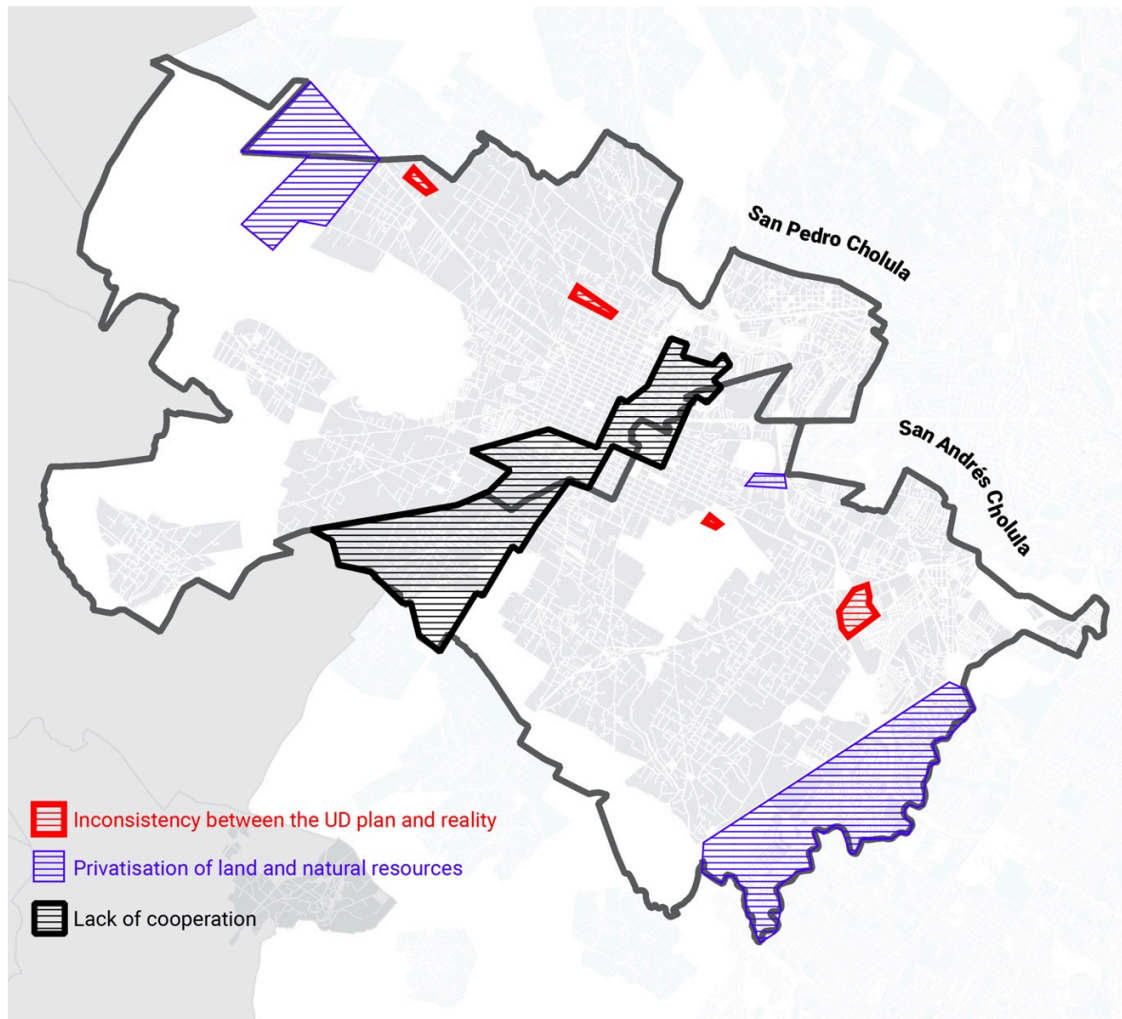


Figure 6. Unified critical map for the political conditions. Map by Gabriela Preisser Roca & Youngjin Yoo.

## The borders as a strategic planning tool

After doing all this spatial analysis, we looked at the possibility of an application of the concept of spatial justice in the context of the just city. This study understands the concept of spatial justices as “one in which there is a right to public space, a collective identity, mobility, accessibility and centrality, where access to the city is equal, diverse and democratic. One in which planning guarantees

equal access to basic needs such as housing, education and health services, security, and a decent urban environment.” (Feinstein in Valera Aldana, 2023, p. 25).

In this context, spatial justice must be understood as the complete development of every single inhabitant, despite unequal allocation of resources over space, over the idea of the fair distribution of benefits to mitigate disadvantages (Garnica-Monroy & Alvanides, 2019, p. 1348). We then, focused on Soja’s approach because it considers the spatial factor as an explanatory variable to ‘add new and interesting strengths and strategies to justice struggles of all kinds, and especially to the building of cohesive, lasting and innovative coalitions across divisive lines of class, race and gender’ (Soja, 2011, p. 262), and try to reduce certain inequalities and social segregation.

As stated in previous sections of this text, urban planners should consider the territory, and more precisely the location of borders and boundaries, as instruments that serves to make visible and tangible the social structures and understand the social logic of space. According to our research, it was possible to visualise in a clearer way the possible spatial injustices by identifying the borders using the socio-demographic characteristics of the inhabitants and comparing the regulations versus the reality of their application. When this represented on a map, it is possible for decision-makers and planners to delimit more precisely which people or socioeconomic groups are the most affected and how the identified borders can be removed.. And because of this removal, the expected result is an improvement of people’s living conditions.

In the very particular case of the “critical areas” in San Pedro and San Andres, we were able to identify some of the most important problems, and then, as urban planners, think of ways that these could be solved.

For the lack of infrastructure for non-motorised mobility over short distances, which mainly affects children, women and indigenous people in the neighbourhoods identified in the “critical maps”, we should think about the creation of spaces for ad-hoc mobility according to the needs of the inhabitants, such as wider sidewalks and wide bike lanes that suit tricycles (which are a common transportation vehicle in Mexico), as well as better planning for mixed land use and provision of basic urban services like school, clinics, and food markets, to help reduce travel distances.

For the lack of basic urban facilities, such as markets, basic education schools and health centres, one could think about co-designing with the inhabitants, alternative educational, health and economic systems that take advantage of the needs of the inhabitants and the particularities of a territory that is the threshold between the urban and the rural.

In the case of the deficient provision of drinking water, the government, residents of gated communities and neighbourhoods, and private initiative would have to work together in a co-management plan to achieve true governance of the vital liquid. The same to improve environmental conditions of the whole area of the Cholulas, Puebla, and surrounding municipalities.

We are completely aware that this study has limitations regarding the demographic analysis, the economic conditions of the inhabitants, the understanding of the cultural activities of each *barrio*, etc., so if someone wants to use it as a planning tool, we recommend that research should include ethnographic studies in-depth, a morphotypologic study to understand how the inhabitants shape their public and private spaces, and perceive their environmental and health conditions, as well as the real conditions in which they live and work (monitoring with data in long-term studies)..

We do not pretend to homogenise every condition of the territory and the inhabitants, but we are certain that these tools might help to create more just and sustainable communities.

## Acknowledgments

The author want to thank Azul Castañeda Prado and Agustin Solórzano with whom I co-taught the course “BORDES” and helped in the development of the research, as well as the class of Capstone Projects 2, who did most of the spatial analysis and helped to develop some of the ideas for this text: Nancy E Chavez Martinez, Andres Cruz Morales, Marisol Gala López, Rubén A González Hernández, Mariana Gutiérrez Terán, M Paola Lechuga Gómez, Renata Olivares Espinoza, Alfonso Preisser Cinta, Gabriela Preisser Roca, J Iván Sánchez León, Regina Suárez Varela, Carla Toranzo Carbajal, Youngjin Yoo, and especially Luisa Fernanda Medina Martínez who also helped me with the figures and tables.

Also, the Research Group “Sustainable Territorial Development” for their input during the process of this article.

## Footnotes

<sup>1</sup> When we refer to “the Cholulas” we are considering the two studied municipalities, even though there is a third one: Santa Isabel Cholula. From our experience, we know that San Pedro and San Andres are the most contested ones and Santa Isabel is the latest area that became a municipality and has the least population.

<sup>2</sup> According to SEDESOL (2011, p. 19), the Metropolitan Area of Puebla - Tlaxcala grew from 1980 to 2010, 2.46 times in population and 12.58 times in land area.

<sup>3</sup> For a broader comprehension on what an *ejido* is, you can read: Alegría, J. G. Z., & López, J. A. C. (2018). La Revolución de 1910 y el mito del ejido mexicano. *Alegatos*, 24(75), 497-522. Available at: <http://revistastmp.azc.uam.mx/alegatos/index.php/ra/article/view/345/334>.

<sup>4</sup> Atlixco is a small town, located 30 minutes away from Puebla. It is known as a week-end city, where people own vacation houses or do daytrips during weekends.

<sup>5</sup> We use the term *barrio*, which is the traditional term for neighbourhood. The term is closely related to faith and devotion; therefore, it signifies culture, traditions, and social organisation. There is a steward who takes care of a church for one year, organises the patronal feast and minor festivities, and administers the economic contributions of the community. San Pedro has ten barrios, and San Andres eight.

<sup>6</sup> From now on, we will refer to the *bona fide boundary* just as *boundary*, and *border* to the *fiat boundary*.

<sup>7</sup> Social imaginary “refers to a network of meanings, collectively shared, that each society uses to think about itself” (Castoriadis in Arruda 2020, p. 38)

<sup>8</sup> Processes and maps are described in more detail in the next sections of the chapter

<sup>9</sup> We decided that the range for our study would be from 0 to 60% of the houses that do not have access to the observed services.

<sup>10</sup> In Mexico, despite the official recognition of metropolitan areas, there is no legal authority nor legislation for these. Therefore, the municipalities that make up the metropolitan area do not have a legal obligation to address common problems or do common urban plans with other municipalities in the metropolitan area.

<sup>11</sup> These three terms are the ones used in the Urban Development Plans of both municipalities.

<sup>12</sup> INAH stands for National Institute of Anthropology and History. This national office is in charge of the preservation of the historical sites and buildings.

## References

- Aguilera-Martínez, F. A., & Sarmiento-Valdés, F. A. (2019). Concepto de borde, límite y frontera desde el espacio geográfico. In *El borde urbano como territorio complejo. Reflexiones para su ocupación* (pp. 31–56). Universidad Católica de Colombia. <https://publicaciones.ucatolica.edu.co/pub/media/hipertexto/pdf/el-borde-urbano-con.pdf>
- Arruda, Angela. (2020). Imaginario social, imagen y representación social. *Cultura y representaciones sociales*, 15(29), 37–62. Epub 07 de marzo de 2022. Recuperado en 06 de julio de 2023, de [http://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S2007-81102020000200037&lng=es&tlng=](http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-81102020000200037&lng=es&tlng=).
- Blake, G. (2005). Boundary permeability in perspective. In *Holding the line: Borders in a global world* (pp. 15–25). UBC Press.
- Bouchan Gómez, L., & Sandoval Xiqui, I. I. (2015). *Centro educativo kinder-primaria en la zona de Angelópolis* [Tesis de Licenciatura, BUAP]. <https://repositorioinstitucional.buap.mx/handle/20.500.12371/6178>
- CONEVAL. (n.d.). *Rezago Social* | CONEVAL. MEDICIÓN DE LA POBREZA. Retrieved 27 June 2021, from <https://www.coneval.org.mx/Medicion/IRS/Paginas/%C3%8Dndice-de-Rezago-social-2010.aspx>
- Garnica-Monroy, R., & Alvanides, S. (2019). Spatial segregation and urban form in Mexican cities. *Environment and Planning B: Urban Analytics and City Science*, 46(7), 1347–1361. <https://doi.org/10.1177/2399808319856629>
- Gutiérrez Juárez, E., Kurjenoja, A. K., Schumacher, M., Guizar Villalvazo, M., Gonzalez Meza, E., & Durán-Díaz, P. (2022). Neoliberal Urban Development vs. Rural Communities: Land Management Challenges in San Andrés Cholula, Mexico. *Land*, 11(7), 1058. <https://doi.org/10.3390/land11071058>
- Hillier, B., & Hanson, J. (1984). *The Social Logic of Space*. Cambridge University Press.
- INEGI. (2021a). *SCINCE 2020*. Descarga Masiva; Instituto Nacional de Estadística y Geografía. INEGI. <https://www.inegi.org.mx/app/descarga/default.html>
- INEGI. (2021b, March 16). *Censo de Población y Vivienda 2020*. Censo de Población y Vivienda 2020. <https://www.inegi.org.mx/programas/ccpv/2020/>
- Sánchez Ayala, L. (2015). De territorios, límites, bordes y fronteras: Una conceptualización para abordar conflictos sociales. *Revista de Estudios Sociales*, 53, 175–179. <https://doi.org/10.7440/res53.2015.14>

- SEDESOL. (2011). *La expansión de las ciudades 1980–2010*. SEDESOL.
- Smith, B., & Varzi, A. C. (2000). Fiat and Bona Fide Boundaries. *Philosophy and Phenomenological Research*, 60(2), 401–420. JSTOR. <https://doi.org/10.2307/2653492>
- Soja, E. W. (2011). Response to Kurt Iveson: Social or Spatial Justice? Marcuse and Soja on the Right to the City'. *City*, 15(2), 260–262.
- Valera Aldana, A. (2023). *Justicia espacial desde la perspectiva de accesibilidad en dos ciudades: León y Querétaro*. CEDUA / Colmex.
- Vis, B. N. (2018). *Cities made of boundaries: Mapping social life in urban form*. UCL Press.

## Declarations

**Funding:** No specific funding was received for this work.

**Potential competing interests:** No potential competing interests to declare.