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Original Paper

Social Dynamics

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Abstract

What theories are there of social dynamics, of the emergence, adaptation, resilience, collapse or decay, of social systems such as organisations, communities, networks, cliques and teams? In chapter 1, I consider evolutionary theory, in biology, economics, sociology and psychology. In chapter 2 I consult the literature on Complex Adaptive Systems, and its applicability to social systems. Social systems are distinctive, in being intentional and reflexive, with intentions depending on outcomes. In chapter 3 I focus on social systems: their variety, the role of language, the relation between self and other, network effects, and their collapse, resilience and rigidity.

Keywords

Social systems, networks, evolution, complex adaptive systems, language, self and other.

1. Introduction

An understanding of the dynamics of social systems, their emergence, adaptation, collapse or decay, is needed to assess their possible future and policies to deal with them. The social systems include organisations, civilisations, communities, associations, cliques, teams, networks, etc.

To start, in chapter 1 I discuss evolution, as a theory of development. In chapter 2,

to get a grasp of what it means to say that social systems are complex, I discuss complex adaptive systems: how complexity of a system arises from interaction between elements of the system, and how this can lead to chaotic behaviour.

In chapter 3 I consider social systems. There, interaction between people can cause complexity, but can also produce cohesion, with people learning from each other.

2. Evolutionary Theory

According to evolutionary theory in nature, species arise from the interaction of three processes, of variety generation, selection and transmission. Variety is generated in the random mutation or copying errors of genes, and the cross-over of parental chromosomes, in sexual reproduction. This yields novel

forms of life, most of which are dysfunctional and are selected out in the 'selection environment', with some forms that survive and pass on their genetic material to their progeny.

In Economics, evolutionary theory has the merit of taking uncertainty and unpredictability seriously and foregoing 'rational design' of organisations or economies, in contrast with mainstream economics. In order to play their game of maximisation of some utility function, economists attend to risk but neglect uncertainty. The generation of variety is attributed to science, technology, and entrepreneurship, selection to markets and institutions, and transmission to imitation, education and training.

Evolutionary economics has the problem, in its rivalry with mainstream economics, that the latter offers simple, clear, rigorous mathematical models of equilibrium and optimum, while evolutionary economics has to contend with the much more difficult task of modelling the evolutionary processes of variety generation, selection and transmission.

However, to deal with the problem of complexity and uncertainty of evolutionary processes, there is a modern methodology of 'agent-based simulation' models, where multiple agents are simulated in their interaction, on the basis of decision rules and inference of options by inference from facts that emerge, with errors of observation and both intentional and random variations in decisions.

To give an example: With a PhD student, I developed a model to test under what conditions trustworthiness, in the sense of loyalty, sticking to an existing relation of collaboration, in spite of the appearance of a more profitable alternative, could survive in markets, where survival of a firm depended on sufficient profits. This was a move in a debate with Nobel prize winner Oliver Williamson, who claimed that in markets trust is not viable. We found parameter values where trust was viable even if the criterion for survival was profit.

However, the complex nature of these models make it opaque what is going on, and it is notoriously difficult to empirically test them. However, for different settings of the parameters that rule those processes, one can investigate the outcome of the model of economic variables and compare those with statistics of the real economy.

Economic evolution is not strictly like biological evolution, and has several deviations from it. One is that when a firm is 'selected out' by the market, it can still survive, wholly or partly, in a take-over or imitation by another firm. Defunct practices can be revived. An example is that after sailing ships were replaced by steamships, the principle of sailing was revived during scarcity of oil, in the 1980's, albeit in the form of computer-controlled aluminum sails.

A second difference of evolutionary economics from natural evolution is that selection by markets can be hampered by businesses lobbying with the government, or by misleading or non-informative advertising that can distort the competitive process, thus weakening the pressure of competition. In nature, selective pressures are also avoided or mitigated in 'niche construction', or 'co-evolution', where the selection environment is changed by action of the entities that are selected, with beavers constructing dams, rabbits and moles digging tunnels, and birds building nests. However, the phenomenon of firms shielding from markets and regulatory institutions, with misleading information

and lobbying, is of a different order of magnitude. And if the elimination or tailoring of selective pressures is faster than selection, evolution breaks down.

Also, in the economy, selection is partly virtual, with the testing of prototypes or simulations prior to the introduction of a product to the market.

A fourth difference is that in economics, transmission requires communication, and there the meaning of words is not exactly copied, but more or less transformed in interpretation, whereby transmission gets a bit of the character of variety generation.

In evolutionary psychology and sociology, the origin of cognition, emotions, morality and language is traced to the extent that they have contributed to adaptation for the sake of survival and procreation of groups.

As in evolutionary psychology, one could ascribe certain features of community construction as arising from the evolution of human society. Thus, de Dreu et al. (2014) discussed the notion of 'parochial altruism', with solidarity within a group, but suspicion of outsiders. Solidarity helps group survival. While individual features are transmitted biologically though genes of individuals, there may be cultural transmission of group features. Solidarity inside the group is vulnerable to the invasion of predators who prey on solidarity of members of the group, and may then win out in evolutionary selection.

In-group reciprocity would have to be defended by group members identifying and restraining such external predators, but that can easily become risky, and people will be tempted to free-ride on the commitment of other group members. To enhance such sacrifice, one may need to develop an innate inclination of suspicion and control of foreign invaders, intensified by political rhetoric, which kindles suspicion of foreigners, and appeals to brain features that produce disgust. Outsiders are made to be seen as disgusting and sub-human. That is the source of xenophobia, discrimination and nationalistic war rhetoric, which we now witness on the part of the Russians in Ukraine, preserved in Russia by lies and violent suppression of free speech.

The easiest way to identify foreigners is by their appearance, culture, and where they come from. Hence racism. Solidarity is greater, and disgust less, for refugees that come from near-by, geographically and culturally. The bias of proximity is sharply illustrated by the contrast between the hospitality with which Poland and Hungary receive and accommodate refugees from Ukraine while simultaneously blocking and pushing back refugees from the Middle East and Africa, e.g., those dumped at the border between Poland and Belarus.

De Dreu and associates tried out the effect of sniffing oxytocin, the 'love hormone', and one might expect that to reduce mistrust of outsiders, but the mistrust increased, while at the same time enhancing solidarity within the group.

David Hume and the Chinese philosopher Mencius assumed that human beings have an innate feeling of benevolence, next to an innate drive towards self-interest. This can also be understood as a result of evolutionary adaptation. Cooperation was needed for hunting big game and for defense, during the

300,000 to 400,000 years of human and pre-human hunter-gatherers. Such cooperation requires that one can see a situation from the perspective of the partner, and rather than having to build such a perspective again and again in specific relations, this may have led to a general empathic perspective towards others, as a precursor towards generalised altruism.

Evolution has also left its trace in our perception, thinking and language. For a long time, the priority of cognition for survival lay in the adequate perception of things moving in time and space, such as prey in hunting, a predator pursuing us, an approaching enemy, an incoming spear or arrow, the location of a lost child, or the location of shelter.

Lakoff and Johnson (1980) proposed that humans conceptualise abstract concepts, such as meaning, democracy, justice, happiness, and virtues, etc. as metaphors from objects in time in space, and this biases knowledge. While the meaning, of a chair, say, changes in moving from one sentence and action context to another, this shift of meaning is like a chair changing colour or dropping a leg when moved from one room to another.

An important metaphor is the 'container metaphor', as when we say someone is 'in' love or 'in' error, as if we are talking of a hut, cave or boat one is in. Lakoff and Johnson propose that profit figures of a firm going 'up' is good and going down is bad because one is standing up when healthy and lying down when ill or dead.

This object bias is disturbing since current survival of society depends on an adequate conceptualisation of abstract notions that are not like objects moving in time or space. The core of the problem seems to be that we conceptualise abstracts in terms of objects with given identities in time and space while they are better seen as processes of change. In particular, virtues are to be seen as processes we are in, not as properties we have. Bodies also are processes, of growth or decay, but that can mostly be ignored, because the processes are slow relative to the movement in time and space that is salient for survival in primitive societies.

In sum, we have natural reason, but it is distorting.

Cognition is enabled but constrained by forms of thought as *enabling constraints* by which we perceive and interpret the world, and which we have adopted in evolution, education and teaching and have further developed in adult life. Feelings are shaped, kindled and channelled by experience in life. We are enabled and constrained by evolution.

3. Dynamic Systems

Systems have emerging properties that their components do not have. Thus they can be said to have an identity, as a whole. Systems can act as agents, such as organisms, organisations, institutions, communities, nations. Connections between the elements can be strong and rich, incorporating many activities, but can also be tenuous, weak, meagre and temporary, so that one can hardly speak of a unified system.

Even when the connections between the elements are strong and durable, as in a person, it is a mistake to treat the system as homogeneous, unitary, as is often done by citizens, policy makers, government, even sociologists and economists. Economists used to treat collectives such as industries in terms of one firm in it, as a 'representative' agent, disregarding their connections and rivalries, in competition and collaboration. In fact, systems interact, and can this can in turn produce a stable, coherent larger whole, but also chaos and incoherence.

Strong connections yield a more stable, but in an excess number connections more rigid, system. We need a concept to understand such differences of structure. I will use the concept of networks of connections and their properties of density, richness of content and strength of ties, stability and adaptability.

It is the purpose of this chapter to report on that. I begin the discussion of systems with a fundamental issue: ontology, i.e. philosophy of what exists; of the 'furniture of the world'. What are the properties of things that exist? 'Things' here can be anything: an object, an organism, a community, a technical system, world trade.

3.1 Ontology

Ideally, there would be only one ontology that covers everything. However, like any theory, an ontology is not some magical grasp of all truth that represents reality beyond our perception. It is a device for ordering our perceptions (MacCumber, 2007), and there may be different ontologies for different kinds of things.

According to what I see as the dominant ontology, things have a boundary, an internal structure of elements and processes, and external interaction with other things. There can be a hierarchy, with elements in a coherent system, which in turn is an element in a 'higher 'level' system, such as an organ in a body, or people in a community.

This ontology leaves open what drives the internal and external interactions and the adaptation of the elements. Those include logical, biological, physical processes, in 'Complex Adaptive Systems (CAS)', to be discussed presently, and social systems, with elements and processes studied in psychology, sociology, anthropology, linguistics and philosophy.

A second ontology is that of networks, with relations, called 'ties', between the elements called 'nodes'. The ties can be unidirectional or reciprocal, 'thick' or 'thin', in the exchange of many or few sorts of resources, with frequent or incidental exchange, and strong or weak in terms of duration, and type of investments in building and maintaining the ties. The exchange of resources requires that the boundaries of the elements of a system, the nodes, are permeable, to absorb or shed the resources exchanged. In some treatments of this network ontology, in the literature, no identifiable, stable identity of things is left: The internal structure seems to disappear, and the node is entirely determined by its momentary network positions.

There can be a hierarchy of networks, as in the body, where organs are nodes, and cells are nodes within them. The ties between organs are streams of blood, transporting oxygen, food and hormones, or

electrical impulses along neurons. In communities the ties are relations of trade, family, health care, employment, neighbourhood, friendship, sex, rivalry, organisation, control, communication, contamination, hypes, and mobs. The connections between 'nodes' can yield complementarity, with the nodes sustaining each other, but they can also propagate collapse. When one node collapses, for whatever reason, that can burden or withhold support to a neighbouring node, and so on. An example is contagion, as with Covid-19. Another is the collapse of a building because the collapse of a part that carries a load and rests on a lower part transfers the weight of what rested on it, and this can yield a cascade of collapse.

A third ontology is that of internal forces that adapt the internal structure of things to changes in the environment. This dynamic ontology of impulse is found in the history of philosophy, such as the 'thymos', drive to manifest oneself, in ancient Greek philosophy, Spinoza's 'conatus', the urge to survive, Nietzsche's 'will to power', and the submission to the perennial movement and transformation of nature of Taoism and Stoicism. According to Nietzsche, survival is not the supreme force: people often manifest themselves, in a 'will to power', at the risk of not surviving. This may contribute to the vitality of a social system but also to its collapse.

The three ontologies are not necessarily irreconcilable. I already indicated how the node ontology can be added to the dominant ontology, in taking the boundaries to things as permeable. Adaptive force may also be added, as discussed later.

3.2 Entropy

There is a principle of dissolution of things, called 'increasing entropy', universal in nature. It is loss of potential energy and the organisation that energy maintains. An example of loss of potential energy is a river flowing downhill from a mountain glacier. One would need to spend energy in pumping the river uphill. Organisms need to take in energy in the form of food to maintain themselves. Life entails a fight against increasing entropy.

To maintain its identity, a system needs 'homeostasis', equilibrium, keeping parts of the system within 'tolerance levels', such as, in the metabolism of the body, temperature, oxygen, food supply, and vitamins. There is also homeostasis of the mind, with emotions triggering the utilization of opportunities from outside and blocking or avoiding threats to survival.

Is there social entropy? Will societies fall apart if not maintained in a homeostasis of economic and social cohesion? The notion has been proposed of Energy Return on Investment (EROI), defined as the amount of energy spent to produce something, including labour, energy locked up in materials, and the building and maintenance of requisite institutions to maintain a balance of parts in an increasingly complex system. This difference between energy coming out and energy going in seems to be declining in modern society, requiring ever more energy to produce things than come out, making societies more complex. Wagner proposed a law according to which the share of government in national product increases as prosperity grows, but the evidence for it is contested (Brewer, 2008). In the prolongation of this, energy will dissipate and society will fall apart. This may be the socio-economic equivalent of

entropy. One of the aims of this article is to investigate in more detail how this works, and what might be done to turn it around or deflect it.

3.3 Complex Adaptive Systems

Concerning artificial and organic systems, a widespread theory of 'Complex Adaptive Systems' (CAS, Holland, 1992) has developed. Complexity denotes the interaction between elements of a system, and between the system and its environment. Its outcomes are unpredictable and sometimes chaotic. Adaptation in and of systems is inspired, in part, by evolutionary theory. Elements consisting of building blocks of a system are connected by rules, and both elements and rules are reinforced to the extent that they contribute to an overall joint purpose. This is called 'credit assignment' or 'attribution of merit'. According to libertarians, in society profit and wealth fulfill this role.

Next, in an evolutionary process, elements and rules adapt by breeding, making new combinations of basic constituents of the elements, submitted to selection according to success in contributing to overall purpose, with 'genetic algorithms' in which, like chromosomes in biology, strings of properties cross over.

This applies to the development of immune systems, the evolution of body-mind systems, and self-learning computer algorithms, for example in self-driving cars, economic planning, pricing and allocation. This is also how neuronal networks in the brain develop (Edelman, 1987).

The collective endeavor of elements may serve the maintenance of homeostasis, or creation of a new one, but when not in tune with each other these elements can create chaos in their interaction. That applies also to society.

Evolutionary adaptation can apply not only to the nodes, but also to the 'rules', the connections, between the nodes of a network. New rules may arise from random trials, as in 'genetic algorithms'. New rules, when successful, grow to dominance.

CAS fits naturally with the ontological notion that things in the world have boundaries, an internal organisation, and external connections. CAS shows how a system can be adaptive, in its internal and external interaction with the environment.

Kaufmann (1993) developed the notion of 'N/K structures', where N denotes the number of nodes, and K the number of neighbours of each node. Lansing (2002) gave the example of N lightbulbs, each connected to three neighbours, with the rule that the bulb lights up if two or three neigbouring bulbs light up, or else turns off. The system might then end up in a stable pattern of twinkling bulbs. With many bulbs and more than three connections per bulb, there arises chaotic behaviour without a stable pattern.

In both nature and society, there is adaptation and interaction within organisms and between organisms, in competition for resources between species, as predator and prey, or in symbiosis or complementarity, in 'niche construction'. In eating fruit from trees and excreting the seeds, birds help to maintain forests, elephants clear forests into a mixture of forest and grassland where other wildlife can hide and hunt, in an ecology of habitats. But the interaction of species can cause collapse. Ecological system collapse has

occurred regularly, in particular when humanity interferes with the balance that has grown in evolution. For example, in a German lake algae proliferated, this was considered a nuisance, and a chemical substance was added to kill the algae. However, the algae were food to river crabs and insects that formed the food for white fish, so those were killed as well.

4. Social Systems

4.1 Variety

Social systems are groups of interacting people with a common goal and culture in the anthropological sense of habits and ways of life. There is a great variety. The interactions can be dense, many, frequent and extensive, or sparse, few, sparse and shallow. They can be private or public organisations, which can be permanent, such as firms, political parties, families, or temporary, as in building projects, exhibitions, conferences, demonstrations, rave parties, and soccer matches. They can be based on ongoing contacts activated in projects, as in building a house, a soccer club, etc.

The interactions in a network can be voluntary and free, as in a liberal democracy, or imposed and controlled, as in an authoritarian regime. In social systems, members achieve benefits, in positive freedom of access to collective benefits, with a constraint on individual negative freedom of space for action. The constraints can be peaceful, with freedom of protest, or coercive and violent, as in criminal gangs and terrorist, suppressive regimes.

Social systems generally have leaders, temporary and elected by voting or appointed through democratic representation, or semi-permanent and imposed by an opaque process of jostling for power in an oligarchy.

Even in democracies, sometimes authoritarian leaders are found attractive in their ruthlessness, and even violence in the suppression they exercise. They are felt to be romantic in two senses, of being decisive and manly, charismatic, crossing boundaries of custom or justice, and of imposing an order that is felt as safe, in the romanticism of belonging to a collective whole. One sees this romance of action with hooligans, who cross boundaries of non-violence, exercising physical strength and agility, and offering the togetherness of a clan, with the exalted celebration of each win of their heroes. Criminal youth gangs can also entertain this combination of romantic, decisive heroism and the provision of a sense of belonging, in the gang. More calamitous examples are Hitler and Putin, with their romantic nationalism and violent suppression. Putin sees himself as a saviour, dedicated to the restauration, at any cost, of the whole of sacred Russia, and old values of religion, obedience and family. Such leaders are often surrounded by a fanatic group of followers and admirers, benefitting from corruption and the resulting kleptocracy, who want to prove their dedication and loyalty, mimicking and overdoing the violence of their heroes.

Are there concepts or theories that can deal with this variety of social systems?

4.2 Metaphors and Models

Theories of CAS and quantum phenomena in physics provide fashionable metaphors in theories of social systems, but why should they apply there? Can they serve as models? As Introna (2003) phrased it, non-human systems and social systems are 'ontologically incommensurable'. I disagree: the first ontology that I indicated earlier covers both CAS and social systems. I don't know about quantum physics because I cannot make sense of it.

To apply to social systems, the elements of CAS would be individuals or groups of them, and those would have to be subjected to the credit assignment according to their contribution to overall purpose. A libertarian might claim that riches are indicative of social merit, in the credit assignment of profits by markets. In more egalitarian societies, that is unacceptable. Liberal societies do want to preserve the negative liberty, room for individual action, of individuals. The loyalty of individuals to rules, in social cohesion, is then to be earned by rulers by engendering faith of the population in the rulers' contribution to the flourishing of the collective, in positive freedom, yielding new products and services. Dissolution of the system might then arise from loss of social cohesion because faith in the benefits from society erodes. Even if there is no decline of those, dissolution may arise from saturation or boredom. One recognises this in the notion of the 'mass man' in Ortega y Gasset's 'revolt of the masses' (1930), who has no gratitude for the benefits developed in the past but considers them as a birthright, and lacks the commitment to a joint effort of the population in the project of society, and acts like a spoilt child.

Characteristic of human social systems, in fundamental contrast with non-human systems, is that people have thought, which is reflexive, partly self-conscious, aware of its historical roots, and intentional, with goal-directed actions. Actions and interactions are directed at action, which produce results that feed on the conditions and incentives for action, of which most people are aware, and use it in political action (Introna, 2003, p. 205, p. 215).

Concerning a comparison with CAS, the elements of social systems are people, rational animals with different talents, backgrounds and life histories who face moral dilemmas and the dilemma of authenticity and conformism, so that, depending on personality and circumstances they might imitate or contrast themselves with others. In social systems, results of interactions feed back into the rules or habits of interaction, such as in the development or breakdown of morality and trust. Social systems are 'socially constructed and historically emerging'. The rules for interactions are constituted in practice, but dependent on potentials that are developed in evolution and act as 'enabling constraints'. Hence the interest in evolutionary theory. Interactions in social systems are largely based on communication, which entails language, with its peculiarities, to be discussed later.

None of this applies to non-human physical systems, where internal rules and forms of interaction between the elements of a system may adapt, but not reflexively on the basis on intentional thought and language (Introna, 2013).

Concerning models from quantum phenomena, people and their organisations are macroscopic phenomena where quantum fluctuations cancel out. McKelvey (2003, p. 99) used the notion of 'entanglement', found between electrons and photons, as a model for bonding between people, but that seems ludicrous. He interprets entanglement as arising from past interactions between those particles, and past interaction certainly applies to bonding between people, but so much more is going on there that does not apply to elementary particles.

As metaphors, CAS and quantum phenomena are useful to alert researchers, managers and politicians to the fact that social systems face radical uncertainty, can produce chaotic, unpredictable behaviour, can self-organise, cannot be subjected to prior intelligent design, and managing them must appeal to motivation and ideas arising bottom-up, with limited or no imposition of designs top-down. Management can try to affect that bottom-up process by inspiring, motivating, facilitating or discouraging different kinds of relationships, and furthering trust, and the adaptability and flexibility needed when the unpredictable occurs.

In social systems, interactions are between people, which is far more complex than in non-living systems, and this constitutes a field with many studies, in psychology, sociology and anthropology, raising the issue, among other things, of trust. I will turn to the relation between self and others later.

An economic law is that of decreasing marginal returns: when one has much of something, the value of an addition decreases. The relative value of a return to more individual freedom, wresting free from the collective, may then rise. Is this a cause of the rise of more selfcentredness and egotism that one sees in modern developed societies, with loss of social cohesion? An incentive for social coherence is external threat, as currently in Ukraine. Initially, Covid-19 was such a threat, but this wore off when the crisis of an overextension of hospitals seemed to subside with the development of the Omicron variant of the virus, and people wanted to revert to their private freedoms.

4.3 Self and Other

The core problem in democracy lies in the relation between individual and collective, self and other, between self-orientation and civility, in the recognition and acceptance of strangers, and the willingness to communicate, listen to them and recognise their views as legitimate even if one disagrees.

Identity of the individual has a personal side, arising from the course of individual life, and a collective side, in the interaction between people, in a more or less shared culture. According to the stage theory of the development of cognition of Jean Piaget, development arises from the attempt to assimilate experience in existing mind frames, and accommodating them when that fails. This entails interaction of self and other. One needs the other to escape from prejudices and learn.

Two prominent writers oriented at the other are Emmanuel Levinas (1991) and Martin Buber (2004). They proposed that the other and the relation with him/her precedes the ego. 'The relation is the liberation from the fortification of the ego' (Lipari, 2004, p. 129). They deviated fundamentally from the old idea, going back to Descartes, that the ego, the subject, has a pre-formed identity, and looks at

the world, the object, from outside. Levinas and Buber, among others, objected that this turns the other into an object, to be used only as an instrument for the benefit of the self.

De original meaning of 'theory', in ancient Greek, was 'contemplation', seeing, which yields 'comprehension'. Levinas and other postmodern philosophers (e.g. Merleau-Ponty, 1964), are suspicious concerning such seeing and comprehending, because they press things into pre-conceived moulds of conceptualisation, neglect what is invisible in the object, its background, its history and what lies beyond its horizon, its potential for developing. Nevertheless, Levinas speaks of opening up to the 'visage' of the other. It seems to be seeing, but is not superficial, going no further than the surface, and recognises the idiosyncrasy and depth of the other. That other seeing of Levinas precedes rational categorisation. Levinas calls it a 'trace'. Perhaps that is a good term for the effect of the instinctive benevolence that according to David Hume was thrown up in evolution. That yields a potential which may not be realised. It can be smothered in adverse education or harshness in the struggle for life. Levinas himself says he following about it: 'it precedes every memory'. It is made in an unrecoverable past, which the present, proposed in memory, cannot match, in terms of birth or creation (Levin, 1999, p. 321).

For Levinas the other is 'high' by the epiphany of its face, and one must care unconditionally for him/her, in an asymmetric relation, where the other takes precedence over the self. The face of the other calls out, which precedes any action, with the imperative to care for him/her, in full dedication. It is not like opening the door of one's house to the other, but letting him/her participate in building the house. Self and other differ, and cannot merge, and the other must be accepted and valued in its own identity. The letting the other in is unconditional. Levinas says that one must accept even one's hangman.

The evolutionarily given, instinctive nature of the trace can perhaps contribute to solving the dilemma that Levinas encounters, and admits, concerning on the one hand the unique individual whose face demands unconditional care, and on the other hand justice, which applies to all equally, brings humanity together, in a categorisation, putting in a box, which Levinas wants to avoid. I call this the 'dilemma of benevolence and justice'. Benevolence is individual, made to measure, while justice requires equality under the law. This dilemma manifests itself widely. Sometimes benevolence entails inequality and injustice. For example in progressive taxation, and benefits extended to the indigent and not to the well- to- do. It comes up in the present quarrel, in the Netherlands, to reduce the rising price of fuel and energy as a result of the crisis in Ukraine. Why let higher incomes also benefit from this, in a reduction of tax on fuel, rather than focusing on people who are now in crisis?

One cannot craft an arrangement that seamlessly suits individual taste and conditions, and at the same time is the same for all. Care for every single individual person must make the transition to justice for all, with rules that apply to all and are impersonal. (e.g. Levinas, 1991, pp. 113-115). One must somehow not only feel responsible for that unique other, but also for third parties, and ask yourself whether the unique other does not harm other others. The asymmetry of the ideal relationship vanishes, and equality under the law appears. Yet the Levinassian relation must be preserved as a source of

inspiration and standard for social justice. How can we ensure that law and justice, with all its institutions and power holders, can remain inspired by the responsibility of the self for the unique other? According to Levinas that is the calling for 'prophetic voices' that one hears sometimes, rising from the folds of politics, from the press and in the public spaces of liberal states (Levinas, 1991, p. 203). Is that strong enough?

How radical is the difference between self and other? If it is radical to the point that the doings of the other can no longer be assimilated, is incomprehensible, it may become a bulwark against dominance and colonisation, but if the other is indeed incomprehensible, how can one relate oneself to him/her (Nordin & Smith, 2019)? In the theory of knowledge discussed before, the first impulse is to try and assimilate the other, but when that fails one must try to accommodate. But when that fails, the point in a democracy is to not let the incomprehensible slide into the reprehensible, but it is very difficult not to condemn what one does not understand.

For Martin Buber, in contrast with Levinas, the relation between self and other must be reciprocal, in dialogue. 'The gift of giving includes the gift of receiving' (Lipari, 2004, p. 135). Levinas did not accept reciprocity because responsibility for the other precedes freedom of the self (Lipari, 2004, p. 132). As with Levinas, for Buber the relation is prior to identity, but that lies 'between' self and other. Buber distinguished between the 'I-It' and the 'I-Thou' relation. In the 'I-it' relation the other is treated as an object, and in the 'I-Thou' relation one is oriented towards the intrinsic, not only the extrinsic, instrumental view of the other. The I-it relation has its inevitable use, in employing the other, and is often needed to enable the I-Thou relation, but lacks the depth of humaneness, the intrinsic value of the other.

Reciprocity does not necessarily imply symmetry. The relations between teacher and pupil, and between therapist and patient, are not symmetric, but they should be reciprocal, and the teacher/therapist should evoke a response as well as initiative from the pupil/patient, assimilate it and accommodate to it.

Note that relational ontology does not eliminate the individual, who is not absorbed and disappears into a twosome of self and other, but stays individual, because it develops its own identity and potential along its unique path of life.

Inspired by Buber, among others, Rosa (2019) pleaded for 'resonance', where the self affects the other and is affected by him/her, like a tuning fork that adopts the vibration from a neighbouring fork. However, that may seem as if it happens by itself, but it requires effort and dedication. It requires agency. Aristotle already emphasised that in his virtue ethics action is crucial. One must develop and enact one's virtues, and immerse oneself into the other, let understanding and empathy grow. Often, one must coach the other to do the same, overcoming closure due to fear or suspicion. One must try to access to his/her sources of opinion and creativity, and to be open to such efforts of the other.

For Bubers's I-Tou relation and Rosa's resonance one must suppress the inclination to control the other. Rosa (2020) argued that modern Man tries to control everything, which blocks the resonance that we

really cherish. He claimed that after the demise of the idea eternal life after death, we become insatiable in the present life, trying to cram that limited life full with property and experience, which requires ever more efficiency in the production of things, driven by capitalism and technology, which causes an acceleration in everything. This obstructs the resonance that we really want, which requires attention and reflection. This generates a bad conscience, in doing what we don't really want (Rosa, 2016). Resonance harbours uncertainty: you cannot control the other, and cannot predict what will happen in his behaviour, or even your own.

Across the world, people avoid resonance with people different from themselves by locking themselvs in 'filter bubbles' or 'echochambers'. Ecological disaster looms for lack of resonance with nature, and political disaster by lack of resonance between different people, threatening democracy.

The value of control depends on how far it goes. Rosa (2020, p. 17) recognised four stages of control: making visible, making accessible, making manageable, and making useful. Resonance requires the first two stages of control: making visible and accessible, to reach out to the other and be reached, but more than that goes too far. Rosa (2020, p. 44) admitted that resonance requires 'semi controllability'.

Interaction, reciprocity, resonance, are not only needed for social and psychological wellbeing, but also for intellectual, cognitive capacity, for learning.

4.4 Language

In social systems, interaction is based on language, with all its peculiarities. In language, words and expressions are often intended to refer to things, and that is part of their meaning. But while this reference is mostly public, shared between people, otherwise communication would not work, it also carries personal connotations. Frege (Thiel, 1965) made the distinction between reference and 'sense', where he defined 'sense' as 'the way in which things are given' ('Art des Gegebenseins'). The classical example is the planet Venus, which was identified as both 'the morning star' and 'the evening star' because it was seen both in the morning and the evening. I twist that a bit by seeing sense as 'the way in which we identify things', and this reflects personal experience. The way in which I identify something as a 'chair' has a cloud of personal associations, such as may grandfather's reclining chair with curved mahogeny armrests and a pale blue vervet upholstery fastened with buttons. I once saw a photo in newspaper of a man sitting in a dent in a stuffed cow, with the caption 'see him sitting in his cow'.

The linguistic scholar Ferdinand de Saussure made a distinction between 'langue', which is the synchronic, shared reference of a word, and 'parole', which is the personal, variable, diachronic sense that people have developed and continue to develop, along a path of life. This is reminiscent of Wittgenstein's (1965) notion of language as 'a form of life', with the meaning of words developing on the basis of how they are used.

Since meaning arises from use, it is situated, with different meanings, expressions, slogans, symbols in different social systems, such as regions, municipalities, families, organisations and professions (Introna, 2003).

Searle (1969) showed how language is not only used to say things about things, but to 'do things with and to people', in 'speech acts', as in requests, commands, exhortations. accusations, and condemnations, and accounts of events, such as 'the chairman opened the meeting'. These expressions generally carry intended reference, such as that of 'the chairman' and 'the meeting', but that is not the meaning of the expression.

People develop their 'sense', perception, interpretation and perspective along an individual path of life, on the basis of different personalities and talents, that can lead to different paradigms that are difficult to reconcile. There is variety of perception, interpretation and knowledge between people, yielding 'cognitive distance', and the need to cross it for mutual understanding and collaboration. That may sound more continuous than it is. There may be discontinuous paradigms that are 'incommensurable', with a cognitive distance that is impossible to cross.

This shows, for example, in the many dilemmas in life, where people take different stands. The most fundamental dilemma, I think, is that between the universal, applying always and everywhere, and the unique, individual particular. It comes up in other dilemmas. Closely related to this dilemma is the dilemma of theory, which needs to generalise, and practice, which needs to attend to particulars. The different sides of those dilemmas can block communication, but they can also yield insight from discussion between them, which may lead them to shift the positions they take between the extremes.

Organisations need 'organisational focus', needed to sufficiently reduce cognitive distance for people in the organisation to achieve a common ground for joint action, intellectually and morally. This will often entail some position between the extremes of dilemmas. In the development of an organisation, organisational focus may shift.

4.5 Collapse, Resilience and Rigidity

How stable or prone to collapse are social systems? The ties between nodes can be beneficial to the system in yielding synergy between the nodes, but they can also make the nodes vulnerable to collapse when a node fails and then withholds its support to neighbouring nodes or puts a burden on them, or when a node contracts an infection and infects neighbouring nodes, which can yield a cascade of failure by which the system collapses.

There can be negative feedback, restricting deviations from current structure, as part of homeostasis, and positive feedback that increases them. Negative feedback yields stability but can create rigidity. Positive feedback can yield learning but can cause collapse. An example of the latter is the collapse of a building: when a part of it fails, due to some structural weakness or decay (say, rot of wood or concrete), and then transmits the weight it carried to lower parts that can't bear it, and collapse multiplies.

Stability and collapse depend on network structure. When all nodes are connected to all others, i.e. the network is 'densely' connected, and the ties are tight, it is most vulnerable. When they are not or sparsely and weakly connected, the system is not so vulnerable, but also lacks the benefit of connections. A network is 'resilient' to the extent that as a whole it can withstand local collapse.

An example of negative feedback is 'path dependence', where the establishment of a structure in the past inhibits its adaptation (Arthur, 1989). A classic example is that of the 'QWERTY' arrangement of letters on a keyboard. It arose from the need, with early mechanical typewriters with levers that when the key of a letter on the board is pressed, spring out to print, through a tape of ink, the letter on the paper. It was expedient to put levers next to each other that do not often occur in sequence, to prevent the levers from becoming entangled. Once established, that sequence was used for training typists and building new machines, even when they were no longer mechanical but electronic and would have allowed for any other sequence on the keyboard.

Path dependence arises often in social systems, causing widespread rigidity, because they are built upon investments that are sunk, i.e. become worthless when the structure is changed. This applies widely, in systems built on language, communication procedures, technical standards, as in building and machine construction, moral principles, behavioural norms.

Another conservative effect arises, paradoxically, from the 'learning curve', where efficiency increases and costs decline as a function of accumulated experience. This is beneficial in itself, but raises the threshold of turning to a new system, in which one would have to start all over again with a new system with its initial inefficiencies.

The trick is to find a system that allows the benefit of connections, in reception of novelty, but at the same time are strong enough to be resilient to the propagation of collapse, without causing lock-in in path dependence.

An adaptive system in social systems is the 'small worlds' network (Milgram, 1967; Watts, 1999), with 'cliques' in which internal nodes are densely and strongly connected, with frequent interactions with each other, with external nodes that are not connected directly to each other, but indirectly through the clique, but may connect the clique to other cliques. The clique then acts as a 'hub', like a wheel with spokes. An example of such 'hub' networks is the airline industry. The merit of that is that it avoids almost empty flights directly between small airports outside the hub, and collects a greater number of passengers in the hub. Paris is a hub for trains, airplanes, motorways, politics and protests. The spokes in an airline hub are airline offices, loading facilities and services, suppliers, taxi stands, shops, and railway stations.

When notions from the science of complex adaptive systems and quantum physics are applied to social systems such as organisations, and used as metaphors they are fine, to bring home to researchers, managers and politicians that in organisation there can be only limited rational design, with top-down ideas being imposed on personnel, but for explanation those notions are of dubious validity.

4.6 Unity and Variety

Evolutionary theory shows that variety generation is needed for the development of new species. Variety is needed to throw up new life forms for selection of the fittest, which develop into new species. In biology this takes place by the mutation and copying errors of genes, and chromosome crossover, in sexual reproduction. In evolutionary economics that is mimicked with the idea that entrepreneurs create

such variety, which is subsequently weeded out by the selection environment of markets and institutions. In Complex Adaptive Systems new combinations of elements are randomly generated for selection, in economic systems they arise from science, technology, and entrepreneurship.

In economics and business science, studies of innovation show that diversity is needed as a source of innovation. Nooteboom (2000) showed how 'cognitive distance' between people and organisations on the one hand yields a problem of mutual incomprehension, but on the other hand a benefit of 'novel combinations' which according to the economist Schumpeter yield innovation. The trick is to develop relations at a cognitive distance that is sufficient to yield novelty, but not so large as to preclude understanding. Where that optimum lies depends on whether the purpose of a firm is efficient exploitation of resources, for which one needs to minimise misunderstanding due to cognitive distance, or exploration of novelty, for which there must be diversity of ideas, hence more cognitive distance.

Before the 15th century China was ahead of Europe in technology, but then it closed itself off from international travel and trade, losing a source of variety, while in Europe the Renaissance emerged, and then the Enlightenment, from the debris that was left behind after the fall of the Roman empire due to the invasion of Visigoths, Vandals, and Mongols. Thus, the breakdown of civilisations may offer the material for the emergence of new ones. That is not necessarily so, as the breakdown of the Soviet Union has shown. That breakdown was due, at least in part, to the inability of communist central planning to exploit the local knowledge of consumptive needs and productive opportunities that markets cater to, as Hayek (1945) proposed (though he did not acknowledge the many imperfections of markets). In Russia, the potential of markets to mobilise variety was blocked by the capture of large assets and institutions by oligarchs, yielding a small clique with too strong bonds.

Theoretically, a small world structure of a network with a clique of dense and strong internal ties and weak and sparse external ties is optimal for innovation. The dense, strong ties give a basis for trust, but by itself that unity can yield too little variety, and the less dense and tight relations with external nodes, other cliques, compensate for that, offering requisite variety. The strong internal ties in the clique arise for efficiency of complementarity and cooperation on the basis of trust. The external ties often arise on the initiative of peripheral nodes with a weaker position in the clique to improve their position as 'boundary spanners', acquiring power by crossing 'structural holes' between cliques. In the global economy, the boundary spanners are weeded out because of the war in Ukraine.

The empirical evidence for the innovative benefits of small worlds is mixed, but the theoretical blessings can be disturbed by additional contingencies. After a while the innovative impulse from external nodes can become exhausted, and a condition for ongoing innovativeness then is that external links are renewed and/or that there is a turnover of nodes internal to the hub. Another contingency is that if the hub is dominated by a strong central node, that may impose its regime on the whole of the hub, making it less receptive to innovation from outside. Present Russia is an example.

Variety in an organization needs to be limited, in what I call 'organisational focus' (Nooteboom, 2000), which, to accomplish anything, entails a common purpose and direction where to go, what not to do,

forms of reporting, and ways of conflict resolution, not to have to negotiate what to do and how to resolve conflicts at every turn. It is established and maintained by organisational culture, consisting of styles of conduct, appearance, role models, slogans and logos, office lay-out, furniture design, receptions and parties. It is not entirely, or even primarily, a rational design by management, but emerges in self-organisation by the actions of people interacting with each other, which management can facilitate. Management and statesmanship are needed to stimulate and communicate the focus, prune ill-functioning appendages and check counter-productive interactions, in organisations and states.

Organisational focus can be more or less tight, narrow, with more or less internal cognitive distance. If the organisation's primary purpose is the efficient exploitation of existing resources, where price is the dominant factor, the focus needs to be relatively tight, and when the prime orientation is innovation, which needs variety of ideas and actions, the focus is relatively wide. An example of wide focus is in small biotech firms that develop new active substances or production methods, which when yielding a working prototype are handed over to more exploitation-oriented large pharmaceutical corporations that implement the innovation, and market a product under the umbrella of the brand name. This illustrates the merit of collaboration, in an alliance, in contrast with a merger or acquisition. One can compensate a narrow focus by collaborating with others with a different focus, creating variety in the collaboration, and compensate the inefficiencies of a wide focus by collaborating with a partner with a narrow focus.

The challenge for management of organisations is to nurture and maintain an appropriate organizational focus, furthering processes that favour its 'homeostasis', while keeping it resilient and without making it rigid, avoiding undue path dependence, and managing what to do and what not.

The boundary management of an organization is helped by 'transaction cost theory', a branch of economics. Transaction costs are cost of 'the market', i.e., costs of contact, contract and control. Costs of contact are costs of locating supply and demand, and judging their quality and reliability. Costs of contract are costs of coming to an agreement, deciding how far to go with a contract or rely on trust, and costs of making a contract. Costs of control are costs of monitoring contract execution, haggling over execution, and possible legal action.

A type of investment that is crucial for the decision to produce or outsource, is that of 'relation-specific' investments, defined as investments that are specific to a given relation, and become worthless when the relationship breaks. Those can be facilities 'on the doorstep' of the partner, with no alternative use in sight, specific instruments or machines tailored to the relation, personnel with specific qualities, specific training of personnel, and getting to know who is who in an organization, where the authority lies, and building trust. The behavioral risk of such investments is that of 'hold-up', where the partner can threaten to exit and leave you with a worthless investment, unless you grant him a larger share in jointly produced added value. This risk can be countered by sharing the cost of such investments or ensuring countervailing power by yielding a unique relational quality that the partner cannot do without and cannot find elsewhere.

Transaction cost economics says than when transaction costs are high, it is efficient to incorporate the partner, in a merger or acquisition, where a single overarching authority can demand requisite information and impose solutions to conflicts. Concerning nations, that is the advantage of an authoritarian nation. Incorporation, resorting to a single, overarching authority is the easy solution, but reduces cognitive distance and hence variety, and reduces flexibility to change arrangements. It is often better to learn the art of collaboration, in an alliance 'without a boss', based on mutual trust and limited contracts.

Alliances between firms can develop into so-called 'industrial districts' (Piore & Sabel, 1983; Sabel, 1989), of which the Prato district in Italy and 'silicon valley' in California are much publicised cases (Andriani, 2003). In such a district firms collaborate, especially in innovation, even if they are competitors, crossing cognitive distances, profiting from the diversity of cognitive distance. They form a clique network with many connections between nodes, that are strong in the sense that there are relation-specific investments and frequent interaction and information exchange, and considerable mutual trust based on the importance of reputation in the district, and the bonding that arises from intensive and frequent interactions.

For wide dispersion of knowledge in markets, it cannot be tacit, operative but not discursive, and has to be codified, which makes it vulnerable to poaching and resulting loss of competitive advantage. In alliances and industrial districts, with personal contacts, knowledge can remain tacit, expressed in face-to-face encounters with the partner.

This is an example of self-organisation. It more than compensates for the disadvantages of small scale firms. No node is 'the boss', and participants have only a limited knowledge of the whole district, of who does what, or even of who participates, apart from what emerges in the reputation system. It forms an organic system. Between such districts, some firms may cross the 'structural holes' between the districts, and act as avenues for information flow between them.

References

Andriani, P. (2003). Evolutionary dynamics of industrial clusters. In E. Middleton (Ed.), *Complex systems and evolutionary perspectives on organisations*. Amsterdam: Pergamon.

Arthur, B. (1989). Competing technologies, increasing returns, and lock-in by historical events. *Economic Journal*, *99*, 116-131. https://doi.org/10.2307/2234208

Buber, M. (1997). *Das dialogische Prinzip*. Gütersloh, Germany: Gütersloher Verlagshaus.

Brewer, A. (2008). *'Adam Smith's stages of history'*. Dicussion paper 08/611, dept. of Economics, University of Bristol.

de Dreu, C., Balliet, D., & Halevy, N. (2014). Parochial cooperation in humans: Forms and functions of self-sacrifice in intergroup conflict. *Advances in Motivation Science*, *1*, 1-47. https://doi.org/10.1016/bs.adms.2014.08.001

Edelman, G. M. (1987). *Neural Darwinism: The theory of neuronal group selection*. New York: Basic Books.

Fleming, L., King III, C., & Juda, A. (n.d.). I. 'Small worlds and regional innovation', *Organization Science*, *18*(6), 938-954. https://doi.org/10.1287/orsc.1070.0289

Hayek, F. von. (1945). The use of knowledge in society. *American Economic Review*, *35*(4), 519-530.

Holland, J.H. (1992). Complex Adaptive Systems. *Daedalus*, *121*(1), 17-30.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision making under risk. *Econometrica*, *47*, 263-291. https://doi.org/10.2307/1914185

Kahneman, D., Slovic, P., & Tversky, A. (Eds.). (1982). *Judgment under* MacCumber, J. 2007, *Reshaping Reason, Toward a new philosophy*. Bloomington IN: Indiana University Press. https://doi.org/10.1017/CBO9780511809477

Kaufman, S. A. (1993). *The origens of order*. Oxford: Oxford University Press.

Lapsly, D. K. (2006). *Moral stage theory*. London: Routledge.

Levinas, E. (1991). *Entre nous, Essais sur le penser-a-l'autre*. Paris: Grasset.

Lipari, L. (2004). Listening for the other: Ethical implications of the Buber-Levinas encounter. *Communication Theory*, *14*(2), 122-141. https://doi.org/10.1111/j.1468-2885.2004.tb00308.x

Milgram, S. (1967). The small world. *Psychology Today*, *2*, 60-67. https://doi.org/10.1037/e400002009-005

Nooteboom, B. (2000). Learning and innovation in organisations and economies. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199241002.001.0001

Ortega, Y., & Gasset, J. (1993). *The revolt of the masses*. New York: W.W. Norton.

Piore, M., & Sabel, C. (1983). Italian small business development: Lessons for US industrial policy. In J. Zysman, & L. Tuson (Eds.), *American industry in international competition: Government policies and corporate strategies*. Ithaca: Cornell University Press.

Sabel, C. F. (1989). *Flexible specialisation and the re-emergence of regional economies*.

Searle, J. R. (1969). *Speech acts: an essay in the philosophy of language*. Cambridge: Cambridge university Press. https://doi.org/10.1017/CBO9781139173438

Thiel, C. (1965). *Sinn und Bedeutung in der Logik Gottlob Frege's*. Meisenheimam Glan: Anton Hain.

Watts, D. (1999). *Small worlds: The dynamics of networks between order and randomness*. Princeton NJ: Princeton University Press. https://doi.org/10.1515/9780691188331

Wittgenstein, L. (1956). *Philosophical investigations*. Oxford: Basil Blackwell.