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978-0-521-64627-7 - Gestalt Psychology in German Culture, 1890-1967: Holism and the Quest for Objectivity

Mitchell G. Ash

Excerpt

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Introduction

What was Gestalt psychology? Max Wertheimer, Wolfgang Köhler, and Kurt Koffka did not claim that the whole is *more* than the sum of its parts. Rather, they maintained, there are experienced objects and relationships that are *fundamentally different* from collections of sensations, parts, or pieces, or “and-sums,” as Wertheimer called them. The Gestalt theorists opposed the assumption that sensory “elements” are the basic constituents of mental life then characteristic of psychological theory and research in Germany and elsewhere. In 1890, one of Wertheimer’s teachers, Christian von Ehrenfels, had already tried to reform elementism in psychology by introducing the notion of additional “Gestalt qualities” given in and with sensory elements. As paradigmatic examples he cited melodies, which sound the same in any key because they have such qualities. Going beyond von Ehrenfels, the Gestalt theorists asserted that dynamic structures in experience *determine* what will be wholes and parts, figure and background, in particular situations.¹

Going further still, Wertheimer introduced the principle of *Prägnanz* in 1914, according to which experienced structures spontaneously take on the “best” or simplest arrangement possible in given conditions. In 1920, Köhler stated that the brain events underlying perception follow the same dynamic, self-organizing principle that Wertheimer had enunciated for perception. This he likened to the tendency of physical systems to approach maximum order, or equilibrium, with minimum expenditure of energy. Since dynamic self-organizing processes occur in both inorganic and organic nature, he argued, they are not structures of “the understanding” imposed on experience, but are properties of both mind and nature. In opposition to what Köhler called “machine theory,” that is, to technological conceptions of science, life, and mind that equated knowledge of nature with its effective manipulation and control, the Gestalt theorists attempted to introduce an aesthetic dimension of inherent order, meaning, and simplicity into the evaluation of scientific theories, and into the fabric of experience and nature itself.

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Gestalt psychology has had a major impact on research in perception and the psychology of art, and has also contributed significantly to studies on problem solving and thinking. In addition, Köhler was one of the first to introduce the distinction between “closed” and “open” systems into theoretical biology. Most fundamental, however, were the philosophical implications of Gestalt theory. The Gestalt theorists asserted the primacy of perception over sensations in the constitution of consciousness, and advanced a conception of the subject as involved in, rather than separated from the world – ideas that had an important impact on phenomenology and existentialism.² In terms more familiar to analytical philosophers, they challenged the empiricist assumption that “sense data” are the “atomic facts” of experience by arguing that there are no such unambiguous “data.” Rather, they maintained, the objects we perceive are always located in what would now be called self-organizing systems – constantly changing dynamic contexts or situations, of which our phenomenal selves, too, are parts. Against both Kant and the constructivist mode of thought dominant in cognitive science then and now, they claimed that form and order are not imposed on otherwise chaotic sensory “material,” or constructed on a foundation of hypothetical sensory information according to fixed cognitive schemata or logical rules. According to the Berlin school, Gestalten are experienced because they *are* such structures, not because they have them.³ One of the Gestalt theorists’ favorite words was *sachlich*, meaning objective; theirs was a quest for objective order that lies not behind, but *within* the flux of experience.

Why did this school of thought emerge when it did, and why did contemporaries consider it important? Psychologist Mary Henle, a student and for many years a close colleague of the Gestalt theorists, suggests that psychologists in Germany were “deeply involved” in what was then called “the crisis of science.” To many, science seemed incapable of dealing with the most significant human problems. Rather than abandoning natural science, “Wertheimer and Köhler proposed that the difficulty was not with science itself, but with the current conception of natural science among psychologists.”⁴ They and Koffka offered a radically reformed conception of scientific psychology that would do justice to the intrinsic meaning and value in human experience and thus overcome the divide between the natural and the human sciences. Historian Fritz Ringer argues that talk of a “crisis of science” was part of a larger problem of modernity faced by many educated Germans at the turn of the century and exacerbated after the First World War. The perception that traditional values were in crisis was widespread both in Europe and the United States at that time. Gestalt theory, in Ringer’s view, was a “modernist” attempt to bring together the demands of science and the hopes of humanism, one of very few to do so through the medium of holistic thought.⁵ In a similar vein, Martin Leichtman argues that the Gestalt theorists were part of the “revolt against positivism” in European thought after 1890, and advanced a “liberal humanistic” or “liberal democratic world view” rooted in Enlightenment

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values that was opposed to the prevailing conservatism of the German academic elite.⁶

This book combines and expands these interpretations in an attempt to develop a synthetic account of Gestalt psychology's history in Germany. Taking Ringer's view still further, and applying it to the vicissitudes of both the Gestalt category and the careers of the Berlin school's remaining adherents under Nazism and thereafter, it challenges stereotypical dichotomies between modern and anti-modern, rational and antirational, democratic or progressive and conservative or proto-Nazi thinking that have been matters of course in German intellectual history for decades. Jeffrey Herf's book, *Reactionary Modernism*, and the recent outpouring of literature on eugenics or "race hygiene" in Germany have shown how particular versions of biomedical science and conceptions of technology could interact with supposedly antimodern cultural nationalism and racism before 1933, and either resonate with or become part of Nazi ideology and practice thereafter.⁷ This study contributes to that discussion by showing how one incarnation of holistic thought had more complex, both supportive and refractory relationships with Weimar, Nazi, and postwar German cultures than conventional dualisms would predict. Like organicist thinking, Gestalt discourse was ideologically *multivalent*, or heterogeneous. Though that category was widely associated with political conservatism and later with Nazism, the history of the Berlin school indicates that such linkages were contested and contingent rather than necessary.⁸

Further, the book shows that Gestalt theory was not only, or not simply, a revolt against positivism. The Gestalt theorists vigorously opposed mechanistic assumptions about perception, as well as sensationist, elementist, empiricist, and associationist conceptions of consciousness. In all these respects they challenged scientific beliefs generally considered central to positivism. But they remained firmly committed to rigorous natural-scientific method in psychology and to the hope of creating a science-based philosophy of mind. In their efforts to achieve this aim they did not cast aside, but rather reconstructed concepts, theoretical models, and research practices encountered in the laboratory of their common teacher, Berlin philosopher and psychologist Carl Stumpf. They also drew upon conceptual resources provided by contemporary developments in philosophy of mind, theoretical biology, physics, physical chemistry, and sensory physiology, only some of which were antipositivistic. Indeed, their chief intellectual alliance in the Weimar period outside psychology was to the Society for Scientific Philosophy founded by physicist and logical empiricist philosopher Hans Reichenbach.

Finally, this study indicates the impact of both political and practical changes on Gestalt theory under Nazism and in the postwar period. The history of psychology as a science and that of the psychological profession in this century are inseparable. In Germany, formal professionalization came during the Nazi period, driven mainly by demand for personality assessment and diagnostics as part of officer selection in the Wehrmacht as well as in the German Labor Front. Psychol-

ogists were in a position to offer such services not because of their subservience to Nazi ideology – though some engaged in that – but due to a shift of emphasis that had already begun in the Weimar period from questions of philosophical concern, such as the problem of knowledge, to more immediately applicable though still culturally resonant topics like character and personality.⁹ That shift had powerful feedback effects on the reception of conceptions of science founded on aesthetic rather than technological categories, like Gestalt theory. Considering this aspect of Gestalt theory’s history thus exemplifies some of the problems and tensions of a profound change in the status and self-concept of many educated Germans, including scientists, from bearers of culture to members of professional society.¹⁰

Redefining the contexts of science

The literature on the Berlin school of Gestalt theory is enormous.¹¹ A chapter on the subject is de rigeur in textbooks for “history and systems” or “systems and theories” courses in psychology. Few such accounts consider its emergence, development, and reception over time, or set any of these aspects in a broader context. Instead, they generally present systematic summaries of what Gestalt theory allegedly stood for and assess its contributions in the light of current thinking. This may suffice for the intended pedagogical purposes, but such discussions foreclose the possibility of asking how or why Gestalt theory changed over time.¹² Many standard accounts also contain significant errors. These are not merely misunderstandings, but examples of how taking current presuppositions in a science for granted can distort, marginalize, or domesticate alternative approaches. A prime example is the routine assertion that Gestalt theory is a “nativist” position, that is to say, one that discounted the role of learning in perception. Parallel to this is the common claim that the Gestalt theorists attributed perceived wholes and structures to inherited structures in the brain. The operative assumption seems to be that a theory that challenges certain empiricist claims must therefore be a descendent of the allegedly “Kantian,” more accurately Cartesian, doctrine of innate ideas.¹³ Students of Gestalt theory have long pointed out that its aim was to overcome such dualistic thinking by discovering not whether perception is primarily learned or not, but just what it is that people perceive, and what the experiences of perception and learning are.¹⁴

The point of view of this study is that of the contextualist scholarship in history of science and history of psychology that has been emerging for the past twenty years. This history is no longer one of linear progress, but of parallel, differing, and diverging lines of development. It is less a story of the discovery of more and more truths about (human) nature with ever greater technical precision, than of the construction and reconstruction of social, technological, and cultural artifacts. And it is less a tale of insights by individuals, though they are very much in evidence, than of knowledge generated by agreements – or arguments – in scien-

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tific communities, according to discursive norms, methodological rules, and societal goals that change with time and place.¹⁵ Whether the results of such processes also correspond to “objective” knowledge is a question for philosophers of science, though even the answers to such questions – like scientists’ own arguments for the objectivity of their knowledge – are not immune from historical change.¹⁶

This book reinforces contextualist accounts of science by locating experimental psychology and Gestalt theory in the changing social and institutional milieu of German academic and cultural life from the 1890s to the 1960s. It also places Gestalt theory in a complex intellectual setting of competing claims about science and mind, which changed over time as well. To construct such a multilevel interpretation, the account proceeds from the assumption that scientists, like other professionals, belong simultaneously to multiple sociocultural groupings, each of which defines itself by constructing its own discursive and practical universe. Relevant for Gestalt psychology are three such groupings, corresponding to their own multiple memberships: the working group in a single laboratory or the scientific school encompassing one or more such groups; the discipline or sub-discipline, encompassing parallel or rival groups of scientists competing for position in both epistemic or conceptual and institutional space; and the broader cultures and societies in which disciplines and laboratories in turn locate themselves.¹⁷

In science studies, these multiple contexts of social life and discourse are often portrayed as mutually constraining. Thus, institutional situations are said to constrain problem choice and method selection; methodological constraints are said to feed back on problem choice; and broader cultural or political contexts are said to determine both problem choice and the interpretation of results. These social settings are portrayed differently here – not as rigid constraints, but as frames or boundary conditions within which a range of motion occurs, as challenges to which a variety of responses is not only possible but inevitable.¹⁸ Most important, this book argues that it is insufficient to consider only one of these social realms at a time – to study only the politics of science on the one hand, or the histories of disciplines or laboratories on the other. Scientists live simultaneously in *all* of these social realms. Focusing on a single important group of scientists, such as the Gestalt theorists, is a way of showing how their multiple social identities and their discourses interact.

This study devotes considerable attention to German psychological laboratories and the scientific schools that arose within them. In doing so it confronts some of the issues discussed in the growing literature on scientific practice.¹⁹ This is necessary because institutional frameworks set the conditions for deciding what scholarship and science are. Scientific institutions are the loci of socialization into particular sets of research practices which then become privileged modes of meaning-generation – “forms of life,” as Timothy Lenoir calls them, following

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Wittgenstein.²⁰ As Helen Longino writes, “One ‘enters into a world’ and learns how to live in that world from those who already live there.”²¹ In the hierarchically organized world of German academic science at the turn of the century, would-be scientists encountered these practices and their conceptual underpinnings during their training not as alternatives from which they could choose, but as embodiments of science per se in a given discipline. They acquired in such settings not only a set of tools for problem-solving, but assumptions and methodological rules that gave meaning to and justified the use of these tools. Due to the amount of time and effort invested and the personal relationships created in such apprenticeships, the commitments involved often carried emotional as well as intellectual weight for young scientists.²² In such circumstances, responses to problems perceived as threatening to normal science are likely to be created and presented as innovations that restructure thinking and practices within existing institutions, rather than overthrowing them. Gestalt theory began as such a revolt from within.

The members of subcultures that emerge within laboratories generally try to advance acceptance of their knowledge in disciplinary communities. However, limiting consideration to a single discipline or to its institutions alone will not suffice to grasp the complexity of the situation in which Gestalt theory arose. Wolf Lepenies has pointed out that emerging disciplines like experimental psychology and sociology faced two difficult problems simultaneously: establishing the autonomy of their subject matter as well as the scientific legitimacy of their methods in relation, often in competition, with those of neighboring disciplines; and specifying the relations of these claims to the common sense – the explicit or implicitly shared discursive norms – of a culture at a given time.²³ Precisely because of its ambiguous status as both a would-be natural science and a subfield of philosophy, and because many experimenting psychologists had training in both fields, experimental psychology in Germany interacted with theoretical assumptions and research practices in sensory physiology, neurophysiology, developmental biology, and philosophy of mind, all of which had subtle cultural or ideological resonances. For the same reason, innovators like the Gestalt psychologists had a rich fund of conceptual and methodological resources – and culturally resonant metaphors – from which to draw.

Relations within or among disciplinary subcultures and their broader sociocultural settings cannot be fully separated from one another. Pierre Bourdieu has characterized academic disciplines as systems of agents acting as a more or less cohesive subfield located within but in a refractive relationship to larger fields defined by class and cultural identity. To the extent that they become social microsystems that organize and restrict inquiry, they achieve relative autonomy, which means in Bourdieu’s terms that they become centers of power and authority in their own right. But this happens only to the degree to which societies value what they do, for reasons that may or may not have much to do with the motives of

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the practitioners. Thus, neither universities nor their constituent disciplines are separate from the discursive fields constituted by shared ideologies, cultural pre-suppositions, and organizing metaphors, or from the societal matrixes in which these are enacted.²⁴

Gestalt theory's location in this sociocultural field changed over time. At first, the Gestalt theorists neither understood their innovation nor cast their discourse in terms of the alleged "crisis of science." Instead they couched their position in language specific to the scientific community into which they had been initiated. But Wertheimer's use of the culturally resonant term "Gestalt" effectively linked the disciplinary and sociocultural realms. The pressure-cooker atmosphere of Weimar culture heightened both the intensity and the ideological resonance of their claims. It also shaped the reception of their ideas, in which both ideology and intradisciplinary competition played important roles. From the 1930s onward, however, the development and reception of Gestalt theory in Germany depended on three other factors – the forced emigration of Wertheimer, Köhler, and many of their students after 1933, the professionalization of psychology under Nazism, and the restructuring of scientific and professional life under occupation and in the two German states after 1945. All of these developments posed challenges to the students of Gestalt theory who remained in Germany that proved difficult to overcome.

The arguments in outline

Gestalt theory originated within a discipline constructing itself first as a science and then as a science-based profession in German culture. Its history was therefore shaped as much by that of Germany as a whole and of psychology in that context as by purely conceptual considerations. The book's four parts try to capture that interaction by considering all of the social settings discussed above within a broadly chronological framework, in order to bring out the dimensions of continuity and change in each. The first two parts discuss the emergence of Gestalt theory to 1920. Parts III and IV describe the establishment of Gestalt theory as a scientific school in the 1920s and trace its subsequent elaboration and reception.

Part I examines the social, institutional, and intellectual situations within which Gestalt theory emerged. A common term for the process leading to the formation of new disciplines is "differentiation"; but this makes the process seem to be a natural product of knowledge growth, rather than a site of bitter intellectual and academic-political struggles.²⁵ Even though a community of experimenting psychologists was fully formed by 1910, academic psychology did not "differentiate" from philosophy in Germany until 1941. That ambiguous disciplinary location was of central importance for the history of Gestalt psychology. The role of philosophy in teacher training was the entry point for psychology into German academic life. Knowledge of "empirical psychology" was specifically mentioned

as part of the philosophy or “general culture” requirement in the statutes for Prussian state teachers’ examinations. Whether such knowledge should be acquired by experimental methods was not specified. Between 1890 and 1910, a community of experimenting psychologists formed, with a scientific society, journals, and laboratories. Most of the leading members of that community continued to be professors of philosophy, and they believed that their research was relevant to philosophical problems, especially in logic and the theory of knowledge. For this reason, among others, their work focused on topics in sensory psychology and cognition. Seen in this light, experimental psychology’s challenge was to incorporate innovative teaching and research methods while preserving the field’s traditional function in the university system as part of the philosophical propaedeutic.

The Gestalt theorists were trained in rigorous experimental method and acquainted with the broader issues at stake by philosopher-scientists such as Christian von Ehrenfels in Prague, Oswald Külpe in Würzburg, and above all Carl Stumpf in Berlin. These professors accepted experimental psychology’s double identity as a natural science and a part of philosophy. Indeed, though Külpe began as a positivist, all three of them came to see their work as a way of establishing an alternative philosophical standpoint between Neo-Kantian idealism and positivism. But other leading philosophers of the time vehemently denied that empirical research could contribute to philosophy at all, let alone address the truly pressing social and moral issues of the time. Shortly after Koffka, Köhler, and Wertheimer began their careers, the controversy took on a threatening dimension, when 107 university teachers signed a petition against appointing additional experimenting psychologists to chairs of philosophy.

Complicating this tense institutional situation was the sheer difficulty of constructing psychology as an autonomous intellectual and research domain at a time of rapid industrialization, when concepts of science and of mind were in flux. Legitimacy for psychology as a natural science in Germany came at first by adapting methods and mechanical modes of explanation from physiology and physics to the study of sensation, perception, and memory. The epistemic space was a shared one at first; for the parallel dualisms of sensation and perception, peripheral and central events in the nervous system, and physiological and psychological processes seemed congenial to both physiologists and psychologists. But tension grew due to the problems of extending to perception the assumptions applied to sensation by Hermann von Helmholtz. This created a conflict between the normative demand for mechanical explanation on the one hand, and the call for construction of an autonomous psychical realm with its own laws on the other. For some the procedures and theoretical models proposed by physiologist Ewald Hering offered an attractive alternative.

At the same time, new theories of mind challenged the elementistic assumptions about consciousness shared by most experimenting psychologists. Philoso-

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phers both inside and outside Germany who sought a middle way between idealism and positivism, such as William James, Henri Bergson, Wilhelm Dilthey, and Edmund Husserl, rejected sensationalistic and atomistic concepts of consciousness and described mind as process, a view also taken in psychology by Oswald Külpe's Würzburg school. The controversy over the status of the Gestalt category, introduced from aesthetics into psychology by Mach and Ehrenfels, impinged on all of these issues. The Gestalt problem became linked with the mechanism–vitalism controversy when neovitalist Hans Driesch and psychovitalist Erich Becher maintained that the “psychological reality” of perceived form justified the notion of an independent “psychical causality.” Related controversies in neurophysiology began when Johannes von Kries and Becher criticized the prevailing view of nerve transmission by isolated conducting pathways as inadequate to account for the perception of ordinary, complex objects. Thus, new conceptual and research issues of obvious philosophical, scientific, and wider cultural significance had come to the fore, but the descriptive categories and philosophies of science then employed by experimenting psychologists seemed incapable of dealing with them satisfactorily. Such difficulties underlined philosophers' claims that experimental psychology could not solve philosophical problems or believably articulate the higher values appropriate to bearers of culture.

Part II shows how Koffka, Köhler, and Wertheimer responded to this complex challenge by radically reconstructing psychology's conceptual framework between 1910 and 1920. The core of that reconstruction was the fundamental revision of the Gestalt concept explained earlier, first articulated by Wertheimer in 1912 and 1913. In his famous 1912 paper on the seeing of motion, he provided, with the so-called *phi* phenomenon – perception of motion without a moving object – what he took to be experimental evidence for the existence of essentially dynamic mental realities that cannot be composed of, or built up from, elements. In the same paper he conjectured that there are “structured whole processes” in the brain corresponding to these psychical events.

Ironically, in view of Thomas Kuhn's use of the term “Gestalt switch” in his theory of scientific revolutions, the creation of Gestalt theory involved not only the sudden change of perspective proposed by Wertheimer, but also an elaborate set of conceptual transformations that took almost ten years to work through.²⁶ First, Köhler disputed Helmholtz's assumption, shared by Stumpf, that sensations are strictly determined by physical stimuli. Rejecting this so-called “constancy hypothesis” opened the way to making perception and its objects – things in relation to one another – rather than sensations the primary foci of psychological research. Koffka then extended the Gestalt category from perception to action, claiming that behavior is not a bundle of reflexes connected by association, but an achievement released by the interaction of structured environmental events with organisms in particular states. This brought Gestalt theory close to American functionalist psychology and pragmatist philosophy. However, instead of making

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perception the product of action, as John Dewey and others did, Gestalt theory placed them on the same plane, saying that both conformed to the same structural laws. Köhler's research on animal problem solving on the island of Tenerife from 1914 to 1918 supported this extension of the Gestalt concept to behavior. In further studies, he attempted to show that animals can perceive relations directly, and claimed that such "structural functions" are therefore a property of living matter, not of mind alone.

This set the stage for Köhler's declaration, in 1920, that inanimate nature also contains Gestalten, physical systems that cannot be described as simple summations of isolated events. That step introduced Gestalt theory as a philosophy of nature, as well as a theory of knowledge, perception, and behavior. In the same year, Wertheimer extended his new epistemology to thought, a step for which he had prepared the way in a 1912 paper on the number concepts of so-called primitive peoples. Traditional logic might be suitable for ordering what is already known, he argued, but it is an inadequate guide to what happens in innovative thinking. Such thinking is characterized by a fundamental "recentering" or restructuring of problem situations – rather like the "Gestalt switches" later described by Kuhn. Research on such transformations, he suggested, might lead to a new "Gestalt logic." The Gestalt theorists accepted their teachers' belief that psychological research could contribute to philosophy. But they had seen during their training that dualistic presuppositions about mind were inadequate guides to psychological reality. They accepted the institutional situation in which they worked, and tried to resolve the intellectual and practical problems involved with fundamental innovations.

Part III analyzes the establishment, development, and reception of the new approach from 1920 to 1933. The Gestalt theorists were rewarded for their boldness with career advancement. This, along with the journal *Psychologische Forschung*, founded in 1921, assured the institutional anchorage of their new approach. The Gestalt theorists and their students employed a variety of research styles, consistent with their own rather different personalities. Wertheimer was both a philosopher-scientist and a Jewish intellectual loosely associated, like Franz Kafka, with the Prague circle. His 1923 paper laying down "Gestalt laws" of perceptual grouping presented an open-ended research program – to discover the principles of perceptual organization in both its static and dynamic aspects. Many Berlin school students tried to unpack Wertheimer's suggestive formulations or apply them to already existing research in form, color, and depth perception, creating what Dudley Shapere has called a conceptual and research domain by metaphorical and analogical extension.²⁷ Köhler, the son of a Prussian Gymnasium director, had studied both philosophy and physics, as well as experimental psychology. His study of successive comparison, also published in 1923, served as an exemplar for employing perceptual research to develop and test hypotheses about underlying brain events.