OBITUARY

Richard J. Gardner, Department of Mathematics, Western Washington
University, Bellingham, WA 98225-9063, U.S.A.
email: Richard.Gardner@wwu.edu

WASHEK PFEFFER
November 14, 1936 – January 3, 2021

Abstract

This obituary in memory of Washek F. Pfeffer describes his life and
character. It also touches on his work in topological measure theory,
but other aspects of his research are treated in the adjoining articles by
De Pauw, Gruenhage, and Moonens.

1 Introduction

At the UC Davis campus, from January 25 to 27, 2021, the University of
California flag flew at half-staff beneath the American flag, in memory of
Washek Pfeffer. It was a fitting tribute. Washek enthusiastically embraced
his adopted country from the moment he arrived in 1965, becoming a US
citizen in 1970. He joined the UC Davis mathematics faculty in 1966, rose to
full professor in 1971, and served until his retirement in 1994.

This account includes the main biographical details of Washek's life, and
ventures to portray his unique character and appearance. It draws on reminiscences of friends from his schooldays to his last years, but is also a somewhat
personal report. Our joint work on topological measure theory is mentioned
very briefly, while his much more significant contributions to the theory of
integration, a description of his books, and a discussion of his research in set
theory and general topology, are left to the articles by De Pauw [2], Moonens
[9], and Gruenhage [7].

Václav František Pfeffer was born in Prague on November 14, 1936. The colloquial version of Václav in Czech is Vašek, which he converted to Washek. (This caused a little confusion, since some pronounced his name Vashek, while others, like myself, spoke it as it reads in English.) He was the only child of Václav Josef Pfeffer, a designer and inventor with several patents including a street-lamp, and Božena Paloušová, a skillful high-end seamstress. The family was not well off, particularly after communism took hold in Czechoslovakia in 1948.

Washek's first year of high school, when he was around 15 years old, was mostly spent in a hospital bed. A hereditary and progressive neuropathy called Charcot-Marie-Tooth disease had been misdiagnosed as tuberculosis of the bone,

Washek in 1991

whose treatment required long periods of lying down. Homework assignments were delivered by a classmate, Vladimír Vondrejs, who still remembers enjoying Washek's original way of thinking and witty short stories. But Washek also studied independently without a tutor, returning to the second year of high school ahead of his fellow pupils rather than behind.

Another high school classmate, Zdeněk Bažant, a renowned Institute Professor of civil and mechanical engineering and materials science at Northwestern University, recalls that Washek was popular, gregarious, irreverent, and a regular visitor to pubs and nightclubs, but still managed to score the top grades. The traits that attracted so many friends later in life were already set: His obvious intelligence, sweeping curiosity, and capacious memory; his love of company and free-ranging discourse from light banter to serious political and philosophical discussion; his unprejudiced interest in and natural affinity for people; and his love of fun and seemingly endless supply of jokes for every conceivable occasion. He had a ready laugh and enjoyed making others laugh too, but was not shy to challenge, argue, and impishly provoke. His drive to succeed and enormous ability for hard work when he considered it necessary for progress were also evident even back then.

Of Washek's classmates who achieved success later in life, the most conspicuous on the world stage was Václav Havel, the famous playwright and

dissident who served as President of Czechoslovakia from 1989 to 1992 and of the Czech Republic from 1993 to 2003. They sat in the same class in middle school. Washek himself had a rebellious streak, sometimes addressing teachers by the pre-communist term *milostpani* (madam) instead of the approved "comrade teacher." In 1955, Havel introduced Washek to a group, including Havel's brother Ivan, that met each Saturday at the Slavia Café in Prague. Washek maintained contact with the Havel brothers throughout his life.

In 1959, while he was still a university student, Washek married his lifelong companion Lida, born Ludmila Aloisie Šašková, in a large wedding at a Catholic church. A year later, he received the RNDr (Doctor of Natural Sciences) degree from Charles University. From 1960 to 1963, Washek was a researcher at the Research Institute for Heat Technology (his single applied mathematics paper [10] may derive from this period) and at the Czechoslovakian Academy of Sciences in Prague, but he was already plotting his escape. He spent Spring 1964 as a visiting researcher at the Polish Academy of Sciences in Warsaw and then, by arranging a vacation to Finland, he and Lida were able to move to Sweden. That winter, after a short spell at the Royal Institute of Technology in Stockholm, Washek boarded the MS Kungsholm, landing in New York on January 6, 1965. Four months later, Lida followed on the MS Oslofjord.

America in 1965 really was a land of plenty and academic opportunity. In those early days, the Pfeffers were astonished by the full baskets of bread and butter that appeared gratis on the restaurant table and could hardly resist devouring them before their meals arrived! Washek accepted a position as Assistant Professor at George Washington University. The next year, he received his American PhD from the University of Maryland for a thesis entitled *An Integral in Topological Spaces*, and moved to UC Davis. He established contacts at Berkeley and was a Research Associate there in Summer 1967. Davis remained his base until his retirement, but he often took temporary or visiting positions in other countries.

The first trip overseas could scarcely have been more exotic. From 1971, Washek spent two years as Director of the Ghana Study Center of the University of California Education Abroad Program at the University of Ghana in Legon, adjacent to the capital, Accra. This was a generally enjoyable experience for the Pfeffers, who were provided with an ample salary, a car, decent housing, and even a cook who quickly learned to bake their favorite Czech bread. They seized every opportunity to explore the surrounding region. There was mathematical exploration as well, and Washek worked hard to learn a new subject, algebraic topology. Though ultimately the effort was not rewarded by research publications, it greatly widened his knowledge of

mainstream mathematics and remained a topic he could understand, discuss, and teach at the graduate level. As always, too, he found new friends with whom he could dive into deep conversations, such as Sir Alexander "Oppie" Oppenheim, the esteemed British mathematician and university administrator who taught at the University of Ghana from 1968 to 1973.

Ghana was also the location of an important landmark in Washek's life, since it was there that he learned how to make his special orthopedic shoes. Improbably, he was taught by a Catholic monk working upriver as a missionary. An extremely entertaining account of this episode appeared as a short story, *Infallible Weapon of Temptation*, in the book [1] by another Czech friend, Jaroslav Cervenka, once a distinguished Professor of Medical Genetics at the University of Minnesota and now an award-winning author of several collections of stories. In Cervenka's tale, the protagonist, Vance Pepper, is clearly recognizable as Washek. (Pepper in German is Pfeffer, but Washek traced the origins of his name to Piper, via Pfefferer.) Washek was justifiably proud of his beautiful homemade shoes, sometimes fashioned from ostrich, alligator, or snakeskin, that became part of his distinctive appearance and, for most of his life, allowed him to walk without a cane. In 2007, he became a member of The Honorable Cordwainders' Company, an organization dedicated to shoemaking.

I arrived in Davis in Summer 1977 for the first of three separate academic years there, having already met Washek at a topology conference in Baton Rouge a few months earlier. We rapidly became close friends. He and Lida were wonderfully hospitable, extending a standing invitation to a delicious dinner every Wednesday, prepared by Lida. Martinis and jokes always preceded the meal, which was served with wine and followed by more conversation and often games of rapid chess, played with the backgammon doubling cube for an initial stake of one dollar. Like Joseph Conrad, Washek spoke English with a heavy accent but fluently and with a larger vocabulary than most native speakers. Naturally, there were occasional but ingrained mistakes: "in another words," "I'll would" (do something), and, curiously, "addying" instead of "adding." He frequently adopted a tongue-in-cheek formal politeness, exclaiming, "My dear sir" and "truly yours." Being a dozen years older, Washek also assumed an avuncular, mentorship role. He was voluble, seemed completely open about his personal matters, aspirations, challenges, and even financial affairs, and showed equal interest in and concern for mine. We did not agree on everything; politically, he stood further to the right than most academics in the West, as emigrés from behind the Iron Curtain often do. At the same time, he always considered an opposing view, and was usually reasonable and flexible in his opinions.

Washek also lent advice about teaching calculus to large auditorium classes

of over two hundred students. The year before, he had experimented with a novel method, described in his joint paper [13] on education, and gave me all the necessary materials. As a teacher, he was successful, his excellent memory allowing him to deliver well-prepared lectures without notes, even at the graduate level, and of course his humor was much appreciated by most of the students. Washek's PhD students came later: Wei-Chi Yang (1988), Eric Howard (1991), Alan Jian (1992), and Jeffrey Mortensen (1993).

During that 1977–78 year, we also became collaborators, experiencing the peculiar thrill of proving that a question cannot be answered unconditionally. In [3] and [4], we found some surprising, if rather arcane, independence results in topological measure theory related to an earlier investigation of Gruenhage and Washek [8] on various types of regularity of Borel measures. For example, we showed in [3] that it cannot be decided in ZFC whether all diffused, outer regular, Radon measures in regular spaces are σ-finite; the answer is negative assuming Jensen's axiom $\diamondsuit$ (we showed later, in [5, Example 13.14], that it is enough to assume the continuum hypothesis CH), but affirmative assuming Martin's Axiom MA and the negation $\neg$CH of CH. In [4], we proved that it cannot be decided in ZFC whether every σ-finite Radon measure in a metalindelöf space (one for which every open cover has a point-countable open refinement) is outer regular, the question again having different answers according to whether CH or MA+$\neg$CH is assumed. Washek took charge of the writing and I learned far more from him about presenting mathematics in English than he did from me.

Apart from his unsteady walk, Washek in those days was physically quite sound. He was tall, his large head (later to be shaved completely bald) displaying small, regular features dominated by the big horn-rimmed glasses he wore in his middle age. Meticulously clean and tidily dressed, he favored Western accoutrements such as the Mexican-style bolo tie, silver-buckled belt, or Stetson hat. On one of his long and slightly spatulated fingers, he sported a huge gold and turquoise ring that clanked against the table when he brought a loose hand down to emphasize a point. Washek's idiosyncratic handwriting was slow and deliberate, each letter as oversized and elaborate as his personality. He invariably used one of his classic fountain pens, partly for ease but also for the sheer pleasure he took in the well-crafted and often expensive gadgets he owned over the years: a Rolex watch, a Leica camera, a La Marzocco espresso machine.
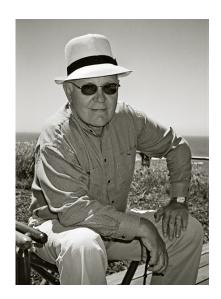
Our lives were to be intertwined long after that year in Davis. I had a yen for travel, and it was Washek who suggested applying to institutions in South Africa, leading to my next job, at the Council for Scientific and Industrial Research in Pretoria, which Washek himself then visited in Summer

1980. Washek's first book, *Integrals and Measures*, earned him an invitation to Monash University in Australia in Summer 1979; he dropped my name, and I visited there the following summer. In 1982, after visits a year earlier to Monash and Stockholm again, Washek came to spend two years at the University of Petroleum and Minerals, now KFUPM, in Dhahran, Saudi Arabia, where I had arrived in 1981. The stay brought out the cautious side of his character, though he could still be puckish on occasion. I was in my office at the end of October 1983, when a tall gentleman in traditional Saudi dress stood at the open door. I said hello, and the visitor came over to my desk while I waited for him to introduce himself. Then he smiled, revealing a pair of novelty-shop Dracula fangs. Washek had changed his signature glasses for a smaller, gold-rimmed pair and I had completely failed to recognize him in his disguise. Satisfied, he continued to make his rounds of the department on his Halloween prank. But generally, Washek toed the line. He helped set up a new PhD program and worked extremely hard and productively, as he had done during his high school year in hospital; diversions were few, and he was unable to enjoy the tennis courts, swimming pool, and university beach. We finished a long survey paper [5] on Borel measures in topological spaces, covering our earlier results in [3] and [4] and much else besides, and wrote our last good research paper [6], on the decomposability of Radon measures. Then, while still at KFUPM, Washek began to turn back to his work on integration, obtaining results which led eventually to his paper [11] on the divergence theorem.

Though our mathematical interests had diverged, there was ample time to spend together during my visits to UC Davis in 1986–87 and 1990–91, as well as at several conferences in Italy, organized by Aljoša Volčič. By then, Washek was establishing new collaborations and destinations for visits, in Belgium (Catholic University of Louvain), Italy (University of Palermo, receiving a Silver Medal of the City of Palermo from the Mayor in 1997), and the Czech Republic (Charles University, where he also served as Honorary Member of the Academic Board at the Center for Theoretical Study). The money saved while in Saudi Arabia had been used in 1985–86 to build a second home, about four hours' drive from Davis, near Mendocino on the California coast, with a garden stretching to the bluff and spectacular views of the Pacific Ocean.

Washek continued to publish at a steady pace. By 1994, when he took early retirement and sold the house in Davis, he was the author of 71 works, including his second book, *The Riemann Approach to Integration*. Signs displayed near the driveway of the Mendocino house announced its new name, *Aftermath*. But Washek's love of mathematics, intellectual energy, and inherent drive impelled him to continue working. A further 34 works, including the books *Derivation and Integration* and *The Divergence Theorem and Sets of*

Finite Perimeter, were to follow, the latter appearing when he was 75. Quite apart from this admirable longevity—he submitted his last and highly technical paper [12] at age 83—he had an unusual ability to create mathematics with minimal recourse to the literature. His books are economical and precise, for the most part unencumbered by heuristics and historical remarks. Measure and integration theory is well-trodden territory, but Washek guides his readers along less familiar paths. Perhaps the isolation of a Prague hospital and Legon guest house reinforced a natural strength to find his way unaided.

In Mendocino, 1998

Meanwhile, outgoing as ever, he had even before he retired made a large and diverse circle of new friends in the Mendocino area. At the local bars, he enjoyed attracting attention by wearing a bowler hat purchased in London and sometimes even a tuxedo as well. He struck up a special friendship with the celebrity photographer, Greg Gorman, who lives in L.A. but had also bought a second home nearby. Washek had been a very keen amateur photographer for years, building his own dark room in the Davis house and spending hours there in experimentation. When I first met Greg, who regularly works with A-list movie stars, I half-jokingly apologized, saying, "Sorry, just another boring mathematician, I'm afraid." "Not at all!" said Greg, his opinion of mathematicians based entirely on Washek, whose flamboyant personality had captivated not only him but also his retinue of young assistants. On another occasion, Greg expressed his respect for the depth of Washek's technical knowledge of photography.

Though Washek could talk non-trivially about many topics, for most of his life Hollywood movies and people held little interest. In a marvelous twist of fate, Washek now found himself seated at the dinner table in Greg's house with the likes of Pierce Brosnan, his wife Keely Shaye Smith, and Diane Lane. The British actor John Hurt once sauntered to Greg's bookshelf, pulled out one of Washek's books, and performed a spot-on Washek impersonation. They all loved him, perhaps to some extent recognizing one of their own.

In 2010, eager to escape the foggy northern California coastal summers

In San Antonio, 2015

and long drives to medical appointments, the Pfeffers moved to Tucson. To my regret, I only visited their beautiful house twice. On the first occasion, in 2014, Washek walked laboriously, with a cane; by the second, early in 2020, he was confined to a wheelchair, unable to shake the cocktails, and needed his left hand to support the right one to move a chess piece. But martinis and chess games there were, and jokes and lively conversation as before. Mentally, he was as strong as ever. Despite being almost helpless physically, he seemed implausibly cheerful. He even found it amusing that he had lost the strength in his fingers to wind the expensive self-winding watch that no longer wound itself due to lack of movement of his wrist.

In one of his last photos, Washek sits suspended in a remote-controlled sling designed to move him in and out of the shower. He wears only a watch, shorts, socks, homemade shoes, and a wide grin, enjoying his own joke and finding humor in his predicament. When he died, on January 3, 2021, the result of pneumonia caught in hospital following a fall, the mathematics community lost one of its truly larger-than-life characters. He will be greatly missed by the many from all walks of life who were fortunate enough to count him as a friend.

Lynch, Stanislav Machacek, Lida Pfeffer, Karel Prikry, Renata Tomanova, Aljoša Volčič, Vladimír Vondrejs, and David Willmer for information, helpful correspondence, and photos, as well as to others who shared their memories. Names appear with or without diacritical marks according to the owners' preferences.

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