

GTA-Conference 28 - 29th September 2012 in Helsinki, Finland

For the first time a GTA conference took place in Helsinki, Finland. As world design capital 2012, Helsinki offered a very interesting and rich conference. The topic of the conference, which was organised by Jaana Vainio-Utriainen from the GTA Finland in cooperation with the Finnish Society for Natural Philosophy (LFS), was “100 Years of Gestalt Psychology”. I now would like to give you a brief overview of a few lectures and various topics of both societies (GTA and LFS). The presentations of the conference are also available online under <http://www.lfs.fi/esitelmat>. You will also find a selection of the lectures as articles in this issue.

Lectures organized by the LFS

Timo Laiho: Is Musical Language based on Gestalts?

Despite the questionable argument that correlates the structures of musical organization with the structure of natural (or formal) language, there remains a corresponding problem in understanding musical perception as based on the holistic structures of Gestalts. This presentation takes up a contrasting viewpoint, in which the overall musical organization in relation to the sensational musical experience is considered to be a result of an interaction between parts and wholes. Following the principles of physicist David Bohm's theory of implicate order, we will consider a mutual and continuous interaction between the enfolded/unfolded states as a structural basis of our perceptual/sensational organization of the musical structures.

Manu Jääskeläinen: Gestalt Psychology in Context: Eino Kaila's Book "Personality" in the Context of Central European Cultural Environment.

The purpose of this lecture is to study the book by Eino Kaila on human personality. The talk includes a description and analysis of the main contents of the book “Persoonallisuus”. Next, there is a presentation and analysis of the references used by Eino Kaila. Separate in-depth studies of some references have been conducted. Gestalt psychology is heavily represented in this book, as are Lewinian dynamics. There are many biological references, as well as philosophical ones. Although many references are to Freud, the theoretical frame of reference in psychodynamics is mainly Lewinian and Adlerian. The statistical

studies conducted concerning the references show some interesting results, but they do not as such provide a reliable picture of the text and its context. Statistics should be completed with conceptual studies.

Tarkko Oksala: Gestalts in Architecture.

The aim of this lecture is to describe the application of Gestalt theory in architecture. First the idea of Gestalt, corresponding meta-forms and examples to utilize them are discussed. Secondly Goetheanic, Bauhaus and recent applications of pattern theory in architecture are considered. The influence of the organic pattern concept promoted by Goethe is typical in Jugendstil and in the work of Antonio Gaudi. In Bauhaus style ideal stereotypic geometric patterns formed the starting point and also the end in design. Both approaches are vital in recent architecture.

Tuomo Suntola: Gestalting Structures in Physics.

The basic questions for human conception are What? Where? and When? It may not be a coincidence that the primary base units in the International System of Units, kilogram, meter, and second, are the units for mass, length, and time – the quantities that are first needed to answer the questions what, where and when. For a deeper understanding of nature and natural phenomena we certainly need more than that – since antiquity thinkers have tried to understand the primary causes and the laws behind natural processes. Principles that have survived through the centuries comprise the ideas of conservation, balance and symmetry. For gestalting the structures of modern physics we follow the timeline of the development from antique metaphysics to modern empirical science and the related picture of reality.

Heikki Sipilä: Mach and Interpretation of Inertial Mass.

For the general public Ernst Mach is perhaps best known for the “Mach number”, which relates the velocity of an object to the velocity of sound. In physics Mach is known for Mach’s principle; Mach claims that inertia is not an inherent property of mass as thought by Isaac Newton, but a consequence of the gravitational effect of all the rest of mass in space on an object. Mach never gave an analytic expression of his concept of inertia. The term “Mach’s principle” was introduced by Einstein, who was strongly influenced by Mach’s ideas when developing the general theory of relativity. However, Einstein too could not give analytical expression to Mach’s principle. Mach never accepted the general theory of relativity. In this presentation, we first look at the historical background of the problem of inertia. Mach’s contribution to the development of bases of physics is discussed. The first analytical explanation of inertia was given by Tuomo Suntola, who, in full agreement with Mach’s principle, described inertia as the work done by an accelerated object against the gravitational effect of the rest of

space. In recent years Mach's principle has received very little or no attention among physicists. The situation is troublesome because Mach's principle is in direct contradiction with some of the hottest topics in modern physics; Mach's principle does not predict Higg's particle. These two contradictions are so grave that scientific journals do not accept even discussion on the topic.

Karl Hayo Siemsen: Learning by Gestalt.

Last year (2011) we had a course in mathematics with a pre- and post-test for 20-year-old students. The teachers had a Hattie value of $d=2.1$, which seemed to be too low to continue the same strategy in 2012. We decided to follow the advice of Ahlfors, the former PhD student of Rolf Nevanlinna, of Wittenberg, Polya, Kline and Wertheimer. The first result of this advice was a genetic model instead of a linear model to represent the learning process. At the same time we optimized the exponential genetic model by accentuating Gestalt concepts and *Erkenntnis* theory with which we had former experience (Ernst Mach, Eino Kaila, Charlotte Bühler and Kaarle Kurki-Suonio). We reduced learning in the first steps fully to these concepts. In the lab experiment we suggested reaching by this way a $d=3.5$ to 4.0 which seems enough to reach the zero-laggards goal.

Viljo K. Martikainen: Gestalts, Concepts and Consciousness.

The terms in the title have many things in common. They are all theoretical terms, whose referents have been and are problematic theoretical entities. The substance, existence and other features of them have been and still are addressed in hundreds of conferences and symposiums. You can discuss the referents of theoretical terms for thousands of years without finding a commonly accepted solution, because one can add an unlimited number of attributes to any of them. The only limit and criterion is the reliability of the total description achieved by using them. I maintain that human concepts are our memory representations. They function as dynamic and situationally-relevant sets of attributes connected with the subject's object of attention. I am supposing also that our concepts are formed and used processually and in most cases situation-relevantly without any greater conscious attention. Concepts are dynamic interfaces between world and mind. Their substance, structure and functions have been created in the course of evolutionary processes. Those actors were saved whose brain and nerves were able to interpret the meanings of the sensory information in reliable and situationally-relevant ways and to do so very fast. Actors had to understand the meanings of the entities in their environment and the changes happening in their actions and reactions. My system model of concepts offers a natural explanation for some of the eternal problems of human sciences and philosophy. I posit that the totality to which Gestalt is referring can be understood by using my system model of concept and its dynamic features.

Lectures organized by the GTA

Pauline von Bonsdorff: The Interdependence of Rhythm and Image.

In classical works such as *Art, Perception and Reality* and *Visual Thinking*, one of the foremost psychologists of art in the 20th Century, Rudolf Arnheim, suggests that visual thinking is basic in comparison to verbal thinking. In his work, Arnheim deals with visual thinking through the analysis of geometrical forms and images, showing how they build upon our tacit grasping of the dynamics of form: form as movement. Recent research indicates that rhythm, rather than image, constitutes our very first grasp of the world (Daniel N. Stern, *Forms of Vitality* 2010; Steven Malloch and Colwyn Trevarthen, eds., *Communicative Musicality* 2009). In my paper I will explore the interdependence of rhythm and image and show, on the one hand, that rhythm is a quality that exists in all the arts, whether the ontology is one of performance or static objects, and argue, on the other hand, that the aesthetic image when actualised in experience is never static but always in play, or movement. In addition imagination, like perception, is a multi-sensuous rather than sensorially specialised activity.

Herbert Fitzek: Art coaching: Gestalt Theory in Arts and Culture.

With Max Wertheimer's research on non-physiologically based moving impressions in perceptual space (phi-phenomenon), the Gestalt concept began its rise as one of the leading traditions of German (we may say) international psychology exactly 100 years ago. Wertheimer had not only discovered the importance of aesthetical qualities in perception, but he had also laid open the force of organizing principles in learning, thinking, shaping everyday life experience as a whole. Although the self-restrictions of experimental psychology as a natural science have strongly affected psychology, thus defining Gestalt principles as perceptual phenomena or even as optical illusions, there has always been a clear perspective in Gestalt thinking to widen the horizon and to conceptualize Gestalt as a figurative – i.e. visual and effective – origin of sense and meaning in all productions of experience and behavior. Differing from common sense, the Gestalt principles show their effects especially when the formation of decisive (or “pregnant”) shapes is changed or disturbed. As the early Gestalt theorists – like Wertheimer and Rudolf Arnheim – knew, Gestalt phenomena are therefore best observed in the ambiguous and complex field of arts. Border crossers of Gestalt theory and psychoanalysis, like Anton Ehrenzweig, have stressed that the formative processes of music, literature, film and visual arts deliver prototypes of psychological experience as an intercourse of conscious and unconscious production. As a consequence, morphological psychology, developed from Gestalt psychology and psychoanalysis in the 50s and 60s of the last century, started research programs on the creative potentials of art production and – especially – of reception processes. A recent branch of

Gestalt Theory in Arts and Culture is called “art coaching”, coming from the use of art reception as a tool for intensifying individual and group dynamics and dealing with the strengthened efficacy of Gestalt in extended reception processes. In repeating, modeling, working out reception processes with the help of psychological attendance we have detected specific pieces of visual art (drawings and sculptures) as representatives of personal core topics or core problems, exhibiting their characteristic profiles (Wertheimer: “Eigenlogik”) in actual and concrete ideas of spectators. A current issue of art coaching is the application of art in the psychosocial intervention of groups of charged adolescents and adults.

Mikko Lounela: Gestalt Therapy and the Concept of Self.

First, I plan to go briefly through some central religious, philosophical and psychotherapeutic concepts of self: self meaning the essence of being a psychological, physical, and spiritual human being. My main focus is on self as understood in Gestalt Therapy, while other (related) conceptions form a background for it. Also, I plan to reflect on influences the concept of self may have on practical psychotherapeutic work.

Kaarle Kurki-Suonio: Concept as Gestalts in Physics Teacher education.

The idea of learning and science as a perception process and the concepts as gestalts was introduced in our physics teacher education in the 80s, in order to outweigh the traditional dominance of the “formula disease” i.e. meaningless dressage with formulae. The central principles of the “perceptual approach” were crystallised in two mottos: “*meanings first*” and “*ask nature*”. *Meanings* were interpreted as *gestalts*, mental images and imagerial structures emerging intuitively in the interaction of mind and nature, and *concepts* as their definitized representations. The approach might also have been inspired partly by interaction with my colleague K.V. Laurikainen and therefore indirectly by his teacher Eino Kaila, who introduced Gestalt psychology in Finland. “Asking nature” implies that, in perception, the mind is active, aiming at identification of “pure phenomena” in the chaos of nature. The pure phenomena form the substance of our questions, which must be put in the form of well-designed experiments in order to compel nature to answer. Some “structure of mind” regulates our perceptual facilities. This is related to the nature of perceivable “pure phenomena”, which are understood in terms of the basic gestalts of *space, time, entities, phenomena, properties and their relations, interpreted as causal relationships*. These “carriers of meanings” are the constituents of the mental imagery which is the qualitative core of our understanding of physics. The development of physics is, for the most part, development of our conceptions about the nature of these *basic gestalts* under empirical compulsion created by experimental research. The quantitative conceptual structure of physics results from quantification of properties into quantities. In quantification, the perceived

meanings are preserved and transferred to the quantitative concepts. No new meanings are born, but a sense of magnitude is attached to them. Accumulation of perceived gestalts leads to structural gestalts and, consequently, to generation of conceptual hierarchies. In this process the qualitative and quantitative levels are intertwined. The quantitative understanding is an essential basis for perception of new structural gestalts on a higher hierarchical level of qualitative understanding, again to be quantified. This forms a general principle for the expansion of our understanding. The interaction of mind and nature undergoes a hierarchical development, growing finally into the interaction of theory and empiry through the methodical cycle of empirical science. The intuitive basic nature of the interaction is preserved, due to subordination to empirical meanings in all procedural details. This justifies the interpretation of the resulting conceptual structures as gestalts (K. Kurki-Suonio: Principles Supporting the Perceptual Teaching of Physics: A “Practical Teaching Philosophy.” *Science & Education* (2011), 20; 211-243.) In physics teacher education, vaccination against the “formula disease” was initiated by the simple question: *what is the property represented by this quantity and what are its carriers (entities, phenomena)*. This question referred to all quantities they knew, starting from those of the equation $F=ma$.

Riccardo Luccio: Wertheimer’s “Musik der Wedda”.

Wertheimer obtained his PhD in Würzburg in 1905, and in 1912 published his famous work on *phi* phenomenon. These seven years that preceded the birth of *Gestaltpsychologie* were described by Michael Wertheimer (1980) as an ‘incubation period’. In reality, in his two reports on primitive peoples (Max Wertheimer, 1910 and 1912) there are already some fairly well-developed ideas, which were later to become milestones of *Gestalttheorie*. In this speech, I’ll examine the paper on “Musik der Wedda”, in which Wertheimer examined a sample of songs of the Wedda, a very primitive tribe of Ceylon, recorded in 1907 by A. Selenka. Here Wertheimer’s analysis anticipates many Gestalt ideas; particularly relevant appears the analysis of the “pre-conclusions” (*Schlussvorbau*). One can easily realize how revolutionary Wertheimer’s analysis is if one compares it with the one performed in parallel and independently by C.S. Myers (1910) on a similar sample. The two analyses seem as though a century separated Myers and Wertheimer.

Hellmuth Metz-Goeckel: Gestalt Theory – History and Modernity.

The contribution focuses on processes of organization, of order or ‘Prägnanz’ in psychic life and demonstrates thereby the development of central discoveries of Gestalt theory. In the early period of the theory the Gestalt laws were very important and are well known. They structure our visual perception: Figure-ground segregation and grouping. The basic ideas were extended by further proof

of order or balance tendencies in motivation and personality, which show up in memory and in acting, for example the resumption and retention of interrupted activities. Newer developments stress self-organization tendencies in the sense of a dynamic order formation. It is central in system-theoretical developments. Further proofs for self-organization are offered from results of the newest Social Cognition research, for instance as the need for dissonance or conflict management or tendencies to obtain or increase our self value.

Raymond Pavloski: Visual Experiences and their Neural Substrate as Parts of a Dynamic Whole.

A century of Gestalt psychology has provided clear demonstrations of the grounding of visual phenomena in neural dynamics. Over the same period of time, we have learned that phenomenal vision depends on specific interactions within and among neural networks. However, we have not found a way to deal with the epistemological gap that stands between perceptual organization and the neural interactions on which it depends. I previously proposed that making progress on this issue would be facilitated by a formal model, the abstract elements of which encompass and bridge the phenomenal and the neural. This presentation applies category theory to the results of neural network simulations in order to show that network dynamics can bring a stable algebra of relations among neural information states into existence, and that a pattern of information states and their relations can describe the organization of a gestalt. A goal for future research is the construction of networks in which gestalts are invariant over the kinds of geometric transformations that take place as a physical object is imaged on the retina. Such models would be consistent with research demonstrating that the global nature of perceptual organization can be described in terms of invariants over such transformations. A means of testing these models using visualization of large-scale brain simulations is suggested.

Klaus Schwarzfischer: Gestalt Laws and Design Research: How Grouping is related to Invariances.

This presentation will demonstrate that Gestalt Psychology touches Design Research substantially. And vice versa, the results will enhance Gestalt Theory by providing new insights into the *Principles of Grouping* from an interdisciplinary point of view. A bad example of application will serve as the starting point. Analyzing the main problem, we will recognize the relevance of Grouping for the design of an intelligible environment and products, which are easy to use. But is it possible to generalize the very different ways in which elements may be grouped to a Gestalt? We think so. If we take one step back, we find that the different *Principles of Grouping* (such as the *Law of Similarity*, the *Law of Proximity*, the *Law of Common Fate*, etc.) can be described by a common language: Symmetries (in the sense of Hermann Weyl), which are defined as invariances against specific

transformations. In doing so, it is important to recognize that any invariance has to be regarded as a continuous feature. These gradual characteristics can be interpreted as attractors in a mathematical sense. Fortunately, for our design purposes it is not necessary to go into these details. But scientifically it is important that it is possible to quantify these effects, in order to clarify the sometimes vague discourses about Grouping. Additionally, we will see that it is crucial to analyze the scene at different levels of detail. This provides the essential differentiation between *local* and *global symmetries*. Hereby, we are equipped with the tools to describe Gestalt phenomena fully with the concepts of invariances. This is not limited to stimulus inherent features, which we may call *syntactic features* when using semiotic terms. Moreover, we can study *semantical* and *pragmatical Gestalt phenomena* as well. This is crucial for understanding the attributes of products and services which are not restricted to the visual realm. Finally, this methodical approach is the foundation which allows the development of an Empirical Aesthetics – if we accept that we have to develop each analysis from scratch for a specific individual with his knowledge and experiences.

Marianne Soff: Gestalt Theory in the Field of Educational Psychology.

Gestalt theory and Field theory, especially some of the central ideas in works of Wolfgang Metzger and Kurt Lewin, are very useful in teaching educational psychology, in order to give teachers-to-be a theoretical basis for their future tasks. In my contribution to the first Conference of Gestalt Theory in Finland, I will give at least some examples for this statement. Basically, education is viewed as a permanent self-organizational process based on, as much as possible, undisturbed personal relationships between learners and teachers, combined with a group atmosphere that allows social affiliation (“Zugehörigkeit”) and equivalence (“Gleichwertigkeit”). So the main task for teachers appears to be the arrangement of the best possible developmental conditions for this self-organizational process instead of just reacting to social disturbances in the classroom. One of the most cited works in social psychology, Lewin’s, Lippit’s & White’s experiments on autocratic, democratic and laissez-faire-styles of leadership (1938ff) in groups, is just one of the basics, though it may not be enough for modern classroom management. Lewin’s earlier essays, fundamentals for the psychology of motivation, especially “Intention, volition and need” (“Vorsatz, Wille und Bedürfnis”, 1926) and “The psychological situation in reward and punishment” (“Die psychologische Situation bei Lohn und Strafe”, 1931) are quoted for problems of motivation and learning at school.

Also, Wolfgang Metzger’s “criteria for working with living beings” (“Kennzeichen der Arbeit am Lebendigen”), as discussed in one of his main collected works, “Creative Freedom” („Schöpferische Freiheit“), are related to concrete aspects of social situations in the classroom and the often burdensome professional

situation of teachers. Moreover, his concept allows the development of pedagogic and didactic hints for the promotion of productive thinking and creative acting.

Gerhard Stemberger: The Phenomenal Ego and its World in Gestalt Psychology and Gestalt Theoretical Psychotherapy.

The contribution focuses on the Gestalt theoretical concept of the phenomenal ego as a segregated part of the phenomenal world in its dynamic field relationship with the other parts of the phenomenal world as proposed by Kurt Koffka, Wolfgang Köhler, Max Wertheimer and other Gestalt theorists. The specific dynamics of the segregation of this phenomenal ego from its phenomenal surroundings, the relative flexibility or fixedness of its boundaries, of its place and functional role in the phenomenal world at a given time are governed by Gestalt Laws. The resulting specific dynamic order of the phenomenal world decides how the person experiences herself or himself in the world, how she/he behaves, how she/he interacts with others, what role she/he plays in groups, what specific problems and conflicts she/he encounters. The basis for this is that the phenomenal field in its specific segregation and dynamic order is an open system operating as a central steering mechanism (Wolfgang Metzger) for the movement and dealings of the physical organism in its physical surroundings, thus influencing also the phenomenal worlds of other people, and vice versa. This concept is outlined and discussed in its basic assumptions and in its specific role for understanding self-organization of the personality in its social life, psychic pathogenesis and salutogenesis. The role and practical relevance of this concept in Gestalt Theoretical Psychotherapy will be discussed.

Jaana Vainio-Utriainen: Gestalt Theory in Finland.

Gestalt theory in Finland originated from Europe and the USA at the beginning of the 20th century and developed into the modern cognitive sciences in the 21st century. I shall highlight some main Finnish gestalt theorists in the context of arts. Gestalt philosophy (Austrian School) originated in 1890 in Christian von Ehrenfels' formulation of Gestalt quality, which did not have an influence in Finland. Thus, Gestalt psychology (Berlin school) and its originators M. Wertheimer, K. Koffka and W. Köhler (1912) had an important effect on the Finnish Gestalt movement. Prof. E. Kaila and K. von Fieandt were the first and main gestalt psychologists at the beginning of the 20th century in Finland. Since the cognitive revolution in the 1950s, Gestalt theory has been applied in modern cognitive sciences in Finland in multiple ways: in education, arts, technology, maths, language and crafts. For example music psychologist/educator Kai Karma with his research and book "The Basics of Music Psychology (1986)" and Jukka Louhivuori in the field of cognitive musicology with his research and book "Cognitive Musicology (1992)" had an impact on Finnish research and education in music in the context of Gestalt psychology. Thus, Gestalt (art)psychologist

Rudolf Arnheim affects current Finnish research and education in visual arts; e.g. his writings belong to the curriculum reading list at Finnish Universities. In our symposium we shall give current views on Profs. Karma, Louhivuori and von Bonsdorff (Rudolf Arnheim) in the context of Gestalt theory in the arts. I shall demonstrate my research concerning Gestalt theory in music, which began with the question: how can we analyse the creative process of music/art in the Gestalt theoretical context? In my gradual thesis I outlined a Gestalt psychological analysis method adapted to Japanese shakuhachi music (signs) with spectral representation, Louhivuori's formula theory and (original) Gestalt laws; whole and parts with interpretation of the creation of musical mind. In my advanced dissertation study (2005) my focus was to analyse French sacral vocal music (I. Reznikoff, neumes) based on the analysis method developed and used in my gradual thesis: Formula Circle in the Context of Dennet's (2000) levels of "The Kinds of Self". The interpretation was based on spectral representation of music, formula circle and creation of computational mind in the formula circle. The main findings were e.g. that the composer's creation has a "spectral signature", which consisted of about 30 percent of (creative) unexpected Fe formulas and 77 percent of prolonged vowels, and the genetic level of this creation was represented in 83Hz with a looping process. Thus, I shall highlight my post-doctoral Gestalt theoretical research (2007) applied to Uuno Klami's vocal compositions (notes). In this research I analysed musical scores with the "Sound Space" method. Through Klami's creation Gestalt process was discovered from different musical macro and microlevel parts in the Sound Space (whole): the dynamic, rhythmic and melodic gestalt, besides the ground rhythm from which was interpreted its style and creation on vocal work.

The lectures were held in the lecture hall of the House of Science and Letters. On the second day of the conference, the lectures were accompanied by a Piano Recital by Esa Ylönen. As a celebratory supporting programme in the evenings there was also a reception at the University of Helsinki and an evening banquet at the famous Kappeli restaurant.

As you can see, Gestalt Theory is very lively and widespread in various parts of Finnish research and the conference was a good opportunity to show this. New contacts were made and networks built, and a mutual enrichment between the various topics of the GTA and the LFS occurred.

Barbara Veigl-Trouvain