

The contemporary interest in mapping the city of Detroit exemplified by anti-blight strategies of Loveland technologies have precursors in the *Detroit Geographical Expedition and Institute* of 1968 to 1971. Convened by radical geographer William Bunge, an academic at Wayne State University and inspired by the protests of the civil rights movement, this group aimed to involve the community in mapping and critique and reform the agenda of urban planning to place residents' interest foremost.

Ronald Horvath, a member of the DGEI, introduced the idea of *machine space*; defined as

any area devoted to the movement, storage or repair of automobiles - the places where machines have a right-of-way over people.

Horvath 1974

Exploring this concept in relation to downtown Detroit, he reported his findings in a *Geographical Review* article in 1974, illustrated with the map below. In his lexicon, *streets, alleys, parking space, driveways, garages, gasoline stations, car washes, and automobile supply stores* - all these spaces give priority to cars in the event of a conflict. The text explored *machine space* in Detroit and for comparison, with sub-areas of East Lansing, the Michigan State capital.

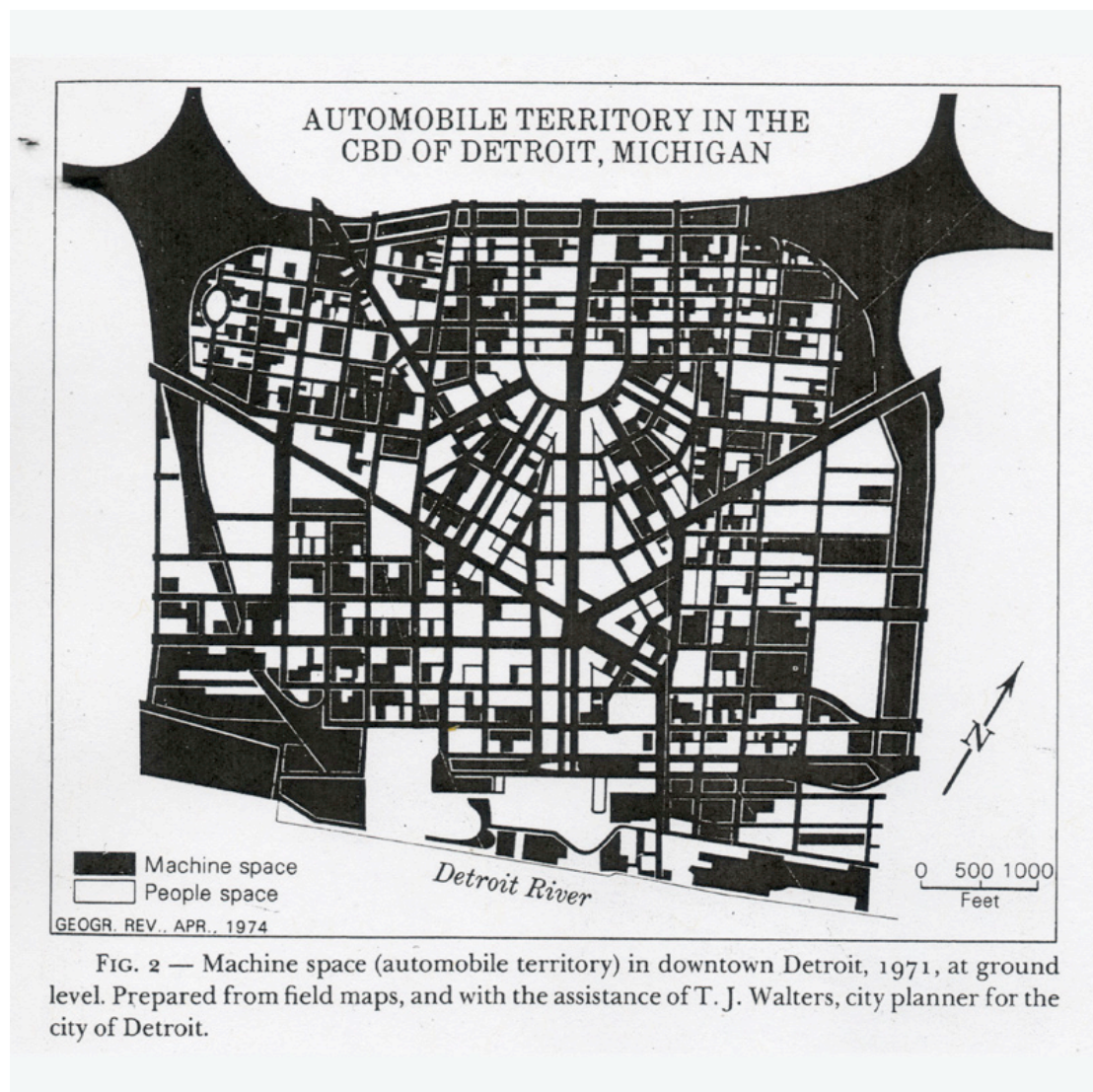


FIG. 2 — Machine space (automobile territory) in downtown Detroit, 1971, at ground level. Prepared from field maps, and with the assistance of T. J. Walters, city planner for the city of Detroit.

(Horvath, Ronald. *Machine Space* *Geographical Review* 64(2) 1974

Horvath delimits the Detroit downtown or Central Business District (CBD) by the river to the sound and the outer verges of the Lodge, Fisher and Chrysler freeways serving the city core. Identified in the legend on the map, *machine space* is shaded black in the map, bisecting the *people space*, in this rendering the *registration* or *blank page*. The distinctive, L'Enfant inspired, radial street plan of the city is easily identifiable and city blocks show a multitude of buildings or people spaces clustering around the major avenues.

The map resembles a *choropleth* - a thematic cartographic form that divides topography into distinct clusters of measurement. In this case, the map displays discrete categories - areas of machine space or people space with categorically different priorities of privilege. Typical of a *choropleth*, there is no identification of features and places on the map itself, just in the title, sometime known as the *legend*.

The dark shading of *machine space* creates a stark graphic, giving an impressionistic feel for the shape and pattern of streets and buildings. Overall, the map clearly signals the extent of *machine space* in the downtown, and forms a visual impression that it surpasses *people space* in area.

Horvath notes machine space in Detroit is more extensive and by percentage greater than the retail area of East Lansing - 65 %. He further suggests and occurs within a paradigm of growth as a city of property expands. Recasting the city as a space of people aligns *machine space* with a notion of *territorial alienation*; in the legal sense the transfer of property from one owner to another and the existence of *estrangement or separation between people and their livelihood or well-being*. Invoking the annual vehicle fatality rates, Horvath extends this analysis further -

Machine space, however, has a second attribute that compounds the contradiction that the examination of alienation brings into focus: it is a place of death.

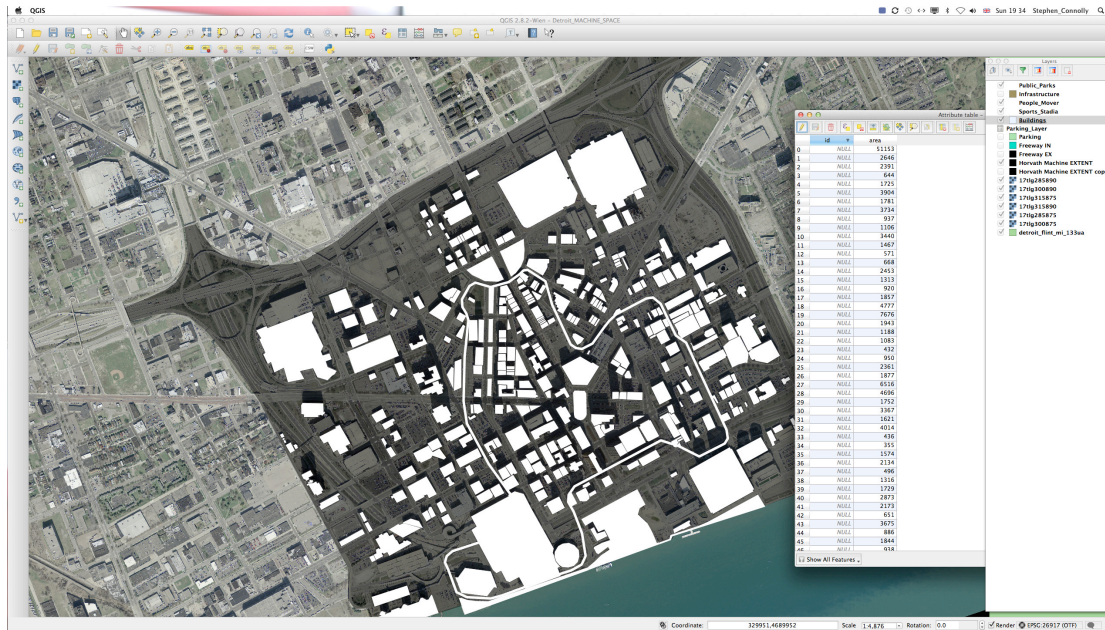
Horvath 1974

On a street level, the binary and antagonistic opposition between machine and people space run into complications. Does people space extend to the sidewalk? At what point does a sidewalk become an alley - a space Horvath assigns to the vehicle?

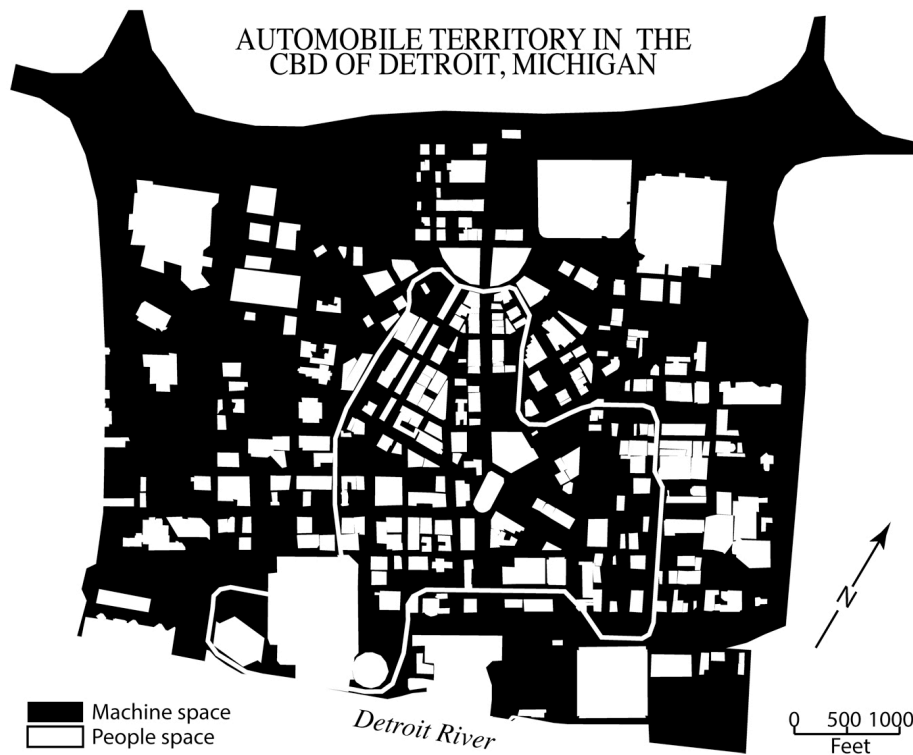
The level of the street is the sole remit of this map - this singular footprint of *people space* excludes the multiple stories of the many early skyscrapers in downtown Detroit. As a building form explicitly designed to maximise *people space* - and thus profit - this is a significant condition to Horvath's notion of urban space. Furthermore, if *automobile supply stores* are to be counted as *machine spaces*, why not *automobile manufacturing plants* of which there were a few near the downtown around the early 1970s.

Horvath's designation of the two legal discontinuous spaces positions the map squarely within the tradition of maps as a representation the territory of sovereignty - marking boundaries of legal enforcement and the rights to use. Urban space in his maps is parcelled into two zones of opposing legal priority. Horvath commented in 1971 - "The trend, I would suggest, is toward increasing exclusiveness of use of machine space by machines." yet now it may also be interesting to think of the exclusions operative in people space.

We can re-create a contemporary machine space graphic with the assistance of freely available high-resolution aerial imagery and open source GIS software. Four tiled orthographic photographs cover downtown Detroit to a resolution of 0.3 meters/pixel, shot at a height of 9,600 feet on Saturday 12 November 2011. From the evidence of the shadows cast, they were sourced near the middle of the day, and their clear resolution and bright colours confirm the brilliant sunshine (15C at 1.53 pm, 8C av in Nov) and clear skies recorded in weather archives.



The working practice of GIS is to delineate area by drawing vector based polygon shapes in layers, stacked over tiled aerial photographs as indexical referents. Scrutinising these scan-like overhead images of the material environment, “people space” can be identified and divided into categories by identifying buildings, public parks, sports facilities and the people mover.



Machine Space (automobile territory) in downtown Detroit, 2011, at ground level. Prepared from orthographic photography and GIS.

The freeway perimeter of the CBD remains the same as Horvaths’ 1971 map; this area minus the sum of the *people space* will yield the *machine space*. Tracing the many shapes the built form assumes on the aerial photographs by clicking verticies may be routine work, yet it is utterly

compensated by the automated area calculations performed by software - a different proposition to the material card cut-out and weigh methods of analogue cartography in 1971.

As calculated by GIS, on 12 November 2011 downtown Detroit comprised 19 % by area of building space; 4 % public parks and 4.5 % sports stadia. By Horvath's metric, 72 % of downtown Detroit by area is "machine space". Consistent with the omission of the layered floor areas of the skyscrapers of the city, the stacked floors of the 20 or so multi-story car parks in the contemporary city have not been accounted for.

Compared to Horvath's map, in 2011 *people spaces* as buildings have considerably diminished, and those remaining structures cluster around the central axis of the city, Woodward Avenue. Furthermore, a new pattern of built form has emerged. Each corner of the freeway perimeter of the downtown appears to be anchored by mega-structure *people spaces* - the Renaissance Centre (SE); the Cobo and Joe Louis Arena (SW); MGM Grand Detroit (NW); and the large baseball and football stadia - Comerica Park and Ford Field (NE).

These large enclaves of corporate culture dominate the *people space* of the downtown - they occupy some 40 % of the area apart from *machine space*. These places are of two sorts - halls for conventions or sporting events - ie activities attracting communities of interest on an ad-hoc basis; and malls servicing businesses and leisure activities.

These intensely regulated *people spaces* are zones of pervasive surveillance. Entrance is subject to dress and behaviour codes. Security personnel are invested in and exercise the right to deny entrance to and eject people for non-conformity with these codes. The MGM Grand is a casino - its function is extracting wealth from its users; often by means of machines.

In 1974 Horvath was confident that identifying and mapping *machine space* was a coherent political strategy by entering the community into a conversation about space. He observes this process -

serves as an impetus for gaining consensus in the community about how much automobile territory is sufficient. My experience suggests that as soon as people realize how much of their community is devoted to one type of machine... the value of setting limits to the area growth of machines is appreciated.

Yet Horvath's optimism about the promise of this engagement with community fades when faced with the systems of value and power he perceives to be operative in automobile culture -

I would propose going to the heart of the matter: the relationship between status and technological privilege must be changed. If you are a high government official in Washington, D.C. a subsidized parking place commonly comes with your position. A professor driving alone to almost any university can obtain a parking place, whereas a car full of students cannot. A non-technological solution would be to distribute parking places on ecological criteria rather than on those of social status.

In conclusion, the mapping of *machine space* generates a persuasive representation. This reconfiguring of the city by area returns ideas of function and purpose and appends them to the spatial expression of the urban form. Hinging *machine space* on the priorities of privilege reveals the intimate connection between doctrines of *might is right* and spatial manifestation.

What is also interesting about mapping *machine space* is the revelation of information about its obverse - *people space*. This tabulation of the area available to people in the urban form accesses what cities claim to function for.

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