PAPERS OF THE REGIONAL SCIENCE ASSOCIATION, VOL. 66, 1989, pp. 1–6

REFLECTIONS ON "WHAT ABOUT PEOPLE IN REGIONAL SCIENCE?"

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ABSTRACT The paper is the text of a speech delivered to the opening session of the Twenty-Eighth European Congress of the Regional Science Association in Stockholm in August 1988. It reflects on an earlier address (Hägerstrand 1970) in the light of numerous comments and criticisms made during the interim period.

The theme of my speech this morning may seem enigmatic to many of you. It refers to a nearly twenty-year-old paper which I presented in Copenhagen in 1969 (Hägerstrand 1970) as my only real obligation in the capacity of president of the Regional Science Association that year. It is still quoted in various contexts, a circumstance which naturally makes its author happy. I do not expect that everybody present here has read the paper or even heard about it. But that does not really matter, because I do not intend to refer to any particular statements made in it. Instead I am going to defend the philosophy behind what I then said and elaborate the perspective in a different direction.

Over the bygone decades students and colleagues have adopted some ideas and developed them further. I have received my share of criticism. I have worked on my own applications. All this has helped me to understand better what I was saying both about people and regional science. I am going to speak about these broader issues.

Let me begin with a few words about the context of my choice of topic in 1969. Several strands came together. One was my involvement in regional policy studies underway in Sweden at that time. A central aspect of these studies was to compare living conditions in various parts of the country and find out ways of equalising these conditions with respect to access to jobs, education, health care, cultural resources and recreation. A second reason was my feeling that regional science as well as my own field, geography, had too strong a bias towards studies of the purely economic landscape, neglecting other items which make up a livable world. A third strand, and probably the most important from a scholarly as well as political point of view, was my conviction that specialisation in research, technology and administration needed a unifying counterbalance. The proper yardstick of development I felt, would be how it affected the biographies of people, not just those belonging to strong interest groups, but all people. This argument is still valid today, but now other potential yardsticks have come to our attention; for example, the care of natural resources is an issue which has come into focus much more than two decades ago.

I believed then, and I still believe, perhaps even more strongly, that the regional approach has a central role to play as a counter-balance to the ongoing fragmentation of knowledge and action. But that requires, I think, some fundamental reconceptualisations which move beyond ordinary multidisciplinarity.

In my paper of 1969 I ventured to present some ideas by the aid of a graphical notation which is not only descriptive but also has some deductive power. To put it grandly, I tried, at least implicitly, to sell a four-dimensional view of the world, a view which conceptually respects the continuity and interdependence of matter, space and time. I do not refer to the strange views of modern physics and cosmology. I have in mind the medium scaled habitat of humans, other organisms, fabricated things and tangible natural things and substances. In recent decades the two words *space* and *time* are more and more often combined in texts and debates. In this respect "What about people . . ." joined a growing trend. What I still miss, however, is an explicit treatment of the critical role of matter which will be the topic of my comments.

Several critics have pointed out that my representation of people's space-time trajectories as discussed in the 1969 paper and elsewhere has a physicalistic flavour. It did not include the intangible forces of society acting upon people's minds or the ability of individuals to transform their situation. I agree, my way of thinking is admittedly reductionistic in a specific sense. Not that I want to take society back to biology, chemistry and physics. But one cannot talk about anything without simplifying, that is reducing reality to something smaller than it is. I want to find the *bare skeleton* of what one could call natural situations. By natural I mean that the situations are not controlled, as they are in ceteris paribus experiments, but have emerged out of a mixture of historical and geographical circumstances.

My specific kind of "physicalistic" and "reductionistic" bias is a deliberate choice. I will try to defend this bias. In addition, I want to say something about people as actors and not just as victims of environmental circumstances, which I probably laid too much stress upon back in the 1960s.

Since the 1940s my dominating theoretical interest has been the transformation of habitats over time. I have tried to approach this problem from various angles. I include in my understanding of a habitat not only its people and man-made equipment but also the natural base. This traditional view of the geographer has been out of fashion for some decades. But today the real world developments themselves show that this is a valuble perspective evidenced by such international programs as "Human dimensions of global change" or the Brundtland Report (1987) on sustainable development. Sustainable development necessarily requires ability by policy makers and people to give a habitat's transformation a chosen direction, and this in turn requires a better understanding of the material conditions and consequences of human action.

The text of the short sermon that now follows is "meaning and matter." Or I could as well say "stories and matter." I use matter as a summary word for everyday substances like water and bounded packages, like you and me and the chairs we sit on, or apples falling to the ground in front of Isaac Newton. The movement of energy in and out of matter is also part of the picture, but I am not going into that degree of precision.

The humanities and the social sciences devote most of their energies to investigations of the creation and use of human meaning. In his famous book "The Idea of History" Collingwood (1946) maintains that "all history is the history of thought." He elaborates this statement by saying that "The processes of nature can therefore be properly described as sequences of mere events, but those of history cannot. They are not processes of mere events but processes of actions, which have an inner side, consisting of processes of thought; and what the historian is looking for is these processes of thought." Fair enough, but experience tells us that unintended outcomes of intentional actions is quite a

regular feature of societal and environmental change. In these cases, what actually happens has been in nobody's mind as an intention. It is just there as an outcome of something like natural selection.

Politicians should know. Our late Prime Minister Olof Palme once said in the context of some reform effort that "reality is our worst enemy." Also military commanders should know. Old Clausewitz, the eighteenth-century general and philosopher of conflicts, writes in his book *On War* that "difficulties accumulate and produce a friction, that is to say unforeseen impediments, that nobody can imagine who has not seen the war. By innumerable small circumstances which never are properly considered on paper, everything is modified, and one ends up far from the goal." "One has to consider that no part (of the military machinery) forms just one piece. Everything is composed of individuals of whom everybody keeps his own friction on all sides." Clausewitz does not refer to the enemy but to the difficulties at work amongst his own forces in a given geographic space. One could apply his observation also to regional forecasting and planning.

Unintended outcomes of intentional actions should be a fertile area for research. Such work would give new insights into the nature of the world and provide material for improved policymaking. But results, I think, can only be achieved in the frame of regional thinking for the simple reason that the juxtaposition of actors and projects in space is the major determinant of unintended outcomes.

First, consider action as such. Much present thinking about human action deals with the acts of speech. This may be interesting enough from a psychological point of view, but I am inclined to agree with the Norwegian philosopher Jakob Meløe who maintains that actions are always actions in landscapes. Without the inclusion of landscape, that is to say the surrounding configuration of people and things, actions remain unintelligible gestures. ". . . the landscape saturates the operation and gives it its form," Meløe (1973) tells us. That is the same as saying that actions, to be possible and meaningful, lay claim on matter in various configurations depending on the purpose of the action and the place where it occurs.

At this point I proceed to my physicalistic and reductionistic view of the world. In a comment on "What about people . . ." my Amsterdam colleague Christiaan van Paassen eloquently pointed out, with a happy formulation, that "Man as a 'meaning-producing' *subject* is a physical *vehicle* of meaning as well" (1976, p. 326). Society is not only a set of minds and intangible roles and institutions in interaction. Even if we leave out the entourage of things, society has *corporeality*, as is clearly expressed in such ancient words as some*body* or any*body*. In other words, meaning and matter come together in the human person. Action in the landscape whatever the meaning is, is also matter acting on matter. *Seen in this perspective actions become space-time trajectories of matter.* Simple cases can easily be depicted on paper. More important, though, is that the inner eye learns to see events in this way, and that one keeps reasoning within the bounds implied by the conceptualisation. This kind of "physicalism" is very far from the original meaning of the word.

Many will probably say that the matter side of action is self-evident and trivial. I nevertheless believe that our failure to take matter into account has led to our difficulties in judging, for example, the full impact of new technologies and the host of environmental problems, both social, biological and chemical, that haunt mankind today. Matter also has deep philosophical consequences as I will show with an example.

A few years ago a small group of scholars met in Edinburgh in order to

discuss "The Nature of Mind" (Kenny et al. 1972).The question of the free will came up and one of the participants said: "Each person finds himself with courses of action, and he is not bound to take any of them." This argument, as a demonstration of the free will, was seemingly accepted by the group. But to argue that way is to forget our bodily existence. There is after all at least one step into the future, if called an action or not, which is unavoidable; that is to continue to exist. Even if we only lie or sit or stand in silence, we act in the sense that we still participate in the world as part of the landscape of other actors. We cannot suddenly disappear out of existence by a pure act of will.

If somebody objects, saying that suicide is a possibility, he has missed the point. It would be an action which needed some time and equipment, and would deeply affect the potential action space of survivors. As soon as we have come into being we cannot take time off from our bodily existence. We have to leave a space-time trace in the world. And we share this condition with all other living and nonliving entities. As long as something exists it must be somewhere. Seen in this perspective the economists' expression "final consumption" is a very funny concept. Things do not disappear just because a consumer buys them!

As a rule we are not aware of ourselves as things among things. When talking about this fact Kurt Dallenback used to wake up his students by saying: "Until I tell you, you are not aware that your shoes are full of feet" (Church 1961, p. 44). This joke reminds us of how easily we put brackets even around items which are very close to us. I will come back to this later.

Many view it as degrading and dehumanising to place the human being in the same conceptual box as stones, trees and chairs. They even hesitate to call animals things. And so, when some reasoning is classified as physicalistic, there is also an implied accusation of a crude and cynical manner of thinking. But there are exceptions also among humanistic scholars. The theologian and paleontologist Teilhard de Chardin, for example, was fascinated by the ways in which matter has come to be organized in ever more complex configurations through evolution. Speaking about organisms he used the word "corpuscles" also for human beings. This, I think, is to be "matter-realistic" and a perfectly valid aspect of the world we participate in.

When using the word "physicalism" I clearly do not believe that one can successfully borrow very much from the natural sciences for handling societal matters. "Physicalism," in my sense, can shed light on the transformation of habitats over time or, to be more abstract, on the configuration and succession of situations in space and time. There are many ways of understanding space and time. Let me mention three major ways. First we have the subjective experience, the perception of space around us and the feeling of time as duration. I will leave out that side from the discussion. Secondly, matter itself defines space and time by its successive configurations. I like to call this embedded space-time. Finally, we have the derived mechanical clock and calendar and meter measurements.

A short quotation will help to set the stage for an explanation of embedded space-time. The American philosopher D. C. Williams defines the human situation in the world with the following sentence, "At every moment each of us finds himself the apparent centre of the world, enjoying a little bit of foreground of the here and now, while around him there looms, thing beyond thing, event beyond event, the plethora of a universe." This is a description of the world seen from the vantage point of any participant. Despite its simplicity the statement contains what is needed for the derivation of fundamental ideas about space and the interconnections between space and time.

Why "thing *beyond* thing"? Material things, and also humans, occupy room. They are impenetrable with respect to each other. They can touch each other but not share exactly the same room. So, von Thünen (1930) had to divide his Isolated State into zones of various width, because there is a limit to the density by which corn and trees can grow and cattle can feed. Distances, then, which give rise to transportation costs, come about because matter creates space by needing room. Corpuscles, whether living or nonliving, have to be beside or beyond each other. Location above each other is still a besidedness in vertical direction.

The expression "thing beyond thing" articulates a lateral order of simultaneity. "Event beyond event," on the other hand, necessitates succession. It takes change for an event to happen. Things come into being, they move to new places, they change shape, they combine in fixed relations and they disintegrate. The fact that things come in touch and then part creates a network of elementary events which in itself is sufficient for the determination of an objective time scale. It does not matter if duration is felt in many different ways. As long as the succession of meetings and partings are recorded, individual subjective differences can be averaged out.

Configuration and succession of matter also gives embedded time its direction. The branches and leaves of a tree are always younger than the stem. Seen as a whole the shape of a tree is a diagram of its successive spatial stages through what we call time. Many fabricated things are composed of parts in such a way that the spatial structure defines in which successive order the parts have been put together.

The content of human imagination is not bound to the embedded time of matter. We view the environment as a "smörgåsbord" of scattered dishes from which we can sample in ways which fit our meaningful projects. When doing this, we make it a virtue to disregard what is there but does not concern what we have in mind. Heidegger (1927) points out that the street we walk on is more remote than the person we go to meet twenty steps away. Our ability to disregard context has been made into a virtue in scientific experimental work. We have invented clock and calendar time as well as the meter and the network of meridians and parallels in order to support our freedom to go shopping. So these abstractions represent the third variety of space and time. It enables us to aim at resources far away and to organise events at distant moments in the future.

It is not only this constructed, abstract time which helps us to pursue our exploitation of the "smörgåsbord" of matter. Verbal language itself is a mirror of our freedom to create patterns of meaning and make plans independent of the inertia and consecutive order of the flow of matter. But language is linear. We have to take one word at a time. It is nearly impossible to tell stories which reveal interlocking, parallel processes. It follows that verbal language is far more willing to lend itself to depicting sequences of events in time than configurations in space.

Now it is just these interlocking processes which define embedded time. Therefore, by its very nature, verbal language helps to remove our thinking from the realities of matter. A tree cannot begin to grow its leaves out in the air while waiting for the branches to reach out to them. But road builders may well behave in an unorganic way by making all the bridges separately, long before the roadways in between have been constructed on the ground.

Calendar time and embedded time point at two different ways of understanding the concepts of past, present and future. From the point of view of

calendar time it seems quite natural to intepret the present as a sharp now-line which moves forward into a yet not existent future. Embedded time, on the other hand, suggests that there is no clock-sharp present common to everything. Instead the full life-time or the whole time of existence for each corpuscle stands out as its present. The past is what happened before the point of birth and the future what will happen after death or destruction. There is a story about this difference. Some years ago our famous slalom skier, Ingemar Stenmark, who comes from a small village in northern Sweden, was asked by a journalist if he had lived in Tärnaby all his life. Stenmark instantly replied, "Not yet." The journalist referred to life from birth to the moment of the interview. Stenmark saw his life in one piece from beginning to end. One is perhaps closer to thinking in terms of embedded time in rural areas than in modern urban ones.

Lastly, to return to the problem of the transformation of habitats and the unintended consequences of intentional actions. Or, let us borrow from Clausewitz and talk about "friction." I would like to offer the suggestion that we cannot hope to improve our understanding of historical and future processes unless we begin to deviate from humanistic and social science custom and bring both the worlds of human meaning and the world of matter fully into our picture simultaneously. Intentions are free to move in imagined space and time. But real events are bound to the overlapping neighbourhoods of "thing beyond thing." By matter, I refer both to humans as vehicles of meaning, to our ever expanding entourage of fabricated things, to the multitude of substances which are channelled through the economic system, ending up in unwanted quantities at surprising places, and finally to the natural world itself. Plants and animals are entitled to their share of room on the crowded globe.

In "What about people . . ." I tried to indicate one possible way of approaching these problems. As I see it, we need some simple conceptual devices which help to make both knowledge and actions more consistent than the present kinds of verbal and mathematical understanding permit.

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