

**REVISITED CENTRALITY: TERTIARY TERRITORIALITIES IN THE DIGITAL AGE**  
**CENTRALIDADE REVISITADA: AS TERRITORIALIDADES DO TERCIÁRIO NA ERA DIGITAL**  
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## Abstract

This article aims to reflect on the observed territorial changes resulting from the increasing integration of digital technologies into the scope of retail trade and services activities, with a significant impact on the nature, intensity, and direction of urban flows. We define the concept of centrality as an attribute that stems from the concentration of people, goods, and information. We revisit the concept through a historical review by considering classic authors and contemporary reflections based on literature under construction, supported by reports and recent research. This path allowed us to identify changes in socioeconomic and cultural contexts at global and local levels, demanding a counter-hegemonic review of urban management, public policies, and architecture. Three significant moments related to the importance of centrality in urban life were spotted: the identification of centralities and their attributes, centrality as a sought and planned vitality, and on-demand centrality.

**Keywords:** Retailing and Services, Consumption, Urban Flows, Urban Vitality, Industry 4.0

## 1 Introduction

Meeting point places for the flow of people and goods, marked by the confluence of routes, have always been places of centrality, where certain retailing and services activities have emerged, giving rise to urban centers, from small cities to global ones. This situation allows us to state that commerce and the city have a relationship of origin (Vargas, 2001). Quickly identified as meeting points, these places have started concentrating activities and buildings that made them different from other areas inside the human settlements. In other words, the characteristics of these places were the concentration of people, goods, and activities. From a given moment, they not only responded to the flows that originated them but also started to act as attractors of flows, assuming a condition of command and autonomy. Often, the dynamics observed in these areas overlapped the concept of a center, such as a geographic location geometrically defined. The notion of centrality, conceived here as an attribute of the center, goes further and does not refer exclusively to so-called central places, as defined by Walter Christaller in 1933.

Choosing, therefore, the production processes of centrality areas as a major object of analysis, the present work aims to propose a reflection on changes observed in the territory, particularly in urban areas, considering the advance of digital communication technology, the Industry 4.0, Artificial Intelligence and the Internet of Things. These changes are directly related to trade and service activities, the structuring of urban space, and urban vitality. They pointed out a significant impact on the places, motivations, and time devoted to consumption in today's society. This article is, therefore, an instrument of questioning and opposition to hegemonic thinking about urban planning and intervention, given the performance of digital technologies, through the analysis of the concept and meaning of centrality.

The methodology is based on the bibliographic review of classic authors who studied centers and centralities during the 19th century, when the occurrence of concentration of activities and flows in specific places, internally to human settlements, began to draw the attention of scholars and intellectuals. We also included contemporary literature on the advancement of new technologies and the possible impacts on urban dynamics in the analysis, supported by reports and essays, because of the contemporaneity of the theme. We also must mention that the pandemic period made observational research possible, given the behavioral changes to which society was exposed. Using his methodological path made it possible to spot three moments: the identification of centralities and their attributes, centrality as searched and planned vitality, and on-demand centrality.

## 2 Identification of Centrality Areas and their Attributes

During the 18th century, accelerated urban growth, the advance of industrialization, and the change in the speed of transport brought to the fore several approaches to study cities dedicated to discussing the concentration of people and activities in urban space. Their emphasis shifted to understanding social relations, spatial configuration and locational preferences. As for the social relationships found in urban life, relevant themes were centered on the differences perceived between communities and metropolises. They sought to explain the stable and daily social bonds as opposed to temporary and

ephemeral ones and the indifference current in social behavior. Emphasis should be given to Ferdinand Tönnies' work, *Community and Society*, published in German in 1887, and Georg Simmel's 1903 essay, "The metropolis and mental life". Both authors were essential for the development of Urban Sociology, aside to other currents of thought that developed at the time, such as the Chicago School of Human Ecology, that ended up reinforcing the spatial configurations of human settlements through the graphic representation of urban patterns.

Concerning the concept of centrality, the ideas and discussions outlined and developed by the pioneers of the Chicago School related to retailing and services activities are introduced by Eufrásio (1999): the hierarchy of the centers (Park, 1915), the concept of neighborhood (Park, 1915, Mckenzie, 1923), the existence of centers and sub-centers (Mckenzie, 1923), the concept of the main center, CBD (Central Business District), a term coined by Burgess (1924), the dominance concept highlighting the tertiary category of command (Park, 1929), the discussion on the differences in the price of urban land and the dispute for better locations (Park, 1915, Burgess, 1924, Mckenzie, 1923, 1924), the notion of time-travel cost (ecological distance) (Mckenzie, 1924), the importance of different flows of people (Burgess, 1924), as well as a differentiation between basic and specialized needs in Mckenzie (1924), supplied by centers of different sizes and locations.

Burgess (1924) also discusses the concept of agglomeration by explaining the differences between the concept of concentration as group activities (economic space) and the concept of centralization as a central place (geographical space). According to Tourinho (2004), the decentralized concentration also appears in Burgess, indicating the emergence of sub-centers (satellite centers) that were polarized and dominated by the main center. Lately, other researchers from the same School, as Harris and Ullman (1945), advanced the discussions and perceived the city as the central place of a territory and, according to Eufrásio (1999), have indicated the possibility of setting up other urban clusters stemming from universities and recreational centers because of the flows these activities generate. They have anticipated, to a certain extent, the discussions about growth poles and centers carried out by François Perroux (1964).

Criticisms indicated the rigidity of the proposed spatial models without support in other urban realities beyond the city of Chicago and pointed out the lack of consideration of production relations and conflicts arising from the dispute over urban land (Richardson, 1973; Tourinho, 2004). Despite criticism, these studies produced, in our view, decisive findings in the field of urban economics and discussions on the tertiary and the city. However, these analyzes did not pay attention to understanding the demand (consumers). The same rigid graphic spatial models were presented in Ebenezer Howard's book published in 1898, "To-morrow" (*Garden Cities of Tomorrow*), launching the Garden City movement whose principles influenced the urban design of various cities in the United States and in Europe, especially after the end of World War II.

Regarding studies discussing the locational factors intended to explain the preferred business location in the geographic space, the pioneering contributions were given by the authors: Johann Heinrich von Thunen, whose work *The Isolated State* (1826) focused on the study of agricultural activities; Alfred Weber's *Theory of location of industries* (1909), concerning industry; and Walter Christaller's *Central Places in Southern Germany* (1933), on commercial position. This latter work greatly influenced the discussion on the concept of centrality disseminated among Brazilian geographers. All these neoclassical models drew on unreal assumptions, such as full knowledge, rational economic behavior, profit maximization, a linear relationship between distance and travel cost, and the idea of homogeneous territory. They have been criticized. According to Krugman (1997), these theories were of great importance to science, even though they faced resistance from the dominant scientific community at the time.

The attempts to explain the location of economic activities have welcomed another seminal work called *Principles of Economics* (1890) by Alfred Marshall. According to Silva (2004), Marshall is perceived as the official introducer of the agglomeration theory. For Marshall, agglomerations produce externalities, as they allow companies to take advantage of the existence of a dense local market for qualified labor, easy access to input suppliers, and the presence of spillovers effects that provide for greater dissemination of knowledge and technology, thus enabling a quick learning process, creativity, and innovation (Oliveira, Ribeiro, 2012; Fochzatto, 2010). Then came the economic-base theory initially formulated in 1921 by M. Arousseau, discussing the employment issue (Silva, 2004). Together, these two theories established the basis for understanding the power of induction and polarization of given activities in urban and regional development, frequently included in the discussion that occurred after the Great Depression of 1929. A moment when the classic work by Keynes

(1983 [1936]), the General Theory of Employment, Interest, and Money, boosted the state's participation in economic planning and development, with greater emphasis on the post-war period.

Still in the field of Economics, but from an individual's point of view, that is, the motivation of urban life, is Thorstein Veblen's work, *The Theory of the Leisure Class*, published in 1899. In this work, Veblen (1965) defines the expression "conspicuous consumption" to describe expenditures not intended for basic needs but performed for hedonic reasons, anticipating discussions on a need for social recognition by consuming. It took very long before consumers received due attention from retailers, which had mainly focused on the offer, that is, on goods.

This brief bibliographic review recovers the main ideas that dominated the scene until the end of World War II. It was then possible to confirm that the phenomenon of concentration of activities and people, often referred to as centers and subcenters, was presented as an attribute of centrality, mapped and configured through graphic schemes and mathematical models. As a result, the dynamics of the phenomenon of agglomerations that included externalities, perceived as inducing centrality and vitality, gave rise to the idea that agglomerations could contribute to economic development based on planned state actions.

### 3 Centrality as the Searched and Planned Vitality

After the Second World War, the idea that the development of countries and the reconstruction of Europe would only be possible through public actions was strengthened. Initiatives aimed at planning the development of socioeconomically less favored regions and urban development controlled by an increasingly complex planning system proliferated. This system was improved in the 1960s and 1970s, under strong technocratic influence and oriented towards the project/plan (Ashworth; Voogd, 1990). The work in regional development enters the field of economics, while the process of recovery of urban areas has a significant presence of urban planners.

In the field of development planning, François Perroux work must be highlighted (1964,1972) with his Growth Poles Theory, showing that regional development arises from some economic units (industries). Ranging among the key elements of this theory is the notion of economic space as a field of force, where poles, called driving units, attract centripetal forces and emanate centrifugal forces. They, then, give rise to a technical interdependence between companies (linkages) by forming a complex and acting as a driver of regional development (Vargas, 1985). Such effects were in phase with Marshall's externalities. Perroux's idea of growth poles based on the power of driving industries influenced the debate on centers of growth by Hirschman (1968) and Myrdal (1957), leading to a discussion on the effects stemming from the power of polarizing some centers in their region. Following Perroux, Friedmann, and Tinbergen (1973), Hirschman and Myrdal considered tertiary activities the driving element to enable the emergence of economies of agglomeration and urbanization, also functioning as a growth pole, as outlined by Harris and Ullman, as early as in 1945.

Rocheftort (n. d.) followed the same direction, conceiving in France the concept of *métropoles d'équilibre* [metropolises of balance], from the 50th French Plan as a regional development strategy of the *Délégation Interministérielle à l'Aménagement du Territoire et à l'Attractivité Régionale*, in 1963. Rocheftort (1976) also introduced the concept of tertiary of command, described as a tertiary represented by the headquarters of companies whose purpose is not to assist consumers but to do business. In the same command line, Milton Santos (1959) defined centrality as the quality of an urban center responsible for coordinating and commanding different activities in the surrounding space, reinforcing its autonomy. That is, the greater the centrality of an urban center, the greater its autonomy. While in the scope of regional development, issues seemed to be understood, and public policies based on the theories of development poles started being implemented in several countries, including Brazil (Vargas, 1985), the situation was more complex in the urban space.

The construction of New Towns and Directional Centers during the European reconstruction and urban decentralization brought to the scene a strong presence of architects and urban planners. New Towns were built simultaneously to the American suburbanization process, leading to the desertion of traditional centers. The need to keep urban vitality became a topic. According to Jane Jacobs (1967), it was due to the diversity of uses capable of gathering people at different times of the day. Furthermore, it created an intense flow of people walking through urban places and thus promoted social interaction. But the difficulty was to know how to promote urban vitality. In the planning of European New Towns, while the segregation of urban uses and zoning were decisive elements arising from the ideas of the Modern Movement expressed in the Charter

of Athens of 1933, the dimensioning of retailing and services activities received little attention. Graphic schemes and strong indicators of centrality attributes outlined these activities, ranging in a hierarchy of centers and subcenters, very much in line with the Garden Cities movement and the mistakenly read works of Walter Christaller.

These urban designs disregarded the commercial logic and the fundamental role of consumers. This fact is a misreading, as the model created by Christaller demonstrated that the quantity and variety of goods offered and the served population size determined the centers' hierarchy, among other factors. A third factor was the economic distance, defined by the relationship between the price of the good, cost and travel time, and the distance traveled (Berry, 1970; Vargas, 1985). In cities built by the private sector, as in the USA, although influenced by the Garden Cities movement, the implementation of retailing and services centers, hierarchically defined, moved according to demand dynamics (Bailey, 1973; Stein, 1966). Furthermore, the American suburbanization process was not limited to creating new towns. The construction of suburbs by the private sector gave rise to two other interdependent phenomena, the invention of shopping malls and the deterioration of traditional centers.

The invention of shopping malls in the US stemmed from the need to make viable housing developments far from central areas, starting with small commercial and service centers (Vargas, 1992; Garrefa, 2010). Two strategies supported it: one, creating internal conditions for attracting consumers based on the instructions of rapid-growing retail science, administration, and marketing, and two, choosing cheaper and larger areas distant from the urban center, making them privileged by the performance of real estate capital. Both strategies were able to generate new areas of centrality by generating and attracting consumer flows (Vargas, 1992). Retail and Marketing studies focused their attention on the consumer and the competition, with contributions in different moments through the works of Richard Nelson (1958), William Applebaum (1966), Paco Underhill (1999), and Daniel Miller (1998), who dedicated themselves to figure it out in a more emphatic way: Who buys? Where? What? When? How? And why?

Among the various business strategies continuously incorporated, the most expressive change concerning shopping malls was in the traditional anchor stores, firstly represented by department stores, then by cinemas, food courts, courses, events, etc. (Vargas, 1992, 2001; Garrefa, 2010), with leisure activities as a priority. This phenomenon known by shoppertainment had the West Edmonton Mall in Alberta, Canada, and the Mall of America (MOA), in Minnesota, USA, as pioneering paradigmatic representatives in the 1990s (Timothy, 2005). Concerning real estate strategies, which focused on privileged locations, the sector started creating such places through the successive investment of capital and work in urban land (Lefèvre, 1979; Lojkine, 1979) by reproducing, in practice, Marxist ideas on space production and agricultural land rent (Marx, 1980).

Real estate entrepreneurs started carrying out mixed-use projects, setting up areas for receiving residential buildings and complementary services in the immediate surroundings. They intended to value local urban land and to create the necessary purchasing-powered consumer flows to make their ventures viable, as shown by Vargas (1992) in the case of Sao Paulo. Mistakenly, public managers and their consultants believed that the success of Shopping Centers was due to the modernity of the spaces created and the emphasis on the separation between vehicles and pedestrians, ignoring the venture's business management. This belief led to the process known as Urban Renewal in the USA between 1950 and 1970 and the proliferation of exclusive pedestrian areas in several cities (Vargas, Castilho, 2006).

They failed to consider that ventures like shopping centers belonged to a single owner/entrepreneur, with centralized control and management and large financial amounts involved, which differed from the city centers. From the 1970s, this ability to create locations entered the field of city marketing public policies, now in a public/private partnership, on a city scale basis. According to Selby (2004), tourism, historical heritage, and cultural industries became the main driving elements for attracting and concentrating flows. Even though they were temporary, ephemeral, and on demand.

#### **4 On-demand Centrality**

The existence of flows of people on foot or in motorized vehicles determines urban vitality. People flows, in turn, are generated and or attracted by specific labor-intensive activities (employment), such as large public or private service providers and temples and churches in past times. In addition to the flow generated (workers), some of these activities may also attract users to their services (consumers), as well as companies that start taking advantage of the existing flow, stimulating trade and bringing vitality to the place (Vargas, 2020). However, the adoption and spreading of Industry 4.0 based

on digital technology, Artificial Intelligence, and the Internet of Things were stimulated by the Covid-19 pandemic (Riveira; Loureiro, 2020). The pandemic highlighted ongoing territorial transformations, such as the creation or abandonment of areas of centrality, and even promoted changes in the structure of physical manifestation. The current scenario indicates that consumption practices and jobs are the main targets of these changes.

Concerning consumption, the flow resulting from mandatory purchases of goods and services for survival and personal comfort started being impacted. They are standardized and easily acquired by online purchase and delivery systems, such as food products, health, home appliances, accessories for home office work, and ready meals. Other sectors already absorbed by digital platforms (place market) such as accommodation services (Airbnb) and means of transport (uber), in addition to real estate sales, banking services, and job search, among others, had their use accelerated. The same occurs with distance learning and telemedicine, leading to a decrease in consumer flows and their replacement by the flow of small vans, cars, motorcycles, and bicycles.

In addition to resorting to a more qualified workforce, the technologies employed to create and operate these platforms promoted an outsourcing process at several levels, silently starting to fit within a new economic system known as the on-demand economy (Schwab; Davis, 2018). Thus, hiring services only occurs upon demand, in a process known as Uberization that deterritorializes the work's performance.

The decrease in the flow of consumers, the randomness of their occurrence, and changes in their qualifications suggest a spatial rearrangement represented by the emergence of new arrangements, such as coworking points, which can be dispersed in large cities. The occupation of hotel rooms (Globo, 2020) occurred during the pandemic in 2020 since working from home is not always the most appropriate, which led to the emptying of office spaces and to rethink the use of these places. In the lower circuit of the Economy, in peripheral regions, the relationship with employment reinforces the importance of mixed usages, which have always been carried out informally in communities, combining housing, work, and consumption. This informal mixed usage meant a resistance and opposition to the hegemonic thinking of separation of uses, still present in many urban plans and in legislation for financing properties for low-income families.

In another direction, new formats and new uses of establishments start appropriating the urban territory as large centers for the distribution of goods, black stores, small distribution centers scattered throughout the urban fabric and closed to in-person consumers, dark kitchens of ready-to-deliver meals, and places for collecting products purchased online. They all compete for strategic locations in proximity to the consumer market (density and income) and available for lease. These locations aim at the speed of delivery, responding to the last mile phenomenon. (Lavado, 2021). Since they don't receive consumers, the buildings and their inward-facing activities make it difficult for other retail activities to emerge in their surroundings. Place market platforms, which virtually command their entire distribution processes, are self-sufficient and closed in on themselves. They can lie anywhere in the territory – as is already the case with telemarketing centers – dispersed in several virtually connected points.

Thus, questions remain: what motivation will make people move around the city, preserving the vitality of traditional areas of commerce and services? How will retailing and service activities that depend on the flow generated by tertiary jobs be held, nowadays heavily reduced and carried out remotely? In other words, how will the areas of centrality be born spontaneously, or how will they be maintained or created, considering that they are responsible for the vitality of urban areas? How to face conflicts of uncomfortable urban usages? In consolidated and higher-income areas, compulsory in-person purchases are strongly impacted by new technologies, as the flow of consumers is being increasingly replaced by couriers (delivery men) who go shopping. On the other hand, hedonic purchases, whose motivations involve pleasure, not only concerning the purchased good but also the act of purchasing, have other intentions and meanings (Veblen, 1965; Miller, 1998; Timothy, 2005), as well as different spatial and temporal relationships. In addition to changes in the uses of public space, they imply changes in new architectural projects. The goods' brand, multiple activities, and services offered involving experiences and pleasure, the place of purchase, and the quality of public spaces are now being strengthened as crucial elements to increasingly attract consumers and contribute to preserving urban flows (Vargas, 2017). In the case of areas where the lower circuit of the economy prevails, urban uses mix and interfere with the residents quality of life, especially noisy ones, with no control over discomfort. The moments of leisure and entertainment in undefined places are ephemeral, unpredictable, happen on demand, and uncontrollable.

## 5 Final Considerations

Contemporaneity reveals that the notion of centrality, as it is understood and desired, begins to acquire further contours. First, because it is sensitive to the decrease in flows, in search of compulsory and daily purchases, or due to remote work. It implies a decline in the concentration and diversity of activities and people. This situation reinforces, in a counter-hegemonic way, the need for demographic and constructive densification, with a mixture of usages, which opposes the idea of zoning with separation of uses and which remains very strong in the master plan of Brazilian cities.

Perhaps we should assume that the most promising activities to form areas of centrality are leisure and entertainment, which already occur in different ways, focused on hedonic consumption and experiences. These activities also have motivated and fed the flow of people to specific places, such as recreation and leisure centers, parks (public or private), beaches, bars and restaurants, and other public spaces. The place can also be any place, defined at an opportune moment, with a flow instantly attracted by the rapid dissemination on social networks without any prior planning. This speed of changes and demands is another condition that requires a counter-hegemonic rethinking of medium- and long-term planning that includes immediate tactical moves. The attraction of people to large outdoor events promoted by the public or private sectors, which are sometimes sporadic, tend to intensify, since events are efficient tools for disseminating and promoting brands and places, as well as alienation and social control. From an architectural point of view, transient and flexible architecture with sensorial appeals, capable of hosting new activities essentially aimed at hedonic consumption, presents itself as a counter-hegemonic movement. Assisted by technology, these architectural appeals have also invaded everyday shopping spaces such as supermarkets.

Centrality begins to lose its primarily permanent condition and takes on a temporary and ephemeral character, on specific days, on weekends, at night, or for the duration of a large-scale event. In other words, on-demand centralities. The polarization exerted by the large virtual platforms does not seem to incur territorial polarization, nor does it affect urban dynamics. Their interests remain limited to the concentration of capital and the exercise of virtual command, given the enormous power they have over bigdata control. The counter-hegemonic management of the territory must also be based on data and information, which is still far from being effective in the Brazilian context.

Based on the analyzes and reflections presented in this article, we can suggest that a change is underway, moving towards a dispersion of areas of centrality with varying intensities, temporary and ephemeral, with no capacity for polarization. The notion of areas of centrality as we know it begins to reflect the current economic system. In other words, coexistence with on-demand centralities is assumed, which – as a counter-hegemonic imposition in the Brazilian context – will demand changes in the character and format of public policies and ongoing urban management in urban design, and the architecture of our cities.

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