

# Several Thoughts on Emil Kraepelin's Biography

## - Whether the foundation of dichotomy taxonomy system of modern psychiatry is indestructible?

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### INTRODUCTION

Recently, I read a few of classic textbooks of psychiatry and found that the basic architecture age of classification dichotomy of psychiatry proposed by the founder of our modern psychiatry – German psychiatrist Emil Kraepelin was probably 40 years or so. Mr. Kraepelin is famous in psychiatry and he is known as the “father of modern psychiatry”, mainly because his proposed psychiatric classification framework and etiology understanding have profoundly affected the classification, diagnostic systems and etiology study of modern psychiatry since 19th century. I believe that there are many precocious scholars in this field, but he has published the research achievement with a far-reaching effect and proposed the corresponding academic viewpoints and become the master in this field when he was very young. Particularly in the aspect of mathematical researches, some researchers have become the world-renowned masters in their middle twenties. For example, it is said that the famous mathematician Euler born in Swiss in the early 18th century began to publish her research papers in mathematics at the age of eighteen and devoted himself to the mathematical research in the next few decades and made remarkable achievements. However, few clinicians can become a master in certain clinical medicine field shortly after their graduation from a college due to a greater dependence on clinical practice and corresponding accumulated experience in the clinical medicine. It is exactly due to such a understanding that I become interested in the biography and chronicle of Mr. Kraepelin and hope to find the evidences to prove that there were already rich clinical experiences and theoretical bases sufficient to support him to propose the dichotomy taxonomy and corresponding diagnostic concepts, or conversely, find that his clinical experiences in those years are not sufficient to serve as the solid foundation for his classification framework and theoretical bases.

So, I searched the webpage of the Biography of this predecessor via the Wikipedia website. There are really some information surprised me in his biography. Emil Kraepelin was born in neustrelitz of Mecklenburgische Seenplatte district in State of Mecklenburg-Vorpommern, Germany on February 15, 1856. Kraepelin began his medical studies in 1874 at



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University of Leipzig and he studied neuropathology and experimental psychology. He graduated from the University of Wurzburg in 1878 [1] and entered the University of Munich in 1879 and completed his habilitation thesis entitled "the Place of Psychology in Psychiatry" in this school. Returning to the University of Leipzig in 1882, he worked in Wilhelm Heinrich Erb's neurology clinic and in Wilhelm Wundt's psychopharmacology laboratory [2-4].

His major work *Compendium of Psychiatry: For the Use of Students and Physicians* was first published in 1883 and it was expanded in subsequent multivolume editions to *A Textbook: Foundations of Psychiatry and Neuroscience*. In 1884, he became a senior physician in Prussian provincial town of Leubus, Silesia Province, and in 1886, at the age of 30, he was named the professor of Psychiatry at the University of Dorpat (today, the University of Tartu), and became the director of 80-bed university clinic in this school. Four years later (in 1890), he became the department head at the University of Heidelberg, where he remained until 1904. In 1903 (sic), Kraepelin moved to Munich to become Professor of Clinical Psychiatry at the University of Munich. Afterwards, he spent most of time in Munich and established the German Institute for Psychiatric Research since his retirement from teaching at the age of 66, where he spent his remaining years. Kraepelin died on October 7, 1926 and he was 70.

Kraepelin's influence on psychiatry mainly includes the following three aspects: a. he established the diagnostic concept using the criteria of disease course, outcome and prognosis; b. he denied the previously prevailing Unitary Concept of Psychosis and proposed the Kraepelinian dichotomy taxonomy system still dominant in the field of psychiatry so far, namely, the major mental illness is divided into dementia praecox (i.e. today schizophrenia) and manic-depressive insanity (i.e. today bipolar disorder); c. he is convinced that the mental illness has positive biological causes. At the late three decades of his life, he insisted that the mental illness was caused by a gradual systemic or "whole body" disease process.

Kraepelin got the said concept or theoretical framework basically before the age of 40, namely, during the working period of 17 years in neurology and psychiatry since the age of 23. For example, in 1896, in the fifth edition of *A Textbook: Foundations of Psychiatry and Neuroscience*, he proposed the dichotomy of psychiatry and classified the endogenous psychoses into independent and unrelated two categories, namely, dementia praecox and manic-depressive insanity. In 1899, at the age of 43, he included again the catatonia, paranoia and hebeprenia into the dementia praecox. He doubted his dichotomy in the later period and improved it to certain extent, but he made no amendments or denial. Guided by the later psychiatric scholars, it has become the mainstream theory and concept prevailing for over a century.

Today, we have accumulated more and more adequate

clinical and research evidences, and some research achievements questioned the dichotomy rationality give us the reasons to question, challenge and criticize any irrational or fallacious dichotomy.

First of all, as the founder of Dichotomy classification system, Kraepelin himself once doubted the interpretation rationality of his own dichotomy in the later period of his life. For example, Marnenos pointed out in 1909 that Zendig the student and colleague of Kraepelin reported his investigation in a paper: he found that nearly 30 % patients with dementia praecox early diagnosed by Kraepelin appeared to have the disease course and outcome not complying with characteristics of the dementia praecox. Zendig attributed these good outcomes presented in these patients to an early misdiagnosis. Inspired by this investigation, Kraepelin became more suspicious about his own dichotomy. In the paper *The Phenomenological Forms of Insanity* in 1920, he mentioned that some patients with mental illness can have both dementia praecox and manic-depressive insanity simultaneously, and also have the disease course and prognosis different from that of the dementia praecox. He also recognized that the boundary of the two mental disorders was elastic and there was a "bridge" for transition or ligation of the two mental disorders. In allusion to the findings of Zendig, he believed his own dichotomy concept had weaknesses. He wrote in the paper that "unfortunately, those cases that cannot be classified are very common." In the latter part of the paper, he stated that "we have to live in such a fact that our diagnostic criteria are not sufficient to reliably identify all cases between schizophrenia and manic depressive disorder and there are many overlaps in this field." Thus, as the founder of a theoretical system, Kraepelin still cannot guarantee that his own dichotomy is unique or exclusive, that's to say, he is not 100 % sure of the absolute correction of his dichotomy in some time after he proposed the "dichotomy". Moreover, until today, we find it difficult to prove that his "dichotomy" is the only correct system in psychiatric taxonomy.

Second, clinical medicine is empirical science from the commonsense viewpoint. Any master in clinical medicine can win his or her reputation only via the adequate clinical practice and training rather than his or her superb wisdom and a wealth of book knowledge. It is exactly because the clinical medicine is empirical science that each clinician can accumulate rich experiences in their own disciplines only after experiencing enough clinical practices. Moreover, in this accumulating process, the clinicians are required to accumulate the perceptual knowledge and corresponding clinical experiences via the repeated practices and learn from the experienced senior clinicians and draw on their experiences, and meanwhile make up for the deficiencies of their personal experiences via reading the professional books containing the knowledge and experiences of the predecessors. Any clinician must engage in the appropriate exploratory studies if he or she is not satisfied with the existing knowledge and skills. They shall also explore the

theoretical nature of what they are engaging in and uplift their own perceptual knowledge and experience to a theoretical height with universal guiding significance if they hope to understand the theory and principle of their own disciplines from a higher level. Therefore, as a clinician, he may not be able to profoundly understand the complete system of certain clinical discipline in a life time or establish a theoretical framework for a particular discipline if he cannot inherit the research results and findings of the predecessors. Even if a physician can make himself/herself to stand on the shoulders of giants through studying hard the previous theory and experiences at a very early stage, it may become elusive and castles in the air if only relying on the theoretical system established by the predecessors and without his or her own deep and rich clinical practices. From the perspective of his personal experience, Kraepelin established the dichotomy taxonomy system based on his clinical experiences of 17 years. This experience is somewhat insufficient and the fallacy is naturally inevitable.

Third, there are a number of factors affecting or leading to the occurrence of mental illness, including biological factors, psychological and social factors, according to the understanding of contemporary psychiatry principle. They are intertwined and quite complicated and remain unknown so far. The clinical manifestations or features of mental illness are also quite complicated, and the same mental illness may have very different manifestations in different patients, and even the same patient may have the opposite manifestations for two attacks of different forms. For example, the manifestations of patients with bipolar I disorder are completely different for manic attack and depressive attack. Furthermore, the disease course and outcome of mental illness are also subject to many factors, also involving in the biological, psychological and social aspects. No standard and effective treatment means can be used to interfere mental illnesses observed, compared and classified by him when Kraepelin proposed the dichotomy a hundred years ago. So, his observed and compared cases are only of the obvious difference in the aspect of characteristics (like disease course and outcome) subjectively judged by him and with taxonomic significance. There is not much scientific basis as to whether these characteristics can reflect the intrinsic difference of the disease or have the etiological significance. Apparently, there will be a high probability to draw the wrong conclusion and propose the classification method that does not comply with the objective reality if this is taken as the basis to classify the types of mental illnesses so as to constitute the foundation of dichotomy taxonomy. Moreover, with the development of modern psychiatry, people's awareness of mental illnesses appears to be deepened gradually. In recent years, more and more evidences suggest that Kraepelin's dichotomy is wrong. For example, a clinical genetics research of large sample was performed in Sweden. In this study, the genetic risk of family members suffered from the two mental disorders was investigated

after screening the probands of schizophrenia or bipolar disorder, respectively [3]. The research results showed that not only the risk of suffering from the same mental disorder in the proband family members of each mental disorder increased, with a significant familial aggregation, but also the risk of suffering from another mental disorder also increased accordingly, also with the significant familial aggregation. The heritability of the two mental disorders to be a co-morbidity is 63 %, which is basically decided by the additive genetic effects that are common in the two mental disorders. This finding suggests that there was a significant genetic overlap between the two mental disorders, which also supports to certain extent the conclusion that the schizophrenia and bipolar disorder have a homologous genetic basis. Some researchers also compared the research results of the two mental disorders in the aspects of susceptibility genes, neurodevelopment, brain function containing sensory gating and visual-spatial ability level, etc [4]. They believed that more and more evidences suggest that it is not supported to divide them into different disease entities in the aspect of etiology and pathophysiology.

Fourth, according to the logic of science, a correct classification method has to comply with the integrity principle (also known as exhaustive principle) and mutual exclusive principle (also known as exclusivity principle). The integrity or exhaustive principle means that certain individual thing of the classifying things can certainly be included into certain category of the classification system; the mutual exclusive principle means that any classified thing in the classification system can only be included into certain category rather than another category, namely, the classification of each thing is unique. In addition, the scientific classification system may also have to comply with the "in-group homogeneity and inter-group difference" principle of statistical classification. The in-group homogeneity means that all things of the same category are of the same characteristics specified by certain or some classified systems, especially the intrinsic and essential characteristics; the intergroup difference means that there exist the intrinsic and essential difference among the things of different categories in the same classification system, which is consistent with the mutual exclusion. Many classification systems or classification methods in the branches of natural science are all in line with these principles, like the natural classification method of plant or animals. The classification of chemical elements in well-known Mendeleev's periodic table of elements also comply with the said classification principles. At least, after the advent of this periodic table, no classification method of chemical elements can so far challenge this classification in Mendeleev's periodic table. Kraepelin's dichotomy taxonomy of endogenous psychosis at least did not meet the requirements of exhaustive principle, mutual exclusive principle and "in-group homogeneity and inter-group difference" principle. For example, the existed studies have found that there is an intermediate category with fairly broad

scope between the schizophrenia and bipolar disorder, namely, schizo-affective disorder of all forms, through which, two unrelated and independent disease entities are connected together to cause the interactive tangling or continuum phenomenon. Moreover, the instability of manifestation form of diseases also reflects in fact that the dichotomy taxonomy is unscientific or incompatible with the objective truth. For instance, many patients with the mental disorders are diagnosed among bipolar disorder, schizophrenia or schizoaffective disorder: they may be diagnosed with schizophrenia for the first onset, they may be diagnosed with schizoaffective disorders for the second onset, or they may be diagnosed with typical mood disorder for the third onset.

Based on the said analyses, we believe that we have sufficient reasons to question the rationality, scientificity and facticity of Kraepelin's dichotomy. Moreover, we shall also learn that no research finding really consistent with his dichotomy was concluded from the aspects of both mental pathology and biological medicine upon the efforts and exploration of several generations of psychiatrists for over a century after Kraepelin proposed his dichotomy for the classification framework of modern psychiatry. The reasons may of course be the complexity of mental causes and clinical manifestations of diseases, causing it difficult for people to reveal the essential difference of the two mental illnesses, but the more likely reason is that we are in a wrong way, moving forward far away from the true and fontal classification of the mental illnesses.

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