1990-1993. Letters to Hans van Beinum

28 Jul 1990 re F van Eijnatten

Dear Hans,   28 July 90
        I have responded at some length to van Eijnatten. Copy enclosed.
        He quotes three points you make. I agree with the general point you are making. I think it is dysfunctional for Lou Davis to rant on about socio-technical analysis as if it were a branch of production engineering.
        I disagree with your first point. I think this is a matter of the way we use words. Any productive system is both technical and social. That, as you say is tautological. A system can only be identified by defining the system principle - a socio-technical system has to be defined by a principle that is socio-technical. The same collection of parts, social and technical, could be defined by a principle that is simply technical.
        On your second point I basically agree. Socio-technical theory as I spelt it out in TIHR Doc 527 was primarily a methodological statement. It said that if you took the concept seriously then this was the minimum that you had to consider. It was also a strong theoretical statement. It stated that organizations could not be understood in closed systems, holistic terms. Instead of thinking in terms of part-whole relations we had to think in terms of directive correlations between systems that obeyed quite different laws. It gave clear notice that any socio-technical system had to be considered in an expanded framework of directive correlations that included the environments of the system.

Dear Hans,   31 May 1992.

        It was beaut to meet you and Ingrid at Istanbul. It reminded me a lot of the days of the Informal Group. (Who was playing the role of Tom Burns?)
        The maps of the Arnhem region arrived as we came home. They are superb and I shall send a note of appreciation to the senders. The maps discriminate the full range from unsurfaced lanes to first class roads. They also indicate farms and orchards which justifies some assumptions about the load-bearing capacity of the back-roads. That they include copies of the maps available to the Allies and the Nazis is an unexpected godsend. I am dying to get back to my paper on this but must postpone it for a short while as I know that if I do I shall just drop out of the world for a couple of weeks. That is not on. We have to go up to Fort McMurray for about a month. Leaving Monday week. Eric and Beulah were on the phone this afternoon wanting to know if I was dead, or something. Just in the last few weeks Eric has improved to the point where he wants to work. That's good as I want to get back to that third volume but must have him involved as this is his opus magnus (?).
        Enclosed are some more of my scribblings. Bjorn gave me a copy of his new book and of Frieder's evaluation of LOM. The book and the report fully confirm the suspicions I had expressed to Frans. Bjorn is quite brazen about it. I have written again to Frans, copy to Frieder. As far as I am concerned the matter is out of the private box. I just kick myself for not seeing what was right in front of my face.
        Frans sent me a more recent paper by de Sitter in which he has clearly moved from GST to open systems. That was a relief as we do not want a new generation of Dutch engineers and managers slipping back into those rigidities.
        Merrelyn has made great progress with the new edition of Searching. The future of the CCE is still in suspense as the management consultants report was a messy shotgun affair. Like Plato in 'The Statesman' they finished up unable to conceptually distinguish the king from the herdsman.

EPILOGUE.   F.Emery,   Jan 1993

         As an epilogue this is not an attempt to say the last words on the forty years of STSD that Frans van Eijnatten has so assiduously and ably reviewed.

         This note is an epilogue only in the sense of last thoughts or speculations on where I think STSD is taking us, in 1993, as it becomes a significant influence in the world of work. I do not intend to take up points in the ongoing debate about the forms of STSD as that would settle nothing. We can expect continued variation in the forms of STSD that are being advocated because the advocates stand in their own special relations to the world of work. As STSD achieved a high profile in the seventies and eighties academics sought ways to scholasticize it, consultants sought ways to sell it and politicians sought ways to turn it into vote-winning programs. STSD was not developed to serve any of these special ends but that will not prevent others from continuing to adapt STSD to better serve their special ends. We can only seek to understand what drives their efforts at adaptation, and make due allowances.

         Scholasticizing STSD is the means of extending the universities' monopoly over this newly emerging field of knowledge. This requires that the subject matter be so abstractly generalized, conceptually complicated and mathematicized that only the gifted few can grasp it. These qualities have to be much enhanced if the subject is to be offered at post-graduate level. In the years since World War II we have seen this happen to operations research, most of the so-called management sciences and such diverse fields as geography and sociology. There is no mystery about the dynamics of this process. True knowledge is held to reside in the logical interrelations of abstract universals. Few people can, or will, think at the level of abstract universals and the universities' monopoly is based on their unique role in selecting and preparing minds for this level of functioning. The academic acceptability of a new field of knowledge presumes that it is a challenge to abstract, logical thinking; with each subsequent year of study being even more challenging. Appointment to academic staff, and subsequent promotion, requires that one prove to other established academics that one can be relied upon to further scholasticize the subject. Such proof lies primarily in publishing papers in peer-refereed journals controlled by established academics. That is a testing process, but it tests only for the prized academic qualities. Reality testing is of secondary importance, if any. For the future of STSD this academic influence may be of little immediate importance. Over the longer run it could distort the perceptions of managers returning to do MBA's and the professionals who end up in the Human Resources field or in consultancy.

         Consultancy brings its own pressures on the development of STSD. Consultants depend for their livelihood on client dependency. They usually have nothing to gain from increasing client independence. Naturally they will stretch out an organizational change process; seek to lower their costs by standardizing consulting services to meet multiple requirements, and seek to offer the latest fads that permit the highest mark-ups of service prices. As STSD becomes fashionable they offer 'needs assessment', 'skills development', 'team training', and even training of in-house STS designers, before they even consider the re-design of the actual job.

         The third 'trade wind' that will continue to shape the forms of STSD is political accommodation. When it is accepted that paradigmatic change is inevitable, in an area as central as the world of work, the only defensible conservative position is to slow down the rate of change. The slower the rate of change the better are the chances of the winners in the old paradigm preserving something for themselves. Basically the plea is 'not to throw the baby out with the bathwater'. Effectively it seeks to mask or belittle the future inherent in STSD; in order to gain time. These efforts are made easier when even apparently serious scholars cannot distinguish between attractive appearances and organizational realities. For examples we have Womack et als (1990) on so-called lean production and Adler (1992) on 'learning

bureaucracies'. In both cases they are describing (very well) what happens when decisions about control and coordination are located with work-teams but in both cases they sum up their observations as if they had seen the leopard of Taylorism change its spots. Unfortunately, many of their readers will have no clearer idea than those authors of what constitutes the essence of taylorism or bureaucracy. Namely, that both systems insist that decisions about coordination and control be located at least one level above the doers. We decide, they do.

The influences that I have mentioned, academic, consultant and political, are only environmental factors, so to speak. They may facilitate or hinder STSD fulfilling its potential but they do not define the problems inherent in STSD that may inhibit its own development. It is the latter problems on which I wish to concentrate. But, before doing that, let me qualify my previous comments on the influence of academic, consultant and political concerns. Those influences may change their direction, if the society gets to the stage of recognizing that it must make the radical change from a traditional workforce based on a mass of relatively unskilled labour, deployed as readily replaceable parts in narrowly defined jobs, to a multi-skilled workforce deployed in self-managing teams. In Australia the government had firmly set its goals on such a transformation of the workforce (as a realistic alternative to becoming a 'banana republic'). That change of heart came from politicians (from both major parties) and their manipulation of Federal funds has ensured that significant sections of academia, and of the consultants, have climbed on the bandwagon. It is probable that this means only that they will pursue their sectional interests more subtly.

Now to the serious matter of the problems that confront STSD if it is to have a future in the world of work.

Currently, the usual response is that we have to design participative models for work teams that we cannot expect to be fully multi-skilled. Research and development teams and management teams are very obvious examples but increasingly automated plants are showing the same characteristics. (Zuboff, 1988) In those work-settings some of the people have 5 or 6 years of specialist professional education to qualify them for their work-role. It is not feasible to multi-skill everyone up to the equivalent of one, two or three five- year specialist educations.

This is not a new problem.

The document on "Participative design" (Emery & Emery, 1974) was written after we had thrown off the last shreds of 'technological determinism' (thanks to the Norwegian field experiments), and after we had helped re-design the organization of R & D groups and management teams. We formulated and presented in that document a coherent model for democratizing decision making in such groups where multi-skilling was not a feasible option. This was possible because we had learnt that the critical questions were, a) what decisions about coordination and control were necessary for effective group working and b) how far can these decisions be located with the group responsible for doing the work. These were the critical questions regardless of the technology employed, whether production was discrete, batch or continuous, whether tasks were routine or non-routine, or whether the tasks were physical or mental. I have not yet seen anything that goes beyond that model or that demonstrates incompatibilities in that model (Pava, 1983).

I do not see any remaining serious scientific problems in the formation of self-managing work teams that will be productive and self- regulating. The major problem that faces us at the present is that we have not worked out how self-managing work groups are to be managed. We are at the point where we have the scientific and practical knowledge to release a great deal of productivity and creativity at the workface but we continue with traditional managerial practices that stifle or misuse that potential. (Emery, 1991).

Re-thinking the role of management will also involve redesign of the support systems for the self-managing workgroups and their connections with each other, and with customers and outside suppliers. In the past, as we introduced self-managing groups, these matters were

handled on an ad hoc basis to suit local conditions. Such arrangements kept getting whittled away as the support systems (stores, personnel, finance etc) tried to get back to their old ways and powers. For STSD this is an unfinished task. It is probably a task that can be solved only after the general problem of management has been resolved. If only because, in the traditional model, management's reserve powers over production have lain in its controls over the supports. This is particularly true for corporate or departmental control over the constituent enterprises.

STSD came into being as an attempt to solve one of the most central problems in modern industrial civilisation. The alienation of an increasingly de-skilled workforce was a barrier to increased productivity, despite technological innovation and higher levels of education. The same developments were making it harder for societies to be self-regulating. They were increasingly relying on imposed regulation and policing. The grand experiments we have seen with state socialism and public ownership of enterprises obviously did nothing to solve the problem. After forty years of experimentation and innovation I think it is fair to say that we now know how to achieve productive participation of the workforce at the enterprise level. However, solving the problem at the enterprise level is only the first step. The enterprise is probably the largest unit that can usefully be treated as a socio-technical system. Enterprises emerge and are embedded in a social environment which they share with a host of institutions that are primarily psycho-cultural in their orientation.

When many enterprises move to transform their workplaces we start to confront socio-ecological problems that take us beyond STSD.

We have seen in this volume how socio-technical systems theory evolved by giving partial solutions that created new problems, and proceeded to solve those. Sometimes STS theory turned back on itself to find a firmer basis for tackling the newly emergent problems.

There is no reason to believe that the dynamics have changed. It might still be that some of our present problems are of our own making and require us to go back and rethink our premises. On the other hand, some problems have emerged because STS theory, and the practise of participative design, have already changed the world of work. Where once we were concerned with posing a theoretical challenge to Frederick Taylor's concept of the scientific management of work we are now confronted with the real world problem of managing multi-skilled workforces organized as self-management work-teams, and expecting a lifetime career structure. Necessarily the social context must change.

Educational systems must be geared to supplying and sustaining such a workforce and an appropriately selected and educated managerial strata.

The institutional structures and legislation obviously have to be radically changed in order to serve industrial relations that are increasingly symmetrically dependent; and a very far call from the traditional concept of master-servant relations.

These are problems that we knew would occur once a national workforce was restructured to be based on multiskilled, self managing workteams; instead of the traditional basis of a mass of easily replaceable, narrowly trained, semiskilled labour. No-one, to my knowledge, tackled these problems, because we did not know when they would become real problems. They have been niggling problems in some of the large corporations that moved early to basing themselves on multi- skilled, self managing work teams. In Australia they have become national problems. Not because the transformation of the workforce has been completed, or even more than fractionally attained. It has become a problem because the process of change seems, to the leaders of industry, unions and politics, to be unavoidable. Unavoidable if Australia wishes not to be reduced to the status of a 'banana republic'. The consequences have been like the breaking of the wall of a dam. Over the past eight years the

tertiary, secondary and primary school systems have been subjected to massive restructuring to remove status giving academic education from its traditional central place. The centralised industrial relations system, which gave legal standing to the Taylorised division of labour is in the process of being replaced by local enterprise bargaining. This is in acceptance of the fact that it is only at the enterprise that managerial prerogatives can be realistically traded for workgroup rights of self-management and increased productivity. Within a remarkably short time (two years) the trade union movement has transformed itself from hundreds of unions to just more than twenty industrial sector unions. This reflects their new responsibilities for negotiating industry frameworks for enterprise bargaining. It is not possible to see where the social changes will flow onto. As I write measures are being debated, at the national level, for child care provisions that would permit mothers to fully participate in an increasingly career oriented workforce.

STSD was never just an academic or scientific exercise. We are now confronted, thanks to STSD, with policy matters that go well beyond the scope of STSD.