Towards an alternative future: A communication-based framework

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I   Introduction

Much of the work of the Energy Research Group is concerned with trying to understand future requirements for energy and other commodities. In doing so, we have often found ourselves seriously questioning the social assumptions we see as underlying conventional forecasting and planning. We have become quite skilled at dissecting the pronouncements of those with whom we disagree. However, even the most skilful criticism, no matter how clearly presented, is unlikely to be acted upon, or even to be understood, unless an alternative is presented.

To help clarify possible alternatives, I would like to describe to you an idealised, communication-based framework for society that I have been working on. This framework does not give a detailed description of institutions or technologies which might be deployed. It merely describes general organising principles. I will start by giving a brief description of some of its major features, and will then try to make it clearer by using it to examine some of the conventional assumptions about production and exchange in modern societies.

My purpose in developing this idealised framework is to clarify problems in present societies and to point to possible direction of change. Thus the question "Can a society based on this framework actually be achieved?" is not really appropriate. More relevant would be "To what extent, and in what ways, can we move towards such a framework?" A useful analogy (for the technically-minded) can be drawn with Carnot's idealised heat engine. A Carnot engine is, in theory, the most efficient engine possible. Unfortunately, it cannot actually be built, even in principle. Carnot devised it, and engineers still learn about it, because by comparing practical designs with it, it is possible to see how those practical designs can be improved.

You may recognise in the communication-based framework, an approximation of the way groups of people naturally act in relaxed and informal situations. However, it is very different from the formal, institutionalised structures of society.

II   A Communication-Based Framework

1. Description of the goal state

I would like to start by describing the idealised goal state, and will then explore some of the necessary conditions for it to be maintained. I would like to build up the description of the goal state through the successive frames of Figure 1.

Figure 1a. The central circle, A, represents a person. The outer circles represent schematically all other people with whom he has contact. The flow lines indicate that A receives from some of them and gives to others. The diagram is meant to be very general. The flow lines may represent physical goods, assistance with some task, friendship, emotional support, etc.

Let is assume that "receive" flow lines represent <u>exactly what A wants to receive</u>, and that the "give" flow lines represent <u>exactly what A wants to give</u>. Thus the attainment of this set of flows represents the ideal state for A.
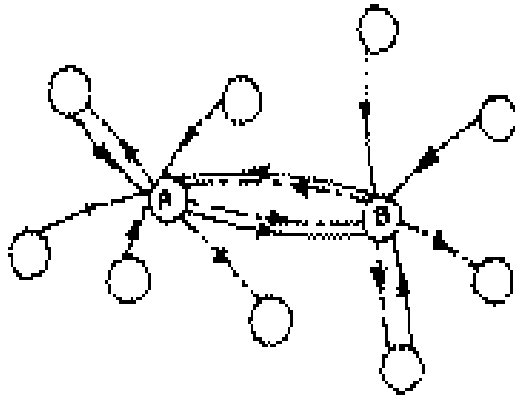
Figure 1b. Now consider the same situation, but from the perspective of B. Again let the flow lines represent exactly what B wants to receive and wants to give. The attainment of this set of flows represents the ideal state for B, Notice that there are two flow lines from B to A: what A wants to receive from B, and what B wants to give to A. These may or may not be the same. Similarly, there are two flow lines from A to B which may or may not be the same.
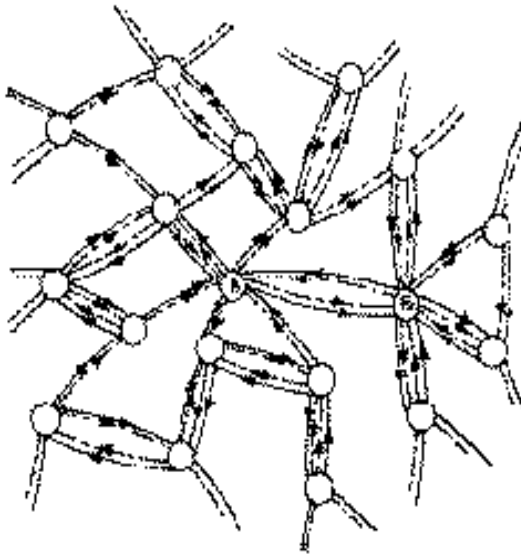
Figure 1c. Finally, let's add the perspectives of all other members of the population. Now all the flow lines occur in pairs. For each "wants to receive" line there is a corresponding "wants to give" line, which may or may not be the same.

We are now in a position to define the idealised goal state as the condition in which each "wants to receive" flow line is identical to its corresponding "wants to give" flow line. Let us call this condition <u>harmony</u>, as the intuitive meaning of the word harmony is a good fit to the condition defined.

<u>Harmony</u> is the conditions such that
$\{(P) ->- (Q) = (P) -.->.- (Q), \text{ for all } P, Q\}$

Notice that a primary feature of this condition of harmony is an absence of coercion. P gives to Q precisely what P <u>wants</u> to give to Q.

2. <u>Some necessary conditions for the goal state to exist</u>

Now I would like to briefly describe three properties, or conditions which are needed for a society to maintain a condition of harmony. We will then be able to examine features of our own society in terms of these three properties.
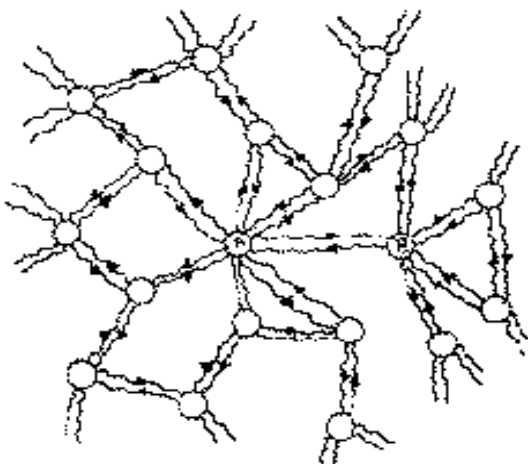
a. Accurate information.

Figure 2. In parallel to the set of flows in Figure 1, which are those which satisfy people's needs, a second set of flows is needed, providing information. The information must flow in two directions, from people in their role as receivers (consumers) to people in their roles as givers (producers), and vice-versa.

‑‑‑‑‑‑‑information

The information from receiver to giver describes what the receiver wants and is necessary if the giver is to match those wants. It also describes how strong is the receiver's want; how urgently he wants it satisfied.

The information from giver to receiver describes what the giver wants to give and includes the effect the giving will have upon him. This is a generalisation of the concept of <u>cost</u>. The receiver needs to know the implications of his consumption: time and effort required of the giver, scarcity, side effects, etc. This information may alter his perception of what he wants to receive.

The two-way information flows enable producer and consumer to converge towards an agreement as to what should be given.

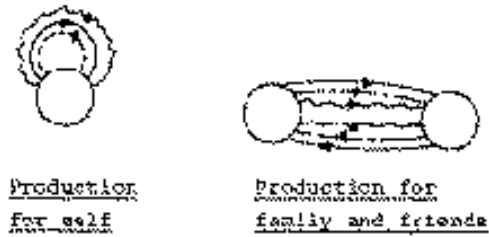Production for self

Production for family and friends

Figure 3. There are some circumstances under which these information flows occur particularly easily. When a person is doing something for himself, it is easy to balance what he wants against the effects, or cost, of doing it for himself. The information flows are purely internal. More difficult, but still relatively easy, is production, or giving, to family and friends. Then much of the background information about needs, abilities, other pressures, etc. is already known to both people. Only details need to be filled in.

Note, however, that producing for oneself or for family and friends is in no sense a requirement of the framework. What is required are techniques of communication which convey accurate information and which enable both people to converge rapidly to agreement. Developing such techniques is a non-trivial problem!

b. Close identification.

In the condition of harmony, as defined above, if A gives to or does something for B, it is because A <u>wants to do so</u>. To do so, A must <u>identify</u> with B; must feel pleasure at B's pleasure. This A, in doing something for B, is doing something for an extension of himself. Again, this identification occurs more easily when A is doing something for himself or for family or friends.

Similarly, the condition of harmony requires B to want from A, only what A wants to give. This requires B to identify with A, so that what B wants for A will change if B learns of difficulties, external pressures, etc. which keep A from want to give.

Note again, that while doing things for oneself, family or friends makes close identification easier, it is not a requirement of the framework. The degree to which a given individual identifies with other people is highly variable. The reasons for this variability are very important, and require much more discussion than is possible in this paper. One major factor is the degree to which an individual expects others to identify with him; to take his wants and needs into account in their actions. People will expect to be treated coercively, and will treat others similarly, if coercion is the predominant way in which their behaviour has been controlled. Thus the requirement of close identification has major implications for child-rearing practices and education, as well as for the organisation of production.

c. Error correction: the diffusion principle.

The condition of harmony is the condition that everyone gets what they want. It is a static or equilibrium condition. If a society is to maintain it, it needs to be organised in such a way that any departures from this equilibrium are corrected. Then the equilibrium state will be stable. Such organisation is necessary because there will always be unpredictable changes (caused by weather, illness, accidents, misunderstandings, etc.) due to people's limited information handling capacities. The organising principle which emerges naturally from the definition of harmony I described below.
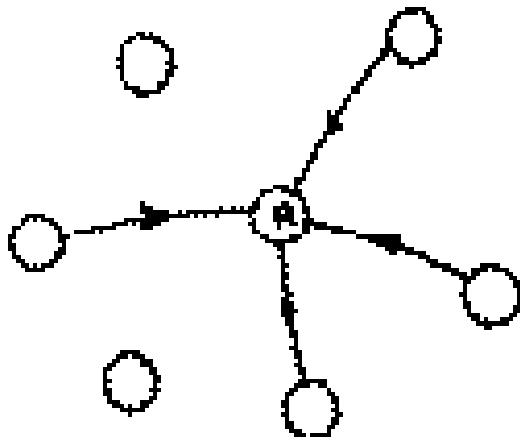
Figure 4a. Due to the
information flows and
identification described above,
any group of people will be
aware of the wants of those
around them, and the degree of
urgency of those wants.
Suppose A develops some need
(for material goods, physical
assistance, emotional support,
etc.) with a greater degree of
urgency than those around
him. Some of them will be able
to satisfy part of all of that
need, and will do so. As a
result, each of the givers will
have less of what they have
given, or may have neglected
other activities in favour of
helping A, and so may develop some needs of there own. However, the original large
need of A will now be spread, or averaged among the group, and so will be lower for
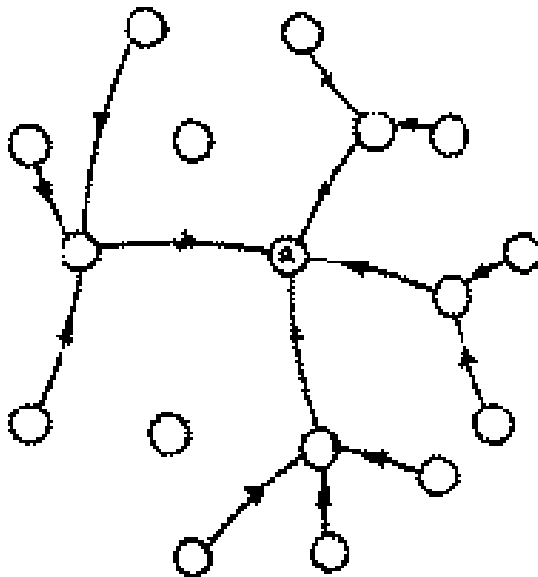all of them.

Figure 4b. However, the givers
need not be too concerned
about even this averaged level
of increased pressure. Their
new needs will be satisfied by
others around them, spreading
the original pressure still
further.

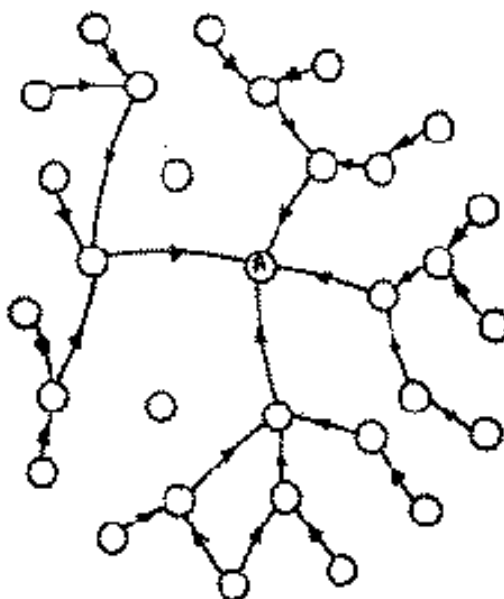Figure 4c. Applying the same
principle once again, another, still
larger group of givers helps the
second group.

Thus the original need is spread
among larger and larger groups
of people. It stops spreading at
the point at which what each
giver gives is small enough so
that he won't need to have it
replaced. (This may only require
giving by one of the original
givers, or may extend to a great
many.)

The important point to note here is that this is an organising principle which applies on any scale, yet requires no centralised control. Each individual deals primarily with those with whom he is in regular contact. Thus close identification is present, and the additional information required to determine what to do is small and well-defined (who has the greater need?) No one is required to make decisions affecting large numbers of people he does not know.

I call this principle the diffusion principle because it is the same as that by which, say, air in a room achieves a uniform pressure. The air molecules diffused from any region of higher concentration to any region of lower concentration so that the average concentration becomes the same everywhere.

In this social diffusion principle, the pressures on each individual are reduced so that the pressure on everyone tends to the average on the society as a whole. Notice, however, that what is actually given or received by different individuals may differ greatly, due to personal differences and differences in their circumstances (as accidents and diseases). The results is not "equality", but I would suggest that it is a pretty useful alternative to what is generally meant by "fairness".
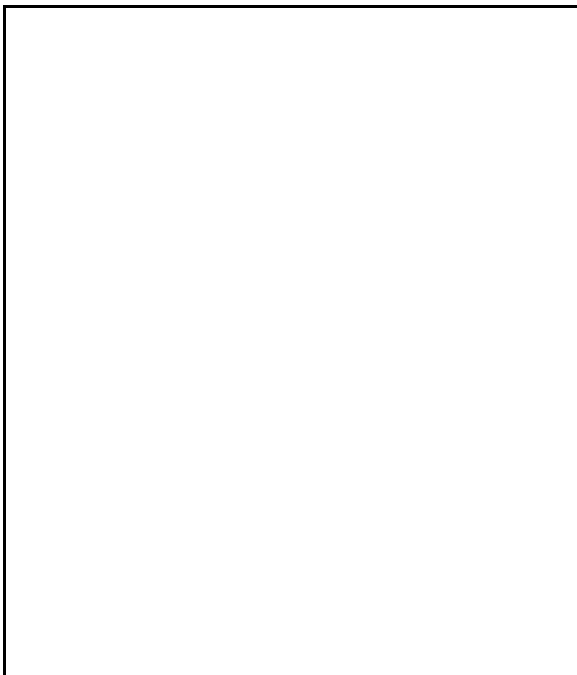
Figure 5. One further property of the diffusion principle may be of interest to anyone concerned with problems of transportation. Consider the diffusion principle applied not to individuals, but to groups of people. communities, or even regions. The information flows describing needs can spread out very rapidly so that all the inward flows of goods or assistance can take place simultaneously, or nearly so. Thus needs in one area can, in effect, be satisfied by surpluses in another area at a much faster rate than the physical rate of movements. The result is rapid satisfaction of needs without rapid transport.

III   Comparison with Present Societies

1. Features to be discussed

I should now like to examine three features of present societies in the light of the frame work just described. These features are present in all industrialised societies, whatever their degree of capitalism or socialism, and to a lesser degree in all developing countries. Their existence is not usually questioned in forecasting, planning or other discussions of the future society. I will confine my analysis to western industrialised societies, although it does apply, in modified form, to other societies as well. Again, I will describe these features in terms of diagrams, to help make the contrast with the framework clearer.
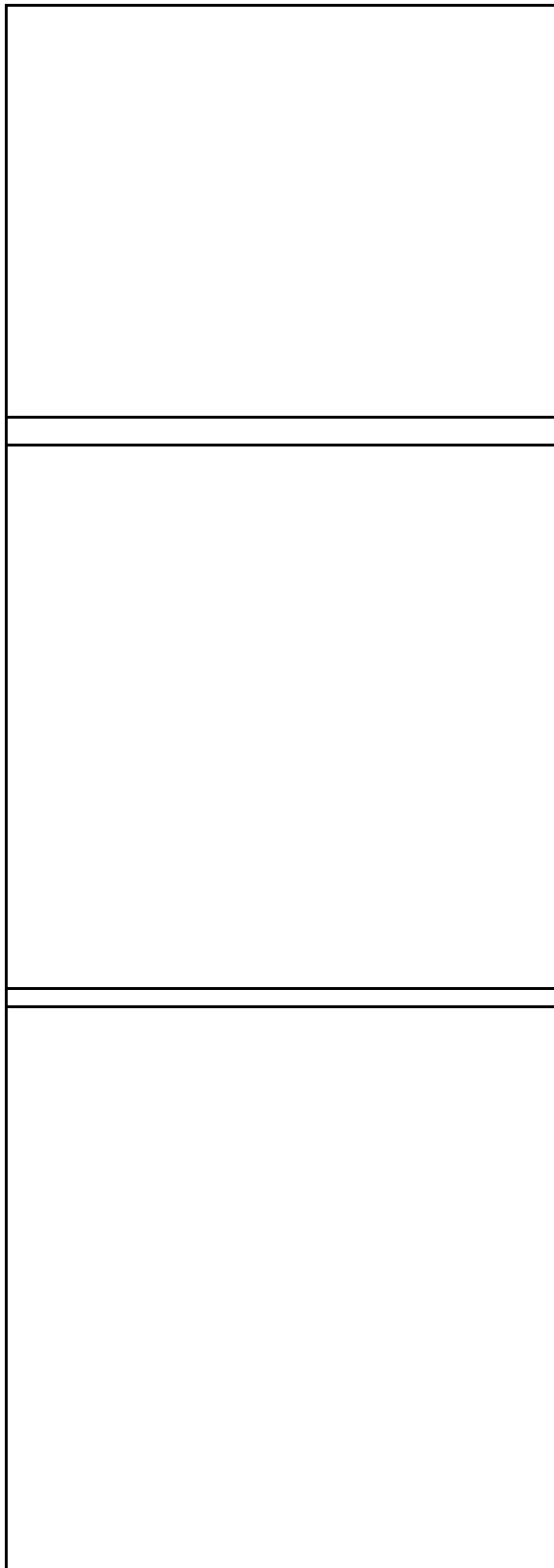
Figure 6a. Specialisation: the bulk of what is given to A is given by people specialising in giving that particular commodity or service. There is no overlap between what is given by different specialists. A, too, is a specialist, so the bulk of his giving is confined to a particular commodity or service. (In this sense, an assembly-line worker is as much a specialist as is a designer of jet engine turbine blades.)

Figure 6b. Production for strangers: The bulk of the giving in society is given anonymously, to strangers. In the terms used in the framework, goods and services are given to people with whom the giver has very little identification. This is largely a consequence of an extreme degree of specialisation.

Figure 6c. Balanced exchange (money): Associated with each item in a flow of goods or services there is a counter flow of money to balance the exchange. This balancing flow is usually a necessary condition for the giving of the commodity or service. Note that there are other forms of balanced exchange besides money. Barter is also balanced exchange. Some, though not all, of the so-called "gift economies" of primitive societies are balanced as well. A comparable return gift is expected eventually, in return for a gift given. Balanced exchange is needed to motivate production in a society in which that production is for strangers. It is basically coercive as it provides a reason for giving other than wanting to give.

2. Specialisation and production for strangers

a. Advantages

The advantages of specialisation are well-known and need little discussion. Specialisation enables people to devote the time needed to develop skills and understanding of a particular area to high degree.

Combinations of specialists can put together packages of skills and depths of understanding which cannot be matched by a single individual.

Geographical specialisation makes it possible to take advantage of locally favourable conditions (as soil types and fertility, climate, sources of energy and materials, etc.) This can also include concentrations of skills or talents, not tied to physical geography.

b. Problems

The advantages of specialisation are usually discussed without reference to the problems it creates so that a balance between advantages and problems is not considered. The problems arise because specialisation requires a narrowing and concentration of attention to one area which leaves very little time for attention to be paid to other areas. The two main results of this are dependency and poor communication.

A specialist, devoting most of his productive time to his speciality, requires the services of many other specialists to satisfy his needs. He is thus dependent upon those other specialists and so is vulnerable to the withdrawal of their services. Moreover by withdrawing or threatening to withdraw their services, specialists gain power over those dependent upon their speciality.

The extreme and exclusive specialisation, combined with production for strangers, which is the norm in industrialised societies, makes these problems much worse. In our complex and interdependent society, most people's specialities are vital to at least some other people. A very large number of specialities are vital to the majority of the population. The result is the very great vulnerability of society as a whole, which is particularly evident in every round of wage bargaining. Because goods and services are produced for people with whom the producer does not strongly identify, producers can withdraw their services without personally feeling the effects of doing so.

In addition to the problem of dependency is the problem of poor communication. Groups of specialists develop private languages (jargons) to enable them to discuss their subject efficiently. (This applies as much to brick-laying as to nuclear physics). Moreover, they share a large number of experiences peculiar to their speciality. Thus different specialists live, in a very real sense, in different worlds. Large portion of the lives of different specialists remain mysteries to one another, with neither common experience nor language available to shed light, should it become desirable to do so. This inability to communicate further reinforces the lack of identification between producer and consumer created by production for strangers. It is a major reason why our society is so riddled with conflicts. For example, getting labour and management groups to understand each other's perspective to the point where they can actually agree to a satisfactory solution is a rare occurrence. More often, what is achieved is a resentfully accepted bargain, which both sides are likely to undermine in the future.

c. Conclusions

The problem, then is to avoid the problems associated with specialisation without also losing the advantages it brings. The opposite end of the spectrum from today's extreme and exclusive specialisation would be a society of small, largely self-sufficient communities of generalists. In the light of the discussions above, this extreme is not desirable either. A balance point, in which the degree of specialisation is limited to the extend that the problems of dependency and poor communication are avoided would be optimal. There are various ways in which a considerable degree of specialisation could be retained while still avoiding these problems.

(i)   People can have several specialities, in each of which they work with different, although probably overlapping groups of people. For some people these several skills could be deployed part-time, while for others different skills might be deployed seasonally. People might take up different skills at different periods in their lives. In ways such as these, the problems of poor communication created by today's exclusive specialisation could be minimised.

(ii) The number of people with a given specialist skills can always be kept much larger than the number required to use that skills. This, combined with the multiple specialisation described above, would enable those specialists wishing to change skills to do so freely, and would make it impossible for them to do so as a

means of exercising power. Moreover, reserves of skills would always be available at times when the need for them was particularly great.

(iii) It is likely that there will always be a set of tasks which are considered to be particularly undesirable or unpopular. These could be widely shared on a part-time basis by very large numbers of people.

3. <u>Balanced exchange (money)</u>

a. Some general considerations

(i)   a major feature of most productive effort in modern societies is that each transaction is accompanied by a counter-flow of money which is said to balance that transaction. A major feature of the communication-based framework described in Section II is that this set of counter flows simply <u>is not there</u>. It may be that the flows from A to B and from B to A are seen by both to be roughly comparable over a period of time, or it may not. It may be that the flows to and from each member of the group are seen by all to be roughly comparable, or they may not. Rough, long-term approximate balances may exist. <u>Item-by-item balances do not</u>! The attitude towards giving and receiving in the framework resembles that in a happy family. Children receive more from their parents than they give, and expect to do the same for their own children, with perhaps some "repayment" to the parents in their old age. However, strict accounting is neither expected nor thought to be desirable.

(ii)   The information flow from producer to consumer in the framework can describe costs such as the effect of producing on the producer, environment, etc. with far greater clarity than can monetary costs in a society where production is for anonymous strangers. Similarly, the information flow from consumer to producer (in the framework) can assist the producer to satisfy the consumer's need more accurately than can a simple buy/no buy monetary signal.

(i)   In balanced exchange, transactions normally are not made unless the balancing flow of money either occurs or is expected. Thus many transactions which would have occurred in the communication-based framework would not occur, for lack of money, in a money-based society. Thus people's wants are not as closely provided for in a money-based society.

(i)   A great deal of productive effort is required simply to deal with the balancing of exchange. Consider the quantity of man-hours, machinery, buildings, etc. devoted to it: payrolls, cashiers, accountants, tax collectors, computers, and on and on ...   **

        Compare Figure 6b with Figure 6c. The flows in Figure 6b represent the transactions which provide people with what they want. Those added in Figure 6c represent transactions which are solely devoted to ensuring balance. They would be unnecessary in a society which did not have balanced exchange. (Asterisk (**) such as in the margin above, will be used from here on to indicate descriptions of activities which are unnecessary in this sense).

**   (i)   The quantity of money which is deemed to balance a given transaction is often quite contentious. People are not always happy about the prices they have to pay or the wages they receive. Thus a considerable quantity of effort is devoted to the conflicts which arise over balance: labour relations, unions, strikes, bargaining over contracts, price regulation, theft, etc.

b. The matching problem

In any society, unpredictable changes both to what people want to what they are able to give occur frequently. In a society based upon the communication framework this is understood and expected, and is dealt with by the diffusion principle. However, in a society with balanced exchange, a balancing flow of money is required for consumption, no matter what the circumstances. This creates a severe "matching" problem for most people. They must ensure that, come what may, they have enough money to continue consuming. Some of the strategies for solving this matching problem, and some of the distortions to production and consumption which it produces, are described below.

(i)   In any production system in which supplies and consumption vary unpredictably, one basic matching strategy is to introduce storage of the required commodity. This acts to de-couple the rates of supply and consumption. Similar strategies are used to help solve the money matching problem. Reserves of money are accumulated and drawn upon in the form of savings and loans. Institutions such as banks, building societies, insurance companies and stock markets are set up to facilitate this storage of money.

**   For many people these strategies are insufficient. Often, large-scale social changes such as the decline of a particular industry leave large numbers of people unable to cope. For them, nationally-organised 'storage' schemes have been organised such as welfare and unemployment benefits. Such payments are usually made <u>without</u> the requirement of the balance, as it is grudgingly acknowledged that a fully-balanced society creates too much pain. Nonetheless, people receiving such payments are treated as social outcasts and are made to overcome humiliating and time-consuming obstacles to obtain their income.

(i)   The matching problem, created by the need for a balancing flow of money, is made very much worse by extreme specialisation. The narrowness which

**   inevitably accompanies specialisation makes it very difficult for the specialist to alter his output should the demand for his product or service decline. Unless his need to consume happens to decline at the same time, the specialist will want to maintain the inward flow of money. The usual strategy adopted is to take whatever steps possible to alter and create demand for his product. This may take the form of advertising, planned obsolescence, fashion and style changes, disposable products, etc.

By contrast in the communication framework, there is no pressure on anyone to produce beyond expected demand (plus perhaps safety margins). A drop in demand for someone's services does not result in a drop in his consumption. He is thus free to seek alternative uses of his time (without any desperate urgency) or even to rest.

To put the problem another way, given the existence of productive capacity - available manpower and plant - which turns out to exceed demand, what is the most sensible strategy. Do you attempt to hide the mistake by attempting to alter demand, and thus use manpower and raw materials unnecessarily? Or do you attempt to cut your losses by re-deploying where possible, but at least, by avoiding the excess production? The latter strategy is particularly difficult to implement if the producer requires a balancing flow of money in order to maintain his personal consumption, and cannot easily be re-deployed due to extreme specialisation.

I see in this aspect of the matching problem one of the major sources of institutionalised pressure for continued economic growth. this becomes particularly clear when considering the capital goods sector of the economy: producers of the machinery used to produce the goods we consume. If their capacity becomes geared to supplying a growing industry, they will be in trouble if the market for the final product <u>stops growing</u>, much less declines.

c. The wrong signals.

There is one final aspect of balanced exchange using money I would like to discuss. Earlier, I pointed out that the information flows provided by money are extremely crude by comparison with the information flows described in the communication-based framework. Producers know only that consumers purchase or do not purchase their product. Consumers obtain little insight into the difficulties of production implicit in a high cost. But money flows are not only crude signals, they are the <u>wrong</u> signals. The message to a producer is <u>produce anything which brings in money</u>!

Satisfying the needs of consumers, external factors such as resource depletion and pollution, the working conditions of the producer, all take a poor second place to the need to maintain cash flows. Cash flows determine survival. If a change in production results in larger money flows but less consumer satisfaction, the producer has little choice but to adopt it.

This is purely a function of the need to balance exchange. It has nothing to do with "ownership" of the means of production. Workers' cooperatives face the same problems.

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The result is vast amounts of spurious production, not determined by pre-existing needs. This includes much of the gadgetry of the consumer society, and encourages the manipulation of people to create possible ways of obtaining money from them. The latter includes much organised crime.

IV   Summary and Conclusions

1. The communication-based framework

In this paper I have developed a communication-based framework for an idealised society. The goal state in this framework, called the condition of harmony, was such that what one person wanted to receive from another was what the other wanted to give. Thus not only do people receive what they want, but they receive it without coercing the giver.

The first necessary condition for a state of harmony to exist was accurate information flows. This was to enable both giver and receiver to understand one another's needs and to converge on mutually agreeable courses of action.

The second necessary condition described was close identification. This was to provide the motivation for people to give to one another.

The third necessary condition was a mode of organisation in which the stability of the condition of harmony was maintained. Specifically, this means that deviations from the condition of harmony due to random events and people's limited information handling abilities need to be corrected. The diffusion principle is a means of doing so which avoids the need for centralised organisation with its consequent information bottlenecks.

2. Comparison with modern societies

Section III examined three features of present societies in the light of the framework: specialisation, production for strangers (i.e. people with whom the producer has little identification), and balanced exchange using money.

The first two of these features lead to poor communication and a further reduction in identification. The result is mutual dependencies between people who do not identify with one another. This in turn produces widespread vulnerabilities and promotes conflict and power relationships.

Some strategies were suggested to enable to advantages of specialiation to be maintained while reducing the associated problems. These were multiple and overlapping specialisation of various forms, and an over supply of specialists to reduce dependency.

These strategies need to be considered in the light of the discussion of the third aspect of present societies: balanced exchange using money. This discussion showed the wide variety of ways in which production to satisfy needs is distorted by introducing balancing flows of money. In particular, many areas of activitiy (indicated by ** in the text) arise which have little to do with the satisfaction of needs. A glance back through Section III reveals the magnitude of these activities. To them should be added to the large fraction of people's attention absorbed by conflicts arising from poor communication and lack of identification.

(Anyone who has observed the operation of any medium- to large-sized organisation will be familiar with this problem). My conclusion from this is that a very great reduction in productive effort, but with an increase in the degree to which needs are met, could result from social change in the direction of the communication framework. The consequent need for specialisation would be very much less than what is now appears to be.

There are other significant consequences of the reduction of productive effort resulting from social change consistent with the framework. The quantity of energy and materials required, as well as pressures to pollute and otherwise harm the environment would decrease. Moreover, agriculture too is distorted badly by the processes described in this paper. The conclusion is that the scarcities now perceived in the world are artifacts of our socio-economic system rather than physical limits.

Thus technical solutions cannot remove them.

3. <u>Some possibilities for constructive change</u>

The purpose of this paper was not to provide a comprehensive social analysis nor to map out a detailed programme of change. It was merely to outline a set of ideas which, to me, clarify my understanding of the social processes I see. It is my hope that these ideas will also be useful to others, who will add their own perspectives and use them to tackle the problems they perceive. Thus the list which follows is only meant to indicate the breadth of the range of possible steps towards the framework. The actual selection of items is quite arbitrary, rather than systematic, and varies from very general strategies to some fairly specific suggestions. All the suggestions are intended to improve communication and identification between people in one way or another. Moreover, anything which does that is a step in the direction of the framework.

(i)   The development of specific, person-to-person techniques to improve communication. Such techniques should assist people to hold conversations which converge rather than turn into arguments. There are both positive aspects (as knowing when to listen) and negative aspects (as avoiding blame and scapegoating) needed.

(ii) Some areas in which improvements in communication and identification are particularly vital are child-rearing and education, and in therapeutic techniques for dealing with family and individual problems. Much recent work in these fields is entirely consistent with these aims.

(iii) New techniques are needed for the coordination of the activities of organisations. Such techniques would facilitate cooperative, rather than competitive and defensive behaviour . They would include flexibility and a sharing of responsibilities to enable the diffusion principle to be introduced. Again, there are now a number of new schools of thought on business management which are very consistent with these aims.

(iv) Groups of people can organise themselves (and encourage others to organise themselves) to produce more for themselves, thus reducing their dependence upon money. This production can include gardening, repair of appliances and cars, making furniture and clothing etc. By sharing tools , time, skills, and perhaps setting up workshops, a considerable proportion of needs can be satisfied. This strategy is particularly suitable for people who are unemployed and have little prospect of finding employment.

(v)   Community facilities can be set up to help people to produce for themselves. This can take the form of physical facilities such as workshops, or of advice or classes on a variety of skills.

(vi) There are a number of ways in which firms can change to enable their employees to produce for themselves. A preliminary step might be to introduce flexible working hours. For example, a group of employees could contract with a firm to fill a certain total number of working hours each week. Then the way in which those hours were filled could be arranged by the employees on a week-by-week basis to suit themselves. This would enable them to take time off when appropriate to produce for themselves.

Further steps would include the provision of facilities for self-production within the firm. Many firms have shops and tools which could be available for personal use when not otherwise needed. Other facilities could be specially provided. Trained personnel could be allowed time to use their skills for the benefit of other employees.

Firms could diversify into products which are not for sale, but are for the benefit of their employees. Such production could be used to fill in periods when demand for the firm's sale products was low.

Strategies such as these could be adopted by unions as alternatives to claims for higher wages. They would be particularly appropriate when faced with the prospect of redundancies. They enable people to continue in employment with a reduced need for money, and with good use made of the firms spare capacity.

(vii) The possibilities for encouraging constructive change by governments are numerous. For a start, they can act in support of any of suggestions described above. This support can take the form of actively setting up facilities, or of removing obstacles by altering tax, welfare, or zoning laws which discourage any such activities.

On a regional and national scale, policies consistent with the communication-based framework would aim to reduce depending by promoting regional self-sufficiency both in production and decision making. The function of regional or international exchange would be to overcome local scarcities and temporary hardships, in accordance with the diffusion principle.

(viii) Finally, I think it is important to point out one major set of strategies which could not promote change in the directions pointed to by the framework. These are strategies of coercion and confrontation, and in particular, violence and revolution. A non-coercive goal state requires good communication and close identification. Coercive strategies produce the opposite effect. The legacy of bitterness and resistance left by revolutionary change can take generations to die out. Moreover, the sudden removal of a group of people from roles of power and authority by a revolutionary group leaves the roles of the original group in the social structure largely intact. Those roles must then be filled by members of the revolutionary group, who find themselves subject to pressures similar to those on the original group. This severely limits their ability to act differently.

The result is that the new group finds it necessary to impose a highly coercive, usually centralised system of control, regardless of any prior commitments to "freedom" or "democracy". This, surely, has been a major lesson to be learned from the experiences of revolutionary regimes of this century.