

## Alfred I. Tauber: Transgressing

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Immunology, as a branch of biology, deals with two fundamental issues. First, what features make one particular group of organisms unique and distinct from other organisms of similar kind? Second, how are the mechanisms that protect organisms from their predators built and maintained? Until after World War II immunology lacked formal theoretical approach to these issues, but it was delivered with an introduction of “the self” notion. Alfred I. Tauber is one of the most important and qualified scientist involved in studies of this concept in the field of immunology. For this reason, I will begin this introduction with a short biography of Alfred Tauber. In second part, I will briefly describe the notion of the immune self.



Picture source: Alfred I. Tauber's archives.

### **Alfred I. Tauber – life and areas of interest**

Asked by us about his favorite free time activities, he answers that he *like[s] to think*. He is a Professor of Philosophy at the Boston University Department of Philosophy and Zoltan Kohn Professor of Medicine at the Boston University School of Medicine. He also teaches philosophy of science at Tel Aviv University as a visiting professor. In the years 2003–2010 he served as the Director of the Center for Philosophy and History of Science and in 2008 he was awarded the Medal for Science, which is the highest honor awarded by the Institute of Advanced Studies at the University of Bologna. However, Alfred Tauber is a hematologist and biochemist by training. Before joining the Boston University School of Medicine in 1982 he was associated with the University of Washington Affiliated Hospitals, Tufts-New England Medical Center, Brigham and Women’s Hospital (Boston) Harvard Medical School and MIT. His bibliography includes 9 books (monographs); 13 edited works; 70 history and philosophy of science/medicine papers; 27 ethics papers; 6 Ameri-

can philosophy papers; 46 book reviews, short introductions, and book forewords; 85 original scientific reports; 23 scientific reviews, letters, and book chapters; 47 scientific abstracts. He is the author of *The Immune Self, Theory or Metaphor?* (Cambridge 1994), *Confessions of a Medicine Man, An Essay in Popular Philosophy* (MIT 1999), *Henry David Thoreau and the Moral Agency of Knowing* (California 2001), *Patient Autonomy and the Ethics of Responsibility* (MIT 2005), *Science and its Quest for Meaning* (Baylor University Press 2009), *Freud, the Reluctant Philosopher* (Princeton 2010) and (submitted) *Requiem for the Ego. Heidegger, Adorno, and Wittgenstein on Freud*. In his own words, the clash between his two careers (that of a philosopher and that of a biomedical researcher) and the necessity to build a bridge between them were his main sources of inspiration. In *David Thoreau and the Moral Agency of Knowing* (2001) Tauber explores the problem of bridging scientific knowledge and personal meaning. The philosophy of Thoreau serves him as an example of such translation, in which moral, aesthetic, and spiritual dimensions of experience might cohere within the reality offered by science. *Science and the Quest for Meaning* (2009) can be seen as continuation of this issue. In this book Tauber states that there must be a kind of a correspondence between science and the notions both of social reality and of the existential placement of humans in their natural cosmos, although he admits that there cannot be a complete union between the metaphysics of science and the metaphysics of personal experience. Similar tension, arising from a necessity of reconciling scientific objectivity with patient-centered healing process and compassion, resulted in the largely autobiographical *Confessions of a Medicine Man* (1999). Set in the same area was *Patient Autonomy and the Ethics of Responsibility* (2005), where Tauber offered detailed examination of the doctor-patient relation. He stated that the notion of identity, constructed on economical and judicial grounds, where individual is an almost utterly autonomous consumer, is misleading, and that physician responsibility must be based on identity construed in mutual, doctor-patient relation. The topic of responsibility is also present in *Freud, the Reluctant Philosopher* (2010), where Tauber, passing over the scientific status of psychoanalysis, concentrates on humane observations made by Freud, namely, that we should discover the subconscious motives of our behavior and take responsibility for who we are. Tauber calls his guiding philosophy a “moral epistemology” and describes it as the inextricable weaving of our personal values into our knowledge and into our ways of knowing. In his view, awareness of this correlations can give us, at least potentially, the freedom of exercising moral responsibility.

### **Immunology and immune self**

According to the classic account of immunology, immune system of an organism destroys external and dangerous elements – pathogens, foreign substances, altered host elements, etc. – and ignores elements belonging to the host. Thus, the central distinction of immunology is between what is host and what is other, which was called the “self/non-self discrimination” due to the importance of the underlying

notion of self. The very notions of self and non-self were introduced into immunology by Sir Frank Macfarlane Burnet. According to his statements, immune system can be regarded as silent (when ignoring certain elements) or active (when doing the opposite), and thus we talk about the immune's system tolerance. Foreign elements are destroyed by immune cells and their products, whereas the normal constituents of the individual are ignored (tolerated). In other words, the boundaries of the host organism are defined by immune reactivity. What is attacked is other and what is regarded by immune silence is the selfhood. This model was approved by immunologists due to the so-called mechanism of acquired immunity. In brief, there are two stages of this mechanism. Firstly, as soon as the organism is informed about the appearance and activity of pathogens, it unleashes its immune cells in a strong immune reaction. During this process the immune system learns about the hostile pathogens and destroys them. Thus, each subsequent invasion of identical or similar pathogens will be repulsed in a quicker and more effective way. Because of this, the self/non-self discrimination passed from the status of a theory to that of a paradigm, and became regarded no longer as a theory, but as a fact. However, such approach had to deal with a vast body of experimental data that was incompatible with theories build upon Burnet's view. Namely, on the one hand, the immune system can not only tolerate host elements, but also ignore the presence of external, foreign components; on the other hand, the immune system can also destroy cells regarded typically as belonging to the host – this situation happens not only due to, for example, cancer, but is also a normal, desired activity resulting from the physiological economy. These discoveries led to a recognition that the classical theory, in which the host can be described as a fortress, from which the forces of lymphocytes can sally forth to destroy attackers, is a naïve and inaccurate description. In fact, the immune system turned out to be based on a dynamic equilibrium, in which the attacked and the tolerated are not easily predicated, rather than on simple warlike vision. Although the supporters of the self/non-self distinction tried to enforce their statements by incorporating the surveillance of the body for malignant, effete, damaged, or dead host constituents (altered "normal" cells), as well as the autoimmune processes directed against properly working elements, Alfred I. Tauber in *The Immune Self, Theory or Metaphor?* (1994) argues that the self/not-self distinction cannot remain unchallenged after sequential blows caused by modern discoveries. Since the immune system is constructed not on the basis of a simple foreign/host distinction, but rather on the basis of the balance of foreign and host elements, the biological notion of self becomes fluid and dependent from its environment. In short, there can be no circumscribed, self-defined entity that is designated as the self. According to Tauber, instead of reformulating the classic self/non-self distinction, we should replace it by a spectrum of divisions based on a gradation of immune responses.

**Conclusion**

Alfred I. Tauber is undoubtedly an authority on the philosophy of immunology. However, we should look at his work within the big picture, where the philosophy of science meets his moral epistemology. There is always a discreet interplay between the values of society and its science. On the one hand, values affect the way we construe and understand metaphors in science and the way we create facts. On the other hand, science (especially modern, non-intuitive) forces us to reframe our experience and to try to reconcile different world models. Although the philosophy of immunology seems to be far away from everyday experience, it deals with one of the most basic notions, and thus can contribute to our understanding of ourselves, even if mainly on the ground of biology.

**Alfred I. Tauber's website:** <http://blogs.bu.edu/ait/>