

# A Memory of John Tukey as a Teacher

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*Abstract.* John Tukey was an inspiring teacher, encouraging his students to think by expressing new ideas in provocative ways, and by tolerating a wide range of questions and discussion in class.

I was a student at Princeton in 1960–1962. Let me tell you about John Tukey’s unique style as a teacher. He would sometimes teach elementary classes on exploratory data analysis, for example, and sometimes on research topics that he was working on, such as time series analysis or robustness methodology. It made no difference what the nominal level or the subject matter was, the classes were always strikingly original in presentation and content. There were many new words, not order statistic, but *orstat*, not median, but *hinge*. But more than new words, there were new, different ways of thinking about the subject matter. He always aimed to shake you out of old ways of thinking. I remember in one of the robustness classes a demonstration that a tiny little blip in the Gaussian density way out in the tails could have a huge effect on the variance of the mean, and how, in practice, could you know that there was no such blip? I have my doubts about the new words, since it made for uneasy communication with people who hadn’t been

neologized, but I loved the new ideas. And what I really liked about the classes was the openness to questions. Even stupid or impertinent questions were accepted and considered. John didn’t like to do things in expected ways; he would always try to discover the real intent and cause of the question, to educate the questioner, sometimes at length, rather than dispose of the question as quickly as possible, and to answer the question in a way that would make the class think. My previous professors usually had a look on their face that said, “Oh God, here is Hartigan asking a question again, interfering with the regular course of the lecture!” but John liked questions. If there hadn’t been any for a while, he would name one of the students, and say “Don, you look like you are about ready to ask a question,” and Don would perhaps demur, or more likely desperately try to think of something intelligent to say. I will tell you one thing, you didn’t do much looking at the clock during John Tukey’s classes!

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