BRIAN O’BRIEN

2 January 1898 - 1 July 1992

PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL SOCIETY  VOL. 145, NO. 3, SEPTEMBER 2001
The most profound influence from my college years was Professor Brian O’Brien, who was the director of the Institute of Optics at the University of Rochester, starting in 1938. Some of my younger colleagues may have trouble understanding how optical science could be so exciting in those days, when there were no lasers, no holograms, no space telescopes. But it was. I guess you had to be there.

When I arrived as an incoming freshman, Professor O’Brien greeted us with a short talk. Referring to the small fraction of the populace that went to college in those days, he said, “Gentlemen, welcome to the minority.” That was not elitism, but a statement of fact. As he put it, “You will now acquire a set of values and opinions that may seldom prevail.” Like others of his generation, O’Brien felt that education is a privilege, to be paid for by making one’s life count for something; and that what counts most of all is to contribute to man’s understanding of nature—to be a scientist. I don’t think he foresaw, in those innocent times before World War II, the political power that some scientists of his generation would wield in the postwar years, though he might have predicted the anti-intellectual reaction that followed.

During my undergraduate years, Professor O’Brien was often away from Rochester, in Washington or at some military test site. World War II had already started in Europe, and like most of his scientific peers, he was determined to make the maximum possible contribution to winning it.

In his campaign to apply the resources of the Institute to the war effort, Professor O’Brien fully included the undergraduates. Being short-handed, he improvised. Every optics major had a job, some on government projects, some as T.A.’s. Far from impairing our education, this wartime training gave us more motivation and resourcefulness than peacetime had ever provided.

Professor O’Brien treated everyone who graduated as an important national resource, moving heaven and earth to place him in the most useful situation possible. My entire class, some in uniform and some not, went off to Washington or Oak Ridge or some such place. “For the convenience of the Government,” our orders read.

There was an apocryphal story about his career as a military consultant, which everyone had heard, but as with most apocryphal stories, an eyewitness could not be found. I repeat it only because, even if it’s not true, it illustrates so well the kind of awe in which he was held.

Out in the Atlantic, a battleship and its flotilla are testing some new instrumentation (we didn’t call it a “weapons system” in those days). Down the deck strides Professor O’Brien, deep in conversation with the admiral on his right and the general on his left. They are
approaching The Black Box, which is strategically placed on the deck with its various appurtenances. In charge of this mysterious device is a baffled young sailor, scratching his head as he looks at the two connectors on top. Then he sees The Great Man approaching, his face brightens, and he holds up two wires: “Which one, doctor?”

Now of course O’Brien has no more idea “which one” than any of the other actors in this little drama, but he thinks faster. He quickly calculates the probability of being wrong and multiplies it by the small amount of damage that would entail. He compares it to the much greater harm that would result from confessing his ignorance in front of the High Brass. Without breaking his stride, he points: “That one!” and the group moves on, with all expectations intact. (Did he guess right? The story never includes that information. After all, that’s not the point.)

Partly in recognition of his work for the government during World War II, O’Brien won the Optical Society’s highest award in 1951, and then became its president. An alumnus of both Harvard and Yale, his inventions ranged from irradiated milk to military instruments. He pioneered the development of fiber optics, and studied waveguide effects in polystyrene models of retinal cone cells, scaled up 80,000 times to match the wavelength of the then-available K-band klystron. He was also an accomplished airplane pilot.

Trained as a physicist, Professor O’Brien taught physiological optics with the skill of a virtuoso. He made me believe that the days of Leonardo and Helmholtz were not dead—that a man could still master anything worth knowing, if he would but put his mind to it. Behind his back, his students all called him “Butch,” and I’m sure he knew it. Imagine a tall, thin, very dignified incarnation of Dr. Who—the man of action who knows everything. Now add an Irish twinkle. That was O’Brien. After a storybook career in academia and industry, and even a brush with Hollywood as the inventor of the Todd-AO wide screen process, he died peacefully in 1992 at the age of ninety-four.

Elected 1953

DONALD H. KELLY
Principal Scientist
SRI International

Donald H. Kelly died in 1997. These remarks were also adapted as “Brian O’Brien, Real and Apocryphal,” for the Rochester Review (University of Rochester) 59.1 (Fall 1996). They are used with the cooperation and permission of Dr. Kelly’s son, George B. Kelly.