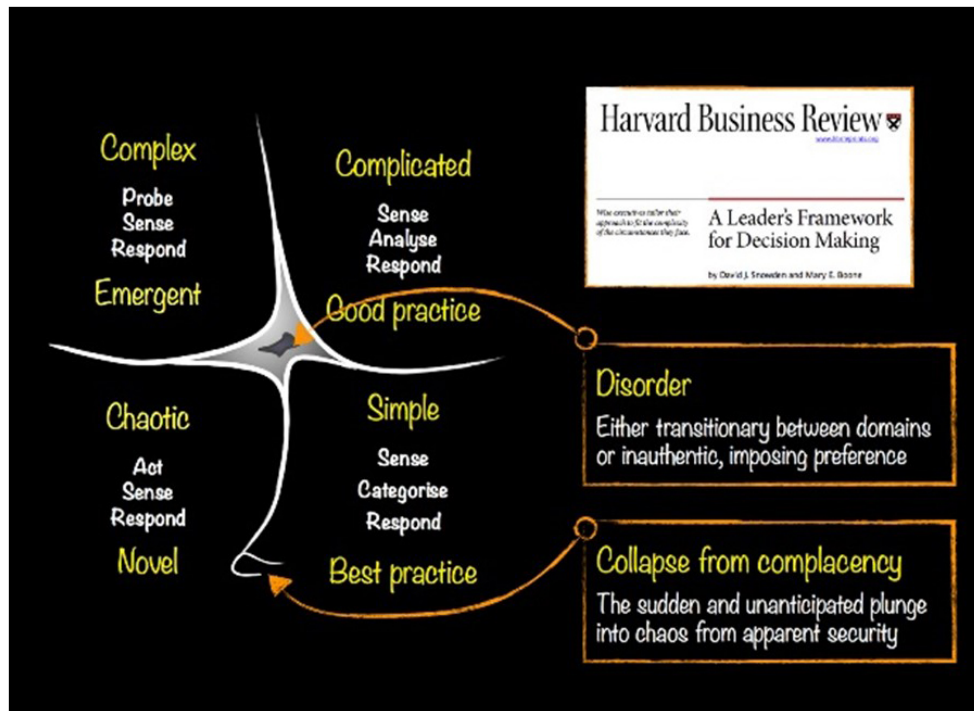# Acting wisely under complexity– some comments to the model of Snowden

by Bengt-Åke Wennberg

David Snowden points out through his model Cynefin that many of the thought figures we usually use in conversations about organizing and different structures in society are only suitable for contexts that conform to the domains "simple" and "complicated". They are, however, not applicable to complex contexts.

By not understanding the difference between different contexts and using inappropriate thought figures, paradigms, doxes to analyze them, according to Snowden, confusion and contradictory reasoning arise. One way to deal with the confusion is to tell yourself that it is easier than it is and that everything really works well. When the complexity strikes and

shows its true face, so too do the shortcomings. You then easily end up in the chaotic field in the picture. With today's rapid technological development, this is happening more and more often. Confusion is on the swell.

Snowden is clear that his model Cynefin is not about a simple four-field model in which one can easily switch from one domain to the other. The problem is deeper than that. The frameworks used in the domains simple and complicated are ingrained and throughout society established conversation patterns – doxes. The specific doxa that is mainly used is based on Durkheim's approach. The strong dominance of this doxa entails complexity reductions that make it almost impossible to discern, noticing and creating reasoning making it possible to jointly manage social contexts as Snowden's domain complex.

So, what is the difference between one and the other? In my bookcase there are now at least three filled binders with articles about complexity. The concept has many different definitions and meanings and is described in different ways within different scientific traditions.

Snowden himself states that a complex context differs from the others in that the outcome cannot be calculated in advance. Thus, according to Snowden in a complex domain, there is no legal causal link by which, under certain conditions, a specific outcome can be foreseen.

What specific contexts which cannot be described with Durkheim's approach is not obvious from Snowden's texts. Nor is it obvious from his texts why the attempts to apply cause-and-effect relationships in these contexts are not successful. To understand this, one must immerse yourself in theory of science.

Our scientific practice – and therefore in also our everyday reasoning – assumes that events and interaction patterns that occur, or have already occurred, can be empirically observed, measured and thus analyzed. Science takes it for granted that certain basic connections that manifest themselves from what has happened have a *permanence*, that is, they will in similar conditions be found in a future.

Our technical practice has since assumed that once the causation has been established, general and comprehensive measures can be taken by management that guarantees the desired permits and counteracts

undesirable ones. The events in nature can be controlled from above and from the outside. Human interaction can be affected by ensuring that the persons involved "obey" a leader or management and focus on achieving the goals and results set by the people in those groupings.

This is the very essence of the skeleton created by Durkheim's approach, which can be described as HPR (H=hierarchy, P= paternalism and R=result control). Paternalism then works through punishment and reward and performance management ensures that the business stays "on track". This approach has been shown to work for such social contexts in which the production process can reasonably be predicted.

By complex events, Snowden means contexts where the outcome cannot be specified and determined in this way because the entities that generate the interaction, and thus determine the outcome, have the freedom to act differently from one situation to the next.

The interactions that occur in a future are not bound by what has happened in the past. They could be different than they were last time. There is therefore no definite outcome on which anyone can prepare the people in the business. There are only alternative, possible and partly unforeseeable outcomes. Crises arise when one acts as if the situation in the future could be the same as it was in the past.

In the "disorder" and "collapse" boxes, Snowden points out that such crises are a direct consequence of not taking into account and preparing for the complex nature of the context. An inappropriate framework has been used. It has been taken for granted that what has happened in the past – what has been shown there – can be unreflectedly put to the root of what will happen in the future.

The relationships between different variables, times and situations that one may find in a complex context when using a framework suitable for "simple" and "complicated" are therefore no "genuine" relationship of type cause-effect. The relationships found in a complex context can instead be characterized as different types of co-variations. If measures are taken on the basis that it is assumed that the co-variations observed have a stable causal component, the measures – if it is a complex context – will risk not having with their intended effect.

A true causal relationship that can be handled with HPR and included in Cynefin's simple and complicated domains requires that certain events and events always lead to certain specific outcomes. They must therefore be generally valid.

It has long been known in technology and science that such links do not normally exist. When they could not be verified, they have therefore been blamed on chance. In cases where chance has been compensated, it has nevertheless been considered that the connections found adequately describe a genuine legal entity. A large part of the scientific craft is therefore about making different statistical analyses in order to make the hypothetically assumed causation credible. The ingrained way of science to treat facts and observations means that one cannot comment on individual cases other than in probability terms.

In technology, which instead seeks a safe application, different methods have had to be developed in order – and in principle against nature's own laws – to **control** the outcome one wishes. The science involved in laying the theoretical foundation for this is called Complexity Science. The science used for governance is called cybernetics. However, the same principles that we find in Complexity Science and cybernetics have now also come to be used in fields that are not part of the field of science and technology, such as economics and social sciences.

A sociologist in Gothenburg, Anton Törnberg, has in a thesis tested whether the conceptual and control systems that with the help of "complexity science" and cybernetics emerged in the social field are also applicable to analyze and influence people's interactions in social systems. He concluded that complexity science cannot adequately describe the nature of social systems.

The crucial weakness of the application is that the empirical material observed, which is used to argue for the existence of certain desirable causation, is not a genuine causation. It does not determine that similar outcomes occur even in other and completely *identical* situations.

The social patterns that arise in freedom in human interaction are thus neither legal nor predetermined. People who are part of the system may make completely different choices than were made in cases previously studied even under exactly the same conditions. In a later situation, ,

people for example may find that things have not turned out as they wished from the choices have been made in the past. Then they can come up with something completely different.

Autonomous persons can always choose to act freely. They can always independently take an independent position on the interactive patterns in which they participate and independently consider the nature of the actions of other people to whom they are subjected. The patterns in social systems are therefore always generated from within. They are always generated by the individuals themselves as a result of their perception of the reality in which they participate – and about the consequences their actions may have.

Therefore, Törnberg believes that complexity science is not good enough as the ultimate method of exploring social systems, and that cybernetics is not good enough as the ultimate form of governance. Sometimes those involved and autonomous people perceive that the proposed patterns are constructive and appropriate to follow – sometimes not. Törnberg calls this libertarian character of social systems "wicked". It does not therefore fit into the premissites that apply to HPR.

Snowden highlights that what we encounter in nature and in human interaction, is based on the fact that nature's living elements can autonomously shape their interactions in many different ways. Some of these interactive patterns we can observe. Others are just potential opportunities that we have no idea about.

Such potential opportunities are hidden from us until they appear, only then can we take a position on how this previously hidden aspect of complexity should be dealt with. This is the reason Snowden recommends "***probe***" as a first step in the management of a complex context. It is only when we make the "first action" that the nature of complexity fully manifests itself.

What distinguishes the specific human interaction in our own social systems from other interactions between devices in nature is that we humans have the ability to tell each other ***about why*** we do what we do. We humans can understand other people's actions through our knowledge of ourselves and our common history in a way that is not

possible for us to understand the interaction between atoms, chemical processes, other animals or cosmic events.

This actual difference in what we can know about nature's systems and what we could find out about our own human systems increases the possibilities for us to gain an in-depth knowledge of human interaction patterns.

In any such communicative situation, we, each, with us, carry an inner idea of how people we meet will act in different situations. It is these beliefs that make us interpret the actions of others as we do and then act as we do. These inner beliefs are an implicit and wordless knowledge.

However, this knowledge is based on notions of each other that are highly uncertain and, in many cases, misleading. The dynamics of an interaction pattern can therefore only be made understandable to us if we each as openly and accurately as possible are helped to put into words this implicit knowledge. This mutual exchange of information is part of Snowden's concept of "*sense*".

When it comes to human systems we do not have to guess and do experiments. Instead, by establishing a communication with those who are involved in creating the patterns, and based on our own experience, we can understand human interaction patterns and test our guesses,

The direct purpose of probe and sense is then to share the basics of our actions with each other so that the actions that can be expected – what Snowden calls *respond* – will be part of the current collective know-how and thus make it understandable to all concerned. The probe and sense process thus create the empirical material that gives each individual an ability, if he so wishes, to integrate their actions with others.

It is, in my view, such knowledge that must be produced in order for the actors in the relevant activities to be able to create good and desirable integration in a complex social context.

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An overview of Complexity Science and literature on this area can be found at https://en.wikipedia.org/wiki/Complex_system

With regard to the use of Complexity Science in the social field, see https://www.uvic.ca/research/groups/cphfri/assets/docs/Complexity_Science_in_Brief.pdf