Forward

"A regular polyhedron is identified by its Schlafi symbol, defined by the form {n, m}, where n is the number of sides of each face and m the number of faces meeting at each vertex. There are five convex regular polyhedra, known as the Platonic solids, as illustrated in Wikipedia:"

The Platonic Solids



I am a published mathematician and an incidental anthropologist, residing in the woods of northern Oregon. Here is a little background so you know who has authored this book for you. For the past seven years, since my retirement, I have been living in seclusion at my home. My approach to geometric unity takes a unique direction, aiming to create a robust foundation for a complex multidimensional geodesic geometry based on the Platonic solids. This geometry's multiple dimensions unify the lefthanded and the right-handed coordinate systems, by defining the left on the inside surface. The difference between left-handed and right-handed systems is defined here so that the x-axis is directed to the left and the yaxis to the right, then the z-axis points towards you and defines a righthanded coordinate system. If the z-axis points away from you, it is a lefthanded system. The systems mirror each other, which is the key to their unification.

The mathematics I present was not created by me but given to me by advanced beings on Mount Shasta. Chapter One relates my near-death experience and how I learned about this mathematics. This book chronicles my journey to publication and shares related stories along the way. Please feel free to explore chapters that catch your interest. Chapter Two contains my published paper, Optimal Spherical Packing of Circles and Hilbert's 14th Problem. In the paper's image of the dual tetrahedra symbolizes an observer facing us. We desire the observer to have the same orientation as the reader. This is one of the reasons why the image and matrices are incorrect. We correct the matrices and images in later papers. I changed my original paper from the Internet to make it more readable, otherwise, it remains completely original. For those not versed in mathematics, focus on the history and concepts rather than the detailed mathematics. Subsequent chapters will not include the mathematics, thus eliminating the duplication of the mathematics in all the other papers.

My passion for mathematics ignited in 1959 during my freshman year of high school. My journey of discovery began one day in my first-year algebra class in Billings, Montana. Earl Halverson, our teacher, was explaining complex numbers. He drew a horizontal real number line on the blackboard labeled x, then a vertical imaginary number line labeled iy. I raised my hand and asked, "How does that differ from the real number line y?" He turned to the blackboard, erased equal portions of the line, creating a broken line, then turning back to the class, he said, "James, I know you're taking mechanical drawing, so imagine that this imaginary axis is on the backside of this blackboard!" Thanks to my creative teacher, I realized that imaginary numbers could represent real things.

This teaching aid for imaginary numbers is foundational to developing a new yet ancient axiomatic geometry. Being confined to an imaginary Euclidean box for 2400 years has limited our perception to three dimensions. The extra dimensions of our world are not hidden in invisible imaginary spaces but are all around us, participating in our daily experiences. Models can be constructed to visualize these concepts. Euclid of Alexandria's work, *The Elements*, taught us the geometry we learned in school. By revisiting concepts from Book XIII of *The Elements*, we will uncover these extra dimensions, and help you visualize why our world is 26-dimensional.

By my senior year, I felt that mathematics, particularly geometry, was like a house of cards built on sand. My ambition was to fix that. However, after flunking out of college at Montana State University in Bozeman, I found myself high on the draft board's list. When my draft notice arrived, I put it back in the mailbox, went downtown, and joined the Navy. That night, I came home late for dinner, and my draft notice was sitting on my plate. I tore it up, to my mother's shock. She said, "You cannot do that." I replied, "Yes, I can, because I'm in the Navy." My stepfather Gabriel, an ex-Navy man, responded, "Congratulations, son, you made an excellent choice." Nine months later, I was on my way to Vietnam. I spent half a century practicing medicine, starting as a Navy hospital corpsman in Vietnam, serving on the USS Bonhomme Richard CVA31 from 1964-1965, and with the United States Marine Corps, 1st Marine Division, I Core, in South Vietnam from 1967-1969.

I graduated from the University of California, Hayward, in 1971 with a Bachelor of Science in Physical Science and a minor in Anthropology. Digging into the past has always been my favorite escape of mine. During my junior year at Hayward, I attended a seminar by R. Buckminster Fuller. By the end of his lectures, I decided to become a generalist rather than a specialist, switching my major from chemistry to physical science and graduating the next spring. The country was in a recession, with gas rationing.

After graduation, I only went to one job interview, which was at Lawrence Livermore Lab in Berkeley, California. I had applied for the job in the mail and sent my DD214 along with my letter. When I arrived late, there were eight other candidates in the waiting room. Six were PhDs, and the remaining two had master's degrees. One of them asked me my name, and when I answered, "VanDyke," they all started to laugh. The interviewer opened his office door at that moment and asked, "What is so funny?" When someone responded that VanDyke just showed up, he said, "You will not be laughing if he takes the job," then he asked me to come into his office. When I sat down, I said to the interviewer, "After your statement, I have just two questions. Why am I more qualified than the other candidates, and what would my salary be after working for one year?" His response was, "Besides being the only veteran, you are the only candidate who has a security clearance already in our file, and your medical experience in the service makes you best suited for the job." When he told me what my salary would be after working a year, I answered, "I am going to pass on the job offer. Unlike the other candidates, I have a job; I am already working, and my salary now is more than what you can offer after a

year of employment. By returning to school, I will be able to complete a Registered Nursing program in a year and double my salary." That was my choice, and I have never regretted that decision.

I entered the Chabot College school of Nursing, Hayward, in the fall of 1973 and graduated in the spring of 1974. A month later, I had my first job at Saint Rose Hospital in Hayward as an RN that doubled my salary. The following year, the anesthesiologist gave a strike notice. My supervisor called me into her office and said, "James, since you started working you have never called in sick. Because of the strike, you will be one of the first employees to be let go. So tomorrow, I want you to call in sick and go look for a new job." Two days later, I went back to work, and when my supervisor asked what was going on, I said, "I have a new job at Kaiser Hospital in Redwood City, and I start in two weeks." I worked in the Operating Room at Kaiser Hospital for the next 41 years. In 1989, I began job sharing, working two weeks on and two weeks off until retirement, allowing me ample time to pursue my interests. Please enjoy this book, which is the culmination of 35 years of investigative work.



Your author James R. VanDyke thanks you.