

Lewinian Space and Ecological Substance

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It is proposed that Lewinian theory—a bundle of paradoxes in which the perceived is viewed as more important than the actual, the unreal more valid than the real, motivation inheres in the environment, and the content of structures remains unspecified—constitutes a set of ideas whose time has just now come. A theory of form but not of substance, it proposed a redefinition of psychology as the study of behavior in the *psychological field*, a terrain which is as yet to be explored. A current program to obtain some of the requisite substantive data about the nature of the perceived environment, an experimental ecology of human development, is outlined. The environment is conceptualized as a series of nested and interconnected structures, moving from the innermost, the microsystem, through the meso- and exo- to the macrosystem at the cultural (or subcultural) level. Examples of conceptual and empirical work with these several system-levels are reported.

I am grateful to you, my colleagues, for giving me an opportunity to acknowledge, at least in small part, an intellectual debt of considerable size and of long standing to Kurt Lewin. As we so often do with a generous benefactor, while making a token repayment on the principal, I shall on the very same occasion be increasing my indebtedness by giving new promissory notes. My purpose in borrowing on Lewin's rich intellectual capital is to finance some additions of my own to his brilliantly conceived theoretical structures—additions, incidentally, that Lewin himself might well have viewed as incompatible with his original designs.

Perhaps you too will doubt the soundness of the investment, and on more compelling grounds. After all, Lewinian theory does not exactly dominate today's psychological scene. And even when Lewin was alive, his ideas were more divergent than mainstream.

This brings me to my first major thesis—that Lewin was

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ahead of his time, that only now are we in a position to appreciate the importance, and indeed the necessity, of his mode of thought for advancing the growth of basic science and social policy relating to human behavior and development. In short, I am proposing that Lewinian theory is a set of ideas whose time has come.

The reasons why Lewinian modes of thought now become essential to our science will, I trust, become apparent as I develop my argument. But first, we must reacquaint ourselves briefly with the distinctive properties of Lewin's field-theoretical approach.

I first encountered Lewin's ideas as a Cornell undergraduate in the mid-1930s. In that fortress of Titchenerian structuralism, it took a renegade thinker (and we have fortunately always had more than our share of these at Cornell) to suggest to an uncouth sophomore that he read and review the only two chapters by Europeans in the Murchison's 1931 *Handbook of Child Psychology*, one by Piaget (1931) and the other by Lewin (1931). I still have a copy of the paper I wrote. It concluded summarily that both were fuzzy thinkers unable to operationalize their ideas, which were basically unscientific in the first place. In the margin was a penciled note by my mentor, Professor Frank S. Freeman¹: "You judge too quickly; someday you may change your mind." I have been changing my mind ever since—slowly; it takes me a long time to change my mind.

My methodological rigidities got a severe jolt a few years after I graduated, when I came to know Kurt Lewin in person. We met under somewhat unorthodox circumstances, which are not without historical interest. When people ask me where I got my graduate training, I am sometimes tempted to tell the truth, that I received almost all of it after I had finished my doctoral degree. The day after I got my PhD, I became a private in the U.S. Army, and after a series of more conventional assignments, ended up in a most unconventional war setting—"Station S," located in an allegedly secret hideout outside of Washington, D.C., where the Office of Strategic Services (now the CIA) operated an assessment center for evaluating agents and support staff for service overseas. The assessors were a remarkable group. Selected and directed by Professor Henry A. Murray, they included, among others, Donald Fiske, Eugenia Hanfmann, David Levy, Donald

¹Freeman's (1934) book on individual differences was also ahead of its time, anticipating by almost 40 years today's socio-culturally sophisticated rebuttals to the simplistic hereditarian arguments of Jensen and his academic patriots.

Mackinnon, James G. Miller, Theodore Newcomb, Edward C. Tolman, and Kurt Lewin. In addition, there were four or five young whippersnappers—enlisted men who happened to have PhDs in psychology and were transferred from their regular military units, put into civilian clothes, and assigned to assist the senior professionals. But those of you who know any of this group will quickly recognize that they were neither willing nor able to keep us in our place. They welcomed us as colleagues, and that is where my graduate training began.

We were on 24-hour duty, with weekends off every two weeks. In the late evening, after our assessment duties were over, there were two major activities: singing, and thinking out loud about human behavior and development. Lewin, of course, took the lead in both. He knew songs from all over the world in every language, and he sang them with gusto and affection. But beneath the variety, there was also a common theme. For him the songs were always an expression of human relations at the personal, interpersonal, group, and cultural level. He was a lover of diversity of human groups, in this instance as reflected in their songs. And it was this same passion that reappeared at the intellectual level in our animated discussions far into the night. There was an interesting quality in Lewin's line of thought about human behavior; whenever he spoke, it was always to place behavior in context—situational, interpersonal, sociological, cultural, historical, and, above all, *theoretical*.

PARADOXES AND THEIR RESOLUTION

For Lewin, theory—and highly abstract theory at that—was what psychology was all about. That is where psychology began and where it always ended. But, in between, Lewin invariably came down to earth. Witness his classic reminder: “There is nothing so practical as a good theory.”

There is something paradoxical, and even pixieish, about this piece of Lewinian advice. Those of you familiar with Lewin's explicitly theoretical works will agree, I suspect, that they hardly overwhelm one by their immediate translatability and applicability to everyday human affairs. His first theoretical volume (1935), for example, begins with an essay on Aristotelian vs. Galilean modes of thought. All his writings abound in highly abstract propositions, frequently couched in the language of formal logic, mathematics, and especially topology—the study of relations among regions in space. And, as becomes apparent from the

ubiquitous schematic diagrams that regularly illustrate his theoretical text, Lewinian space is far from empty. There are innumerable borders, barriers, nested structures, subregions, interconnections, and isolated areas (designated as "systems in abscission," of which more later). Moreover, Lewin constantly reminds the reader, lest one be misled, that the space is not physical but psychological—consisting of the environment not as it exists in the so-called objective world (where, for us, practical matters are usually thought to reside), but in the mind of the person, in his or her *phenomenological field*—including, as especially significant, the world of imagination, of fantasy, and unreality.

Lewin's equation of the psychological with the subjective of course flew in the face of the most sacred tenets of the dominant psychological theory of the time, American behaviorism. Even more heretical from the behavioristic perspective was his treatment of motivational forces as emanating not from within the organism but from the environment. Objects, activities, and especially other people sent out lines of force, valences, and vectors that attracted and repelled, thus steering the behavior of the person.

Where then is the person, and what is his or her nature? The first part of this question is more easily answered than the second. Within the psychological field, Lewin posited the existence of a phenomenological entity identified as the "self." Self consists of so-called "psychical systems," which appear to be somehow isomorphic with the structure of the environment, but, as I have documented elsewhere (Bronfenbrenner, 1951), the nature and origin of this isomorphism remain somewhat vague.

But the greatest lacuna in Lewin's theoretical system, a terra incognita of truly continental proportions, pervades not only the self but the environment as well, thus encompassing the entire psychological field. With respect to the latter, we are told that there are boundaries, borders between regions, interconnections, blind alleys, gerrymandered regions, and islands in the sun. We can see the lines of force, the barriers, the resulting detours the self must negotiate in pursuing goals located in the life space. But true to the tenets of topology, Lewin's theory does not conceptualize the features of the landscape or the nature of its inhabitants. It is a theory of form, not of substance.

Yet, according to Lewin's own maxim, this is a theory that presumably provides us our surest guide for dealing with practical problems—a theory, mind you, in which the perceived is viewed as more important than the actual, the unreal more valid than the real, where the motivation that steers a person's behavior

inheres in external objects, activities, persons, and groups, and—to the utter confounding of the practical doer—where the content of all these complicated structures remains unspecified.

Surely here is a bundle of paradoxes hardly congenial to a down-to-earth pragmatist. Yet, as we all know, Lewin was unique among psychological theorists in his commitment to and active involvement in practical affairs. This fact is epitomized in the title of Alfred Marrow's (1969) intriguing biography (which I heartily commend to you); in its very title, it identifies Kurt Lewin as *The Practical Theorist*.

And now comes the greatest paradox of all: I suggest that all the preceding paradoxes are readily resolved once we recognize where we stand today in the scientific development of our discipline, how far we have come, and what we still have to do—the exciting prospects that lie unexamined before us. To understand the coming resolution, we need to see our discipline in historical perspective. At the time of its beginnings, psychology used to be defined as the science of the mind; only later did it become the science of behavior. If we take Lewin seriously, we must understand him as telling us to move back in the direction of the original “mental” conception but still leave behavior in the model. This is what he means in urging us to investigate the environment and human activity as they appear in the minds of people. In short, we may view Lewin as proposing a synthesis of the two traditional conceptions of our science, thus redefining psychology as the study of behavior in the psychological field.

It is from this broadened conception that our series of paradoxes can be resolved. Let us take them up one by one.

The reason why Lewin does not specify the content of the psychological field is because that psychological terrain has yet to be explored. It is a scientific task still to be undertaken, and this is where the future of psychology lies. Until substantive data about the nature of the perceived environment begin to come in, we can have only a theory of form and not of content.

We do need, however, to prepare ourselves for investigating the unknown; we need to know where to look as we begin our explorations, so that the critical features of the terrain do not elude our gaze. Among the phenomena we must be prepared to see are the motivational properties inhering in perceived objects, activities, persons, and events, including those in the domains of unreality. Above all, we must be prepared to see a complex of differentiated regions, some embedded in others, some interconnected, others isolated, but all interacting to steer the behavior and development of the person.

What could all this possibly mean in concrete terms? Does Lewin provide us with any tangible, down-to-earth examples? Does he ever! He does it all the time, from the very beginning, from the very first paper he ever wrote. It was called "*Kriegslandschaft*" (War Landscape), published right after the end of the first World War, after he had spent several years in the army, most of it in the front lines, where he had been wounded in combat. The article, which appeared in the *Zeitschrift für Angewandte Psychologie* (Lewin, 1917), is a marvelous prefiguring of all his basic theoretical concepts. In this extraordinary paper, Lewin describes how the perceived reality changes as one moves nearer to the front. What first appears as a lovely bucolic scene of farmhouses, fields, and wooded areas is gradually transformed. The forested hilltop becomes an observation post, its sheltered side the location for a gun emplacement. An unexposed hollow is seen as a probable battalion aid station. Aspects of the natural landscape that were a delight only a few kilometers back are now perceived as ominous: the frightening defile, the camouflage of trees, the hill that hides the unseen enemy, the invisible objective to be taken, the place and time of security after the fray—features of the environment that threaten, beckon, reassure, and steer one's course across a terrain objectively undistinguishable from scenes only a short distance behind the front.

You will recognize here all the basic premises of what later became Lewin's explicit, systematic theory: the primacy of the phenomenological over the real environment in steering behavior; the impossibility of understanding that behavior solely from the objective properties of an environment in which behavior is described without reference to its meaning for the person; the palpable motivational character of environmental objects and events; and, especially, the importance of the unreal, the imagined—the enemy not seen, the promise of a warm meal, and the prospect of surviving to sleep, or to lie awake another night. What could be more down to earth than that?

AN ECOLOGY OF HUMAN DEVELOPMENT

But these are only concrete instances. What does Lewin's theory have to say in general terms about the substantive scope, the differentiated content of the psychological field? Where in a descriptive geography do the borders occur, what is inside them, what is interconnected with what, and what regions remain cut off in relative abscission? As I have already indicated, this is

a task that Lewin has left for the rest of us. It is also the task which, together with some colleagues, I have been addressing over the past three years. Because the total undertaking as Lewin conceived it would have been overwhelming and because my phenomenological world does not match the breadth of his extraordinary conceptual powers, our efforts are confined to those domains of the psychological field that appear to us most relevant to an understanding of the development and socialization of children in modern industrialized societies. I refer to this endeavor as the "experimental ecology of human development," because, like Lewin, I regard the experiment as a critical strategy—not for testing hypotheses, but for laying bare the organization and content of what he called the psychological field.

The effort has four major components: (a) the development of appropriate theoretical models; (b) the legitimization of rigorous research on human development in the environmental contexts in which children and adults actually live out their lives; (c) the career development of young researchers; and (d) systematic analysis of the interplay between theory and research on the one hand, and social policy and practice, on the other. I suggest that such analysis is important not so much for the sake of social policy as for the development of our basic science. This reversal of the conventional emphasis also derives from Lewinian theory in a manner to be explained below.

The implementation of the foregoing ideas in research designs, methods, and experiments will yield data to fill in the unknowns in the classical Lewinian equation, $B = F(P,E)$; that is, behavior and development are a function of the interaction between the person and the environment.

Work on the first four of these objectives has been made possible through the generous support of the Foundation for Child Development. The theoretical foundations (Bronfenbrenner, 1974, 1976, 1977, in press) were laid out while the author was a Belding Fellow of the Foundation. In addition, a program of career development grants at the postdoctoral level was supported for a three-year period, and now continues at the predoctoral level at Cornell University.

Implementation of theoretical ideas in actual research is being carried out in a major project on the comparative ecology of human development, being carried out jointly with colleagues in four modern industrialized societies—Britain, Israel, Sweden, and West Germany. The project focuses on the impact of formal and informal support systems on family functioning and the

development of the child, and is supported by grants from both public and private agencies. Present circumstances permit only the briefest outline of the nature of this theoretical and empirical work.

The Microsystem

Consistent with Lewin's topological thinking, the ecological environment is seen as a series of nested and interconnected structures. The innermost of these, the *microsystem*, is the one most familiar to psychologists. Indeed, most of Lewin's early theorizing and experimentation was concentrated in this domain. But as might be expected, he looked at it in a somewhat unorthodox way. For him, there were two critical features of the immediate situation. The first was the concept of *Tätigkeit*, or activity. An activity was distinguished from an act, such as a movement or an utterance, in being molar rather than molecular—an ongoing process characterized by intention and possessing a momentum of its own, so that the person is captured by a demand for closure. Consistent with this element of intention, a dominant feature of an activity is the perception of a goal and movement toward the goal.

The second feature of the immediate situation that is especially salient in Lewin's theory is the existence of interconnections between people in the setting. Moreover, these interconnections are formulated in terms not so much of interpersonal feelings as of the relations of the various parties toward each other as members of a group engaged in common, complementary, or relatively independent tasks.

We have attempted to give further substance and structure to these ideas by developing theoretical frameworks that permit the systematic description of activities and group structures found in the immediate setting containing the developing person. Specifically, my colleagues and I have recently designed a transcultural code (Nerlove, Bronfenbrenner, Blum, Robinson, & Koel, Note 1) for analyzing the molar activities of preschool children and their caretakers in modern industrialized societies. The code categories were based on observations of three- to five-year-old children and their caretakers both in the home and in preschool settings. For purposes of convenience, the categories are organized in ten domains. The first domain, entitled Nonengagement, consists of rather passive activities, such as "sleeping," "resting," "drifting" (wandering aimlessly around), etc. The most purposive behavior in this domain is "waiting." A second sphere contains

activities limited to paying attention to other people or ongoing events without active participation. Other areas deal with enduring emotional states, nonfantasy and fantasy play, games, musical activity, responsibilities and work, educational processes, and activities with a predominantly social purpose.

Within categories, activities are analyzed and subclassified in terms of function and complexity. For example, Play is characterized by whether it involves fine or gross motor coordination, object manipulation, and degree of prestructuring. If the play entails fantasy, it is further differentiated by the presence of nonhuman and human transformation (e.g., a block becomes a car or a person), and by the range of fantasy elements employed (e.g., imagined objects, persons, mythical beings, settings, roles, and fantastical activities, including the speaking of parts). Games are distinguished by the degree to which they involve chance, physical skill, knowledge and memory, strategic thinking, standards of performance, and interpersonal competition. Responsibilities and Work covers self-care, chores, taking care of others as an obligation, and a range of volunteer and paid jobs. Educational Activities encompasses both teaching and learning, formal and informal, in relation to particular content areas. Finally, Social Activities includes seeking and maintaining proximity, social conversation, helping behavior, and efforts to influence and organize the behavior of others.

The code also provides for systematic analysis of the interpersonal structure in the context of which activities are being conducted. For example, the child may carry out an activity alone, in a dyad with someone else, or with more than two people in a triad or a higher order system. It is our thesis that certain types of developmental experiences are possible only in structures beyond the dyad, referred to as "N+2 systems." For example, when there are only two persons present, the only possible interpersonal effects are the direct influences of A on B or B on A. The introduction of a third party permits a new kind of indirect impact, the influence of C on the relation between A and B. We refer to this phenomenon as a "second-order effect." As I have indicated elsewhere (Bronfenbrenner, 1977), the third party in the situation can act either as a powerful catalyst or as an inhibitor to activity between the other two members. For example, as a catalyst, he or she can serve as a source of security in unfamiliar situations, facilitate the formation of new relations, provide a model for social interaction, enforce initiatives, strengthen the power of the second person as a behavior model

for the first, or function as an aide, substitute, or scapegoat.

The existence of the transcultural code enables us to compare the content and structure of activities engaged in by children and their caretakers in different cultures, as well as in diverse socioeconomic, ethnic, religious, and other subcultural groups within the same society. When applied to observational or interview materials, it constitutes our basic framework for analyzing the microsystem, the immediate setting containing the developing person.

The Mesosystem

The next level of the ecological environment is the *mesosystem*, which comprises the interrelations among two or more settings in which the developing person becomes an active participant. For instance, the mesosystem for an American 12-year-old would typically include interconnections between home, school, and neighborhood peer group. In sum, a mesosystem is a system of microsystems.

These possible interactions are of several types. The most basic is what we have called the "ecological transition"; that is, the move by the developing person into a new and different ecological context. Examples include entering a day-care center, the move from preschool to school, going to camp, graduations, finding one's first job, changing jobs, marriage, vacations, travel, moving, changing careers, emigrating, or, to return to the more universal, going to the hospital, coming home again, returning to work, and—the final ecological transition to which there are no exceptions—death. We suggest that each such transition has developmental consequences, since it involves the person in new activities and types of social structure. Moreover, from the point of view of research design, every transition is in effect a ready-made experiment of nature, with a built-in, before-after design in which each subject can serve as his own control.

But the interconnections between settings are not limited to those made by the developing person. They may include other interpersonal links as well. For example, the first day that a child goes to school, he/she may be accompanied by his/her mother or an older sibling, who then introduces him/her to the teacher or to the other children. Under such circumstances, we refer to the transition, and the mesosystem it creates, as dyadic. In the more general case, a mesosystem in which there are more than two persons who are active in both settings is characterized as "multiply-linked."

We make these distinctions not merely because they are logically possible, but because we believe them to be of significance for the way in which children are able to function in the new settings which they enter. For example, we are currently investigating a series of hypotheses which posit that the capacity of a child to profit from experience in a new setting, such as entering school, varies directly with the number of interpersonal links between that setting and others, notably the home, in which he/she is already an active participant.

This kind of reasoning has led us to focus attention on the importance of what we call a “transcontextual dyad”; that is, a two-person system involving the developing person that reappears in more than one setting. The most common transcontextual dyads in our own culture are probably those between parent and child, siblings, and age-mates. Our preliminary observations suggest that in contrast to other societies, transcontextual dyads involving the child with some other adult besides the parent are comparatively rare in the United States. This may be a significant fact, since our theory leads us to predict that development is enhanced as a direct function of the number of transcontextual dyads in which a given child is involved.

There are also other forms of interconnection between settings beyond face-to-face interaction. These include various forms of communication (e.g., telephone conversations, letters, announcements), and indirect connections via the “grapevine” or social network. The latter is especially important, not only for conveying information but also as a means for locating needed resources in times of stress. In general, we suggest that the capacity of a developmental setting—such as the home, the day-care center, or the school—to function effectively will vary directly with the number of interconnections existing between settings, and the extent to which they permit two-directional flow.

The Exosystem

The next level in our nested structure of the ecological environment is the *exosystem*, defined as a setting that does not itself contain a developing person, but in which events occur that affect the setting containing the person. For example, for a school-age child in America, exosystems might include the parents’ workplace, the school attended by an older sibling, the parents’ network of friends, a teacher’s home life, activities of the local school board, etc. Exosystems are important in two ways. First, while not containing the developing person, they may involve

significant others in that person's life. For example, data from one of our pilot studies indicate that, after finances, the area of greatest stress experienced by parents in caring for and bringing up a child is "conditions at work."

But active involvement of people from the child's own world in other settings is not the only source of exosystem influence. Any social institution that makes decisions that ultimately affect conditions of family life can function as an exosystem.

In some instances, the causal chain can be quite convoluted. A recent example, brought to my attention by some colleagues, involves an unintended consequence of the rise in income level required for eligibility to enroll one's child in federally sponsored day care. The immediate result was that many mothers who could no longer get free day care for their children had to quit work in order to stay home and care for the child themselves. At a recent conference, staff members from agencies monitoring child abuse reported that placing mothers in this situation had led them to mistreat their children. While the evidence remains anecdotal, the possibility of such a ricochet effect cannot be ruled out.

The Macrosystem

Finally, the outermost ring of the ecological environment is represented by the *macrosystem*, which encompasses the overarching patterns of stability, at the level of the subculture or the culture as a whole, in forms of social organization and associated belief systems and life styles. Such patterns result in similarities among the lower order systems to which particular groups of persons are exposed. For example, within a given culture, one school classroom looks and functions much like another. It is as if all had been constructed from the same blueprint. Similarly, from city to city within a given society, one urban slum resembles another, as do neighborhoods where young executives live, particular "ethnic" sections of town, etc. And associated with each of these subcultures are characteristic patterns of ideology and life styles that are reflected in the goals and practices of socialization. As a result, the everyday experiences of children from a given socioeconomic, ethnic, or religious group tend to be similar.

We suggest that the reason why children from one or another subcultural group develop in a particular way is to be found in the character of the micro-, meso-, and exosystems that are operative for that particular subculture. Such a formulation carries

with its important implications for research and public policy. On the first count, it argues against the scientific utility of the prevailing pattern of studying ethnic and cultural differences by comparing developmental outcomes with little or no attention to the nature of the ecological context in which these outcomes are obtained or the processes through which they are achieved. Instead, we should be focusing our scientific work on a systematic effort to describe the ecological environment in which a given cultural group finds itself—in particular, the way in which exo- and mesosystem influences direct and delimit the kinds of activities and relations that are possible to children and those responsible for their care. Once such analyses are carried out, we shall come to regard social class, ethnicity, and religion not as attributes of the person, but for what they are: structured aspects of the environment that function to enhance or inhibit the process of making human beings human. The implications of such a reorientation for social policy are self-evident.

The foregoing considerations point to a second and even more powerful scientific strategy that, borrowing a term from Soviet psychologists, I have referred to as a “transforming experiment.” A transforming experiment is one that calls into question or actively alters practices or beliefs that are part of the prevailing macrosystem in which the research subjects live. I propose that experiments of this kind are essential for two purposes; first, to understand the nature, strengths, and weaknesses of existing structures and strategies of socialization; second, and far more important, to modify these forms and practices in ways that will enhance developmental processes.

Those of you who know Kurt Lewin’s work will recognize in this formulation his own much misunderstood concept of “action research.” There are those who have looked upon action research as a betrayal of the true scientific faith, a renunciation of research in favor of reform. But in doing so, the critics have misjudged the scientific power of Lewin’s dynamic theory. As my first mentor in graduate school, Walter F. Dearborn, once put it: “Bronfenbrenner, if you want to understand something, try to change it.” Or, to reverse the classical Lewinian maxim: “There is nothing like the practical to build a good theory.”

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