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A Brief History of the Wartegg Drawing Test

1. Introduction

The Wartegg drawing completion test (Wartegg Zeichen Test, WZT) is a projective drawing test developed in the 1920's and 1930's by the Austro-German psychologist Ehrig Wartegg (Wartegg, 1939). The standard DIN-A4-sized test form has eight white, 4cm-by-4cm squares in two rows on a black background (Figure 1). Each square is blank except for a small sign, such as a dot or a line, that is given as the starting point of a drawing. For example, a dot is located in the centre of square 1. Subjects are instructed to complete the eight drawings, incorporating the given sign into the drawing. Like other projective drawing tests, Wartegg's test is based on the assumption that the content and the qualitative aspects of the drawings reflect the personality of the person drawing. For example, a higher than average number of human drawings in the WZT protocol is generally interpreted as a sign of sociability (Gardziella, 1985).

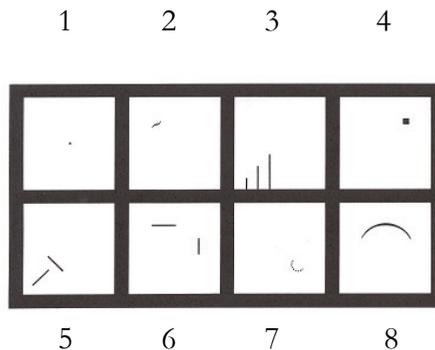


Fig. 1: The WZT test form. Reprinted with permission from Hogrefe Publishing.

While Wartegg's test is practically unknown in Anglo-Saxon countries, it is widely used in Latin America, Finland, Italy, and German-speaking countries. The Finnish test publisher, Psykologien Kustannus OY, sold 180,000 copies of the test sheet in 1998. In Brazil, the WZT is the most popular personality test used in personnel selection (Pereira, Primi, et al., 2003). In Switzerland, the WZT is frequently used in vocational counselling (Deinlein & Boss, 2003). According to

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Ceccarelli (2003), Wartegg's test is one of the most popular personality tests used in the family and couple therapy setting in Italy. During the last two decades, test interpretation manuals have been published, for example, in Sweden (Wass & Mattlar, 2000), Switzerland (Avé-Lallement, 1994), Finland (Gardziella, 1985), and Italy (Crisi, 1998).

A peculiar feature of Wartegg's test is that, in contrast with its popularity, a lack of research exists concerning the test. PsycInfo abstracts list several thousand studies on the Rorschach, while only 88 studies can be found for the WZT. Following the debate concerning other projective methods, such as the Rorschach, the validity of the WZT has been questioned (Tamminen & Lindeman, 2000). Very few validity studies exist for the WZT, and the results of those that have been conducted are inconclusive. The historical background of the WZT is, likewise, not well known, which has led to speculations (Roivainen, 2006) about the "Nazi past" of the test, as it was first published in the 1930's in National Socialist Germany (Wartegg, 1934, 1936, 1939). Uncertainty about the historical roots of Wartegg's test may have also contributed to its lack of popularity in Anglo-Saxon psychology.

2. The Early History of Wartegg's Test

Ehrig Wartegg was born on July 7, 1897 in Dresden, Germany, where he also received his primary and secondary education. Wartegg's parents were Austrian nationals, and Wartegg participated in the First World War in the ranks of the Austro-Hungarian army. He first served in the eastern front and was seriously wounded in 1915. During the final years of the war, he was promoted to be an aide-de camp of Prince Elias, brother of the empress. Furthermore, Wartegg took part in the secret Sixtus project, which aimed to withdraw Austria unilaterally from the war. After the war, Wartegg studied composition with the German music conductors Karl Böhm and Kurt Striegler. Through his well-connected relatives, Wartegg also had the chance to meet other leading composers and musicians of his time: Richard Strauss, Alban Berg, Igor Stravinski, and Paul Hindemith. However, the masters judged Wartegg's compositions as "romantic rubbish" (in Wartegg's own words), and Wartegg's interests turned toward psychology and philosophy (Wartegg, 2000).

2.1 Psychoanalytic Influences

In 1922, Wartegg began to frequent lectures and seminars organized by the "School of Wisdom". This institute was founded by count Herman Keyserling, a cult figure of the 1920's whose travel book, *The Travel Diary of a Philosopher* (Keyserling, 1925), was a best-seller in Germany and abroad. Keyserling was interested in mysticism, theosophy, arts, psychology, and philosophy. Lecturers

of the institute included Carl Jung, Nobel laureate poet Rabindranath Tagore, and the abstract painter, Vassily Kandinsky. In March 1923, a seminar on psychoanalysis was organized by the “School of Wisdom” in Darmstadt, and Wartegg soon adopted psychoanalytic ideas and made his first attempts as a therapist. In 1925, Wartegg wrote to Freud asking about the possibilities for further psychoanalytic training. Wartegg’s problem was that he lacked a medical degree (in fact, any academic degree), which was usually requested of members of the psychoanalytic society. Freud responded that he was a friend of “layman analysis” and instructed Wartegg to contact Therese Benedek, the leader of the psychoanalytic association in Berlin. Wartegg was first analysed by Margarete Stegmann in Dresden for half a year and later by Benedek for another half a year. However, Wartegg never became a full member of the German Psychoanalytic Society, and he continued to participate in the meetings of the society as a visitor. Wartegg contacted Freud again in 1929, this time asking Freud’s opinion on whether a synthesis between psychoanalysis and Gestalt psychology was possible. Freud responded that he did not know Gestalt psychology well enough to decide if such a synthesis was feasible (Wartegg, 2000; Horn & Lockot, 2000).

2.2 Mystical Philosophy

In Keyserling’s school, Wartegg was also exposed to mystical philosophy. According to Wartegg, he was initially inspired to develop a drawing test from reading Richard Wilhelm’s book, *I Ching* (Wilhelm, 1924), on Chinese philosophy (Wartegg, 2000). Wilhelm was a well-known German sinologist who had studied the Chinese I Ching method of fortune-telling and personality analysis in China and, after returning from the east, published a book on the topic in German. The I Ching consists of eight trigrams, or patterns of three lines. The lines of the trigram are short, representing Yang or the “feminine energy”, or long, representing Yin or the “masculine energy”. Figure 2 shows two examples of trigrams: the Kam, symbolizing earth, and Kun, symbolizing heaven. Two trigrams can be combined to form hexagrams (64 in all), each with a different symbolic value. For example, a hexagram formed of Kum on top and Kan below signifies peace and good luck. In practical fortune-telling and personality analysis, two pieces of wood (one short, one long), or two coins are used to establish the trigrams. It can be speculated that I Ching trigrams have influenced the graphic aspects of the WZT. Boxes 3, 5, and 6 in Wartegg’s test have two or three lines of varying length as the initial stimulus.



Fig. 2: Two I Ching trigrams, heaven (left) and earth.

2.3 Modern Art

Another factor contributing to the development of Wartegg's test was the ascent of modern art in the 1920's (Wartegg, 2000). Wartegg personally met Vassily Kandinsky and Paul Klee, whose pre-World War I works (along with other artists of their group, "The Blue Rider") are sometimes referred to as the first abstract paintings in the history of art. Unlike their predecessors, the modern artists did not aim to represent their subjects realistically or depict objects in the natural world but, instead, used color and form in a non-representational way (Read, 1986). They considered it important to capture something of the depicted objects' intrinsic qualities. In 1926, Kandinsky published an influential book, *Point and Line to Plane* (Kandinsky, 1973), where he developed a theory of geometric figures, colors, and their relationships. He claimed, for example, that the circle is the most peaceful shape, and that it represents the human soul, while the line is the product of force; it is a point at which a living force has been applied in a given direction. The horizontal line corresponds to the ground on which man rests and moves. Furthermore, it possesses a dark and cold affective tonality, similar to black or blue. On the other hand, the vertical line corresponds to height that offers no support, and it possesses a luminous and warm tonality that is close to white and yellow. Influenced by theosophy, Kandinsky felt that an authentic artist creates art from "an internal necessity" and is concerned with creating a spiritual resonance between himself and the viewer.

2.4 Gestalt Psychology

Wartegg began his academic studies in psychology in 1927 at the Dresden University of Technology. In 1929, he moved to the University of Leipzig, where the department of psychology had been directed by Felix Krüger since the retirement of Wilhelm Wundt in 1917. Together with other disciples of Wundt, Krüger had established the school of Ganzheit psychology (the psychology of totality), sometimes referred to as "the Leipzig school of Gestalt psychology" (Ash, 1998, ix).

Gestalt psychology proposed that the operational principle of the human psyche is holistic, and for this reason, psychology cannot be studied in a mechanistic manner of dividing a complex psychological entity into simpler parts. The assumption that sensory elements are the basic constituents of mental life was popular in psychological theory and research of the late 19th century. One of

the first attempts to challenge this atomistic doctrine was Von Ehrenfels' 1890 study *On Gestalt Qualities* (Smith, 1994, 243-248). Von Ehrenfels had been a student of Brentano in Vienna, and he found the atomistic theories of the day to be insufficient in explaining the unity and structure of our experience. According to Von Ehrenfels, special "gestalt qualities" are superadded to our experiences of sensory elements. Von Ehrenfels was a gifted amateur musician, and one of his examples of gestalt qualities comes from music: we can recognize a melody as one and the same even though it has been transposed into a different key or has been played on a different instrument or at a different tempo (Smith, 1994, 246).

Going beyond Von Ehrenfels, Max Wertheimer and other Gestalt psychologists asserted that "There are wholes, the behaviour of which is not determined by that of their individual elements, but where the part-processes are themselves determined by the intrinsic nature of the whole" (Wertheimer, 1938). Thus, dynamic structures in experience do not have an extra Gestalt quality added to the elements as Von Ehrenfels had suggested, but rather the Gestalt determines the elements as well. The Berlin school of Gestalt psychology is best known for its theories of perception. Wertheimer introduced the concept of *Prägnanz* in 1914, according to which we tend to experience things in as good a Gestalt way as possible. Regular, orderly, simplistic, and symmetrical figures are preferred over complex or disorganized ones. For example, according to the law of good form, our mind adds missing elements to complete a figure, as is shown in Figure 3. The law of similarity says that we will tend to group similar items together, and according to the law of proximity, things that are close together are seen as belonging together. Wolfgang Köhler applied Gestalt principles to study learning and problem solving. Köhler showed in his experiments conducted during 1913-1917 that chimpanzees were capable of insight learning, which opposes the associationist theories of Pavlov (Köhler, 1925). In 1920, Köhler suggested that the brain events underlying perception follow the same kind of self-organizing principles that Wertheimer had shown to apply for perception.

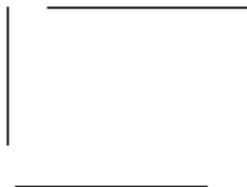


Fig. 3: The law of good form.

Holistic and phenomenological philosophy became popular in post World War Germany (Harrington, 1996). Phenomenological, holistic ideas were perceived as an alternative to the mechanistic natural science and technology that had

showed its dark side in the development of military technology and the great destruction seen in the World War. Holistic and gestalt concepts such as “gestalt”, “whole”, “field” and “system”, were applied in several fields of psychological research. In 1923, at the Leipzig Congress of Psychology, Krüger defined the Leipzigian “genetic approach” as one of the four main directions of the gestalt doctrine. According to Krüger, the other three directions were: 1) the approach through perception (the Berlin school of Wertheimer and Köhler), 2) Wilhelm Dilthey’s hermeneutic approach; 3) the total personality approach of William Stern (Allport, 1923).

2.5 The Ganzheit School

According to Krüger (1953), the experiential life of our psyche is ruled by forms of order, a structure. This structure is made up of orientations and dispositions of a dynamic nature that tend to organize whatever is afforded to experience. Krüger believed that the holism of the Berlin Gestalt school did not go far enough. The Ganzheit school of Leipzig was especially interested in the genesis of gestalts and emphasized the role of emotions, personality and will in the constitution of experience. According to Rosenthal (2004, 221- 243), the Ganzheit school shared some of the basic tenets of Gestalt theory that were established by the Berlin school, as well as its phenomenological orientation. However, they focused on the detailed temporal dynamics of psychological processes, and on the categorical character of meaning and perception. Furthermore, the Ganzheit school postulated that perceptual experience is directly meaning-laden and intrinsically emotional, and that forms are inherently semantic and value-laden.

While holistic philosophy, theorizing and applying holistic concepts to explain psychological processes was central to the Ganzheit school, experimental research was also carried out. Much of the research followed the “experimental psychogenesis” paradigm developed by Wohlfahrt, Werner and Sander (Sander, 1962). In these experiments, very brief, poorly lit, or very small stimuli (for example, a short line) were repeatedly presented with gradually increasing exposure time, improved lighting, or stimulus growth to normal size (for example, a geometric figure composed of several long lines). The subjects were instructed to describe what they perceived and felt as the experiment proceeded. Sander provided minute descriptions of these “primitive” responses, observing that “the emergent perceptual constructs are by no means mere imperfect or vague versions of the final figure . . ., but characteristic metamorphoses with qualitative individuality, preformulations (*vorgestalten*)” (Sander, 1930, 191). The concept of microgenesis (*Aktualgenese*) was launched by the Ganzheit school to describe this process. Sander emphasized that the structural dynamics in an unfolding perception involved intense emotions: “all metamorphoses are engulfed in an . . . emotional process of pronouncedly impulsive and tensor nature, and take place

through an intense participation of the whole human organism” (Sander, 1930, 194). However, as Rosenthal (2004) notes, Sander’s description of ”an inner urge for meaningfulness and formation of the ill-formed” closely resembles Wertheimer’s concept of *Prägnanz*.

A good example of experimental *Ganzheit* psychology comes from Vidor’s (1931) study, where subjects were presented with a tune where pieces of the melody had been cut out. The subject’s task was to complete the missing parts in order to create a complete melody. The role of perceptual as well as motivational and emotional factors in the composition process was then studied.

2.6 The WZT in the *Ganzheit* Psychological Framework

In 1932, Wartegg was appointed as an assistant professor at the University of Leipzig and continued working on his drawing test. The following year, the Nazis took power. Holistic philosophy was increasingly presented as being the ideologically correct philosophy and in accordance with National Socialist politics (Harrington, 1996). For the school of *Ganzheit* psychology, the Nazi takeover was welcome. Their competitors, the Berlin Gestaltists, went into exile, and the German psychoanalytic association was disbanded in 1937. Friedrich Sander, who became professor at the University of Jena in 1933 when his Jewish predecessor Peters was fired, promoted *Ganzheit* psychology as the politically most correct psychological doctrine. By the end of the 1930’s, he had become one of the most influential psychologists in Germany. Wartegg had difficulties because of his contacts with “Jewish” psychoanalysis and because of his Czechoslovakian citizenship. To secure his position, Wartegg claimed German nationality in 1933 and joined the NSDAP (Locket, 2000).

Wartegg’s doctoral thesis, *Gestaltung und Charakter* (The formation of gestalts and personality), was published in 1939 (Wartegg, 1939). According to Sander’s theories (Sander, 1962), there were three main types of human personality: 1) the synthesizing G type (*ganzheitlicher Typus*), thinking in a synthetic mode and preferring complete entities in their psychological processing, 2) the analytical E type (*einzelheitlicher Typus*), thinking in an analytic mode and tending more toward details and particulars, and 3) the integrated analytical-synthesizing GE type (*gestalterlebender Typus*). Wartegg’s thesis mainly describes how the drawing process differs for the G-, E-, and GE-type persons and what kinds of drawings are typical for each personality type. For example, in the first phase of the drawing process, the reaction elicited by the given stimulus varies according to personality type. Wartegg’s subject number 36 described his reaction to figure 3 of the WZT (three vertical lines) in the following way: ”These three lines are three people or represent three episodes. As a whole, they might refer to three important events in my life” (G-type attitude), while subject number 3 saw the same stimulus in a more concrete way: ”When I saw the three lines, I immediately

thought of poles or lamp-posts” (E-type attitude) (Wartegg, 1939, 18- 21).

Wartegg acknowledged that for the use of applied psychology, a more detailed typology of personality is needed, and he therefore devised a four-dimensional schema composed of more traditionally recognized basic functions: emotion, imagination, intellect, and activity (Wartegg, 1939, 254 - 256). For a modern reader, Wartegg’s thesis is easiest to understand in the parts where he presents his ideas on the interpretation of drawings with these more traditional concepts of personality. For example, Wartegg suggests that self-confident, energetic persons tend to have strong lines characterized by darkness and deep imprint in their drawings.

Wartegg reports in his thesis that the earliest experiments on the drawing test were carried out as early as 1929 (Wartegg, 1939, 6). Thus, it can be concluded that the test form has been in its present form since that date. According to Wartegg, he chose simple forms as the initial signs of the drawings because these left the subjects with more freedom in the task, and therefore, with a hypothetically greater potential of projection. Wartegg tells us that he had called his instrument a “drawing test” since 1926 in order to distinguish it from other psychological drawing tasks (Wartegg, 1939, 3).

Rorschach’s inkblot test is briefly mentioned in Wartegg’s thesis (Wartegg, 1939, 129, 137). It should be noted that Rorschach’s test, published in 1921, was generally not as well-known in the 1930’s as it is today (Wood, Nezrovski, et al., 2003). Wartegg himself had developed a somewhat similar test, the “Ausfassungstest” (“meaning of figure” -test), composed of five cards with abstract designs. The subject’s task is to describe what the figure in each card represents. Wartegg acknowledges the similarities between Rorschach’s test and his own, but does not make more detailed comments. Wartegg does not refer to Goodenough’s Draw-a-Person test devised in 1926 (Goodenough, 1926), but it should be remembered that Goodenough’s test was developed to test intelligence, not personality. The concept of projection or the term “projective test” are not used by Wartegg, as this term was first used by Frank (1939).

2.7 Synthesis of Ideas and Political Censorship

For a modern reader, it is impressive that in a 1930’s thesis that swears by the idea of holism, none of the works of Wertheimer, Köhler or Koffka are included in the reference list of 100 publications. The names of Wertheimer and Köhler are mentioned only once in Wartegg’s thesis (Wartegg, 1939, 254), while Sander gets three references already on the first page. It is clear that political factors had a strong effect on Wartegg’s writings. It is more difficult to judge to what extent his publications reflected his actual thoughts. Wartegg’s censorship of psychoanalytic ideas from his thesis obviously did not reflect his real thinking.

He practiced psychoanalysis in the 1920's and again in the 1950's communist-ruled GDR, opposing the official policy. It is unlikely that he completely abandoned psychoanalytic ideas for a decade for intellectual reasons. Perhaps Wartegg's letter to Freud from 1929, where he speculated on the possibility of a synthesis between psychoanalysis and Gestalt psychology, reveals Wartegg's real thoughts. Horn and Lockot (2000) note the fact that in his letter, Wartegg did not use the Leipzigian term *Ganzheit* psychology, and thus, was referring to Gestalt psychology in general or, otherwise, specifically the Berlin school. This is strange considering that Wartegg had already begun his studies at Leipzig. It seems as though Wartegg was interested in psychoanalysis and the Gestalt ideas in general at the time he invented his test and tried to establish a *Ganzheit* psychological framework for the test for his thesis in the 1930's..

A good example comes from box 6 in Wartegg's test. This figure is practically Wertheimer's figure (Figure 3), halved. The most common drawings in this box are based on uniting the two lines and completing the figure so that it becomes a rectangle. Some of the popular responses in this box are "painting", "book", "table", "parcel", "box", "house", or just simply "square". The Gestalt laws of closure and good form seem to guide the drawing process strongly, and round objects are rarely seen in this box. In a post-war publication (Wartegg, 1953, 27-28), following Jungian ideas, Wartegg defines the "archaic or symbolic significance" of this figure as "the opposite force of division, cohesion," and the corresponding personality characteristic as "the ability to integrate emotion and understanding, rational control". We can assume, on the basis of Wartegg's personal history, that Wartegg entertained these kinds of psychodynamic hypotheses already at the time when he was developing his test, although they are absent in his 1939 thesis. However, Wartegg's drawing test can also be considered analogous to the microgenesis experiments of the *Ganzheit* school. In Wohlfart's and Sander's experiments, the subject's perception of a stimulus becomes gradually more and more complex. In Wartegg's test, the subject's response to a stimulus becomes gradually more complex as the drawing develops from simple lines to a whole figure. The drawing process is affected by the Gestalt laws of perception, but at the same time, emotions, values and motivation play an important part in this "Gestaltung" process, as the *Ganzheit*-psychologists argued.

In 1938, a politically higher ranking professor, Hans Volkelt, took over Krüger's position as the head of the psychological department in Leipzig, and he soon turned against Wartegg. Volkelt quite correctly identified the psychoanalytic undertones in Wartegg's test, and Wartegg had to leave the department in 1939. During the war, he worked for the ministry of labour, devising tests for personnel recruitment. After the war, Wartegg had to face the de-Nazification committee because of his membership in the NSDAP. Wartegg's colleague, Vetter, who had lost his job in 1937 because of his Jewish wife, testified in favour

of Wartegg, and claimed that Wartegg had to take the party membership in order to keep his job but that he had resisted Nazi politics in his work and private life. Nevertheless, Wartegg was sanctioned by the committee and lost his right to work as a psychologist until 1949, when he was pardoned (Wartegg, 2000; Lockot, 2000).

3. Postwar Developments

After the war, Wartegg remained in eastern Germany while his test started to gain reputation abroad. A Wartegg seminar took place in Basel, Switzerland in 1946, and an international working group was founded with members from Switzerland, France, Holland, Belgium, and Sweden. Test instructions were translated into English, French, and Dutch. Wartegg started working as a clinical psychologist at an East Berlin clinic in 1950. For political reasons, he had to revise his theoretical ideas concerning the drawing test. The communists had seized power in eastern Germany, and all social science, including psychology, had to follow Marxist-Leninist guidelines. In clinical psychology, this meant adherence to Pavlovian ideas that had been declared as ideologically correct in a meeting of leading health-care professionals and bureaucrats in Leipzig in 1953 (Bernhardt, 2000). Pavlovian psychology had previously been declared by Stalin as the official Marxist-Leninist psychology in the Soviet Union. In his publication from 1953, *Schichtdiagnostik* (Differential diagnostics), Wartegg almost completely abandons his previous Ganzheit psychological ideas and tries to formulate a theoretical basis for the drawing test, combining "Pavlovian sensory-physiological reflexology" with elements of depth psychology (Wartegg, 1953). In addition, travelling abroad became more difficult. Thus, Wartegg's contacts with his western colleagues were limited, although he was permitted to participate in several national and international conferences during the 1950's, including the meetings of the German Psychological Association. For these reasons, the point of gravity in the research and development of Wartegg's test moved to the west (Sehringer, 1964). Wartegg retired in 1960 and died in 1983 (Lockot, 2000).

3.1 Empirical Research

PsycInfo abstracts show a total of 88 studies on the WZT. Out of these, one is from the 1930's, 3 are from the 1940's, 33 are from the 1950's, 19 are from the 1960's, 14 are from the 1970's, and 16 are from the period 1981- 2006. In comparison, the respective numbers for the Rorschach studies are 1,240 for the 1940's, 1,984 for the 50's, 1,407 for the 60's, 1,079 for the 70's, and 3,620 for the period from 1980 to this day. These figures show that there has been very little research on the WZT, and that interest was at its highest in the 1950's. Considering the popularity of the test in clinical use, the number of research

reports is astonishingly low, and shows that the scientific debate in psychology is feeble for phenomena that are of little interest to Anglo-Saxon psychologists. Roughly 30 of the research reports on the WZT are in English, and another 30 are written in German. Almost all of the English reports are written by Scandinavian, mainly Finnish psychologists. Other publication languages include Italian (6 reports), Finnish (5), Dutch (5), French (5), Spanish (4), Czech (2), Portuguese (2), and Romanian (1).

3.2 Wartegg's Test in Finland

The first serious attempts at an empirical evaluation of the WZT are those by Takala and Hakkarainen (1953), two Finnish psychologists. Takala and Hakkarainen developed a quantifiable scoring system for the test and administered the WZT to 1,025 subjects. The results showed that the test differentiated occupational groups and could serve as a possible predictor of vocational success. Correlations with intelligence were low, but with drawing ability were high. In another study (Takala, 1964), the scores of the drawing test were studied in relation to age, sex, intelligence, occupational interests, and personality traits. It was found that test scores correlate with intelligence and occupational interests; however, a correlation with personality traits was not found.

In Finland, the test continued to be widely used in the 1960's in the clinical setting, as well as for vocational guidance and personnel selection. A new interpretation method was developed by Manfred Gardziella at the Institute of Occupational Health during the 1970's (Gardziella, 1985). This method has been taught on a wide scale in courses organized by the Ministry of Labour and the Finnish test publisher, PKOY. In practice, since Gardziella's manual was published, Wartegg's test has been interpreted according to Gardziella's guidelines in the different sectors of applied psychology in Finland.

Gardziella's method is based to a great extent on Wartegg's original ideas, but Gardziella has also adopted some of the modifications suggested by Kinget (1952) and Lossen and Schott (1952), such as those concerning the drawing sequence and the symbolic meaning of the initial figures. Gardziella's method is not based on any personality theory, but rather on Gardziella's clinical observations (from "thousands of cases" according to Gardziella's own account). For example, human drawings are considered as a sign of sociability. According to Gardziella, ambitious people draw long lines in box 3 (depicting ascending stairs, graphs showing growth, etc.), while inactive or depressed individuals tend to draw shorter lines (descending stairs, downhill, etc.). Impulsive persons may begin drawing in any of the eight boxes, while orderly persons begin from box one and proceed in the numerical order. Many of the ideas concerning the interpretation of the qualitative aspects of the drawings such as drawing size, pencil pressure,

and number of details resemble those concerning other drawing tests such as Machover's Draw-a-Person (Machover, 1949). However, Gardziella's manual does not include any empirical evidence concerning the validity of the method, and in the 1990's, criticism against the non-scientific basis of Gardziella's method was raised by academic psychologists.

In a study by Tamminen and Lindeman (2000), the validity of Gardziella's scoring system was studied empirically. The results showed that the drawing contents were not related to the criterion measures of anxiety, need for affiliation, need for achievement, or attachment styles, as was suggested by Gardziella's handbook. Another validity study was carried out by Roivainen and Ruuska (2005) in which a low negative correlation (-0.33) was found between the number of human drawings in the WZT protocol and subjects' Alexithymia score on the Toronto Alexithymia Scale. It was concluded that efforts to develop the interpretation methods toward meeting empirical validity and reliability criteria should be continued.

3.3 Wartegg's Test in Brazil

In Brazil, the WZT has been popular, especially in personnel selection (Pereira, Primi, et al., 2003). In the study by Pereira et al., 20 recruitment companies out of the 34 investigated employed the Wartegg test in the recruitment process. In another study in which 304 Brazilian psychologists were interviewed, 225 reported to know the WZT well or use it (Noronha, Primi, et al., 2005), while only 84 psychologists used the MMPI. The interpretation of Wartegg drawings has been based on translated versions of Wartegg's original texts, the method of Biedma and Alfonso (1973) that has been popular in the Hispanic world, and methods developed by Brazilian psychologists such as Kfoury (1999) and Freitas (1993). Based on 1,020 cases, Freitas (1993) identified popular and unusual responses in Brazilian Wartegg drawings. The interpretation guidelines suggested by Freitas were, for the most part, not confirmed in a validation study by Souza, Primi, and Miguel (2007), but some positive (though low) correlations were found between PF 16 scores and WZT drawings. For example, inhibited individuals with a low PF 16 A score produced less curvilinear drawings than those with a higher score on scale A ($r = -0,24$, $p = 0.008$), as predicted by Freitas. In 2003, the Brazilian psychological association (CFP, 2003) issued a statement recommending that non-validated tests be used cautiously in assessment. Souza et al. (2007) concluded that the WZT does not yet meet the requirements of the CFP for validated tests.

3.4 Wartegg's Test in Italy and Germany

In Italy, Wartegg's 1953 publication, *Schichtdiagnostik*, was translated by Otto Roser and published at the end of the 1950's. Costante Scarpellini, a Catholic

theologian, published an interpretation manual in 1962 with few modifications to Wartegg's method (Scarpellini, 1962). Scarpellini was a professor at the Catholic University of Brescia, and consequently, the WZT has been studied and used mainly by psychologists with connections to Catholic universities and research institutions (Fontana, 1984, 2005). A new interpretation method based on Jungian theory has been developed by Alessandro Crisi (1998). In Crisi's method, the proportion of drawings that falls into different categories (for example, drawings involving positive emotion, negative emotion, unusual drawings, etc.) is analyzed in a way that resembles the methods of Rorschach interpretation (Exner, 1986). In a recent study (Ceccarelli, 1999), the WZT ranked sixth in frequency of usage of personality tests in the Italian region of Marche. In the family and couple therapy setting, it ranked second, after the MMPI.

In Germany, the WZT remains a fairly well-known test. The WZT is among the assessment methods that are introduced to psychology students at universities including Wartegg's Alma Mater, the University of Leipzig (V. Mayer, University of Leipzig, personal communication 4/6/2007). The test is used by clinical psychologists, and the interpretation is based on clinical experience, as well as Wartegg's original publications. Avé-Lallement (1994) and Petzold (1991) have published more recent interpretation guides in German. From a psychometrical viewpoint, the status of these methods is the same as the Finnish, Brazilian, and Italian test manuals: there has not been empirical validation, and the methods are based on clinicians' intuition and experience (Diagnostikkommission, 2004).

4. The Future of Wartegg's Test

In recent years, there has been a lively debate concerning the projective methods in general and the Rorschach test in particular (Lilienfeld, Wood, et al., 2000). Many of the arguments of this debate also apply to Wartegg's test. Projective tests have been defended by clinicians who find them to be a useful tool in getting around defensive answering and impression management that may affect the results of inventory-type psychological tests. On the other hand, academic psychologists have criticized projective methods for validity and reliability issues. For example, studies that have compared test results from personality inventories with those of more well-known drawing tests, such as the Draw-a-Person (Machover, 1949) and Draw-a-Tree (Koch, 1952), have shown low correlations (Lilienfeld et al., 2000). It has been suggested that the projective hypothesis, as it is based on the psychodynamic theories of personality, and on the assumption that inner feelings, fears, and desires are reflected on outside objects, is itself wrong.

In the case of the Rorschach, empirical validity has been shown for some scales (Meyer & Archer, 2001) when the test is interpreted according to Exner's method. Perhaps valid scales can also be created for the Wartegg test. It can be

argued that the WZT is more creative and has more projective potential than other drawing tests because the topic of the drawing is freely chosen. In the Draw-a-Person and Draw-a-Tree tests, the topic of the drawing is given, and interpretation is based more on the qualitative aspects of the drawing. The weak (0.20- 0.30) correlations found between the WZT drawings and PF 16 scales in the study by Souza et al.(2007) indicate that, as the authors conclude, the present WZT methods are not sufficiently valid nor reliable from a psychometric point of view. On the other hand, these figures can be interpreted as encouraging for further work in developing empirically valid scales.

Summary

Wartegg's drawing test (WZT, Wartegg Zeichen Test) was developed in the 1920's and 30's by the Austro-German psychologist Ehrig Wartegg (1897- 1983). While practically unknown in English-speaking countries, the WZT is widely used in continental Europe and Latin America. Wartegg was introduced in the 1920's to mystical philosophies, modern art, psychoanalysis and Gestalt psychology that can be considered to be the roots of the WZT. Wartegg's academic work on the WZT at the University of Leipzig during the 1930's was based on the doctrine of Ganzheit psychology. The rise of Nazism, the Second World War and the postwar division of Germany hampered Wartegg's work. Wartegg lived in eastern Germany, where the post-war communist government opposed Gestalt psychology and psychoanalysis and favoured Pavlovian theories. Several interpretation methods have been developed for the WZT, but none have yet been empirically validated. There has been very little research on the WZT, despite its popularity.

Keywords: Wartegg, drawing test, history.

Zusammenfassung

Der Wartegg-Zeichen-Test (WZT) wurde in den 1920er- und 30er Jahren von dem österreichisch-deutschen Psychologen Ehrig Wartegg (1897-1983) entwickelt. Während der WZT in englischsprachigen Ländern praktisch unbekannt ist, ist er in Kontinentaleuropa und Lateinamerika weit verbreitet. In den 20er Jahren wurde Wartegg mit mystischen Philosophien bekannt, mit moderner Kunst, mit der Psychoanalyse und mit der Gestaltpsychologie, was als Wurzeln des WZT angesehen werden kann. Warteggs wissenschaftliche Arbeit am WZT an der Universität Leipzig während der 1930er Jahre basierte auf der Lehre der Ganzheitspsychologie. Der Aufstieg des Nationalsozialismus, der Zweite Weltkrieg und die Spaltung Deutschlands in der Nachkriegszeit erschwerten Warteggs Arbeit. Wartegg lebte in Ost-Deutschland, wo sich die kommunistische Regierung der Nachkriegszeit gegen Gestaltpsychologie und Psychoanalyse stellte und stattdessen die Pawlow'schen Theorien bevorzugte. Etliche Interpretationsmethoden wurden für den WZT entwickelt, allerdings wurde bis jetzt keine davon empirisch validiert. Trotz der Popularität des WZT gibt es dazu wenig Forschung.

Schlüsselwörter: Wartegg, Zeichen-Test, Geschichte.

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(ProQuest: denotes formulae omitted). The Wartegg Drawing Completion Test (WDCT) was created by the German psychologist Ehrig Wartegg (1897-1983), a follower of the School of Gestalt psychology in Leipzig that was the main centre of the psychology of totality. The WDCT derives from the Sander Phantasie Test (Berger, 1939) and, as reported by Roivanen (2009), was published for the first time in 1926, even though a complete handbook saw the light only many years later (Wartegg, 1953). Since the publication A Brief History of the Micrometer. Contents. Foreword History of Machine Tools and Micrometers. A Brief History of the Micrometer. Chapter I: The Early Period. First Attempt to Measure Length with Threads. While the drawings of Palmer's patent application were carefully rendered, the design could be improved. For example, it offered no spindle clamp. More importantly, the graduated lines were not equally spaced.