

EVOLUTIONARY BIOLOGY

Gentle giant of genetics

Oren Harman assesses the first biography of biologist W. D. Hamilton, the 'greatest Darwinian since Darwin'.

He was socially awkward, charmingly accident-prone, honest, modest, a champion of underdogs. A romantic who saw the human condition as essentially tragic, he felt more at home in the Amazon bush than with people, judging culture "a braggart"; the genes, to his mind, really ran the show. And his theory of inclusive fitness, many hold, is the single most original development in evolutionary theory since Darwin, explaining the workings of natural selection through the 'gene's eye' point of view.

The British evolutionary biologist W. D. "Bill" Hamilton (1936–2000) was a naturalist of legendary knowledge, especially of insects, and a complex man, both rugged and compassionate. An uncompromising truth-seeker, he set the highest of standards for his scientific papers, which were often rejected, famously by *Nature*. Now, in *Nature's Oracle*, sociologist Ullica Segerstrale presents the first biography of this gentle giant with a poet's soul.

Hamilton asked big questions and provided answers just as dramatic. Where does altruism come from? Why does sex exist? Why are females attracted to males? How does cooperation in nature arise? Marshalling mathematics, and later computer modelling, in the service of an acute power of observation and an ability to see the world from the point of view of the tiniest biological creatures and entities — the wasp, the virus, the gene — Hamilton reached often counter-intuitive solutions. Sex is merely an adaptation to avoid bugs, with ourselves and other diploids as "guilds of genotypes", as he put it, "committed to free, fair exchange of biochemical technology for parasite exclusion". Cooperation is a game played by the self-interested, nothing more; aesthetics is a signal for good genetics, meant to garner mates.

An intellectual and physical daredevil, Hamilton was also often distracted and sometimes depressed. Sporting a caveman-like shock of thick white hair, he was famous for mumbling inaudibly, his back to the audience, during virtually incomprehensible lectures in the United States and Britain. He felt alone and uncomprehended. Despite his unusual generosity in giving credit to others for his own fountain-like ideas, Segerstrale also uncovers an exaggerated jealousy for primacy, and an 'outsider' mentality that persisted long after he had become celebrated.

It is not easy to remain unmoved by

Hamilton's blend of obsession, sincerity, vulnerability and loneliness. Even more difficult is the task of writing a biography of a man unusually gifted as a writer himself, who left behind a brutally honest intellectual autobiography, *Narrow Roads of Gene Land*, in two volumes (a third followed, edited posthumously). Readers will be excused for noting that Segerstrale's biography seems to rely rather heavily on these. "I tend to be more like a bird than alligator — hatching my ideas to maturity before letting them loose," Hamilton wrote of himself. Passing by a yellow ragwort struggling to grow through a crack in London's asphalt, he noted, "a screaming child would not have touched my heart in the same way". It's a tough charge to improve on that.

In places, under-reliance on the secondary literature leads to either conjecture (that J. B. S. Haldane sought to prove altruism compatible with natural selection because of his left-leaning political tendencies) or factual fuzziness (missing the crucial impact of George Price's covariance paper on Hamilton's view on group selection). A somewhat incomplete treatment of Hamilton's intellectual legacy also leaves the reader lacking the



Nature's Oracle: A Life of W. D. Hamilton
ULLICA SEGERSTRALE
Oxford University Press: 2013. 441 pp.
£25, \$35



W. D. Hamilton a few years before his death.

wider context. In the past few years, the pages of *Nature* have seen a hard-fought debate between proponents of Hamiltonian kin selection and its challengers, but Segerstrale chooses not to delve deeply into the controversy. Had she done so, she would have been able to show the extent to which E. O. Wilson's current views on the evolution of eusociality represent a return to Hamilton's ideas.

Hamilton was indeed an inveterate seeker of patterns, a man with "evolution on the brain", as Segerstrale puts it, but he sometimes took this too far. His application of extreme geneticism to humans is an example. Wary of the adverse effects of modern medicine on the gene pool, he called unapologetically for infanticide of the genetically weak. This is one instance in which the otherwise singular Hamilton is anything but unique, joining a long line of naive champions of eugenics — and it demands more detached, hard-nosed criticism than offered here.

Still, combing through letters and scrupulously interviewing family members, colleagues and friends, Segerstrale succeeds in bringing Bill Hamilton, warts and all, to what will be an appreciative audience. "I am ashamed that in practice I find myself much more selfish than my ideal," the man who tackled altruism confessed touchingly in a long, paranoid letter to John Maynard Smith in 1977, accusing Smith of not giving him sufficient credit for the idea of inclusive fitness. Hamilton's mother, a medical doctor, saw signs of Asperger's syndrome (an autism spectrum disorder) in characteristics such as his obsession with priority, preoccupation with patterns, minuscule handwriting and focus on number and detail. He himself thought, tellingly, that being a 'thing', rather than a 'people', person accounted for his insight into nature.

Whatever the truth in these suppositions, Segerstrale's biography of Hamilton is ultimately a celebration of the life in science of a deeply feeling human being — an "evolution sufferer" as he called himself. In the grand scheme of nature, Hamilton knew, a human life is desperately transient. So did his favourite poet, A. E. Houseman:

*For nature, heartless, witless nature,
Will neither care nor know
What stranger's feet may find the meadow
And trespass there and go,
Nor ask amid the dews of morning
If they are mine or no.*

Despite it all, Bill Hamilton's life is one to remember. ■

Oren Harman is professor of the history of science at Bar-Ilan University, Israel, and author of a biography of George Price, *The Price of Altruism* (W. W. Norton, 2010). oren.harman@gmail.com