Ernst Otto Fischer (1918–2007)

He who wishes to stand up to life's tumult, from serving as a soldier in Russia, receiving the Nobel Prize, to the tranquility of old age, requires a home because it gives him roots. This is how he could be heard, long after he had passed the scientific pinnacle of his unusually rich life. Every dog has his day; one must know when the moment is right to stop—one of his words of wisdom, endorsed by Rainer Maria Rilke's "Autumn Day". Ernst Otto Fischer died aged 88 in Munich.

He gave impulse and ideas to us, his students who venerated him, which he in turn exacted us to develop. He lifted us in times of setbacks, revealed to us the big picture, and stimulated us to reflect. For us colleagues, his was the belligerent, unrelenting pressure for the highest scientific standards, and for scientific freedom. Above all he loved his Bavaria, where he practiced lifelong the Benedictine principle "stabilitas loci".

Ernst Otto Fischer was an intense personality; impulsive and thoughtful, urbane and homely, rowdy and modest, scientist and esthete. These apparent contradictions made complete a person with equal measure of heart and reason.

His scientific achievements, which where much lauded and rightly awarded with the Nobel Prize (1973), resulted out of an emotional intelligence like no other. Ernst Otto Fischer had a nose for the genuinely interesting, unusual, and novel. He captivated and intrigued his students, who, against the hard currency of trust, he allowed to flourish and grow scientifically. "Think for yourself, don't let someone think for you"—this lesson he learnt from the Nazi era, which had robbed him of his childhood, and carried with him for life. Influenced by this, he struggled life-long for scientific freedom and countered every attempt at political influence on science. Self-determined research was a symbol of freedom for Ernst Otto Fischer.

As a graduate of a humanistic grammar school and a life-long humanist, Fischer initially wished to study art history. However, as soldier on leave, he was so impressed by a lecture of Walter Hiebers, later his mentor, that after the war he turned to studying chemistry at the Technische Hochschule in Munich. First of all though he, like all his fellow students, had to make the bombed-out institute in the Arcisstraße reusable with his bare hands. He then developed a convenient method as doctoral student to synthesize tetracarbonylnickel with the simplest resources (1948). Shortly thereafter, as Walter Hieber gave him his scientific independence early, he was able, together with his contemporary Wolfgang Pfab, to achieve the spectacular structural elucidation of ferrocene in 1952. Spurred on by theoretical approaches, he synthesized di-(benzene)chromium with Walter Hafner in 1955. These achievements made Fischer a rising star in organometallic chemistry, a star that would shine ever brighter, rapidly moving and thus always visible.

In a hard, at times bitter, rivalry with Geoffrey Wilkinson (1921–1996), he and his highly productive research group with young, capable, and enthusiastic scientists synthesized new organometallic compounds in ever-changing variations. As modern instrumental analytical methods developed, Fischer's best students were trained in the leading laboratories of the time: Gottfried Huttner in X-ray analysis, Cornelius Kreiter in NMR spectroscopy, and Jörn Müller in mass spectrometry. Soon the Munich laboratory encompassed all modern methods, that allowed a rapid, precise identification of the new organometallic compounds and their often unexpected structures. Two highlights during these pioneering times on organometallics were the first double bond (metallacarbenes) and triple bond (metallacarbynes) between transition metals and carbon. As a staunch believer in basic research, Fischer never regarded immediate practical uses for his rich chemistry. Despite this, his life work, developed with about 200 doctoral students and postdoctoral workers from all around the world, forms the basis for industrial catalytic processes, a current prominent example being the olefin metathesis.

More than a dozen of his students received academic positions, and many gained leadership positions in industry. The Fischer school was like a seal of approval in industry, as Fischer's major talent was the unerring identification of young talent. These were his family; seeing them flourish was the reward.

In reality, however, his enduring achievement—well beyond that of receiving the Nobel Prize—lay the allure with which he fascinated others. Out of this aura of open research, chemists developed with an almost musical facility, who have themselves furthered science and industry and thus also become personalities. As arbitrary examples, Walter Hafner and Reinhard Jira: Trained in hard, precise research in Fischer's laboratories, they then developed the catalytic acetaldehyde process from ethylene, oxygen, and water as industrial chemists at Wacker. Simple approach, ingenious in the execution—just like Ernst Otto Fischer himself.

The healthy competition with the Briton Geoffrey Wilkinson, with whom he later peaceably shared the Nobel Prize, made Fischer more dogged, more firm in his position, more consequent, more diligent. Fischer knew that "*all things in the night are larger more fearful than by day and are smaller when clearly discerned*" (Ludwig Thoma, "Wittiber"). This gave him composure in scientific rivalry. The Nobel Prize was a timely recognition (Fischer was 55) of the original, consistent development of chemical substances featuring metal–carbon bonds. Ernst Otto Fischer was a major pioneer of organometallic chemistry, which unmistakably carries his signature. Simultaneously he built bridges between once separated fields of chemistry.

We students could learn to appreciate the desire for the new from him. We not only gained a desire to learn, but also an ability to marvel. On July 26, 2007, we brought him to his final resting place at the old cemetery in Solln, Munich. Science has lost an ingenious chemist; his beloved Bavaria one of her foremost sons.

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DOI: 10.1002/anie.200703517