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Case Report

Katalin Karikó, The Nobel Prize, and The Tall Poppy Syndrome

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Abstract

Medical workplace competition is a wellspring for the occurrence of the tall poppy syndrome (TPS). Those involved are usually peers and not necessarily people of excellence.

This case report details the cutting down of an unproven individual by another. The victim is later cut down by a medical institution. It demonstrates that ordinary people can be cut down by other Individuals or institutions. The report also indicates that individuals are often cut down on their path to success and being cut down is not a sign of failure.

Keywords: *Tall Poppy Syndrome (TPS); Taller Poppies (TP)*

Introduction

The Tall Poppy Syndrome (TPS) is a metaphor in which a poppy field is encountered and the taller poppies (TP) are cut down so that all are equal. It is a cultural attitude driven by bad envy wherein people of success, fortune, skills, intellect, or any form of excellence are trivialized, criticized, attacked, resented, or excluded. They are a threat to the group and need to be brought down to the mean. Cutting down involves gossip, bullying, ostracism, and sabotage. In spite of this accepted definition, the metaphor is much more complex.

The phenomenon is mostly recorded in the psycho-social literature. It is common in the workplace; consequently clinical medicine should not be spared. We reported what we believed was its first medical report [1]. This case report was followed by other articles and a small observational series [2-6]. We now report a case study involving a person cut down by a peer and a medical institution.

Case Report

Katalin Karikó grew up in Hungary and obtained her Ph.D. in biochemistry in 1982 from the University of Szeged. She continued her postdoctoral research at the Institute of Biochemistry, Biological Research Center of Hungary. In 1985 she lost her laboratory funding and staff position [7].

She moved to Philadelphia in 1985 and served as a postdoctoral fellow at Temple University until 1988. There she participated in a clinical trial in which patients were treated with double-stranded RNA (dsRNA) - novel or groundbreaking research.

In 1988 she left Temple for John Hopkins University potentially committing academic espionage by taking trade secrets. Her Temple advisor advised her that he would have her deported if she accepted the position and reported her to the U.S. immigration authorities. By the time the situation was resolved, Hopkins had rescinded their offer [8,9].

Karikó was now persona non grata but finally found a kindred spirit who hired her at the Uniformed Services University of Health Sciences in Bethesda, MD in 1988. A new opportunity presented itself in 1989 when she was hired by the University of Pennsylvania to work on messenger RNA (mRNA). As an adjunct professor at the Perelman School of Medicine, she submitted her first grant application in which she proposed establishing mRNA-based gene therapy [10].

Her early research showed promise and she obtained a full-time position with a chance for professorship and tenure. However, double-stranded DNA was more stable compared to the single-stranded mRNA which was very unstable and difficult to manipulate. Research grants drifted towards more predictable DNA experiments; mRNA grants disappeared to include Karikó's. She could leave Penn or be demoted which she accepted [10].

In 1997, Drew Weissman, a professor of immunology, arrived at Penn and a collaboration began. Not only was mRNA unstable, but therapeutic use led to inflammatory reactions. While using transfer RNA (tRNA) in a control experiment they noted that tRNA did not provoke an inflammatory response. This led to chemical modification of mRNA which prevented the inflammatory reaction. The molecule could now get into cells to create proteins which was paramount to producing vaccines and drugs [10].

Penn patented their mRNA technology, licensed it, and made millions of dollars from drug companies. In 2020, Karikó and Weissman's technology was used in vaccines for COVID-19 produced by BioNTech and its partner Pfizer and by Moderna [7,9,10].

Karikó works at BioNTeck while maintaining her adjunct professorship at Penn.

Karikó and Weissman won the 2023 Nobel Prize in Physiology and Medicine for the development of mRNA technology [11].

Discussion

One sees what one looks for and one sees what one knows. TPS in America is relatively unknown and under-recognized if known. TPS is more recognizable if it is divided into "peer-to- peer" or "private" versus "public" components. Private TPS involves one's tribe, is more common, and does not necessarily involve a TP such as our case report (now Karikó is a public figure). Public TPS involves bona fide TPs who have committed some egregious act or behavior and the public feels justified in cutting them down [12].

In Karikó's first instance of TPS, the cutter was angry with her and most likely felt justified in cutting her down but the revenge component was more difficult to justify. In the second instance, the cutter institution most likely justified its actions under some mantra like "publish or perish." Institutions are common cutters as are governments but they are seldom mentioned in the TPS definition [13].

The observance of TPS necessitates an unbiased attribution of fault in the cutter or cuttee.

Emotional intelligence is necessary and the observer's self-awareness improves as well as the others as behaviors are identified.

Conclusion

TPS may be more common in medicine than its recognition. Competition and rivalries are breading grounds for TPS and may begin in high school or before. A negative behavior may develop and become a habit. The individual may not be aware of their behavior until TPS.

TPS may involve individuals and institutions. Those involved in TPS and the observer have the opportunity to assess their emotional behavior providing stimulus for self-awareness and behavioral improvement.

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IRB

All information herein is a matter of public record. This is an observational study based on my unbiased observation. The interpretation is based on years of TPS study which includes other scientific articles and a book publication.

Conflicts of Interest

The author declares no conflicts.

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