



Nota. Estimados lectores, al parecer, todos tenemos, al menos, dos vidas. La idea es audaz, es cierto, pero, si lo pensamos un poco, podríamos estar de acuerdo con ella. Al terminar la prepa, el CCH, o el bachillerato, nos vemos forzados a escoger una licenciatura. Esta decisión nos compromete, en los siguientes 4 o 5 años, a estudiar y a aprender una cantidad considerable de habilidades. Nuestra memoria se llena de cientos de datos e información diversa. Si todo va bien, en 5 o 6 años nos convertimos en un físico más, o una química más, o un actuario más. Y luego siguen 30 ó 40 años de vida profesional. Paralela a esa vida, digamos de matemática profesional, es muy probable que se vaya gestando otra vida, digamos de narradora de cuentos o de maestra de tercer año de primaria. Sabemos que existen biólogas que escriben cuentos, físicos que son directores de teatro, actuarías que simultáneamente estudian relaciones internacionales. Y así sucesivamente. Nos atrevemos a decir que es casi imposible obligar al cerebro a recorrer una sola vida. O, si se quiere expresar de otra manera, es casi imposible dedicar toda una vida a una sola cosa. A pesar de que esa cosa sea tan interesante como las matemáticas. El texto que a continuación reproducimos es la primera parte de

The Double Life of Felix Hausdorff / Paul Mongré

escrito por Walter Purkert, y publicado en *The Mathematical Intelligencer* el 25 de abril de 2009.

En él nos enteramos de la doble vida de uno de los matemáticos más importantes del siglo XX, Felix Hausdorff.

El artículo es realmente extraordinario. Agradecemos profundamente a nuestra querida colega la profesora Elsa Puente por la sugerencia de su lectura. La versión completa se puede consultar en la página:

<https://link.springer.com/article/10.1007/BF03038095>

The Double Life of Felix Hausdorff / Paul Mongré

Primera parte

Walter Purkert

In a 1921 review of Hausdorff principal work, *Grundzüge der Mengenlehre* (1914), the American mathematician Henry Blumberg wrote:

It would be difficult to name a volume in any field of mathematics, even in the unclouded domain of number theory, that surpasses the Grundzüge in clearness and precision.

Compare that statement with another remark about Hausdorff in a letter from Paul Lauterbach, writer and translator, written to the musician and Nietzsche scholar, Heinrich Koselitz:

A Dionysian mathematician! That sounds incredible; but let him send something to you and we will wager that there is something about him to be experienced.

“Dionysian” refers to Dionysius, the Greek god of wine, fertility, but also of ecstasy and the intoxicating, irrational, ecstatic elements necessary for experiencing the world or the creative process. An individual who writes books of mathematics of such unsurpassed clarity and precision, on the one hand, and is considered to be Dionysian, on the other, surely must lead a remarkable double existence -and Hausdorff was just such a man.

As Felix Hausdorff he was an important mathematician whose work has remained relevant and influential up to the present day; as Paul Mongré he was a man of letters, a philosopher, and a critical essayist, a figure whom the journalist Paul Fechter recalled in 1948 in his autobiography as “one of the most remarkable individuals to appear in the first decades of the twentieth century” and who “has wrongfully been forgotten by the younger generation.” Naturally, in this double life many visible and invisible threads became intertwined, and these must be retraced to properly understand the man and his work.

Felix Hausdorff was born in Breslau on November 8, 1868. His father, a Jewish businessman named Louis Hausdorff (1843-1896), moved in the Fall of 1870 with his young family to Leipzig, where he managed various companies including linen and cotton shops. He was an educated man who at age 13 had obtained the title “Morenu” (Morenu being Hebrew for “our teacher”).

Felix Hausdorff’s mother, Hedwig (1848-1902; she was called Johanna in various documents), was a member of the widely dispersed Jewish family Tietz. From one branch of this family came Hermann Tietz, the founder of the first department store and later the principal owner of a chain of department stores “Hermann Tietz.” During the period of the National-Socialist dictatorship, the firm was “aryanized” under the name HERTIE.

We do not know how Felix Hausdorff was reared as a child, but it seems likely he had a strict religious upbringing. The results of Felix Hausdorff’s religious training were the opposite of what his father wanted to achieve: Hausdorff gave up practicing the Jewish faith. He became an agnostic who critically disputed the tenets of Jewish religion just as he did the Christian. Still, he was never baptized, a religious rite that would have offered him considerable advantages.

Hausdorff’s educational background was in many ways typical for a child from a middle-class family with high aspirations. For three years he attended the former second Bürgerschule in Leipzig; afterward, beginning in 1878, he went to the Nicolai Gymnasium. This school had an excellent reputation as a humanistic educational institution. Hausdorff was an outstanding pupil, the best in his class over many years, and he often was given the honor of reading

the poems he had composed in Latin or German during school vacations. In his graduating class of 1887 he was the only pupil to receive the cumulative grade of "I." The choice of field for his university studies may well have been a difficult one for the multitalented Felix Hausdorff. Magda Dierkesmann, a student in Bonn from 1926-1932 who was often a guest in Hausdorff's home, reported many years later:

His versatile musical talent was so great that it was only due to the urging of his father that he gave up his plans to study music and become a composer.

By the time he graduated, the decision had been reached: in the annual report of the Nicolai Gymnasium for 1887, next to the list of graduates, one finds a column giving the "future field of study," which for Felix Hausdorff was "natural sciences."

Between 1887 and 1891, Hausdorff studied mathematics and astronomy in Leipzig, though with interruptions of one semester each to study in Freiburg and in Berlin. He had exceptionally broad interests and took courses in mathematics, astronomy, physics, chemistry, and geography. He also attended lecture courses in philosophy and history of philosophy, languages and literatures, and on the history of socialism and the labor movement.

During his last semesters as a student in Leipzig, Hausdorff worked closely with Heinrich Bruns (1848-1919), professor of astronomy and director of the astronomical observatory. Bruns, a student of Karl Weierstrass, was known above all for his work on the three body problem and on optics. He gave Hausdorff a dissertation topic on the refraction of light in the atmosphere (1891). This work was followed by two further publications on the same subject, leading up to Hausdorff's Habilitation for which he submitted a study on the extinction of light in the atmosphere (1895).

With the Habilitation, Hausdorff could begin his academic career as a Privatdozent in Leipzig. He offered a wide range of courses, but alongside his teaching and research he also continued to pursue literary and philosophical interests. This brought him into contact with a circle of noteworthy writers, artists, and publishers that included Hermann Conradi, Richard Dehmel, Otto Erich Hartleben, Gustav Kirstein, Max Klinger, Max Reger, and Frank Wedekind. During the period from 1897 to 1904 he published eighteen of the twenty-two works that appeared under his pseudonym, including a volume of poems, a play, a book on epistemology, and a volume of aphorisms. The book of aphorisms was the first among Hausdorff's works to appear under the pen name Paul Mongré. He entitled it *Sant' Ilario. Gedanken aus der Landschaft Zarathustras* (1897). The choice of pseudonym already suggests his orientation: á mongre -after my own taste. This reflected an individuality, spiritual autonomy, and a rejection of prejudices and conformity in political, social, religious, or other spheres of human affairs. The subtitle, *Gedanken aus der Landschaft Zarathustras* stems from the circumstance in

which Hausdorff completed his book while recuperating on the Ligurian coast near Genoa, the same locale where Friedrich Nietzsche wrote the first two parts of *Also sprach Zarathustra*; the subtitle also naturally suggests a strong spiritual affinity to Nietzsche.

Any attempt to describe the contents of a volume of aphorisms would be senseless, but in order to say at least something about it, one can point to two ideas that Hausdorff takes up over and over again: first, he expresses a deep skepticism with regard to all forms of teleology and, even more, ideologies or theories for improving the world that claim to know the true meaning and purpose of humanity.

Fruitful is anyone who calls some thing his own, whether making or enjoying, in speech or gesture, in longing or possessing, in science or culture; fruitful is everything that occurs less than twice, every tree growing in its soil and reaching up to its sky, every smile that belongs

to only one face, every thought that is only once right, every experience that breathes forth the heart-strengthening smell of the individual! (1897)

The year 1898 saw the appearance of Hausdorff critical epistemological study -again under the pseudonym Paul Mongré -*Das Chaos in kosmischer Auslese* (Chaos in cosmic selection).

Consider the following passage from his Leipzig inaugural lecture "Das Raum Problem". By studying a map one can never determine the form of the original space without knowing the method of projection used to obtain it. Thus

[...] our empirical space is just such a physical map, an image of the absolute space, absolute in the sense of transcendental]; but [...] we do not know the method of projection and so we cannot know the original. The two spaces are related by means of an unknown and undetermined correspondence, a completely arbitrary point transformation. Still, the empirical space maintains its value as a means of orientation; we are able to find our way with this map and we can communicate with those who also possess this map; the distortion never enters our consciousness because not only the objects but we ourselves and our measuring instruments are uniformly affected by this.

If this viewpoint is correct, then it must be possible for the preimage to undergo an arbitrary transformation without changing the image.

Hausdorff worked intensively on the space problem for many years; in the winter semester 1903 to 1904 he offered a lecture course in Leipzig on "Zeit und Raum" (Time and Space), in which he spoke of his passion for this problem. The fundamental concept of a topological space, which he later created, was conceived in order to accommodate practically every situation in which "spatiality," in the topological sense, plays a role. This concept was probably influenced by his philosophical reflections on the space problem.

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