

## René Descartes and the Forensic Scientist

The modern world provides us with many technological advances such as high-speed computers, transatlantic flights and tiny cell phones (which are constantly being lost, crushed or dropped down monitoring wells). However, forensic scientists sometimes need to get back to the basics, using logic and scientific methods which have been available for centuries, but probably forgotten. Considering the mistakes our society has made lately, maybe a step back, to say the Enlightenment of the 1600s, is warranted. In the next few paragraphs, I will discuss what advice the French mathematician, René Descartes, may have for the forensic scientist, or for all of us, in general.

Descartes was born in the north of France in 1596 and is probably most famous as the mathematician who devised the cartesian coordinate system. He is also well known as a philosopher and for the phrase “I think, therefore, I am.” But to the forensic scientist, or in my case a geologist, Descartes is celebrated for providing us with some simple rules for being a scientist and conducting scientific investigations. These rules were published in his 1637 pamphlet, *Discourse on the Method for Conducting One’s Reason Well and for Seeking the Truth in the Sciences* or simply a *Discourse on Method*.

As forensic scientists, we need to provide plausible explanations for the opinions we give. For example, a common question posed to us is: when did the gasoline leak begin at the service station? A judge is less likely to be interested in the actual age, but more in the methodology we used. Descartes provides us with such a methodology with his rules for problem solving. A second test that a forensic scientist must pass concerns his or her credibility. A judge must feel comfortable accepting an expert’s opinion. For this, Descartes has provided us with a set of rules for living.

Descartes’ four rules for problem solving were really the first new addition to the scientific method since the days of Aristotle. Descartes felt that these rules, which were based on mathematics, are a means to acquiring knowledge. He also believed that only through mathematics could knowledge be successfully attained, being that mathematics is totally objective and not subject to the many biases that can fog the mind. The rules are:<sup>1</sup>

- Never accept anything as true that is not plainly known to be such; that is to say, carefully avoid hasty judgements and prejudice. In other words, be doubtful;
- Divide each of the difficulties into as many parts as possible in order to better resolve them;
- Conduct these thoughts in an orderly fashion, commencing with the simplest and ascending little by little to the more complex, and
- Everywhere make enumerations so complete and reviews so general assuring to have omitted nothing.

Descartes’ guiding principle is “If you are a real seeker of truth, it is necessary that at least once in your life you doubt, as far as possible, all things.” Furthermore, he felt that the only thing that one can be certain of is doubt, leading to his phrase “I think, therefore, I am.”

As discussed above, Descartes believed that knowledge of the world could only be achieved through the use of an epistemological method, a belief which may seem foreign in today’s faith-based world; however, his modesty shines through when he states that this method may work for him, but other methods could work just as easily for others.

But to the forensic scientist, Descartes’ rules for living, or his code of morals, may be the most important. Descartes felt that a philosopher (or a scientist) living in society should adhere to a modest, conventional way of life. Modesty and humility were characteristics important to Descartes and they are very likely valued by presiding judges. These rules are:

- Obey the laws and customs of your country, governing yourself according to the most moderate opinions and those furthest from excess and furthering opinions that are commonly accepted by the most judicious. In other words, do not put yourself out on a limb. The world changes slowly and radical opinions will not be accepted readily;
- Be firm and resolute in your actions and opinions. Using words familiar to our recent election, do not be a flip-flopper;
- Conquer oneself rather than fortune and change your desires rather than the order of the world. There is nothing that is completely within our power except our thoughts. Or, you cannot change the world, but one can change oneself, and

<sup>1</sup>Descartes, R., 1637, *Discourse on Method and Meditations on First Philosophy*, Fourth Edition, Cress, D. A., translator, Hackett Publishing Company, Indianapolis, IN.

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- Cultivate your reasoning and advance as far as possible in the knowledge of truth. In other words, become a philosopher, or in our case, a forensic scientist.

In summary, he's advising us to be moderate, be resolute, don't be judgmental and keep questioning everything. That seems to be pretty good advice for any profession.

The *Discourse on Method* is about 70 pages long and I try to read through it at least once per year, especially if a trial is

coming up. In my humble opinion, the thoughts provided by Descartes are the basis for modern science and are indispensable to the forensic scientist.

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