Digital Ethics, Morality and the Law

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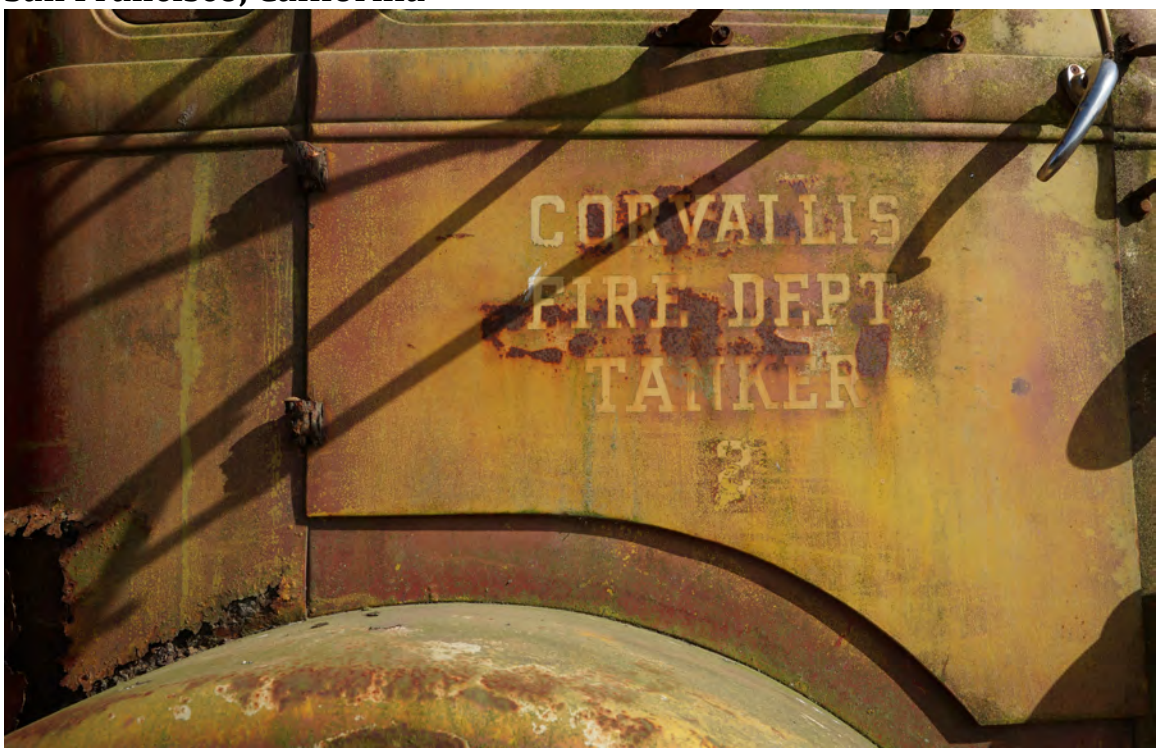

FORWARD: **Why Digital Ethics, Morality & the Law?**

Data and computer scientists often encounter great difficulties when their professional work is applied within national legal systems, other than common and civil law systems, that do not guarantee human rights protections to its citizens. Further concerns might arise as current employers may require some professional activity that is legal but may be objectionable as being personally immoral. As section to my Lit'l Legal Handbook -- https://github.com/Rafa-Baca/LEGAL_HANDBOOK, the following strives to unravel the often-intertwined concepts in ethics, law, and morality for developers, data, and computer scientists.

FOO GOOD:

As a profession, we programmers strive to do good. "Real World" motivations are often murky and, comparably, not as clear as our programming which reliably provides well-structured output in bits and bytes. In the end, we should always strive to hack the real world based on our personal moral compass to do good to the many who will use our data and software. *Coding foo should never bar our personal and professional obligations to foo good.*

So how do we know our own personal brand of foo is good? Let's first gather a distinguishing understanding of law, ethics and morality . . . .

Digital Ethics, Morality, and the Law:

Introduction: The Digital Realm -

As technology within the digital domain continues to rapidly expand and affect our everyday lives, building resonate and inspirational communities on Internet frontier is arguably one of the most noteworthy efforts in recent human history. By its very nature, creation is a messy process where a sense of wonder, lawlessness, amusement, love, and anger can all be seen all at once during this Internet "Wild West" period.

Presently, many communities across the Internet are struggling for a shared moral, ethical, and legal ethos for a fair, consensus of agreeable conduct that can be reliably enforced - a search for an innate digital sense of right and wrong. All online communities tend to agree that there should be baseline understanding of respect and accountability, although there are many approaches for how this understanding should enforced.

Illustratively, groups of entities, namely individuals, corporations, and nations, have recently charted quite different paths toward this unified goal for cyberspace. In many instances, online communities of individuals develop guidelines for conduct within their corresponding fields of interest. For example, in making a small, solitary pledge at Softwarethics.org,[1] individuals working within their professional occupations are in the process of actively developing codes of ethics for software and social engineering on the Internet. Other individuals are compelled toward online activism and even vigilantism to address many digital and physical world objectives, through the actions of such groups as Anonymous; Never Again's "Tech Pledge" (http://neveragain.tech/), and with social engineering certification training programs for hackers.[2]

With the absence conduct in the digital realm that consistently advocates respect for basic human liberties as well as the peaceful, well-being of citizens in other nations, companies across the globe are taking a collective initiative toward creating online communities for promoting fundamental online norms while addressing a variety of issues. In response to the San Bernardino shooting, Apple and a community of companies, collectively defended their position that defends writing software code, even for screen-locks, as protected free speech and for the right to resist the orders of the government to assist in potentially incriminating a U.S. citizen in the name of counter-terrorism. (https://www.apple.com/newsroom/2016/03/03Amicus-Briefs-in-Support-of-Apple/). In light of the Russians interfering with US presidential elections, Facebook, Twitter, and a community of companies have actively and favorably responded in support of "electoral integrity", the democratic right of free and fair elections.[3] As a consequence of Volkswagen software engineers programming a hack around mandatory government auto carbon emissions testing, the S&P Dow Jones Indices, the London Stock Exchange, and RobecoSAM permanently removed, for social and ethical reasons, Volkswagen AG stock from the Sustainability Indices for globally responsible companies.[4]

From a sense of right and wrong embedded deep down within our shared human experience, all these participants no mater how big, small, or sophisticated that they may be ultimately know that many of the above acts just "feel wrong". The issue is how can that individual feeling for determining "wrongness" be applied to something as abstract and wild, at times, as the Internet? What behaviors would be acceptable to you, and how can these behaviors be fairly applied to activity on the Internet in terms of morality, ethics or laws? First, let us address the basic differences between law, ethics, and morality. Second, we see how various communities are struggling to apply various laws, ethics, and morality to the digital world at this time.

I. Morality, Laws & Ethics 101: The Basic Differences between Law, Ethics, & Morality

Ultimately, I believe that a reputation of trust is the currency that each individual actively gains while on the Internet and information or "data" is the fuel that drives one's perceived reputation. Formulaically, as expressed in terms of statistical machine learning, one's reputation is based on how likely others will have a "good feeling" that an individual will act favorably within accepted norms based on information of validated past events. As fake information is often purposely juxtaposed next to the truth, the Internet is a murky space to make a "good feeling" judgment from one's perceived prior behaviors. So how do we go about navigating or perhaps socially designing some basic level of accepted norm for trust as humans increasingly connect digitally and interact with one another on the Internet?

As an overview to the following discussion, consider that each of us have personal set of values of what innately feels right or wrong. In my opinion, this innateness tends to come from a user manual for all humanity. Therefrom, morals tend to become a validated set of values when recognized by at least one other individual as fundamentally agreeable. Ethics tends to add some civic structure to some select moral values, when becoming a majority consensus of what particular behaviors within a community are agreeable and tolerable. Notably, ethics and laws are applied differently in practice – although laws can directly arise from ethical standards that a government decides to apply to preserve peace and order. Ethics are an active means for dynamic engagement within a community whereas laws tend to be static rules by which to govern effectively from. However, great social tensions happen within a nation when some ethical principles are incorrectly made law.

Let's first gain a deeper understanding about the concept of morality, stemming from the Latin word *mores* referring to "folkways"[5] (or values) of agreeable significance shared within a community.[6] Our personal liberty interests are a good example of morals and are also referred to as our fundamental personal rights[7] that, in part, comprise the Bill of Rights of the U.S. Constitution -- such as freedom of religion, right to peacefully assemble as well as the right to self determination and movement. Morals are self-understood from ones' personal opinions of right and wrong.[8] By extension, a moral community thus develops a core set of guiding principles that two or more individuals can tolerably agree.[9]

Thus, moral values form the foundational layer of right and wrong that corresponding moral communities ultimately ascribe to.[10]

"Having a moral duty" is a popular phrase and suggests that morals occupy the same social space within our greater community just as our laws do.[11] In reality, as morals are a personal experience shared by individuals, morals tend not to be written or clearly defined as our laws, which are systematically written and codified by the government. However, individuals often mistakenly (and dangerously) confuse morals with the law when justice is called for. Many legal actions are taken to what is actually considered a moral wrong, such as many disputes between one's religious values and many other personal ideologies that are not collectively shared by the tolerant majority.[12] Further, to avoid the tragedies of genocide, most modern nations strive to be respectful of diverse moral interests to protect the interests of all citizens.[13]

"The wellspring of ethical change is personal morality"[14] as individuals expand their shared values toward a consensus that forms a broader community's sense of right and wrong. As illustrated by many groups of players within a single online multiplayer gamer community, the variety online sub-communities and their specific customs may be incomprehensively vast such that ethics dynamically strives to underscore those acceptable customary behaviors shared by the majority within the broader community for that particular game, such as the perennial Warcraft series.

Ethics derives from the Greek word *ethos* meaning "customary".[15] Ethical behaviors derive from a dominant moral community that is respectfully tolerant of other moral views in the minority. Ethical principles remain an open-ended narrative within a specific community as well as in a cluster of communities alike. In short, ethics is principally conveyed as shared moral values in action.[16] Unlike the law, ethics cannot easily be generalized into a defined set of written rules.

In the United States, our contemporary understanding of written guiding principles or codes of ethics were first modeled from the Belmont Report of 1978 advocating ethical treatment of human subjects in scientific research.[17] Influenced by the Belmont Report, many communities now tirelessly work to provide updated written codes as ethical behaviors change with time, especially within professional (workplace) communities such as software engineers' codes of ethics under the Institute of Electrical and Electronics Engineers - Computer Science (IEEE-CS) and the Association for Computing Machinery (ACM). Although a noble idea, many professional ethics codes *per se* are not enforced just as regional governments effectively enforce legal codes. Again, ethical principles represent the continuously evolving norms of action and written ethics codes often represent aspirational exemplifications for behavior within a community - as opposed to the laws governed by nation states.[18]

Justice or fairness is a subset of the concept of ethics and not the law. Specifically, a "just" decision is a fair decision to the extent that each individual within a community is treated equally in terms of what they need or deserve.[19] In other words, justice is a principle by which "we render to each what is due and treat like cases alike."[20] Modern democratic legislatures, the courts although to a lesser extent, and similar governing bodies decide what emergent ethical principles,

including principles of justice, should be transformed to written law.[21]

Deriving from the Latin word *lex* meaning law or rule, the law creates and maintains an ordered society and ensures safety and welfare of such governed citizens.[22] As discussed above, most constitutionally democratic governments further ensure that their citizens are guaranteed fundamental personal rights.

In contrast to ethics and ethical principles of justice, the law fashions well-defined civic boundaries that are easily generalized, written, and reliably enforced.[23] To this end, the law is often exalted within its own formulaic written terminology that very much differs from our everyday use of language. Further, the law requires well-defined commitment of all those who choose to be within the community of citizens governed by that law as a principal manifestation of a sense of nationalism.[24]

As humanity is never perfect, law and justice very often collides as is manifested in the world's many civil wars and cultural wars, respectively. Laws may not be strictly enforced and give way to the unpredictably turbulent ethical battles, in the name of justice, between various moral communities underneath the canopy of a governed citizenry. Specifically, in the United States, the ethical sensibilities of justice to treat all equally and fairly have episodically intersected with the contemporary written law within the broader discourse of the nation. For example, consider the following equations: the U.S. Slave Codes were inherited from British slavery laws and enforced early on by many of the southern colonial states in United States history = legal but immoral thus unethical. After the written addition of the 13th, 14th, and 15th Amendments to the U.S. Constitution – the supreme law of the land, former slave states enact state and local "Jim Crow" laws to prevent African American and other populations from exercising their legally superior constitutional rights as citizens to vote for well over 100 years after the U.S. Civil war = illegal and immoral thus unethical – but yet wedges one community against another to the present day. There are many other unspeakable examples within this blurry war of collisions, such as the mandatory sterilization of the mentally disabled and vulnerable ethnic minority populations in the 20th Century within the United States and its protectorates[25] to illegalization of marijuana by Federal Bureau of Narcotics Chief Harry Anslinger[26] and its subsequent legalization in the 21st century (http://fortune.com/2017/09/11/california-marijuana-drone-delivery-ban/). Society can remain conflicted in its legal and ethical codes but each individual's sense of moral fairness toward human rights tends to ultimately bubble-up and prevail as the eventual societal norm (- with much hopeful optimism!).

II. Got Lovn Feeln? A Survey of Getting Along in the Digital Wild West

With a better understanding of morality, ethics, and the law, let us now turn to what might work best in curtailing that growing feeling of "wrongness" on the Internet today as shared by a consensus of many communities of individuals, corporations, and governments.

A. Imparting Morals to Machines: 21st Century Morality Transplant Surgery -

In the field of artificial intelligence, there is a concept of supervised machine learning where you train a computer to statistically draw inferences based on past information when given a description or "label". In particular, to establish an initial point of reference to the learning process of a machine, humans typically provide labeled descriptions. Thereafter, for unseen instances, the machine draws on those labeled past experiences to guess the answer of greatest probability.

As such, Massachusetts Institute of Technology (MIT)'s Moral Machine project (http://moralmachine.mit.edu/) currently crowd sources human labeling in the context of asking human's to provide information to assist computers to innately decide on "what is the moral thing to do?" The project prompts thousands of humans for their moral value intuition so that each dilemma shown on the website is statistically synthesized as a moral value. Those labeled moral values will be "transplanted" to machines through algorithms as if given an innate sense of what an artificial intelligent being will personally value. I suppose a community of robots that share the same values would eventually form the first artificial moral community rooted in from the many human contributors to this project.

Similarly, the U.S. Government's Intelligence Advance Research Projects Activity (IARPA)'s CREATE project[27] applies traditional philosophy to artificial intelligence that assists humans to make enhanced, "human augmented" judgments to best mitigate the harms associated with human conflict. Collectively, a sourced crowd of thousands of people is submitting speech and debate arguments that assist machines to identify the good and bad parts of such arguments, even those arguments based on unreliable pretenses. Ultimately, an artificial intelligence can be developed for application in analytical toolkits to assist humans from making poorly biased judgments as well as promote better communication that yields enhanced human reasoning and conclusions.

B. Imparting Ethics to Coders -

Communities of like-valued coders are currently doing amazing things on the Internet to standardize their respective codes of ethics. Ethical Hacking certifications and professional codes for developers are the most predominant.

Many communities of hackers, computer scientists, software engineers, and digital security experts collectively agree that a coder's social ("ethical") responsibility is to make the public aware of software vulnerabilities; this is called "Responsible Disclosure". In support of the "responsible disclosure" movement, some tech companies will pay individuals who find such software vulnerabilities monetary rewards, aka "bug bounties".[28] Moreover, there are widely available ethical hacker certifications[29] as well as ethical hacking and social engineering initiatives. Such certifications are quite popular in the digital security industry.

Professional codes of ethics have been introduced to software programming in the 1940s by MIT professor Norbert Wiener.[30] Since then, the predominantly recited ethics codes in the digital field are the above mentioned Software Engineering Code of Ethics and Professional Practice, IEEE (Principle 1: Public 1.00 *et seq.*): [31]

" • **~~Approve software only if they have a well-founded belief it is safe and meets specifications.~~**
- **~~Accept full responsibility for their own work.~~**

- **Not knowingly use software that is obtained or retained either illegally or unethically.** – IP (copyrights)
- **Identify, define, and address ethical, economic, cultural, legal and environmental issues related to work projects.** – business & employment law, environmental law
- **Ensure that specifications for software on which they work satisfy the users' requirements and they have the appropriate approvals.** – contract law
- **Ensure adequate testing, debugging, and review of software. –** contract law
- **Not engage in deceptive financial practices such as bribery, double billing, or other improper financial practices.** – criminal law ",

and the ACM Code of Ethics & Professional Conduct, § 1 (General Moral Imperatives): [32]

" • ~~**Contribute to society and human well-being**~~.
- **Avoid harm to others.** – criminal law (& civil penalties in California)
- ~~**Be honest and trustworthy.**~~
- **Give proper credit for intellectual property.** IP law
- **Respect the privacy of others.** – due process, US Constitution
- **Honor confidentiality.** – IP law (trade secrets) **".**

Notably, I have crossed out the above provisions of ethical code with no foundation in U.S. Law to find that the majority of items in these two ethical codes for professional conduct are generalizations that are duplicated from existing law. In short, the majority of the IEEE and ACM ethical codes also may be separately enforced in both the criminal and civil courts by at least the underlying U.S. laws.

C. Imparting laws (and order?) to the Digital Wild West -

Hacker Laws:

Currently, the Computer Fraud and Abuse Act "CFAA" (18 U.S.C. § 1030 *et seq*.) is the most infamous federal law applied to Internet hacking. The CFAA prohibits accessing or conspiring to access a computer without authorization and leads the way to individuals being prosecuted in both criminal and civil court systems. In practice, the CFAA is applicable to computers greater than ten (> 10) that are related to the federal government, across interstate boundaries, and for losses exceeding USD$5,000.

Many other U.S. states apply much of the same provisions of the federal CFAA law but in an equivalent state law context. California, for example, subsequently enacted the Computer Data Access And Fraud Act, Cal. Pen. Code, §502 ("CDAFA") that does not require unauthorized breaking into a computer for access as with the federal CFAA but merely requires logging into a database with a valid password - but without permission - to subsequently take data. Accordingly, California's CDAFA has expanded the prosecutorial reach of the federal CFAA where common hacking techniques, such as webscraping, can arguably be punished under the state's CDAFA statute after receiving notice, often the click-thru-notice from a website's Terms & Conditions clause. At this present time, the U.S. Supreme Court is (Oct. 10, 2017) denied review of this very matter in the case *Facebook, Inc. v. Power Ventures, Inc.,* No. C-08-05780 (N.D. Cal. July 20, 2010) where California might have overstepped its prosecutorial authority.

Whistleblower Statutes:

Federal whistleblower statues (5 U.S.C. §1201 *et seq.*) theoretically shield and potentially, financially reward employees that witness some illegal activity during

the course of their employment. Whistleblower statutes generally refer to federal protections afforded to government workers and some contractors in areas typically designated by the statute that include digital intelligence (arguably: such as contractor Edward Snowden), military (arguably: U.S. Army veteran Chelsea Manning through the whistleblower repository, WikiLeaks), securities and banking regulation, and labor and federal employment matters among others. Employees of private companies and non-profits may also be eligible for federal whistleblower protection under the law if their work is related to Environmental, Occupational, and Health reporting. There are some states that also enact their own state whistleblower statutes based on the federal law as a guideline.

Whistleblowing is another example of an unsettled cultural war where opposing ethical communities struggle to define what a whistleblower actually is in the digital realm. The overarching whistleblower laws that give protection to just one community strictly falling under the static written law but controversially denies other potential whistleblowers from those legal benefits further conflate this murky confusion. Again, the static whistleblower statues attempt to cover a dynamically unsettled issue between ethical communities at this time. Moreover, from my personal observations, employees actually attempting to evoke whistleblower statutes have found the process disappointingly ineffective, as the U.S. Department of Justice will only accept quick, easy "open-and-shut" cases with little evidentiary holes. However, if you are professionally active in the digital security and intelligence communities, these whistleblower statutes are helpful to keep in mind as they were initially enacted by our legislatures to help those who come forward with the truth, which along with justice must be at the heart of an online democratic society.

FOO ALARM FIRE – SOUNDING THE ALARM:

The law may be regarded as a formal governmental confirmation of what is already generally acceptable by the community with the largest ethical consensus. Given new social situations such as the Internet, the path from ethical principles to laws is fluid, often indirect, and unsettled. Some codes of conduct may be arguably unethical but legally valid and vice versa. In my opinion, justice is often obtained at the junction of being both clearly legal and ethical and with minimal murkiness among most individuals. It should be said that the human narrative continues to include those who struggle for justice.

As professional, individual, and business communities take positive steps to apply codes of digital ethical conduct or become signatories to online petitions, such ethical actions may not be entirely enforceable under the vast, expansive skies and natural landscapes of the lawless Digital Wild West. In my humble opinion, just as many flags where set on the Antarctic and Lunar territories under respective Treaties, I believe to provide effective enforcement a multinational legal agreement, such as an Accord (enacted by the U.S. executive branch) or, better, a treaty (enacted by U.S. Congress) would need to be in place and coordinated by some international body like the United Nations. As a smaller scale exemplary roadmap, to combat recurring digital data breeches by corporations, similar global efforts have been recently made to ensure commercial regulatory compliance with the European

Union's General Data Protection Regulation (GDPR – Regulations (EU) 2016/672) for privacy and protection of EU citizens' personal data.

In short, with the concerted approval from our U.S. representative government, a body of international law advocating a *Digital Bill of Rights* for all users remains a valid option. Our journey should begin with each of us as individual citizens and tech companies commanding our U.S. Congress to take legal action based on growing shared ethical concerns for the Internet, and directly contacting our representative through the help of the Electronic Frontier Foundation: (https://democracy.io/#!/).

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