

Obituary: Prof. Dr. med. Dr. h. c. Friedrich Vogel (1925–2006)

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Two roads diverged in a wood, and I –
I took the one less traveled by,
And that has made all the difference.

Friedrich Vogel once quoted these lines from the poem by the American Lyricist Robert Frost (1874–1963) at the beginning of a prize acceptance speech, alluding to his decision in 1953 to go into the field of Human Genetics. At that time, Human Genetics practically no longer existed as a specialty in Germany owing to its burdensome historical legacy. Friedrich Vogel, having completed his medical studies at the age of 28, nevertheless made the decision to go into Human Genetics, to take the “less traveled road”. This decision was characteristic of Friedrich Vogel, who throughout his career never followed the mainstream trend, but was able to discern scientific perspectives and developments at an early stage. Moreover, he had the good fortune to begin his career at a time when Human Genetics was undergoing rapid changes and development, ranging from the discovery of the structure of DNA and the characterization of chromosomopathies, to genome research. From today’s perspective, one can recognize Friedrich Vogel as the leading German Human Geneticist of the postwar period. He united a distinguished reputation with personal modesty, a great sense of responsibility with absolute personal integrity. In addition, as the above quotation illustrates, he was an academic of the old school, combining

professional competence with a profound knowledge of philosophy and history, art and literature.

Friedrich Vogel was born on March 6, 1925 in Berlin. His class was the last to complete a normal secondary school diploma (“Abitur”) in 1943. He became a soldier, was captured and released in August 1945. He returned to his mother in Berlin (his father died in combat in 1944). He began medical studies at the “Humboldt Universität zu Berlin” in 1946, and switched, in 1948, as one of the first students, to the newly founded Free University (FU) in the western part of Berlin. After completing his dissertation on psychosomatic influences on eczema, he joined the group of Hans Nachtsheim at the “Max Planck Institut für vergleichende Erbbiologie und Erbpathologie”. Nachtsheim also held the chair for General Biology and Genetics at the FU Berlin. He was one of the few German Geneticists who emerged from the National-socialist period with an intact scientific and personal reputation. Nachtsheim’s influence significantly contributed to the establishment of Human Genetics Departments at German universities in the 1960s.

Friedrich Vogel completed his habilitation in 1957 with a thesis on the heritability of the normal electroencephalogram (EEG), published as a monograph in 1958. In his last book, “Genetics and the Electroencephalogram”, published in 2000, Vogel provides the first comprehensive treatise on the genetic, clinical, and neurophysiological aspects of the EEG. This book marks not only the completion of Vogel’s work in this area, but was also intended to stimulate future research in this field.

During his time in Berlin, Friedrich Vogel wrote the “Lehrbuch der allgemeinen Humangenetik”, published in 1961 by Springer. In 1962, Vogel was appointed as

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director of the newly established department of Anthropology and Human Genetics at the Heidelberg University. Under his leadership, this department took on a leading role in the national and international genetics communities. Many of Vogel's students have gone on to assume professorships throughout Germany.

Vogel's scientific career spans almost 40 years. In addition to his work on the genetic aspects of the EEG, he made significant contributions to the following fields of research: The estimation of the mutation rate of human genes (using the retinoblastoma gene as an example), the analysis of chemical mutagenesis in mammals (with a focus on the sensitivity of certain developmental stages of male and female germ cells), the influence of blood groups on susceptibility to disease and its evolutionary context, as well as human behavioral genetics. On the latter topic he wrote a book with P. Propping (1981), "Ist unser Schicksal mitgeboren?" which was intended for a general audience.

It was typical of Friedrich Vogel that the frequently published reviews put the results of his own research into a larger context. In 1955, he coined the term "pharmacogenetics" in a review article; this term was immediately adopted by the scientific community. He also published a series of theoretical papers on topics including the estimation of the number of human genes, the mutational process based on amino acid substitutions in hemoglobin, and the basis of multifactorial inheritance.

In 1968, Vogel published together with W. Fuhrmann the first book on genetic counseling in German. This book has been translated into seven other languages and significantly influenced the development of this field in Germany. In 1970, Vogel edited together with G. Röhrborn the book "Chemical Mutagenesis in Mammals and Man" that was instrumental in establishing the field.

Of special importance was Vogel's encounter with Arno Motulsky in 1956 at the International Congress of Human Genetics in Copenhagen; their meeting developed into a close friendship. In 1964, Vogel and Motulsky founded the journal "Humangenetik", now "Human Genetics", together with H. Baitsch, P.E. Becker and G.G. Wendt. This journal replaced the "Zeitschrift für menschliche Vererbungs- und Konstitutionslehre". No one has served as editor of this journal for as long as Vogel and Motulsky. Their editorship of the journal had an important influence on the development of the field of human genetics. This is also true for their influential textbook "Human Genetics—Problems and Approaches", which has now

reached its third edition. The book is a product of their work as fellows at the Center for Advanced Study in the Behavioral Sciences (Stanford, 1976–1977) and at the Wissenschaftskolleg Berlin (1983–1984). The textbook presents the current state of knowledge in the context of the historical development of the field. The book explains complex biostatistical approaches and also presents discussions of psychological and clinical problems. It deals, in detail, with the ethical consequences of applied human genetics. A colleague once wondered "how is it possible to acquire the breadth of knowledge that is reflected in this book".

In order to fully comprehend the influence of Friedrich Vogel on Human Genetics, one needs to remember the state of the field in postwar Germany in the early 1950s. In the name of "Eugenics", unimaginable crimes were committed during the rule of the National Socialists. The field of Human Genetics was practically not existent afterwards in Germany. Friedrich Vogel, therefore, looked for orientation to the earlier German geneticists and on geneticists in the English-speaking countries. As a student of Nachtsheim, Vogel was fully committed to a rational use of the knowledge emerging from research on human genetics. Vogel contributed continually to the development of human genetics in Germany. For many years, he was a reviewer for the German Research Association (DFG). He established a DFG Research Center on Clinical Genetics in Heidelberg and provided significant contributions to a number of other major research programs of the DFG. He was influential in the development of the biology curriculum for medical students and thus for their training in genetics.

Finally, one has to mention a special event, the International Congress of Human Genetics in 1986, which took place in Berlin. It is in large part due to Friedrich Vogel's international reputation that the congress was awarded to Berlin. It was the first time since 1927 that a large, international Genetics meeting had taken place in Germany. The meeting was widely regarded as highly successful, and in a certain way helped the field of Human Genetics come to terms with the history of genetics during the Nazi period and to document a new beginning.

Friedrich Vogel was a generalist in the best sense of the word, an academic who looked forward with a critical, but optimistic gaze. According to his own words, Vogel completely shared the view of the theologian and participant in the German resistance movement, Dietrich Bonhoeffer:

"Optimismus ist ... keine Ansicht über die gegenwärtige Situation, sondern er ist eine Lebenskraft, eine Kraft der Hoffnung, wo andere resignieren ..., eine Kraft,

Rückschläge zu ertragen, eine Kraft, die die Zukunft niemals dem Gegner lässt, sondern sie für sich in Anspruch nimmt. Es gibt bestimmt auch einen dummen, feigen Optimismus, der verpönt werden muss. Aber den Optimismus als Willen zur Zukunft soll niemand verächtlich machen, auch wenn er hundertmal irrt ... Mag sein, dass der jüngste Tag morgen anbricht, dann wollen wir gern die Arbeit für eine bessere Zukunft aus der Hand legen, vorher aber nicht.”

(The essence of optimism is that it takes no account of the present, but is a source of inspiration, of vitality and hope where others have resigned; it enables a man to hold his head high, to claim the future for himself and not to abandon it to his enemy. Of course, there is a foolish, cowardly kind of optimism, which should be rigidly condemned. However, the optimism, which is a pledge for the future should never be despised, even if it is proved wrong a hundred times. Tomorrow may be

the Day of Judgment. If it is, we shall gladly give up working for a better future, but not before).

The many prizes and tributes that Friedrich Vogel received included the Federal Cross of Merit, the Hans Berger Prize of the German EEG Society (1966) and the Honorary Doctor Title of the Free University of Berlin (1998). Together with Arno Motulsky, Vogel was awarded the Medal of Honor of the German Human Genetics Society in 2003, the first such award to be given. The laudatio closed with the remark that music can express things that words cannot; in Brahms' First Symphony, the first three movements are characterized mainly by minor harmonies that in a sense reflect the mood in the field of Human Genetics in postwar Germany. The dramatic turn in the fourth movement of that symphony comes when the wonderful alhorn melody sounds and, together with the solo French horn and the trombones, ushers in the triumphant finale.