Ethics in dimensions

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ABSTRACT: Questioning behaviour by reference to ethical standards has become quite common, in society generally, and in most professions, the obvious examples being medicine, law and engineering, all of which have standards to be observed by members. Management is, of course, another sub-profession within those operational-professions and observation suggests there is a difference between applying ethical principles when performing actual medical, legal or engineering functions and when acting as a manager above, senior to, those performing those functions. In the body of this article a scenario is used to illustrate how a senior engineer might have to react to stave off a possible crisis by acting unethically; the analysis of the situation, the person's response, and the follow-on actions by others, shows how such behaviour flows through the chain of command and into other businesses by their relationships, following length, breadth and depth dimensions.

Keywords: Ethics, management, scenarios

INTRODUCTION

Dimensions of ethics? What dimensions? As this article is directed to engineering people one can keep them simply to the three dimensions as engineers use in their work: length, breadth and height (or depth, which word, actually, suits this exploration better than the other). Should one include time, as a fourth dimension?

And what aspects of ethics' dimensions can be discussed in the context of education? Well, to illustrate that one will look at how a situation can develop as a chain, increasing in length of those involved, broadening in the breadth of organisations within it, and deepening in its serious nature, and does one finds it is related in some way to the better-known *chain of command*?

For that a scenario taken from a recently published novel by the author will be used, in which the ethical behaviour of the characters was not examined, but was noted by one of the pre-publication review-readers, who included *ethics* (in addition to *project management, management and leadership*) in the list of educational subject matter he found in the book [1].

But first one must have some words describing and defining what this article is about.

SOME DEFINING STATEMENTS ABOUT ETHICS

In a previous article [2] (preceded by two other papers in this topic [3][4]), this author enjoyed exploring thirty books, written by a variety of authors (including two with the initials *SJ* after the name), all of whom admitted this topic can be defined fairly clearly in text, but is difficult to apply by actions in practice.

As remarked in this author's earlier article, finding a general definition in the literature is far from easy. The Oxford Dictionary related *ethics* specifically to *the science of morals, moral principles, rules of conduct*; however, as a comment on that this author has difficulty in associating the terms *science* and *morals* with each other. Garrett, an early writer on the more specific topic, *Business Ethics*, specifically stated that *ethics is not about morals* but tended to confuse the situation by adding that ethics is *conformity to conventional social rules or the existing moral judgements of men* [5]. Another early writer, Higgins, succeeded in enhancing, though perhaps further slightly confusing, the issue with a clearly stated definition:

Ethics is the philosophical science which establishes the right or moral order of human acts, that is, in the light of first principles ethics establishes the absolutely necessary norms of free acts whose realization in practice truly makes us men [6].

Garrett and Higgins were both members of the SJ and it is curious to note that both referred only to *men* in their definitions. One may, should, must, assume they included both genders and, therefore, by their using the word *men* they meant *human*.

A more modern source (Wikipedia) also refers to *morals* in its definition.

As before, one may conclude only that what is in ethics as a philosophy (or as whatever one takes it) provides a standard of behaviour, which should be followed for the good of humanity generally. Now, how is this presented, interpreted for engineers?

ETHICS FOR ENGINEERS

In the previous article four references on engineering ethics were reviewed [2]; all of which covered much the same ground. The most important reference, here, in this present context, is the ethics policy for members of the Institution of Engineers, Australia. Being a uniform national body, the IEAust has possibly beaten the Americans by providing a *Code of Ethics*, which should be followed by all professional engineers. The 1994 edition was comparatively brief, containing nine *Tenets*, which members were committed to uphold. The version then-current in 2004 (from the Web site) was very similar, with a few additions and alterations, the most significant alteration being changing *shall* to *should* in all the paragraphs which indicate acceptable behaviour, making what was *mandatory* now *preferable*. The now-current version (also from the Web site) is a different format and begins with this preamble:

> *As engineering practitioners, we use our knowledge and skills for the benefit of the community to create engineering solutions for a sustainable future. In doing so, we strive to serve the community ahead of other personal or sectional interests. Our Code of Ethics defines the values and principles that shape the decisions we make in engineering practice. The related Guidelines on Professional Conduct provide a framework for members of Engineers Australia to use when exercising their judgment in the practice of engineering. As members of Engineers Australia, we commit to practise in accordance with the Code of Ethics and accept that we will be held accountable for our conduct under Engineers Australia's disciplinary regulations* [7].

That has followed by four sections, headed: 1. Demonstrate integrity; 2. Practise competently; 3. Exercise leadership; and 4. Promote sustainability, each of which has sub-headings, each expanded in the Guidelines on Professional Conduct.

In essence, the *Code of Ethics* defines the values and principles that shape the decisions engineers make in engineering practice, and the Guidelines on Professional Conduct provide a framework for members of Engineers Australia to use when exercising their judgment in the practice of engineering and the management of engineering practice.

AND NOW ABOUT SCENARIOS

In its original use, this word described the outline of the plot of a play, and in written form was attached to a convenient curtain or other surface for reading by those involved. It is commonly used nowadays to describe a series of future events, based on follow-through from an initial action, the concept being: *If we do this... then, that will happen.* Therefore, a *scenario* is not based on certainty, not really even on probability alone, but on a logical understanding of *what can happen*, that is, on *possibilities*, juggled into *perceived probabilities* by the person preparing the scenario.

The developed statement of a scenario, therefore, requires an understanding of the existing situation and knowledge of how this may impact on future events. Unfortunately, that involves a paradox, one cannot *know,* in the usual meaning of that word, those future events, what must be done is imagine those logical follow-ons from the present (a mental ability strong in some people and almost missing in others), then, present them as knowledge ... even though they have not yet happened ... and may never happen.

The two scenarios, which commonly get attention are the *best case* and the *worst case*; of these the latter is the one on which business executives focus because it is the one to be avoided as much as possible. Two processes have been used to look at worst case possibilities, the Delphi technique to develop what may happen from some starting point and the Hazop procedure to avoid catastrophic events in hazardous industries. Both serve their purpose; curiously, there is a major difference between them, Delphi uses opinions from separated and independent experts, whereas Hazop uses an assembled committee.

So, now, to this scenario, for examination of ethical behaviour.

THIS SCENARIO

Briefly, the starting-point in this scenario involves a large, highly-successful-in-the-past, but now old and running-down company, in which the chief executive has decided to try to bring in new life by approving a project, in which people could develop as a new generation of managers, located well distant from the head office and, thus, uncontaminated by the general sloth caused by decades of management inbreeding.

Unfortunately, an accident at the project results in a fatality. Circumstances lead to possible prosecution of the company by government authorities, and civil action by unions acting for the deceased's family against the company and several employees.

On hearing this news, the chief executive is immediately concerned about how these actions may affect the project's success, not only its physical completion but the company's rejuvenation, all part of a *worst case scenario*. So, he instructs the company's legal director to prevent any problem from arising, expressed obliquely but firmly.

The legal director follows her boss's directions by contacting the senior partner of the law firm acting for the company at the project site and passes on the instructions, adding that only he should be involved in the work, no-one else should know of it, and there is no limit to expenses which might be incurred. In reply the lawyer accepts all this and said they would invoice in two parts, one for their work, and one via a separate account for expenses.

The lawyer has agreed to do the work but nothing specific is written into the narrative to tell how he proceeds, there are only indirect indications that the lawyer is following instructions, such as his attending preliminary hearings with the government department concerned with industrial safety. Work on the project continues, and as the weeks go by the busy project people occasionally wonder what is going on, is the government department getting ready to act? Is the union only waiting for successful prosecution before confirming the civil action? There is no word concerning either anything happening or the whole matter being dropped. In the words of the government inspector involved: ...*nowt*; and as an afterthought he added: *Zilch. Nada. Nothing, visual or audio. No documents, no talk. Silence. Officially. Not one word.*

Here, in order to further expand the scenario, one has to release two incidents from the sequel (as yet unpublished) to the above novel.

At a much later date, another company director has opportunity to meet the lawyer and quiz him about what might be happening, but is unable to get more than confirmation that what is going on is *in confidence*; the lawyer cannot talk about any details, much to the annoyance of the inquisitive director. And later still, the company's finance director discovers the existence of a very large payment to the law firm ... for unspecified expenses, approved for payment by the chief executive.

ANALYSIS

As a preliminary comment, the author states emphatically this is pure fiction and is not at all in any way based on history. It is simply a follow-through from the starting point: the accident, an event preceded by the importance of the project, so the reasoning is: *given that event and background, the CEO will act. How? Let's go from that...*

First, one needs to note the events leading to the accident and, as is often the case, the circumstances involved a series of pre-events, none individually important but together making up the background. The beginning came from the government's environment department required a pit being built to treat surface run-off water, a job not in the originally-approved (and cost-estimated) project, hence, added on. The principal contractor took it on, but needed help with its planning and supervision, and because all the company's full-time people claimed they were too busy to look after this extra job, so partial supervision was given to a junior engineer, a student employed for a work-experience semester. In excavating the pit an employee of a sub-contractor hired by the project's principal contractor acted contrary to instructions given by the junior and that led to his death.

Question: did the senior engineer act ethically when he appointed the junior to this sub-project? (One can imagine him saying: *Hey, it's only a hole in the ground, some concrete, all being done by the principal contractor, they're responsible for getting it done, you only plan the work and monitor progress...*). But this is a serious question. One can only answer: juniors have to learn-by-doing, and in this case the junior did learn something of value (disclosed in the sequel). It is reasonable to conclude the appointment was *normal*, neither ethical nor unethical, merely the way things go on.

Second, now the accident has happened, one has the chief's instructions. Although expressed obliquely, in such a way the legal director had to work out what he meant by conferring with another director (sworn to secrecy), readers of this story conclude readily that the chief's meaning was: *Find out who to pay, and get that done*.

Question: is that an ethical action? Most of us know this sort of action occurs in our society, indeed, has occurred for centuries. Cynics say this is only unethical if one breaches the eleventh commandment, if one is found out, which seems

to have become much easier with today's technology, on the contrary straight-minded folk will say it is wrong no matter whether revealed or successfully hidden. And in this case? One must agree the chief has acted unethically, but is battling against time and entrenched stagnation, trying to bring new life into his organisation, to save the company from a destructive take-over or worse, which would affect the lives of many hundreds of employees, and shareholders, and other stakeholders, suppliers and customers, via the company's businesses, and so on, and so on ... all features of a possible worst case he can imagine.

The argument, which excuses this behaviour is the relationship between *means* and *ends*, and is another feature of understanding ethics, summed up obscurely by Garrett:

> If both the means and the end I am willing are good in and of themselves, I may ethically permit or risk the foreseen but unwilled side effects if, and only if, I have a proportionate reason for doing so [4].

This is expressed in a somewhat complex manner but essentially his point may be stated as: if *I'm doing something with a* good *intention, using an ethical process or procedure, and expect to attain a* good *result, then I can allow parallel or intermediary undesirable events to happen, provided I have good intentions overall*. This is the *greater good* philosophy, if the result is *good*, then, a *bad* action to achieve that result is acceptable. Many historical events have been based on this philosophy and it seems society accepts it to some extent, but logical-minded engineers and managers might require the *means*, *end* and *unwilled side effects* to be quantified before accepting any particular action-path. In this scenario one might assume the CEO quantified the number of zeros, which might be required to complete the chain of events he was initiating.

Third, the legal director has taken over, has worked out what to do and has accepted the task.

Question: is that action unethical, when it is by accepting an unethical task given by a superior? This is more complicated than the second situation above; while one may agree the CEO's action is unethical, it was the result of his personal decision made for a *good* purpose. If that decision is passed on to another for subsequent action, and acted upon, is that downstream action also unethical?

However, one may ague this point, there is plenty of history in the last century to provide the affirmative. The most telling example comes from the War Crimes trials after the Second World War, during which many claimed they were *only following orders* when they killed others, including civilians ... the paradox being killing another combatant is allowed, killing a civilian can put one in front of a judge.

In this hypothetical, fictional, scenario which, perhaps, is similar to what may sometimes happen in the real world, one must argue the legal director's following-on action was unquestionably unethical.

Fourth, one then has the senior partner of the law firm who is performing the work he has been given. There is, nowhere in the novel, any statement of what happens, this is left to the reader's inductive imagination and several pre-publication readers did figure out that the lawyer found the right person or persons to pay, so the whole matter would drop out of sight and be forgotten. (Curiously, one reader did not get that, at all.)

Question: assuming the above occurred, is the lawyer's action unethical?

Actually, a decidedly moralistic person would rate the lawyer as more sinful than the legal director, because he is not only paying those involved to hush-up the matter, but he is also being paid for doing that ... all unethical behaviour for a person who is a servant of the legal system.

However, he did act correctly at a later time by refusing to be drawn into revealing information when quizzed by the other, visiting, director. This comes back to the problem of analysing behaviour when a person follows orders, in this case non-disclosure. The lawyer was confronted by a senior company employee requesting information, but he acted as he had been instructed, and that was, most certainly, ethical behaviour.

Fifth: what about those who received (the assumed) payments? Government employees? Union officials? Victim's family? Who knows how many? The *expenses* mentioned in the sequel are not quantified, but enough is inferred to make the finance director flinch and ask questions, and anyone involved with such organisations will realise an event like a fatality does involve many people, *all of whom, in this scenario, are acting unethically by being paid to forget what they know.*

Is there anyone else? Yes, there is.

Sixth, one must consider the project people, those in the principal contractor, the subcontractor, and the *down-stairs* people in the government department involved with ensuring industrial safety and investigating accidents.

Weeks pass and what are they doing? They wonder what is going on. But do they try to stimulate action in the interests of achieving justice? To determine what and who was at fault for what happened, and providing funds, insurance payout,

for the victim's family? (As outsiders, readers, they may figure the family could well be among those paid out of the *expenses* but the characters in the story do not know that.)

The project people would say: *It's nothing to do with us, it's outside our area of responsibility, it's head office business, our job is to get this project finished and operating*. The contractor and sub-contractor would say: *It's not our problem,* pointing a finger at each other, *it's your problem,* our *problem is to get this work finished and make a profit.* All have been holding their breaths for weeks, fearing prosecution and persecution, just slightly relaxing progressively as nothing happens.

To complete the picture, the *down-stairs* government department people would say: *Making these decisions is not in our job description, the bosses upstairs make these decisions on what's to be done and hand them down to us*.

One may hear the sound of hands being washed, dried and aired. Is such neglect unethical?

Such a concern only for one's own level or area of concern may be appropriate and, indeed, it is usual, alternatively one may say, it is an avoidance of responsibility for truly ethical behaviour. And, for justice.

JUDGING BY OUR CODE OF ETHICS?

This comparison is neither logical nor relevant because the novel's milieu is set some time in the future, in a hypothetical time of a world government influenced strongly by religion, but to round off the above, let as see how the characters match up to our today's code ... the only relevance being the CEO has risen to his position through the professional engineering path.

Well, one may argue he has used his *knowledge and skill for the benefit of the community* but he had strong personal reasons, in parallel, for his action. Did he *demonstrate integrity*? Rather doubtful, he acted independently and required *keeping it all quiet*. He certainly displayed competency by acting promptly and effectively, and also leadership by pointing the direction action must take ... while allowing the person following to interpret instructions. Sustainability, here, cannot be judged, it does not come into the matter.

Altogether, then, one has to conclude this CEO did not follow the IEAust Code of Ethics. But what he did was intended to result in a *greater good*, so does that count for something positive? No, unfortunately, the Code does not recognise the *greater good* scheme of things possible. When the Code is next revised should a Jesuit be on the committee? Those rather fanciful comments are not really serious but are intended to show: a) there is a lot more to ethics than one sees on the surface; and b) the Code only allows for very straight-forward thought and action, whereas a lot of human decisions are not like that, but are more, much more, complex.

SO TO DIMENSIONS

This narrative of actions is a long chain, from the top position of the company, down through the ranks to the lawyer to persons not detailed, through the senior project people, with the contract companies' staff in a parallel chain, then, looping back to the top, to the one who (figuratively) signed the expenses cheque, with other parallel chains through the government department and the union system. That last one could be the most complex one of all. The actions follow chains of command, with the exception of the law firm, where only one person has been involved.

It is also very broad, covering all those levels in the client company, the project group, the principal contractor and the sub-contractor companies. The number of levels in the government department and the union would probably be less, though complex to contact all necessary parties and avoiding those who should know nothing.

The depth dimension is illustrated by how far down the organisation the incident goes, all the way down to its involving two junior, undergraduate, engineers, both hired for a work-experience semester, the one whose orders were not followed and a second one who was the only witness of what occurred.

To understand this next point one must read the novel, but in the context of this article it is worth comment: the incident initiating all this unethical behaviour was caused by the sub-contractor's employee refusing to take orders from a junior person (who as well as years younger also happened to be a member of the *other* gender), and it is reasonable to remark that such a refusal to follow instructions is unethical in principle; if one is told a certain person has responsibility for what is being done, then, orders given should be orders followed.

At a later date, the company's project engineer spoke severely to the principal contractor's site engineer, emphasising that if one of his *company people*, no matter who, gave an order, it must be followed.

In the Introduction, *time* was questioned as a dimension, and one may reason that ethics (thinking, action, behaviour generally) should be independent of time, application of the topic should be the same century by century. This can be illustrated by reference, for example, to Shakespeare's *A Merchant of Venice*, in which one character deliberately plans

to inflict grievous bodily harm on another ... reflection on that suggests very strongly that the writer was conscious of whatever ethical issues were involved ... but common knowledge, today, shows similar intentions, as in the above illustrative narrative. Therefore, one can only conclude that while the concept of ethics should be consistent and continuing, the application certainly is not.

A SUMMARY

The novel was not written to illustrate ethical and/or unethical behaviour and this author is, therefore, indebted to George Anastas (PE, USA) for pointing it out [8].

So what have we? While agreeing it is all fiction, readers may have an uneasy feeling (encouraged by reading items in the daily press) that events, such as described in this novel do occur, money flows in directions, which will stall action, silence voices, dry up inkwells, delete passages from hard discs, *et cetera*, in real life.

The value of such a fictional presentation, apart for providing a relaxing (dramatic in parts) read, it can act as a warning that trying to cover up something undesirable may proceed through a long and broad and deep path, involving many people and (if funding is available) considerable cost. At an elementary, personal and prosaic level the warning is; ethics is related to morality, which means behaving properly to others and in all circumstances ... with the best of overall intentions.

Quoting again from the previous article, consider this from Townsend, the arch-heretic of management: *If you have to have a policy manual, publish the Ten Commandments* [9].

CONCLUSIONS

This work of fiction illustrates how seeking to avoid a worst case outcome can require acting unethically and, then, leading, causing, inviting, others to follow similarly, first via the chain of command and, then, into other organisations. The plot's logical follow-through is inescapable.

So, this final thought is that although ethical behaviour is said to be what makes us human, our human nature, being what it is, means there are those among us who will, most probably, always act in whatever way is necessary to avoid the end point of any worst case scenario sensed. Under some circumstances the temptation to work towards the greater good for tribe, clan, family, sept and self may be irresistible. And (another paradox), perhaps that quality is what identifies us as human?

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BIOGRAPHY

Ronald Bentley Ward arrived in Sydney, New South Wales, on 6th October, 1928. He attended early schools in inner suburbs, then, Sydney Technical High School, still recognised as the one for engineers and scientists, which was in the 1940s located close to the city, now in a southern suburb. After passing the Leaving Certificate in 1945, he worked as an apprentice, then, as a tradesman toolmaker at the Commonwealth Aircraft Corporation from 1946 to 1954. He, then, moved from aircraft engine manufacture to chemicals and worked with several firms in engineering positions up to 1979 when he opened his own consulting firm, specialising in project management. In 1984, he became a lecturer at the New South Wales Institute of Technology, which became the University of Technology, Sydney, and retired from that position in 2001. While working in industry, he completed a trades course in fitting and machining, the Associateship Diploma (Mechanical Engineering) of the Sydney Technical College, Bachelor of Engineering at the University of New South Wales, and Master of Business Administration at Macquarie University. During the years at the University of Technology he returned to the University of New South Wales to research a thesis on the relationship between hazards and management practices in the chemical industry and was awarded the degree of

Doctor of Philosophy in 1995. He has published three books, one text on communication, another on engineering management and a third book outlining some engineering oddities, plus well over a hundred-and-forty papers on education, engineering, accidents, management and speculative topics, over a hundred-and-twenty expert witness reports. He has also written a series of one hundred-and-ten fictional case studies and two as-yet-unpublished novels. All of these exemplify his interest in engineering as a profession and the need of a broad education at the undergraduate level, where topics other than those purely technological should be included and presented in a manner to suit those students. He has lived in Sydney suburbs all his life, and travelled interstate and overseas many times to conferences with his wife, Brenda. He has maintained his connection with engineering education by continuing to write and publish, and by having been accepted in 1998 as a Visiting Fellow in the Faculty of Engineering of the University of New South Wales. He thanks WIETE for the invitation to submit this article for the Global Journal of Engineering Education.