

## Emil Julius Gumbel (July 18, 1891 – September 10, 1966)

by HEINZ KLAUS STRICK, Germany

Even if some people don't want to admit it: in recent years, reports of extreme weather events, droughts and floods, rogue waves and hurricanes have been increasing. Extreme weather leads to extreme costs. The Europe-wide floods in the summer of 2002 alone cost insurance companies approximately 2.5 billion euros.

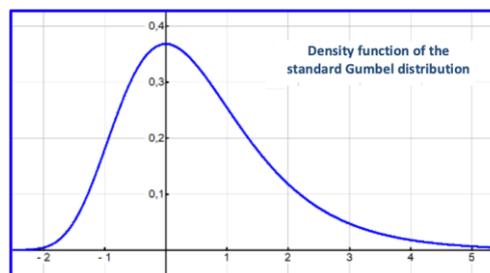
The investigation of these phenomena, especially their risk and cost assessment, are important research tasks in hydrology, oceanography, the insurance industry, and other disciplines.

While mathematical statistics usually deals with mean values and the dispersion around these mean values, extreme value theory (EVT) examines the extrema—in other words, it involves modelling the lower and upper ends of distributions.

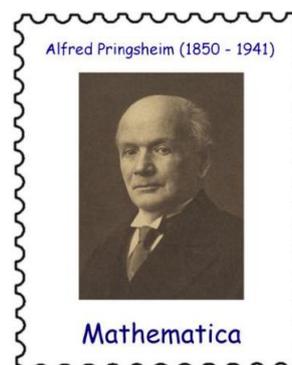
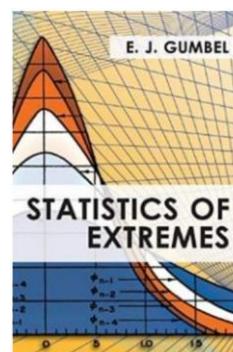
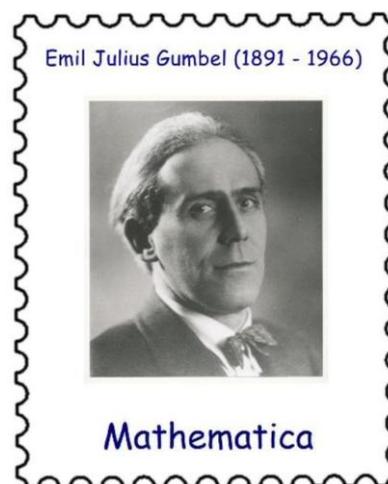
Already at the beginning of the 20th century, there were isolated, independent publications on this topic by mathematicians in France, Sweden, and the Soviet Union: MAURICE RENÉ FRÉCHET, Ernst HJALMAR WALODDI WEIBULL, and BORIS VLADIMIROVICH GNEDENKO. These approaches were rediscovered and further developed by a German mathematician who finally published a comprehensive book in New York in 1958, which is still considered a standard work in the discipline and has been reprinted several times. The author of *Statistics of Extremes* was the German mathematician and publicist ERICH JULIUS GUMBEL.

One of the possible continuous probability distributions is also named after GUMBEL. It can be used, for example, to model the distribution of the highest level of a river when results are available for a certain period of time. It is useful for estimating the probability that a flood could occur if the height of existing dams is not changed.

The density function  $f(x) = e^{-(x+e^{-x})}$  of the so-called standard GUMBEL distribution which is also called the *double exponential distribution*.



ERICH JULIUS GUMBEL was born in Munich in 1891, the first of three children of the Jewish private banker HERMANN GUMBEL and his wife FLORA. After attending the Wilhelmsgymnasium, he studied mathematics and economics at the Ludwig Maximilian University from 1910 onwards, under ALFRED PRINGSHEIM and the respected economist and social reformer LUDWIG JOSEF BRENTANO, who as late as 1914 considered war impossible due to international economic interdependencies. One week before the outbreak of the First World War, GUMBEL received his doctorate in economics with top marks.



In the general enthusiasm for the war, he volunteered for the front, but soon faced reality with horror, especially when German troops devastated the university town of Leuven (Louvain) in war-neutral Belgium and destroyed its famous historical library. At the beginning of 1915, he was temporarily exempted from military service due to an acute respiratory infection. He went to Berlin and took statistics courses at the university there. At the same time, he joined the New Fatherland League, a moderately socialist association that advocated peace and international understanding. Here, he met ALBERT EINSTEIN, among others, whose physics lectures he attended from then on. In 1916, he was called up for military service again (as an aircraft technician and at Telefunken), but he did not shy away from spreading increasingly pacifist slogans. In 1917, he joined the USPD (Union of German Social Democratic Party) led by KARL LIEBKNECHT.

After the Kaiser's flight, GUMBEL campaigned for a new republican beginning through a constitutional national assembly; he wrote numerous articles in which he took issue with the elites of the old regime, who maintained their claims to power even after the capitulation and saw no war guilt on Germany's part. Self-proclaimed *Freikorps* intervened in the civil war-like conditions in Germany. In January 1919, ROSA LUXEMBURG and KARL LIEBKNECHT, the founders of the Communist Party, were among those murdered.



GUMBEL escaped this fate only because he was attending a League of Nations conference in Bern at the time of his planned assassination; his apartment was ransacked. He was beaten at a meeting of the *German Peace Society*.

GUMBEL wrote texts for the weekly magazine *Die Weltbühne*, worked with the publicist CARL VON OSSIETZKY (Nobel Peace Prize 1936), translated pacifist texts by BERTRAND RUSSELL, and published them in 1922, with a foreword by ALBERT EINSTEIN.



With his documentaries "Four Years of Lies" about the systematic misinformation by those responsible in the German Empire during the World War and "Two Years of Murder" about the political murders afterwards, GUMBEL attempted to rouse the public, especially the members of the *Reichstag*. When a requested statement by the Reich Minister of Justice was allegedly not published due to a lack of paper and financial resources, GUMBEL published his next work: "Four Years of Political Murder"; KURT TUCHOLSKY described the meticulously researched work as a "document of German shame".



GUMBEL listed in detail 376 politically motivated murders, including the names of the perpetrators and those behind the scenes, as well as the decisions of the law enforcement authorities. Of these, 354 murders were committed by right-wing groups (including the assassinations of Finance Minister MATTHIAS ERZBERGER and Foreign Minister WALTHER RATHENAU) and 22 by left-wing perpetrators.



While numerous proceedings against right-wing terrorist perpetrators were delayed or resulted in minor sentences (326 proceedings were not opened or ended in acquittal; 24 perpetrators were sentenced to prison terms averaging four months or fines averaging two Reichsmarks), 10 left-wing perpetrators were sentenced to death, and 18 received prison terms averaging 15 years). GUMBEL had actually expected at least defamation lawsuits because of his writing – nothing happened, but no cases were reopened either.

In 1923, GUMBEL completed his *habilitation* at the University of Heidelberg with his work "Theory of Statistical Distribution Functions" and thus received the right to teach mathematical statistics. At first, his work as a lecturer went unnoticed until, at a memorial ceremony on July 26, 1924, the 10th anniversary of the beginning of the World War, he spoke out against the glorification of soldiers' deaths. For him, the battlefield was not a "field of honour" but of "dishonour"—after all, innocent people died there in a horrific way. From then on, his lectures and public lectures were regularly disrupted by nationalist groups (referred to in the press as the "Gumbel riots").

Because of his statements, disciplinary proceedings were initiated against him several times, but initially remained without consequences. However, when he was about to receive an extraordinary professorship in 1930 due to his undisputed academic qualifications and years of proven service as a lecturer, the National Socialist Student Union called for a "fight to cleanse the university". A statement by GUMBEL then brought the final straw: In an allusion to the famine winter of 1916/17, he expressed the opinion that a "large turnip" would be more appropriate as a symbol for a war memorial than a "scantly clad virgin with a victory palm".

Now the university also bowed to pressure from the right and withdrew GUMBEL's teaching licence – for "unworthiness". GUMBEL, who had recently married, left Germany with his wife and their child to take up a visiting professorship at the Sorbonne. After the Nazi Party seized power, he was "denaturalized", his writings were burned, and his work was erased from German memory. He experienced his time in French exile as "wonderful years" – until the invasion of German troops in June 1940.

With much luck, he managed to escape to the USA via Marseille and Lisbon after EINSTEIN had arranged an invitation for him from the Rockefeller Foundation. But he only had temporary contracts, including at the New School of Social Research in New York and as a reviewer.



After the war, he tried to return to Germany, but he was *unwelcome* in Heidelberg; only the Free University in Berlin offered him a visiting professorship. In 1953, he was called to Columbia University in New York and from then on, he devoted himself exclusively to science.

In 1966, ERICH GUMBEL died of lung cancer. An obituary was not published in Germany until his 100th birthday in 1991.

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<https://www.spektrum.de/wissen/mit-statistik-gegen-rechte-gewalt-der-pazifist-emil-julius-gumbel/2267540>

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