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“Professional or Practitioner? What’s Missing from the Codes?”¹

Brad J. Kallenberg

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Imagine a code of ethics that advocated shady business practices and that the organization proposing the code came under investigation by the U.S. Department of Justice. Imagine further, that the investigation came to trial and the stance taken by the organization was found to be illegal by the highest court of the land. Such a scenario, if true, would raise a host of questions about codes of professional ethics, not the least of which would be “What value, if any, do codes of ethics have for the teaching of ethics?” Sadly, the above scenario is factual. However, I’m not referring to Enron but the National Society of Professional Engineers, and the document in question was its 1974 version of the Code of Ethics for Engineers.²

My purpose in this paper is to use engineering codes of ethics as a foil for showing that their impotence for coercing moral behavior can lead to a shift in the aspect under which we see the codes. Consequently, I shall suggest four strategies for improving the way we use the codes to teach professional ethics. Specifically, I urge that codes be considered as covenants (with insiders, rather than as contracts with outsiders), as emblems of social identity (rather than as

¹ Thanks to Emily Strand for her help in researching the topic of this paper. Thanks also to Terry Tilley for helpful comments on an earlier draft of this paper.

² “National Society of Professional Engineers (NSPE) Code of Ethics for Engineers,” <http://www.onlineethics.org/codes/NSPEcode.html>, III.1.e. Section 11 of the 1974 version reads: “He shall not solicit or submit engineering proposals on the basis of competitive bidding.” In 1978 the NSPE lost its final appeal when the U.S. Supreme Court upheld lower court verdicts against it. A similar charge was leveled by the Justice Dept. against the American Society of Civil Engineers for their code of ethics. Unlike the NSPE, the ASCE opted to revise the code rather than fight the litigation battle. Cited in D. Allan Firmage, *Modern Engineering Practice* (New York & London: Garland STPM Press, 1980), 37.

Eventually the NSPE worked out the kinks in the code. But even today there remains in it a curious regulation prohibiting engineers from “actively participat[ing] in strikes, picket lines, or other collective coercive action.” This single line, innocuous enough in itself and probably uncontroversial if obeyed, continues to raise suspicions about the origin, historical context, and actual function of codes of ethics

uniforms), and as proscriptive rather than prescriptive documents. Finally, I will apply to engineering the difference that Alasdair MacIntyre draws between professions and practices in order to make clear that what is missing from contemporary codes of ethics is a spelling out of those conditions under which engineering can flourish as a *practice* and in flourishing produce something akin to moral experts.

I. The failure of codes-as-regulations

If we have learned anything from philosophy in the past century, it is that sentences are tools to get things done. Even descriptive statements are not mere reflections of states of affairs; they are assertions made by certain persons under particular circumstances for deliberate purposes. These, “speech-acts,” as Oxford philosopher John L. Austin called them, can be likened to a game of catch.³ Things can go wrong with the release, with the trajectory, and with the reception of the ball.

Few of us, if any, have been in the position to compose Codes of Ethics for professional engineering societies. As educators, we are better thought of as coaches of would-be players eager to enter the game. From our position on the sidelines, we observe that codes may be intended for a number of different purposes.⁴ For example, sometimes it appears that the codes aim at *regulating* the behaviors of engineers.⁵ Other times we surmise that codes are designed to *sensitize* practitioners and *educate* novices to see moral obligations in ways that transcend

that may run against the grain of their supposed purpose of standardizing the moral behavior of professionals such as engineers.

³J. L. Austin, *How to Do Things with Words*, ed. J. O. Urmson and Marina Sbisa, 2d ed. (Cambridge, MA: Harvard University Press, 1962, 1975).

⁴In Austin’s mind, the force of a speech-act has three moments and its ultimate “felicity” depends on whether and how well the speech-act fulfills the speakers’ intentions (the “release” or illocutionary force), fulfills conventional and referential conditions for truthfulness (the “trajectory” or locutionary force), and is taken up by the hearer (the “reception” or perlocutionary force).

⁵Heinz Luegenbiehl finds this intention ludicrous; codes are far too vague to ever successfully restrict behavior. See Heinz C. Luegenbiehl, “Codes of Ethics and the Moral Education of Engineers,” in *Ethical Issues in Engineering*, ed. Deborah G. Johnson (Upper Saddle River, NJ: Prentice-Hall, 1991), 137-54. Others find this intention laudable. See Roland Schinzinger and Mike W. Martin, *Introduction to Engineering Ethics* (New York: McGraw Hill, 2000), Stephen H. Unger, *Controlling Technology; Ethics and the Responsible Engineer*, 2d ed. (New York: John Wiley & Sons, 1994).

quick and dirty utilitarianism (of the sort that seemingly justifies some ends by virtually *any* means).⁶ And at other times we think perhaps that codes aim at *guiding* moral decision-making.⁷ At bottom, of course, stands our assumption that codes must at least be able to *adjudicate* between those who are behaving morally and those who are not.

Unfortunately, all of these intended functions are thwarted by some very knotty problems. Codes appear far too vague to be of much use for making close calls between what is and what is not morally acceptable. But the deeper problem is that *people* adjudicate, not texts. Texts themselves cannot unambiguously compel assent from disputing parties because the act of adjudication turns upon the keenness of the adjudicator's moral judgment, including his or her attunement to context, skill at reading between the lines, and discernment of the ideal shown in the actual behavior of practicing experts. For this reason Donald Gotterbarn asserts:

The Code is not a simple ethical algorithm that generates ethical decisions. In some situations, standards may be in tension with each other or with standards from other sources. These situations require the... engineer to use ethical judgment to act in a manner which is most consistent with the spirit of the Code of Ethics and Professional Practice, given the circumstances.⁸

Gotterbarn's use of words such as "spirit," "manner," and "circumstance" show that the judgment involved is a narrative rather than a mathematical skill. In other words, when reading a novel, we instinctively judge it to be "good" (or "bad") depending on whether the hero stays "in character" (or not) and acts within a "realistic" (i.e., true to life) range of behaviors given the plot, setting and genre of the story; no mathematical formula assists us in making this call. Perhaps this is why the Department of Health and Human Services, in its 1995 attempt to define "research misconduct" felt impelled to not only expand the syncopated definition supplied by

⁶ Kenneth L. Carper, "Engineering Code of Ethics: Beneficial Restraint on Consequential Morality," *Journal of Professional Issues in Engineering Education and Practice* 117, no. 3 (1991), Firmage, *Modern Engineering Practice*.

⁷ Luegenbiehl, "Codes of Ethics and the Moral Education of Engineers."

⁸ Don Gotterbarn, "Not All Codes Are Created Equal: The Software Engineering Code of Ethics, a Success Story," *Journal of Business Ethics* 22, no. 1 (1999): 83.

the National Science Foundation (“fabrication, falsification, and plagiarism”⁹) but also to supply multiple *examples*.

The need for skilled judgment is of course why codes are likewise limited in their ability to serve as “guidelines” for engineers acting as autonomous moral decision-makers.¹⁰ Why else would the NSPE find it necessary to assemble an ethical review board to review difficult cases or the ASCE provide its members with a telephone number for an ethics hotline? As John Ladd points out, if the dilemmas facing engineers were not genuinely puzzling, the codes would be entirely unnecessary. Unfortunately, by the same reasoning, “if such cases present genuine perplexities, then they cannot and should not be solved by reference to a code.”¹¹

One way to respond to the ambiguity of the codes is to make the codes more specific. The problem, of course, is that the more specific the codes are, the longer and more unwieldy they become. Consequently, if codes are to remain relatively simple, on the grounds that they are guidelines rather than regulations, then we cannot prevent the possibility that codes may recommend conflicting duties.¹² Any attempt to specify in advance the manner in which a code be read and followed seemingly leads to an infinite regress: one needs a rule for interpreting the rules of interpretation for interpreting the code, and so on.¹³

⁹ Cited in Caroline Whitbeck, *Ethics in Engineering Practice and Research* (Cambridge, UK: University of Cambridge Press, 1998), 201. Whitbeck argues that this so-called definition is really only a collection of examples. See her n. 14 on 223.

¹⁰ Luegenbiehl, “Codes of Ethics and the Moral Education of Engineers,” 148.

¹¹ John Ladd, “The Quest for a Code of Professional Ethics: An Intellectual and Moral Confusion,” in *Ethical Issues in Engineering*, ed. Deborah G. Johnson (Upper Saddle River, NJ: Prentice Hall, 1991).

¹² Michael Davis, “Three Myths About Codes of Engineering Ethics,” *IEEE Technology & Society Magazine* 20, no. 3 (2001).

¹³ Saul Kripke, *Wittgenstein on Rules and Private Language* (Cambridge, MA: Harvard University Press, 1982). Kripke claims to find an infinite regress of interpretation in Wittgenstein’s claim “This was our paradox: no course of action could be determined by a rule, because every course of action can be made to accord with the rule....Hence, there is an inclination to say: every action according to the rule is an interpretation.” Ludwig Wittgenstein, *Philosophical Investigations*, ed. G. E. M. Anscombe and Rush Rhees, trans. G. E. M. Anscombe (New York: Macmillan, 1953), §201.

In my estimation, Kripke misreads Wittgenstein by concluding that Wittgenstein must be a skeptic after all. In fact, Wittgenstein was trying to free us from the assumption that every action is preceded by an mental act called “interpretation.” Rather, “obeying a rule’ is a practice” (§202) and “following a rule is analogous to obeying an order. We are *trained* to do so; we react to an order in a particular way” (§206, emphasis added).

We ought to be the most pessimistic about the codes' putative ability to enforce moral behavior. In the first place, codes are at the mercy of the character of the one who reads them. For example, imagine someone who says, "I'm telling the truth, and I've got the data to prove it." Of course, fabricating data would be a clear case of research misconduct. Yet, authentic data must be *represented* and then *interpreted*. So, if a researcher is bent on deception, he or she can follow the letter of the law while still representing the data in such a way that others are likely to draw errant conclusions from the data.¹⁴ This sort of misconduct cannot be exposed if the code is taught merely as a set of wooden regulations.

Moreover, codes are by nature reactive. Skilled judgment of review boards is necessary precisely because codes cannot anticipate the shape that future violations of the spirit of the code may take. Hence codes are endlessly revised to accommodate changes in the landscape. What passed for safely constructed skyscrapers prior to September 11 will no longer pass muster in light of building codes revised to accommodate the clear and present danger of future terrorist attacks.¹⁵ (Some fear that the revised building codes will make construction so cost-prohibitive that skyscrapers will be a thing of the past.¹⁶) But all such revisions are necessarily retrospective.

Codes not only fail to compel moral behavior, they even are of limited use for inspiring or exhorting moral behavior. On the one hand, those shoddy characters that most need moral exhortation are the least likely to read the code, (much less derive inspiration from it). On the other hand, those exemplary characters that are most likely to read and be inspired by the code, probably don't need it. It is not surprising then, that the results of a 1980 survey by the American Institute of Chemical Engineers revealed that fewer than six persons out of more than

¹⁴ P. Aarne Vesilind, "How to Lie with Engineering Graphics," *Chemical Engineering Education* 33, no. 4 (1999).

¹⁵ LeMessurier, whose heroic efforts to protect the Citicorp Building from the sheer force of New York City winds, is a moral hero not because the on-the-job substitution of bolted joints for welded ones violated building codes, but because as an expert practitioner he both saw and acted on the threat of dangers that the building code could not anticipate. For LeMessurier's full story see Whitbeck, 146-154.

¹⁶ Andy Pearson, "The Skyscraper of the Future," *Building* 9 (2001).

4,000 respondents even mentioned the society's code of ethics when responding to ethical problems posed by the survey!¹⁷ Ought we conclude with the surveyors that "there are written codes of ethics, but they are often of little value?"¹⁸ To complicate this question, codes have succeeded in a number of nonethical functions, which makes us wonder whether these secondary functions aren't the primary ones. For example, codes of ethics sometimes elevate consumer confidence by enhancing a group's image. But there is a dark side to image enhancement: sometimes image exceeds substance. We are more than a little bit jaded toward used car dealers who conspicuously post a code of ethics on the lot.¹⁹ Given the Department of Justice ruling that faulted the NSPE and ASCE codes for being exclusionary and monopolistic, are we not justified in being a little suspicious of the use to which such codes are being put?

John Ladd insightfully pointed out that groups in possession of a code are in danger of complacency replacing or displacing zeal for moral rectitude that flourishes when one is never quite sure where the moral boundaries are. Moreover, in our litigation-happy society, the letter of the code can sometimes provide the very loophole one needs to retrospectively justify improper behavior. To make matters worse, efforts to plug the loopholes may divert attention away from "macro-ethical" issues that confront the profession as a whole to "micro-ethical" minutia. For example, the concrete calculation of how much more water Company X needs to flush in order to bring the *concentration* of a toxic effluent within legal limits may distract engineers from the more important task of revising poorly worded environmental laws. In this example, what ought to be considered is not the concentration of the toxic effluent but the quantity of toxin released into the environment.²⁰

¹⁷ Roy V. Hughson and Philip M. Kohn, "Ethics," *Chemical Engineering* (1980): 132.

¹⁸ Luegenbiehl, "Codes of Ethics and the Moral Education of Engineers," 137.

¹⁹ For example, see the very short code of ethics for the Connecticut Independent Automobile Dealers Association at <<http://www.ciada.com/ethics.htm>>. This illustration is John Ladd's.

²⁰ Ladd, "The Quest for a Code of Professional Ethics: An Intellectual and Moral Confusion." The example of a poorly worded environmental law is taken from Whitbeck, *Ethics in Engineering Practice and Research*.

If codes are of little use for inspiring, enforcing, or adjudicating moral behavior and have been, in fact, prone toward secondary and even nefarious misuses, what promise do they hold for the teaching of ethics to would-be practitioners? If we instinctively assume that codes are a regulatory device, aimed at preventing misbehavior, then our use of codes to teach ethics may be artificially limited to teaching the rules and the consequences of breaking them. But this pedagogical strategy fails for codes that function not proscriptively, but *prescriptively*—such as the code of honor known among Samurai as *Bushido* (lit. “way of the warrior”). The contrast is quite striking: Western forms of consequentialism turn upon the assumption that physical death is the greatest evil and risk of death is to be minimized *at all costs*. For Samurai the keeping of the code sometimes resulted in death—by Western standards, the ultimate negative consequence indeed!—while the breaking of the code resulted in dishonor.²¹ Yet for the Samurai, dishonor was worse than death. In this example, the force of their code of honor required their adoption of a quite different set of values than easily fits into the mindset of contemporary Westerners.

I suggest that the moral formation of engineers requires the same sort of transformation that would turn Westerners into Samurai. Such metamorphosis cannot be accomplished by codes whose force (here, consequentialism) depends upon the very values (here, a reductive account of the “Good”) that need transformation.

I highlight the example of Samurai *Bushido* to help us see that the term “code” names a family resemblance that is broader than we may have initially imagined. Above I said that codes were speech-acts, and as such, they can misfire in a number of ways. Yet even in misfiring, speech-acts are performative. Suppose I brandish a weapon and say, “Now *this* is a gun” in order to impress you. If you are not impressed, on one level the speech-act fails. Yet not all is lost for learning. You may take my words as a joke, or as evidence of my psychosis, or as a threat and thus learn something important about your insecurity, or the (twisted!) nature of our friendship,

²¹ Eiko Ikegami, *The Taming of the Samurai: Honorific Individualism and the Making of Modern*

and so on. So too, even if codes fail to be what they are most often intended as—namely, regulations—the other intentions that can be read into the codes illuminate ways for us to use the codes to teach engineering ethics.

Let me make four suggestions for reading codes of ethics that run against the grain of our students' instinctive approach to the codes. I suggest that we must help students think of codes (1) as covenants rather than contracts; (2) as emblems rather than uniforms; (3) as prescriptive rather than proscriptive; and (4) as preconditions of a practice rather than as regulations of a profession.

II. Covenant vs. Contract

The first pedagogical corrective I suggest is that we treat codes as covenants rather than as contracts.

The notion of “contract” has a long illustrious history in political thought. When the Caesars ruled the world, peace (*pax*) was achieved when a pact (*pactum*)—a treaty or contract—was formed between warring parties. As is well known, Thomas Hobbes saw the formation of a contract between conflictive strangers as the logical basis for the modern nation-state. Two observations. First, the contact he envisioned was that between strangers who only accidentally shared something in common beyond the mutual desire for self-preservation. Second, the “peace” achieved was privative only: peace is the *absence* of war. No more substantive account of the commonwealth is offered than a barely tolerable balance of power that teeters on the brink but does not plummet into war.

When we think of engineering codes of ethics as contracts it is quite natural that the contract be imagined as something formed with relatively hostile “outsiders.” In other words, codes of ethics are thought to assure *clients* that work will be delivered in a timely fashion, assure *employers* that profits and trade secrets will stay within company walls, and assure the

Japan (Cambridge, MA: Harvard University Press, 1995).

public that no harm will come to them. In a litigious society, the peace that is achieved is a legal one; engineers who keep the contract will not be sued.²²

If strangers form contracts, friends (and colleagues) form covenants. In contrast to friendships formed for utility or pleasure, Aristotle described perfect friends as those who wished each other well purely for the other's sake.²³ In his mind, the crucial word is "well-wishing," for the well-being (*eudaimonia*) of the other necessarily included the flourishing of the *polis* that already shared a substantial conception of what human life is for, which was embodied in their shared form of life.²⁴ Rather than look outside engineering (clients, employers, public) for the other contract parties, I suggest that codes of ethics are best understood as having the force of covenants formed among insiders.

Two millennia prior to *Pax Romana* there was living in Egypt a caste of slaves made up of foreigners from Canaan. Through a series of fantastic events in the reign of Pharaoh Rameses II, this band of Hebrews escaped Egypt and was led by their charismatic leader Moses to the hinterlands of a country that would one day be theirs. Curiously, this socially backward bunch of former slaves wandered somewhat aimlessly around the desert for an entire generation while they practiced to be a people under the terms of a covenant that they had adopted as their own. This covenant became their constitution, it defined their very form of life. It told them what to do with their pots and pans. It told them, to cancel all debts every fifty years and return any land held as collateral back to the original owner. It told them when to work and when to party, whom to have sex with and whom not to have sex with.

This covenant was highly invasive; rebellious children as well as adulterers could be stoned to death for breach of this covenant. But it had one tremendous advantage: it was an agreement

²² J. H. Steffens et al., "Panel Discussion: Ideas for Better Code" (paper presented at the Conference on Engineering Ethics, Baltimore, MD, May 18-19 1975). For a less reverent account see Frederick Richards, *Sue the Bastards; Handbook for the Field Engineer* (Pittsford, NY: F. Richards, 1976).

²³ Aristotle, "Nicomachean Ethics," in *The Complete Works of Aristotle (Bollingen Series; 71:2)*, ed. Jonathon Barnes (Princeton, NJ: Princeton University Press, 1984), Book 8.

formed among friends that trumped all other considerations. To recall a former example, when the Samurai warrior said “Die with honor!” he was not issuing a command; he was wishing his friend well in a form of life in which honor outweighed life itself. So too, when the Israelites spoke “Shalom!” to each other they were not merely wishing for the absence of conflict. They were wishing upon each other a more substantive good, the good of becoming together precisely the sort of people capable of embodying the covenant. In so doing they understood themselves to be the people of God.

I suspect that one must be an insider to a covenantal form of life to fully appreciate the fact that being such a community is a good greater and more substantial than the mere absence of conflict. But to imagine engineering codes of ethics in terms of covenant is to begin to ask two questions: “Who is the ‘we’?” who make such a pledge to each other and “What corporate good can possibly be greater than not being sued?”²⁵

III. Emblem vs. Uniform

The second corrective I wish to offer to augment the standard reading of engineering codes of ethics is that they be taken as emblems rather than as uniforms.

Compulsory uniforms for school children aim at imposing one form of equality by means of conformity to a dress code. In contrast, when a soldier is decorated with the emblem of the Rangers, the mark does not *compel* uniformity but *identifies* one as a constitutive member of an elite combat unit. The emblem itself gestures to the identity of the wearer; it answers, in part, “Who is the ‘we’?” who has formed a covenant among themselves.

²⁴ See Alasdair MacIntyre, *After Virtue: A Study in Moral Theory*, 2d ed. (Notre Dame, IN: University of Notre Dame Press, 1984), Alasdair MacIntyre, *Whose Justice? Which Rationality?* (Notre Dame, IN: University of Notre Dame Press, 1988).

²⁵ Although it is beyond the scope of this paper, engineering ethics requires an assist akin to that provided to medical ethics by William May when he argued that medicine needed an end, or *telos*, informed by religious sources in order for physicians to transcend the limitations of the metaphors of *technician*, *fighter* and *parent* to which medicine was susceptible. See William F. May, *The Physician’s Covenant* (Philadelphia, PA: Westminster, 1983).

In late September, 2001, Rev. David Benke found himself helping lead a national prayer service in Yankee Stadium just days after the 9/11 terrorist attacks. Benke shared the stage with a rabbi, a Muslim imam, a Roman Catholic Cardinal as well as Sikh and Hindu holy men. Greeting everyone present as brothers and sisters, he prayed “The strength we have is the power of love, and the power you have received is from God, for God is love...”²⁶ For this action Benke risked losing his ordination. Members of Benke’s denomination raised formal charges of “tolerating syncretism” and opened a heresy trial against him.

It would have been better for my case if Benke’s denomination had deliberated longer. As it turned out, Benke *was* defrocked and like you, I question the intentions of those behind such a decision. It seems so scandalous to our democratic sensibilities to censure Benke for his efforts to be inclusive. Such a decision only raises our suspicions of an arbitrary and vicious use of power against Benke. Nevertheless, let me retell the story in a slightly different way, because it illustrates what I mean by the logical force of an emblem.

Benke serves as what might be called a “bishop” within the Lutheran Church Missouri Synod, the nation’s ninth largest Christian denomination. In Benke’s case it matters who it was that brought charges against him. The LCMS has a number of identity statements which serve as the terms of their covenant. For example, the 1996 “Reaffirmation of the Synod’s Position on Closed Communion” states that faithful confession and catechesis requires them to maintain a form of corporate life that stands as a living alternative to “an increasingly pluralistic and secularized view of the Christian faith.”²⁷ Benke’s action, reasonable enough to us, nevertheless compromised the distinctive identity this group pledged to maintain.

Part and parcel of becoming a Navy Seal or an Israelite or a Samurai or a LCMS pastor is learning to think like one. Those who stand outside these respective covenants cannot see all of what insiders see. Consequently, many were horrified to read of Benke’s dismissal from the

²⁶ Daniel J. Wakin, "Seeing Heresy in a Service for Sept. 11; Pastor Is under Fire for Interfaith Prayers," *New York Times*, Feb 8 2002.

²⁷ <http://www.lcms.org/belief/clcommun.html>.

clergy of the LCMS. But those who are insiders to *this* covenant understand the inseparable relation between their emblem, which is to say, their identity statement, and those behaviors that for engaging in them constitute their form of life and become the means by which each of them sees the world under one particular aspect.

Perhaps a simpler illustration can clarify things. Imagine that a child wants to become a Boy Scout. However, the child refuses to wear what he considers a “dorky” uniform, insists on playing Nintendo games rather than work on merit badges, can’t stand camping and so never goes, neglects paying dues and avoids the National Jamboree like the plague. The force of the Boy Scout emblem, which this child is denied, is simply that of an identity marker; it stands for an association within a form of life that this young person does not share, but may—provided he adopts *this* form of life.²⁸

If it is possible to conceive of engineering codes of ethics as emblems, then it stands to reason that codes may play an important role in the shaping of how an engineer “sees.” Of course, so long as codes are mistaken for consumer protection devices, they will be expressed in terms that anyone can understand and thus be virtually worthless for this sort of moral formation. However, if codes are allowed to function as emblems of a particular social role and identity, they may also play a role in the catechesis of novitiates.

Space will permit me only one example. After insisting that engineering codes of ethics are not simple algorithms for decision-making, the recent Software Engineering Code of Ethics advocates engineers “to consider broadly *who* is affected by their work.”²⁹ Such consideration is to include not only clients and colleagues, employers and public but—and this is important—also

²⁸ In the eyes of society, engineers do not cease to be engineers when they lose membership in Professional Society, but when he or she loses the license to practice (though the two losses are related). But the condition under which one’s license is lost is the last step in a descent away from the path taken by excellent practitioners. In other words, *engineers* do not lose their license because they forfeit their identity as engineers long before he or she is stripped of the license.

²⁹ Gotterbarn, "Not All Codes Are Created Equal: The Software Engineering Code of Ethics, a Success Story." 83. Emphasis added.

“how the *least empowered* will be affected.”³⁰ Why *this* should be of chief concern is not self-evident to outsiders whose concept of equality disallows blatant favoritism. Yet the inclusion of this clause in the code may provide the stimulus for the moral training required to see its significance.³¹

IV. Prescriptive vs. Proscriptive

In addition to thinking of codes as covenants and emblems, I suggest third that we think of codes as prescriptive rather than proscriptive.³² Proscriptive statements tend to be fairly specific, enough so that violation is easily recognized. For example, an earlier version of the NSPE Code of Ethics, item 1a, read as follows, “The engineer will...not attempt to attract an engineer from another employer by unfair methods.”³³ At some level, “unfair methods” becomes ambiguous, but surely *some* methods of recruitment (the promising of kickbacks, bribes, or dates with my sister) would be agreed to by all as blatantly underhanded. The code’s prohibition of these means that it functions like a command: imperatives given by an authority the breaking of which makes one culpable and liable to punishment by the authority. Proscriptions in a code of ethics resemble building codes: fail to put in a proper header when framing a doorway, and the inspector will make you do it again or condemn your house.

What is sought by proscription is the assurance of ethical behavior regardless of whether the individual is a crook at heart. But isn’t the mechanism for producing just actions by unjust persons what laws are for?³⁴ But then proscriptive codes are redundant.

³⁰Cited in *Ibid.* Emphasis added.

³¹ The fact that in this instance the code is not self-evident may create the sort of dissonance that is a necessary precursor to learning. On the relationship of aesthetics to ethics, see Brad J. Kallenberg, *Ethics as Grammar: Changing the Postmodern Subject* (Notre Dame, IN: University of Notre Dame Press, 2001).

³² This distinction was suggested as early as 1975. See comments by N. Balbanian in Steffens et al., “Panel Discussion: Ideas for Better Code”.

³³ *Ibid.*, 100.

³⁴ Aristotle, “Nicomachean Ethics.” 1144a 12-16.

In contrast, *prescriptions* are by nature open-ended and difficult to measure. Can one ever be finished with the responsibility to “hold paramount the safety, health and welfare of the public?”³⁵ That codes cannot be reduced to proscriptive statements explains the fluidity of what W.L. King in 1944 called “the unwritten laws of engineering.”³⁶ So, for example, King uses military metaphors to show both that the engineer is under a strict chain of command on the one hand, and yet on the other, “of course, there will be times you cannot wait to stand on ceremony and you’ll have to go ahead and ‘damn the torpedoes.’” King hastens to add, “But you cannot do it with impunity too often.”³⁷ The trouble, of course, is how often is “too often?” Here we are asking about the ambiguity that surrounds the *application* of a rule. With Wittgenstein we are forced to ask what it means to “go on in the same way.”³⁸ I suggest that a code may function more as a “canon” than as a command.³⁹ The difference is this. To acknowledge a statement as canonical is to submit to the statement as an authority but that what it means to walk or behave according to the canon cannot be specified in advance. Rather it require skilled judgment (Aristotle’s *phronesis*). To treat codes as canonical is to suggest that much more needs to be in place for their proper functioning than simply an improved document. How is skilled judgment to be built? Who sets the standards? When might the judgment of the one trump the unskilled judgment of the other? To these missing elements I now turn.

V. What’s missing from the codes: Preconditions of a “practice” vs. regulations of a “profession”

³⁵ NSPE, Fundamental Canon 1.

³⁶W. J. King, "Unwritten Laws of Engineering: Part 1—What the Beginner Needs to Learn at Once," *Mechanical Engineering* May (1944), W. J. King, "Unwritten Laws of Engineering: Part 2—Relating Chiefly to Engineering Executives," *Mechanical Engineering* June (1944), W. J. King, "Unwritten Laws of Engineering: Part 3—Purely Personal Considerations for Engineers," *Mechanical Engineering* May (1944). See also Joe Amato, "Unwritten Laws: Engineering Ethics in a Narrative Context" (Ph.D. Dissertation, State University of New York at Albany, 1989).

³⁷ Cited in Amato, "Unwritten Laws: Engineering Ethics in a Narrative Context", 28.

³⁸ See Kallenberg, *Ethics as Grammar: Changing the Postmodern Subject*.

³⁹ Gratefully, the NSPE (and others) tacitly acknowledge the difference by setting out “Fundamental Canons” before delineating the “Rule of Practice.”

A fourth corrective I suggest for reading and teaching ethics begins by questioning the usefulness of describing engineering in terms of “profession.” A dark way of telling the recent history of engineering notes the prestige which physicians enjoy in the public eye or the relative autonomy with which society allows the American Bar Association to control its own membership and argues that engineers spent the past century courting public favor in hopes of achieving the same status and privilege as medicine and law. Edwin Layton summarizes this tale,

Spokesmen for the engineering profession have, in fact, frequently made status the fundamental aim, and other professional values means to this end. Thus engineers have argued that in order to gain more status their profession should show a greater sense of social responsibility.⁴⁰

The means to this end has been the crafting of codes of ethics that unmistakably resemble codes adopted by medicine and law on the grounds that codes express a contractual relationship between society and the profession by indicating “how the profession will police itself...which is necessary given the specialized knowledge of the profession.⁴¹ In this fashion, the codes, at best, become a set of regulations which by nature are fraught with the problems discussed above. At worst, the codes become a credential for presenting “the proper image to the public so that the profession will be able to attain prestige and monetary rewards.”⁴²

This stark deconstruction of professionalism has been given a more charitable reading in recent years by definitions of “profession” that, in addition to self-regulation, draw out the importance of practical savvy, formal education, and production of significant goods.⁴³ These corrections help us see the possibility of understanding medicine or engineering on its own terms and only secondarily as the way a subgroup of society stands toward the whole. What we are really after, says Alasdair MacIntyre, is not a profession, but a “practice.” MacIntyre offers the following helpful, though tortuous, definition of “practice” as

⁴⁰Cited in Luegenbiehl, "Codes of Ethics and the Moral Education of Engineers," 140.

⁴¹ Ibid., 138.

⁴² Ibid.

⁴³ Charles B. Fledderman, *Engineering Ethics* (Upper Saddle River, NJ: Prentice Hall, 1999).

any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved, are systematically extended.⁴⁴

Space will not permit a detailed explanation of MacIntyre's definition, much less justify the role that it seems to play in narrative ethics. But allow me to make the following observations that may help shift, for the fourth time, the aspect under which we see engineering and its codes.

First, what separates a practitioner from a trifler is the pursuit of excellence. The excellence that is pursued cannot be defined in advance with precision, for its recognition requires a certain amount of trained discernment on the part of the practitioner. The discernment or skilled judgment is neither a knack nor a given but something novices cultivate over time under the watchful guidance of a mentor. In the case of engineers, the skills of judgment are both *technical* as well as *moral*. In other words, the practice aims at human goods (as per a specific tradition's account of what human life is for⁴⁵) and the novice gains an appreciation for what activities contribute toward the Good. But the vision of the practitioner is always under refinement. Practices therefore, cannot be run as democracies; so long as novices outnumber expert practitioners, chaos would ensue if decision-making was left in the hands of an untutored majority. We know that most engineering students enter the field for sake of security and income. But money, while necessary to the practice, is an *external* good that falls outside the pale of internal goods which practitioners come to appreciate and for which they will sacrifice greatly. In contrast to a simple democracy, practices naturally tend toward oligarchy precisely because only *expert* practitioners embody the standards of excellence necessary to rule well. The recent Software Engineering Code of Ethics comes close to expressing this when it

⁴⁴ MacIntyre, *After Virtue: A Study in Moral Theory*, 187.

⁴⁵ Brad J. Kallenberg, "The Master Argument of MacIntyre's *After Virtue*," in *Virtues and Practices in the Christian Tradition: Christian Ethics after MacIntyre*, ed. Nancey Murphy, Brad J. Kallenberg, and Mark Thiessen Nation (Harrisburg, PA: Trinity Press International, 1997), 7-29.

urges young engineers “to consider whether their acts would be judged worthy of the ideal professional working as a software engineer.”⁴⁶

Granted, it may be naïve optimism of the most pernicious sort to assume that practices left to their own devices will turn novices into morally as well as technically virtuous practitioners. Nevertheless, we have one negative historical example that makes this claim somewhat plausible. In his massive two volume *The Gulag Archipelago*, Aleksandr Solzhenitsyn chronicles Stalin’s attempt to do away with an entire class of pre-revolutionary engineers because they could not be completely loyal to the government, equipped as they were with a higher order of moral reflexes.

...Their open, shining intellect, their free and gentle humor, their agility and breadth of thought, the ease with which they shifted from one engineering field to another, and, for that matter, from technology to social concerns and art. Then, too, they personified good manners and delicacy of taste; well-bred speech that flowed evenly and was free of uncultured words; one of them might play a musical instrument, another dabble in painting; and their faces always bore a spiritual imprint.⁴⁷

The old-school engineers, who displayed all the virtues expected of those who sought and pursued excellence in engineering, were expert human beings marked by moral virtue (such as devotion and integrity), by humanism (they were well read and culturally aware), by the ability to “wake-up” from ideological slumber,⁴⁸ and by aesthetic skills (such as in cooking or the arts). These virtues made the old-school engineers unfit for Stalin’s ideology, therefore he sought to replace them. Ironically, the new school of engineers, who “lacked a well-rounded education and exposure to different ideas, which lack gave them ‘tunnel vision’ and allowed them to justify or ignore infractions against basic human rights” had to be inculcated by a system of education that could not but produce engineers who lacked technical skill as well as moral virtue.⁴⁹

⁴⁶ Cited in Gotterbarn, "Not All Codes Are Created Equal: The Software Engineering Code of Ethics, a Success Story." 83.

⁴⁷ Cited in Ingrid H. Soudek, "The Humanist Engineer of Aleksandr Solzhenitsyn," in *Social, Ethical, and Policy Implication of Engineering: Selected Readings*, ed. Joseph R. Herkert (New York: IEEE Press, 2000), 58.

⁴⁸ Ibid., 59.

⁴⁹ Ibid., 58.

Consequently, the field of Russian engineering declined in quality to the point that Stalin finally conscripted the prisoners to train the new class of engineers!

The tendency of medicine, music, or law to habituate its practitioners to identifiable forms of life and standards of excellence seems uncontested. But this fact makes a difference for the way we understand a practitioner's code. Good musicians are terrified of "sharpening" a note. This fear may be codified as "Thou shalt not play sharp notes." But the force of the explanation of "Why not?" evades nonmusicians. Why ought not one to sharpen a note? Not because it is commanded. Not because one who does so will be punished. Not for fear of long term consequences, such as unemployment. Not because sharpening notes breaks a contract with the audience. Certainly not because playing sharp notes is not universalizable! Rather, one ought not to play sharp notes, because that makes for bad music. Who says? Expert musicians. What makes one an expert? Among other things, precisely her or his ability to consistently avoid sharpening notes.

The apparent ungrounded circularity of this value judgment, namely, that "good" music is determined by the play of the "experts" who achieve their status by their ability to play music "well," is obviated by the historical nature of practices. Not only do practitioners themselves progress with time (provided they seek excellence under proper tutelage), the practice itself improves from one generation to the next. Remember, a century ago physicians still used leeches to reduce fevers! The improvement of a practice need not imply the existence of a standard toward which the practice is asymptotically homing in. Rather, improvement may be only measured retrospectively. But from the vantage point of the later practice, the improvement can be seen as real nonetheless.⁵⁰ While I cannot here argue that practices *necessarily* improve or that the improvement necessarily entails *moral* improvement, the suggestion that improvement fits the idea of engineering-as-practice, is enough to shift the

⁵⁰ MacIntyre applies this argument to entire traditions. See Alasdair MacIntyre, *Three Rival Versions of Moral Enquiry: Encyclopaedia, Genealogy, and Tradition* (Notre Dame, IN: University of Notre Dame Press, 1990), and MacIntyre, *Whose Justice? Which Rationality?*

aspect under which we see engineering codes of ethics. In fact, if the practice-nature of engineering can possibly contribute to the moral formation of novices, why not use codes themselves to specify the preconditions of the practice? For example, if virtues are gained by diligent pursuit of excellence under the watchful eye of an expert, why do not the codes specify the need for lifelong mentorship? If practices improve over time, why do not the codes require practitioners to gain mastery of the practice's moral history? If moral and technical virtues are embodied in expert practitioners, why are stories of heroes such as Inez Austin or Fred Cuny so poorly known?⁵¹ If engineering is a practice, these are precisely the sorts of preconditions necessary for the flourishing of the practice and for the possibility of the moral progress among its practitioners .

Conclusion

As educators, we sometimes feel unfairly expected to make up for the impotence of codes to coerce moral behavior of would-be professionals. Some resort to desperate measures, such as field trips to prisons in hopes that first-hand experience of prison conditions for white-collar criminals will scare our students straight.⁵² But as I've tried to show in this paper, our job may be made more manageable if we begin by assisting students in the changing the aspect under which they view codes of ethics. Codes are most fruitfully read as covenants between insiders, as emblems of a social identity, as prescriptive canons, and as preconditions for a practice.

⁵¹ The stories of Cuny and Austin can be found at <http://www.onlineethics.org/moral/index.html>. However, The Online Ethics Center for Engineering and Science, by far and away the best website for engineering ethics, recounts at present only five mini-biographies of moral heroes.

⁵² Marie Beaudette, "MBA Students 'Scared Straight'," *Dayton Daily News* 2002.