



The diversity of urban street functions and street death

Wenqi Wang

Cardiff University, Wales, UK

wangwenqiphdapply@outlook.com

Abstract. This essay explores urban street functionality and the concept of "street death," focusing on the Corbusier-Jacobs debate about the role of streets in cities. Corbusier prioritizes efficient traffic-oriented streets, while Jacobs emphasizes mixed-use streets for urban vibrancy. The study critiques Koolhaas' view on streets in vertical development and delves into Corbusier's city function concentration and Jacobs' mixed-use concept. Using Queen Street in Cardiff as a case study, we discuss its benefits like diversity and vitality, and challenges like congestion and safety. This case illustrates the interaction between the two perspectives. Overall, the essay underscores rational analysis for balanced functions, local needs, urban quality, and economic progress. Street diversity is crucial for dynamic spaces, improved experiences, and economic growth.

Keywords: functional diversity, urban development, urban connectivity, urban planning, community interaction, street death.

1 Introduction

This essay delves into the functional diversity of urban streets and the concept of "street death." Street functional diversity encompasses a range of activities, including residential, commercial, cultural, and recreational, fostering interaction, community, and urban life. While some advocate for streets mainly serving passage and transport, exemplified by Corbusier, others, led by Jacobs, emphasize diverse functions as vital for urban vitality. Exploring these perspectives, the essay first critiques Koolhaas' assertion that streets are dying. Then, it delves into Corbusier's and Jacobs' views, examining their implications in light of Koolhaas' argument. The study progresses to a case study: Cardiff's Queen Street, a dynamic commercial hub. This case study combines theoretical insights and critical analysis, evaluating the diverse role of streets. Ultimately, the essay integrates theory and case to assess pros and cons, and propose enhancements for balanced urban development.

2 The death of the street

Koolhaas posits a transition in the generic city's landscape, moving away from a predominantly horizontal orientation towards a more vertical emphasis, where the skyscraper emerges as the quintessential architectural form[6]. In certain traditional urban contexts, cities evolve in a manner that sees their physical structure expanding outwards, gradually forming a radial configuration emanating from a central hub. This decentralized pattern characterizes what can be described as horizontal urban development. Conversely, the notion of vertical urban development advocates for the consolidation of urban functions within a cluster of towering buildings [6]. This approach envisions streets primarily as conduits for efficient and rapid vehicular and pedestrian flow. As shown in Figure 1, when streets are solely relegated to connecting two points, their role becomes confined to that of mere passageways, leading to an inherent homogeneity in their function, resulting in a monotony of street life.

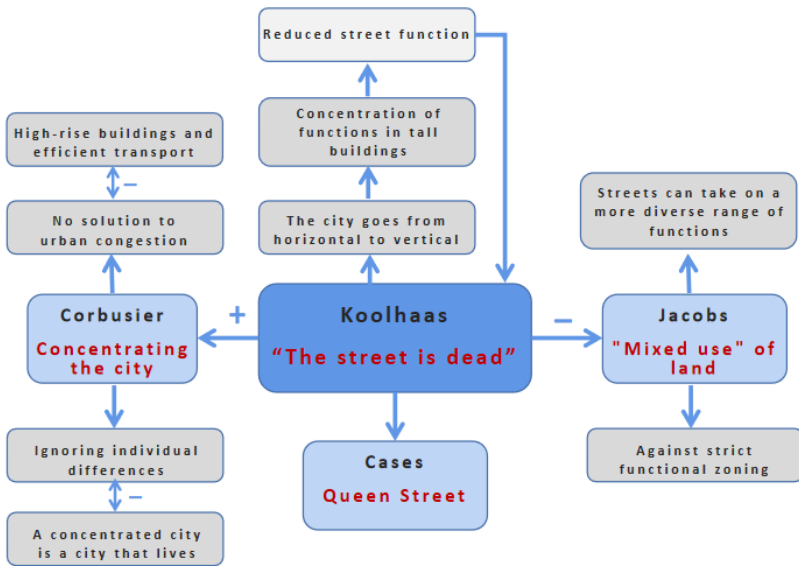


Fig. 1. Diagram of the exposition process

3 Concentrating on the city

Following a similar line of thought as Koolhaas, Le Corbusier held a conviction that urban problems stemming from congestion could be mitigated through the implementation of numerous high-rise buildings accompanied by enhanced density and an efficient transportation system [7]. In his view, streets were to serve a singular purpose: efficient transportation, devoid of any extraneous functions. He proposed a concentration of all city functions within towering structures, which, when coupled with heightened floors, would augment the floor space within confined land plots. This strategy

elevated the building density of such plots, ultimately yielding a more compact urban landscape. In this design, streets merely functioned as conduits connecting these buildings, facilitating seamless vehicular movement. By eliminating redundant street functions, the emphasis on traffic efficiency was amplified, freeing up space for taller buildings and shorter inter-building distances, contributing to the illusion of a denser cityscape and more efficient streets.

However, this audacious social reform, grounded in rational design, disregarded the inherent complexity and diversity of cities as a natural order – a perspective eloquently elucidated by Jacobs [8]. When grappling with the challenge of urban congestion, Le Corbusier advocated for the introduction of towering structures, green spaces, and functional zoning. Paradoxically, these measures aggravated the issue rather than resolving it. The proliferation of tall buildings and green spaces, instead of enhancing the quality of life, inadvertently fueled social segregation. Notably, functional zoning and expressways offered minimal relief from congestion, exemplified in locales like Beijing, China, where traffic gridlock persisted despite the presence of lofty buildings. As the height of buildings escalated, so did the population within them, exacerbating the traffic burden borne by the streets. Thus, it becomes evident that the city failed to achieve the envisioned perfection subsequent to the suppression of street life.

Le Corbusier staunchly believed in the necessity of concentrating on cities, arguing that only through these means could cities truly thrive[7]. His ideal city model eliminated conventional urban elements such as blocks, streets, and inner courtyards, opting for a centralized approach encompassing all functions. His vision encompassed a city where individuals inhabited small, square rooms linked to an external highway solely via a limited number of internal passages. In this schema, streets functioned primarily as pathways between units and various functional divisions, with automobiles reigning supreme [7]. While this approach may have promoted efficient street utilization, it paid scant regard to the existence of the individual and the interpersonal gaps it perpetuated. Le Corbusier was driven by the notion that noble aspirations would naturally yield noble outcomes. His aspiration of rapid slum eradication and the establishment of an egalitarian society overlooked the reality that a healthy society necessitates not universal equality, but rather an environment in which individuals find their fitting comfort zones, fostering self-motivated upward mobility[5]. This approach eschews the notion of an identical society founded on the exploitative subjugation of one segment by another. Notably, it disregards the diverse needs of those who require more than just passage through streets – such as homeless vagrants who seek refuge on public thoroughfares. Additionally, those who briefly pause on streets or await companions exhibit a subconscious yearning for social interaction and communal living, making the street a source of comfort[1]. When the multifunctionality of streets is curtailed to the extent that a solitary traffic role prevails, it disenfranchises some and ultimately culminates in the decline of street vitality and urban vibrancy[3].

4 "Mixed use" of land

Jacobs, on the contrary, brought about a paradigm shift. While conventional architects and urban planners often fixated solely on architectural form, prioritizing refined design tools to mold urban spaces into more efficient vessels for economic and societal growth, Jacobs emerged as a nonconformist thinker. Her ideas stemmed from her personal experiences and daily observations of New York City, rather than being bound by traditional urban planning theories. Rather than construing cities as mere containers, she redirected focus towards the dynamic essence of urban areas within the context of economic evolution. Introducing the concept of "Mixed use" land, she advocated for the integration of diverse functions alongside thoroughfares designated for transportation.

Challenging the prevalent 'functional zoning' approach often adopted in modernist urban planning, Jacobs postulated that streets could encompass a wider range of functions, asserting that urban dynamism derives from diversity[8]. The amalgamation of various functions onto streets yields a multifaceted economic, social, and physical urban environment. To begin with, the utilization of mixed-use land facilitates the convergence of multiple functions alongside streets, transforming them into spaces for social interaction, catering to a broader demographic with varied preferences and characteristics. Secondly, the infusion of diverse functions attracts a greater number of people to the streets. A bustling street environment is synonymous with numerous pairs of eyes, attentively observing ongoing activities and occurrences. This implicit surveillance fosters a sense of restraint among individuals, discouraging criminal activities and thus enhancing public safety—a phenomenon inadvertently achieved by bustling streets[4]. Although the sense of security may contribute to lower crime rates and a heightened sense of belonging, the constant invisible scrutiny can also lead to feelings of perpetual surveillance. Lastly, the multiplicity of street functions contributes to the tapestry of street life, providing regular users with a sense of connection and familiarity[3]. For instance, encountering familiar storefronts and friendly faces during a stroll instills a feeling of homecoming. The street comes alive in these moments.

Jacobs staunchly opposed the delineation of streets as boundaries and the rigid compartmentalization of neighborhoods into strictly functional zones. She championed the preservation of a city's heterogeneous and blended character over time [8]. The diversity of street functions serves as a wellspring of urban vitality, dynamism, and safety. This diverse blend of street functions attracts a more diverse populace, bringing in a profusion of resources and injecting vibrancy into street life. Nonetheless, when a street's primary function as an access route becomes overly crowded with ancillary functions, it can impede the smooth flow of vehicles and pedestrians, diminishing efficiency. To counterbalance this, when incorporating multiple functions on a street, their impact on the main access function can be mitigated by regulating the time and space allotted to secondary functions. Jacobs also proposed that the seemingly mundane aspects of everyday street life foster the inception of novel economic activities and sustain momentum[8]. Presently, the erosion of these traces of street life and community interactions threatens the dynamic facets of urban development. The vitality of a city is intrinsically linked to these living fragments of street life—each piece contributing to

the city's advancement and economic progression. As these dynamic components dwindle, cities risk succumbing to a standardized and sterile disposition[4]. Should the lifeblood of the street dissipate entirely, cities would lose their essence, becoming hollow shells, and their inhabitants, mere automatons.

5 Studying the street profile

To delve into the intricate interplay between the multifaceted new functions of urban streets and their potential decline, this essay focuses its investigation on Queen Street, located at the heart of Cardiff. Spanning approximately 563 meters in length, this street is flanked by Boulevard De Nantes on both of its ends. With a width of around 18 meters, Queen Street predominantly accommodates pedestrians and non-motorized vehicles, with fewer automobiles traversing its expanse. However, it's noteworthy that cleaning and refuse vehicles do traverse this route as well.

The thoroughfare is characterized by a lineup of commercial structures, boasting numerous expansive and transparent windows. Some of these establishments extend onto the public street space, providing tables and chairs for patrons to enjoy their meals. Queen Street stands as a bustling commercial hub nestled within Cardiff's urban core, teeming with a vibrant tapestry of people and activities. Amidst the lively milieu, it's common to observe homeless individuals seeking respite or soliciting assistance along the thoroughfare[3]. Moreover, the street also becomes a stage for various individuals who showcase their talents in exchange for support, effectively using the street as a means of livelihood.

As shown in Figure 2, by scrutinizing Queen Street, a bustling urban hub in its own right, we can unravel insights into the intricate balance between diverse street functions and the possibility of their decline.

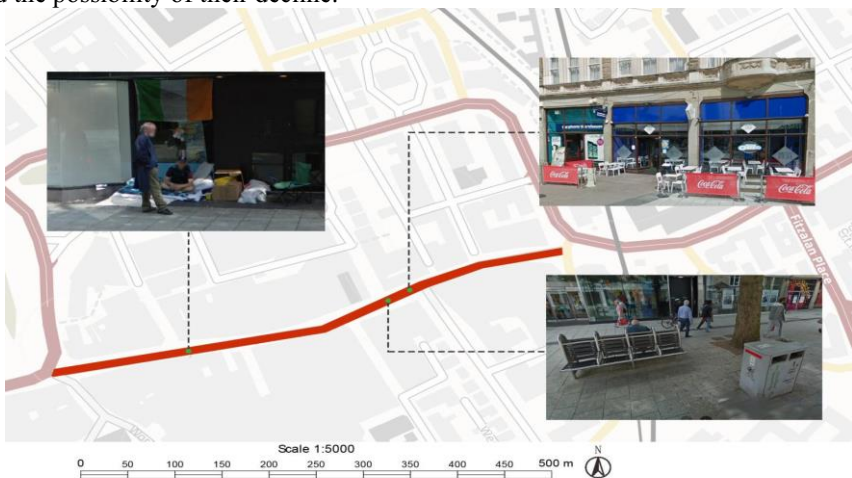


Fig. 2. Street scene view

6 Queen Street and street vibrancy

Queen Street exemplifies a quintessential thoroughfare characterized by a harmonious blend of activities, including leisure, play, work, socializing, and self-expression. This bustling street empowers individuals to freely engage in activities aligned with their preferences, such as street performances to earn money or expressing ideas through speeches. Within the framework of Jacobs' theory, the street stands as a rich tapestry of functions, epitomizing the diverse roles streets can play. It pulsates with vitality, vividly showcasing Cardiff's urban dynamism and allure. While Queen Street experiences substantial foot traffic and boasts numerous retail establishments, the expansive shops, coupled with the absence of residential dwellings nearby, hinder the formation of a cohesive network of familiar faces. Conversely, the dense footfall creates fertile ground for opportunistic individuals, including potential thieves, to operate with relative ease amid the crowd.

Queen Street eschews strict zoning, providing people with the freedom to harness the open space for various endeavors. This deliberate lack of zoning safeguards the street's functional diversity and preserves the organic blend that has evolved over time. These facets collectively imbue Queen Street with a dynamic momentum, contributing significantly to the region's economic progression[1]. The street's multifaceted nature stands in contrast to Koolhaas' notion of centralizing functions in towering edifices, shunning the conventional vertical urbanism. The elongated thoroughfare flanked by structures of three to five stories primarily designed for commercial, office, and residential purposes underscores the streets' role beyond mere conduits for movement. The street holds a pivotal position within the urban fabric, offering not just mobility but the opportunity for unrestricted human interaction. In essence, Queen Street stands as a vivid testament to the urban vibrancy that continues to evolve.

However, alongside its vibrancy, the mixed-functionality of Queen Street also harbors safety concerns and latent challenges. First and foremost, the coexistence of numerous functions results in intricate crowds and intersecting pedestrian flows, often entwined with the passage of non-motorized vehicles, adding an element of risk where vehicular and pedestrian pathways overlap. Secondly, the restlessness of these crowds occasionally disrupts the seamless movement of vehicles. This erratic flow leads to reduced speeds or even traffic jams, thereby jeopardizing safety. Addressing these concerns warrants targeted enhancements. Implementing designated non-motorized lanes within the mixed-use design of the street would ensure the separation of pedestrian and vehicular traffic, mitigating the potential for accidents and streamlining access[2]. Furthermore, managing the temporal occupancy of street spaces for profit-driven activities could offer a balance between public engagement and vehicular movement. During peak demand periods, curtailing such activities would ensure unobstructed circulation, while allowing them during off-peak hours preserves the street's multifunctionality.

The case of Queen Street unveils the absence of the "death" of a street, yet it also underscores the nuanced advantages and challenges inherent in diversifying a street's functions. This multifaceted illustration provides a compelling exploration of the intricacies surrounding street functions and their implications for urban environments.

7 Conclusion

In conclusion, urban streets play a crucial role in the urban landscape, and their functional diversity significantly influences their vitality and potential decline. Streets that offer a diverse range of functions contribute to a lively and engaging atmosphere, ultimately enhancing safety and attractiveness. Conversely, streets restricted to singular purposes often stagnate, resulting in a lack of inspiration and compromised safety. Jacobs champions functional diversity from a practical perspective, while Corbusier's focus on streamlined roadways and vertical architecture stems from a professional analysis.

Hence, when considering the roles of urban streets, it is essential to carefully assess both their advantages and drawbacks. Matching functions to local needs, understanding the surrounding community, and tailoring solutions accordingly are imperative steps. By adopting this approach, urban streets can transform into vibrant public spaces, elevating the quality of life for residents, enriching their experiences, and fostering economic and urban progress.

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