

**Draft by Arun Kumar Tripathi**

## **Education on the Internet vs. Apprenticeship and Dreyfus Model of Learning and Skill Acquisition & Aristotle's Man of Practical Wisdom**

**Many people in the United States believe that the development of the Internet will solve all the problems within education. If the development goes in the right direction, they maintain, first class education will be available for everyone - in so far as they master the information technology. Thus the problems posed by too many students and too few universities as well as the serious problem of access to the good but expensive universities will be solved.**

**Hubert and Stuart Dreyfus believe such reliance on the Internet is dangerous because, as they have argued while discussing the skill models, the imitation of the example of the teacher is a crucially important element in education at all levels.**

**In many areas, the student can only learn to be an expert by imitating the day by day responses to specific situations of someone who is already an expert, or ideally, a master, and only by working closely with students in a shared situation and shared social practices can teachers pass on their passion and skill to their students. According to the model of skill acquisition, sometimes the shared situation included community practices as part of what is learned and sometimes it will not, but in any case the actual (real) presence of the coach or master is essential. So, in general, in so far as teachers want to teach skill in particular domains and practical wisdom in life, which they certainly do, they finally run up against**

**the limits of the World Wide Web. As far as they can see, learning by apprenticeship can work only in the shared situations of the production sites of the crafts, or in the nearness of the classroom and laboratory; can never be achieved in cyberspace.**

**Thus the use of the Internet represents an impoverishment, not an improvement, of education. It can facilitate a kind of mass education, but it will only teach the students the rules and facts that can make them competent. Without experience guided by expert coaches and without apprenticeship to exemplary teachers whose commitment and style is manifest on a day to day basis so it can be imitated, such mass education will not normally produce experts, and wisdom and mastery will remain completely out of reach.**

**Practical Wisdom (Aristotle Phronesis) can never be achieved on the Internet.**

**The Coming Revolution in Information Technology as seen by Soren Kierkegaard --these of Hubert L. Dreyfus**

**In Europe around 1850 the new importance of the press accentuated an essential feature of language, viz. the dissemination of information and thereby introduced the first revolution in information technology (IT). Soren Kierkegaard responded with a devastating critique of the curiosity fostered by the media and condemned in advance what he saw as the uncommitted and dispersed spectator that would be produced by the new easy access to information. Commitment to information as a boundless source of enjoyment puts one in what SK called the aesthetic sphere of existence. Such a life is typified by the net-surfer who is interested in everything with no distinction between the trivial and important, the quantitative and the qualitative.**

**Kierkegaard saw that this sphere would breakdown under the glut of undifferentiated information. He predicted that it would be replaced by a second stage in which another essential feature of language, the use of speech acts such as requesting and promising, would enable people to live in what he called the ethical sphere. In this form of life everything would be directed towards action. Information would be expected to yield power by enabling people to make informed decisions. But it would soon become clear that information alone does not lead to power but paralysis. In order to use information, people would need to have life-plans, fulfill roles, take up tasks and, above all, make commitments. We are now in the second stage of IT and it is becoming clear how the ethical sphere can be implemented by using computers to keep track of commitments in order to further the coordination of action. But, since commitments proliferate endlessly, if there is no distinction between which actions are important and which are trivial, commitment for action will again end in paralysis. The ethical person responds to this breakdown by trying to choose what will count as important. But, if there is no basis for this choice but a further choice, the project ends in Sartrean absurdity.**

**In my view, if Kierkegaard is right, the third stage of IT, which is still on the horizon, will bring out a third essential feature of language. It will accentuate language's capacity to define identities and open worlds by means of narratives. Given the tendency toward long term commitments latent in language, such identities will be experienced as ones that one is willing to die to maintain. Such identities based on unconditional commitments will determine what ultimately matters and so finally establish qualitative differences between what is important and trivial, relevant and irrelevant, serious and playful. With such a meaningful framework in place, one will finally be**

**able to use the first two stages of IT, the providing of boundless information and the means for soliciting and keeping track of commitments, in the service of meaningful action organized into a meaningful life.**

### **Research of Dreyfus brothers on Skill and Learning**

**The research of Hubert and Stuart Dreyfus demonstrated what has become a widely-accepted model of how individuals progress through various levels in their acquisition of skill. The Dreyfus brothers labeled individuals in these progressive stages as novice, advanced beginner, competent, proficient, and expert. These stages should be reflected in curriculum planning when considering at which appropriate levels residents should be introduced to particular skills.**

### **What is a Skill? The Phenomenology of Learning (P/NP) by Professors Hubert L. Dreyfus and Stuart E. Dreyfus**

**People have claimed that computers can be programmed to exhibit skill in such domains as medical diagnosis, face recognition, and in playing games such as backgammon and chess. Professor Hubert Dreyfus's publications include: What Computers (Still) Cant Do; Being-in-the-World: A Commentary on Division I of Heidegger's Being and Time; Mind over Machine (with Stuart Dreyfus); The Power of Human Intuition and Expertise in the Era of the Computer; and On the Internet. He thinks of himself as an applied philosopher reflecting on the bearing of the work of existential thinkers such as Soren Kierkegaard, Martin Heidegger and Maurice Merleau-Ponty on current cultural developments such as the attempt to create artificial intelligence, and the effect of the Internet and various technologies that facilitate action at a distance, on everyday human interactions.**

**Professor Stuart Dreyfus has authored or co-authored 3 books on dynamic programming, which is a method for determining the optimal sequence of decisions in problems involving a process evolving over time. The method assumes a "model" of the situation, meaning a rule describing how decisions affect the evolution of the process and what elements of the situation enter into the rule. Since the method is only as good as the "mode," and the "model" often must be provided by an expert in the area modeled, his interest turned to how experts acquire decision-making skills and whether they can be expected to provide reliable "models." This led to work with his brother, Hubert, and to their joint book Mind over Machine. In which they argue that experts generally don't develop and use such "models." He is now investigating "model-free learning," a method by which a brain or a computer algorithm can successfully acquire a skill without ever developing a "model."**

**According to Stuart E. Dreyfus, for a dynamic (sequential) decision process, he considers a model being identification of what constitutes "state" (i.e., what, perhaps including past history, is needed to predict behavior), dynamics (for determining the effect of a decision given the state, and cost (for determining the cost, if any, of taking a decision given the state. The dynamics and cost rule can involve random variables. Model-free means determining the optimal decision policy for such a process by observing the results at each stage of the process of various decisions (experimentation) and adjusting decisions accordingly without using this observed behavior in order to learn what constitutes state, what are the dynamics and what rule produce the costs. That one can optimize decisions without attempting to learn a model is contrary to what adaptive control algorithms usually do, but Stuart Dreyfus believes it is what brains do.**

## **Description of Model of Skill Acquisition**

### **Stage 1: Novice**

**In the beginning you learn to recognize objective facts and features, relevant to the skill. Characteristic of relevant elements are that they can be recognized context-free, i.e. without reference to the overall situation. The novice acquire basic rules to follow, acting upon those facts and features. The rules are also context-free, i.e. no notice is taken to the surroundings. On account of this the novice feels very little responsibility for the result.**

### **Stage 2: Advanced beginner**

**The novice needs to cope with real situations. When he does, he will improve his performance. This means that the advanced beginner does not learn by rules or verbal description, but by experience. "Through practical experience in concrete situations with meaningful elements, which neither an instructor nor the learner can define in terms of objectively recognizable context-free features, the advanced beginner starts to recognize those elements when they are present". The new elements are called "situational", i.e. they are relevant in a specific situation. The advanced beginner will now refer his decision-making to both the context-free and the situational elements. Like the novice the advanced beginner applies learned rules to recognized components, and therefore feels little responsibility for the result.**

### **Stage 3: Competent**

**As time goes, there is no possibility to keep all elements (both context-free and situational) in mind. If the**

**performer does, he will not focus on the goal. He needs to adopt a hierarchical procedure of decision-making. He also needs to organize the situation, choosing an organization plan, and then examine small set of factors. Accordingly the competent with a goal in mind sees a situation as a set of facts. The particular constellation of those elements decides a certain conclusion should be drawn, decision made, or expectation investigated. The competent feels responsible for his outcome, since he is more involved in the process than the novice and advanced beginner.**

#### **Stage 4: Proficient**

**The proficient is deeply involved in his task. Certain features of the situation are more important than others. Step by step salient features change, and deliberation is not possible. The proficient has experienced similar situations in the past and so associates with present situations plans that worked in the past and anticipates consequences that previously occurred. The proficient respond to patterns without decomposing them into components, this is called "holistic discrimination and association". The proficient is recognized by involved and intuitive understanding followed by detached decision-making.**

#### **Stage 5: Expert**

**An expert generally knows what to do base on mature and practiced understanding. The expert does not see problems in some detached way. The skill of an expert is a part of him and he is deeply involved in coping with his environment. "When things are proceeding normally, experts don't make decisions; they do what normally works". With enough experience in a variety of situations, all seen from the same perspective or with the same goal in mind but requiring different tactical decisions, the mind of the proficient performer seems to group together situations sharing not only the same goal or perspective but also the same decision, action, or tactic. At this point**

**not only is a situation, when seen as similar to a prior one, understood, but the associated decision, action, or tactic simultaneously comes to mind. An ability to discriminate an immense number of situations is produced by experience. With expertise comes fluid performance.**

**Stage 6: Mastery**

**Stage 7: Practical Wisdom (Aristotle's Phronemos Man of Practical Wisdom)**

## **Phronesis and Aristotle's Man of Practical Wisdom**

**Here are my thoughts on Aristotle's Man of Practical Wisdom and Phronesis. According to him, phronesis is practical wisdom, the ability to make the right decision in difficult circumstances. Phronesis, or practical wisdom, or prudence, is, to me, a profound concept. Aristotle identifies phronesis as one of the dianoetic virtues, that is, those intellectual virtues that characterize the well-ordered mind. The dianoetic virtues are: Sophia (wisdom of first principles), episteme (scientific knowledge), phronesis (practical wisdom), techne (craft knowledge), and nous (intuition). According to THE CAMBRIDGE COMPANION TO ARISTOTLE. The perfection of practical rationality is the life of complete virtue of character, guided by practical wisdom (phronesis).**

**The good life is the life directed by phronesis, and the most perfect exercise of phronesis is the application of that virtue to the good of the community.**

**According to Hubert Dreyfus (University of California, Berkeley) expertise is as far as Aristotle got, meaning how you get to be very good at doing in your world, whatever your skill-world is or whatever your social world is.**

**Something that works, that you can feel good about and something that other people can feel good about. You can become what he calls a Phronemos, a man of practical wisdom. It is the highest form of being an expert in everyday life. Knowing when to tell the truth and when not to tell the truth, and when to be courageous and when not to be and so forth.**

**And you can only get it by having lots of experience. And, this is the fifth level of skill model. You get so you can just-- in Aristotle language: straight way do the appropriate thing at the appropriate time, in the appropriate way. But there is something higher than that. And, that is able to change the world, to change the rules of the game and changing the world and changing the rules of the game, that is something Aristotle didn't understand. There was just the Greek world, his world, and the question was to become the master or the expert; lets say: not master but the expert in it. (Novice, Beginner, Proficient performer and Competency)**

**Besides spelling out the Aristotles Man of Practical Wisdom, Hubert Dreyfus has recently made a distinction between two types of resoluteness, and hence two types of authenticity, found in Martin Heidegger's Being and Time. The first he associates with the social virtuoso, Aristotle's Phronemos, while the second he associates with the cultural master, the world-creating individual. The distinction between these two types of authentic being-in-the-world may, in fact, serve to explain in part the radical divergence that has taken place between Heidegger's self-proclaimed followers in the Continental tradition.**

**Quoting Hubert Dreyfus, "So we would expect Heidegger to present his own version of the mastery of the cultural practices that, according to Aristotle, enables the phronemos to straightway do the appropriate thing at the appropriate time in the appropriate way. But just what phenomena do Aristotle and Heidegger have in mind with**

**techne and phronesis? The way to find out is to let these phenomena show themselves as they are in themselves. Hubert Dreyfus describes, in a very abbreviated way, four stages one goes through in acquiring a new skill in any domain, as well as what one has when one has become an expert, especially the expert in social situations, Aristotles man of practical wisdom." (Hubert Dreyfus, in "Could anything be more Intelligible than Everyday Intelligibility? : Reinterpreting Division I of Being and Time in the light of Division II")**

**Hubert and Stuart Dreyfus have explained that when people are truly expert at something, they do it "naturally" -- that is, without thinking consciously about what they are doing, and without following any explicit rules. [Hubert L. Dreyfus and Stuart E. Dreyfus, "From Socrates to Expert Systems: The Limits of Calculative Rationality," Technology in Society, vol. 6, no. 3 (1984), pp. 217-33]  
[http://socrates.berkeley.edu/~hdreyfus/html/paper\\_socrates.htm](http://socrates.berkeley.edu/~hdreyfus/html/paper_socrates.htm)**

**"Nothing seems more possible to me than that people some day will come to the definite opinion that there is no copy in the nervous system which corresponds to a particular thought, or a particular idea, or memory. Information is not stored anywhere in particular. Rather it is stored everywhere. Information is better thought of as "evoked" than "found" [Making a Mind vs. Modeling the Brain: AI Back at a Branchpoint Hubert L. Dreyfus and Stuart E. Dreyfus, University of California, Berkeley]**

**Dreyfus has argued that the enterprise of Artificial Intelligence consists in turning the rationalist project of philosophers like Descartes, Leibniz, Kant, and Husserl into an empirically rigorous research program that could actually make progress. In common with the rationalist tradition in philosophy, the AI research program holds that the mind is fundamentally rational, representational,**

**and rule-governed. According to Dreyfus, if the AI research program succeeds, then the rationalist tradition in philosophy will be vindicated, while if it fails, this will be good evidence in support of the critiques of the rationalist tradition offered by thinkers like Wittgenstein, Heidegger and Merleau-Ponty. Dreyfus own view is that the AI research program, and cognitivism in general should be abandoned, precisely because they fall victim to the same critiques that were originally leveled at the rationalist tradition in philosophy.**

**Hubert and Stuart Dreyfus, for example, argue that expert systems are not truly expert. 12 They describe five levels of expertise in the mastery of knowledge (novice; advanced beginner; competence; proficiency; and expertise) and assert that true experts do not proceed by rules of thumb so much as they transcend the rules by leaping intuitively beyond them.**

**Human experts know when to use rules and when to break rules, but expert systems only know how to follow rules. They achieve at best the third level of expertise.**

**Even if expert systems can not be designed with "meta-rules" which state when to break the rules, they are still valuable tools. Chess programs may not beat grand masters, but they do routinely beat the rest of us. They are rule-based systems that follow the rules to reach viable conclusions. Non-expert humans have at least one meta-rule: if you don't know when to break the rules, follow the rules. Rule-based expert systems are valuable guides for non-experts, and they are excellent tutors.**

**An examination of the main themes in Heideggers early and later thinking, focusing on the continuity and development of his thought. In the first half of the course, we will analyze the notion of authentic temporality and the contrasting inauthentic modes of being in relation to**

**Aristotle's distinction between phronesis, sophia, and techne, and will discuss how Heidegger posits the primacy of the practical while at the same time supplanting the traditional definition of practical philosophy. In the second half of the course, we will examine how these remain the central themes in Heidegger's later thought, though his move away from the Dasein-orientedness of Being and Time and toward the concepts of history and community prompt Heidegger to restate these themes in somewhat different terms. These points will be explored by reading Heidegger's essay on art, truth, and technology.**

### **Texts**

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**Selections from the Nicomachean Ethics bks. VI and X, The Concept of Time, selections from Being and Time, The Origin of the Work of Art, On the Essence of Truth, The Question Concerning Technology.**