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Gestalt Theory in Eino Kaila's Psychology and Philosophy

Academic Psychology in Finland

The first university in Finland was founded in 1640 as the Royal Academy of Turku. Its Faculty of Arts had two chairs in Philosophy: Theoretical (teaching logic and metaphysics) and Practical (teaching ethics, politics, and history) (see Haaparanta & Niiniluoto 2003). When the Academy was moved in 1828 to the new capital Helsinki, its statutes were reformed by the Humboldtian model, and philosophy became the most central academic subject.

Johan Vilhelm Snellman, who later became Professor of Philosophy (1856-63) and member of the Finnish senate, wrote on logic, psychology, and theory of state on the basis of Hegelian idealism. Snellman was succeeded by Thiodolf Rein, a liberal follower of Hegel and Lotze, who in the early 1880s published the first textbooks of logic and psychology in Finnish.¹ Rein founded in 1873 the Philosophical Society, where he defended interactionist dualism against the psycho-physical parallelism of Edward Westermarck. Two of Rein's students went to Leibzig to study in Wilhelm Wundt's new laboratory of experimental psychology: Hjalmar Neiglick wrote on light perception in 1887 and Arvi Grotenfelt on Weber's Law in 1888. Neiglick died young but Grotenfelt became Rein's successor in Theoretical Philosophy in 1905. Westermarck, who studied the development of morality and moral psychology in the spirit of evolutionary naturalism, was appointed Professor of Practical Philosophy at the University of Helsinki in 1906, and Professor of Sociology at the London School of Economics in 1907.

When Eino Kaila started his studies in philosophy at the University of Helsinki in 1908, Grotenfelt and Westermarck were his professors. Neither of them worked in the field of psychology, but Westermarck's student and friend Rolf Lagerborg advocated psychological behaviorism. Kaila himself had a prolific scientific and artistic personality, with a lively but critical interest in the main currents of philosophy – such as Haeckel's monism, Mach's positivism, Bergson's voluntarism,

¹ For a brief history of psychology in Finland, see Ihanus (2006).

and James's pragmatism (see Niiniluoto 1986). Kaila chose experimental psychology as the topic of his doctoral dissertation *Über die Motivation und die Entscheidung: Eine experimentell-psychologische Untersuchung*, which he defended in Helsinki in 1916. The empirical material consisted of students who estimated the difficulty of mathematical problems and then decided whether they try to solve them. The framework was mainly based on the association psychology of Oswald Külpe's Würzburg school. In 1918-23 Kaila published several articles on experimental psychology of perception in the German journals *Zeitschrift für Psychologie* and *Psychologische Forschung*.² Kaila was also interested in theoretical problems of psychology. He defended the parallelist view with reference to G. E. Müller, arguing that the series of neural events is primary to the parallel series of mental events, and sharply rejected vitalist approaches in biology and psychology (Driesch's entelechy, Bergson's *élan vital*) in his Finnish monograph on "mental life as a biological phenomenon" in 1920 (see Niiniluoto 2010).

After Finland had gained its independence in 1917, new Finnish and Swedish universities were founded in Turku. In 1921 Kaila was appointed the first Professor of Philosophy at the Finnish University of Turku. One of his first actions in Turku in 1922 was the establishment of a laboratory of experimental psychology, the first of its kind in Finland. A new era of academic psychology in Finland had started. Among Kaila's students was Ragnar Granit, who became Nobel laureate in physiology and medicine in 1967 for his studies in the psychophysics of vision. Kaila continued his own psychological studies with a large Finnish monograph *Sielunelämän rakenne* (The Structure of Mental Life) in 1923, with influences from Gestalt psychology, but in the mid-twenties he turned his main attention to problems in the philosophy of science.

When Kaila moved in 1930 to Helsinki, to become Professor of Theoretical Philosophy after Grotenfelt, he again established a laboratory of experimental psychology in 1932. It became the centre of new studies in the psychology of perception and development psychology. In 1934 Kaila published his masterpiece in the psychology of personality *Persoonallisuus*, but thereafter again concentrated on philosophical problems of logical empiricism. It was not until 1948, when Kaila was appointed one of the twelve full-time members of the Academy of Finland, Psychology was separated from Theoretical Philosophy in Helsinki, and in 1951 Kaila's student Kai von Fieandt became the first occupant of the new chair in Psychology for twenty years. In the meantime, a chair in Psychology had been established in 1936 at the College of Education in Jyväskylä (later the University of Jyväskylä), and its first holders Niilo Mäki and Arvo Lehtovaara were Kaila's students too.

² For a complete bibliography of Eino Kaila, see Manninen & Niiniluoto (2007). The only book-length study of Kaila's psychology has been published in Finnish by Manu Jääskeläinen (1983). See also Jääskeläinen (1981, 1986).

Kaila on Gestalt Psychology

We have seen in the preceding section that the characterization of Eino Kaila as “the founding father of modern Finnish psychology” is well justified (see Jääskeläinen 1981). In particular, Kaila has a unique position in the history of Gestalt psychology in Finland, comparable to that of David Katz in Sweden and Edgar Rubin in Denmark (see von Fieandt & Moustgaard 1977).³

Already Kaila's dissertation in 1916 contained a reference to Kurt Koffka's 1912 work. Experimental studies “Über ideatorische Koordinationen” (1918), “Versuch einer empiristischen Erklärung der Tiefenlokalisation von Doppelbildern” (1919), “Gegenstandsfarbe und Beleuchtung” (1923), and “Die Lokalisation der Objekte bei Blickwegungen” (1923) directed Kaila's attention to many important aspects of perceptual psychology. In 1920 he used some facts about human perception – like the tendency to experience the world as solid objects in space and time and the constant size of perceived objects – in his arguments against Ernst Mach's phenomenalism.

Kaila's book *Sielunelämä rakenne* (1923) included chapters on “Gestalts” and “The Perception of Space and Things”. Besides comments on James's stream of consciousness, and Brentano's and Husserl's notion of intentionality, Kaila argued that Christian von Ehrenfels's treatment of Gestalt qualities in 1890 was too “atomistic”. With references to Wolfgang Köhler's and Max Wertheimer's studies, he went through basic results of Gestalt psychology on perceptual illusions, experienced time and space, and perceived movement. Questions were raised about Köhler's 1920 thesis on “physical Gestalts”, and the “product theory” of Gestalts by Witasek and Benussi. This work shows that Kaila was well aware and impressed by the recent investigations of Gestalt psychologists in Germany and Austria.

Jääskeläinen (1981) dates Kaila's active period of Gestalt psychology to the years 1928–1932, starting with the monograph *Beiträge zu einer synthetischen Philosophie* (1928) on “non-additive wholes”, and in Jääskeläinen (1983) he locates Kaila's 1923 book still in the period of association psychology. On the other hand, Jääskeläinen (1981) does not mention Kaila's experimental studies in Vienna in 1932 in his overview of Kaila's Gestalt psychology, even though this topic is discussed in some detail in Jääskeläinen (1983).⁴

³ Another person worth mentioning in this connection is Anitra Karsten, who started her studies in Berlin in 1922 with Wolfgang Köhler and especially Kurt Lewin, who inspired and supervised her research project about *Psychische Sättigung*, which she defended as her doctoral dissertation for Kurt Koffka in Giessen in 1928. Karsten worked in Germany and Sweden in the field of applied psychology and did not have a tenured academic position in Finland. Kaila had important co-operation in Helsinki with his colleague Yrjö Reenpää, Professor of Physiology, whose *Allgemeine Sinnesphysiologie* (1936) was influenced by Gestalt theory.

⁴ For a comprehensive history of Gestalt theory, see Smith (1988). The extensive annotated bibliography recognizes Kaila's contributions to Gestalt psychology, but the 1932 monograph on suckling infants is not mentioned.

Kaila had outlined his philosophical position of “logical empiricism” already in 1926 (see Kaila 1926, 2003a). After publishing German monographs on causality, probability, deduction, and synthetic philosophy, he made three visits to Vienna in 1929, 1932, and 1934, to meet the main proponents of the new philosophical school of logical empiricism, especially Moritz Schlick and Rudolf Carnap (see Niiniluoto 1986; Manninen 2012). Kaila was recognized as an author close to the scientific world view of the Vienna Circle (see Stadler 1997), who admired exact methods in philosophy (see Kaila 2003b), even though he never accepted the positivist and verificationist views of some of its members. Kaila was impressed but also puzzled by Carnap’s *Der logische Aufbau der Welt* (1928), which suggested a method of “constituting” the physical and cultural worlds from a phenomenalist basis of complex momentary “elementary experiences”. Unlike the members of the Vienna Circle, most of whom had their background in physics, Kaila was an expert in psychology. Carnap’s choice of the “autopsychological” phenomenalist basis was motivated by the Gestalt theory, but Kaila had a number of critical points against Carnap’s constitution theory (see Kaila 1979, Essay 1). Philosophical debate with Carnap on realism continued in the 1930s (see Kaila 1979, Essays 2 and 3; Niiniluoto 1992, 2012).

During his second visit to Vienna in the spring from January to June in 1932, Kaila was engaged in experimental work at Charlotte Bühler’s institute. Charlotte Bühler was a renowned expert on child psychology, and her husband Karl Bühler was a leading figure of the Würzburg school after Külpe.⁵ In the city orphanage (*Kinderübernahmestelle der Gemeinde Wien*), Kaila studied 71 suckling infants from two to eight months and their reactions to human face. Against associationist psychology, Kaila attempted to show that the children react to a Gestalt-quality of the eye region of an adult face. The suckling’s imitation of facial expressions is not an innate or instinctive reflex, but requires maturity of coordination. From the age of five months, attempts of mimic imitation exhibit rudimentary intentionality and social interaction. The monograph *Die Reaktionen des Säuglings auf das menschliche Gesicht* (1932) is Kaila’s main work in empirical psychology. It led to a debate with Charlotte Bühler, who raised questions about instinctive reactions and the whole – part relations of faces. Kaila replied with new experiments made in 1934, but some disagreements continued in *Zeitschrift für Psychologie* in 1935. Still in 1945 Kaila defended his main conclusions by referring to Konrad Lorenz’s ethological notion of specific preformations: reactions to a smile are results of matches between neural locks and the keys of releasing stimuli (see Kaila 1945).

Kaila 1934 monograph *Persoonallisuus*, based on lectures in Helsinki in the

⁵ Kaila’s student Kai von Fieandt studied color perception in Vienna in 1935 with Karl Bühler and Egon Brunswick.

previous spring term, shows the influence of Gestalt ideas. Translations of this widely read book appeared in Swedish, Estonian, and Danish. It was published a year before Kurt Lewin's *A Dynamic Theory of Personality*. Personality for Kaila is a dynamic multi-layered whole, whose meaningful actions are responses to animal, mental, and deep-mental needs. The principle of holism is now formulated so that the whole determines the parts, and the law concerning the whole is simpler or easier to find and express than the law concerning the parts. For meristic wholes, like the solar system, the situation is the opposite (cf. Smith 1988). Examples of genuine holism include perceptual Gestalts, but already in 1928 Kaila had argued that Köhler's physical Gestalts in the brain are meristic or additive. In contrast to apparent holism, e.g. electrically charged metal strings which tend to a spherical form, Kaila briefly suggests that quantum theory may reveal genuine holism in the physical nature. An important role in Kaila's exposition is played by Karl Bühler's distinction between expressive signs, signals, and representative symbols. According to Kaila, the use of language with the symbol function is the key difference between humans and other animals.

Kaila returned to Gestalt psychology in essays in the early 1940s, where he argued that classical Gestalt theory is unable to give an account of meanings and the symbol function (see Kaila 1942, 1945). In historical remarks, he gave credit to James's notion of the "stream of consciousness" and Mach's anticipations of ideas about "figure and ground" (Rubin), "preference of good forms" (i.e. Wertheimer's "Prägnanz-tendency"), and "economy of thought". In an essay "Logik und Psychophysik" (1944), Kaila argued that a Gestalt is neither a quality nor a thing, but should be understood as a "*Wirkungszusammenhang*", i.e. a causally connected nexus of interacting parts (see Jääskeläinen 1981).

Kaila's Gestalt Philosophy

During Eino Kaila's academic career, psychology had not yet been divorced from philosophy. By present standards, his work in empirical psychology belonged to a special scientific discipline, but for him it was an integral part of his philosophical profession.

As a philosopher Kaila had two interrelated life-long projects. One of them was the development of conceptual tools for defending the epistemology of logical empiricism without metaphysical assumptions (see Niiniluoto 2012). Crucial for this program was the definition of concepts like reality, truth, observation, law of nature, and testability. This task, which Kaila's friend Carnap called explication, became the main focus of analytic philosophy. Kaila contributed to this project with his probability logic (Kaila 1926) and the analysis of the notion of reality in the 1930s (see Kaila 1979, Essays 2 and 3). He appreciated formal logic as a tool in this task, but he did not invent new logical systems which made his brightest

philosophy students famous worldwide. Through his students and successors – Georg Henrik von Wright, Oiva Ketonen, Erik Stenius, and Jaakko Hintikka – Kaila became the founding father of Finnish analytic philosophy.⁶

Another philosophical project for Kaila was his passion for constructing a monistic world view which does not presuppose sharp differences between matter and mind, quality and quantity, structure and function (see von Wright 1992). Tensions in this task can be seen in the 1920 monograph which attacks vitalism by denying independent psychological causality: psychological regularities are instances of unknown causal physiological laws. Yet Kaila attempted at the same time to be an anti-reductionist who accepts the autonomy of biology in relation to physics and chemistry (see Niiniluoto 2010). In his 1928 German monograph, Kaila called his project “synthetic philosophy” (see Kaila 1928). Its elaboration was published in Finnish in 1929 as *Nykyinen maailmankäsitys* (Contemporary World Outlook), which appeared in the same year as the manifesto of the Vienna Circle, *Wissenschaftliche Weltauffassung: Der Wiener Kreis*, authored by Carnap and Otto Neurath (see Stadler 1997).

Kaila declared in his synthetic philosophy that “philosophy is the alpha and omega of scientific thought”. Without indulging in metaphysical speculation, each of the four main chapters of the book is based upon best current theories of empirical science: time and space on relativity theory, matter on atomic physics, life on biological evolution theory, and soul on Gestalt psychology.

A central conceptual tool of Kaila’s 1928 synthetic philosophy was the distinction between additive and non-additive wholes. The former are mechanistic and associative, while the latter exhibit new laws, so that a non-additive whole is more than the sum of its parts. Kaila’s main inspiration here was not the biological theory of emergence, but rather psychological Gestalt theory. But he argued that quantitative science, which eliminates qualities, creates the illusion that only the mental is non-additive. So, to confirm his anti-reductionist monism, Kaila urged that in fact non-additivity is a feature which unifies matter, life, and soul.

In the 1930s Kaila found a new tool in the concept of invariance which he combined with the Carnapian constitution theory: the reality has three levels of increasing invariance or regularity. Scientific objects are invariances of physical objects, and physical objects in turn are invariances of perceptual objects (see Kaila 1979, Essays 2 and 3; Niiniluoto 1992). As Kaila argued in his Finnish book on human knowledge, *Inhimillinen tieto* (1939), invariances are laws or patterns of regularities that are sought by science.⁷ Especially important in modern science after Galileo are relational or dynamic invariances. But these

⁶ For assessments of Kaila’s influence in Finnish philosophy, see Haaparanta & Niiniluoto (2003), Niiniluoto, Sintonen & von Wright (1992), Niiniluoto & Pihlström (2012).

⁷ A translation by Anssi Korhonen of Kaila’s 1939 book on *Human Knowledge* is forthcoming by Open Court.

Gestalt formations also appear as concepts, similarities, uniformities, analogies, and structural identities on the level of perception in daily life (cf. Jääskeläinen 1981). This theme Kaila elaborated in his fine posthumous essay on the perceptual and conceptual components of everyday experience (see Kaila 1979, Essay 4).

In the 1940s Kaila returned to some philosophical aspects of the Gestalt theory. Carnap changed in the early 1930s his phenomenalist approach to physicalism, which assumed that all meaningful discourse is translatable to the intersubjective observational language of science. Among his theses of logical empiricism, Kaila also adopted the physicalist principle of “logical behaviorism” which claimed that all meaningful statements about human psyche have to be reducible to statements about bodily behavior (Kaila 1979, 120). Combined with Gestalt theory this perspective gives a new theory that Kaila called “Gestalt behaviorism” (Kaila 1944). One of its main tasks is the physicalization of the symbol function (see Kaila 1945).

Kaila's appreciation of the Gestalt theory can be seen also in a brief article where this theory is used as a framework for arguing that the Golden Rule of ethics is a sort of idealization of the actual human situation. This rule is ambiguous in so far as there are no objective standards for defining who are my “neighbors” (see Kaila 1947).

Kaila struggled with his gigantic synthetic program for the last thirty years of his life. To be successful, he should have mastered all special sciences and been constantly up-to-date about their theoretical and empirical progress. In the 1940s he turned his main attention to quantum physics. As a member of the Academy of Finland from 1948, Kaila could concentrate on research without teaching duties. He returned to the relation of qualities and quantities in the light of the new systems theory in biology, but was critical of the mechanistic attempts of cybernetics. Yet, the concept of holism attracted him. His student Ohto Oksala coined a translation of the German *ganzheitlich* into Finnish as “kokonaisvaltainen”, etymologically meaning “the power of the whole”. Kaila further suggested that the Romantic philosophers of nature, among them Snellman, had anticipated modern holistic “field theories”.

Kaila thought that quantum physics with its probabilistic laws reveals a new form of “terminal causality”, in addition to traditional initial causality, but only the first part of his new “unitary philosophy of nature”, *Terminalkausalitet in Atomdynamik*, appeared in 1956. The next parts would have considered “biodynamics” and “neurodynamics” (see Stöltzner 2012). Kaila also planned a synoptic work which would summarize in Finnish his synthetic philosophical project. The title was *Hahmottuva maailma*, where ‘hahmo’ is ‘Gestalt’ in Finnish. The proper translation would not be ‘The World as a Structured Whole’, as suggested by von Wright (see Kaila 1979, xxxviii), but rather more

dynamically 'The World as a Structuring Whole'. Only the part concerning everyday experience of this unfinished symphony was ready, when Kaila passed away in the summer of 1958 at the age of 68 – leaving us with the unending quest for combining the results of scientific inquiry into a unified world outlook.

Summary

Eino Kaila (1890-1958) was the most prominent philosopher and psychologist in Finland in the first half of the twentieth century. As Professor of Philosophy at the University of Turku in the 1920s, he was *the* person who brought Gestalt psychology to Finland. As Professor of Theoretical Philosophy at the University of Helsinki in 1930-1948, Kaila's charismatic lectures and eloquent monographs introduced to the Finnish audience symbolic logic, logical empiricism, and modern philosophy of science. He was closely associated with the Vienna Circle, but pursued independently his life-long project of holistic philosophy of nature. In his synthetic attempt to combine the best results of physics, biology, and psychology into a unified world view, Kaila integrated the main ideas of Gestalt theory in his philosophy.

Keywords: Gestalt psychology, Gestalt theory, holism, invariance, logical behaviorism, logical empiricism, perception.

Zusammenfassung

Eino Kaila (1890-1958) war in der ersten Hälfte des 20. Jahrhunderts der bedeutendste Philosoph und Psychologe Finnlands. Er war derjenige, der als Professor für Philosophie an der Universität Turku die Gestaltpsychologie in den 1920er Jahren nach Finnland brachte. Von 1930–1948 als Professor für theoretische Philosophie an der Universität Helsinki tätig, machte er in seinen charismatischen Vorlesungen und mit eloquenten Analysen die finnischen Zuhörer mit symbolischer Logik, logischem Empirismus und moderner Wissenschaftsphilosophie bekannt. Kaila war sehr eng mit dem Wiener Kreis verbunden, führte aber unabhängig sein lebenslanges Projekt einer holistischen Naturphilosophie weiter. In seinem synthetischen Versuch, die bedeutendsten Ergebnisse aus Physik, Biologie und Psychologie in einem vereinheitlichten Weltbild zu vereinen, integrierte Kaila die Hauptideen der Gestalttheorie in seine Philosophie.

Schlüsselwörter: Gestaltpsychologie, Gestalttheorie, Holismus, Invarianz, logischer Behaviorsimus, logischer Empirismus, Wahrnehmung.

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