EXPERIMENTAL REALISM AND EMPIRICAL IDEALISM IN INFORMATICS
A virtual interviewer of Don Ihde, and West Churchman

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INTRODUCTION

Many researchers and graduate students adopt the vocabulary, if not the thought, of leading scholars who are newcomers in the hardly defined field of informatics. Names come and go, even bigger names like, say, Marx, Habermas, and Foucault. In this paper I wish to contribute to the continuity of the research tradition in informatics and to the build up of its identity by relating one expression of the thought of one new personality that has been observed in these last years, the philosopher Don Ihde (<http://www.sunysb.edu/philosophy/new/faculty/ihde.html>), to the thought of C. West Churchman (<http://www.ISSS.org/lumchurc.htm>) whose orientation was originally associated with the pragmatist philosophical currents of experimentalism and empirical idealism, and whose dialectical social systems approach has been related to field of informatics during the last 30 years. Those who are interested in a historical background and roots of the early Churchman's thought, are invited to read Krikorian, Y. H. (1962). Singer's philosophy of experimentalism. *Philosophy of Science*, 29(1), 81-91. An understanding of the experimentalism and empirical idealism of Edgar Arthur Singer Jr, Churchman's mentor and William James' student, can enable a better appreciation of Don Ihde's professed experimental realism, as related to Churchman's thought.

My own relating of Don Ihde to West Churchman (in the following abbreviated as DI and WC) is done by inserting virtual interviewing questions into the integral text of an interview of Ihde as accounted for in one of the documents that are linked to his home page, <http://www.sunysb.edu/philosophy/new/faculty/ihde.html>. A similar effect could have been attained also by means of explicit comments to other papers which are likewise linked to Ihde's home page but have the disadvantage of having a more restricted scope. The interview, as accessed at <http://www.sunysb.edu/philosophy/new/research/ihde_2.html> was made in the context of the "Matrix Project" and is presumed to offer an outline of DI's general position around the year 2000.

The text of the document is immediately followed by my commenting questions in bold italics, with main references to WC, and in particular to his work as outlined in the book *The design of inquiring systems* (1971, in the following abbreviated as DIS. See an extended word-index for DIS at <http://www.informatik.umu.se/~kivanov/chuindex.html> or <http://www.informatik.umu.se/~kivanov/chuindex.pdf>).

The reader is supposed to be familiar with DI's work, or with his home page and links mentioned above. Therefore no direct references will be made to his work published elsewhere and less available on the Internet. The point of the edited interview is mainly to stimulate the reader to a closer study of the works by both ID and WC.

A difficulty is that DI seems to presuppose that the reader of his linked web-pages has read not only his work but also the work of his sub-culture or community of phenomenological social studies of science. As a matter of fact, what DI writes (in "Why not science critics?" <http://www.sunysb.edu/philosophy/new/research/ihde_3.html>) about the technical opacity of texts of scientific journals of selected communities can also be said about his own community. In his papers (e.g. "If phenomenology is an albatross, is postphenomenology possible?" at <http://www.sunysb.edu/philosophy/new/research/ihde_3.html>) one can find many colleagues' names, their fragmented concrete, detailed examples and technicalities which assume that the reader already is an acculturated willing member of his particular selected community and its neologistic phenomenological language. If not, such reader is locked out as an outsider. (For an outsider's criticism of the criticism of Plato by DI's most cited colleague, Bruno Latour, please see "Platonic information technology. Reading Plato: Cultural influences and philosophical reflection on information and technology" Proc. of ISTAS 2000, IEEE Institute of Electrical and Electronic Engineers, Symposium on Technology and Society, 6-8 September 2000, Rome, pre-publication version at <http://www.informatik.umu.se/~kivanov/RomePlato.html>).

A related difficulty which is object of my paper is that a student or researcher should be able to justify his preference for in-depth study of the new over the old by specifying the criteria or what is to hoped to be found in the second approach which is not found in the first one, and the irrelevance of the other way round, what can be lost in the later approach but has already been found in the old one. If not, the adoption of new scholarly trend can work as an insulation from criticism based on the probability that the new approach has not yet been submitted by potential critics to the searching criticism which time allowed to be directed towards older approaches. Basically this is also the problem of historicity to which, by the way DI in the interview displays a very ambiguous attitude.

I hope, then, that this will allow the use of prior knowledge and experience for understanding and coping in new problem situations, be they called research or design. New terms, neologisms (which characterize phenomenology especially after Heidegger) and buzzwords can then hopefully be reduced, in the spirit of the "Occam's razor", to already known established terms and concepts which have the benefit of having been already been examined and understood after been objects of criticism during many decades, if not centuries.

A redactional note regarding the original text by DI: wherever the word "dominate" appears it can be a wrongspelling of "dominant". There seem to be other spelling and editing errors in the original DI-text on the web, which probably was published there before it was eventually proofread and published in print elsewhere. The

edited interview ends with a postscriptum which outlines the conclusions I am prone to draw from this version of the paper.

COMMENTED INTERVIEW WITH DON IHDE

(From <http://www.sunysb.edu/philosophy/new/research/ihde_2.html>, accessed 10 Jan. 2004.)

These are excerpts from the interview with Don Ihde, November 14, 2000 in relation to Matrix Project. Participants: Don Ihde, and interviewers ES Evan Selinger, SM Srikanth Mallavarapu, JJ Jari Joergensen, RE Robb Eason, NP Nikos Plevris, and JH Jeremy W. Hubbell. I myself am supposed to be the eighth, virtual, interviewer.

ES: Don, you have a background in Continental philosophy; but if one does a quick survey of works being published in Continental philosophy today, one finds very little on either the topics of science or technology. Even if one finds treatments of these issues, they are often very dystopian, presupposing science, technology, and their advancements are somehow encroaching on the lifeworld, damaging more productive forms of living and styles of existence. Why do think that is the case and how is it that you, coming out of a Continental background, seem to be taking a different path?

DI: I think that you are right about it largely or dominantly being the case. There are some people of course who do philosophy of technology out of Continental backgrounds. I suppose the two most prominent would be Andy Feenberg and Albert Borgmann. Andy comes out of critical theory. Albert comes out of a Heideggerian background. I think part of it has to do with a very bad habit. In my estimation this bad habit of Continental philosophy tends to first of all narrowly select some standard set of godfathers, or people who are widely known, and vertically cite them. For example, when it comes to technology, Heidegger and Marcuse are probably still the people who are most talked about in the field. It used to be a wider set, but other people have sort of dropped off. Both of these people tend to be highly dystopian. On the other hand, as you know, the Dutch have been reading American philosophers of technology. They read us as being at least less dystopian than the European forbearers. My own take is that the more I study particulars kinds of technologies, the more dissatisfied I am with traditions that would make vast generalizations about technology, particularly on a dystopian basis. I think technologies can do very bad things; but they can also do very good things.

KI: But the problem, after the concluding statement is "And so what?" One wonders about your definition of "good things" and about any recommendations of yours on how to use or to develop technology to achieve good things. Why are you dissatisfied with generalizations about technology "particularly" on a dystopian basis, but not also with those on utopian basis? And, regarding the statement that technologies can do very bad thing but also

very good things, could it be that such a typically "positivist" statement contribute to the attractiveness and impact of your thought? Utopically, it does not threaten the vested interests of the capital-intensive technology but, rather, legitimizes a hopefully profitable tinkering, bricolage and "play" with it, while promising its consistency with likewise fashionable trend of continental European thought which is excitingly exotic for old fashioned positivists.

SM: In the interview with Kuhn that we read, he clearly expresses dissatisfaction with the fact that philosophy departments did not treat him fairly. This points to the problem of disciplinarily within science studies. We have history and philosophy of science departments, sociology of science, and people from cultural studies contributing as well. Where do you see science studies going now and where do you place yourself? You clearly come from a Continental tradition and yet your work interests people like Bruno Latour, Donna Haraway, and Andrew Pickering.

DI: That is really an interesting question because not only was Kuhn badly treated by the philosophers, but Latour was as well. Many of the people in contemporary science studies have been treated badly by the philosophers. Sometimes I've been treated badly by the philosophers. There is a long tradition of dismissal. Of course part of it has to do with what philosophers we are talking about. The English speaking situation is one in which there have been two very large phases in philosophy of science. One being the early positivist phase in the early part of the century in which, ironically, most of the participants came from Europe. The second being its transformation into a more analytic, linguistic analysis version of science dominated by English and American philosophers. Both of those traditions ended up in a kind of a battle that Peter Galison characterizes as the positivist/anti-positivist controversy. Both of them together had arguments about what really was central to the philosophy of science. What was not central had to do with things like laboratory life, instrumentation and technology in science, and the sort of sociology of science and scientific knowledge production.

KI: Can't it be said that e.g. all the rich literature about Galileo and his relation to the Church is a "philosophy and sociology of science", not only, but also a "theology of science", as for instance, the whole work by Alexandre Koyré (1892-1964) appears to be? And among the positivists there are very advanced studies of instrumentation in terms of perception and measurement such as by Ernst Mach (1838-1916 in his "phenomenism" where the emphasis on psychology of perception is also an indication of the limits of the social dimension which "social studies of science" like to emphasize, without particular consideration for political economy.

That gap-- which I think still exists, with a few exceptions, in the dominate philosophy of science-- was taken up by what I call the post-Mertonian sociologists of science: the people out in the strong program, the Bath school, actor-network theory, and Bruno Latour.

KI: Do you agree that the same gap (or some other kind of gap?) has been also the bridging object of the "systems" movement which followed early

positivistic "operations analysis", as well its studies of "implementation", especially as expressed eventually in so called action science or action research?

If my own travels are indicative, one of the interesting things is that precisely because of the empirical studies and the emphasis upon practice that has come out of science studies, it is my estimate that old-fashioned philosophy of science has lost ground.

KI: Is the use of the expression a rhetorical device and a tautology, and is it legitimate to ask whether something has lost ground because it has become old-fashioned or whether it has become old-fashioned because it has lost ground? Would this take us to the discussion of what fashion is or should be, with all its relations to the question of relativity of values and of aesthetics?

Even somebody like Hacking, who is a kind of exception to standard philosophy of science, reluctantly admits that all of the action now seems to be in science studies. These are people who do cultural, sociological, and anthropological studies of science. It is here that I have to admit being moderately happy because one of the good things coming out of the phenomenological, hermeneutic tradition is an emphasis on praxis. It looks at human actions, particularly embodiment and perception. In my own case, it incorporates the role of technologies, such as instruments. It turns out that there is a lot more in common between the way in which I think of the philosophies of science and technology with the currents trends in science studies then there is in the dominate English speaking or American philosophy of science traditions.

ES: You just pointed to a positivist appreciation for science studies. But what if we consider a contrary question concerning disappointment? You are widely regarded as one of the first, if not the first, American philosopher of technology. It seems to me that despite the ubiquity of technology in the American landscape, philosophy of technology, as a specialized subdivision of philosophy, never quite achieved a large following. Why do you think that is?

DI: I think that observation is correct. It is not one that lacks support. In fact, in Joe Pitt's 1995 addition of *New Directions in Philosophy of Technology,* a fair number of the founders of the American Society for Philosophy of Technology admitted the same thing. It seemed to hit a level, a plateau, and hasn't grown. I have made the same point, comparing the movements in feminist philosophy of science with Continental philosophy, as it exists in the Society for Phenomenological and Existential Philosophy. Both of which have, in the same period of time, multiplied their memberships by very, very large numbers. SPEP is now the second largest single interest or special interest philosophical society in the country. Feminist philosophy has a wide adherence. Yet the membership list of SPT stayed relatively constant. Why? That one is harder to address. My own theory is that it failed to attach itself to progressive movements. We just talked about a little earlier the general dystopian character of Continentally derived philosophy of technology in America. While SPT isn't necessarily totally dystopian, it tended to arrange itself according to what I would call non-progressivist movements. Its

earlier associations, for example, were with movements like alternative technologies vis-à-vis post-colonial situations. I think that was a bad move. Similarly, it has been concerned with a number of environmental issues. In many cases the environmental issues have tended to side with, in my estimation, more conservative takes upon environmentalism. However, the spirit of the times has changed. For example, one of things that characterized early-European technological dystopianism was the dominance of technologies that could be called war technologies and large industrial technologies-- what we in America term rustbelt technologies. Now if that is the only thing that technology is, then of course may of the points we made about things like global pollution and the escalation of Cold War policies hit home. But on the other hand, the Cold War is-- if not gone-- at least highly dissipated and distributed. Secondly, the technologies that are coming on-line now are largely electronic information technologies. Those movements that originated with the previous technologies have either not kept with or adapted themselves to the new type of technology. For example, in my 14-year-old child Mark's generation, there can hardly be a better word than technology. Technology means electronic music, computers, e-mail, laptops etc. They think it's great stuff. If you suddenly bring back somebody like Marcuse who argues that we don't have any genuine choices, or Heidegger who wants to say we're all standing reserve, it doesn't ring a bell anymore. I think that is partly where SPT has not been flexible enough or quick enough to see what is happening in terms of the world of technological change.

KI: *What you just said can be interpreted as your recommendation that new trends in philosophy of technology or views of technology, in order to thrive, should attach themselves to progressive movements, whatever that means. If the trends associate themselves to successful fashions or trends in society this will increase their chances for success; success is measured in terms of number of adherents or members of professional societies, and the number or economics of these societies is a measure of their value, degree of truth, seductive capability, rhetorical power, or political impact as the impact by the sophists opposed by Plato. What you said can likewise be understood as a recommendation to young university researchers to adhere to new trendy trends, wherever they originate, as long as they promise rich financing of research funds. Have you any theoretical or philosophical grounded practical reservation to test and prevent such an interpretation which would not fit the evaluation of, say, science, technology and professional societies in the Third Reich before world war II?*

JJ: Now that you are talking about time to some extent, Latour claims we have never been modern. How would you say this claim fits into your philosophy?

DI: That is a nice, but hard question to answer. About seven or eight years ago, a young woman at McMaster Univeristy in Canada did a thesis on the oeuvre of my works on the philosophy of technology. Part of her thesis was that I was the first "post-modern philosopher of technology". While I like her characterization, I also have deep misgivings about certain aspects of post-modernism. But if by modernism you mean the attachment to modernist epistemologies such as those that came out of Galileo, Descartes, and that particular period, which hold that knowledge is the true representation of an external world, then I am clearly not

modernist. I have no sympathy with that. I am clearly post-modernist in the sense that techniques mostly from phenomenology, but also from deconstruction and variants on multi-perspectivalism are where I would stand epistemologically. Epistemologically, I suppose I am closer to a post-modern position. If by modernism you mean the movement towards a secular world, a world in which you try to evolve principles of relations between religions and ethnic groups that allow them to function within a spirit of toleration and mutual respect-- what could be called Enlightenment modernism-- I'm thoroughly modernist. It seems to me that the problem with the contemporary world is a kind of throw back to a pre-modernist situation in which ethnic terrorism and conflicts.

KI: Is your reference to "secular world" a program statement of your philosophical position as being isolated from or oblivious to (despite your sympathetic references to "multi-perspectivism") theological aspects or contents of technology as expressed in the remarkable book edited by Mitcham and Grote (1984) Theology and Technology? Or is it a statement that you agree with Heidegger's student Karl Löwith often quoted claim that Heidegger developed a "theology without God"? What does such a claim mean to you and your conception of god? See Macquarrie, J. (1994). Heidegger and Christianity. London: SCM Press

ES: Remaining with the topic of history, I want to ask you a question about one of the protocols for the techno-science research seminar you lead. You stipulate that only living authors should be read in these seminars. Why did you make that choice and what does it suggest to you about the use and value of the history of philosophy? To extend the question a little bit, one of the more dominate analytic departments in our country-- the philosophy department at New York University-- doesn't have a history requirement for its graduate students, such as a comprehensive history examination. Some traditionalists have found that to be somewhat problematic, while others have clearly ranked the program as one of this country's best. Can you comment on why you select only living authors? How does that decision reflect your underlying convictions about history of philosophy and its value? Finally, how do you see your approach in relation to approaches taken by programs like the one at NYU?

DI: I think I would start on that question by going back to my discovery about the myth of Stony Brook. When I first came to Stony Brook in 1969, there were two standard stories. The first was that the Long Island Rail Road was going to be electrified and that it would take us only forty-five minutes to get from Stony Brook to Manhattan. The second myth was that Stony Brook was the Berkley of the East and that it would only be a matter of time before we would be recognized as such. Well, as you know, it still takes an hour and forty-five minutes in the somewhat updated diesel locomotives to get from Stony Brook to Manhattan. Furthermore, whereas there are thirteen or fourteen extant Nobel Laureates currently existing at Berkley, our only one has retired. During a visit to Berkley a number of years ago, I decided to take a look at the bulletin board in the philosophy department to see what they were offering. As you know, they had a very large graduate program with some very eminent people. I looked at what was offered and found there were two courses that could have been termed historical. There was a course on Kant and one on Descartes. All of the other courses followed

the rubric of living authors only. This anecdote is a partial response to your question. It is not only NYU. I think the dominantly analytic schools have been largely ahistorical or non-historical. In fact, if you go to English universities, many of them assign all of the historical figures like Plato or Kant to the classics, not philosophy department. In some sense, I suppose I'm slightly reflecting part of my own early analytic training that was in this mood. But that is not really the purpose. The purpose here at least is to promote balance by creating a perspective that I think is highly needed in our department. Our department tends to either be historically oriented, with standard courses on the major figures and texts of the history of philosophy, or is Continental in the sense that I described before of studying the godfathers. You've got to do your Husserl and you've got to do your Heidegger. I don't think that is bad. I think its good. On the other hand, it misses the sense of what is going on here and now in a cutting edge discipline. Science studies itself is only a few decades old.

KI: Doesn't this presuppose that what is going on here and now is taken as not only a ("phenomenological"?) given but is also assumed to be good, beneficial and fruitful, presuming also that what has survived up to "here and now" is social-darwinistically the only and best that has to be taken into consideration. Doesn't this create a sort of censoring "veto-right" for each generation in respect to what the following generation is supposed to be permitted to know?

Most of the best-known principals are in fact still alive, Kuhn exempted I suppose; but he belongs to the pre-science studies era in one sense. I do it in part as a kind of sense of balance as over against the heavy weight of history and Continental thought. It is interesting because the thrust has been even more toward the progressive elements and that is, as you know, we end up reading a lot of people's recently published books; but we also read a lot of things that aren't even published. It is almost like we are participating in a living internet because we are in fact on the net with our various interlocutors. We have been on the net with the three that occur in this volume: Pickering, Haraway and Latour on a quite frequent basis. It is a semi-deliberate design to live in a very contemporary setting.

JH: A related question to that. How does history work in within your writings and what is your relationship to the history discipline as it is made up here at Stony Brook?

DI: This is coming from a historian so I have to be careful. First of all, I have to say that I affirm history, particularly in the areas that I read: the history of science and the history of technology. I happen to think that most of the recent and contemporary history of science and technology is considerably superior to its older forms. In that sense I am not against history in any respect. I admire and appreciate the more sensitive and precise kinds of studies that are coming out of the contemporary world. In science studies, for example, I am quite sure that if I made the claim that Shapin and Schaffer's *Leviathan and the Air-pump,* might well be the most important piece of socio-historical work in that field in the twentieth century, I probably would not find too many people that would divert from my assessment. Now that is a kind of history that seems to be more or less unique to contemporary approaches where you are dealing with the social/cultural aspects of

science and technology as they develop as well. You can see I am reading history again through living authors, Shapin and Schaffer who are very, very smart guys. This is an aside. I have from time to time thought about doing a book entitled, *Against the History of Philosophy* that would maybe raise a few eyebrows. It has to do with the fact that I don't think that philosophers should really do the history of philosophy. I think what philosophers do is read historical texts and pretend in some respects that they are contemporary. I don't think that they are contemporary and I don't like the pretense.

KI: ***Isn't one main idea behind hermenutics to claim that all text has to be interpretation and that the hermeneutical interpretive process never ends? In this sense, for instance, even Plato himself did not know what he was saying but each new generation understands him and his message in an at least partly different way in the light to new presuppositions which uncover old ones, including hidden ones. Compare with the main idea behind the classification of "inquiring systems" in the DIS book by WC referred above.***

JH: How specifically do historical actors figure in your work? This is something that is absent from the Matrix as I have read it so far. There is no discussion about how history plays within these different institutions. Could you comment on that and your own take on Shapin's and Haraway's books.

DI: That's pretty interesting, of course, because Haraway and Latour, in particular, have made extensive comments and responses to Shapin and Schaffer. Pickering has also made some responses, but not as extensive as the other two. All of us would be different. Bruno Latour, being his usual contrary self, both says that he has no disagreements and yet goes about disagreeing with a whole series of particulars. My take upon it would be probably slightly more a take upon what he calls the instrumental technology or the machinic technology. I would look at the air-pump itself and look at the way in which it becomes a kind of interpretive device which then provides the structuring of the experimental life as they are calling it through its technological selectivities. I would probably emphasize that more than either Donna or Bruno, although I can see Andy might well do the same kind of thing with the devices. I tend to focus in upon those. In fact, one of the terminological inventions that I have used in the last few years is what I call epistemology engines. An epistemology engine is a technology or a set of technologies that through use frequently become explicit models for describing how knowledge is produced. The example I have used over and over again is the camera obscura. Both Descartes and Locke deliberately use it as a model of the mind. The analogy is that the camera obscura is to the eye as the eye is to the mind. If you look at the way it is constructed and used, you can basically say the whole structure of subjectivity is inside a body trying to discern what is outside in the external world. That is not the only epistemology engine-- although it is perhaps the most dramatic-- which can be historically derived. That is the kind of special take I would have upon those histories.

KI: ***Would you equate, or how would you differentiate, your idea of "structure" (whatever that means) of subjectivity in the "historical epistemological engine" of the body to, or from, the expanded Kant-inspired***

"maximal a-priori" formulated by WC in his The Design of Inquiring Systems (p. 141ff).

ES: Another question about history since we are on the subject. In the Dutch interpretation of what they call American philosophy of technology, the claim is that what separates American philosophy of technology from its European ancestry is a turn to historically situated, particular empirical technologies. I want to ask you a question about that. On the one hand, your works have been, from start to finished, filled with particular historical vignettes of concrete empirical technologies which you use as way to overcome metaphysical determinist positions of technologies and reified discussions of technologies that refer to different empirical technologies, as Technology, capital "T". But on the other hand, compared to other philosophers of technology, it seems that one might say you've been less empirical in so far as the early Dreyfus drew himself into a particular empirical research trajectory, artificial intelligence, in order to delineate what computers can and cannot do. More recently Feenberg seems to have gotten directly involved with distance learning and is working on the intricacies of it in relation to his own social theory. Do you see yourself as making as much of an empirical turn as these other two?

DI: That is a good observation. I think that of the people that you mentioned, Dreyfus is the most extreme. He has made an entire career out of looking at artificial intelligence, expert programs, and computerization. As a result, with the keen analysis that he has been able to employ, he is probably the single most influential philosopher upon one strand of technological development. There are so many Heideggerian, Dreyfussian computer designers these days that it is almost amusing; but that came out of a very, very long time of work. You probably are not aware that my use of perception and instrumentation had actually been built into a set of airport approaches to keep pilots from having perceptual illusions upon approaching airports. That was not something I deliberately did; rather it is an interesting kind of illustration and adaptation of some of my early work on perception and instruments. The fact of the matter is that maybe I am just coming to it late because, as you know, the last few years I have been focusing quite narrowly upon imaging technologies: mostly visual imaging technologies across a wide stretch of sciences, such as astronomy, medicine, spectroscopy, chemistry, etc. I have been focusing a lot of research on the history and use of imaging technologies. In recent times this interest has accidentally reverberated onto an earlier interest of mine: auditory experience. I am now adumbrating the visual stuff with a re-interest in auditory technologies, including electronic music, computerization, etc. There is a particular thing that I am after. I am quite convinced that if one looks at the practices of science vis-à-vis the production of knowledge, that the use of these kinds of instruments no longer fits the modern epistemological model as we are not really talking about true representations of an external world. I don't think that scientific images are either texts or pictures. I am trying to create a phenomenological, hermeneutic framework for understanding how these images and their production work in their production of scientific knowledge. One of things that keeps cropping up is the way in which these instruments are in fact not representational. They are much more constructed kinds of imaging processes. The interesting thing is that this is exactly the same, whether you are talking about producing visual images, or whether you are talking

about producing computer music. What computer music does now in terms of its digital and synthesized aspect is move away from "reproducing" sounds or imitating natural sounds-- instead producing machinic sounds per say.

KI: Again, isn't this the same idea of "maximal a-priori" in WC's The Design of Inquiring Systems (p. 141), the idea of creating imageries which stimulate the creative apprehension of a situation in terms which can lead ("multi-perspectivally" as in the "sweeping-in" process of p. 197) to a ambiguous "solution" of a creatively constructed problem?

I find that to be a quite distinct parallel with a lot of the topographic or computer design images that try to make composite images of projections for greenhouse gases and earth warming. None of those things are just simple pictures. They are composite, compound, complex images that allow you to see trends and tendencies at a glance.

KI: Isn't this the graphical analogy of translation of numbers or arithmetics/mathematics to images or geometry (analytical geometry as mathematically/logically implemented in the computer software)? What about the import of the age-old classical controversy of the relation between mathematics and geometry? Do you discuss the place of (embodied) mathematics in your philosophy of technology? If you adopted CW's scheme in DIS the answer would be straightforward inasmuch mathematics and logic are represented by the role of Leibnizian inquiring systems in human and social inquiry.

JJ: You talked a little bit about the importance of examples you choose. Feenberg discusses Minitel. Winner discusses nuclear power. Your examples are basically about imaging technologies. How do the examples you choose reflect your philosophy? Could you have focused on something else and would you have still come to the same philosophy you have now?

DI: Well, I guess I would get caught in that question because if you choose a different technology you obviously come out in a different place—to some degree. On the other hand, what I do find-- and this is perhaps a little higher altitude observation—is that the style of phenomenology I developed reflects and revolves largely around variational method. I think that one has to go through, as early Husserl even claimed, a series of variations to find out what is variant and what is invariant-- if there is any such thing as the invariant. If you remain interested in epistemology then each set of technologies provides a perspective. You need to have a series of multiple perspectives to recognize the shape, structure, and complexity of the phenomenon you are investigating. In that sense, I guess my variational theory is one which reads instruments in that particular way.

KI: Is this variational method or variational theory a less precise variant of what WC aimed to with his "sweeping-in" in Singerian inquiring systems" (DIS p. 186ff) where quantitative considerations are may be seen as including degrees of qualitative ones in the spirit of coding-measurements or analogs of "semantic differentials"?

That in turn leads me to such things as imaging technologies. On the other hand, I have recently become impressed with two convergent tendencies. One tendency is within science itself. Old fashioned science wanted to say that the way in which you could be more reliant--not certain-- upon scientific conclusions was by replicating the same experiment over and over again in the laboratory. If you can't get your gene to express correctly in lab one, or lab two, or lab three, it is probably unlikely that the claim that it did express itself in that way was true. That is the standard approach of science. But when you get to super-macro-scale things, like Gallison's *How Experiments End Early*, and you need to run experiments to find out whether or not there is a neutral current, the cost and complexity of these experiments is so incredibly expensive that no single country can afford to repeat at an ad infinitum basis these kinds of experiments. Consequently, a lot more resides upon the single complex experiment. But what has developed, it seems to me, in contemporary science, which I find very impressive, is what could be called convergent instrumentation. If you want to find out the date of this anthropological remains, you don't just use one method of measurement, Carbon-14 or something like that. What you do is use as many methods of measurement as possible, usually three to five, and if they all converge upon pretty close parameters, then you know you have really got something solid. We use this multiple perspective, multi-variant kind of instrumentation increasingly in things that are not repeatable. A recent author that I have been reading, who has a book on genes, people and languages, makes the point that if you can get genetic patterns, linguistic patterns, and archeological patterns to converge upon say the movement of Middle Eastern farmers into Europe, at a certain time period, then those multiple disciplines with their multiple methods are doing the same kind of thing-- producing a convergence phenomenon, which gives you greater assurance that you have gotten something solid in the process. One of things that I am interested in is where can you find these kinds of variant convergences which give you better results than say earlier kinds of either standards replication experiments or single linear kinds of approaches.

KI: What is the difference between your idea of multi-perspectival convergence and the "sweeping-in" process of "approximation to an ideal implicit in WC's DIS (pp. 194-201) that was further developed by myself in my concept of precision, accuracy and quality in the dissertation "Quality-control of information" (1972, <http://www.informatik.umu.se/~kivanov/diss-avh.html>?

NP: My question has to do with the answer that you gave to Evan before. In *Representing and Intervening* Ian Hacking distinguishes different kinds of realists. Do you consider yourself a realist?

DI: I have often been accused of being a realist and plead partially guilty to that. I don't have a problem with being a realist in one sense. But that doesn't answer much. You have to ask: What kind of realist are you? I think I am a Hacking kind of realist. If you can interact with the thing you are investigating in such a way that you can determine, to use Merleau-Pontyian language, that it is questioning you back, then you have something real. Hacking's famous point is that if you can spray it with electrons then it is real. I think one other thing needs to be said. This goes back to imaging technologies. The trajectory of visualism in science is to equate

seeing with believing—even though it may be a complex, instrumental seeing. It seems to me that what Hacking does is to use a kinesthetic, tactical indicator. I like this because it is in line with John Dewey's kind of realism. I am not a mono-sensory person. I am a whole bodied perception person. If you can get something to react as mediated through instrumentation or immediately through touch, then it is real.

KI: In DIS (pp. 78ff) an example of instrumentation is given in terms of mass spectrometry applied to the observation and identification of organic substances. It is obvious that the constructive ideation of a spectrometer allows or constructs a questioning back by a sample of material that is fragmented by a bombardment of electrons, thereby producing ions of different masses. The ions are in turn questioned back by being actively processed in order to produce a likewise constructed imagery. The substance's (and the instrument's!) "reality" is therefore defined by the process of interaction between experimenter, instrument and substance. The question is what is gained by applying the phenomenological terminology of a thing that is questioning back. Possibly this terminology obfuscates the question of relation between realism and idealism which does not seem to be addressed (cf. DIS, p. 199, and the special chapter on the dialectics of idealism and realism in WC's book Challenge to Reason (1968).

JG: In your *Technology and the Lifeworld* you write about the cultural transformation of technologies. Your current work focuses on epistemology engines and electronic music. Yet, in neither of these periods do you do what science studies do: follow the actors around in the laboratory. What do you think you gain and lose by not entering the laboratory?
DI: What I've lost is clearly not doing that type of research. This is why I am appreciative of laboratory studies, especially the pioneering works of Latour, Woolgar, and Knorr-Cetina. It is an obvious place to see what the scientists are doing. But it is not true to say that I have not entirely done laboratory studies. Again, as concerns imaging technology, I've taught a seminar on this topic three times, with one more coming up this Spring. In these cases I bring the image-makers and image-users to the seminar, or else we go to them. We do therefore go to their native lairs. We also do something else that I don't think Latour does as much. After analyzing them in their layer, we analyze ourselves, and ask: What do we think they have done? This is an interdisciplinary, critical approach. At the same time, I want to be able to see what the inter-technological situations are. Hence my interests in computer generated music and computer topography processes which converge on similar effects.

KI: Don't you think that in this way one paradoxically disregards most important matters of social power and economics which are supposed to lie at the heart of social studies of science? As a matter of fact WC has extensive discussions of the problematic relation between the roles of designer, decision maker, and client (pp. 47-49, 202-205, 219-229). These are relations which to some extent are also acknowledged in action science and action research, not to speak of the world of consultancy which is lively problematized as early in Plato's famous epistle on his consultancy to Dyonisius of Syracuse and in his early diatribes agains sophist philosophers. Is it possible that the disregard

for these matters can entice today's philosophers to practice modern sophistry?

ES: Let me follow up on Jari's question concerning following the actors around. It is a variation of a question you are usually asked. You are frequently asked to clarify whether phenomenology is a subjective philosophy. Most people think that what phenomenology does is provide descriptive, first person, experiential accounts. But rather then having you answer this question, let me ask something else. The criticism of phenomenology as subjective entails the belief that phenomenologists begin and end with the givens of experience. Even though this may not be the case with phenomenology, as you argue, it seems to hold for attempts to follow the actors around. The people at Pasteur's lab found nothing disagreeable with Latour's account. Their attitude seemed to be: That's just the way things are. What do you think is going on with that type of description—the kind provided by the early Latour? It seems to begin with the givens of what scientists are doing and ends with them having no objections to the observations made. Nevertheless, while phenomenology has been criticized for its treatment of the given, Latour's accounts have been highly praised. Why?

DI: I like this question because I don't think phenomenology returns to the given. This is one of things that differentiate a critical phenomenological approach from a more social science oriented approach. Once you have been able to discover the possible multi-stability of a phenomenon, you can never return to it as given. This is an intransitive or asymmetrical direction that arises out of varational method. Right now I am reading a book called the *Sun and the Cathedral*. It is a history of the use of meridian lines in European cathedrals. The purpose of this was to set the very hard to set the calendar date for Easter, which is supposed to after a certain moon in the cycle, and on the first Sunday after that moon. This is in fact stimulated the first dissatisfaction with the first Julian calendar, the recognition that Ptolemy's tables were in fact in error, and believe it or not, they also discovered that Copernicus was in error. Technologies began to raise questions about how observations of the heavens were being made. They led to all sorts of discoveries in what we now call early modern science. One thing that the book reiterates is that it was very hard for people to shift from a geocentric to a heliocentric universe. This is where phenomenology comes in. The given is that you see the sun rising and setting and intuitively take as given the solidity of the earth, which any fool can plainly see that the sun is rotating around the earth. Suddenly, it occurred to me that this is not a given at all. The question is: How is the context situated such that seeing the sunrise and set is taken as an intuitive thing? What I have to do is dream up a thought experiment to show that you can perceive this differently. I have some clues to this end. This is a myth about experience that has been holding steady for centuries, which I think is simply wrong.

KI: Which is, then, the difference between this insight and the problematization of perception itself since Plato, the differentiation between apparence and truth of reality, even at it is seen as the never ending approximation of an ultimate ideal through multi-perspectivism, and such. And what it the difference between that very same insight and the non-positivistic, and still not necessary phenomenological, conception of data as not being "given" but, rather, constructed by an observer in view of some

purposes or teleology? Cf. the problematization of "inputs" and of "data" by WC in DIS.

ES: Do you see a connection between your early insistence on multi-perspectivalism and that the fact that the Techno-Science Research Group often involves Visiting Scholars from different parts of the world. This is a fairly unique approach to any academic discipline. Is there a connection between the two?

DI: I think that in my own history the first movement in this direction began almost twenty years ago. As you has pointed out, *Technics and Praxis* was identified as one of the first philosophy of technology books per se. The result of that book is that I went to Colombia South America in 1982. I was supposed to be conducting a faculty seminar on the philosophy of technology. In America one of the big questions had to do with differentiating the relationship between science and technology. As a result, you come prepared to address this question. This was designed to be my second lecture. I went down and announced this and was attacked. The faculty in the seminar claimed this position was nonsense since science is not different from the technology used. Moreover, technology is an instrument of destruction of our indigenous culture. After this attack, I realized I needed to redo my presentation, in the direction of techno-science as cultural. The point of the story is that different cultural contexts, in this case, North American views on technology moving into South America, have different perceptions. Having participants in this seminar from different parts of the world is a necessary corrective feature to our limited biases.

KI: And, again, which is the difference in principle between this insight and WC's "The Hegelian inquirer illustrated: dialectical planning" (DIS, pp. 180ff) applied to different group's perceptions of support of research and development as related to national policy, international politics and military intervention? At the time (end of the sixties) it was a question of Vietnam, yesterday and today is a question of Afghanistan and Irak, and it has the advantage of being very concrete and relevant for "here and now".

SM: Post-humanism is a frequently endorsed position these days. We find it in theorists like Katherine Hayles. Yet your focus on human embodiment seems to run in a different direction. While you are a post-subjectivist, you probably are not post-human.

DI: I am very happy to be described as a post-subjectivist. Phenomenology is a kind of albatross. When I used this metaphor in Denmark last year, everyone wanted to know why I was discussing an albatross. I grew in America where all elementary school children had to read the *Rhyme of the Ancient Mariner*. This is a story by Coleridge in which an unlucky guy presumably dooms a boat by killing an albatross. The crew makes him wear this dead albatross around his neck for the rest of the voyage. Phenomenology is my albatross because I cannot get rid of it. It has been tagged on me. It is always marked as something it isn't, such as subjectivism. So, I'll bear my albatross for the moment until I invent a better term to describe what I am doing. I have a lot of problems with the terminology of post-human. Does post-human mean post-humanist? If by that you mean we are using an implicit modernist description of humans as highly autonomous, subjective

individuals, atomistically linked to society, then I am obviously a post-humanist. If on the other hand, you mean the there is any kind of flexibility to retaining some sense of what it means to be experiencers, to be in a world, to perceptually take into account that world, then I am clearly not post-human. You are perfectly right. The key is embodiment. The move into science studies brought with it a new list of interlocutors. As with any change of conversationalists, a new emphasis is brought to bear. The notion of embodiment and being a body has for a long time been present in my work. With this new set of interlocutors, it has been amplified. This is what I see missing, a lacunae, in some other work, especially in those who want to use a strictly semiotic, symmetrical model. For me embodiment does not mean going to the limits of your skin, but also incorporating instruments and technologies.

KI: As I understand it, you do not need to adopt a postmodern or posthuman attitude in order to understand embodyment as something broader and deeper than keeping within the limits of yours skin. Such a conception of skin is conditioned by a positivistic and mechanical or anatomical conception of body. But if you understand body as a teleological object and, consequently, define it as a system (WC's DIS, pp. 42ff) then it will obviously incorporate instruments and technologies, for instance in the definition of the resources and the environment which define its functionality in relation to its purposes. And the conception of teleological object would also entail the solution of many conundrums regarding actors vs. actants, interactants, humans and non-humans vs. hybrids, etc., as problematized by DI in, for instance "If phenomenology is an albatross, is postphenomenology possible?" <http://www.sunysb.edu/philosophy/new/research/ihde_3.html>)

JJ: You call yourself a critical phenomenologist. How normative is this? Haraway is very normative. Pickering is much less so. Where to you fit in?

DI: And Latour wants to claim not being critical at all, wanting to eliminate the notion of the critical. The first thing I want to say is that in the early days I constantly experienced the critique of being a descriptive phenomenologist. I was continually asked why I was not normative and failed to develop axiological notions. What I mean by critical is epistemologically critical. What phenomenology does, when you practice it along the lines of multi-perspectival theory, is eliminates the ability to make certain kinds of claims. I also call myself a non-foundational phenomenologist because I do not believe I can make absolute claims about a lot of things that early phenomenology wanted to claim. This because rigorous phenomenology shows that ambiguity exists around things like technologies. In the discussion earlier where I spoke of transplanting plants, I mentioned how plants can change location, while their ecology is left behind. The plant can become something quite different, even a menace or die, depending on the relationship between environment and organism. This is what critical phenomenology must take into account.

KI: See above, aren't these difficulties solved if you adopt the insight that an observer's objects must be teleological objects, implying that you must also take into account an environment and, furthermore, you have a guide about what is to be defined or understood as an environment (and

resources, etc.). For the rest, in the conception of "claims" you refer to, do you include also ethical claims? Why should ambiguity prevent from such claims when, for instance, ambiguity in the most concrete and trivial contexts of, say, industrial manufacturing, or statistics, is dealt by means of the concept of error and tolerances? Cf. my doctoral dissertation, referred above.

The other question is more difficult. I do think there are normative dimensions in phenomenology, but they have to be normative dimensions that arise out of phenomenology. For example, many times I have used the metaphor of multiple cuisines. There is no way that one could phenomenologically establish that there is a best cuisine. On the other hand, I am equally clear that one can tell the difference between good and bad Cantonese cooking, and good and bad nouvelle French cuisine. Within genres you can easily tell what is better and worse.

KI: *Do you really claim that the good or the best in cuisine, more generally in taste, whatever that means, if not according to Kantian "Critique of Judgment", is the same as good or best in ethical moral matters, whatever that means, if not in terms of Kantian "Critique of Practical Reason"? Does phenomenology dispense with the need of an analysis of the relationship between aesthetics including "play" and ethics? Or, which is the definition or philosophical understanding of such a sensitive category as "genres".*

ES: How can you then defend your asserting that pluriculture is better than monoculture to traditionalists who emphasize the value of custom?

DI: I run into this all the time. Especially, when I visit European countries. What I call pluriculture, Europeans call a surface phenomenon. The ability to pick and choose, the bricolage of cultures, they claim is not too deep. To return to my plant metaphor, they insist that plant is what it is only in its indigenous environment. Now in certain circumstance this makes some sense. In other circumstances this makes no sense at all. I argue, for better or for worse that in our highly connected contemporary environment you cannot avoid contact with plural cultures. To take the whole thing and transplant is impossible because there are indigenous plants coming into that environment at the same time as that environment goes elsewhere. The metaphor then is always between surface and depth. But don't forget that depth can also mean digging your own grave.

KI: *That you cannot avoid contact with plural culture does not mean that you can avoid the necessity of understanding and committing yourself to the preferability of one (probably your) culture in order to be able to live with social responsibility, in the lifeworld, at all. The possibility of surface-life exists only for those who can avoid the social responsibility of making fateful decisions in face of completing claims, preferring to adopt an "aesthetic attitude" of wait and see so long as one can get along with it. But there is another sense, in which plurality can be contrasted to relativity (or pluralism to relativism): in this new sense one can accept pluralism in order to develop a better discernment of novel alternatives and their evaluations, in order to determine the better or contingent best, and escape relativism. (Once again, ref. to my doctoral dissertation, above). Finally, is it not paradoxical to opt for surface (since "depth can also mean digging your own grave") when one of*

the most recurrent terms in phenomenological literature is precisely deep and depth? Take as example "deeper understanding" in DI's linked page on "How could we ever believe that science is not political?" at <http://www.sunysb.edu/philosophy/new/research/ihde_2.html>.

RE:　　One difference between your work and Haraway's is pragmatic. She finds herself situated, economically and politically, in a specific way. I think that while you would agree that you are situated, your phenomenological descriptions, do not take these pragmatic aspects into account. Haraway sees all of her descriptions as working towards the projects she is engaged in. Do you see your descriptions as pragmatic as moving toward projects you are situated and engaged in?

DI:　　I would like to affirm yes, but will have to answer with a firm maybe. I am not entirely sure. I don't have a program that I am trying to follow in which I want this, that, or the other thing. Haraway and Feenberg do have programs. They think that greater democratization of science is a desirable thing. In theory and in general I thoroughly agree with them. But to agree with them is to then ask: How is that possible?

KI:　　Does that mean that you make the ethical commitment contingent to instrumental reason? Or, do you mean that one can determine the possibility of a program, such as the democratization of science, whatever that means,without having formulated a program to begin with?

Ben Hale

POSTSCRIPT

Concerning the background for DI's striving for an expanded hermeneutics, and the insight that "today's science technologically constructs products" requiring a "postmodern" hermeneutics which does not presuppose the culture/nature modern distinction but, rather, focuses upon the construction of things (in Expanding Hermeneutics, <http://www.sunysb.edu/philosophy/new/research/ihde_2.html>), please compare with Churchman, C. W. (1970). The artificiality of science: Review of Herbert A. Simon's book The Sciences of the Artificial. Contemporary Psychology, 15(6, June), 385-386.

To see the benefits of applying the CW-approach to issues suveyed phenomenologically by ID, please see the last section of the above mentioned paper ID "How could we ever believe science is not political" at <http://www.sunysb.edu/philosophy/new/research/ihde_2.html>. Compare the example and comments on the history of classification of the stars with CW's chapter 4 (The Leibnizian inquirer illustrated) and chapter 9 of DIS (Singerian inquiring systems) to chapter 4. The spirit and content of the two analyses appears to be the same despite of no reference by CW to phenomenology. This suggests that phenomenology while losing contact from formal and natural science may have borrowed a lot from the CW-kind of experimentalism and empirical idealism, as

much as the pragmatist Charles S. Peirce and William James had absorbed a certain brand of phenomenological attitude. About the relation between pragmatism and phenomenology, see Ransdell, J. (1989). Peirce est-il un phénoménologue. Études Phénoménologiques, (9-10), 51-75. (Thème: La phénoménologie de Charles S. Peirce.) In English: Rosensohn, W. (1974). The phenomenology of Charles S. Peirce. Amsterdam: Grüner

One main conclusion I myself am prone to draw from all these comments and comparisons is that the complexities of the phenomenological approach and its terminology are caused by its effective rejection of teleology and associate responsible human will and ethics in favour of a vague intentionality which it kept tied to the "object". The loss of teleology into the "object" is evidenced, for instance, in the undifferentiated and inconsequential packing together of problematic concepts, or, rather, a-theoretical terms like predilections, prejudices, and predispositions; and others like judgment, interpretation, and explanation; and still others like feelings, beliefs, values, emotions, purposes, goals, aims, meanings (but not human "will"); as well as the unproblematic reference to a problematic anonynously "preferred" situation (in Daniel Fällman's dissertation "In romance with the materials of mobile interaction: A phenomenological approach to the design of mobile information technology", pp. 33-34, 47-49, 51, 88).

This "object" is not understood as a teleological object or system but, rather, primarily as an initially given old-fashioned Lockean "empirical" object which subsequently must be rescued by the introduction of complexities in a way which recalls the rescuing of the Ptolemaic astronomical system before the Copernican revolution.

This introduction of complexities leads to the the need for so called extensions or expansions ("expanded" hermeneutics, or eclecticism?) trying to incorporate Kantian and Hegelian qualifications of the Lockean approach (cf. WC's DIS, chap. 5-7), to a pluralism which despite the disclaimers must be post-Hegelian Nietzschean, leading further to Heidegger (1889-1976) and followers like Merleau-Ponty (1908-1961). (The sociologist Karl Weick's "double interact" as a supposed building block of organizations also fits this Lockean approach and "Newton's syndrome", since it corresponds to a Lockean atomic agreement between two observers, as explained by WC in DIS, pp. 118-120.) The Nietzschean influence in Sweden, appears in the intellectual environment of the philosopher Hans Larsson (1862-1944), who was revived together with Heidegger in the "design turn" in informatics of the 1990ies, and is portrayed by Gunnar Matti in "Det intuitiva livet: Hans Larssons vision om enhet i en splittrad tid" (Uppsala: Gidlunds, 2000). In present academia it all ends in postmodern relativism (not to say nihilism), organizational opportunistic bricolage, or aestheticism with emphasis upon the body in terms of its senses and perceptions, in particular visual imagery. But, in practice, is this visual imagery or exploitation of the body much more than a computer-based embodiment of the issue of Kantian representation ("maximal apriori") related to Lockean concerns for the old empirical "object"? (CW's DIS, pp. 125, and 141-145.) Or, more superficially, to paraphrase the design-theoreticial Vilém Flusser expression, earlier we looked for Platonic, or wordly, forms to give to matter, and now we playfully look for matter to fill out computer-generated

forms. And, when matter happens to be the body's, then we presume that the occasional match reaveal undefined "structures" of the body which legitimize the playfully generated forms. Cf. Flusser, V. (1999). The shape of things: A philosophy of design. London: Reaktion Books.

 This fateful development may be unconsciously perceived as risking a conceptual collapse, symptomatically named by the remarkable neologism of "postphenomenology" in a desperate attempt (like Latour's non-modernism") to insulate it from the criticism already raised against relativistic or nihilistic postmodernism. This explains the difficulty of considering questions of ethics and of the place of aesthetics or perception as related to emotional life and human will. My own position in terms of recommendations for future research approaches has already been stated in my document "The systems approach to design and inquiring information systems" (including artifacts), at <http://www.informatik.umu.se/~kivanov/Chu-SysAppDes.html>. My critical attitude to phenomenology does not imply its wholesale rejection. Even a "theology without God" hopefully may still work as a reminder, rather than a substitute for God, as indicated by pope John Paul II interest for Max Scheler before becoming pope, in his quality of professor of philosophy in a Poland permeated by phenomenological tradition.

To terminate, and since Don Ihde seems to be fond of the idea of "Plato upside down", I wish to submit to the consideration of the readers two excerpts, one from Plato and the other from Heidegger. I think they give an self-explaining image of an important difference between these two philosophers and, in the contrast, despite the fact that pluralism does not need to lead to relativism, also show the seductive relativism of the latter. What Plato writes about phenomenal presentations in the upper third of his text may explain the popularity of the phenomenological approach today, especially as it is practiced by those who have not the resources and the motivation to go deep into the classical sources of phenomenology. By classical sources I do not mean only Husserl and Heidegger, but also, for instance, Max Scheler with his emphasis on ethics neglected by Husserl and Heidegger and, in particular, Johann Georg Hamann who, preceding Nietzsche in time, escaped in his Christian ethics both Kant's and Nietzsche's secularizing influence. And now, over to Plato and Heidegger:

Plato. (1961). Plato: The collected dialogues. Princeton: Princeton Univ. Press - Böllingen. (edited from Epis. VII 343c-344c)

For everything that exists there are three classes of objects through which knowledge about it must come; the knowledge itself is a fourth, and we must put as a fifth entity the actual object of knowledge which is true reality. We have then, (1) a name, (2) a description composed of nouns and verbal expressions like in a definition, (3) an image, and (4) a knowledge and understanding and correct opinion of the object... Now in cases where as a result of bad training we are not even accustomed to look for the real essence of anything but are satisfied to accept what confronts us in the phenomenal presentations, we are not rendered by each other–the examined by the examiners who have the ability to handle the four with dexterity and to subject them to examinations. In those cases, however,

where we demand answers and proofs in regard to the fifth entity, anyone who pleases among those who have the skill of confutation gains the victory and makes most of the audience think that the man who was first to speak of write or answer has no acquaintance with the matters of which he attempts to write or speak. Sometimes they are unaware that it is not the mind of the writer or speaker that fails in the test, but rather the character of the four -- since that is naturally defective. Natural intelligence and a good memory are equally powerless to aid the man who has not an inborn affinity with the subject. The study of virtue and vice must be accompanied by an inquiry into what is false and true of existence in general and must be carried on by constant practice throughout a long period. Hardly after practicing detailed comparisons of names and definitions and visual and other sense perceptions, after scrutinizing them in benevolent disputation by the use of question and answer without jealousy, at last in a flash understanding blazes up, and the mind, as it exerts all its powers to the limit of human capacity, is flooded with light. For this reason no serious man will ever think of writing about serious realities for the general public so as to make them a prey to envy and perplexity

Heidegger, M. (1968). What is called thinking? New York: Harper & Row. (Trans. by J. Glenn Gray. Orig. Was Heisst Denken? Tübingen: Max Niemeyer, 1954, p72.

A dialogue of Plato -- the Phaedrus, for example, the conversation on Beauty -- can be interpreted in totally different spheres and respects, according to totally different implicatins and problematics. This multiplicity of possible interpretations does not discredit the strictness and the thought content. For all true thought remains open to more than one interpretation -- and this by reason of its nature. Not is this multiplicity of possible interpretations merely the residue of a still unachieved formal-logic univocity which we properly ought to strive but did not attain. Rather, multiplicity of meanings is the element in which all thought must move in order to be strict thought. To use an image: to a fish, the depths and expanses of its waters, the currents and quiet pools, warm and cold layers are the element of its multiple mobility. If the fish is deprived of the fullness of its element, if it is dragged on the dry sand, then it can only wriggle, twitch, and die. Therefore, we always must seek out thinking, and its burden of thought, in the element of its multiple meanings, else everything will remain closed to us. If we take up one of Plato's dialogues, and scrutinize and judge its "content" in keeping with the ways in which sound common sense forms its ideas - something that happens all too often and too easily -- we arrive at the most curious views, and finally at the conviction that Plato must have been a great muddlehead; because we find -- and this is indeed correct -- that not a single one of Plato's dialogues arrives at a palpable, unequivocal result which sound common sense could, as the saying goes, hold on to. As if sound common sense -- the last resort of those who are by nature envious of thinking -- as if this common sense whose soundness lies in its immunity to any problematic, had ever...