

VISUAL METAPHORS OF HUMAN ANATOMY

By Michael Nevins

Images often convey ideas more effectively than words. In order to explain medical developments during their own times, three physicians TUVIAH KOHN (1652-1729), FRITZ KAHN (1888-1968) and MARK PODWAL (b.1945) sometimes employed visual metaphors of human anatomy.



Portrait of Tuviah Kohn, from title page of his book *Ma'aseh Tuviah*

TUVIAH KOHN (alt. Tobias Katz, Toviyyah ha-Kohen, Tuviah HaRofe) was born in 1652 in Metz in northeastern France. His father and grandfather were physicians who fled Cossack pogroms in Ukraine to settle in Cracow where the young man studied in a yeshiva and became familiar with ten languages. At the age of twenty-six Tuviah entered the University of Frankfurt on Oder to study medicine, but rampant antisemitism caused him to transfer to Padua which was congenial to Jews. After receiving his medical degree in 1683, Tuviah began an odyssey that led him from Italy back to Poland and eventually Constantinople where he served as court physician to five successive Ottoman sultans.

In 1707 at the age fifty-five, Tuviah published an encyclopedia that in addition to contemporary medicine, discussed hygiene, astronomy, botany, philosophy and religion. The massive book, *Sefer Ma'aseh Tuviah* (The Work of Tuviah), was written in Hebrew in order to acquaint his Jewish community with "new science."

Those who permit themselves to be treated by a physician who has not studied the entire theory of medicine can be likened to those who, when journeying on an ocean, entrust their fate to the winds; sometimes the winds drive the ship to its destination, but more often they cause it to sink. Those who think any kind of practice makes a good physician are sadly mistaken.

Tuviah Kohn relied on classic teachings of Hippocrates and Galen and, although he was one of the first to accept Harvey's recent explanation of human circulation, he rejected the astronomic theories of Copernicus. To be sure, he recommended laxatives and emetics, cupping and bleeding and various folk remedies and nostrums and, although he generally eschewed superstition and magic, he attributed certain ailments to the work of demons and found no reason to doubt the existence of centaurs or mermaids.

Illustrations contained in *Ma'aseh Tuviah* enhanced reader's interest, especially the engraved image of a human body that is compared to a tall building (below.) On the left is a schematic of the torso of a dissected body and on the right a four story house with a roof and chimney; the various organs as functional parts of a house; liver and gall bladder as an oven, kidneys correspond to a fountain, the stomach a smoking cauldron; the head as the roof, eyes as windows, etc.



Tuviah Kohn retired from the sultan's court at age 62 and moved to Jerusalem in order to spend his remaining days studying "the crowned texts" (Torah). He wished to retreat from the challenging world of medical science in favor of quiet contemplation of Jewish wisdom, but couldn't have picked a worse time to make *aliya*. The tiny and destitute Ashkenazic community was being harassed and extorted by corrupt caliphs and in 1720 their synagogue was burned down and forty Torah scrolls destroyed.

Tuviah Kohn did what he could to help both materially and medically, but after five years of chaos and having exhausted his entire fortune, he died and was buried on the Mount of Olives.

Tuviah never achieved the tranquility that he yearned for in the Holy Land and his attempt to reconcile Jewish tradition with emerging medical science met with only partial success. The methodology of Talmudic discourse (*pilpul*) was well-suited for scientific analysis and by Tuviah's time "the people of the book" were reading new texts, as if the locus of learning was shifting from the traditional book stand (*shtender*) to the laboratory bench. The opportunity to participate in mainstream culture was described as being "like persons suddenly treated to a delicious meal" and in the Introduction to his book Tuviah Kohn added the following:

Medicine is a very simple science if it is practiced by charlatans. On the other hand, it is a very difficult one when practiced by a schooled physician. The flowering of a new medicine dwells in the bosom of the physician of our time....The method which modern physicians use with constancy and reflective analysis has led them to new discoveries....Thus they have enlightened us so that they could establish in our time a practical method of medicine.

Although Tuviah attempted to reconcile traditional practices with emerging scientific developments, he recognized this could be challenging for Jewish students who like him came from European backwaters. In order to preserve their Jewish identities if they delved too deeply into secular studies, Tuviah offered a simple caveat: "No Jew in all the lands of Italy, Poland, Germany and France should consider studying medicine without first filling his belly with the written and oral Torah and other subjects."

During the Middle Ages Jews generally were reviled, but some Jewish doctors were revered – even feared — and numerous royal and ecclesiastical courts employed Jewish physicians. Jewish society in Europe was close-knit and insular, a veritable world unto itself, but by Tuviah's time their isolation was changing with the adoption of gentile modes of thinking by adherents of the *Haskala* (Jewish Enlightenment.)

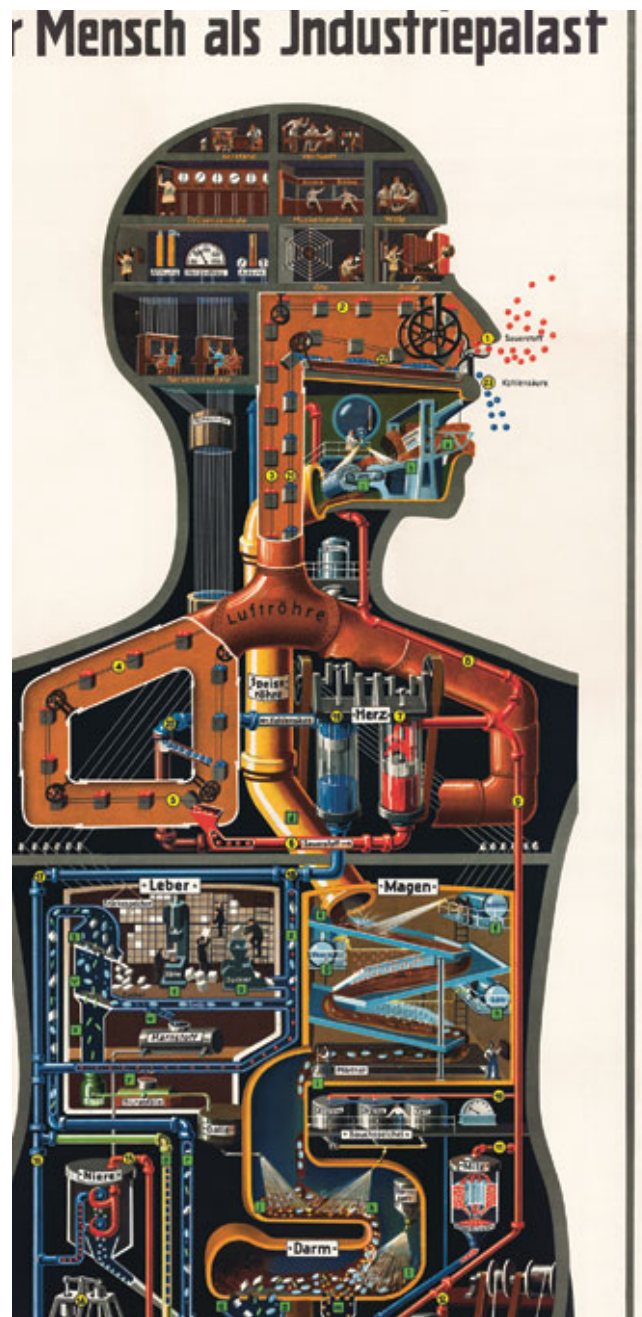
In Russia during the relatively liberal reign of Czar Alexander II (1861-1881) many Jews thought they stood on the threshold of a new society of rational men. The number of Jewish university students rose one hundred fold and graduates were free to live outside the Pale of Settlement, but when Alexander II was assassinated in 1881, pogroms proliferated, emigration spiked and a steady brain drain began out of eastern Europe.

Now let's fast forward to the 20th century to consider another Jewish physician, Fritz Kahn who, much like Tuviah Kohn, employed visual metaphors to clarify medical knowledge during his own time.



Fritz Kahn at work at his home in 1916

FRITZ KAHN was born in Halle, Germany in 1888 (about 400 miles distant from Tuviah Kohn's birthplace.) The son of a Jewish physician, he earned a medical degree in Berlin in 1912, served in the German army during World War I and later practiced as a gynecologist and surgeon. Like his predecessor Tuviah Kohn, Dr. Kahn was a wanderer variously living in Germany, Palestine (1931-1937), France, Denmark, Spain, the United States, Portugal and Switzerland.



"Man as Industrial Palace", 1926

Fritz Kahn many books written over his fifty year career contained hundreds of illustrations drawn by professional artists. His main work *Leben des Menschen* (The Life of Man) included a poster created by Fritz Schuler called *Man as Industrial Palace* (above) that provided a picture of the human body's inner life. It first appeared in the book's fourth edition in 1926, became widely known as "Machine Man" and during the Nazi regime the author's Jewish name sometimes was deleted or replaced by an Aryan name.



"Modern Technology Expanding the Doctor's Scope." 1925

The illustration shown above comes from a three part series called *The Doctor of the Future*. A well-dressed doctor sits before his desk facing a control panel and remotely monitoring patients. On his left is a textbook and before him a clock and telephone; displayed on the wall are cardiac and respiratory tracings and displays of blood pressure, temperature and a chest X-ray.

As Dr. Kahn explained:

The good old house doctor who prescribed his mysterious recipes...will become a bioengineer in the future, who considers the human body as an organism whose functions he checks with similar methods and apparatuses as an engineer checks the operations of his machines....The doctor of the future will no longer have to visit the patient's bedside daily, enduring wind and weather, to learn about the condition of the heart....Yesterday's utopia is today's truth. Today's utopia is tomorrow's truth.

In their recent article in the *Journal of the American Medical Association* (June 4, 2024) C.A. Voltin and L.S. Zuckier observed that Fritz Kahn anticipated the advent of a new era of telemedicine when experienced “world doctors” would provide remote consultations. They added that, to his credit, Dr. Kahn later expressed concern regarding potential changes to the patient-physician interaction driven by the new technology — “a concern that remains valid today.”

Fritz Kahn hardly was a lone voice in the wilderness when suggesting that medical practice involved more than technical skill. The famous Johns Hopkins physician William Osler at the end of the 19th century had admonished colleagues to “care more particularly for the individual patient than for the special features of the disease.” And when Rabbi Abraham Joshua Heschel addressed the American Medical Association in 1963, he was blunt and didn't resort to metaphors: “The crisis in the doctor-patient relationship is part of an ominous, unhealthy, livid condition of human relations in our society....The mechanics of medicine must not be mistaken for the very essence of medicine which is an art, not alone a science.”

In 1933 Fritz Kahn and his family were expelled from Germany and sought refuge in Palestine. After several years they returned to France where he was arrested on charges of espionage but with influence from relatives, he was released and fled to Spain. In Germany his books were seized, burned and listed as “damaging and undesirable writing.” With the help of Albert Einstein, who in 1940 wrote a letter to the U.S. consul in Portugal on his behalf, the Kahns obtained visitor's visas to the United States. Although his accomplishments were described in *Life Magazine*, Dr. Kahn was unable to make a living here and returned to Europe where he continued his writing and travels and after a long illness died at a spa in Italy in 1968, his ashes scattered on Lake Maggiore.

MARK PODWAL is a renowned doctor-artist of our day whose whimsical drawings usually reflect Jewish themes. However, the ink drawing shown below, provides a visual metaphor of a more universal theme. It was adapted from the 16th century anatomist Vesalius' famous dissection etching and, titled "Dying," it suggests complex medical or ethical challenges that sometimes must be confronted as time is running out. As author Cynthia Ozick once opined, Mark Podwal's "unifying eye [makes] connections so new that they shake the brain into fresh juxtapositions of understanding."

