Gestalt psychology refers to the school of psychology that was formed in Berlin by Max Wertheimer (1880–1943), Kurt Koffka (1886–1941), and Wolfgang Köhler (1887–1967) and that continued to have influence throughout the twentieth century at universities where it was particularly practiced, namely the New School for Social Research in New York, Swarthmore College in Philadelphia, the University of Münster in Germany, and the Universities of Padua and Trieste in Italy. After a period of neglect and misunderstanding, the principles of the school are once again central to psychological discussion, especially in perceptual psychology.

The term “Gestalt” entered psychology in 1890 in Christian von Ehrenfels’ essay “On Gestalt Qualities” (Smith, 1988). In the case of a melody, transposition in key does not destroy the melody, which is a gestalt quality arising above the individual notes. Most research conducted to solve Ehrenfels’ problem—for example the work of Alexius Meinong and his school—was addressed to an overarching quality added to a group of elementary sensations (the individual notes), which was explained by a mental act of integration (Ash, 1995; Smith, 1988). The Berlin variant instead stressed not qualities but wholes. Our experience is not the summation of stimulation plus an integrating factor; rather the experience itself is a strong whole, a Gestalt.

Since Gestalten are emergent entities, new wholes rising above fundamentals but not reducible to them, the whole is literally greater than the sum of its parts. Put another way, the characteristics of a whole are suprasummative. The qualities or meaning of a perceptual object, gesture, or statement will change relationally depending on the context. They are parts that have roles in the context of the whole gestalt, and their part-quality also changes when isolated. This is the basis for the Gestalt respect for the total situation.

There was, therefore, a long tradition of solving the “gestalt problem” before Wertheimer and his colleagues began publishing their experiments. Berlin Gestalt psychology emerged as a school with Max Wertheimer’s (1921–(1945)) experiments on stroboscopic motion. In the experiments, Wertheimer was interested in cases where there is no retinal excitation for movement. His novelty was in suggesting a “short circuit” (Querfunktion) to explain the movement. Around the same time, Köhler (1913–1971) rejected unnoticed sensations, supposedly built up into a coherent experience (Gestalt) later, arguing that such experience was sui generis.

It is sometimes supposed that the Gestaltists were the first to investigate illusory movement, but this is not true. They are also not the first to argue against elementarism. Their achievement lies in taking
the objects of phenomenal experience (Gestalten) as basic and normative for psychological explanation and then searching for underlying physiological processes (and not unconscious acts) of a comparable form and complexity to serve as their likely basis.

The Gestaltists provided epochal interpretations of all areas of experimental psychology, from perceptual psychology to memory, learning, and productive thinking (Koffka, 1953; Köhler, 1929, Wertheimer, 1942). Furthermore, in the work of Kurt Lewin (1890–1947) gestalt ideas were extended to social psychology. By the middle of the twentieth century, a second generation of Gestalt authors had continued to provide important interpretations of perceptual phenomena not only in America (Hans Wallach, Nicholas Pastore, W. C. H. Prentice), but also in Germany (Wolfgang Metzger, Edwin Rausch, Wilhelm Witte) and Italy (Cesare Musatti, Fabio Metelli, Gaetano Kanizsas) and venturing further into social psychology (Fritz Heider, Solomon Asch, Mary Henle) and even art (Rudolf Arnheim), music (Victor Zuckerandl, Leonard Meyer), and philosophy (Aaron Gurwitsch).

Basic Ideas

Gestalt psychology simultaneously recognizes the wisdom of naïve and folk understanding and is rigorously scientific in its standards. This calls for a critical realist attitude in which we balance our experience against our accumulated scientific understanding of the transcendental world (Epstein & Hatfield, 1994). Epistemologically, such a commitment makes gestalt psychologists stress the normativity of perceptual experience. Our experiences—a visual illusion or even a neurosis, for example—are phenomenally primary and require adequate explanation, not the other way around (as in psychoanalysis, where the mechanism is more important).

There is, furthermore, a monistic, naturalistic commitment. Stated briefly, the main tenet of the school is that our perceptual experience is formed by the relational working of neural activity. Because our experience is whole and unified, there must be unified physical processes underlying experience that can account for these phenomenal qualities. This stance is naturalistic, in basing experience on more fundamental factors, and Naturphilosophische, in the sense that it monistically unites mind and body. In short, our experience is primary, and, because consciousness must be based on underlying physical processes, these processes must be of a complexity and sophistication to be worthy of serving as the basis for emergent mental activity.

Methodology

Gestalt psychology typically begins with a rigorous phenomenological description of the psychological effect at hand. This includes not only variation of stimuli to find the range of effect, but the very appearance of the stimuli (e.g., “film” versus “surface” color). Since psychological models have to do justice to the phenomenon and not vice versa, premature model building is looked down upon. In fact, many of the important Gestalt phenomena—such as Benary’s triangle and the Gelb effect—tell against one simplistic model or another (in these two cases, the theory of antagonistic retinal processes associated with Ewald Hering).

As an example of a typical gestalt explanation of perception, one may look at Karl Duncker’s experiments on “induced” movement (Duncker, 2003). Duncker found that a glowing dot that does not move in a dark room can be made to appear to move if its framework, in this case a glowing rectangle around it, moves. Because the framework is hierarchically superior to the dot, the dot appears to move. Such an explanation is based on “relational determination,” or organizational factors codified by Wertheimer in his famous laws of perceptual organization (Wertheimer, 1923/1939).

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In that paper, Wertheimer identified a number of factors that create unified perceptual objects, among them similarity, size, and good continuation. Wertheimer was interested in a deeper tendency toward “good” form or *prägnanz*, which is extremely difficult to define with precision. But it is clear that the rules were a signature of a more profound organizational capacity of the human mind that is up to the research to discover.

Many Gestalt insights are developed heuristically from the behavior of electromagnetic fields. Thus, perceptual illusions (Müller-Lyer, Poggendorf, etc.) are created “forces” in the perceptual field; the lightness we see on a surface is a higher order ratio among the stimuli equilibrated in the visual field; and as in Duncker’s example, frames of reference organize stimuli into hierarchical systems.

Relational determination suggests that perceptual experiences are based on relationships rather than absolute stimulation. This relationism has also been stressed by J. J. Gibson, who was influenced by Koffka when they both taught at Smith College. Indeed, the predictions of Gibson’s ecological theory and gestalt psychology are not very different in normal, information-rich environments. The difference is that Gibson chose not to talk about cases of impoverished stimulation like Duncker’s example, because it is an artifact of the laboratory and not ecologically valid. Gestalt psychology takes it as a challenge of scientific progress to tackle both these controlled laboratory situations as well as more everyday problems.

**Misunderstandings**

In the 1960s and 1970s, as the cognitive revolution was taking place, the Gestaltists were popularly regarded to have simply devised some remarkable illusions and the rigorous experimental apparatus behind the discoveries was often overlooked. Nowhere are attitudes toward Gestalt psychology more pronounced than in the reception of Wertheimer’s rules for grouping. Most perceptual psychologists were interested in quantifying the factors or making predictions about their relative strength. The rules were tested and interpreted in dozens of ways, but Wertheimer always regarded the rules as an abstraction from a single process.

To American psychology, dominated by a positivistic philosophy of science that equated prediction with explanation, this was a shortcoming. If Wertheimer could not predict which factor would win out over another, was his series of organizational factors merely a list? In its place, information-processing accounts were devised that would attempt to quantify various relationships and yield predictions.

Similarly, Köhler’s elaborations of the theory of psychophysical isomorphism—developments of Wertheimer’s “short circuit”—were widely dismissed. Köhler had argued on logical grounds that any successful psychophysical theory must find physical processes that bear a structural resemblance (isomorphism) with the supervening experiences. More concretely, he proposed a field theory of electrical activity in the brain that could explain the emergence of percepts and their modification through learning (e.g., after-effects). Köhler was widely misinterpreted to have suggested a “pictures in the head” theory. It was suggested that one simply take the experimental investigations of the Gestaltists without the psychobiological baggage. Most research after Köhler was devoted to discovering single feature detectors in the brain, the aim of which was antithetical to Köhler’s holistic solution.

**A Recent Revival**

From the 1990s on, Gestalt psychology has been treated less as an embarrassment and more
sympathetically understood for its naturalistic and monistic spirit. Part of this rehabilitation involves accepting certain beliefs about the philosophy of science. A young science, for example, has to pass through a rigorous phenomenological phase and explain qualitative features first. If psychology today recognizes that it may have prematurely adopted advanced criteria for its model of explanation, it recognizes that the discovery of the features of perceptual organization proceeds ad hoc, often without predictive power.

Similarly, in regard to psychophysical isomorphism, many theorists are beginning to understand that there is a large explanatory gap that has to be filled between phenomenal experience and known brain physiology, a gap that Köhler’s experiments were intended to address. Armed with findings from chaos and catastrophe theory and synergetics, brain scientists are more apt to recognize the correctness of the overall spirit of Köhler’s program, in spite of particular shortcomings (Ehrenstein, Spillmann, & Sarris, 2003). This effort has looked beyond individual feature detectors and to molar percept formation through spatial, harmonic, or temporally bound neural action.

What makes the achievement of the early Gestalt psychologists so impressive is not just the attractive worldview and talented and productive group of researchers. The Gestaltists were also possessed of a keen sense of the phases that psychology must pass through as a science and thus sought to be the “Newton’s” of their field, providing the foundation for later research.

See also
Gestalt Therapy; Isomorphism; Visual Illusions.

References

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Suggested Readings


IAN VERSTEGEN
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