

configuration is the key both to the forms of the city, and how human beings function in cities.

The theory to be set out here is based on one central proposition: that the fundamental correlate of the spatial configuration is movement. This is the case both in terms of the determination of spatial form, in that movement largely dictates the configuring of space in the city, and in terms of the effects of spatial form, in that movement is largely determined by spatial configuration. The principal generator of the theory set out here is the discovery, through recent research, that the structure of the urban grid considered purely as a spatial configuration, is itself the most powerful single determinant of urban movement, both pedestrian and vehicular. Because this relation is fundamental and lawful, it has already been a powerful force in shaping our historically evolved cities, by its effect on land use patterns, building densities, the mixing of uses in urban areas and the part-whole structure of the city.<sup>4</sup>

The result now available suggests that socio-economic forces shape the city primarily through the relations between movement and the structure of the urban grid. Well functioning cities can therefore, it will be suggested, be thought of as 'movement economies'. That is, it is the reciprocal effects of space and movement on each other (and not, for example, aesthetic or symbolic intentions) and the multiplier effects on both that arise from patterns of land use and building densities, which are themselves influenced by the space-movement relation, that give cities their characteristic structures, and give rise to the sense that everything is working together to create the special kinds of wellbeing and excitement that we associate with cities at their best.

It will be suggested as a consequence of these arguments that our view of the city in the recent past has been afflicted by conceptions of space which are at once too static and too localized. We need to replace these by concepts which are dynamic and global. Both can be achieved through the configurational modelling of space, using the power it gives us both to capture the complexities of urban form, and bring these analyses to bear on design.

### Form and function in space are not independent

We must begin by making a few basic observations about space and its relation to function. We tend to think of the form and function of space as two quite independent things. Space is a shape, and function

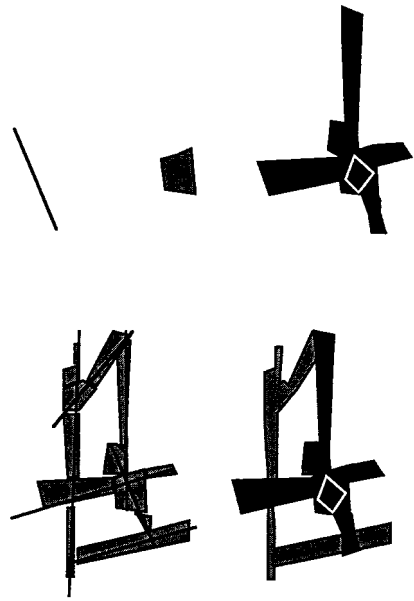


FIGURE 28.1

is what we do in it. Set up this way, it is hard to see why there should be any relation between the two, and even hard to see how any relation could be a necessary one.

But if we think a little more carefully about how human beings operate in space, we find everywhere a kind of natural geometry to what people do in space. Consider, for example, Fig. 28.1. At the most elementary level, people move in lines, and tend to approximate lines in more complex routes, as in the first figure. Then if an individual stops to talk to a group of people, the group will collectively define a space in which all the people the first person can see can see each other, and this is a mathematical definition of convexity in space, except that a mathematician would say points rather than people. The more complex shape of the third figure defines all the points in space, and therefore the potential people, that can be seen by any of the people in the convex space who can also see each other. We call this type of irregular, but well defined, shape a 'convex isovist'. Such shapes vary as we move about in cities, and therefore define a key aspect of our spatial experience of them.

There are relationships, then, between the formal describability of space and how people use it. These elementary relationships between the form of space and its use suggest that the proper way to formulate the relation is to say that space is given to us as