

CHAPTER FOUR

HOW LIFE

COMES FROM WHOLENESS



1 / VITAL POINTS

From chapter 3 we have the idea of the wholeness as a neutral structure that exists in every part of space. Wherever we are in the world, there is a wholeness. Each wholeness, at whatever scale, is made of centers: the coherent entities which appear in that space, and the way they overlap. To form a wholeness the centers are rank-ordered by their degree of coherence. Mainly the wholeness is formed by the top centers, the most salient centers.

We do not yet have a clear idea of *degrees* of wholeness, degrees of life: how one thing comes to have more life than another. The key idea in this book is that life is *structural*. It is a quality which comes about because of the existence of a discernible structure in the wholeness — and therefore explains what we perceive as the quality of buildings and artifacts. The structure is something I shall later define as “living structure.”

This chapter will show, in detail, *how* life actually occurs because of wholeness. Somehow a kind of conjuring trick is done, almost as if spirit appears out of matter and space.¹ But it is not a trick. What I would like to demonstrate is the way that the creation of life is possible, and how it is done. There are four key ideas, all arising from the structure of centers described in chapter 3:

1. Centers themselves have life.
2. Centers help one another: the existence and life of one center can intensify the life of another.
3. Centers are made of centers (this is the only way of describing their composition).
4. A structure gets its life according to the density and intensity of centers which have been formed in it.

These four points, simple as they are, give us the secret of living structure, and of the way life comes from wholeness.



2 / THE HOTEL PALUMBO

To start the discussion, I am going to describe a particular place which I like very much. In this example, we shall see that the wholeness in a part of space gets more life, or less life, according to

the way the centers help each other. When centers help each other the wholeness has more life: when the centers are not helping each other the wholeness has less life.

A few summers ago my family and I went to Ravello, a few miles south of Naples, high above the Mediterranean, looking down over the Bay of Salerno. We stayed in a small hotel, the Palumbo, first built as a palace in the 11th century. One of my favorite places in the hotel was the garden and terrace overlooking the gulf. The bay is soft blue, there is a perpetual haze, so that the blue of the sea and the blue of the sky are not divided and one looks out into a pale blue sphere of light. The hotel garden is quite small, filled with flowers, and has a lovely terrace right at the edge



The Hotel Palumbo



Garden terrace of the Hotel Palumbo

of the cliff. If we asked for it, our breakfast was brought out to this garden, which we had quite to ourselves. Every morning we sat there for hours having our coffee, watching the gulf, while the children played among the flowers of the garden and tried to catch the lizards.

Following is a partial list of a few of the centers which formed the wholeness of this terrace. First are the architectural centers which are created in the geometry:

- *The bays formed by four columns*
- *The individual spaces of these individual bays*
- *The big white columns*
- *The repetition of the bays*
- *The trellis of rounded branches*
- *The nine parts of the trellis*
- *The capital of the column*
- *The base of the column*
- *The chamfer on the corner of the column*

- *The balustrade wall between the columns*
- *The slight camber on the columns*
- *The cap of the balustrade*
- *The electric light on the columns*

To complete the picture, we must add other equally essential, but non-architectural, centers:

- *The individual tables and chairs*
- *The grass of the lawn in the bays*
- *The grapes growing on the trellis*
- *The stem of the grape vine*
- *The view of the gulf through the columns*
- *The visits of the waiter, bringing coffee*
- *The coffee cups on the tables*
- *The vines growing on the columns*
- *The blue shimmering sea beyond the cliff*
- *The filtered sunlight dappling the grass*

This describes a few of the hundreds of centers which together form the wholeness of the terrace.



3 / HOW LIVING STRUCTURE IS CREATED FROM THE CENTERS IN THE WHOLENESS

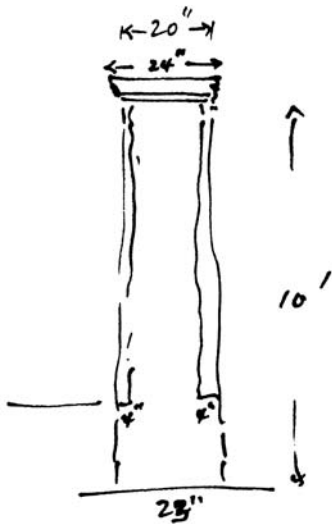
It is hard to deny the life of the Palumbo Hotel terrace. The life of the place is tangible and immediate. But this wonderful life does not come about merely because of a vague beauty in the place. It comes about in a very definite way because of the centers in the wholeness and their relation to one another. *In particular, it comes about because the different centers help each other.*

It is this mutual helping among the centers which causes the life and is the crux of the whole thing. Here is one example of this "helping" between centers: The terrace is made of structural bays — each made by four columns — each roughly square, about 13 feet by 13 feet. Each of these bays is itself a center. At the corners of the bays there are columns. The columns are centers, too. And on each column, on each of its corners, there is a chamfer. The chamfer is once again a center in its own right.

Each of the four-column bays is helped to be alive by these tiny chamfers on the columns at

the corners of the bay. What I mean by this is that each bay becomes *more* of a center, and is more alive, because of the chamfer. Suppose, for example, that the columns had been made square, without the little octagonal chamfer on the corners. Then, as you can see on the facing page, each column would slightly eat into the space of the bay, thus disturbing the wholeness of the bay. Instead, the four chamfers help, geometrically, to increase the unity and wholeness of the space in the bay. These chamfers, which are only two or three inches across, strengthen and intensify the structural bay which is created by the columns, and is some 13 feet across. At the same time, the chamfer also helps and intensifies the column itself. Thus we have the following helping relations between the space, the column, and the chamfer:

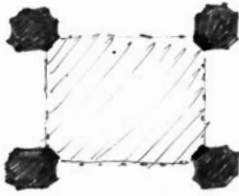
- 4 chamfers - column
- 4 columns - space of bay
- 16 chamfers - space of bay



A single column with chamfers



The chamfer helps the column.



Helping: when the bay has octagonal chamfered columns, the chamfers form a subtly shaped octagonal bay. The column helps the bay, and the bay becomes more coherent.



Not helping: when the bay has square columns, the columns eat into the space of the bay; the bay is less coherent.

Each bay has a system of twenty-one centers, in all, each getting life from the presence and cooperation of the others.

It must be emphasized that this helping relation between centers does not occur automatically. The columns could just as easily have been made in another way which would *not* have this beneficial effect on the space. The corner of the column could have been given a shape which does *not* help to intensify the column. Creating a smaller center (in this case the chamfer) which successfully intensifies the column and also intensifies the bay (space made by four columns) is quite a trick.

Let us look at another case. In the lower left-hand photograph, the children are playing in the small walled garden at the end of the terrace. The walled garden continues the space of the terrace, but encloses and “ends” it. The beauty of this closing is not only geometrical. As you can see, the children run the length of the terrace, then turn around in the end part, and come flying back. An old person strolling along would do a slower version of the same. The garden at the end, by forming a turning point, helps the terrace as a whole, makes it more of a living center than it would be without it. Again the result is not automatic. If the garden at the end



The small garden at the end of the terrace which helps bring life by encouraging and supporting the children running to and fro.



The small garden forms a center (A) at the end of the terrace, which helps the larger center B (the terrace itself), as children and old people run or walk to it, turn around, return. The one center's existence animates the other.



Light placed to help the top of the column



The cheap electric light fixture on the column forms a center (A), which helps and gives life to the center formed by the column itself (B).

were smaller, or larger, or differently walled, this effect would not occur.

Another example. There is an electric light mounted on the column, a very ordinary light that was chosen and placed so that it helps the capital. The capital becomes a little more intense because the lamp is just there. Again, this is not automatic. If the light were lower down, or asymmetrically mounted, or a more obtrusive shape, this would not happen.

In each case, the helping relation between two centers, A and B, may be seen in the fact that the one center increases the life of the other (the life of A helps increase the life of B). For example, when I look at the flower box on the low wall, the life of the low wall is increased by the existence of the flower box. If I take the flower box away mentally (with my hand, by covering part of the photograph) I see the life of the low wall drop down, diminish.

Although, in one sense, the helping relation between centers is obvious, you may be puzzled as to how one might determine, operationally, when one center is helping another one. Wouldn't it be possible to say that any two centers near each other are helping each other? How do we know when it is really happening? This quite reasonable question has a practical answer. Suppose we have two centers A and B, and we want to know if B is helping A or not. We simply



The flower box helps the low wall; the low wall helps the column and the bay.



The view through the columns helps the terrace as a whole.

look at A *with* B, and *without* B, and go back and forth between the two, using the criterion of life to decide which of the two, A with B or A without B, has more life. If, of the two, A with B has more life, then B is helping A.²

In this terrace at the Hotel Palumbo there are dozens — hundreds really — of these helping relations between the centers. Here are some other examples:

- *The capital of the columns is shaped to make the columns more alive.*
- *The nine-fold division of the trellis helps the bay become calmer and more alive.*
- *The tables set in the bays help the bays come to life.*
- *The bays also intensify the tables.*
- *The low wall between the columns intensifies the column bay between the water and the garden.*
- *The low wall helps the view.*

- *The view of the bay and the blue sky helps the individual bays.*
- *The grapes help the view.*
- *The grapes help the tables.*
- *The round tables help the bays.*
- *The chairs help the round tables.*
- *The lights on the columns help the columns and the bays.*
- *The flowers in the garden help the bays.*
- *The low wall helps the flowers.*
- *The grass helps the terrace.*
- *The vines help the grass.*

Some of the helping relations between centers are very large in scale. For example, one of the most important centers in the terrace is the view through the columns. Certainly at the Palumbo it is one of the most marvelous things: a vast entity extending out from the terrace towards the distant hazy blue of the sea. We



Looking out across the gulf of Salerno



The blue of the sea

may imagine it as a cloud of space stretching from the terrace to the sea and over the sea. In a person's experience of that place, there is no doubt this center appears as a major entity, and no doubt that the existence of this large center brings life to the smaller center of the terrace itself.

What makes us so definite about recognizing the merging of the blue of the sea and the sky as a center in the place? It is something we are transfixed by, we stare at it, we are drunk in

it, and the far-off blue haze helps the green vines of the terrace come to life. And the bays of the terrace themselves, as individual centers, gain greater life from this larger center which is stretched between these bays and the world beyond towards the Gulf of Salerno.

The system of centers, the ways these centers help each other, and the continuity of the thing with the whole world—these together form the structure which establishes the life of the thing.³



4 / RECURSIVE DEFINITION OF A CENTER

We need to go back to the key question in the puzzle of wholeness: What exactly *is* a center? This question holds the key to the problem of order, and to the entire problem of living structure.

The crux of the matter is this: a center is a kind of entity which can only be defined in terms of other centers. The idea of a center cannot be defined in terms of any other primitive entities *except centers*.

We are used to a view where we try to explain one kind of entity by showing it to be constructed of other different kinds of entities. An organism is made of cells, an atom is made of electrons, and so on. All of these are centers. If we ask what the centers are made of, we come up against a brick wall. Here we have a question

so fundamental that it cannot be explained or understood, as a composite of any other more fundamental kind of entity. Instead, we shall see centers are only made of *other* centers. This is the most fundamental concept. The nature of these centers can therefore be understood only reflexively, or recursively. This is one reason wholeness looks so mysterious to those who are wedded to mechanistic thought.

Consider, for example, the apple tree shown on the next pages. I see the tree as a center, I see its branches as centers, the blossoms as centers, and the petals of the bloom as centers. The fact that I can see the tree as a center comes about because I see it as a whole: seeing it as a



Apple blossoms

whole, I see it made of other centers, branches, which I can pick out and identify, again, because I see them as centers, too.

The wholeness of the tree, as I see it, comes from the way that I understand the interpretation of these many centers: by recognizing that the tree is made of branches. My ability to perceive that a branch is a center is necessary part of my ability to see the tree as a center. I cannot find some way of explaining the centeredness of the

tree which does not rely on my ability to see the centeredness of the branches.

This interconnection of my perceptions goes all the way to the very bottom of the foundation that my perceptions stand upon. Consider, for instance, one of the apple leaves shown below. We feel it to be a center, of course. Now, suppose I ask what it is about the leaf which makes it seem like a center. To answer this question, I have to point to the tip of the leaf, the uniform double curvature which makes it a single thing, its spine, its minor ribs, all parallel to one another, the zone of flesh roughly a parallelogram between two ribs, the stem of the leaf, and the indentation where the leaf is joined by its stem, and the very tiny serrations, almost smooth, which form the outer boundary of the leaf. All these are centers.

It is the organization of these centers which makes the whole leaf a center. Yet all these things are *themselves* centers. That is why we notice them. It is their centeredness which we notice,



Apple tree, a wild variety



The branch of the tree, its leaves and apples and twigs



Enlargement showing individual leaves



Some of the centers in the apple leaf from which the center that is the leaf is formed.

and which makes us pick them as the elements with which to see and explain the centeredness of the leaf as a whole. Thus it is the organization, the “centered” organization of these other centers, which makes the leaf a center in our experience. As soon as we try to describe, precisely, why this *particular* thing is a center, we find that we have to invoke some kind of description in terms of *other* centers.

In mathematics, such a concept is called recursive.⁴ Grasping this idea, and grasping the fact that this bit of understanding is a positive step forward, and not problematic, is the key to understanding wholeness. The apparent circularity here is — I believe — the crux of the prob-

lem of wholeness. The reason that deep wholeness (or life) is so mysterious, is that centers are built from centers, wholeness is built from wholeness.⁵

This is not a peculiarity of the leaf. It is typical of every single thing in the world that we can examine. In fact, it is precisely this which I believe to be unavoidable. What then *is* a center? A center is not a primitive element. Centers are already composite. Yet they are the most primitive elements available. They are bits of wholeness which appear as structures within the wholeness. But where do they come from, and what are they made of? The answer to this question is essential to all that follows.

Centers are always made of other centers. A center is *not* a point, *not* a perceived center of gravity. It is rather a field of organized force in an object or part of an object which makes that object or part exhibit centrality. This field-like centrality is fundamental to the idea of wholeness.⁶

The relative wholeness or centeredness of any given center can only be understood in terms of the relative centeredness of its component centers and their organization. There is no way of describing the centeredness of a leaf — or anything else — which does not invoke the centeredness of *its* various component parts, and of those around it. If I try to explain why a given thing feels like a center — why a center occurs at a particular point in the organization of the leaf — I cannot avoid talking about the other centers which occur at other levels. The centeredness or centrality in the leaf comes from the organization and interplay of its centers, and they are only centers because of their organization and their relatively greater centeredness.

So there is a fundamental circularity which we cannot escape. This circularity is not a mistake, or an indication of something logically vicious in the argument. *On the contrary, it is the essential feature of the situation.* Our understanding of both wholeness and life will come into focus just at that moment when we thoroughly grasp this circularity and what it means.