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SOCIETY OF ACTUARIES

Substitute One Mis-impression

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he long-standing motto of the Society of Actuaries, from John Ruskin, is "The work of science is to substitute facts for appearances and demonstrations for impressions." We have always had the IMPRESSSION that it means our job, as actuarial scientists, is to pursue facts, and facts only. But this time, we decided to substitute our impressions with demonstrations. Mark Googled the quote.

The quote is from Mr. John Ruskin's book, *The Stone of Venice*, Volume 3, page 36. The book is about Venice's architecture. But Mr. Ruskin, as a good actuary, went on commenting on something broader, the relationship between art and science in his term. Here is the context of the quote:

VIII. Science and art are commonly distinguished by the nature of their actions; the one as knowing, the other as changing, producing, or creating. But there is a still more important distinction in the nature of the things they deal with. Science deals exclusively with things as they are in themselves; and art exclusively with things as they affect the human senses and human soul.* Her work is to portray the appearance of things, and to deepen the natural impressions which they produce upon living creatures. The work of science is to substitute facts for appearances, and demonstrations for impressions. Both, observe, are equally concerned with truth; the one with truth of aspect, the other with truth of essence. Art does not represent things falsely, but truly as they appear to mankind. Science studies the relations of things to each other: but art studies only their relations to man; and it requires of everything which is submitted to it imperatively this, and only this, what that thing is to the human eyes and human heart, what it has to say to men, and what it can become to them: a field of question just as much vaster than that of science, as the soul is larger than the material creation.

* Or, more briefly, science has to do with facts, art with phenomena. To science, phenomena are of use only as they lead to facts; and to art facts are of use only as they lead to phenomena. I use the word "art" here with reference to the fine art only, for the lower arts of mechanical production I should reserve the word "manufacture."

Mr. Ruskin's definitions of art and science are different from what most people would think about today. Mr. Ruskin, as part of his religious belief, believed that truth is static and universal—a bit mysterious, but there waiting for us to discover. Starting from this belief, he drew a line between art and science. Many branches of modern philosophy of science would argue otherwise.

However, none of those ideas is as surprising to me as how much I misread the quote. Before, I thought Mr. Ruskin must loathe appearance and impression. I reasoned that they are subjective, volatile, unreliable and therefore unscientific. We have to substitute them with something objective, concrete and "scientific." Obviously, as an art historian, Mr. Ruskin had no interest to down-play "art." Actually, he even rated art higher than science. To Mr. Ruskin, the truth already exists, and produces influence over us, over our souls. The work of science is to express this influence with facts, to substantiate the impression, not to dispute or fight against. To some extent, he was calling appearance and impressions prophets for science. In Ruskin's time, over a century ago, we thought that facts were far more important than impressions. Yet now, we realize that perception is often more important than reality. In fact, the burgeoning science of behavioral economics is focused on exactly that issue.

The well-known example of *The Economist* magazine pricing (from Dan Ariely's book, *Predictably Irrational*) is one notable example:

When given the choice between two subscription arrangements, the online version for \$59 and the print plus online version for \$125, over 2/3 of a group of MIT students chose the \$59 online version. Yet, when

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Da e S e., ASA, MAAA, s wec * * e a e s w w RGA Re s a ce C a C oswe fed, M . He ca be eac ed aw of e @ a e.t . a print-only version for \$125 was added to the mix of choices, a similar group overwhelmingly (over 85 percent) chose the \$125 print plus online version. The clear facts were that the print plus online version still cost \$66 more than the online version, but the inclusion of an obviously less attractive option made it