# On Lewin's Method and Theory

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I want to talk about two aspects of Lewin's theory[1]: first, about his ideas on the relative autonomy of psychology and secondly about the notion of life space. Both conceptions appeared very early in Lewin's publications, and I thought it might interest you if I would describe briefly the contents of his first book and first paper in which these ideas are foreshadowed.

I begin with the principle of the autonomy of psychological concepts which has its roots in certain notions belonging to the philosophy of science, or "methatheory." A number of Lewin's early publications deal with this field. Among them is the book which he published in 1922. Its title might be translated as: *The Concept of Identity in Time in Physics and Biology.* The subtitle is: *A contribution to the comparative science of science.* In this book he compared different sciences and he tried to define the basic differences between them. He dealt mostly with physics and biology, giving less attention to psychology. The central concept used it that of "genidentity," and by it he meant the identity of objects over time. It is a unit formation which allows for appearances of an object at different times to be treated as identical. For instance, physics considers its objects as extending over time; one speaks of one and the same stone or star although it has been observed at different times. Again, when we talk of the motion of an object, we imply genidentity, that is, we imply that the same object at different times is at different places.

One of the main theses of the book is that the concept of genidentity as used in physics is different from that used in biology. Let us consider an egg and the two-year old chicken that grew out of this egg. Egg and chicken are biologically genidentical, they represent different stages of development of the same biological object. However, physically they are not genidentical, because the molecules composing them have changed. In the same way a person at the age of forty is biologically identified with the same person at the age of twenty, though physically only a small number of the molecules may be the same. He may have

[1] I acknowledge my indebtedness to people like Leeper (1943), Deutsch (1954), and Cartwright (1959), who have given us excellent presentations of this theory.

changed as a biological entity, but the fact that we can speak of a change means that we refer what happened to the same organism.

Thus, Lewin tries to show that there is an essential difference between physics and biology in the basic units of description used. This leads him to the view that a fundamental incommensurability separates sciences from each other; each science is a closed unit of systematically connected concepts. Paths of derivation lead along the lines of this network, but one cannot derive the propositions or laws of one science from those of another. Going from one science to another means to change completely the way of dividing up reality into units.

In a later paper (1926) he says there is a tendency in the development of sciences which leads to a sharpening of the differences between them. Each science gradually purifies its concepts and segregates itself more and more from its neighbors. In line with these ideas he says: "The yearning for meaning and unity of life must not look for an illusory satisfaction in the idea of a philosophical unit of science." (P. 73) In other words, he believed that the idea of an eventual unification of all sciences is just wishful thinking. Of course, he was well aware of the fact that there are many bridges between the sciences, and he was all for building more of them, for instance, in intermediate fields like biochemistry, or physiological psychology; nevertheless, from his point of view they were bridges between regions whose concepts and propositions show basic differences.

These ideas form the background of his conviction that psychology should strive to build up a more or less autonomous realm of concepts which form a closely knit system, and that as it develops it should become more aware of its own proper nature, that it should segregate itself from other sciences, for instance, physiology, and that it should, in this way, purify itself. Deutsch says about Lewin: "He takes the stand that psychological phenomena must be explained in psychological terms just as physical phenomena must be explained in physical terms." (1954, p. 183.)

Another aspect of this conception of psychology is the confinement to the central region and the relative neglect of peripheral input and output. Brunswik, who especially has stressed this feature in his descriptions of Lewin's theory, says: "Lewin's system and it's laws remain confined to a post-perceptual, yet prebehavioral . . . field in the central area." (1955, p. 736.) This is true—but as we state it we should add first, that Lewin did take perception and behavior into account as belonging to the boundary of the life space, though he never succeeded in formalizing the relation of this boundary to the life space itself. Secondly, in his experiments stimuli and action outcomes play their important roles as observables.

Maybe we can make that last point somewhat clearer if we ask ourselves what is the point or the goal of a Lewinian experiment. In trying to answer that question, we do well to recall the physicist Lenzen's notion of the partition between observer and object. He says that:

> "If one touches a desk with a finger, the partition is between them. An observer, however, may be extended by mechanical devices. Bohr has cited the following example: If one firmly grasps a long stick in one's hand and touches it to a body, the body touched is the object of observation, and the stick is an apparatus that may be viewed as part of the observer . . . If a physicist is looking at a pointer on a scale, its status depends on the purpose of observation. If he is using the instrument to measure an electric current, the pointer is an extension of the observer; the object is the electric current. If the physicist is calibrating his instrument, the pointer is part of the object of observation; the light by which the pointer is seen is then an instrument which belongs to the observer." (Lenzen, 1955, pp. 308–309.)

That is, the instruments used in observation and measurement belong to the observer, they are the mediation and not the focus of observation, unless reliability and validity of the instrument are in question. In the scientific gathering of data the difference between object and mediation is of as great importance as it is for perception. We can try to set up the observables themselves as the focal points of our theoretical system and try to find the laws which may obtain between them; or we can consider the observables as something that will, under certain conditions give us information about constructs lying beyond them. In Lenzen's terms: we can put the observer-object partition between observer and the directly observable, or between the directly observable and the construct.

I think one can say that for Lewin the partition between observer and object is at the life space; his primary concern is with what goes on in this life space; that is where he expects to find the relevant variables, the nodal points which he expects to follow exact laws without exceptions.

In contrast to Lewin's concern with the life space, psychology today often considers input and output as the primary object of study; true enough, there are also intervening variables, but they play only an ancillary role. The psychologist deals with them somewhat reluctantly and then only because otherwise the relations between input and output become unmanageable.

For Lewin these so-called intervening variables are the focus from the start, and input and output are relegated to a secondary role; they form the tools for observation which make it possible for us to get a glimpse of the processes in the life space which are the ultimate object of observation. Only by referring these manifestations or offshoots to the central layer can one obtain laws related to each other in a wider system. In themselves they are surface phenomena, phenotypes, each of which is determined by a multitude of factors and therefore cannot be expected to have stability and invariance.

The difference between this centralist position of Lewin and a peripheralist position is shown, for instance, by Spence's clearly formu-

lated and therefore valuable description of Lewin's theory. (Spence, 1944.) Spence says that Lewin is not concerned with laws linking stimuli with responses but with laws mediating between two different responses; the one being what the subject says about the situation, the other, what the subject does in the situation. However, my own feeling is that this does not describe what Lewin was really doing. According to the tenor of Lewin's theory the goal of psychological investigation is not to find response-response laws. Both behavior and description of the situation have to be referred to constructs belonging to the life space, they have to be used as indicators of the contents or processes of the life space. Lewin was studying the laws obtaining in the life space, and for him the partition between the observer and the object was located at the life space and not at the behavior.

In the same way the physicist uses the pointer readings of his volt meter and his other meters as manifestations of properties of the electric current, he studies the laws of electricity and is not concerned with the motions of the pointer as such. Or, the astronomer does not study the very complicated light processes in front of his telescope which mediate information about the true objects of his inquiry, which are the stars and planets.

This concentration on the processes in the life space has, of course, its disadvantages, for example, the relative neglect of peripheral input or output which I have already mentioned. But in spite of these disadvantages, the gains from this kind of approach are very great. Brunswik, who as I mentioned before, was certainly very much aware of the defects of Lewin's system, also stressed its positive aspects. He says:

> "Encapsulation into the central layer, . . . may be the least harmful of all the limitations which possibly could be imposed upon psychology: It may actually mean concentration upon the most essential phase in the entire process of life and of its ramifications. It may be the thing psychology has always been really after throughout its history." (Brunswik, 1943, p. 266.)

I come now to the second part of this talk which deals more specifically with Lewin's notion of life space. Let us try to observe this notion in statu nascendi, so to speak, and to find out what were the primary experiences which led Lewin to develop it and to express it, at a later stage, in terms of topological concepts. I am aware of the fact that I am disregarding here the considerable influence Wertheimer and Köhler had on Lewin's thinking.

What I want to talk about is Lewin's first publication, a short paper in which he applied the concept of life space in a very interesting way, though the term is not used and *topology* does not yet appear. This paper was published in 1917 in the *Zeitschrift für Angewandte Psychologie,* and it is entitled "War Landscape." Lewin states, that it deals with the phenomenology of landscape, and in it he describes how the environment

appears to the soldier in trench warfare. He himself had served and had been wounded in the First World War.

This paper on the war landscape is fascinating to read in view of the later development of topological psychology. Many of the concepts which afterwards were defined in a systematic way appear here as descriptive concepts, for instance, boundary, direction, and zone.

To review this paper briefly: Lewin begins by saying that as the soldier approaches the front lines he experiences a peculiar transformation of the appearance of the landscape. The landscape at a greater distance from the front, Lewin calls it the peace landscape, seems to extend evenly on all sides almost to infinity. This landscape is without direction. Near the front the landscape seems to be bounded, the environment suddenly comes to an end. It has a direction, a front and a back, and this direction is not referred to the marching soldier but it belongs to the environment itself. Also, this transformation cannot be described simply as an awareness of increasing danger and eventual inaccessibility; it is experienced as a feature of the objective landscape.

Near the front lines there is a zone which extends approximately parallel to the boundary. That is, there is a boundary zone whose characteristics become intensified as the enemy lines are approached. This boundary zone is to be distinguished from the regions of danger. For instance, there may exist isolated danger islands; they are relatively distant from the front but exposed to enemy fire.

He then talks about the difference between peace-things and battle things. He means by that not the difference between, for instance, a farmhouse and a cannon. The same objects may be experienced in a different way according to whether they are seen in the context of peace or in the context of battle. He says:

> "What lies within the battle zone belongs to the soldier as his legitimate property, not because he has gained it by force of arms, but because in the context of battle everything is seen as something to be used for military purposes. Even barbaric acts as the burning of furniture in war cannot be compared to the same acts in peace time." (Lewin, 1917, p. 445.)

Thus, he describes the impression of incongruity when he had to get straw for bedding or coal to warm his supper from a village in the battle zone. It seemed absurd to have to use battle things suddenly as peace things. The main characteristics of battle things have to do with protection against being seen or shot at by the enemy.

These samples may give you an idea of this paper on the war landscape about which Koffka writes that it is an "exceedingly good and instructive description of a field with a very simple kind of inhomogeneity." It is "a field which has a polar structure in one direction: the enemy's land on the one side and home and safety on the other. This vectorial property is a primary characteristic and determines the entire field, no

other characteristic being entirely free from it." (Koffka, 1935, pp. 43–44.)

Let us take a closer look at the notion of phenomenal field or life space as it is applied in this description of the war landscape. There are a great many puzzles and unsolved problems hidden in it. Whenever one tries to formulate what is really meant by it or what its implications are one is led deeper and deeper into significant questions. Some of them are, I suppose, characteristic of any kind of cognitive psychology, others seem to be more specific to Lewinian theory.

Let us begin with the relation of the environmental part of the life space to the objective environment, or to use Koffka's terms, the relation of the behavioral environment to the geographical environment. The geographical environment is the environment as described by physics or geography. Certainly, the geographer would describe the war landscape in a way which is very different from Lewin's phenomenological description. He would characterize the hills and villages as to their location, extent, altitude, and so on, but not as to their function in giving protection from the enemy. Nevertheless, one cannot say that the landscape which Lewin portrayed as representing the experiences of a typical soldier is entirely subjective. Though it takes into account more than the purely physical features of the environment it still has a certain kind of objectivity. It contains the functional possibilities of the environment which are invariant to the personal needs or biases of a subject in a particular situation. It refers to what a typical soldier can do and what he may suffer in this environment. These functional possibilities are objective in the sense that they are more or less valid for all persons in this environment. For instance, when a soldier enters a danger island, there exists a certain probability of his being wounded or killed regardless of whether he is aware of the fact or not. Of course, whether or not he goes to a certain place will depend on this awareness; however, the concept of danger island can also be applied in an objective sense though it is not a geographical or physical concept. It has to do with causal relationships existing in the environment. Could it be that this description of the war landscape after all does not describe the behavioral environment or life space, but something between the behavioral environment and the geographical environment?

Chein, in an interesting article, (1954), has talked about a geobehavioral environment by which he seems to mean the environment as it would affect an average person, or even as it would affect a person typical for a certain group.

It appears that we here get into a problem which Floyd Allport has characterized as the inside-outside problem (1955). We are dealing with an interaction between the person inside and the environment which is outside. Of course, we can leave it at that and talk about some kind of transaction and refuse to get involved in further analysis, but this does not lead very far. Usually we attribute such an interaction in different

degrees to two poles, and that is what we do with the person-environment interaction.

When we talk about the person as opposed to the geographical environment we attribute a minimum to the outside entities, that is, we attribute to the outside only those properties which it shows in interactions with the widest possible range of other objects, regardless of whether they are persons or inorganic objects. When we confront the person with the geo-behavioral environment we attribute to the outside a great deal more, namely everything that persons have in common in the interactions with the environment. In a way, the average person is then attributed to the outside. In this way we can enter more and more on the accounts of the environment until the person shrinks to an undifferentiated point: it becomes the environment characteristics for one particular person at one particular moment.

However, the geographical environment is still with us, and the problem arises now of relating this physicalistic environment to the different other "enriched" environments. And we have not given up entirely the attribution to the person. We have to characterize these environments by saying: this is the environment for this group, or for this person. And why do we still call it environment when it is in some way latched on to a particular person?

These questions have to do with the problems of intention or representation which every cognitive psychology has to meet in some way. Something belonging to the inside part, the person, is described in terms of the outside part, the environment. The so-called intervening variables can be related to environmental variables in two different ways: causally, or through intentionality. In stimulus response theories the intervening variables are defined by the causal relation; in cognitive theories they are defined both by the causal relation and by the relation of intention or reference. When we think about mentalistic concepts we are apt to be so occupied with the difficulty of anchoring them in observables that we forget that they have also this feature of intentionality which places them somewhat apart from other scientific concepts.

Lewin does not treat this problem systematically. However, he comes into contact with it, for instance, when he talks about the life space dimensions of time and reality. He says that one has to distinguish psychological facts from their referents. A present psychological fact can refer to something that lies in the future or in the past, and an existing psychological fact can refer to something unreal. He proposed the following general formulation: "The existence or nonexistence and the time index of a psychological fact are independent of the existence or nonexistence and time index of the fact to which its content refers." (1936, p. 38.) The fact that I will get on a train for Kansas tomorrow morning affects my behavior today: it is part of my present life space although it is only happening in the future.

This duality of psychological fact and its referent has sometimes

been treated as a case of symbolic reference. Thus Angyal says in his book "Foundations for a science of personality:" ". . . the function of the so-called mental process is essentially a semantic one. By this we mean that 'psychological contents' function as symbols and that psychological processes are operations with these symbols." (1941, p. 56.)
There is no question but that the concept of symbol is useful here as a thought model, but it is not entirely satisfactory. A word can be called a symbol for a thing. In this case both symbol and referent are present to awareness. The concept is used in this way by Cassirer (1944) when she says that man is the symbolic animal and that the world of man is shaped by the symbolic systems of language, religion, science, and so on. When Angyal talks about symbolic reference he applies it to the relation between a life space content and something outside the life space, for instance, something belonging to the geographical environment. Though this relation is similar to the relation between word and thing, it has to be distinguished from it. However, in spite of this difference I will go on using the terms symbol or symbolic reference in the way Angyal applies them.

Before the advent of cognitive field theory association theory employed concepts involving symbolic reference as, for instance, "idea," or "image." These concepts also have a double home, so to speak: on the one hand they have their place as psychological facts in a network of causal relations, that is, they are functionally related to each other in such a way that the presence of one idea tends to evoke another idea. But on the other hand they are also connected with the environment by this peculiar relation of representation: each idea stands for something, often for a content of the objective world. It seems to be a characteristic of this theory that it is the single idea that shows representative function while the relations between ideas are not symbolic of the environment. The fact that two ideas are associated does not as such refer to a relation existing in the environment.

With the idea of field representation we come to an entirely new notion. Not only single entities but also the relation between entities, for instance, part-whole or neighborhood relations have representational function. Instead of collection of symbols we find something like a map. Or, instead of a list of words as in a dictionary, we find something which includes grammar.

This new notion is, of course, implicit in the gestalt psychological concepts of cognitive structure. But one might say that its most consistent elaboration is found in Lewin's construct of life space. The parts of the life space are identified by their referents, they are usually characterized by the words we use to describe the objective environment. And not only the parts have this representational function but also the relations between the parts. For instance, the fact that two regions of the life space are neighboring refers to, or symbolically represents the fact that the referents of these regions stand in some neighborhood relation.

Since the life space is involved in this relation of intentionality, it is a kind of construct that is not found in other sciences. Angyal says: "The symbolic relationship is quite unique in that it does not occur, as far as we know, outside the psychological realm." (1941, p. 58.) Maybe the reason why many psychologists shy away from using mentalistic concepts is not only the difficulty of operational definition but also this uniqueness.

A word may be added about the concept of "field" as Lewin uses it. Critics have pointed out that there are important differences between it and the field as the physicist understands it. (London, 1944.) Lewin himself noted this difference, which, for instance, shows in the definition of direction in the life space. (Lewin, 1938, p. 40) This direction depends not only on the state of the immediate surroundings, but on the field at large, a conception which is not in harmony with the physical field concept, at least not with the classical one. I feel that this difference between life space and physical field is also connected with the fact that the life space shows this feature of intentionality.

I want to add a few further questions which arise when we consider the life space contents as symbols. Words are symbols of things and they can be classified in two different ways: on the one hand according to their own properties, their length maybe or their first letter, and on the other hand according to their meaning. Thus they take part in two orders, they have a dual home. Is that also true of life space contents? And how about causal connections: words as such do not really interact causally, even if we put them on paper. They are not like chemical substances which interact when one mixes them, they do not group themselves spontaneously in certain ways. But the life space contents do interact, and if they are symbols, they are symbols that influence each other. Should their interaction be understood in terms of their meaning, or in terms of their own properties, whatever those are? These are some of the questions we are faced with when we conceive of the life space as something having symbolic reference.

I have to append one more remark here. So far I have considered only the environmental part of the life space. According to Lewin there exists another part, the person, and he uses basically different theoretical notions in treating it. The representation of the person is not a map, in its structure it is more akin to association theory. Each single region of the person can be considered to be a symbol of an activity, but the relations between them do not show symbolic reference in the sense in which this is true for the neighborhood relations between regions of the environment. As in association theory they stand for functional relations between psychological facts, especially for possibilities of tension communication.

I am coming to the end of this talk which has dealt mainly with the relation of the person to the environment in Lewin's theory, and also with the manifold problem of intentionality which is implied in it. I tried to communicate an impression I get whenever I try to under-

stand Lewin's basic notions, and that is, that they are, so to speak, visions, not at all completely formulated and explicated; that they have a wealth of implicit meaning which has not yet been exhausted, and that they therefore are still full of promise of further development.

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