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## **ERODED RESILIENCE, INFORMAL SETTLEMENTS PREDICTABLE URBAN GROWTH IMPLICATIONS FOR SELF-GOVERNANCE IN THE CONTEXT OF URBAN VIOLENCE IN MEDELLIN, COLOMBIA.**

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### **HIGHLIGHTS**

- Informal settlements urban growth follows predictive models.
- There are three identified stages of informal settlements development: Foundation, infill, and consolidation.
- Organizational capacity grows as population increases, however, fragmentation weakens collective action capacity.
- NSAA co-optation capacity increases as the neighborhood organizational capacity fragments.

### **ABSTRACT**

Scholars have vastly explored incremental growth of informal settlements as one of their defining features. Most of this work has focused on the family unit scale, concentrating on housing asset growth as related to the family historical narrative, legal status, social image, and financing. However, little has been explored about how this relates to the neighborhood scale and, more importantly, how the type of density growth impacts urban form, governance structures, and community social ties, which are essential elements for the development of resilient communities. Using semistructured interviews and historical mappings of informal settlements in Medellin, Colombia from the past four decades, this research maps the relationship between the urban growth of informal settlements and their impact on social networks. This research presents urban informality growth as following predictable patterns. It demonstrates that the exponential density growth found in these settlements, as they moved through the distinct phases of the predictive model, played a significant role in the fragmentation of social ties and co-optation by non-state Armed Actors, what I call eroded resilience. This finding raises important questions about the role of exponential density growth in connection with existing governance structures, not only in the context of urban informality but also in the context of global population growth.

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## 1. INTRODUCTION

The United Nations define informal settlements as “areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally; unplanned settlements and spaces where housing is not in compliance with current planning and building regulations” (United Nations, 1997). Physically, a defining feature of the informal settlements is their haphazard urban fabric. This condition, that some describe as random and organic, is paradoxically the result of a very constricted set of rules of urban development created as part of the process of land taking in the context of limited resources. In other words, the random nature of buildings of informal settlements is the result of the process of building a shelter in a limited amount of time and with low economic resources outside of current legal and regulatory framework. This process of building under such conditions leaves dwellers with limited options of land occupation. Decisions such as where to locate and how much land a family takes are very similar from case to case. These individual choices create a very recognizable fractal pattern that can be visualized from aerial images of the settlements. New research on the physical form of informal settlement focuses on mapping and forecasting the growth of these recognizable urban forms (Augustijn-Beckers, Flacke, & Retsios, 2011; Mayunga, Coleman, & Zhang, 2007; Patel, Crooks, & Koizumi, 2012). Population growth mirrors informal settlement building densification. This process of densification, goes through three distinctive phases of progressive increase in population and number of housing units: foundation, infill and consolidation. Previous research on informal settlements has failed to observe these density generated changes that impact social, economic and physical relationships within the settlement.

Collective action in land taking is a defining characteristic of an informal settlement. It is a key element necessary for successful land claiming efforts of informal communities. Over the lifespan of an informal settlement, collective action enables communities to reach agreements with state entities regarding provision of services (such as sewer, potable water, energy, communications, and trash collection). Regulation land claiming rights in the form of land tenure agreements and the provision of state programs like health, recreation and education is also facilitated through collective action.

The resilience of an informal settlement can be measured by the success in community organizing. This capacity of self-governance is essential to challenge threats to the community from both internal and external forces. Informal settlement communities are by definition, effective collective action organizations; they need to be so to exist. As such, if they grow exponentially, the theory would predict that this growth would be reflected also in the ability to use the surplus of membership to increase effective collective action.

However, the efforts of community action present challenges when occurring in the context of violence produced by Non-State Armed Actors (NSAA) within the communities. While the two phenomena of informal settlements and violent actors correlate, they do not imply causation. This coincidence reveals that informal areas are territories in which state institutions have less control and where para-state actors fill these vacuums of the state.

The presence of violence vis-à-vis Non-State Armed Actors (NSAA) in informal settlements in Latin America is a recurrent theme in the literature about violence in the Americas. In the Latin American case, these community governance structures are co-opted by violent para-state organizations such as gangs and criminal franchises (Arias, 2004). Horizontal studies about informal settlements in Rio de Janeiro find that over time a larger capacity of violent actors is detrimental to the development of favelas (Perlman, 2007, p. 228). However, these studies do not account for the important variable of densification change inherent in informal settlements as it relates to the process of self-governance and community action in the context of Non-State Armed Actors (NSAA).

This research focuses on answering the question: how does population change, as part of the growth of informal settlements, impact governance structures? A mixed method ethnographic approach provides insights about the evolution of community organizations in the context of urban informality and their relationships with the state and NSAA. This is presented alongside a quantitative mapping of urban growth, community organizations and NSAA's evolution in three informal communities in Medellin, Colombia from their beginnings around the 1970s to the present during the stages of informal development.

This research finds that in informal settlements, as communities densify, part of the process of urban consolidation and population arrival, the number of community organizations also grows. The densification process increases the number of services but challenges the overall community capacity for collective action. Alongside this process, NSAA follow a similar course: their number grows as the population expands and the varied number of groups creates space for violent competition and association with city and nation-wide non-state armed organizations. This inverse correlation of community governance and non-state organization capacity that is a result of the urban and population growth part of the process of informal settlement formation, facilitates the co-optation of the weakened self-governance structures within the informal settlement by non-state Armed Actors. This condition impedes the process of the community, collective action to claim rights to the state. At the same time, the increased capacity of control by NSAA, builds on the already contentious relationship between the state and informal settlement community. The resulting vacuum of governance then is occupied by these new violent para-states organizations. I call this inverse correlation between informal community capacity and NSAA by densification: eroded resilience.

Control of informal settlement communities by NSAA is not new. What this research adds to other studies is the role of population growth and urban densification in the inverse correlation of community governance and NSAA capacity. Here I find that at lower stages of the spectrum, when the self-governance structures of these informal settlements are robust and capable of contesting the state, they are also more capable of managing and negotiating the criminal organizations. This finding underscores the importance of building communities' self-governance capacity as a way to create resilience in a context of violence by NSAA.

## 2. POPULATION GROWTH IN THE CONTEXT OF GOVERNANCE VACUUM AND CONFLICT

Rhetorically, people often make tacit linkages between the spaces of urban informality ("slums"), crime, and violence. This occurs in academic circles—as exemplified by the common fact that when researchers seek to understand urban crime and violence, they tend to study urban informal spaces; slums, favelas, *barriadas*, *tugurios*, *comunas* (Angarita, Gallo, & Jiménez, 2008; Arias, 2006; Arias & Rodrigues, 2006; Aricapa, 2005; Blake, 2013; Estrada C. & Gómez V., 1992; Franco, 2004; Koonings & Veenstra, 2007; Moser, 2004; Sánchez, Díaz, & Formisano, 2003; Wilding P., 2010). This representation also occurs in the media regarding the ways conflict and crime are framed (Amar, 2003). In many cases, the word *favela* (in Rio de Janeiro) or *Comuna* (in Medellín) denotes a place of both poverty and violent conflict. Since the 1960s, and especially since the 1990s, academics strongly emphasize the importance of not criminalizing the inhabitants of informal settlements, that is, to not reduce its people to poverty, violence, and criminality (Perlman 1976a; Turner 1977; Amar 2003; Civico 2012). Today, beyond a historical context of criminalization of the poor since the burgeoning of urban slums in the 18th- and 19th-century cities, there is no clear understanding of why these 21st-century (informal) spaces are prone to this connection—both in the popular imagery and some cases, in actual practice—as in spaces in which the intersection of poverty and violence prevail.

It is clear that a direct correlation between conflict and informality does not inevitably exist (Muggah, 2012, p. viii). Living in an informal settlement does not predetermine violent conflict. The types of criminal activity that happen in these physical spaces are in some cases no different from those that occur in the planned spaces of the city. What is evident is that spaces of informality present challenges for official security actors (State) to assert and maintain their Westphalian monopoly of violence, a key feature of the foundation of the state, highlighted by Max Weber (Acemoglu, Robinson, & Santos, 2013), and thus the capacity to govern effectively. At the same time, informal settlements present advantages for NSAA to deploy and extort power and coercive force.

## 2.1 Growth of informal settlements

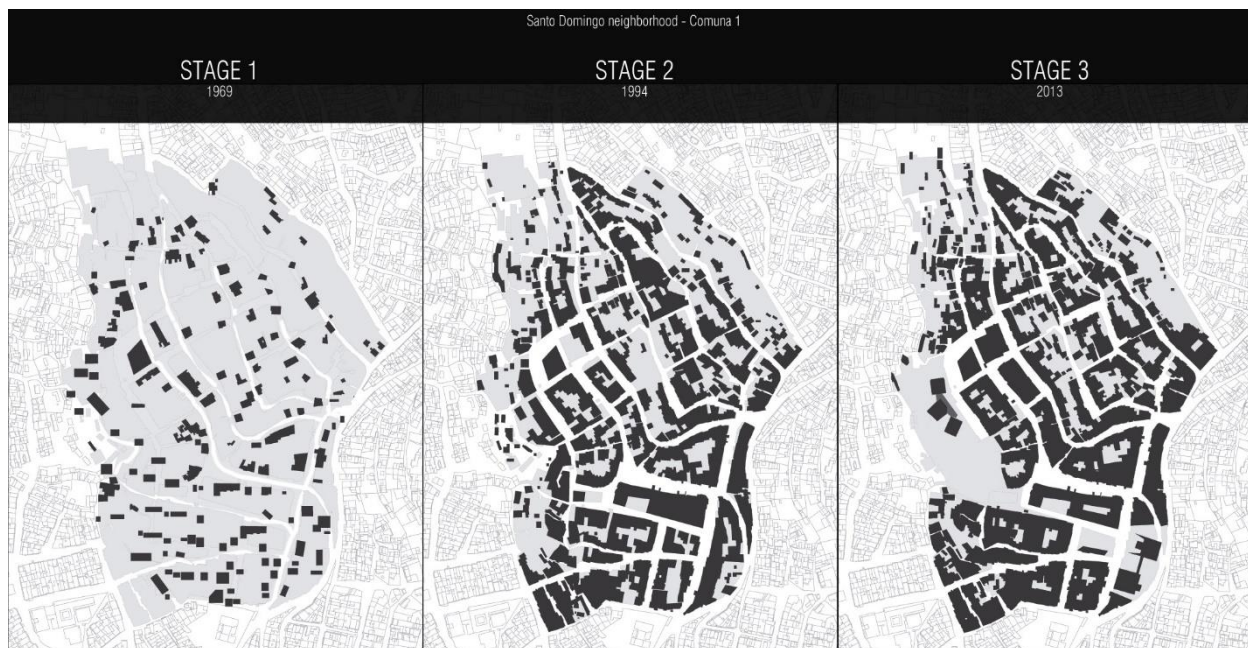
A staple theme in the literature on urban informality is the territories' constant state of construction (Caldeira, 2000; Caminos, Turner, & Steffian, 1969; Greene & Rojas, 2010; Holston, 1991; Swilling, Tavener-Smith, Keller, von der Heyde, & Wessels, 2013; Turner, 1977; Ward, 1976). This change happens across various dimensions: population size and characteristics, housing quantity, and quality, and infrastructure. The existing literature focuses on issues of the self-built quality of informal settlements and describes them as unfinished in nature, and its growth as incremental. It tells us little about how communities develop in the context of these constant changes. Literature in urban informality focuses on the social implications of the "marginal" urban poor (Perlman, 1976, 2010; Roy, 2005; Roy & AlSayyad, 2004; Soto & Instituto Libertad y Democracia, 1989). The sparse body of literature on the physical aspects of informal settlements focuses primarily on the housing units within these areas, rather than on the logic of the urban form (Ward, 2012; Williams, 2005).

An emerging body of work explores the nature of growth within informal settlements, tied to the development of new mapping tools (Augustijn-Beckers et al., 2011; Blaschke, Lang, & Hay, 2008; Hofmann, Strobl, Blaschke, & Kux, 2008; Livengood & Kunte, 2012; R  ther, Martine, & Mtal  , 2002). In addition, the literature offers insight about the creation of predictive models to "successfully simulate the housing pattern of informal settlements growth" (Augustijn-Beckers et al., 2011). Further development of these models will permit the creation of predictions of how an informal settlement will grow (Beardsley & Werthmann, 2008; Patel et al., 2012; Sietchiping, 2008; Sobreira & Gomes, 2001, p. 2). These new models permit mapping "slums" geometry in terms of urban growth changes in shape and size over time (Barros & Sobreira, 2002). A new term proposed for the process of mapping and forecasting informal settlements is "Slumulation" (Patel, 2012). These studies reveal the process behind observations of growth as occurring in defined phases.

Current literature on informal settlements largely supports the idea that informal development follows a prescriptive series of stages (Augustijn-Beckers et al., 2011; Drummond, 1981; Rybczynski et al., 1984). In the *Architectes des favelas*, Didier Drummond studies the urban development of the favelas in Rio de Janeiro, finding that the informal settlements go through a series of phases of evolving consolidation. Phase one is "precarious implantation of shelters"; phase two is "transformation of shelters to sheds," and phase three is "solid construction" (Drummond, 1981). In these three phases, Drummond reveals the very nonspontaneous mechanisms, in rather predictable and normative ways, in which these urban environments evolve through resident planning. In Medell  n, Nora Elena Mesa S  nchez observes a series of stages of urban development within informal settlements. She comes to three phases similar to Drummond's. However, she links housing improvements to the unit's relationship with the overall urban form, which she defines as follows: "Stage 1, Poblamiento (populating): Allotment or subdivision, the moment of settlement behavior relative to the ground; Stage 2, Edificaci  n (Building): the volume, or three-dimensional aspect of the constructions of the buildings; Stage 3, Adecuaci  n (adaptation): Consolidating and establishing relationships" between the physical

infrastructural networks (e.g. streets, transportation, public services) and between informal settlements and the city (Mesa Sánchez, 1985) My work on the patterns of growth in Medellín settlements presents the defining characteristics of each development stage in terms of the evolution of both physical and social organizations (Samper Escobar, Massachusetts Institute of Technology., & Department of Urban Studies and Planning., 2014). It presents growth in informal settlements not only as physical and urban but also as contributing to the ways different actors relate to each other in the various stages. The stages of development are: (1) Foundation, (2) Infill, and (3) Consolidation (illustrated in Figure 1):

1. Foundation: The first moment of occupation and erection of a group of homes, by a group or community of dwellers that act collectively.
2. Infill: An increase in density and the eradication of open space between units as a result of the growth of existing units and the final use of open spaces left in-between units and the delineation in the final urban form of the public space. The population increase by the new density is mirrored by that of the collective groups.
3. Consolidation: The final moment of integration with the urban form, at which point some informal settlements will become successfully integrated. Units' quality improves, and most growth happens in the third dimension. Community organizations specialize into niches.



**Figure 1:** Santo Domingo Savio. Stages of Informal Development. *Source: Jota Samper*

## 2.2 Collective action, resilience, and informal settlements

An important question emerges from this classification of informal settlement growth into phases: What role do these phases of change in the physical and social networks of the informal settlements have in the ways conflict happens there? Janice Perlman in her seminal work "The Myth of Marginality" (Perlman, 1976) contradicts the literature of the time and builds on the emerging ideas of the 1970s regarding favelados (people who live in favelas) as an emerging entrepreneurial class. Her latest work "Favela" (Perlman, 2010) focuses on her original sample of interviews, revisiting her position after 40 years. She now puts forth the disheartening proposition, that 40 years later those communities are in

fact marginalized. Perlman finds that there are noticeable differences between families who stayed in informal settlements and those who relocated to formal neighborhoods in state-sponsored projects (*conjuntos* and *loteamientos*). Her study claims that those who moved weathered better, in the sense that they have greater upward mobility and quality of life (measured by Perlman's socioeconomic status index (SES) scores) than their informal settlement counterparts. According to Perlman, "the marginalization of the urban poor became a self-fulfilling prophecy" (Perlman, 2010, p. 333). Since Perlman measures a difference between two types of urban forms (formal versus informal), her findings pose a puzzling question in the context of the phases of development of informal settlements. What is the role of urban space as a variable in what Perlman sees as different outcomes?

I argue that Perlman and others who focus on conflict in areas of poverty and urban informality miss an important variable at the core of the definition of spaces of informality: that is, their state of constant urban change. They fail to account for the effects of changing urban form upon the social and criminal structures of the informal settlements. The important question then is this: What are the consequences of the ever-changing nature of informal settlements on the social organizations that operate within the informal settlements? I argue that Perlman's conclusions do not account for two important variables, which are the basis of this research. First, informal settlements are always changing regarding population and physical form, so the quality of the buildings, units, and public realm changes greatly over a forty year period. Also, the increasing number of inhabitants should have an impact on the community's abilities to pursue collective action. Second, the families Perlman was visiting now live, as she noticed, under conditions of violent conflict. This new condition greatly influences their capacity to generate weak and strong linkages and should also have an impact on the levels of marginalization of informal communities. Perlman found violence to be the single most distinguishing factor of favelas today versus those she mapped 40 years ago. However, she underscored the value of this variable of living under the pervasive coercion exerted by drug gangs as accounting for the present marginalization that her research finds.

These two variables, which she did not account for, are the ones that influenced the results of her research. The constant urban change and conditions of violent conflict changed the structural situation of the informal settlement. Perlman's study did not incorporate these changes in structural conditions because her focus was on surveying the socio-economic status of family households independent of the urban form and its social organizations.

Collective action is a necessary feature in land taking for an informal settlement what make it a key defining characteristic of what an informal settlement is. This process can be read as an act of insurrection against the status quo, be it a neoliberal capitalist system under a weak nation regime. This act of insurrection in the land taking context becomes a claim of these communities of their "right to the city" (Lefebvre, 1996), in which citizens take control of the production of space. Informal settlements then, are the embodiments of Prucell's reading of Lefebvre's ideas, "a radical vision for a city in which users manage urban space for themselves, beyond the control of both the state and capitalism" (Purcell, 2014). Stepping out of the supervision of the state and capitalism creates parallel institutions of governance within these spaces, what James Holston articulates in the process of building the city in the poor peripheries of Brazil as "insurgent citizenship" (Holston, 2008).

This capacity of self-governance is essential to challenge dangers both from within and external to the community. The literature that focuses on community organizing against evictions, places importance on the role of community linkages to local and external actors, as correlated with the success of stopping external attacks like evictions (Gans, 1962; Granovetter, 1973). Furthermore, the value of community organizing and participation are important as tools to overcome the struggles for permanence of marginalized communities (Skuse & Cousins, 2007; Viratkapan & Perera, 2006). Regarding growth, traditional Collective Action theory tells us that as the organization grows this change presents challenges to its ability to engage in effective collective action (Olson, 1971). A body of theory challenges

this notion, demonstrating a correlation between larger organized groups and successful collective action (Oliver & Marwell, 1988). When looking at externalities, large population groups have a surplus of resources that help them more easily organize collective action to achieve their goals (Agrawal, 2000). Informal settlement communities are by definition small, effective collective action organizations; they need to be to exist. As such, if they grow exponentially we should expect that growth to be reflected in the ability to use the surplus of membership for more effective collective action. However, this effort of community action presents challenges when it happens in the context of violence produced by Non-State Armed Actors (NSAA) within the communities. In the Latin American case, these community governance structures get co-opted by violent para-state organizations like gangs and criminal franchises (Arias, 2004). Horizontal studies about informal settlements in Rio de Janeiro find that overtime larger capacity of violent actors is detrimental to the development of favelas (Perlman, 2010). However, these studies do not account for the important variable of population and densification change inherent in informal settlements as it relates to this process of self-governance and community action in the context of non-state Armed Actors.

Literature in social disorganization explores the relationship of community members' social ties in ways that are spatially bound and the influence of these ties on crime (Bellair, 1997). Changes in neighborhood ecological structures can strongly influence levels of social control, social ties, and collective efficacy (Kubrin & Weitzer, 2003). Social ties here are considered an appropriate indicator of crime levels. An inverse correlation between social ties and fear implies that as social ties breakdown, there is more fear and this itself correlates with higher levels of crime (Taylor, Gottfredson, & Brower, 1984). Social ties are fundamental to the foundation of informal neighborhoods. These ties and the close interdependence of community members allows them to claim ownership of land.

In the context of urban violence in which informal communities live, what becomes important is their capacity to be resilient against NSAA in the absence of state protection. Social physiology defines resilience as "attainment of desirable social outcomes and emotional adjustment, despite exposure to considerable risk". Resilience is then a response to psychosocial adversity or events considered stressing enough to hinder normal functioning (Luthar, 1993; Masten, 1994; Rutter, 2001). In the context of urban violence, Diane Davis defines resilience "as those acts intended to restore or create effective functioning community-level activities, institutions, and spaces in which the perpetrators of violence are marginalized and perhaps even eliminated" (Davis, 2012, p. 32). Davis further unpacks the concept of resilience in the context of urban conflict as positive or negative:

"Positive resilience is a condition of relative stability and even tranquility in areas intermittently beset by violence. Strong, cooperative relationships between the state and community, and between different actors—businesses, civil society, the police, etc.—tend to characterize positive resilience. Negative resilience occurs when violence entrepreneurs have gained effective control of the means of coercion, and impose their own forms of justice, security, and livelihoods. In such situations—most frequently in informal neighborhoods where property rights are vague or contested—the community is fragmented and seized by a sense of powerlessness, and the state is absent or corrupted" (Davis, 2012, p. 35)

Since informal communities depend in their self-governance structures more than on state institutions, it is the strength of those local institutions that relies the capacity of these communities to stop the acts of the perpetrators of violence, and thus its ability of collective action becomes a measure of its resilience capacity. A question that emerges here is what role the stages of urban development in informal settlements play in the strength and configuration of social ties? In other words, what effect does growth have on informal settlement social relationships, crime and the capacity for resilience against those violent acts?

### **3. MEASURING URBAN DENSITY CHANGE AS DETERMINANT FOR COLLECTIVE ACTION AND NSAA CO-OPTATION.**

This research looks at community self-governance evolution through time as it relates to the community's changes in density (population/buildings) and to the levels of violent conflict. To answer these questions, this research uses a mixed-methods approach in two parts: an ethnographic approach to understand the evolution of community organizations in the context of urban informality and its relationships with state and non-state actors; and a quantitative mapping of urban growth and community organizations and NSAA evolution in three informal communities from their foundation to the present.

I chose the city of Medellin as a key case in the literature on the intersection of informal settlements and criminal control by non-state Armed Actors. Medellin informal settlements have been controlled by a myriad of criminal organizations for over 40 years. Medellin, the once most violent city in the world, has navigated over the past 40 years four types of NSAA that have taken siege of its informal settlements, accounting for up to 40% of its territory (Samper Escobar et al., 2014)

I examine three informal neighborhoods (Independencias, Santo Domingo, El Triunfo) that share similar characteristics: being founded more than 30 years ago and having been controlled by NSAA. Medellin's informal communities are an "extreme case or a unique case" (Yin, 2009) of informal settlement and criminal control. The unit of analysis is the informal settlements of Medellin from 1968 to 2012. Specifically, this research concentrates on three neighborhoods in three districts (comunas) of Medellin as embedded units (comunas: 1, 8 and 13). These embedded units were selected following the same criteria for the selection of the city of Medellin. They represent the areas of the city with the highest levels of informality and transformation over time with longer and more varied forms of urban conflict: Comuna 1: Santo Domingo Savio, Comuna 13: Independencias 1 and 2 and Comuna 6: El Triunfo. Also, these neighborhoods are selected because detailed accounts of their histories exist. Four other neighborhoods were included as control cases using a variation of the "N of One plus Some" research technique of secondary cases that are used "to identify issues to expect, questions to ask, and data to look for in the primary case[s]" (Mukhija, 2010). These other neighborhoods are Nueva Jerusalem in Bello, Comuna 8: El Pinar, Comuna 13: Antonio Narino and Comuna 6: El Picacho. See table 1 for a description of the selected areas.

Three type of sources are identified in this research. Below is a description of each one of them and how they participated in the study. Data about community stories regarding building the city of Medellin come from 472 interviews conducted as part of "Medellin my Home", a historical memory project in collaboration between three U.S. universities and founders and residents of informal communities in Medellin (2009-2015). The interviews include stories from the three areas of study as well as other areas of the city with conflict and informality. This group was randomly selected from a pool of 45,000 families considered by the city of Medellin to be living in the lowest poverty bracket in the city. Interviews have been conducted by Duke University, MIT, Emerson College and Lesley University students who were trained by the author and project's co-founder and co-director Tamera Marko, and were video recorded. In this ongoing project, we have more than 6000 hours of video interviews with more than 520 families to date. To compensate for the potential bias of this population, the author conducted other random community interviews in the areas of study with community members not belonging to this database. These groups of individuals were selected through snowballing (Bertaux & Bertaux-Wiame, 1981), starting with access to neighborhoods at two points. The first group is composed of individuals recommended by the social worker's team of the Empresa de Desarrollo Urbano EDU and Planning Department. The other group is drawn from community groups or NGO's in the selected embedded units of analysis (Comunas). By having these two-entry points, this study seeks to overcome



some of the bias that having only one would introduce. These narratives provide the basis for measuring the capacity of informal communities collective action.

**Table 1:** Research neighborhoods

Neighborhood	Base year	Type	Area (Ha) ** ***	Pop (2002)	Fiscal lots to titling *	Units ** ***	Estrato Social strata			Unit/ha ** ***	People Per unit
							1	2	3		
El Triunfo	1980	<i>Invasion</i>	11.71	3,439	101	1,135	1,081	54	0	219	4.48
Santo Domingo	1963	<i>Invasion</i>	56.13	18,890	2,394	6,645	1,625	5020	0	118.3	4.19
Independencias	1980	<i>Invasion</i>	25.42	14,460	1,109	4,553	4,373	180	0	179.1	3.17
Villatina	1960	<i>Invasion</i> <i>/other</i>	40.66	10,619	1,395	4,286	1,781	2,505	0	105.4	4.5
Picacho	1977	<i>Invasion</i>	41.77	13,010	-	4,245	2,313	1,658	4	95.4	4.43
Antonio Nariño	1970	<i>Pirata</i>	39.39	12,336	-	4,488	615	3,496	377	113.9	2.74

Source: \*Secretaría de Hacienda, contratos: 4600019122 de 2008, \*\*Municipio de Medellín. Viviendas residenciales estratificadas por comuna y barrio según estrato, 2010 \*\*\*Alcaldía de Medellín. Plan Estratégico Comuna 6 2006–2015: La Comuna 6-Doce de Octubre un territorio para vivir dignamente, (2009)

Interviews with state officials include professional experts who have participated in the planning, execution, or evaluation of the project in informal settlements. This also includes the publications and interviews of the academics whose work analyzes projects in informal settlements or urban conflict in Medellín. I have interviewed 25 individuals who fit into this category, including two mayors, planning directors and planners whose work and opinions have had (and, in many cases, still have) a direct influence in the three selected embedded units (Comunas). And finally, interviewed armed actors present and formally part of NSAA. This group is smaller than the others, and access to the members represents the greatest challenge in this project. One entry point is the large portion of re-integrated illegal armed actors who are part of community organizations (that protect them) and also of state projects that support the reintegration process. The second entry point is through a network of community members, state officials, and project managers who deal in the day-to-day activities with an active member of illegal armed groups. I have conducted 10 interviews with members of this category.

Growth of the informal settlements over time in this study is understood as a relationship of population growth and building growth. Since informal settlements growth is not mapped, I needed to draw new historical maps of the city of Medellín to see this change. This was done by geocoding historical aerial images found in the Department of Planning in the City of Medellín. I erased new buildings by reference to the aerial images and created a new map for each one of the time periods where aerial images were found. This was one of the most time-consuming parts of the study: this constituted a base Cartography for spatial analysis involving the construction of maps that show growth at parcel scale of the six neighborhoods studied here. Mapping required site visits to corroborate states surveys, collecting and georeferencing historical aerial photography, and the painstaking labor of checking and drawing a map of each building in the neighborhood for each of the identified periods. Research maps are also informed by archival research in the Planning Department databases and other entities, including university libraries and research groups, newspapers and historical maps, crime data repositories, review of historical memory projects historical archival material, and then superimposed with the collected historic aerial photography (1950- 2013). The resulting maps of the six neighborhoods distributed along the phases of informal development provided the base for a measure of urban density change that was corroborated when possible with census data or community mappings.

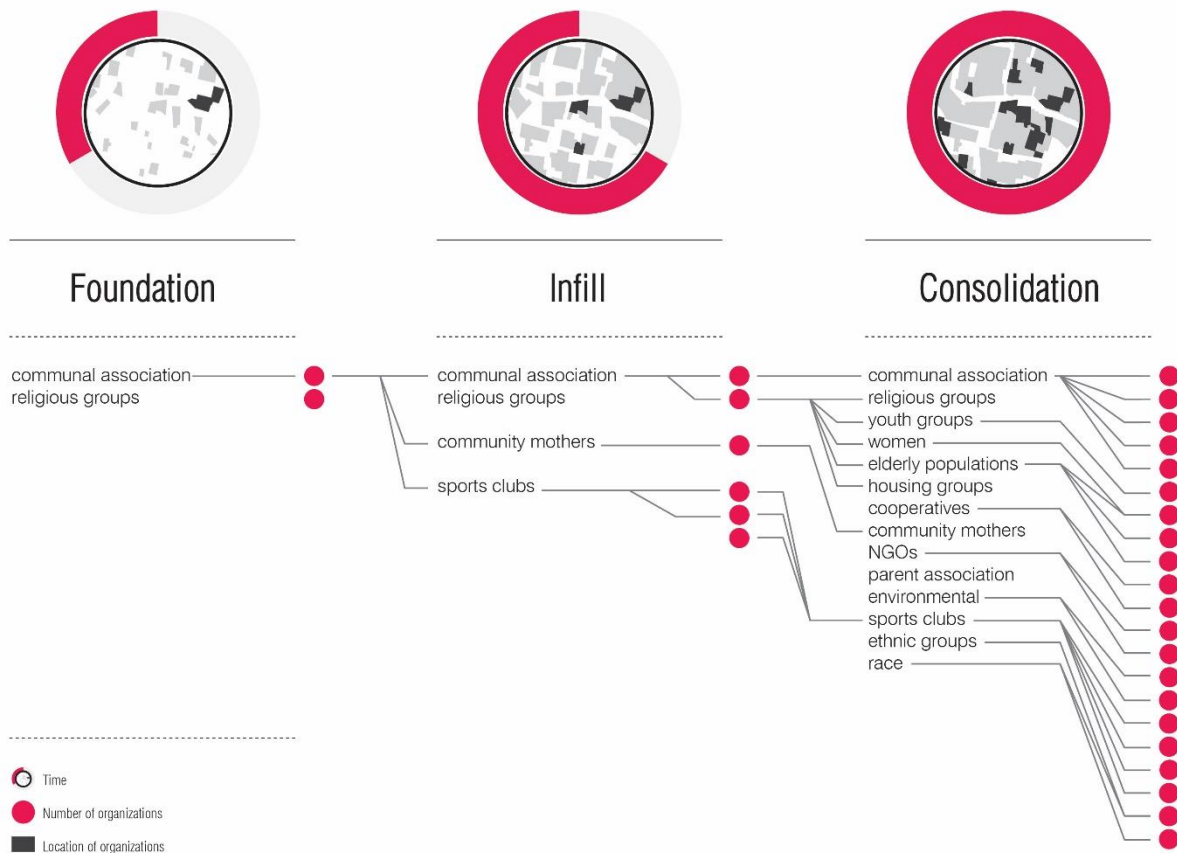
#### 4. INFORMAL SETTLEMENT GROWTH AND COMMUNITY GOVERNANCE STRUCTURES

**Table 2:** Comparative of three neighborhoods. Santo Domingo Savio, El Triunfo and Independencias.

	Stage 1 Foundation	Stage 2 Infill	Stage 3 Consolidation	Area/ha
<b>El Triunfo</b>				11.7
<b>Build Area</b>	1,050	29,739	41,331	
<b>Units</b>	25	564	1,135	****
<b>Population</b>	113	2,540	3,998	***
<b>Density</b>	2.1	48.2	97	
<b>time</b>	1982-1989	1992-2001	2001-2014	
<b>Number of Buildings</b>	25 (1983)	1,121	1,506	
<b>Santo Domingo</b>				16.2
<b>Build Area</b>	19,168	55,385	78,605	
<b>Units</b>	5-500	2,383	4,885	
<b>Population</b>	3,500	* 10,490	21,505	**
<b>Density</b>	30.8	147	301.5	
<b>time</b>	1959-1969	1992-2001	2001-2014	
<b>Number of Buildings</b>	541 (1969)	2,915 (1994)	3,671 (2013)	
<b>Independencias</b>				17.2
<b>Build Area</b>	3,159	81,346	199,009	
<b>Units</b>	50	4,157	6,996	
<b>Population</b>	225	11,222	18,887	
<b>Density</b>	2.9	241.7	406.7	
<b>time</b>	1970-1989	1989-1999	1999-2014	
<b>Number of Buildings</b>	50 (1972)	3,633 (1989)	4,294 (2013)	

Each of these cases (informal settlements) follows the stages of informal development (see table 2). Looking at the data on these neighborhoods, transitions between stages can be characterized as follows; from stage 1 to stage 2, there is the largest population growth. Most neighborhoods grow 3 to 20 times their size in population, depending on the timeframe used (beginning of land taking to end of period). In most cases, for every founding member, 20 more people will arrive at the neighborhood. This radical change in neighborhood composition has profound effects on the performance and composition of neighborhood social networks. Also, land coverage changes significantly, as much as 30 times the original area coverage. This second period is characterized by the transition from a rural model, in which open space is the predominant feature, to an urban model where open space is restricted and defined by the buildings. From stage 2 to 3, population grows between two to three times and then halts. Most building growth happens in height during this phase. At this juncture, there is an increase of land coverage but not as radical as in the previous

stage, up to two times more than in the previous stage. Final densities are between 200 to 400 units/hectare.



**Figure 2:** Social organizations' growth per informal stage. Source: the author's interviews and the Alcaldia de Medellin PB info 2010.

Informal settlements exponential growth from the moment of foundation to a plateau around the consolidation stage has profound effects on relationships among inhabitants (social ties, alliances, community management, economy, etc.), and on the organizations, that engage in the space of the informal settlement. These changes can be summarized as follows: urban growth and population density (1) increase the number of members, but it also increases and (2) fragments the number of possible social organizations. As these phenomena occur, it creates an opportunity for (3) specialized and clustered social organizations within the community.

1. *Increased numbers of residents:* Foundational moments require a relatively small quantity of members, from 25 to 100 families. The number of community members increases tenfold (or more depending on the case) within the first years of informal settlement development. In the informal settlement of *Independencias*, for example, for each founding member there are now 83 new ones (see Table 2). Examining the ties of informal communities by their propinquity explains the extent in which existing members are able to establish new social ties. The exponential growth between

stages of informal development implies that as the neighborhood grows it becomes unfeasible to know everyone in the network.

2. *Increased number of Social Organizations:* In the first stages, there is a single group, possibly two, including the church as a key organizational structure in Colombian informal settlements (like in the case of *Santo Domingo Savio* or *Moscu*) (Calvo Isaza & Mayra, 2012), but as time passes the number of organizations grows at the same rate as the population. Growth over time opens the opportunity to create new social organizations. In the foundational stage, a single group (usually a *Junta Accion Comunal* or an informal group that will fulfill its functions) accomplishes all communitarian needs (social gatherings, housing, infrastructure provision and negotiations with state actors). As the neighborhoods grow, new organizations appear and take functions away from the founding organization or add new functions. An example of such growth and diversification is *Comuna 1*; here there are 16 types of registered social organizations currently participating and competing for the participatory budget (PB), ten times more typologies of organizations and 30 to 40 times more unique organizations (see Figure 2). Another characteristic of this growth in communitarian organizations is that they become specialized in the type of services provided.
3. *Specialization:* the increasing numbers of organizations is also reflected in the variety of interests and areas of work of each one of those organizations. There is then not one single group that has to coordinate all community projects. Instead there are myriad typologies of interests that represent specializations of those interests. For example, some of the typologies of social organizations that participate in the PB of the *Comuna 13* are: communal associations and groups that each represent the interests of youth, women, the elderly, community mothers, housing, cooperatives, religious interests (now more than just Catholic), NGOs, parent associations, the environment, ethnicities, sports clubs and LGBT communities. Political groups are excluded from the Participatory Budget (PB), but they are also present in these areas. Figure 2 maps the growth of these organizations within *Comuna 1*. Moreover, it shows how time and urban growth play a major role in this fragmentation and specialization. The fragmentation of community organizations continues, now each one of those organizations specializes and become more sophisticated. In *Comuna 13 (Independencias)* there are now youth organizations that use the arts as tools for peace such as "*Casa Morada*." This organization is an NGO operated by community members with ties to and funds from multiple state and non-state resources. They have a state of the art studio and teach hip-hop alongside art classes on graffiti (*Comuna 13* style). In *Comuna 8 (Villatina)* the community planning council is developing a community plan for *Comuna 8* that competes against the city "greenbelt plan."

## 5. MAPPING INFORMAL SETTLEMENTS GROWTH AND VIOLENT CONFLICT

Exponential population growth affects community organizations, eroding and fragmenting social ties which in turn weakens social structures that previously had greater capacity to hold violent actors at bay. On the other hand, this growth increases market opportunities, both for legal and illegal activities, which along with the increase in the numbers of violent actors, permits their integration into violent social organizations. The violent groups perceive the non-violent groups (such as community associations) in the informal settlements as their enemies. The three phases of informal development represent not only physical and social evolution moments, but also mark important changes in the way conflict happens inside informal settlements.

**Stage 1: Foundation.** The reduced number of community members and the interdependence necessary to survive creates a very tight group that provides some level of protection against the also reduced number of perverse actors. Low opportunities for rent also creates a disincentive for other organizations to profit from dwellers at this stage.

**Stage 2: Infill.** The high number of new residents overwhelm the capacity of community organizations. New market opportunities appear at this stage like small stores. The increased number of dwellers opens opportunities for a myriad of possibilities for association, among those are associations through crime. The larger number of dwellers challenges community social ties that were key at the community's foundational moment, fragmenting the community into multiple groups with different affiliations. This opens space for newly formed gangs to act. Gangs tend to be local and tied to the neighborhood territory. Infilling creates irregular spaces and paths of movement, providing an advantage to those who know the territory.

**Stage 3: Consolidation.** As commerce and density grow hand in hand, the market opportunities for illegal profit increase and the competition for those new revenues creates violent conflict. Large Non-State Armed Groups take place in informal settlements and profit from outsourcing their violence and turf control to the ever-changing small gangs in informal settlements which continue to control local territories made accessible and defensible by their intimate local knowledge of the space.

Below I explain in more detail the differences in conflict at these stages of development.

### *5,1 Stage 1: Foundation*

Across the interviews, community members talked about this period as an idyllic period of time in which armed actors were not present, a provocative finding. Initial interpretation of these reports suggests that time had colored the memories of such critical foundational moments, some up to 40 years in the past – painting a better picture of life than actually existed and removing situations of conflict in a typical case of what in psychology calls “false memories” (DePrince, Allard, Oh, & Freyd, 2004). A more detailed look at the interview descriptions revealed a plausible explanation for the consistency in people's memories of this period. Around 20% of the large pool of interviews included foundational stories and 30% of the semi-structured interviews. All narratives follow the same pattern: in the beginning, criminals existed but not the kind of criminal organizations that would arrive later. Even though perverse actors existed, they did not act in groups and were less threatening. The enemy during this period was not NSAA; the enemies were landowners and state actors like police or army which act with a myriad of institutions (military, police, and municipal non-security institutions). These actors and institutions arrive to evict families, tear down structures, arrest community members, and burn houses. As an example, the police evicted a family and destroyed their house twenty times in the Moravia neighborhood. Such stories do not include illegal armed actors; community members replay over and over saying “they arrived later.”

The explanation for such a puzzling phenomenon I argue is as follows: at the foundational moment, successful communities (those that we can interview now and have achieved permanence over time) are a small and very tight group of 50 families or so, as shown by the cases in this study. They depend on each other to survive. They ally to fight common enemies; to build necessary infrastructure such as paths, streets, sewers, and energy connections; to build their own houses; to take care of family members, etc. In Medellin residents of informal settlements called these meetings to build “convites” (literally meaning “invites”, a gathering of community members to achieve a single goal. This can be a public project, like a road paving, or the construction of a sewer line or a private goal like building a roof for a family house). Most founders know each other intimately. Interviewees could recount the full name of each of the families that constructed their neighborhood. This tight-fitting society does not leave

space for competing social organizations, even criminal ones. Nor are there sufficient members to create competing organizations in the neighborhood, including criminal organizations.

### *5.2 Stage 2: Infill*

At this stage, population growth is the most salient feature. As explained previously, the increases of the population are on the order of 10 or more times greater than the foundational moment. Community organizations growth mirrors population growth, which also includes organized criminal groups in the form of street gangs. At this stage violence shifts from being perpetrated by state security institutions or specific individuals to these new local gang organizations.

Along with the population increase, there is a reduction on the number of “convites,” as core infrastructural needs are filled. At this point, the main goals of community action are accomplished; such goals as the widening of streets, creating access to clean water, and electricity. These new improvements are brought both by communities and the state, or in some cases a combination of both, like the case of electricity provision in Independencias. Two things then happen simultaneously: (1) those services that for all neighborhoods are essential for their survival (like water provision) are being supplied and (2), population growth makes it more difficult to coalesce the community towards a single goal. A community member mentioned that the sense of “union is lost.” In discussing this period, interviewees lose their grasp on understanding the entire social network of the neighborhood; they cannot recall the names all members who live in the community. The cohesive social network of the foundational stage fragments, multiple community organizations start challenging the hegemonic power of the Juntas de Accion Comunal (JAC) Neighborhood Association, and there is competition for resources through different political networks, or through the same pool of resources. In Comuna 13, for example, the JAC as an organization has been more connected to the traditional parties while new youth organizations such as Siglo XXI acquire their support initially thru NGOs and non-traditional political parties. Later in 2008 they competed for the same pool of money during the participatory budget (PB). This type of competition further foments fragmentation. This fragmentation per se is not necessary for the detriment of the community. Heterogeneous voices and interests are good for governance. The problem there is the absence of a framework in which multiple voices can negotiate and organize to solve the new set of issues that growth brings to the community. Two important issues are how to deal with the new association among lines of crime and how to manage security issues.

Among those new organizations are also perverse organizations; the first gangs appear at this stage (infill). Community members belittle the power of these groups. When compared with the next stage (consolidation), expressions like “los pelados [those youth] that fight among them” are used by community members when describing these first criminal organizations in the neighborhoods. The opportunity of a racket market encourages competing gangs to use violence to capture illegal tax incomes. The fragmentation of a cohesive social structure enables gangs that increase in sophistication to control and supplant the now fragile community social organizations.

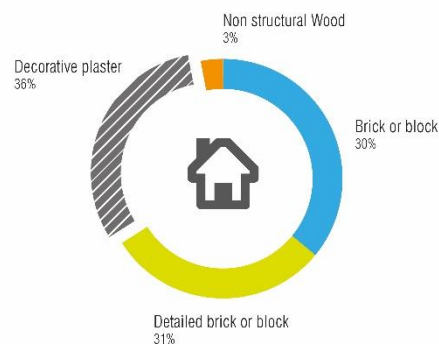
Interviewees connect changes in the type of conflict with an escalation of violence as the result of newcomers. They connected new types of organizations with groups that arrived. “When those [name of the criminal organization] people arrived.” At first this could be attributed to a way to distinguish themselves from criminals: we are not like “them” kind of response. However, even when talking with ex-members of the conflict, arriving individuals and groups are mentioned as one of the sources of escalation of conflict at this stage and the next one (consolidation). An ex-member of a gang in Villatina, talked about the arrival of the “negroes” (Urabeños). He mentions how this new arrival intensified conflict and how the conflict was not like that before the advent of such a group.

While some new organizations bring with them new members from other areas. It is clear that existing residents also become part of new organizations. So the argument that all of this change came from

outside does not hold true. The gangs at this scale are small and not very sophisticated. Also, the types of weapons that they use and their strategies to control territory are very primitive. Community members know the names of the participants of the groups and also their mothers. In Manantiales de Paz, Bello, an informal settlement at stage two, it is through these family ties that community groups establish a dialogue with the gang leaders. This closeness means that at this stage perpetrators of violence are local. However, fragmentation as part of the violence of the gangs makes some community members feel that the perpetrators are coming from the outside. This proximity would change in the following stage where outsiders as criminal organizations clearly arrived.

During this stage, the network of streets and spaces becomes very tight, and houses packed in at a higher density. The proportion between what is public and private changes. The reduced surface area of streets impedes the mobility of community members. Lack of mobility makes territorial control by armed groups easier. The first lockdowns appear at this stage. Impromptu checkpoints at strategic places are a way to secure protection of turf. In El Triunfo, the first turf battle will be followed by the installation of those checkpoints at the “entrances” on the bordering streets. This phenomenon, today called “invisible borders”, is present all over the city. These practices become more systematized in the next stage of development.

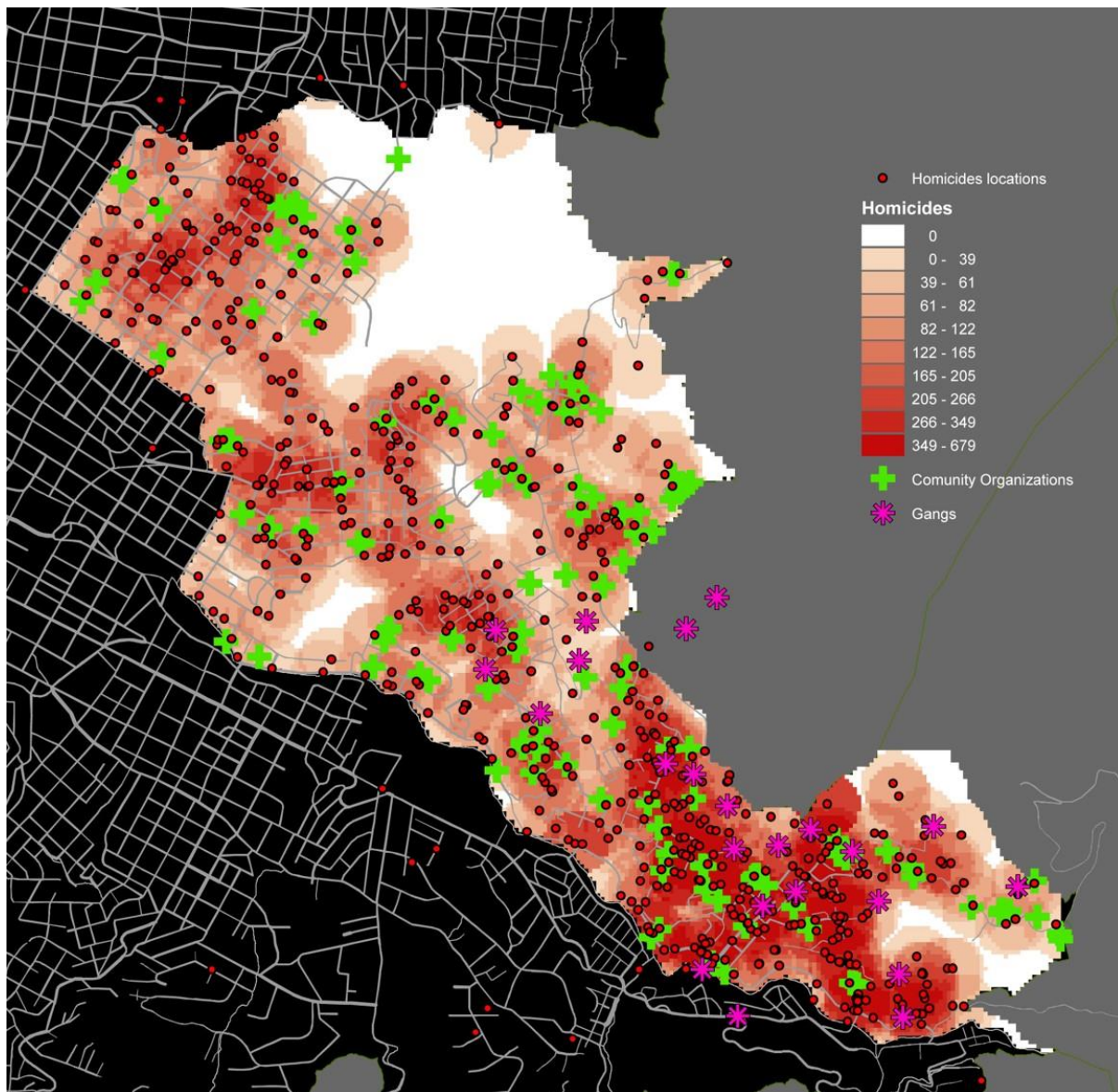
### 5.3 Stage 3: Consolidation



**Figure 3:** Neighborhood EL Triunfo (at stage 3) type of constructions *Source: Plan Estratégico Comuna 6 2006-2015 Construyendo Ciudad (100)*

Commerce and density grow hand in hand. As market opportunities for illegal profit increase, competition creates violent conflict. Large Non-State Armed Groups (NSAG) take place in informal settlements and profit from outsourcing their violence and turf control to the ever-changing small gangs in informal settlements.

In this final stage, density continues to increase two-to three-fold. It is also a period where house improvements include aesthetic considerations that demonstrate better incomes of some dwellers from other periods. James Holston in Brazil connects this process of façade decoration in informal settings to dwellers meeting their class aspirations by decoration styles and materials of new owner upgraded structures (Holston, 1991). In the neighborhood, El Triunfo for example seventy-seven percent of homes are made of a solid construction and have some type of decorative exterior vs. three percent that present some fragile material construction (see figure 3). The unit’s appearances are in some way a reflection of the possibility of having disposable income for some dwellers.



**Figure 4:** Map of clustering of homicides 2001 – 2009 (in red) and locations of communitarian organizations (in green) in the *Comuna 8*. This map reveals how community organizations and gangs intersect in a context of measured violence. Is in this spatial intersection that co-optation emerges. *Source: SISC, JAL Comuna 8 and Jota Samper*

Commerce growth reflects this revenue increase at the interior of the dwelling. Interviews compare the lack of commerce options of the previous stage to the copious number of commerce establishments and the variety of services increasingly available. “Twenty years ago, there were no more than fifteen stores, today there are more than one hundred” (716). The Empresa de Desarrollo Urbano EDU estimates business growth up to three hundred percent between 2003 to 2008 in Santo Domingo Savio neighborhood (Samper Escobar, 2010). Also, the investment in units at this point is a reflection of security, as evictions by the state, or private actors are improbable.



The flipside of the economic success of the neighborhoods is that the economic and organizational growth is mirrored by similar developments with the perverse organizations. Economic growth creates new markets for racketing opportunities to the existing and new gangs. New bus lines were met with demands for taxation to gangs in Comuna 13. Competition to include those market opportunities generates conflict and space for more violence among warring gangs. In *Independencias*, control over taxation of commerce at the entrance to the two neighborhoods is motive for armed confrontation between "Los del Dos" and "Los del Uno" as narrated by one of the ex-members of one of the groups. Drug distribution and the protection of places of drug sale (*plazas de vicio*) are new objectives for gangs.

The gangs also follow the organization specialization and sophistication present in the existing community organizations. Gangs select market niches within the crime market, such as gangs specialized in for-hire assassinations (which in Medellín is called sicarios). This period sees local gangs affiliated or violently absorbed by large criminal organizations like the Milicias, Paramilitares, Oficinas, or specific drug lords. An example of such a process is the "Grupos de Vigilancia y Seguridad Privada (convivir)" in 1995, which later became part of the ACU and then gangs (combos) by 2001 (Angarita et al., 2008)(Angarita, Gallo, and Jiménez 2008). The connection with those organizations that operate at a larger scale brings sophisticated urban warfare techniques and armament. Upgrades in armament and training make gangs more efficient in reproducing violence. However, the connection of gangs with larger organizations is quite fragile, measured by the loose coalitions that form and reform within neighborhoods, resulting in the ever-changing nature of the franchises of organized crime in Medellín. Large franchises and small neighborhood gang relationships are fragile, measured by the lines of communication between them. In Medellín, in 2012, two drug lords fought for the control of Medellín's drug market: Alias 'Sebastián' against Alias 'Valenciano' in the vacuum left by alias "Don Berna" in the Oficina de Envigado. Gangs would affiliate with one or the other capo and would only sell products (drugs) from one of the providers. For obvious reasons big "capos" (drug lords) do not visit the neighborhoods very often and, if they are seen, their presence is narrated more as a fascinating myth than a landlord overseeing his property. A key local person is dedicated to communications with the larger organization that supplies money, drugs, and jobs. Most of the members of the local gangs do not get to meet with the intermediaries.

Higher density leads to a paradoxical phenomenon of territorial control. With each level (of housing above existing units) added to the neighborhoods, the battlespace becomes more tridimensional (multiple build levels) and more complex. With the added complexity of the environment, the ability of local gangs to control territory diminishes thus their domains become smaller. The small gangs provide little competition to older and more organized criminal organizations, but they are fundamental to such organizations for the distribution and transference of power to the scale of the street. Finally, at this stage, state and neighborhood relationships change. Informal settlements at consolidation stage are tough to demolish, and more services of the state arrive. Is at this stage that municipal governments implement upgrading projects.

## **6. ERODED RESILIENCE AND INFORMAL SETTLEMENT GROWTH: THE NEXUS BETWEEN VIOLENT CONFLICT SELF-GOVERNANCE AND ITS RELATION TO STATE POWER.**

This research presents conflict in informal settlements evolving as correlated with population growth and indirectly correlated with self-governance capacity. The relationship between local community capacity and NSAA control is enabled by the lack of capacity of state institutions to monitor those informal areas. Each stage of development presents different capacities for each one of these groups and learning of this variation presents a more nuanced perspective on the complex relationships at the core

of informal settlements. This condition of increased action capacity of NSAA from the reduction of collective action effectiveness of governance institutions in informal settlements I call Eroded Resilience. At earlier stages positive resilience can be found but as the neighborhood densifies negative resilience prevails. Table 3 puts into context how community governance, NSAA control, and state interaction evolve over these stages of development.

**Table 3:** Eroding resilience, State, NSAA and Community evolving over the three stages of informal growth.

<i>Stage Actor</i>	<b>FOUNDATION:</b>	<b>INFILL:</b>	<b>CONSOLIDATION:</b>
<b>STATE</b> <i>Municipal government, planning offices, and policing</i>	<b>The enemy:</b> The state as protecting private and public property, attempts to control settlement in the area, through the process of evictions. These evictions are violent acts. Given that population continues increasing violence increases with each succession. At this stage, evictions are a common phenomenon.	<b>Disenfranchised:</b> After losing the battle to claim the rights of the land appropriated by informal dwellers, the state organizations enter into a gray area of action. Without tools to evict the community or tools that permit them to increase the quality of life in these places, inaction is the only route of action. This leaves space for others to fulfill para-state functions, chief among those of security.	<b>Arrival:</b> After decades of state inaction. The increase density make the prospect of state evictions impracticable. This impracticability opens political and legal opportunities for state action. At this stage, the state arrives with the main provision of services. However, at the same time high and entrenched para-state actors challenge state police forces action.
<b>NSAA</b> <i>Individual criminal, gangs, organized crime franchises</i>	<b>Individual:</b> criminal actors coexist among community members, they act alone, and their actions do not challenge the new power structures within the community.	<b>The small gang:</b> increasing population creates an opportunity for new forms of association, including associating by crime. This period sees the foundation of the first gangs.	<b>Multiple gangs and franchises of crime:</b> consolidation of the urban form, more density, a heterogenization of incomes, and proliferation of economic activities presenting new taxation opportunities for larger criminal organizations.
<b>COMMUNITY</b>	<b>Cohesive group:</b> A requisite to succeed in the land claiming effort is the effective collective action led by a strong leadership. It is at this time that the community efforts are at their best. A single group manages all community needs.	<b>Specialization of functions:</b> Increased numbers of dwellers incentivizes the creation of new groups that fulfill specialized functions (water, recreation, education, and building). Multiple organizations compete for resources, among those is competition for violent control by the new gangs.	<b>Endanger and atomized group action:</b> High density, the proliferation of community agencies that compete for resources, and undermining of the capacity of action of the community. Also, violent non-state actors. Reduced ability of the community for successful collective action.

Source: Jota Samper

Growth modifies the social ties of community members and has adverse effects on security levels in informal neighborhoods. Social ties change in the following ways: (1) an increase in the number of community members requires a more complex community organizational system; (2) the specializations of social organizations' motivations also include those of perverse (illegal armed actors) organizations; and (3) the population growth gets confounded with fear, intensifying the cycle of decreasing social ties, which in turn increases levels of fear and crime. These three features are the key elements that configure the eroding resilience.

1. The complex organizational structure needed: As the population grows, the same system that permitted the organization of the community to do their projects became more complex to control. The sheer quantity of members makes this exercise more difficult, competition between community leaders become fiercer as larger numbers of leaders appear. These changes are no different to other organization growth challenges, but in this context, the scale of increase along with the lack of an external (state or otherwise) support for such process makes effective governance more complex. As a result, a single community organization is unachievable.
2. Perverse organizations mirror specialization of social organizations: I argue that with the exponential growth of dwellers comes an increase of community members who participate in crime. Opportunities for association by participation in crime then appear. This type of association also becomes more specialized as time passes, following the same process of the other social organizations in later stages of development. As the neighborhood grows, the type of criminal activity and the type of violence that those groups execute is different and more specialized. In Stage 1 (Foundation), theft is the most common crime. All interviewees attested to this. At this stage, there is no mention of the presence of illegal armed actors as organizations within the informal settlement. In Stage 2 (Infill), gangs appear, for the first time. These groups are very local and do not have an association with larger groups (drug lords, *Milicias*, *Paramilitares* or *Bacrim*). In Stage 3 (Consolidation), neighborhood gangs establish connections with the most sophisticated criminal organizations and franchises. Informal territories offer economic, political, or strategic benefit for those organizations. The criminal franchises outsource, training or eliminating local gangs as a way to acquire control of the territory. Interviewees associated with gangs seem to have no problem switching from working for one type of (criminal) franchise to another. Those who do have a problem with this kind of switching of groups (or sometimes even sides) do not survive the transitions.
3. Population growth reinforces fear and declining social ties: In the interviews, every new threat to the security of the neighborhood appears to arrive from outside of the informal settlement. Repeatedly, the interviewees use the theme “‘they’ arrived” to refer to ways than an NSAA is acting in the territory (gangs, *Milicias*, *Paramilitares*, *Bacrim*). This arriving condition of armed actors creates confusion because most illegal armed actors live in these informal communities. In other words, the actors whom day to day use violence in the neighborhoods are indeed community members by definition. External groups that perpetuate violence also arrive from other places. The case of the *Paramilitares* groups taking Comuna 13 is a good example here. Most of the leaders of such groups arrived from other places and located in the neighborhood, sometimes in the same houses that the *Milicias* members occupied. However, in most places, gang structures are reconfigured (by killing or expelling a significant number of their members) to serve the new criminal organization structure. During the transition from *Milicia* to *Bloque Metro* (BM) in Comuna 8 in 2002, members of *Milicia* and competing *Paramilitares* groups joined the BM once it had acquired control of the city and entered into the DDR (Disarming Demobilization and Reintegration) process. This phenomenon is depicted in the documentary film “*La Sierra*” (Dalton & Martinez, 2005). Here it is argued that most of that process of the arrival of illegal armed actors is part of the population growth and that, from the perspective of the dwellers, it seems like foreigners coming to their neighborhoods. In reality, it is a mix of old members and new members arriving and creating new associations, some criminal, some not. These new arrivals and new organizations create a new pool of actors within the space of the informal settlement. Moreover, the community members already living there often must choose which groups to align with, leave or risk losing their livelihoods or worse, their lives. This violence that produces displacement is a form of social engineering performed by the criminal groups.

## 5. CONCLUSION

Control of informal settlement communities by NSAA is not new. However, this research adds to the many other studies of this relationship the inverse correlation of community governance and non-state Armed Actor capacity. It shows that at lower stages of the spectrum when the self-governance structures of these informal settlements are robust and capable of challenging the state they are also more capable of managing and negotiating those criminal organizations, what I call eroding resilience. This finding underscores the importance of building community self-governance capacity as a way to create resilience in a context of violence by Non-State Armed Actors.

Arun Agrawal concludes that small groups can “increase their performance” if there are government incentives to collaborate. However, “if groups are dispersed this prevented coordination of resource management” (Agrawal, 2000, p. 79). Violent groups in informal settlements provide an environment where these small clustered and specialized groups are isolated. Preventing ways in which to capitalize from its surplus on membership is a way to successfully coalesce into collective action. In Medellin, the case of the of the Mesa de Derechos Humanos de la comuna 6 shows that incentives to collaboration among community groups that coexist in a context of violence “produce higher levels of resilience in the context of violent actors” (Samper, 2012). This research presents changes in density as a relevant variable in the capacity of organizations to engage with criminal actors. It sees undermining the ability of self-governance of these communities and its collective action as detrimental to community security. This finding is vital not only in the context of urban informality but also in the context of global population growth and asymmetrical urban warfare.

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