

# What is field theory?1

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What Is Field Theory? 1 John Levi Martin University of Wisconsin, Madison

Field theory is a more or less coherent approach in the social sciences whose essence is the explanation of regularities in individual action by recourse to position vis-a-vis others. Position in the field indicates the potential for a force exerted on the person, but a force that impinges "from the inside" as opposed to external compulsion. Motivation is accordingly considered to be the paramount example of social structure in action, as opposed to a residue of chance or freedom. While field theory is often castigated for its necessarily tautological definition, this may be far more of an advantage than a defect. Field theory offers social scientists a combination of analytical insight and attention to the concrete; further, the implicit definition of "explanation" that it brings is one that, unlike conventional sociological definitions, is internally consistent and in accord with everyday usage.

THE PASSING CRISIS IN WESTERN SOCIOLOGY Surveying the state of Western sociology at the dawn of the new millennium, what is most striking and perhaps troubling is the absence of theoretical crisis: even the most sour doomsayer cannot in good conscience point to any signs that there is a deep theoretical rupture or confusion in academic sociology as it currently stands, nor is there reason to suspect crisis looming in the near future. What has happened to the "perpetual youth" supposedly granted the social sciences (Weber [1904] 1949, p. 104) I have profited from the rancorous discussions of the Highland Park Colloquium on Theory, Methods, and Beer. I would also like to thank Neil Fligstein, Matt George, Ann Mische, and the reviewers for their probing criticisms that greatly increased the coherence of the argument, though all called for a more complete theoretical

specification than I was able to provide. Finally, one can only acknowledge the loss of Pierre Bourdieu—it seems impossible to adequately describe how great a loss this is for the social sciences. Direct correspondence to John Levi Martin, Department of Sociology, University of Wisconsin, 1180 Observatory Drive, Madison, Wisconsin 53706. JLMartin@ssc.wisc.edu 2003 by The University of Chicago. All rights reserved. 0002-9602/2003/10901-0001\$10.00 AJS Volume 109 Number 1 (July 2003): 1–49 1 American Journal of Sociology that would forbid them from settling down into a consensual holding pattern? It is not that the fundamental problems in social analysis have been resolved, namely (1) the absence of a clear criterion as to what constitutes good theory (some frequently heard, but frequently incompatible, standards are prediction of future states, parsimony, explanation of variance, reproducible intervention, intuitive accessibility, and the ability to sponsor generative research); (2) uncertainty as to the ontological status of key theoretical elements, not the least of which is society; and (3) frequent translation of social and political disagreements into seemingly scientific disputes regarding matters of fact. And yet all is quiet on the theoretical front. I argue that this quiet has resulted from two seemingly welcome, but deeply pernicious, trends: (1) widespread agreement to compromise on both false and true dualisms alike and (2) theoretical inattention. Regarding the first, it has been common for recent discussions of practically any conventional opposition (the list includes but is not limited to macro/micro, social/individual, nature/nurture, static/dynamic, structure/agency, quantitative/qualitative) to conclude with a resounding verdict of “both.” Both the individual and the social are

important determinants of X, Y, and Z. Without belittling the wisdom of such statements, such facile solutions (which Goldstone [1991, p. 49] terms “wishy-washy”) seem to allow the instantaneous dissolving of what for centuries have been understood as profound antinomies; perhaps more than the words “both” and “and” are required before we break off into small groups and celebrate, akin to the “mutual reconciliation societies” that Marx ([1843] 1977, p. 88) saw in Hegel’s understanding of “contradictions.”

Some, indeed most, of these dualisms may have been meaningless from the start; if the claims below are accepted, “structure” and “agency” would be one. In that case, a “both/and” approach, no matter how theoretically elegant (e. g., Sewell 1992) only furthers the hypostatization of meaningless terminology. Others may be theoretically unproductive or ambiguous (e. g., social/individual), yet tap fundamental questions that inspired the development of sociological thought in the first place. The tension between individual- and social-level understandings—the former intuitively accessible to our “first person” understandings in terms of motivations and constraints, the latter satisfying the scientist’s yearning for a wholly “third person” explanation—has been one of the most productive tensions in sociological theory, even if it is in principle irresolvable. A premature defusing of this tension robs us of an important incentive to theorize, bringing us to the second point. This widespread detente has led to the promotion of what would otherwise be seen as important empirical generalizations, or statements regarding the scopes and conditions of such generalizations, to the status not only of “theories,” but even theories worthy of names written in title case (the ideational equivalent

of a named chair). Since both structure and agency are present in, say, social movements, there is little need to consider whether a theory as grand and as deliberately indifferent to intentionality as that of Marx and Engels is correct; the word "theory" then becomes available for more modest-and more promising-investigations. But if every case of successful data analysis becomes a theory, and only successful analyses see the light of day, we are destined to a seemingly endless proliferation of theories. Indeed, it might be better to replace the word "theory" in such cases with "work group" or "cluster" (in Terry Clark's [1973] sense), or even "my career." Unfortunately, Pierre Bourdieu's seminal work-or at least, the introductions to such work-may have led field theory to become associated with the resolution of such dualisms and to be lumped in with what I am arguing are either premature defusings of important tensions or newfound alliances between imaginary opponents. I make the case that field theory is something quite different that has the potential to yield general but nontrivial insights into questions rightly deemed theoretical and to organize research in a productive fashion. Finally, field theory allows for the rigorous reflexivity that is necessary in all cases in which sociology attempts large-scale political and institutional analyses. I begin by sketching the essences of field theory most generally, acknowledging its weaknesses and indeterminacies, and critically analyzing the degree to which field theory is applicable to the social world. I briefly discuss the major variants of field theory in the social sciences and highlight their common elements. I then argue that each of these has an important contribution for the social sciences. I conclude by suggesting that recent advances in one branch of

Field theory may be generalizable and that this gives us the possibility of joining the analytic insights given by field theory to a more grounded line of research. ESSENCES OF FIELD THEORY Some Characteristics of Field Theory I will argue that there is a sufficiently distinct core to field theory, both in the social sciences and in other sciences, to warrant its being considered an approach or a family of approaches (also see Mey 1972). Field theory stems from the physical sciences; while there are a number of different fields, and theories of each have varied over the course of their development, the best model of intellectually rigorous field theory would be classical (nonrelativistic) electromagnetism, though the important features 3 American Journal of Sociology here are found in similar systems (Newtonian gravitation has much in common with field theory, but only Einstein's theory of general relativity actually technically gave it a field theoretic form [Hesse 1970, p. 226]). Field theories really took the basic form of the fluid mechanics developed in the 18th century, in which equations linked a "flow"-or potential for transmitted force-to spatial coordinates, but applied this form to situations where no fluid could be found; examples are motion induced by gravity, electricity, or magnetism (Hesse 1970, p. 181; Rummel 1975, p. 26; also cf. Kohler 1947, p. 127). I will follow general use and employ the term "field theory" to denote only those theories that do not involve a clearly existent substantial medium. Our discussion should begin with a careful examination of the characteristics of such field theories not because the physical sciences are in general a good model for the social sciences, but because if field theory has distinctive characteristics, they may have been most apparent in this realm. An

examination of classical electromagnetism suggests that field theory may be said to have the following characteristics: 1. It purports to explain changes in the states of some elements (e. g., a static field induces motion in a charged particle) but need not appeal to changes in states of other elements (i. e., "causes"). 2. These changes in state involve an interaction between the field and the existing states of the elements (e. g., a particle of positive charge moves one way and one of negative charge another; see Maxwell [1891] 1954, p. 68; Koffka 1935, p. 42; Kohler 1947, p. 300). 3. The elements have particular attributes that make them susceptible to the field effect (particles differ in the degree and direction of charge). 4. The field without the elements is only a potential for the creation of force, without any existent force (Hesse 1970, p. 196). 5. The field itself is organized and differential (Koffka 1935, p. 117). In other words, at any position the field is a vector of potential force and these vectors are neither identical nor randomly distributed. It is worth pointing out how utterly at odds such a conception is with the conventional understanding of causality in the social sciences. According to this conception, elements have attributes, mutually exclusive attributes often being considered instances of a "variable." Relations between elements are interpreted as by-products of relations between variables, and causality is said to exist when a change in state in one variable produced by external manipulation would impel a change in state in another variable. Causality follows a mental image of external impulsion 4 Field Theory taken from classical mechanics (basically the conception of Hobbes), but recasts this in terms of variables, as opposed to substances (see Abbott 1988b). Our

current social science methods are almost uniformly based on such epistemological assumptions and consequently form an inventory of ways of linking variation in one attribute to variation in another (where the attributes belong to the same units). Since sociologists tend to be suspicious of things that do not vary—after all, sociology’s claim to a domain distinct from those of biology and psychology largely rested on the irreducibility of variation—this methodological imperative has generally been a congenial one. But it is folly to go on to declare that the essence of explanation is explaining variation and that other approaches are nonscientific. Lieberson (1985) gives the hypothetical example of a sociologist attempting to understand why things fall. Methodologically acute, our sociologist assembles a set of different objects: a cannonball, a feather, a potato, and so on, and begins to drop them, measuring their acceleration downward. Linking this acceleration (the “dependent variable”) to various attributes of the plummeting objects, such as volume, weight, composition, density (the “independent variables”) our researcher may (if lucky) come up with a rather large  $R^2$  and conclude that he understands why things fall. “What is going on here? Something must be wrong if social researchers think that they have a full grasp of falling objects without ever invoking gravity.” Lieberson (1985, p. 103) argues that this researcher has confused variation in the acceleration or accumulated velocity with the fact of acceleration itself—a constant and hence invisible to us. “What we get at is variation in the impact of the force. But we do not get at what the force is.” Here Lieberson leaves matters, happy to have used this example to make an important point. But our researcher may, thus enlightened, now diligently go back to try to “get at” what this force is. Our



researcher will not get very far. Few of us are Newtons, and even Sir Isaac did not feel that he had “gotten at” this force (Jammer 1957, p. 137). Furthermore, it is safe to say that no living human being has ever really “gotten at” this force. But are then further efforts necessarily in vain? In between the bumbling foolishness of our researcher’s first attempt, and the most sophisticated science in human history, lies field theory. It was a proto-field theory—including the postulation of an invisible “occult force”—that was able to explain regularities in acceleration due to gravity, both on earth and in the heavens. Field theory posits an enveloping gravitational field that we can neither see nor measure except via its effects, and instead of trying to maximize explained variance, proceeds by assuming in principle a perfectly simple determination. As *American Journal of Sociology* Ernst Cassirer said, “Galileo did not discover the law of falling bodies by collecting arbitrary observations of sensuously real bodies, but by defining hypothetically the concept of uniform acceleration” (Cassirer [1923] 1953, p. 354). Interestingly, this obsession with the distinctiveness of Galileo’s method—and even more with Cassirer’s treatment of it—lies at the heart of field theory in the social sciences. (Cassirer influenced both Bourdieu and Lewin, and Lewin was in turn the influence for most other field theorists. Lewin cites the above passage in his tribute to Cassirer, from whom he took a course in philosophy [Lewin (1949) 1999b, p. 32; see also Marrow 1969, p. 9]). Of course, one may be inspired by the approach of a scientist in another discipline without claiming that it is profitable to adopt as a guiding vision portions of another science. Yet field theorists have evidently believed that the above five distinctive points, transferred

to the realm of social theory, are not only meaningful but helpful. I discuss each and its application to the social world in turn. Explication of the Points with Reference to Social Phenomena The first point was that field theory purports to explain changes in the states of some elements but involves no appeal to changes in states of other elements ("causes"; see Mey 1972, p. 7). Instead, one makes reference to a characteristic of the field in the position occupied by some element. This characteristic of the space is usually seen as a vector (Hesse 1970, p. 192), whatever it is called ("valence" in Lewin's [1999b] terminology; "slope" or "gradient" in Spiegel [1961]). This type of explanation is clearly foreign to sociology—it is difficult to persuade others that one is able to explain, say, occupational mobility by making recourse to the fact that nothing else is changing. Yet we very well know that there are certain forms of upward mobility that are built into certain careers and in fact we expect that such mobility will tend to take place for persons in a certain position so long as "nothing happens." The second point was that these changes in state involve an interaction. It is quite significant that this example of the inability for generalizing techniques to understand gravity was first used by Lewin ([1931] 1999a); it was also used by Brandt (1952, p. 47) in the first major introduction of field theory to the social sciences. For other field theoretic discussions of the importance of this example, see Mey (1972, pp. 92, 239).

Interestingly, Galileo's own impatience with field theories and their "occult properties" led him to castigate Kepler for believing the old "puerilities" of Ptolemy and Aquinas and linking the tides to the—obviously impossible—influence of the moon (Hesse 1970, pp. 126–27). But by

conceiving of gravity as akin to magnetic lines of force, Kepler used this phenomenon of the tides to conceive of celestial gravity as a general attractive force (Jammer 1957, pp. 83, 89). 6 Field Theory between the field and the existing states of the elements (Verschuur 1993, p. 101). The closely related third point was that the elements have particular attributes that make them susceptible to the field effect; the "force" that impinges upon some object in a field is a function both of the field effect, and of some characteristic of the object itself. Thus massless bodies remain unaffected by a gravitational field. There is no field known to physics that affects all particles; similarly, the mere existence of some class of persons who are not susceptible to a social field effect does not disprove the claims regarding the existence of the field. However, it must be possible to specify a priori which types of persons will be susceptible, just as we can say in advance that some substances will and others will not be affected by a magnetic field. The fourth point was that the field without the elements is only a potential for the creation of force, without any existent force (Brandt 1952, p. 180). Thus the field explains the otherwise inexplicable transfer of energy to an element that is not necessarily in contact with any other element. Consequently, field theory is generally applicable for cases in which the alternative form of explanation involves action at a distance, a form of explanation that has generally been treated with suspicious dislike by Western (in contrast to Eastern, especially Chinese) science (Needham 1981, p. 14; though see Hesse 1970, p. 187). While the distinction may seem like hair splitting, a field replaces the idea of action at a distance, in which X somehow directly affects some Y that it

does not touch, with a purely local explanation (see Maxwell 1954, p. 70; see also the discussion of Koffka 1935, p. 41). The  $\vec{E}$  field directly induces a potential energy in  $Y$ ; the presence of a continuous medium like a fluid is sufficient but not necessary for such local action (here I rely on Schwinger et al. [1998, pp. 2–5]; Hesse [1970, pp. 195, 201]; or cf. Maxwell [1954, pp. ix, 67], Mey [1972, p. 8]). Although  $X$  may somehow “cause” or anchor the  $\vec{E}$  field, we do not say that  $X$  itself affects  $Y$ . The potential for force is in the  $\vec{E}$  field, not in the magnet (Verschuur 1993, p. 98; cf. Marrow 1969, p. 31). As a consequence, the  $\vec{E}$  field itself is not directly measurable; its existence can only be proved by its effects (Rummel 1975, p. 27). Because of this, and the more general Western discomfort with any explanation not ultimately reducible to hard particles whamming into one another, analysts generally only propose  $\vec{E}$  field theories when they have run out of other options. (Newton is the classic example in physics, but it was a similar need that led to Gestalt theory, as we shall see below.) The last point was that the  $\vec{E}$  field itself is organized and differential (Brandt 1952, p. 183). The  $\vec{E}$  field may frequently be seen in topological terms of some sort, since its variations may be understood as variations in the strength and direction of motion induced in a particle. Thus at any point, then, the  $\vec{E}$  field consists of a slope (a gradient) down which an object will “roll” (cf. Gibson 1986, pp. 151–52). In the social sciences, the  $\vec{E}$  field serves as some sort of representation for those overarching social regularities that may also be visualized (by competing theoretical orientations) as quasi-organisms, systems, or structures. Field theory, then, has several generic characteristics no matter what the domain of application. Consequently, it

seems reasonable to evaluate the general strengths and weaknesses of field theory as an explanatory approach before proceeding to propose its use for the social sciences. Since the limitations and weaknesses of field theory have been pointed out before, I review them briefly, acknowledging their import but arguing that they are not sufficient to dissuade us from the project.

### LIMITATIONS OF FIELD THEORY

Field Theory, Tautology, and Occultism

Perhaps the biggest danger of field theory is a tendency toward tautology: –since fields are only known by their effects (see Hesse [1970], pp. 135, 141 for a more subtle exposition), it is tempting to proliferate invisible fields that “explain” whatever it is that we otherwise cannot explain. For example, Faraday developed his idea of “lines of force” on the basis of experimental effects, and he developed the idea of a field on the basis of the patterns made by iron filings on paper under which magnets were placed (Verschuur 1993, pp. 82–83, 99). In this case, the parsimony and (after Maxwell) theoretical consistency of the posited field was sufficient to justify its theoretical use (Hesse 1970, p. 202). In other cases, however, we may judge the field theory proposed neither simpler than the data it is supposed to explain, nor to have sufficient intuitive accessibility.

3 But even when field theories have incontestable explanatory power, they have frequently been opposed because they violate the assumptions of the mechanistic materialism that was the largely dominant metaphysics in the early modern scientific West (see Burtt 1927). The most important of these assumptions is that all creation or transmission of force must be explicable in terms of contact-in Leibniz’s *In Two Great Systems* Galileo’s alter-ego asks his interlocutor (Simplicius) about why things fall, and

Simplicius replies that everyone knows that, the answer is gravity. The former replies, " You should say that everyone knows that it is called gravity; but I do not question you about the name, but about the essence of the thing" (cited in Burtt 1927, p. 100). As suggested by this interchange, a field theory that only names the field cannot be considered a theory, but as Hesse (1970, p. 253, cf. p. 197) says, " The charge of untestability is not always a capital one, particularly not in the case of new theories which are establishing a new fundamental model. " 3 8 Field Theory words, that " a body is never moved naturally, except by another body which touches it and pushes it" (Hesse 1970, pp. 106, 157–59). 4 Because field theories dispense with such mechanical contact, they are generally received with discomfort and with attempts to introduce substantial ethers that can more " scientifically" explain the observed effect. (Newton himself, unable to dismiss mechanistic criticisms of his conception of gravity, later added an " explanation" in terms of an ether composed of mutually repelling particles [Westfall 1977, p. 157]. 5) An ether differs from the fluids of fluid dynamics in being a medium that responds as if it were a fluid, but apparently has the ability to penetrate any other object (e. g., Huygens's proposed gravitational ether [Jammer 1957, pp. 114–15, cf. pp. 139, 141]). Such ethers are clearly just as nebulous as the field and, unless one dogmatically holds that all that exists must be treated as substance, have no scientific virtues. They needlessly complicate without adding to the explanation. Indeed, sociology has had its share of such unproductive ethers, from Parsons's (1951) various media of exchange to the ubiquitous " power" of Foucault (1979). 6 Even theorists applying field terminology to the

social sciences (e. g., Brandt 1952, pp. 178, 180) admit that there is a potential problem in our inability to say exactly how some “ force” is being transmitted. The fact 4 This idea goes back to Aristotle’s deī→ definition of local action (see Jammer 1957, pp. 36, 40, 60–62). While the West has generally been suspicious of all nonlocal effects, there have been periods in which action at a distance was considered theoretically acceptable (Hesse 1970, p. 187). Gilbert’s pioneering work on magnetism in 1600 led to the i→ first such acceptance (Verschuur 1993, p. 38); Newton’s work led to a further acceptance of the “ occult” phenomenon of gravity, though he himself was troubled by the lack of mechanism. Newton in his *Opticks*, qu. 31, noting that material bodies seem to have “ certain Powers, Virtues, or Forces by which they act at a distance, ” says, “ These principles I consider not as Occult Qualities, supposed to result from the Specii→ c Forms of things, but as General Laws of Nature, by which the things themselves are formed” (Newton [1730] 1952, pp. 401, 388; cf. Westfall 1977, p. 141). Note that “ occult quality” was a technical term of the Aristotelians to denote qualities that were hidden in bodies and were responsible for manifest effects, an explanatory practice Newton abhorred. In contrast, he meant that we know the qualities of the objects (e. g., mass) but not why they lead to falling; “ For these are manifest qualities, and their causes only are occult. ” He reasonably points out that those who attempt to explain such forces (e. g., atomic attraction) with convenient mechanical claims such as “ hooked atoms” are also inventing occult qualities. 5 It has been suggested by those attentive to Newton’s appreciation of alchemical reasoning that this protest may have been more strategic than genuine, and that indeed, it was the

magical notions associated with the Hermetic tradition that allowed Newton to go beyond the mechanical philosophy (for a discussion, see Cohen 1994, p. 175).<sup>6</sup> While Foucault's detailing of the many precise mechanisms that fall under the umbrella of "power" might suggest a fluid mechanics, the ability of this power to penetrate all barriers suggests that it is more akin to an ether than to a mechanically explicable fluid.<sup>9</sup> American Journal of Sociology that Newton also could not say exactly what kind of force produces acceleration is of little comfort.<sup>7</sup> Of course, it may be tempting to stress the heuristic nature of all theoretical concepts; such a recourse is considered epistemologically orthodox in the American sciences in general and sociology in particular due to the influence of the "operationalism" of Percy Bridgman (see Cartwright 1987). But such a defense might be counterproductive and indeed undermine some of the coherence of field theory, which was, in the social sciences (as we shall see) largely derived from a general scientific trend in early 20th-century Germany that insisted that scientific theory had to "get at" the real world, not simply rearrange observations. This "getting at" the real world implied that the terms of the theory had to be intuitively accessible (*anschaulich*) as referring to a world we could understand and inhabit. (For the importance of *Anschaulichkeit* in the case of physics, see the classic work by Forman [1984]). The fact that field theory was rooted in this style of thought, which Harwood (1993) has called "comprehensive," means that it is less than coherent to defend field theory by an appeal to heuristic (Ushenko 1958, p. 89).<sup>8</sup> We are left with an apparent problem: field theory relies on something of uncertain ontological status, at least in the Western



tradition where things that are real have to possess the properties of extension and mass. Such objects allow for explanation to proceed by a series of local collisions, the equivalent of which in the social sciences is explanation by recourse to “ mechanisms. ” Between Mechanism and Function Field theory, in contrast, emphatically does not attempt to give an explanatory account in terms of mechanisms (see Kohler 1947, p. 348). While “ the same might be said of most other sociological theories, such theories are not intrinsically at odds with mechanistic explanation, as is field theory. 7 Interestingly, with Einstein’s general relativity, such “ forces” disappeared and instead were interpreted as simply the imposition of the wrong (i. e. Euclidian) coordinate system on a “ warped” Riemann-like space (see Jammer 1957, p. 259f). The analogous re-interpretation for sociology would be (to anticipate) that there are no “ social forces” external to people at all, simply “ free agents” in social space warped by powerful institutions. 8 Interestingly, Gilbert, who pioneered the study of magnetism, also emphasized that while his conception was untestable, it offered intuitive accessibility, and Euler’s conception of pressure that led to a fluid dynamics compatible with field theory succeeded precisely because, in contrast to Bernoulli’s, it was impressionistic and nonoperational. Similarly, Faraday and Maxwell unashamedly relied on analogies to well understood processes (such as elasticity or fluid dynamics) that they did not mean to defend literally (see Hesse 1970, pp. 100, 191, 208–9). 10 Field Theory By “ mechanism, ” sociologists generally mean to refer to some readily understandable causal sequence that explains some theoretically accounted-for pattern (Lundberg 1939, p. 375). While it has never been

demonstrated that such mechanisms must be at a lower level of analysis than the theoretical units in question, this seems to be the case in practice. 9 It is important not to confuse mechanisms with the theoretical claims themselves. Mechanisms are usually what is invoked when someone accepts a theoretical claim, but insists on asking “ how” it comes to be the case. 10 (In classic Lazarsfeldian survey analysis, a search for mechanism implied the use of intervening variables, though now such a search is more likely to lead to an appeal to a simplified accessory model.) While providing mechanisms is not necessary for a theory to be useful or correct, such provision often increases its plausibility. It is symmetrical to arguments that appeal to function, though in that case we generally attempt to explain “ why” the accepted finding has to be the case. As an example, consider the theory of evolution—that is, the claim that species change over time and that a range of species that originally included only very simple organisms developed into a range that went from the very simple to the fabulously complex. “ Natural selection” is a mechanism that was offered by Charles Darwin to explain how evolution might actually occur. As this example makes clear, a successful mechanism need not be the empirical focus of work guided by a theory: evidence for or against evolution coming from the fossil record or overlaps in DNA rarely bears upon natural selection. Further, there is almost no empirical “ evidence” for natural selection as “ explaining” evolution. Finally, the introduction of this extremely reasonable mechanism has not led to any appreciable predictive power (though this is of course not always the case). Mechanisms, in sum, turn on making an accepted relation or set of relations plausible. In the case at hand, the intuitive accessibility of

the mechanism of natural selection was considered by many sufficiently great to allow them to jettison theological or functionalist explanations of evolution. Such theological or functionalist explanations, in stark contrast to mechanistic explanations, appeal to a higher—as opposed to a lower—level of analysis to explain a theoretical claim. Here we are totally uninterested in explaining “how” something comes to be: our claim is that it must be and that the mechanics are theoretically trivial. Mechanisms, in other

Definitions of mechanisms are generally poor; usage confirms my claims here (see, for example, Hedstrom and Swedberg 1998; Stinchcombe 1991; the classic use of such “mechanisms is Schelling 1978). 10 There is a new interest in assembling explanations out of mechanisms without having an overarching theory; for examples, see Tilly (2000) and Mische (2003). 11 American Journal of Sociology words, are a specific type of plausibility argument associated with reduction to potentially visible and understandable events—even if these events are never actually observed. Field theories are peculiar in that they are incompatible with the specification of both functions and mechanisms. Somewhat formulaically, we may say that field theories, like mechanistic theories (and unlike functionalist theories), reach toward the concrete and propose only local action, but like functionalist theories (and unlike mechanistic theories), they insist that any case must be understood in terms of the global pattern. There are further relevant differences between field theory and both functional and mechanistic explanations. Regarding the first of these, the fact that the field at some place and time can be determined to be of a certain nature in no way implies that it must be this way—indeed, field theory, by never

making explanation reach outside the field, must forswear any legitimating arguments that there is a reason why the field must be as it is. For this reason, field analysis is quite different from systems analysis, which, though it may stress the self-organization of the system, requires that the system be understood in contradistinction to an environment. But in field theory, explanation stops at the constitution of the field. 11

Regarding the latter, the incompatibility of field theory and mechanism does not arise because the sorts of phenomena treated by field theories cannot, in principle, be mechanically explicable—quite the contrary, it is this very possibility that repeatedly encourages speculative constructions of an ether or of a mechanistic plenum (space being completely filled with particles) to “explain” the field effect. But field theories are proposed, whether reluctantly or not, when no such mechanistic explanations currently offer promise: if there were a mechanism, there would be no need for a field theory. Accordingly, field theories may be seen as provisional theories that we are happy to replace when adequate knowledge of mechanisms is gained, should this be the case. Thus the field theory of electromagnetism was replaced with quantum electrodynamics, which was able to respecify the relations previously described in field terms as more “mechanistic” interactions between particles. Yet the very indeterminacy of the field theory was its strength: it became possible to explain “magnetism” wholly by recourse to the properties of the field, which could be treated as a thing in itself, as opposed to considering the properties of magnets (Verschuur 1993, pp. 99, 111, 121). The field displayed regularity and mathematically explicable properties; the lodestone remained

confusing. 11 For related reasons, field theory in the restricted sense used here does not generally examine the historical process whereby the field arose, although this may be a crucial question for the sociology of fields more generally (e. g., Abbott 1988a; Fligstein 1990). 12 Field Theory Thus while the formal similarity of field theories to fluid dynamics encourages the search for an overlooked fluid that would allow the reduction of field effects to local collisions, 12 even where a mechanical explanation can be found, its discovery rarely occurs simply by positing well-known mechanical interactions at crucial junctures. The ideological convictions of the early mechanists led them to propose fantastic “ explanations” of magnetism such as Descartes’s spiral particles (Westfall 1977, p. 143; Hesse 1970, pp. 58—59, 106, 157, 160—61; cf. Jammer 1957, pp. 105, 188, 197), which were useless because premature; sociologists may have similar temptations, but temptations to premature mechanism is not the same thing as the epistemological high ground. Accordingly, I will admit the necessarily provisional nature of all field theories (cf. Verschuor 1993, p. 149) while arguing for their utility, 13 and I admit that the absence of mechanisms may be a theoretical weakness in a number of respects. However, in the case of sociological analysis, there are extremely good reasons to refrain from privileging automatically a theory that can be linked to mechanisms. Because individuals (or at least individual acts) are frequently though not inevitably the level below those units described by sociological theories, mechanisms tend to involve action by individuals. While we all must appreciate the robust realism of appealing to the nature of individuals, who certainly do exist, great dangers lurk here for theorizing. This is because

social science is the unique case in which the lower level appealed to by mechanistic accounts is ourselves, and we have a great number of prejudices about our own constitutions that we cannot rid ourselves of, because we do not know what all of them are. There might not have been any theory of natural selection if the Galapagos finches were the theoreticians; Galapagos finches may have very different ideas about what it means to be a Galapagos finch. The charge of occultism must thus be turned around: for the case of the social sciences, we should not simply be suspicious of "latent" functions—we should be even more on guard regarding the "manifest" (cf. 12 Technically, fluid mechanics is a form of continuum mechanics, where the material can be treated as continuous as opposed to composed of discrete particles, but the relation between particle mechanics and continuum mechanics is generally well understood. 13 As Maxwell (1954, pp. 165—66) wrote, "It must be carefully borne in mind that we have made only one step in the theory of the action of the medium. We have supposed it to be in a state of stress, but we have not in any way accounted for this stress, or explained how it is maintained. This step, however, seems to me to be an important one. . . . [But] I have not been able to make the next step, namely, to account by mechanical considerations for these stresses in the dielectric. I therefore leave the theory at this point. " 13 American Journal of Sociology Merton 1968). It seems that people are able to be absolutely sure that they understand the reasons why they are doing something, while being—at least as far as modern neurology can tell—absolutely wrong. (For a recent and accessible discussion of some of this work, see Gazzaniga [1998].) And since social scientists and others use the

word “ know” to mean to bring to analytic self-consciousness, we will never correct such mistakes if we insist on basing our theories on what we all “ know” to be the case about the nature of individual action. Field theory has the notable advantage of forbidding us to apply our self-understanding wholesale, let alone to crown these prejudices with the title “ mechanism” and then to congratulate ourselves on a truly scientific understanding. Field theory necessarily involves an *Verfremdung* in Brecht’s sense; that is, a limit to the “ homeyness” of our theoretical arguments. Given the tendency of sociological theory to be the one thing that seems wholly determined by social factors, such distantiation is an important quality. This does not mean that field theory is a cure-all for projection—I shall argue below that it may bring its own distortions— but it helps prevent theoretical progress from foundering on our least alterable beliefs, beliefs about ourselves (Rokeach 1968, p. 164). While it brings this distantiation, field theory still has a general quality of being intuitively accessible. While we cannot see magnetic fields, we can quickly come to accept that they are there, and we can understand how to navigate and manipulate them. Indeed, field theory allows us to account for the conviction Durkheim (e. g., [1902—3] 1961, p. 89) as well as many others had that there was something “ more” out there— some social whole that penetrated us—without our being forced to recapitulate Durkheim’s famous difficulties in specifying exactly what this thing was. In sum, field theory, while not without its limitations, may have signal advantages for the social sciences; I go on to discuss how field theory has been used here. Since there are a number of existing reviews of field theory (Mey 1972; Rummel 1975), I concentrate on charting out the

three main directions in which field theory progressed in the social sciences: the socialpsychological theory associated most notably with Lewin, the field theory of stratification or domination associated most notably with Bourdieu, and the field theory of interorganization relations associated most notably with DiMaggio and Powell. While these theories have generally been seen as rather different, and indeed come from different substantive and methodological arenas, we will see that there are fundamental affinities among the three and that all point in the same direction.

14 Field Theory VARIETIES OF FIELD THEORY Field theory first made its inroads into psychology with the totalistic Gestalt theories, which stressed that individual percepts had to be understood in relation to a wider perceptual field. Because such theories tend to be outside the domain of the social sciences, I shall not focus on them here (the main exponents were Wertheimer, Koffka, and Kohler). Such psychological approaches were intimately tied to a more fundamental and general trend in German science toward “totalistic” or “comprehensive” analysis (e. g., Koffka 1935, p. 9) that is seen in fields from critical theory to genetics (Jay 1984; Harwood 1993) and is closely linked to the philosophy of science of Cassirer (1953). Indeed, a number of “applications” of “field theory” in the social sciences are little more than pronouncements that the researcher should see “the whole story”; such accounts are not examined here. 14 But Kurt Lewin’s adoption of this totalistic perspective into social psychology brought field theory into a position where it was relevant for the social sciences and had implications for theorizing; I begin with this approach. Social-Psychological Fields Gestalt theorists had argued that (contra the atomistic approach of



many behaviorists), one could not understand how an organism sensed the environment without attention to the *field* of perception as a whole. 15 Any one percept [bit of perception] was likely to have its meaning only in relation to others. Thus Kohler recalled that his goal was to determine “ “ why percepts at a distance have an effect on one another. This is only possible, we assumed (and we followed Faraday in doing so), if the individual percept has a *field* and if the ‘ *field*,’ which surrounds the percept, does not merely reveal the presence of this percept but also presents its specific properties" (cited in Mey 1972, pp. 13–15; for a discussion of the relation of Gestalt theory to *field* theory, see Mohr [in press]).

14 The *first* serious introduction of *field* theory to the social sciences other than social psychology was Karl Brandt’s (1952) use in economics (though also see Geiger [1949, pp. 51–52]). While he made few actual theoretical contributions, Brandt’s understanding of *field* theory was excellent and so he will be referred to as a *field* theorist though not reviewed. Even earlier, Lundberg (1939, esp. pp. 103, 260, 311) had, drawing upon Gestalt theory, incorporated aspects of *field* theory into his system, but they were merely one minor part of a conglomerate theory that lacked simple coherence (though many aspects are still impressive today).

15 While they adopted the idea of “ *field*” from the visual *field*, it is interesting to note that Maxwell (1954, p. ix) also saw *field* theory as wholistic—he commented that “ Faraday’s methods resembled those in which we begin with the whole and arrive at the parts by analysis, while the ordinary mathematical methods were founded on the principle of beginning with the parts and building up the whole by synthesis. ” 15 American Journal

of Sociology Brunswik (1935) went farther and argued that perception had to be understood not as the passive internalization of sensation but as the organism's attempt to navigate a world that had its own "causal texture"; hence the trick was to "get" the principles that would allow for effective action. This suggested to Tolman that animals should have the ability to orient themselves to a complete spatial whole when learning a path as opposed to simply memorizing a set of reinforced actions such as turns, something he demonstrated with rats (Tolman, Ritchie, and Kalish 1946a, 1946b), though his work was ridiculed and ignored by a generation of orthodox behaviorists (see Gould and Gould 1999, p. 67). The orthodox behaviorist model, as Rummel (1975, p. 25) and Kohler (1947, pp. 106, 121) point out, is comparable to the mechanistic interpretation of action at a distance in contrast to a field one: without an explicable chain of elements banging in to one another, the phenomenon had to be wrong. Tolman (1954) went on to contribute a field theory of psychology for the Parsons and Shils volume *Toward a General Theory of Action*. As this effort, reasonable though it was in itself, had little to do with field theory, other than its Lewinian proliferation of drawings that seemed somewhat in between plans for a football play and plans for a transistor radio, I do not consider it further here. This field approach to perception was taken over by J. J. Gibson (e. g., 1986), whose work is an important example of field theory, though somewhat outside the social sciences. Instead it was Lewin, a colleague of Kohler and Wertheimer at the Psychological Institute (see Marrow 1969, p. 13), who put field theory on the map in social psychology. While Lewin (1951, p. 240) claimed to find his inspiration for

his conception of field in Einstein, his definition of a field as "a totality of coexisting facts which are conceived of as mutually dependent" is clearly derived from the Gestalt emphasis on totality. In particular, he famously argued, behavior should be defined as a function of both personality and environment, with the added complications that environment is a function of personality, and personality a function of environment. Such statements of total generality of course strike today's social scientist as utterly pointless, but they evidently served to free many psychological theorists from the need to consider each organism in theoretical isolation. Lewin, however, was not content simply to stay at this level of abstraction: he also alternated between impressionistic and theoretically ambiguous topographical drawings to show what he was getting at and overly precise mathematical formalizations. His few empirical examples cannot be taken seriously in retrospect (cf. Eng 1978), and his later use of field theory—elaborate multishaded topological maps showing how, say, autocracy narrowed the space of free choice among group members—were, even if correct, no more scientifically persuasive than a model made of toothpicks and marshmallows over dessert. Yet there was something theoretically important underlying even the seemingly vacuous formalizations linking behavior to personality and the environment, though it was often obscured by the premature formalization. Orthodox behaviorism worked and still works very well on its own turf: on animals strapped down and exposed to a set of distinct stimuli (see also Leontyev 1977, p. 180). But the mobile animal cannot be passively exposed to the same stimuli; it nears the desired object (when it is safe) and evades the feared. A behaviorist

analysis of the mobile animal—hundreds of stimuli and responses for each movement of a few inches—would appear as absurd as a blow-by-blow description of a large battle. Lewin’s terminology comes into its own in such a situation. The animal (or person) is, first of all, in a phenomenological life world: that is, the world as it appears to him or her. Lewin then made three crucial contributions. First, the life world is, according to Lewin, intrinsically affective—in contrast to stimuli considered solely as stimuli (light stimulates retinal cells), these phenomena are perceived immediately as desirable or undesirable. These *Aufforderungscharaktere* (usually translated “valences”)<sup>16</sup> determines how objects and other beings construct the life world. Second, the animal (or person) is free to move about in the life world (cf. Koffka 1935, p. 384). Because of his topographic imagery, Lewin frequently confounded Cartesian space with the space of the life world. But this confounding is in the world, not in Lewin’s theory, for movement in the life world (as he described it) did in fact frequently correlate with movement in space. Since we all move through time at the same rate of one hour per hour, we tend to ignore purely temporal movement when understanding our own actions (with the exception of “waiting,” itself a surprisingly rare strategy, though one highlighted by Bourdieu 1988). The rat sees the maze as a series of obstacles standing between himself and the desired cheese; progress in the space of the life world corresponds roughly to geometrical progress toward the cheese. Indeed, Lewin was sufficiently sensitive to the importance of the difference between life world and Cartesian space to focus on experiments that precisely tested which subjects (animals and children) could themselves make this dissociation and move “away” in

geometrical space from a desired object in order to approach it in the 16

While “valence” is the standard translation, Allport (1955) and Koffka (1935, p. 35) used “demand character” and Brown “invitational character” (Marrow 1969, pp. 56—57, 61). 17 American Journal of Sociology

Field space, as in classic studies by Kohler (also cf. Koffka 1935, p. 275). 17 “Movement thus needs to be analyzed not in terms of locomotion through physical space but as directed action in the field—an “aim path” of striving (see Mey 1972, p. 18). Third, the animal (or person) has conceptions of likely changes in the field at any time. These changes are produced both by the animal’s own motion through the field and by internal developments of the field itself, which may or may not involve actions taken by other animals in the field. This has two implications. The first is minor but vexing: at least one additional dimension (the subject’s conception of the future and past states of the field) must be added to the already busy diagrams. While Lewin figured out reasonable ways of accomplishing this, there was a practical problem of how to use paper to represent increasingly higher dimensional figures. A more important implication—and one that, interpreted consistently, could solve the former problem—is that the past cannot directly affect the present. In contrast to what he considered primitive views of causality, Lewin (1936, p. 10) argued that behavior should not be seen as caused by something in the past (let alone the future), but must be grounded in an understanding of the totality of the current situation. (We may then ask how this situation came into being, a historical question quite different from the systematic question posed by field theory [Lewin 1936, pp. 30—31, 34].) This “principle of ‘contemporaneity’” is, ows

directly from the fundamentals of field theory (Lewin 1936, pp. 33, 35; cf. Koffka 1935, p. 429). Here field theory correctly understood made an interesting and reasonable contribution to social analysis that cut against dominant approaches. But Lewin's use of field theory brought at least as many problems as it solved. For one thing, Lewin attempted to combine a metric notion of field taken from physics with a wholly distance-less understanding from topology—two approaches that are fundamentally inconsistent (Rummel 1975, pp. 43, 38, 41; Spiegel 1961, p. 17; though see Mey [1972, p. 40] for a defense). Lewin (1936, pp. 53, 55, 85) later realized the tension between the two approaches and suggested a division of labor: topological analysis would determine the possibility or impossibility of certain trajectories, while vector analysis would determine their relative likelihood. In practice, he generally favored the topological approach for substantive problems because he might then sketch any particular claim he was making, but he switched to the metric notion of field to make wholly general

17 A child (or ape) is placed inside a U-shaped set of three walls, able to see something desired on the other side of the middle wall. To get to the desired object, she must first walk away from the object and then go around the side wall.

18 Field Theory (and largely meaningless) mathematical formalizations involving differential equations (Lewin 1951). Even more important, there were severe limitations built into Lewin's definitions, especially insofar as he tried to make the field wholly psychological. Most important were the limitations in his conception of valences. A valence is something that pulls one toward or pushes one away: the field itself may be seen as the product of many valences, as a gravitational field may be

seen as the product of many objects each with its own gravitational field. This seemingly unremarkable definition, however, leads to paradox, because Lewin considered the valence to be “in the head” of any person in question. Accordingly, any need, desire, or drive held by the person or animal itself has a valence. It then becomes not the cheese that has the valence, but the hunger of the rat. The field continually collapses to a point; Lewin is in the position of someone holding one end of a string, and forced to argue that the pull he feels comes not from the other end, but his own end. Similarly, Lewin understood the field to consist of everything relevant to the person in question at one time: “What is real is what has effects.” But since actors do not always know about all the factors that are in fact relevant, Lewin (1936, p. 19) was forced to conclude that the psychological life space—the field which he claimed to be in the head of the acting subject—contains elements that are wholly outside this person’s psyche. Resolution clearly requires a sense of a social, as opposed to psychological, field (cf. Simonis 1974, pp. 368, 372); or at least a transpersonal or geographic field as in Koffka (1935, pp. 63, 345, 357, 376, 664, 675). Lewin did sometimes speak of a social space or social field, by which he meant the joint life space of more than one person (Mey 1972, pp. 61—64): unfortunately, joining two or more unworkable topological models did not increase the concreteness or usefulness of his scheme. In fact, his approach made it difficult to understand why the life spaces of two people would have anything to do with one another. Lewin’s theory was enormously influential among a moderate number of social psychologists, who were attracted by the comprehensive nature of the

philosophy, the personal charisma of certain believers, the promise of formalization, or the social activism underneath. But there were few contributions after Lewin. The most noteworthy work, by J. F. Brown (1936a) (often miscited as B. F. Brown), is justly if cruelly summarized by Rummel (1975, p. 54) as “ low grade sociology and political science, tendentious comments on the sins of capitalism and the virtues of Marxist socialism, and the most naïve observations on Soviet communism—all ” sprinkled with obtrusive ‘ barriers,’ ‘ regions,’ ‘ locomotion,’ and ‘ vectors.’” The lack of progress seems to have come from the difficulty of going 19 American Journal of Sociology further with a fundamentally psychological understanding of the field and of valences. It was necessary to link the pseudospacial organization of demand-characteristics (valences) to something interpersonal if this spatial logic was to be anything other than tautology. This came with the importation of field theory into sociology proper. Fields of Organized Striving Here we must backtrack briefly, as field theory was most successful when joined to a preexisting line of inquiry. This line essentially stemmed from Max Weber’s sociologization of the idea of “ spheres of value. ” Around this time in the circle around Weber there was a general emphasis on the ethical dilemmas that arose because of the necessary conflict between spheres with their own “ inner laws” (see Burger 1976, p. 8; Goldman 1988, p. 136; Schluchter 1996, p. 278, n. 18; and Habermas 1996, p. 409; Mannheim [1940, pp. 159–60], in the work in which he proposed a field approach, also discussed Weber’s value spheres). But it was Heinrich Rickert (1913) who formalized this and logically derived six types of values, which Weber adopted for his key theoretical



piece, "Religious Rejections of the World and Their Directions" (Weber [1915] 1946), though Weber's six spheres were slightly different from Rickert's. Weber emphasized the "inherent lawfulness" (Eigengesetzlichkeit) of each of these spheres that led toward a purification or rationalization of purpose and consequent tension between spheres, as one could not "serve two gods" (e. g., religion and science) at the same time. There was something deeply compelling about this basic vision, but also something fundamentally asociological—following Rickert, Weber had simply declared that there were six value spheres and given very little justification for this. The Gestalt tradition in general and field theory in particular gave a number of German social scientists the tools to come up with an (in principle) empirically grounded approach to these value spheres. (While Pierre Bourdieu became the most prominent exponent of such a field theory, this approach was first developed in Germany.) In this light, value spheres exist not because of the transcendent nature of human action, but because of the existence of some social logic to the social goals held by actors. In the words of Victor Turner (1974, p. 135), the field is "an ensemble of relationships between actors antagonistically oriented to the same prizes or values." Accordingly, I will call this branch of field theory a conception of "fields of organized striving." It was here that field theory was first seriously applied to the social sciences (e. g., Brandt 1952, p. 188). The first notable effort in this direction was Friedrich Furstenberg's (1969) analysis of the process of upward social mobility or social ascent 20 Field Theory (Das Aufstiegsprozess) using a mixture of field theoretical concepts and closure theory. 18 I will focus on his theory,

highlighting similarities to the better known approach of Bourdieu, and then I will discuss further refinements made by Bourdieu and others. First of all, instead of speaking of spheres of value as did Weber, Furstenberg analyzes “sectors of ascension” (Aufstiegsektoren). His list of sectors, however, is close to Weber’s, including economics, politics, bureaucracy, religion, and intellectual sectors, as well as a few others (Furstenberg 1969, pp. 67–69). Like Weber, then, Furstenberg sees there being necessary divergences “due to choices between our goals. But unlike Weber, Furstenberg—influenced by comprehensive approaches—assumes that these sectors cannot be analyzed independently, since all are part of the same social field (and here he cites Lewin). Furstenberg (1969, pp. 51, 122) chose the field analogy in part because it emphasized that the result of any individual’s action was due to the interaction between the state of the field and the states of the individual. The social climbing process can thus be seen as a “chain of interrelationships between the ascending individual and the current social environment” (Furstenberg 1969, p. 52). Consequently, like Bourdieu, Furstenberg (1969, pp. 70–71, 51, 74) sees trajectory as a crucial aspect of the navigation of fields; he speaks of the safe but limited path of the career track (Laufbahn) that has institutionally defined boundaries as the limiting example of the tendency for the field to give the individual a “social fate.” But there are other strategies and trajectories of mobility (e. g., marrying into a higher group). Accordingly, like Bourdieu, Furstenberg (1969, p. 42) stresses that our techniques of “analyzing movement in the social structure have to be as multidimensional as their object. Perhaps most important, Furstenberg (1969, pp. 36, 37, 42, 49, 54–55), “like Bourdieu,

attempts to combine objective structural analysis and a positional subjective analysis. On the one hand, the influence of objective social position is necessarily mediated by subjective perception, and the objective structural trajectory must have a "subjective correlate" in an individual striving for success. In particular, Furstenberg (1969, p. 159) attributes to each person a subjective "aspiration level" (Anspruchsniveau). Spiegel (1961) put forward a field theoretic analysis of opinion change in which a field formed around the introduction of an object of opinion (Meinungsgegenstand) such as a consumer article, with people dividing into adherents and abstainers depending on the location of the object in a space of preferences; this interesting approach has something of the notion of the field of striv-