



Jana Šmardová: „*What Tumors teach US: Parallels in Cell and Human Behavior*“ (MUNI press, 2023)

Originally in Czech: „*Co nás učí nádory: paralely v chování buněk a lidí*“ (MUNI PRes, 2021)

A remarkable book published in Czech by Masaryk University Press in 2021, whose author, Dr. Jana Šmardová, lived to see the completion of the English translation but not its publication. Jana succumbed to cancer in the summer of 2023 after a long, courageous battle. Molecular oncology was her first choice for a lifelong career. She became so intensely involved in the study of malignant tumors that she began, metaphorically speaking, to chat with them and find parallels in them for human society, for the behavior of individuals and society as a whole. She looked for the tumor parallels everywhere, including in the art world. Jana called these cross-connections between the behavior of cells and humans overlaps.

She was comfortable in this niche and allowed it to fully absorb her professional life while keeping a safe distance in her personal life in order to remain a loving wife and mother as well as a wonderful colleague and university teacher. Jana was inspired by Konrad Lorenz' book "The Eight Deadly Sins" (German original 1973, Academie 2000). Professor Konrad Lorenz was an ethologist who studied animal behavior, but the significance of his research and experiences with animals goes far beyond the boundaries of his field. He understood that a pathological disorder is not an insurmountable obstacle to understanding an organic system, but rather a prerequisite for it. And this became the starting point for Jana's ongoing search for overlaps or parallels between the behavior and manifestations of malignant tumor cells and humans, although it should be noted that these are not simplistic mechanistic ideas. Jana started from the eleven hallmarks of tumors described by Hanahan and Weinberg (Cell 144, 646-674, 2011). She used these eleven characteristics to explain the eleven immortal sins in a distant paraphrase of the biblical Decalogue. These sins include man's race against himself (death by overwork); the tumor cell lie (the lie of man and post-factual era); aversion to aging (the eternal desire for the elixir of youth and immortality); non-compliance with rules or chaos versus order (unwritten or written rules such as God's ten decalogue); desire for perfection (selfishness); misuse of resources (egoism, greed, wastefulness and avarice); loss of identity with place of origin (underestimation of the value of relationships and home); distinction between ego and non-ego and circumvention of laws (social parasitism – disregard for the interests of the community by egoists); permanent/destructive mobilization (fascistoid symptoms of the so-called permanent revolution); pride and thinking only of oneself (overestimation of the role of the individual, neglect of the social dimension and the importance of the environment); betrayal in behavior (cooperation between the healthy and malignant parts in an organism and in society).

The author of the book devotes special attention to the tumor suppressor p53, not only because she has devoted a lot of attention to it in her research work, but above all because of its previously known and unknown regulatory functions in the process of carcinogenesis. A whole range of metaphorical human characteristics are attributed to the p53 tumor suppressor, such as wisdom, the art of making the right decisions, responsibility, social sensitivity or the need to serve the whole, and, surprisingly, DIY. Continuous research on the tumor suppressor p53 since its discovery in 1979 confirms that it is, without exaggeration, an evergreen among the molecular factors involved in the control of cancer, around which the network of other molecules is refined. It is therefore not surprising that the entire process of regulating tumor processes represents a structure reminiscent of the relationships in human society. The author of the book has



described the parallels in the behavior of cells and humans in an extremely successful and unique way, both in terms of content and with examples, published scientific results and also her own observations.

The wisdom of life advises us: "Listen to your body if you want to be healthy and prevent acute and chronic problems of your body and mind, if you want to live long and sustainably in good physical and mental health". This undoubtedly also applies to cancers, even if many of them occur insidiously and without the possibility of noticing their asymptomatic latency phase. Of course, this also applies to the preventive well-being of us humans, to maintaining the right microenvironment for physiological processes in the human organ system. Jana Šmardová's message to look for overlaps or parallels in the manifestations of malignant processes with human behavior and social phenomena is instructive, inspiring and benefits our sustainable being. Let us pay tribute to Jana Šmardová, the author of a remarkable and extraordinary literary and scientific work. Let us honor her memory!

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