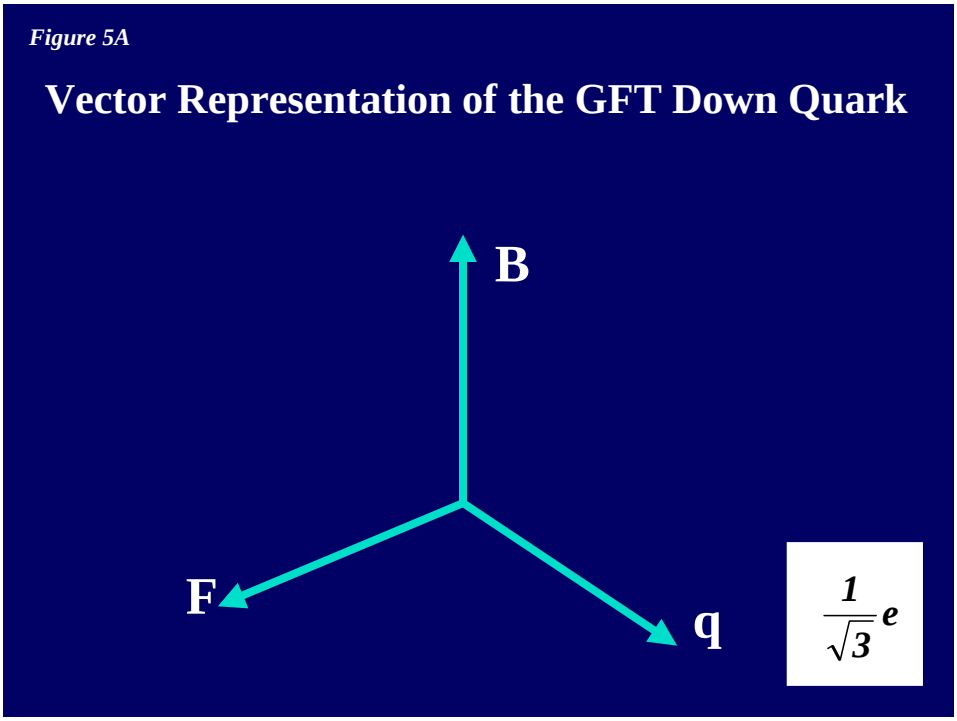
CHAPTER SIX

Fractional Charge and the Creation of Composite Quarks

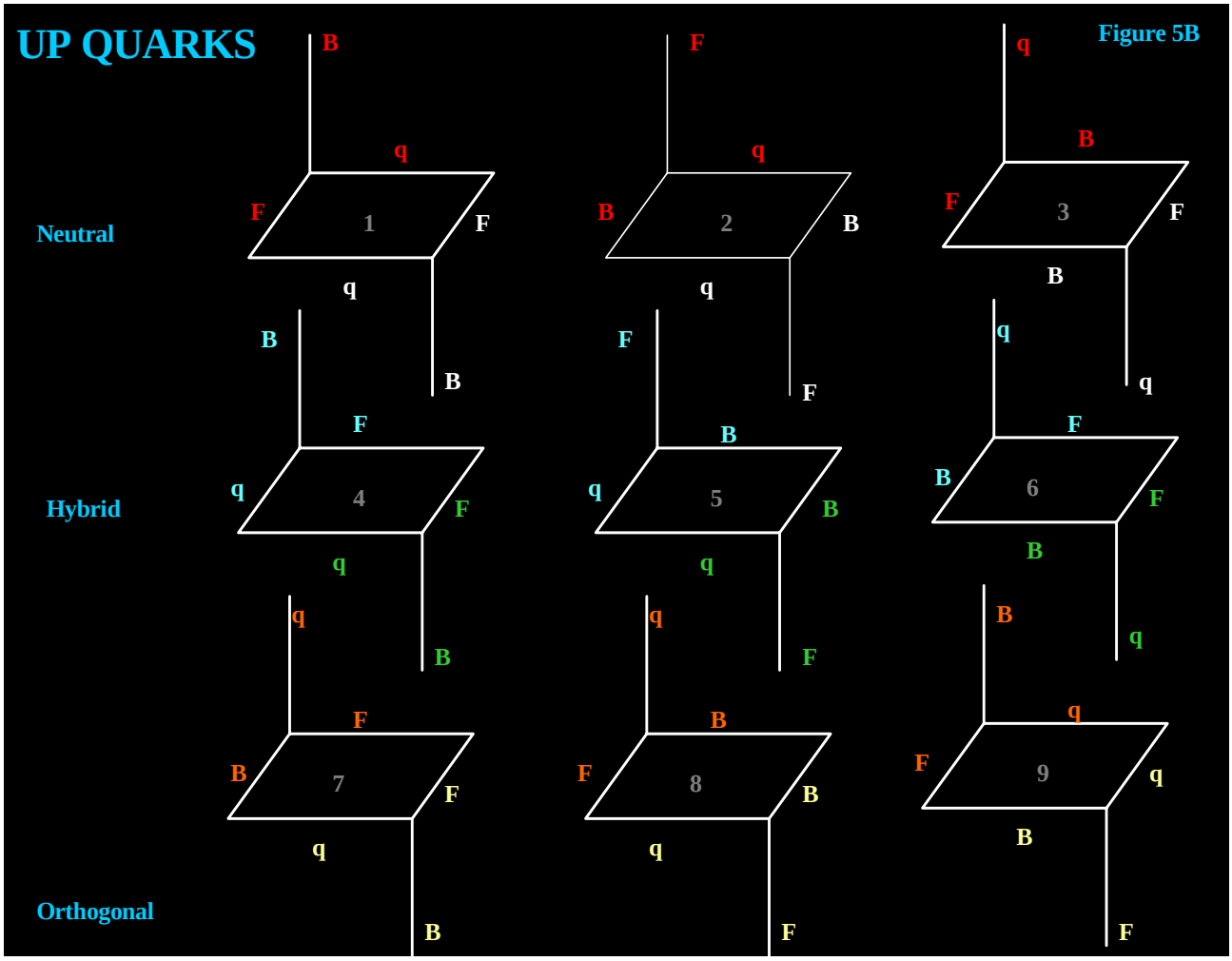
The GFT finds that an elementary quantum of space is the GFT down quark. The GFT defines a quark as any entity possessing a fractional charge. We assign this quark a charge of $\left|\frac{1}{\sqrt{3}}e\right|$. (This seemingly arbitrary assignment of charge will be justified in Chapter Nine)

Figure 5A



An accelerated quark, as with any accelerated charge, will evince mutually perpendicular velocity, electric, and magnetic vectors. An accelerated charge, subjected to a perpendicularly directed magnetic field B, will orbit in a circle. Two quarks of the same polarity, propagating in opposite directions, may form opposing B fields. We allow the opposing B fields of each quark to influence their respective opposing charged counterpart. This induces the charges to assume a common orbit, each quark spinning in opposite directions. This pair of interacting GFT down quarks is generally referred to as a GFT up quark. There is no radiation of energy from the spinning charges thus there is no violation of Maxwell's laws of electromagnetism.

Two interacting GFT down quarks may assume several possible configurations. Refer to Figures 5B.



The q vectors of conformers 1, 2,3 and 6 are equal and opposite thus forming neutral structures. The q vectors of conformers 4,5,7,8, and 9 are orthogonal and thus the charges must add vectorially. The vector addition of these fractional charges will yield a resultant charge of $\left|\frac{\sqrt{2}}{\sqrt{3}}e\right|$ **. These conformers form a family of GFT up quarks. The orthogonal vector addition of charge (TOVAC) and the interaction of fractional charges will play a crucial role in the formation of the electron and photon. It is worth noting that the GFT has introduced several concepts that seemingly violate a whole series of laws and principles, the most serious of which are the absence of synchrotron or bremsstrahlung radiation upon rotation of the quarks, and the possibility of opposing spins occupying a common orbit. In Chapter Five a rigorous gyrodynamic proof was presented describing the**

absence of synchrotron energy by a precessing electron however, there has not been any proof provided that these gyrodynamic principles apply to the GFT up quark. The notion that any charged particle may orbit about in a circle and not lose energy has been thoroughly discredited. Indeed this was the fatal flaw in Bohr's planetary model of the atom which subsequently ushered in the advent of quantum mechanics. This apparent absence must be fully explained. Lastly, opposing spins in a common orbit is tantamount to a collision and cannot be sustained. Such orbits are implied by several of the conformers. These apparent flaws will be addressed and reconciled in Chapter Seven.