

UC Berkeley

IURD Reprint Series

Title

Livable Streets: Protected Neighborhoods

Permalink

<https://escholarship.org/uc/item/5fr624cv>

Author

Appleyard, Donald

Publication Date

1978-11-01

Peer reviewed

File copy



DONALD APPLEYARD

Livable Streets: Protected Neighborhoods

Institute of Urban & Regional Development
University of California, Berkeley

Reprint No. 174

Reprinted from: EKISTICS, Volume 45, Number 273, November/
December 1978, pages 412 - 417.

The Institute of Urban and Regional Development serves the faculty and students of the Berkeley Campus conducting research into a wide array of policy-relevant questions. Its foci of inquiry are the processes of urban and regional growth and decline, the consequences that alternative styles of governance have for patterns of development, and the scientific bases for development policy and for policy planning.

Toward these ends, current research is directed to the economics of urbanization in the West and in the Third World; techniques of environmental management; effects of using new energy sources; emergent patterns of suburbanization and central area reconstruction; evaluation of alternative modes of transportation; design of effective means for supplying social services; contemporary issues in housing policy; regulation of urban growth and uses of land; determinants of urban livability and the factors shaping urban life; and potential improvements in methods of analysis, evaluation, and planning.

The Institute's members are drawn from departments throughout the Berkeley Campus, and their research findings are published in their respective professional journals and in commercially distributed books. The Institute prints and distributes many of their research papers; a catalog of publications is available on request.

Livable streets: protected neighborhoods

Donald Appleyard

Donald Appleyard is Professor of Urban Design, College of Environmental Design, University of California, Berkeley. This article is an extract from his forthcoming book, Livable Streets: Protected Neighborhoods (University of California Press, 1979).

Since streets are where most of our children are reared, and where most housewives and old people spend their lives, they are, outside the home, the most important part of our urban environment. Yet today most urban residential streets are dangerous, noisy, polluted, impersonal domains, about which their residents feel able to do little. Though nominally public, they are actually controlled by agencies and ordinances that are remote from the residents, a fact which severely restricts efforts for their improvement by the residents. The situation on most residential streets is one of acute frustration. Residents are unable to control traffic intrusion, or to organize themselves to create clean, pleasant, sociable environments, and cities are unwilling or unable, because of obsolete ordinances or lack of funds, to provide much help.

Residents are usually modest in their requirements; here they would like to be rid of the trucks, there they would like to slow down the excessive speed of the cars. But we should raise our sights for a moment. What could a residential street — a street on which children are brought up, adults live, and old people spend their last days — what could such a street be like?

The street as a safe sanctuary

Streets on which children grow up should be safe from speeding and careless drivers. Young children should be able to walk or cycle safely through neighborhood streets to reach local schools or schoolbus stops, the shops and the playgrounds and parks they like to visit. Drivers of cars, delivery vans, and other vehicles should understand that they are in pedestrian territory when traveling on these streets, and they should therefore move slowly, carefully, and with warning — as guests, not as owners. If only this were possible, street life would flourish. Access for emergency vehicles, for ambulances, police cars, and fire services must, however, be provided for occasional crises.

The street as a livable, healthy environment

Street dwellers should be able to sleep soundly without disturbance from night-time noise or passing headlights. They should be able to talk on the sidewalks in normal conversational tones without having to shout. They should be able to study, eat, and be sick or tired without the constant or intermittent rumble of traffic past their homes. The air they breathe should not be heavy with fumes. Dirt and soot should not forever be seeping

through doors and windows. They should not be forced to withdraw from the street because of the discomforts caused by traffic.

The street as a community

The street environment should have places where people can sit, converse, and play. Although not all neighbors wish to participate in street activities, streets should be places where communal life is possible, where it can happen if street dwellers want it to. A street should be pleasant enough for people to sit out and talk easily, where there are not too many strangers. Street communities can not only reduce the anomie of urban life, they can encourage street activities, keep the street clean, engage in common actions and care for the detailed design of the street, the sidewalks, benches, street furniture, and play places. They can put on local celebrations and defend the street or neighborhood from unwanted intrusions, projects, or plans. The optimal size of such communities is debatable, but for many groups and situations it is the street block itself.

The street as neighborly territory

While protecting each resident's right to be left alone, and respecting his private domain, the street should become, in a symbolic, if not a legal sense, territory that the residents feel belongs to them and for which they have a sense of pride and responsibility. If this were the case, residents would be more likely to maintain their streets, plant along them, monitor street behavior, and provide other kinds of street amenities.

The street as a place for play and learning

Since the street is where children spend by far the largest amount of their outdoor recreation time, it should be a fine place to play. What makes good places for children to play? Places which are diverse in character, with different kinds of surfaces, adequate space to play all the street games children like to engage in, places where they can hide, places where they can build things or play in sand.¹ They should be able to do these things without disturbing adults. Back yards can accommodate many of these activities, but in central cities the street is often the only place available. The street is a learning environment.² On it children could learn much about nature, through plants and trees, the sun and the wind, and — hopefully — through exposure to the earth itself. They can learn about social life if there are people on the street whom they can safely meet. Learning about the larger city depends on their freedom to roam safely in their neighborhood.

The street as a green and pleasant land

The "greening" of streets is perhaps one of the most common desires of those who live in the central city. Trees, grass, plants, and flowers not only provide relief from the hardness and greyness of the city, they provide shade in summer and remind people of the natural environment which is often far away; they signal the seasons, and symbolize, through growth, flowering, and decay, the cycles of life itself.

The street as a unique historical place

People take pride in places that have a special identity. This identity may be due to some unique quality such as a view, a small creek, an old tree, or a particular house or garden that one of the residents has built or created. All streets have a history, though it is evident only on a few, and is suppressed or forgotten on the great majority. Without undue nostalgia a street's history can be discovered, revived, or revealed, and its present history can be recorded so that residents are able to begin seeing it as a "place" rather than a "channel." Residential streets should be destinations, not routes.

Street life

There is no single perfect street, but the qualities described above should help to set some standards — we might call them *street-dwellers' rights* — that we should strive to attain. It is common, since Jane Jacobs and Bernard Rudofsky, to idealize streets that have a lively and visible street life. They are like a party we wish we could go to. Streets like those in Chicago described by Gerald Suttles, and those of the old West End in Boston studied by Marc Fried and Herbert Gans, perform important functions for those who live on them³.

In many ways working-class city streets provide images of a thriving, bustling world of intense human interaction, filled with the gossip, humor, dependence, and community solidarity that middle-class suburbanites have lost. They are American versions of the legendary streets of the Trastevere, of Venice, or of Naples, those "echo chambers of human passion" that tourists travel from far and wide to photograph, where the clack of street voices drowns out all other sounds. But the middle class concept of a street as a *sanctuary* rather than a social center is taking over.

A revealing study by Sidney Brower of working-class Baltimore residents found that they denigrated pictures of streets with people sitting on the stoops as less preferable to live on. Many working-class people wish to escape from the pressures of intense street life and crowded conditions⁴.

Can we retain or somehow recreate this nearly lost form of urban life? The young "pioneers" who flock to New York's Greenwich Village, Boston's North End, San Francisco's Telegraph Hill, Castro Street, and Union Street, not to mention London's Chelsea and Islington, and Amsterdam's Jordaan, are in search of such action. But the kind of street life in these places is quite different from the former working-class street life. The families with vast numbers of children no longer exist, and the

little old neighborhood shops and local industries which provided the mixed uses and life that Jane Jacobs argued for are having a hard time surviving. Most have been replaced by little boutiques, handicraft shops, restaurants, and street vendors, many of which serve regional markets. We can feel nostalgic about the passing of the old street life, but this new form has its own vitality. Indeed, since it prospers because of the free wish of young people to join in, it has a healthier quality than the earlier active street life, which stemmed from inadequate housing and enforced localism. These young pioneers are active and in many cases demand protection for their street life from excessive traffic. They should be encouraged.

There is, however, another quieter kind of ideal residential urban street. It is typified by the San Francisco cul-de-sacs studied by Charles Zerner: quiet sanctuaries where children from many blocks around gather to play their street games; or the quiet cobbled London mews, tucked away behind the street-facing houses or some of the quieter squares of Kensington, Chelsea, and Islington; or the narrow streets of older European cities where there is privacy and where children can safely play. Although street life here may be less evident, and less interesting to photograph, these streets too can have a powerful social unity⁵.

American cities have few residential squares apart from those in Savannah and a few in Philadelphia and Boston. But those few have usually become treasured places, adopted by the affluent. Streets without through traffic, in some cases cul-de-sacs, have developed mostly by chance — change in terrain, as in San Francisco, may have prevented the gridiron from being carried through, or the distance between arterials may have resulted in cross streets within a superblock that do not carry much through traffic. Also there are the older suburbs where the gridiron plan was thrown over in favor of discontinuous streets. However, in the new outer suburbs, although the streets are designed to discourage through traffic by use of three-way intersections and street hierarchies, their length and width encourages what traffic there is to travel fast.

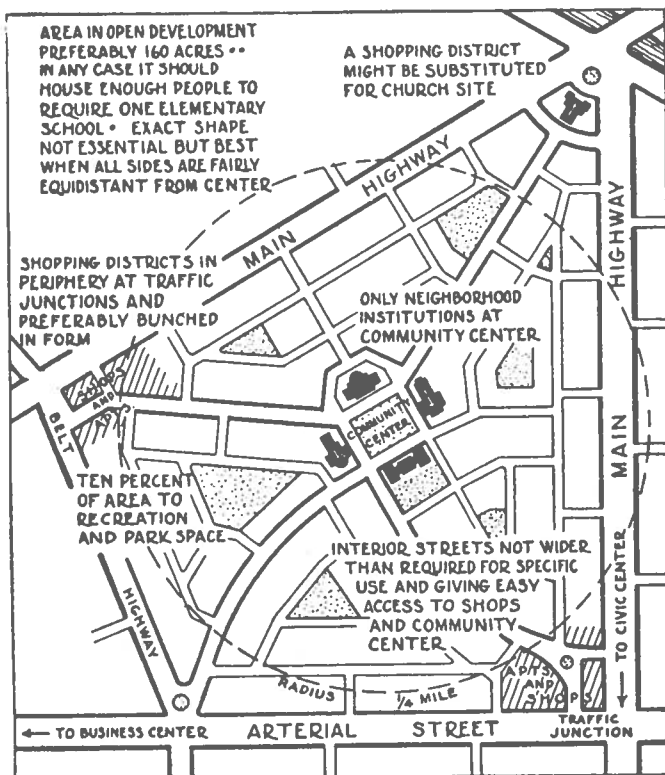
Ideal streets are very scarce in our cities today, and the principal reason is the suppression of neighborhood street life by passing traffic. The reduction or slowing down of traffic can allow the life that people want on their street to flower; it can make it possible to live amenably in the denser urban fabric of the inner city; it can be the first step in creating conditions for street communities to reappear.

The protected neighborhood

Around the street lies the neighborhood. It may be that an effective national policy to create livable streets should first concentrate on the concept of protecting neighborhoods.

In the history of city planning there have been a number of significant attempts to protect neighborhoods. The *neighborhood unit* was conceived not only as a bounded social enclave but also as a protection from traffic (see fig. 1). Though attacked later for its social exclusiveness on the one hand, and for its ineffective-

Fig. 1: The "neighborhood unit" as seen by Clarence A. Perry (New York Regional Survey, 1929, vol 7).



ness in the socially and physically mobile world of the modern city on the other, a recent study shows that the concept endures in the planning profession with remarkable tenacity. The neighborhood concept is to be found in plans throughout the world.⁶

While the original ideals of creating urban villages failed to materialize in the complete sense in which they were conceived, the concerns of the two groups of critics have to some extent cancelled themselves out. Physically defined neighborhoods have not necessarily become exclusive, because the physical mobility of their residents has freed them from confinement within neighborhood boundaries. The strategies of exclusion have shifted to the larger scale of city and suburb.

Neither has the neighborhood concept become entirely irrelevant. Indeed, despite the internecine disputes of planning theorists, the "neighborhood" has never achieved such popularity as it has today. It is now the clarion call for a widespread political movement, and is even a plank in our national urban policy. The "new" neighborhood, however, is not the bounded social enclave of the old working-class, though that mythical meaning still clings to the word, but is an active political entity dedicated to defending and upgrading its local territory. The neighborhood movement may be fueled by the same romantic quest for roots and "community" that motivates the "street life" movement, caused by the very placelessness of our society, but the results of such revitalization are on the whole likely to be beneficial. And so the revival of the concept of neighborhood as a basis for traffic management as well as other policies seems justified, so long as some of the original social baggage is dropped and cautions about exclusiveness and displacement are held in mind.

The next powerful concept in the history of neighborhood planning was the *precinct*, later called the *environment area* by Colin Buchanan (1963). Since the concept of the neighborhood was in disrepute at the time, all social implications were denied. It was primarily a design concept to afford priority to the "environment" over "access" in residential areas (see fig. 2). More modest and focused than the neighborhood unit, it proved less controversial. It also had less charisma and became overshadowed by the subsequent motorway building era. Nevertheless the Buchanan Report has had many applications throughout Britain and other countries such as Sweden (see fig. 3) and Australia. The concept was also evidenced in San Francisco's protected residential area program (see fig. 4).

The Dutch *Woonerf*, or residential yard, represents the latest stage in the evolution of the protected neighborhood.⁸ In addition to design regulations it contains a new and powerful idea. It *legally changes the rules of traffic behavior* within the protected area.

The woonerf concept has been developed over the years in the city of Delft and has now been adopted at the national level by the Netherlands Ministry of Transport and Public Works. A woonerf is a residential area in which most traffic has its destination within the area, and where traffic flows are generally between 100 and 300 vehicles per hour during the peak period.

The design philosophy of the woonerf is to create a kind of *gestalt* message that the street belongs to the

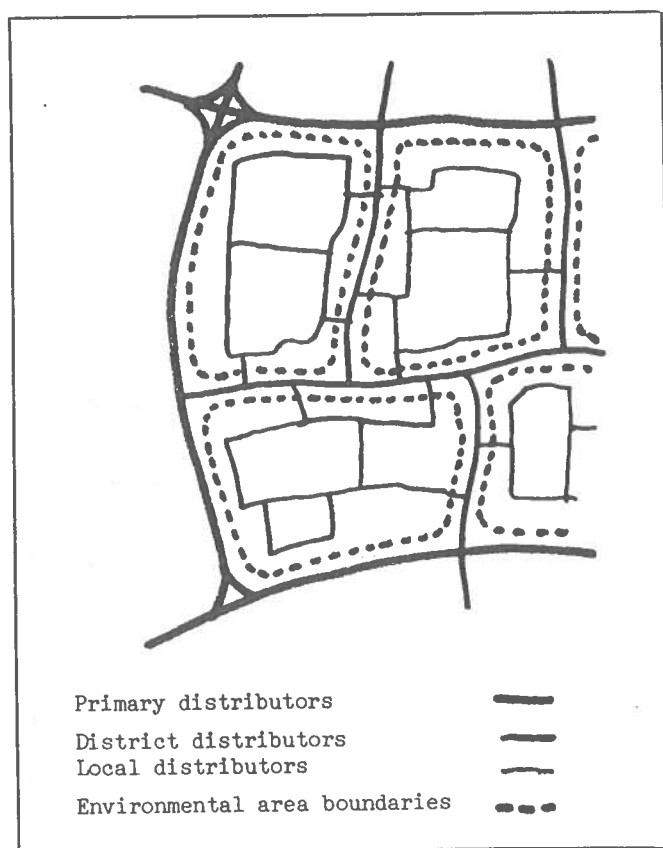


Fig. 2: The "environmental area": principal concept of the Buchanan Report, 1963.

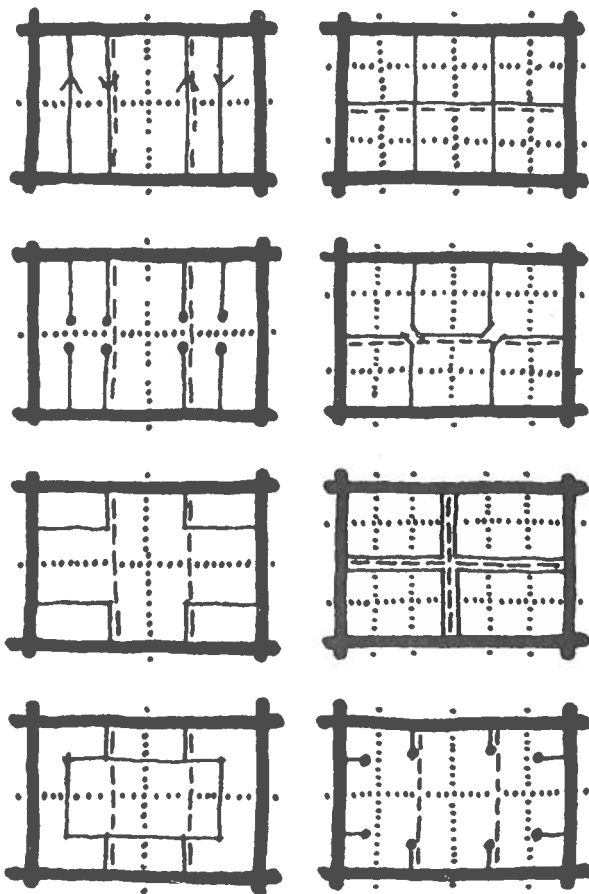


Fig. 3: Eight alternative street patterns for super blocks offered by Sweden's National Board of Urban Planning (*Traffic Improvement Scheme*, Report no. 23, Stockholm, 1974).

residents. The particular traffic control devices can vary with each neighborhood. Indeed intensive citizen participation almost inevitably means that devices differ between neighborhoods and between streets.

However the real power of the woonerf concept lies in its traffic rules. Each woonerf is clearly denoted at the entrances by a special woonerf sign, and the Ministry of Transport and Public Works has produced a folder which summarizes the new traffic regulations in five points. This folder is specifically intended for road users and residents; the five points are:

1. You may walk anywhere on a road with in a woonerf and children may play anywhere.
2. Cars must be driven at a walking pace, as must mopeds and cycles.
3. Anyone who drives a car or rides a bike or moped within a woonerf must not impede pedestrians. But pedestrians and children at play should not obstruct or unnecessarily impede cars.
4. Parking is only permitted where a P is painted on the street or where the well-known blue board with a white P is displayed. Parking anywhere else in a woonerf is forbidden.
5. Within a woonerf, traffic from the right always has priority and this applies to cycles and mopeds as well. This is possible because cars are only moving at walking pace. So, a cycle from the right takes precedence over a car from the left.

The concept embodied in these regulations is that pedestrians and children have greater rights to residential street space than vehicles, but the space must be shared. Each traveler on the street is forced to take cognisance of the others. Research has shown that children now play over all the street space, that their play is more stable than before, and that there are more behavioral adjustment between drivers and pedestrians than previously. Visits to woonerven reveal that drivers do indeed travel very slowly and carefully in these areas, although there are some problems with motorcyclists.

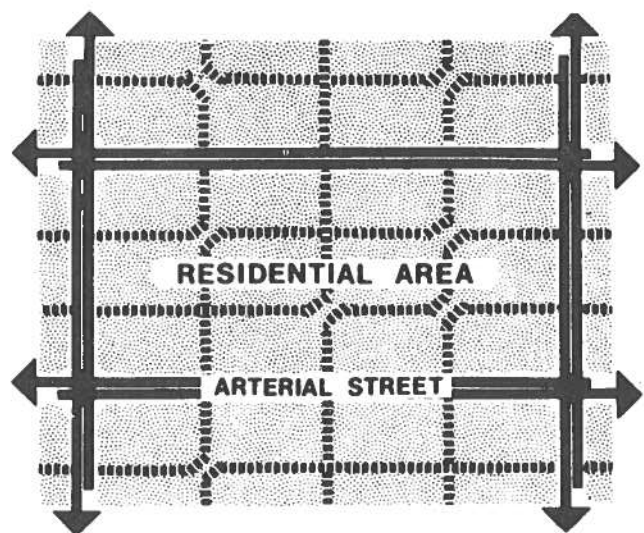
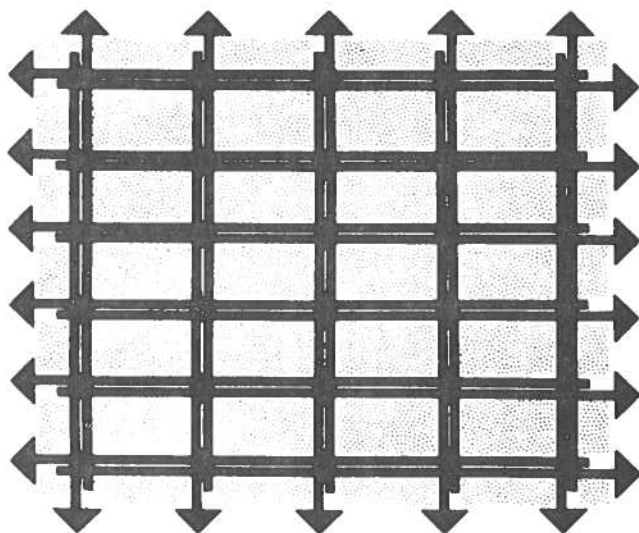


Fig. 4: An extract from San Francisco's Urban Design Plan which proposed a policy of Protected Residential Areas for the city. This program is presently in abeyance.

The protected neighborhood in the United States

While most of the American public may not be ready for such constraints as the woonerf, and may not wish to spend money on the wholesale redesign of urban streets, the concept of protected neighborhoods and a reassessment of the traffic rules in the residential neighborhoods should be publicly debated. What are the issues that should be discussed?

1. Acceptable speeds: It is clear that the 25 mph speed limits adopted in most states have little effect on driver behavior and are too fast for most neighborhoods. Acceptable speeds for neighborhoods with children may have to be as low as 15 mph. This is the designated speed at school sites in many states. It is a stringent rule, and may only be justified on streets where there are large numbers of small children. Several European cities have or are considering 20 mph limits in residential areas. In Britain the concept of slow speed roads is gaining acceptance. The development of safe acceptable traffic speeds for American neighborhoods should be a matter of national priority.

2. Acceptable volume: Traffic volume may be less important than speed and more variable. Again there is little research on this subject but it appears that when the volume on a street rises above 2,000 vehicles per day the vast majority of residents consider such a street to be unsafe for children's play.

3. Right-of-way priorities for pedestrians: As with the woonerf, we may seriously have to consider changing the right-of-way rules in residential neighborhoods. At the present time, drivers believe they have the right of way on even the quietest residential street. Until this attitude is changed, livability and safety will continue to be in jeopardy.

4. Acceptable noise levels: Noise interferes with a whole range of home and outdoor activities, especially sleep and speech, causing annoyance, and, in severe cases, deterioration of hearing. Research into acceptable noise levels has been carried out in several countries.⁹ Interference with conversation in the home can occur about 45 dBA while interference with different levels of sleep can occur between 35 and 50 dBA. However, fluctuating noise can be even more disturbing to sleep. Short term noise abatement policies depend on controlling the speed and volume of traffic and on compensation, which may consist of the provision of sound insulation for the dwellings. Long term efforts will have to be directed at reducing noise emissions.

5. Reducing pedestrian accidents: The bottom line in protecting residential areas and their residents from traffic is the reduction of child accidents. A research program underway at Britain's Transportation Research Laboratory has the goal of reducing accidents in British residential areas by 10 percent. A recent study of 9,000 residential streets on housing estates,¹⁰ for instance, has found that cul-de-sacs were the only design feature of

streets that correlated substantially with reduced accidents. Sweden has geared the design of residential areas towards the main purpose of reducing child accidents, and has supported extensive research on the relation between street design and child safety.

Although uniformly acceptable speeds or volumes of traffic or rights of way in residential neighborhoods may seem remote and overly standardized for the diversity of neighborhoods to be found in the United States, national guidelines based, if possible, on solid research will be needed to make residential areas safe and livable places.

In the meantime, the idea that cities might develop *protected streets and neighborhoods* with their own particular rules is worth consideration. The motivation should come from the neighborhoods. While the concept should be clear, its realization should be flexible. In St. Louis, the Streets Department encourages neighborhoods to develop their own schemes, so long as the arterial streets are left open. The designation of such areas could be based on the street system, on physical boundaries, on social groupings or functional patterns. The dangers of exclusiveness must be vigilantly watched.

Protected neighborhoods will vary in size from individual streets to numbers of blocks, though the larger areas may have more difficulties in arranging for emergency services. Optimal sizes are unclear though recent research in Britain suggests that areas containing about 1,000 houses coincide with some accident threshold.¹¹

Protected neighborhoods would not have to be everywhere. Many neighborhoods are already sufficiently well protected. There are also different levels of protection, from almost *impermeable* neighborhoods with walls, gates and speed control devices, to more *permeable* ones with signs and more moderate controls.

Those who wish to carry through such improvements must be aware of the difficulties. Traffic is a complex system that shifts around rather than disappears. Neighborhoods are heterogeneous. Many residents are willing to tolerate the conditions that exist and do not want any change. Large numbers of people are still opposed to any restriction on the automobile. Naively held ideas and simplistic plans will succumb to violent backlash unless schemes for livable streets are developed with political awareness and a concern for equity.

Many national and local road safety campaigns have been carried on throughout the world¹² (OECD, 1971 b) with varying degrees of effectiveness. Usually they have been accompanied by increased law enforcement strategies, as well as engineering and environmental changes, so that the individual effects of the different components in these campaigns are difficult to assess. We should not ignore, however, the importance of public safety campaigns, especially at the local level, to educate drivers about the purposes of protecting neighborhoods. Too often neighborhood traffic programs become bogged down in political controversy while the main purpose, to make streets safer for children, is lost.

Another strategy is that of better and more effective *law enforcement*. This seems less hopeful as the law enforcement agencies in cities have too many tasks to undertake already, and the policing of thousands of residential streets for a few traffic offenders is a very inefficient use of police manpower. The city that relies solely on better enforcement as a solution to its resi-

dential traffic problems is avoiding the issue. However, if combined with a sound traffic control system, law enforcement becomes workable and essential.

References

1. R. Moore, "Open space: learning place," *New School of Education Journal* (11, 4, 1973).
2. S. Carr and K. Lynch, "Where learning happens" in M. Meyerson (ed) *The Conscience of the City* (New York, Braziller, 1970); K. Lynch, *What Time Is This Place?* (Cambridge, MIT Press, 1972).
3. J. Jacobs, *The Death and Life of Great American Cities* (Random House, New York, 1961); B. Rudovsky, *Streets for People* (Doubleday, New York, 1969); G. Suttles, *The Social Construction of Communities* (University of Chicago Press, Chicago, 1972); M. Fried, and P. Gleicher, "Some residential satisfaction in an urban slum," *Journal of the American Institute of Planners* (27, 1961, 305-315); H. Gans, *People and Plans* (Basic Books, New York, 1968).
4. S.N. Brower, *The Design of Neighborhood Parks* (Baltimore City Planning Commission, Department of Planning, Baltimore, 1977); D. Appleyard (ed), *The Conservation of European Cities*, "Introduction" (MIT Press, Cambridge, 1979).
5. C. Zerner, *The Street Hearth of Play*, unpublished master's thesis (University of Oregon, December, 1974).
6. J. Dahir, *The Neighborhood Unit Plan: Its Spread and Acceptance*, (Russell Sage Foundation, New York, 1947); R. Isaacs, "The neighborhood theory," *Journal of the American Institute of Planners* (Vol 14, No. 2, Spring 5-23); S. Keller, *The Urban Neighborhood: A Sociological Perspective*, (Random House, New York, 1968); T. Banerjee and W. Baer, "The origin and development of neighborhood theory" in *Where to Live?*, unpublished manuscript (University of Southern California, 1978).
7. C. Buchanan, *Traffic in Towns* (Her Majesty's Stationery Office, London, 1963).
8. Royal Dutch Touring Club, *Woonerf* (The Hague, Netherlands, 1978).
9. OECD, *Reducing Noise in OECD Countries*, A Report of the Ad Hoc Group on Noise Abatement Policies (Paris, 1978).
10. G.T. Bennett, and J. Marland, *Road Accidents in Traditionally Designed Local Authority Estates* (TRRL Supplementary Report No. 394).
11. E. Dalby, Transportation and Road Research Laboratory, Crowthorne, personal communication, 1978.
12. OECD *Road Safety Campaigns: Design and Evaluation* (Paris, 1971).