



Digital & Multimedia Sciences Section - 2016

C22 On the Need for Social Contract Theory in the Ethics of Digital Forensics

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The goal of this presentation is to describe how professional codes of ethics are based on philosophical notions of ethics, with deontic and consequentialist theories most often seen. Aristotelean virtue ethics are also encountered. This presentation will also indicate that none of these theories provide the subject of a digital forensic examination with sufficient protection. By eliminating these theories and considering the fiduciary duty of digital forensic examiners, it is argued that an ethics theory based on social contract theory best balances the interests of the examiner and the (innocent until proven guilty) examined.

This presentation will impact the forensic science community by indicating that an ethics theory or code of conduct for a forensic examiner not only depends on what one expects from an ethical forensic scientist, but also on the nature of the artifacts examined. The artifacts examined in digital forensic science are often of an intimate nature and deserve to be examined with special care. Social contract theory provides a widely accepted basis to balance the interests of the various parties in an examination. It is hoped that these insights will lead to the establishment of a code of conduct for digital forensic examiners that reflect the special nature of examined artifacts.

The conclusion of this presentation is that a code based on social contract theory is not only indicated by the argument provided above, but will also assist in providing practical moral guidance. It is argued that such a code will necessarily be one that is not a mere list of good practices, but one that provides principles that need to be applied (or interpreted in a given situation) to provide moral insight.

Professional ethics typically manifest as normative guidelines describing the proper conduct expected from professionals. Professional status stems from extended education and training in a specific discipline that permit an individual to execute specialized tasks in society, where members of the society, due a lack of similar skills, have no option but to rely on the work of the professional. Codes of conduct are derived from various ethics theories with (professional) duty, (utilitarian) fairness, and notions of professionalism (virtues) usually all present to a greater or lesser extent. Such codes typically also include some requirements of allegiance to the profession as well as submission to sanctions by professional bodies. Codes worth exploring for such examples range from ancient texts, such as the Hippocratic Oath, to more modern codes in the forensic science domain, with prominent examples being those of the American Academy of Forensic Sciences (AAFS), the American Society of Crime Laboratory Directors (ASCLD), the Global Information Assurance Certification (GIAC), and the SANS Institute.

Distilling professional codes of conduct to their bare essence usually yields two elements: (1) the need to act with integrity; and, (2) the need to act to the best of one's ability where the ability is expected to be at a very high level — a level that justifies the professional epithet. This presentation argues that this second requirement is insufficient for forensics, in general, and digital forensics, in particular.

The basis of the presentation's thesis is the fact that forensics is a family of applied sciences. Ethics in science is a topic that has been studied from multiple perspectives: impact of research on participants; potential scientific bias of researchers (due to commercial, authority-related, gender-based, and other influences that the researcher may be unaware of); and the expected behavior of the scientist. This presentation takes its primary cue from this third category. Again, once distilled, it is clear that the primary demand on the scientist is to act with integrity; however, the paper argues that there are subtle differences between the expectations of integrity in the scientific and professional contexts. The forensic scientist has to conform to both flavors of integrity. Finally, the subject matter of the digital forensic scientist adds a third flavor of integrity that constrains his or her actions.

Above, the phrase "flavor of integrity" was used to imply that the concept of integrity — nebulous as it may be — remains the same; however, what one emphasizes about it may differ from instance to instance. The (Platonic) ideal form of science is one that searches for the truth above everything else. Hence, integrity in a scientific endeavor refers to choices that seek the truth above all else. Note that scientific integrity does not require the achievement of this ideal (which is impossible), but a dedication to seeking truth. At first glance, the dedication to truth seems that an imperative approach to forensic ethics is appropriate; however, the German philosopher Immanuel Kant showed that autonomy is required for a deontic approach. While the forensic scientist should not be constrained in seeking the truth, this scientist is bound by science — hence, total autonomy is not an option. Similarly, seeking truth is a virtue that suggests an Aristotelian approach; however, Aristotle's focus on a golden mean is inappropriate. Similarly, balancing outcomes in consequentialist theories renders utilitarianism impractical.



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This presentation suggests that the difficulty in finding a home for forensic science in the best-known classical ethics theories stems from the fact that forensics potentially exerts control over the individual by helping to determine guilt or innocence (keeping in mind it is not only the guilty who stand accused of wrongdoing) and this power may be sovereign. This suggests a social contract theory as a key element in determining the appropriate ethical behavior of forensic science (and, ultimately, the forensic scientist). Given that John Rawls's seminal work already straddles constraint of power through the social contract theory and the domain of ethics, this approach is an obvious theory here.

Forensic power increases in the case of digital evidence. While forensic science makes truth claims related to human beings, everyday digitalization causes digital forensic power to permeate the individual's essence. This is cause for the clear balance of power and purpose.

Professional Ethics, Digital Forensic Artifacts, Social Contract Theory