Any evaluation of evaluations has to start with the advent of the scientific method. And though there’s been debate over variations of it, and certainly early historical accounts of observation and inquiry, most agree that it was ancient Greeks who engaged in the earliest forms of what is today recognized as rational theoretical science. Towards the middle of the 5th century B.C., some elements of scientific tradition were already heavily established. That was before Plato, a pretty impressive figure in his own right, mentored his student, Aristotle, who later argued the differences between inductive and deductive reasoning, and became the father of the whole concept of scientific method. You know, things like empiricism, universal truths, and scientific inquiry and demonstration.

In the meantime, in the 3rd and 4th centuries B.C., the Greek physicians Herophilus and Erasistratus of Chios—thankfully no Starbucks barista had to note their names on a coffee cup—employed experiments to further their medical research. Erasistratus is remembered for his study of repeatedly weighing a caged bird and noting its weight loss between feeding times. We’re just glad we weren’t in that lab when the bird turned hangry.

Let’s get geotechnical

That is, until several foundation-related engineering problems (Hello, Leaning Tower of Pisa, we’re talking to you), prompted scientists to take a more, well, science-based approach to examining the subsurface. The earliest advances occurred in the development of earth pressure theories for the construction of retaining walls. Henri Gautier, a French Royal Engineer, recognized the “natural slope” of different soils in 1717, an idea later known as the soil’s angle of repose. Of course, modern geotechnical engineering began in 1925 with Karl Terzaghi. The father of modern soil mechanics and geotechnical engineering, Terzaghi developed the principle of effective stress, and demonstrated that the shear strength of soil is controlled by effective stress, among other theoretical frameworks.

Ancient Chinese secret?

Of course, our field isn’t the only one with such heavy reliance on testing. The standardized test—or what would later become known as the bane of our existence, the SAT—was invented in ancient China. The imperial examination was developed to select able candidates for specific government positions in 605 A.D. It was abolished by the Qing Dynasty 1300 years later in 1905. Guess they’d found all the leaders they needed by then.
The British civil service was influenced by the Chinese imperial examination and recruited civil servants based on merit, as defined by examination. Locally, standardized testing became widespread during both World War I and World War II, as tests were used to determine the mental aptitude of recruits to the military.

**How smart is that?**

Then, of course, there’s the intelligence test, designed to measure, uh, intelligence. Your intelligence quotient (IQ)—the abbreviation “IQ” was coined by the psychologist William Stern for the German term Intelligenzquotient, his term for a scoring method for intelligence tests at University of Breslau in 1912—is a score determined by dividing a person’s mental age score, obtained by administering an intelligence test, by the person’s chronological age, both expressed in terms of years and months. The resulting fraction is multiplied by 100 to obtain the IQ score. If you followed that, score an extra point for yourself.

In case you’re wondering about the term “mental age score,” French psychologist Alfred Binet, together with Victor Henri and Théodore Simon published the Binet-Simon test, in 1905, which focused on verbal abilities. It was intended to identify intellectual disabilities in school children, but in specific contradistinction to claims made by psychiatrists that these children were “sick” (not “slow”) and should therefore be removed from school and cared for in asylums. The score on the Binet-Simon scale would reveal the child’s mental age. For example, a six-year-old child who passed all the tasks usually passed by six-year-olds—but nothing beyond—would have a mental age that matched his chronological age, 6.0.

Interestingly, raw scores on IQ tests for many populations have been rising at an average rate that scales to three IQ points per decade since the early 20th century, a phenomenon called the Flynn effect. So that must mean we’re all much “older” now. Wiser, too?

**TEST FOR FUN**

You can’t swing a dead cat without hitting an online test, whether a Buzzfeed quiz that probes what kind of tree you’d be or a social media quizlet that asks you to review colors. If you’re all amped up on assessments after reading this, first thank you, and second, here are five of our favorites.

- **What personality type are you?** [16personalities.com](http://16personalities.com)
- **How emotionally intelligent are you?** greatergood.berkeley.edu
- **How smart are you?** [iqtest.com](http://iqtest.com)
- **What should you do with your life?** sokanu.com
- **What’s your sexuality?** vistriai.com/kinseyscaletest

Answers: 1. Fire, 2. A secret, 3. Survivors are not buried, 4. The match, 5. There are no stairs, because bungalows do not have a second floor, 6. He is bald, 7. Neither one, because the accountant was his sister, 8. A widow.

**ASHES, ASHES**

What do you get when you burn coal? Ashes, of course. And here at Geotechnics, we test a lot of Coal Combustion Products during the course of a week. Fly ash. Gypsum. Bottom Ash. And we’re happy to help our clients determine the unique qualities of each variety. To learn more about testing CCP’s or ask a question to stump the expert, give Randy O’Rourke a shout at (412) 823-7600.

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