

# Developing Sensitivity to Ethical Issues

◇ Project Management ◇ Engineering ◇ Architecture



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**I**t is traditional for ethics to be looked at from the point of view of that part of the philosophical tradition concerned with general principles. General principles determined rules of conduct. In this paper the inadequacy of general principles as determinants of ethical behaviour is highlighted and the move is made to ground ethical judgements in moral agency responding to the contingent nature of a given situation.

Since the 1980's the speed of development and the social and environmental impacts of technological advancements have placed ethics at the centre of the decision making process. During the 1980's alone we have had the Chernobyl nuclear explosion, the Bhopal chemical disaster, and the Exxon Valdez oil spill.

Since the 1980's the impact of acid rain, depletion of the ozone layer, genetic engineering and water pollution have brought into focus the space and time effects of the negative results of technological development.

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The negative effects of technology are not contained within national boundaries and can influence generations to come. In addition, the major negative effects of technology come not from accidents but from normal operations with their attendant chemical and industrial waste.

In our local environment the denuding of our hillsides damages our flood plains. Our industrial expansion carries with it serious health risk which we have not fully understood. The replacement of the family meal with the products of fast food outlets militate against the involvement structures that support family life.

Project Managers and engineers are at the forefront of this technological thrust and although major improvements have been made in our standard of living the cost of these improvements has reached the stage where our very existence and the existence of the planet is now at risk. It is thus incumbent on us all to realise that our behaviour raises ethical challenges. Sensitivity to

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ethical issues thus becomes a sine-qua-non for us as project managers and engineers.

The word sensitivity is used to highlight the fact that we are immersed in theory based abstract processes which militate against involved embodied intuitive practices. Involved embodied intuitive practices raise sensitivity and allow us to intuit that ethical judgements arise in our routine day to day decisions and actions.

The Project Management Institute's Body of Knowledge (PMBOK<sup>®</sup>) identifies the following areas of competence as essential, scope definition, cost and time control, quality assurance, risk management, communication, human resource management and procurement. Ethics is not listed as a required area of competence. The Project Management Institute (PMI) does however have a code of ethics which is prescriptive in format and grounded in role responsibility. In the PMI code, ethics is not seen as a skill; a skill requiring formal training (know-what) and development in practice (know-how).

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The Engineering and Science Research Council (EPSRC) at their sixth meeting on Rethinking Project Management stated that “*knowledge can be characterised as having several linked dimensions.*”

These linked dimensions can be categorised into mainstream and non-mainstream thinking.

**Table 1**

MAINSTREAM	NON-MAINSTREAM
That which can be codified and defined	That which is craft knowledge (difficult to define)
That which can be possessed (acquired by formal training) , expressed as nouns (Know-what)	That which is embodied in action (acquired through involved embodied action), expressed as verbs (Know how)
That which is sanctioned and restricted	That which can act to stimulate reflection, innovation and diversity.

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EPSRC pointed out that while forms of knowledge on the left hand side can be addressed and disseminated through formal training. Those on the right-hand side cannot.

In this context, the present Project Management Body of Knowledge (PMBOK<sup>®</sup>) in traditional project management have placed too much emphasis on forms of knowledge in the left-hand side. This weakness, coupled with the need for managing complex projects has led to a philosophical shift in thinking in Project Management epitomised by the development of Complex Project Management.

The objectives of this paper are:

- To demonstrate that the condition for the possibility of ethics rests on the essential plurality of human being. In this regard, the structure of the self as delineated by Soren Kierkegaard and radicalised by Martin Heidegger, is taken up to demonstrate that it is the essential plurality of human being, **‘being there’**, coupled with the essential self

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interpreting singularity of the individual human being that establishes our role as moral agent.

- To demonstrate that the imposition of prescriptions and or rules as moral criteria without taking into account the structure of the self, moral agency and the contingent nature of a given situation, tend to have limited applicability when new circumstances arise.
- To posit that given the above two conditions, skill acquisition and the development of ethical expertise become a necessity for the professional in practice. In this regard I draw on the skill acquisition model developed by Hubert and Stuart Dreyfus and the analogy between design problems in engineering and ethical problems as demonstrated by Caroline Whitberk in '*Ethics in Engineering Practice and Research*'.
- To underline the fact that an ethic based on occupational role responsibility is being undermined by the very techno- scientific process responsible for its formation. In this regard I draw on the

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works of Carl Mitcham and Rene Von Schomberg *The Ethics of Scientist and Engineers*.

- To draw parallels between the new philosophical approach in Complex Project Management and the approach to ethics as outlined in this paper which posits the developmental approach for ethical behaviour
- To conclude that one can thus talk about an ethical function to all practical disciplines by taking into account the plurality and self interpreting nature of our existence and drawing on the original meaning of the Greek word ‘**ethos**’ as abode. In this regard I draw on the following works: - ‘*The Ethical Function of Architecture*’ by Karsten Harris; *Architecture: Art and Accountability*’ by Richard MacCormac in *Architecture and its Ethical Dilemmas* by Nicholas Ray and ‘*The Question Concerning Technology*’ by Martin Heidegger.

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Before we can proceed there are several issues on which we should be clear:

1. As human beings we have a way of being, in which 'Being' itself is an issue... how we are in the world is an issue for us. Human beings, cultures and institutions '**Care**'... 'Care' in the sense of having the possibility, the potentiality for '*concern-full*' dealings with things, other human beings and our selves.
2. The way of being in which 'Being itself is an issue' is also called a self interpreting way of being and is constitutive for human beings, cultures and institutions and thus cannot be abstracted out as a property. The way of being in which being is an issue is also a way of relating to our own self interpreting singularity, our own uniqueness, a uniqueness circumscribed by our individual birth and death.
3. Human beings exist in worlds in the sense that we are with things imbedded in a series of involvement structures called worlds. We thus can have the world of project management, the world of engineering, the world of architecture, the medical world, and the

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world of family and so on. **Being-in** and **Being-with** in the sense of being involved with others is also constitutive for human beings.

This is what is meant by **Being-there**.

4. This **Being-in** and **Being-with** also means that there can be no world called project management without project managers, no world of engineering without engineers and vice versa. In the same way there can be no self without community and no community without selves. Self and community are two sides of the same coin.
5. As human beings things become meaningful to us precisely because of our involvement structures and our practices. A chair is a piece of equipment for sitting on. A Chair will be an artefact initially for a person coming from a society where floor mats are used for sitting. Our shared practices and skills into which we are socialised are the ground for the disclosure of meaningful things such as people, selves and worlds. Without shared practices and skills we encounter things with differing signification, in some cases as artefacts, as a visit to a museum could verify.

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6. When our involvement structures/ our practices work, there is no objectification of things. The object-subject relationship is not apparent. We want to open a door we transparently turn the door knob. If the door knob does not turn the knob becomes ‘obstructive’ to us and the object-subject relationship is established. The objectivist stance is enacted...this object- subject relationship... this objectivist approach forms the basis of all scientific enquiries. The important issue here is that in spite of the prominence of science our normal way of being in the world is one of transparent involvement in which the objectivist approach has little apparent significance.
7. Although our practices disclose to us things, people, selves and worlds and determine *what* we are in the world - engineers, architects, project managers, parents, teachers, IT specialist etc, our way of being, in which ‘Being’ itself is an issue raises for us the issue of *how* we are in the world. The issue of how we are in the world manifests itself as anxiety about self. Anxiety used here is an

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ontological condition and thus is prior to any psychological manifestation of anxiety.

8. To remain true to ourselves is to acknowledge and not cover up this anxiety. To remain true to ourselves is to acknowledge this anxiety as the manifestation of a gift - a gift which opens us up to the potentiality to exercise choice. We are thus indebted to ourselves, to choice ...to choose choice and not allow what we are in the world, (our roles as engineers, architects, IT specialist, project managers, lawyers, family members and so on) to cover up our essential nature...to cover up that Being' itself is an issue for us as human beings. Thus no theory, no maxim, no goal, no role should have that hold on us to cause us to abandon our essential nature and release us from the debt we owe to ourselves. The acknowledgment of anxiety as gift is the call to 'conscience' - the call to choice to choose choice.
9. It is this call to '**conscience**' coupled with practices and skills in which we are socialised that sets up the dialectic, a conversation,

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that is the ground of ethics. This dialectic - this conversation establishes our role as **moral agents**.

10. Human beings and human groups such as institutions, nation states, professional organisations, are thus moral agents and are by their very nature called upon to take into account ethical considerations in their judgements and actions.

11. The noun ethics comes from the Greek 'ethos' originally meaning 'the place of abode', the disposition, character, or fundamental values peculiar to a specific person, people, culture, or movement, the distinctive spirit of a people or an era, the way we are in the world. Ethos is directed to '*the how*' rather than '*the what.*' We may be, project managers, engineers, architects, IT specialist which tell us what we are but...how we are as project managers, engineers, architects, IT specialists defines our sensitivity to ethical issues and brings into focus the ethical function of the disciplines given by the culture.

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We can also talk about the ground of ethics as a conversation, a play between the abode of human beings (the source of our involvement structures, our practices and our skills.) and the call to ‘**conscience**’.

12. Kierkegaard states that “*The self is a relation that relates itself to itself... and in relating itself to itself, relates itself to another.*” Self relationship to world is a relationship between the finite and the infinite. World can be seen as a series of involvement-structures given by our immediate sense experiences and tradition or as a context of possibilities given by our ability as human beings to expand the range of meaningful experiences through science and technology as praxis. Thus as human beings we are not only aware of what is actual for us, but also the possibilities of self and world, the possibility to create the new and unfamiliar, the possibility of escape from the de-facto condition. World and self unfold for us because of how we are in the world finite, bodily anchored, circumscribed in time by birth and death and seeking our freedom through technology by making things manifest... (Merleau Ponty).

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We now have to confront our technological way of revealing which has brought us to an understanding of the limits of our own planet and transformed our involvement structures... worlds – from those of the tribe and the nation state to a scale of interaction that is now global in proportions and infinite in time.

Our finitude in the context of infinite expansion increases our anxiety and puts both our self identity and our world at risk. The more complex world gets the more powerless we as individuals feel. This feeling of powerlessness does not however diminish responsibilities. We are now like **Atlas** burdened for eternity with the future of our planet. We take up these responsibilities with their attendant risks through the establishment of institutions (rules, codes of practice, laws, international conventions and tradition) and adaptive organisational structures.

Institutions are used here as the humanly devised constraints that structure human interaction, and function as the rules of the game, the governance

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structures, within which individuals operate. The main purposes of institutions are to reduce uncertainty that pervades all societal interaction and to set the framework for continuity of ideas and experience.

Organisations are the players. Organisations are made up of groups of individuals bound by some common purpose to achieve specified objectives. Central to the establishment of institutions and organisations in our present world is the concept of risk and uncertainty. *“The future is continually drawn into the present by means of the reflexive organisation of knowledge environments.”* (Anthony Giddens and Ulrich Beck). Project Management Institutes, Associations of Professional Engineers are such reflexive organisations in a knowledge-based environment.

It was necessary to explore these ideas of being, of practices, of ‘conscience’ of risk and uncertainty to make the point that the ground of ethics does not lie in supreme moral truth from which rules of conduct could be deduced but is embedded in the self interpreting singularity of human beings coupled

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with the ontological condition of our existence – being-in, being-with, being-there. It is being-with, being with others, in Heideggerian terminology - *Mitsein* that is constitutive for ethics. Ethics conceived as responsibility for one's being that connects intimately with the other. Responsibility for one's being does not lead to immediate determination of right and wrong but informs us of the implications of our individual and collective responsibility for existence itself.

In addition, it was also necessary to emphasise that all our choices have ethical implications and that to be human also means that in one's singularity one has a possibility; a possibility delineated as the choice to choose choice; a possibility not to be constrained by the 'given' of one's culture, thus opening up a conversation between aspects of one's ethos and one's 'conscience'; a conversation which is set in dynamic circumstances created by our technological way of revealing. A way of revealing in which the other is no longer limited to our immediate family, tribe or nation state but is also the distant other both in space and time.

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I will pose two questions that I consider important for us to explore during this presentation. In dealing with these questions because of the constraints of such a forum, and because for me this is a work in progress, the most that I can do is attempt to raise sensitivities as to the role of agency and transparent involvement by juxtaposing ethical skills development with the concept of design and then showing how this raised sensitivity aids in the revealing of ethos as abode through the disclosing of a common ethos. This raised sensitivity also helps us to bring into focus the importance of retrieval, maintenance, change and the limitation of occupational role responsibility in a technological world if we are to enact a way to a life valid for our time and space.

The first question is *how does one respond to situations when the choices given by the culture are inadequate?* This question is important because it raises the issue of the adequacy of our abode, our ethos, when unprecedented situations arise and we have to act.

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The philosophical responses to this first question lie in the history of ethics most of which falls back on an approach which claims that ethics is objective. Some examples of this objectivist school include:

- Moral Realism which is a school of thought proposing that ethical judgements are objective and capable of being true or false in accordance with some theory of ethics or a set of rules which determine the truth or falsity of any ethical response.
- Moral Relativism which is similar to Moral Realism except that it accepts that ethical truth or falsity is relative to one's ethnicity (background body of doctrine, theory etc.), as a result there is no one true body of doctrine in ethics.
- Moral 'Expressivism' accepts the objective nature of moral judgements but does not accept the idea of a theory of moral or ethical judgement. This school states that ethics is primarily a matter of practice and not a matter of abstract moral knowledge.

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‘Expressivism’ is of the view that ethical judgements are fallible in the life world in the world of practice and not by any theory. In addition we can offer explanations for our ethical judgements and that is all that is required.

- Divine Command Theory is similar to Moral Realism except that the approach to ethics comes from God in the sense that moral requirement can only exist with a deity involved. The presence of a deity is the ground of ethics.
- Ethical Naturalism takes the stance that the processes of the natural sciences can be applied to ethics. In this sense ethical or moral properties such as goodness can be transformed into satisfying interest (what is good for this or that individual, society etc) and interest becomes objects of preference. Ethical claims are grounded in the scientific process.
- Moral Intuition accepts the role of moral theory but also accepts that moral theory has limitations in practice. Moral Intuition gives prominence to the role of intuition and sees the intuitive response as a

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necessary feed back into moral theory. For the moral intuitionist Moral Intuition is subject to doubt and does not rely on any specific organ of perception. Ethical claims are grounded in the intuitive process.

There are a series of schools that are wary of the utilisation of the objectivist approach and ethical theory that diminishes the role of agency and the contingency of context in ethical decisions. These schools claim the end of ethics in the sense that theories or rules of ethics tend to be context free and thus behind the curve when dealing with unprecedented situations. Ethical theories work best for the most routine foreseeable decisions that are more or less reducible to algorithms. What is therefore important is the role of agency. What is important is how agents can perform in situations which are totally unprecedented.

I now turn to the issue of skill acquisition or more specifically how an individual moves from novice to expert. In this regard I turn to the five stage

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model of skill acquisition developed by Hubert L Dreyfus a professor of philosophy at Berkeley and his brother Stuart E Dreyfus an applied mathematician and Professor Emeritus, Industrial Engineering and Operations Research at Berkeley in “*Towards a Phenomenology of Moral Expertise*”

Dreyfus’ five stage model is as follows:-

### **Stage 1 Novice**

The process of skill acquisition begins normally by decomposing the task into a set of context free elements. The elements are abstracted out of the process and a theory or set of rules are developed for thinking in terms of these context free elements. For example in chess the novice learns the numerical value of each piece and the rule of exchange states that if the value of the piece lost is less than the value of the piece captured an advantage is gained.

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## **Stage 2 Advance Beginner**

The advance beginner begins to notice situational aspects of positions of the pieces on the chess board which could lead to a strong pawn structure exposure of his king to attack or to exchanges which are disadvantageous in terms of value of pieces lost. Through experience the advance beginner learns to recognise aspects which improve his skill in a given domain.

## **Stage 3 Competence**

With experience the number of features and aspects increase to the extent that coping requires a hierarchical view for decision making. In chess the decision to launch a king side attack on an opponent if perceived as successful becomes more important than the pieces lost in the process. Success or failure leads to an emotionally charged situation.

## **Stage 4 Proficiency**

After having several experiences of emotionally charged situations from plans developed, the competent performer develops holistic experiences and

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is no longer a detached observer looking for principles to guide his actions. The player understands without conscious effort and knows that there are far fewer ways of seeing than of acting. The proficient chess player can discern a large repertoire of types of positions but must now still deliberate how to act.

### **Stage 5 Expertise**

The proficient performer with enough experience knows how to act intuitively. Expert chess players respond to whole positions. They are able to recognise the functional equivalence of a configuration that does not fall under a single definition. The expert's practical understanding does not come from beliefs or theoretical commitments, but from acquired and embodied skills.

The assumptions inherent in the utilisation of this skills model are:

- I. There is more to intelligent behaviour than calculative rationality and

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- II. Ethical behaviour has a development structure leading to a form of expertise in exactly the same way as skills in other domains. *“Like any other skill ethical comportment has its ‘telos’ in involved intuitive expertise.”* H. Dreyfus.

Dreyfus’s skills model which outlines how an individual can perform in situations which are totally unprecedented however raises several questions: What is the ‘telos’ for expert decision making in ethics? What counts as success or failure when one relies on expertise in ethics? How does one learn from successes and failures in ethical situations when outcomes are observed only much later? What is the process by which ethical maturity is developed in the realm of skilful activity?

In addition, John Dewey states *“An expert is set in his ways, and his immediate appreciations travel in the grooves laid down by his unconsciously formed habits. Hence the spontaneous “intuitions” of value have to be entertained subject to correction, to confirmation and revision, by*

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*personal observation of consequences and cross-questioning of their quality and scope”*

In addition, a form of colonisation takes place when experts are involved. This colonisation tends to preclude the interplay with other narratives so essential to an ethical result.

Dreyfus addresses these issues through a perambulating philosophical discourse, but instead I will turn to a book on Ethics in Engineering and Research by Caroline Whitbeck which addresses these questions more directly. I consider Caroline Whitbeck’s book a must read for all engineering students interested in ethics.

Caroline Whitbeck sees human beings as agents involved in ethical action as similar to agents involved in a creative design problem and throws light on some of the questions raised before. It is the need for a response, Caroline Whitbeck states, that makes an ethical problem a practical one. In fact it is

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the urgent need for responses brought on by technology that is responsible for the practical turn in philosophy dealing with ethical issues.

Caroline Whitbeck in referring to design draws attention to the distinction between designs through:

- i.* The application of theory as solution for a specific problem. The derivation of the theory through the process of abstraction and the application of the theory to produce a solution is undertaken through what is called *analytical thinking*. The derivation of elastic or plastic theory of materials and the design of a concrete beam in engineering exhibits this feature.
- ii.* Designs in which functionality is the essential element. In this context the production of an object or process has no predetermined correct solutions given by theory. Architectural and mechanical engineering designs do exhibit this characteristic. The process is a sequence of mental steps that individuals follow in assembling elementary components in accordance with their function into an effective system. When you explain an everyday

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event, you synthesize your existing causal knowledge with new information in order to explain the event. When you figure out how a device works, you infer from the functions of each of the device's components the overall mechanism. Synthetic reasoning calls for both deduction and induction, especially the form of induction that generates explanations, i.e. "abduction". It occurs both in daily life and science. Interesting design problems rarely have a unique or predetermined number of correct solutions, creativity is required.

Design in which functionality is a critical element answers the concerns related to Dreyfus' expert performer. The 'telos' is the highest order functionality; "*the grooves laid down by his unconsciously formed habits*" does not necessarily apply in conditions in which familiarity with process is what is important. In addition the relation between lower order functions and higher order functions is discerned or emerges in the very problem solving process and thus one does not necessarily have to wait on the empirical

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results at the level of highest order functionality ‘telos’ to determine success or failure.

The issues here are that,

- i. Dreyfus’ skill development model shows only that skill development in ethics is analogous to skill development in other fields such as chess.
- ii. Whitbeck shows that the structure of design problems and there solutions are analogous to the structure and solution of ethical problems.

For interesting engineering design problems, there is rarely a uniquely correct response or any predetermined number of correct responses.

In cases where no unique solution exists the following may occur:

- i.* Responses may be clearly unacceptable-there are wrong answers even though there is no unique right answer. In addition some of the wrong answers may be better than others.

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This gives meaning to the phrase “*making the right mistake*”

*Lloyd Best*

- ii.* There may be no unique correct solution; two solutions may each have advantages of different sorts. It is thus not necessarily true that for any set of solutions one is incontrovertibly better than the rest.
- iii.* Practical problems may or may not have solutions and so also do ethical problems. Coping is thus a legitimate response to ethical problems in which there are no solutions or for which a solution is not yet found and responses are required

Design problems and ethical problems must achieve the following:

- i.* Achieve or approach the desired performance or end.
- ii.* Exhibit some criteria for action.
- iii.* Guard against severe negative consequences.
- iv.* Be consistent with background constraints by avoiding any violation of human possibility of the choice to choose choice.

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Whitbeck suggests that four ethical lessons can be learnt from design problems:

- i. Consider the unknowns and uncertainties in the situation.
- ii. Develop possible solutions separate from definition of the problem which may require further information.
- iii. It is important to begin by pursuing several possible solutions simultaneously but avoid spreading oneself too thin.
- iv. Both the problem situation and one's understanding of it are likely to change and develop over the course of time and sometimes by our very involvement.

The urgent need in the world to manage highly complex projects, programs and portfolios such as, international aid; environment; defense; climate change; disaster relief; pandemics; policy implementation; mergers; national development; IT & T; and change in organizations has forced a better understanding concerning knowledge as know-what and know-how characterized as mainstream and non-mainstream in Table 1. The complexity of projects has also caused project managers to move away from

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the dominance of theory based approaches thus giving rise to the necessity to develop sensitivity through craft knowledge (know-how).

An understanding of the new approach in project management can be gleaned from the definition of terms used by the College of Complex Project Managers.

- **Anti-positivist** – a philosophical position where certainty and facts are accepted only as useful constructs. There is no such thing as a theory describing reality

**Complexity** - complex projects are characterised by a degree of disorder, instability, emergence, non-linearity, recursiveness, uncertainty, irregularity and randomness, and dynamic complexity where the parts in a system can react / interact with each other in different ways, for example, a chess game.

- **Chaos** – dynamic systems characterised by non-linear and recursive activities.

**Systems thinking** -systems thinking looks at the whole, and the parts, and the connection between the parts, studying the whole in order to understand the parts. It is the opposite of reductionism, the idea that something is simply

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the sum of its parts. A collection of parts that do not connect is not a system, it is a heap.

**Emergence** - systems function as a whole, so they have properties above and beyond the properties of the parts that comprise them. These are known as emergent properties. They emerge from the system when it is working. You cannot predict the behaviour of a system from studying its individual parts.

The philosophy adopted by the College of Complex Project Managers is similar to that outlined in Hubert and Stuart Dreyfus skill acquisition model for ethical development and Caroline Whitebeck's '*Ethics in Engineering Practice and Research*'

*The second question is:- what is the ethical function of particular disciplines such as project management, architecture or engineering?* This question is important because it raises the issue of interpreting our way of life and determines how are we to respond with our skills, our technology, and our institutions in a manner that is adequate for the way of life in our

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period and in our space. Our way of life is now one in which we are now like **Atlas**, burdened for eternity with the future of our planet. This question raises the issue of uncertainty related to ethos, related to our abode in the context of our technological age.

We have to be aware as Ian Barbour in *Ethics in an Age of Technology* pointed out that technology acts as liberator, threat and instrument of power. The issue is then how are we to respond and interpret a way of life valid for our technological age, valid for our technological way of revealing?

As liberator, technology can give a higher standard of living; improve on our choices, our leisure, and our communication. As threat, technology tends to lead to uniformity and a mass society through standardisation of production, narrow criteria for efficiency and manipulation through mass media. Technology as threat has the possibility of transforming us into rootless displaced persons with a loss of a sense of community. Technology as instrument to power is based on the fact that technologies are social

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constructions and thus not value neutral. The people who make decisions on technology in societies are mainly managers with special interest in the institutions they serve, interest related to power or profit.

The transformational nature of technology has brought into play the issues of environmental ethics, ethics related to genetic engineering, food and global justice and the social responsibility of scientist and engineers and managers.

The ethical function of all disciplines can be examined from at least two perspectives. The first perspective deals with the adequacy of role responsibility for this present Age, when duties and responsibilities are enshrined in institutions such as laws codes of practice and codes of ethics.

The second perspective deals with the nature of the conversation, the play between the profession and the call to **'conscience'**

As individuals we operate within the context of role differentiation. Role differentiation with attendant duties and responsibilities constitute the

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building blocks of social order and has being posited by some philosophers and management schools as the framework for ethical behaviour. Role responsibility frameworks without the individual liberty to choose to choose choice has concretised into caste systems, racism and totalitarianism.

Role responsibility is a very ancient concept. In *The Ethics of Scientist and Engineers* Carl Mitcham and Rene Von Schomberg bring new meaning to what they call Cicero's fourfold root of role responsibility:

- I. Human beings are endowed with the universal character of reason which has the possibility of lifting us above the brute.
- II. Each individual has his own physical endowment
- III. Each individual is born into contingent circumstances
- IV. Each individual by his or her individual choice may exercise liberty in choosing roles.

Cicero in his advice to his son Marcus states *"All these questions, therefore, we ought to bear thoughtfully in mind, when we inquire into the nature of propriety; but above all we must decide who and what manner of men we wish to be and what calling in life we would follow; and this is the most*

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*difficult problem in the world. For it is in the years of early youth, when our judgment is most immature, that each of us decides that his calling in life shall be that to which he has taken a special liking. And thus he becomes engaged in some particular calling and career in life, before he is fit to decide intelligently what is best for him.”*

Cicero’s advice is based on role responsibility in the social context. Role responsibility has had a long history of enforcement by law.

The well-known Code of Hammurabi (c. 2000 BCE) even goes so far as to establish detailed legal boundary conditions on the practice of many arts, including those of the builders of houses (see Code of Hammurabi pg. 228-233)

Codes of conduct have historically defined the duties and responsibilities for professionals. Codes of conduct as example of occupational role responsibility ethics does not however answer to the question of the ethical function of a particular discipline.

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Role responsibility is now being transformed by the industrial project itself. Codes of conduct focused mainly on loyalty to the profession and to the employer, to the protection and maintenance of technical knowledge and skill and the avoidance of conflict of interest.

The initial formation of professional associations and codes of conduct was undertaken to:

1. Affirm the role distinctiveness and status of engineers in the civilian field. Hence the phrase Civil Engineer as distinct from Military Engineer.
2. Maintain the ethos of the profession which no longer could be maintained by personal apprenticeship alone because of the increasing size and specialisation taking place in the profession.

It is the issue of specialisation that has led to the proliferation and professionalisation of roles around bodies of knowledge. Specialisation also led to the formation of professional associations with their relevant codes of conduct anchored in role responsibility.

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Carl Mitcham & Rene Von Schomberg in **From the Ethics of Technology towards an Ethics of Knowledge Policy and Knowledge Assessment** in a working paper for the European Commission 2007 pointed out that:-

- The narrowing of the sphere of individual responsibility reduces the individual's ability to see the bigger picture and thus makes him more susceptible to directions from senior management outside of his professional philosophy thus increasing the sphere of ethical dilemmas.
- Strict adherence to role responsibility easily leads to an almost banal immorality; the buck is passed on to superiors who gave the instructions.
- The assignment of blame to particular individuals is a difficult case to make in complex scientific-technological matters. The widely studied Challenger disaster of 1986, for example, may readily be interpreted as illustrating this phenomenon: roles and responsibilities of individuals in complex decision making processes overlap.

The question thus arises how are we to address the consequences of collective action when the nature of many technological risks is far beyond the framework of individual responsibility? Such risks arise, as Charles Perrow has argued, "as a consequence of an interaction of semi-independent systems, many of which may themselves be in part so complex as to be

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outside direct control. These issues are important particularly when dealing with complex projects in complex organisational structures.”

Mitcham & Von Schomberg introduced the issue of the ethics of co-responsibility as a response to this problem, they state that “the itemized inadequacies of occupational role point precisely in this direction. Such a collective ethic of co-responsibility arises from reflection on the social processes in which technological decision making is embedded.”

The issue of co-responsibility is highlighted in this paper for the simple reason that it is a sine-qua-non for Project Managers and more specifically Complex Project Managers. The issue of co-responsibility should be the foundation of any form of ethical development in the project management discipline.

Finally, with respect to the ethical function a particular discipline, I will bring to the fore a conflict in Architecture between its role as producer of products of the imagination and its contractual obligation to commerce. Richard MacCormac brought this out by developing two columns of words which are suggestive of the conflict faced by architects today.

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**Table 2**

Humanism	Science
Imagination	Reason
Personal Experience	Objectivity
Value	Cost
Idea	Fact
Art	Commerce
Feeling	Objective knowledge
Inventiveness	Accountability
Quality	Quantity
Recreation	Work

These words also underline the play between aesthetics and the pragmatics of engineering brought about by the industrial revolution with emphasis on product built to the requirements of commercial and industrial activity.

In addition, the activities on the right are exacerbated by procurement systems and armies of project managers and value engineers trained specifically to erase anything immeasurable resulting in cost-cutting processes that drive out architectural quality in even the smallest details. The

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apparent precision with which construction can be costed of course makes this easy and tends towards a meanness of outcome in projects driven only by cost and specification. These are some of the contours of our abode our dwelling place our ethos. What then is the ethical function of Architecture in the given context?

In the context of the meaning of ethos as abode Harries points out that *“dwelling are above all not architectural but ethical problems. Such problems, however, poses problems for the architect, whose very art they threaten.”* The understanding of dwelling calls for emersion in an ongoing community an architectural response to our incompleteness our need for others. Colin St John Wilson on design states that the act of design is *“the achievement of such a mastery over necessity that a position of freedom is won, which will allow the transforming powers of art to act upon the exigencies and importunities of use.”*

Harries points to the Solomonic temple, the gothic cathedrals which invited members of a historical ongoing community to understand themselves as community. The ethical function of architecture can now be seen as a way to promote a sense of community so important in these times. In the present day Harries sees this possibility in the design of places of celebration.

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In an article, *The Economy of the Imagination (2001)*, Lord Evans points out that unlike industries which deal with physical resources the industries of the imagination music, art, craft, architecture, film, broadcasting now employ more than the traditional industries of shipbuilding, steel, car manufacture and textiles put together and now constituted in 2001 6% of UK GDP with an annual growth rate of 16%. MacCormac posits that the signs of a post-industrial renaissance exist as public consciousness moves away from the uninspired managerial approach to the built environment.

I end with a quote by Gilbert Ryle “...*Moral imperatives and ought-statements have no place in the lives of saints or complete sinners. For saints are not still learning how to behave and complete sinners have not yet begun to learn.*”