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Strengthening the functional differentiation of modern societies: the “new normal” of the 21. century?

Two episodes can be used to specify the aim of the following arguments:

- At the end of my formal teaching role in the university (2010) my students gave me a (self-made) small painting of an elephant. They wanted to express their thanks: they had learned from me, that it is important to have the whole elephant in mind – even if dealing with very detailed issues of politics and public administration.
- A while ago I read a “funny” note in a newspaper: “We have to tell a sad story: a *myriapoda/centipede* has died. It has tried (and did not succeed) to find out, with which one of the 1000 feet it should start moving.”

In Germany ever more often we can observe a discussion about a time-change (“Zeitenwende”). This is triggered by issues of climate-change, consequences of the pandemic and the war-disaster in the Ukraine. They are changing the view of our world society (and all its nations):

- with regard to the natural environment,
- with regard of the interdependency between elements of nature (corona virus) and individuals in various kinds of social systems,
- with regard to the processes and structures of international exchange (conflict or cooperation).

However, it is not enough to talk about “Zeitenwende” without referring to important features of the “former elephant”, the “the changes of the “recent elephant” and the “vision” of the “future elephant”.

This does not mean, that there have not been attempts to design a new “vision” in the UN, OECD, EU, Gx-meetings etc. However, it has to be asked/discussed, why many of these initiatives failed: lots of paperwork and insufficient implementation effects. Often the idea of self-induced “harmonization” of the components of the world society has been the basis: Change by trade (“Wandel durch Handel”). Even the “end of history” had been declared (Fukuyama). But still today, in the debates about necessary changes, we hear from “experts” comments on rather few feet of the *myriapoda/centepede*. It would be helpful, if these “experts” would also be asked about their view on/of the “whole elephant”. This suggestion leads directly to the key issues of the following text: the unconceivable complexity and contingency of world society¹ – which can also be addressed as a problem of societal resilience.

¹As the following text will primarily give reasons, examples, illustrations with regard the necessary inclusion of “the elephant” into the (scientific) analysis and discussion, only very few references to publications or official data will be included. I have described six areas in more detail in my book (Grunow 2017) on the “society of the future”: global economy, digital systems (internet), environmental challenges, demography, migration, urbanization. Perhaps the discussions about the paper could highlight some examples from various countries. (And – of course - suggestions for other “elephants” are also welcome.)

1. Introduction: the evolution of societies

This part describes the consequences of the growing world population: increase of complexity and contingency in the communication processes and their management by systemic differentiation processes in horizontal (territorial), hierarchical and functional dimensions.

The starting point has to refer to the growing number of human beings on the globe – more than 8 billions – and the continuous increase of complexity and contingency. This human evolution was only possible by differentiation and organization (reduction of complexity) – including territorial separation, division of labour, networking in groups, organizations, societal inclusion of a large population. With other words: the architecture of the growing social world has included horizontal (territorial), hierarchical and functional forms of differentiation – and as one type of consequences new forms of (mutual) relationships. The complexity implies high degrees of contingencies/permanent changes, which cannot be described completely in detail. Therefore, it is necessary to select a focus of observation and analysis: from single case analysis, population surveys to organizations/institutions and their interdependencies, societal systems and global networks. The respective focus does not only influence the quality of descriptive/explanatory results but also the chances for taking a normative perspective.

This (latter) option/goal is increasingly important in times with an expanding debate about “Zeitenwende”. As it will be described later, the recent developments (pandemic, Ukraine) – – much more than sustainability issues - have acquired the character of a “burning glass” (also concerning “the elephant”), because they are happening now. The insights endorse the necessity of our analysis. But, at the same time, they show the difficulties and dilemmas of future arrangements – even more their anticipation.

The following analysis uses a system-theoretic approach (esp. from Niklas Luhmann) , which is highly complex² – but still allows for some normative conclusions. The key elements of the theoretical concept are human communications ((message, transfer, de-coding/understanding) in various systemic settings (simple system, organization, society, world society) and their mutual resonance. For the following arguments the level of society and its functional differentiation is selected, because the “Zeitenwende” includes a critical review of the advantages and disadvantages of an accelerated globalization and a new emphasis on the architectures and communication *within* each society (national system) – which might also lead to some new insights concerning international cooperation. The ignorance of international rules and contracts had lead to pessimistic perspectives for the UN, the EU, the NATO, the WTO etc. This is especially triggered by the notion of global (systemic) competition between “liberal democratic” and “authoritarian/totalitarian” systems. It also leads to the specific focus chosen for analysis and “normative turn”: how can liberal democracies (in the following: “functional differentiated societies”) survive in a globe, where authoritarian systems dominate in number of cases (countries) and in the numbers of their population. The war in the Ukraine has – at least for the moment – strengthened the cooperation between the “liberal democratic” states. But this should not hamper a thorough analysis of problems and prospects for the future.

²Nota bene: a glossary of Luhmann’s theoretical work (Baraldi et. al. 1997) covers 250 pages; see also: Dammann et al. 1994. The book on the “Society of the society” (1997) can be seen as Luhmann’s “magnum opus”. An easy access offers the transcript of his lecture (2005).

2. The architecture of functional differentiated societies: prospects and problems

This part gives an overview of key subsystems of society (like politics, administration, economy, education, science, media etc.): it describes functions, activities/effects, communication medium and codes, programs. The problems include a lack of central steering, the possibility of mutual capturing, lack of self limitation and the deficits with regard to the inclusion of the population. A short reference is made to the so-called “resource-curse” and the implication of global networks.

For the chosen, “more abstract” account for the “elephant” (the complex *societal* system) it is helpful or even necessary to refer to a theoretical concept, which allows tying the different observations and lines of argumentation together. Therefore, the system theory of Niklas Luhmann (1927-1998) is used in the following considerations. It offers the necessary analytical complexity³ to deal with the resilience issues – including the macro-level (society) of analysis. It concentrates its analysis on late phases of evolution – with an increasing importance of the *functional* differentiation: i.e. a broad set of societal subsystems and their interdependencies. Resilience means in this context, that the mega challenges for the future will be *the toughing/enabling and balancing of the various functional subsystems within each society*.

This can also be formulated in negative terms: to avoid the “capturing” of one subsystem by another: When the political system is taken as the main focus “failed states”, “dictatorship”, “civil war”, “religious suppression” etc. can be some of the extreme (negative) consequences. However, these observations often refer to countries which have already developed some basics of a functional differentiated society. There are still other cases, in which such an evolutionary development has not yet taken place on a notable scale. It has to be noted, that some of the negative/disastrous consequences of this lack of functional differentiation in populous countries can be compensated by international exchange. Typical examples are some Middle East countries with oil-resources: it is not by chance that they are characterized by the word “resource malediction”: they lack the incentive toward functional differentiation, because they can import everything from somewhere in the world.

Many examples also draw the attention towards a second element of the functional differentiation of societies: the necessary *multiple inclusion* of the population into various subsystems: into the political, judiciary, educational, economic, religious, medical, media system (and others). Thereby, also a link between the levels of observation is triggered and made possible: from individual to societal. The challenges are quite clear: the regional, social, ethnic and personal variation (complexity) of a growing population. One of the indicators is the increasing number of “parallel societies”: not everybody is able to speak the native language or knows the basic architecture of the society they are living in. Inclusion, therefore, is often restricted to a small set of the functional subsystems of the society – far away from some kind of a “harmonious” configuration⁴.

It is quite evident, that a scientific approach toward these issues is easier, if the *self-description* of

³Nota bene: his famous slip box has been digitalized in his home university (in Bielefeld/Germany).

⁴In Germany the term “Zusammenhalt” (cohesion) is used for this ambition.

a society and its subdivision somehow corresponds with many of the basic categories used. For the German case, the Basic Law (“Grundgesetz”) fulfils such a demand, because the legalistic German system can be seen as a fairly good representation of the basic architectures of society – notwithstanding many deviations and missing segments.

2.1. A short description: basic elements of system theory (Luhmann).

The sociological theory of Niklas Luhmann is concerned with social (i.e. *communication*) systems on different levels of aggregation: from small groups (with face to face communication) to organizational systems (communication among members), and to societies or world society as units (with all communications incorporated)⁵. The (social) systems are closed – with regard to special forms and contents of communication (i.e. *autopoiesis*) – but also open for the observation and irritation from other social systems. Today these different system formats coexist in extremely large numbers. However, during the evolution of mankind – with the growing population world-wide, the higher aggregations (clans, tribes, societies) have become more typical and relevant. In very abstract terms: mankind more and more *had to “manage” complexity and contingency* – for example: in the format of emerging nation states.

Whereas the increase of complexity has followed the continuous aggregation of people (population growth), contingency was most often the challenge of nature – the “non-social” environment. This had to do with natural developments (changes, crisis, and disasters) and the movement of people into other/unknown territories – with positive or negative impact. The survival of the population in a territory was increasingly depending on the reduction of complexity (chaos) by ordering relationships etc. - and on the resilience and preventive action with regard to contingencies. In other, again very general terms: the survival depended on organizational measures: hierarchical, territorial, centre-periphery arrangements emerged – in order to manage complexity and contingency. However, at first this was connected with a small scale differentiation of labor (tasks and skills) – which on the long run was not compatible with emerging macro-structures. Therefore, system theory – by referring to late developments and “modern times” - focuses on the increasingly important “*functional differentiation*” *within each country/society*. For many modern (liberal) societies this has become the “dominant” mode of societal differentiation – reducing the earlier dominance of other modes (like hierarchy, aristocracy, oligarchy, nepotism, religious cult etc.)⁶.

It is important to keep in mind that the base of all social/societal systems is *communication*. Therefore, the functional subsystems of society are based on different modes of communication – not on labels for roles or organizations. The description of each societal subsystems includes: a. function (task), b. medium (basis) of communication and c. code of communication (binary)⁷. For the PAS: a. deciding about and implementing political decisions; b. political power (majority); c. power (majority) available or not available.

⁵ Two (of the many) publications should be listed as important references for the paper: Luhmann (1986; 2005). A summary of his work can be found in Luhmann et. al. (2017).

⁶ In practical terms: the members of a society would not want their president or their military dictator to repair their car, teach their children physics or make a heart surgery (etc.)

⁷ If a football player puts on a white coat and visits a restaurant, it is not conducive to put a notice board “hospital” in the window. By the way: these forms of misguidance nowadays are termed „green-washing“.

This also directs the attention to the people which are participating in these various forms of communication. The scope and intensity of *inclusion* (of the population) is an important element of a functional differentiated society. If the typical list of functional subsystems (besides Politics & Public Administration - the PAS) in well developed countries (f. e. OECD) –

- *Civil Society (a. societal self-alerting; b. sorrow),
- *Economy (providing scarce resources; b. money)
- *Public media (a. opinion formation; b. information),
- *Science (a. developing knowledge; b. truth),
- * Medicine (a. health care; b. course of disease),
- * Education (a. preparing for participation; b. life cycle),
- * Law (a. conflict regulation; b. jurisdiction),
- * Family (a. socialisation; b. love, empathy),
- * Religion (a. elimination of contingency; b. faith)

– is considered, it becomes quite clear, that there will be many variations in the countries worldwide: many even did not yet develop such societal differentiations and the necessary inclusion of the population. This might often be the case in “failed states”, in countries with extensive natural resources⁸ or under restrictive dictatorship – which can be based in politics, in religion, in economy, in military etc.

This situation leads us to some restrictions in the further analysis: countries without any or with only a marginal functional differentiated system architecture and very limited public inclusion can not be analyzed appropriately⁹. Our discussion of the challenges will primarily be based on existing subsystems and their management. These challenges include:

- a. the fact, that there is a lack of a central steering structure: all functional subsystems are the society, but only a part of it¹⁰;
- b. the subsystems often lack self defined delineations/restriction or stopping rules; they must be stimulated from outside irritation; therefore, resonance between the subsystems (balancing) is necessary (but complicated);
- c. the differentiation needs many persons acting in the various systems: the *inclusion* of the population is an important feature¹¹.

If we concentrate on the countries with an elaborated functional differentiated system-architecture¹², the issues for observation, analysis and propositions are:

- the performance of the subsystem (task fulfillment);

⁸ In countries with „resource curse“ (especially) the rich people are buying the necessary benefits (from other functional subsystems) abroad. If the value of the resources is diminishing, the development of a functional differentiated society might be necessary/on the way. Such situations also indicate, that globalization sometimes can become a threat to the scope and quality of functional differentiation.

⁹ This does not mean, that it is not important to discuss the possibility of *building up* subsystems in „failed states“. However, a pandemic is not the best time to start such an evolutionary project. It can be the follow up, after the pandemic is somehow under control.

¹⁰ Many titles of Luhmann’s books are an indicator: the administration of society, the politics of society, the economy of society, the science of the society, the law of society....

¹¹ This most often coincides with an open, liberal, democratic political system arrangement: f. e. human rights and franchise.

¹² Here we would have to deal with the question: how can the developments towards a functional differentiated society can be put into motion? This can also be seen as a prerequisite for any initiative of „good governance“.

- how (much) is the subsystem influenced (captured) by others;
- how (much) is the subsystem influencing (capturing) others;
- degree and format of population-inclusion (into the subsystems);
- forms and effectiveness of observation, irritation, resonance – i.e. *balance* – between the subsystems (managing autopoietic communication systems).

This list of propositions can well be termed as a hypothesis with regard to continuous debates about the insufficient development toward a sustainable future: deficiencies of functional differentiation, deficiencies in the balancing of the subsystems and deficiencies concerning the broad inclusion of the population. And - in addition: it has to be noted, that the last two topics are of specific relevance for the tasks and performance of the public sector (political-administrative system).

2.2 Excurses

a: Observations concerning the pandemic and its consequences in a (world) society.

The discussion of the theory-based analysis can refer to the development of the pandemic and the reactions of the (world) society as an illustration: Germany (and the EU frame) is used as an example. In this context of dynamics and surprise it is appropriate to rely on the – at least in Germany - well developed societal subsystem of public media. Its function is to deliver information and, by this, to contribute to a public understanding of the new situation. Supported by the technical tools of information gathering and transportation/transfer, this subsystem was not very much affected/restricted in fulfilling its function during the pandemic: at least if it was not “captured” by other functional subsystems (for the contrary examples see Brazil, China, UK, Turkey, and many others). One of the reasons for not relying primarily on *scientific* observations of society is the time lack between dynamic developments and “study results” as well as the often very small scope of the research topics¹³. The media system does not only observe all other functional systems in a society, but can also look at the global (international) developments. This does not mean, however, that scientific insights might not give an input into media-communication: many publications started quite early with the discussion of propositions for the “development after the pandemic” (f. e. Horx 2020).

However, our focus will be the further development of the pandemic: how can this be connected with a system-theoretical perspective? First of all in this case we have to acknowledge, that society has to deal with its *non-social, natural environment* (pandemic). The virus is not open for any kind of human communication. This natural environment has a broad and general character, because it might affect all members of a society (extreme) negatively – and thereby all functional sub-systems. This natural environment is also global, because it is affecting the world society. In very general (abstract) terms: we are in a highly contingent (and therefore) complex situation¹⁴. Such a situation makes the strengths, weaknesses and catastrophic risks of our *arrangements against contingency and complexity* visible. It has to be recognized, that system architectures are

¹³ This was especially visible with regard to the pandemic processes: knowledge of virologists was growing only slowly, but decisions of the PAS had to be fast.

¹⁴ This can also be seen as a possible example of a negative turn of a climate „tipping point“ (sea-level rise by 5 and more meters).

not the only explanatory factor: it is also a question of communication between participating persons¹⁵.

By looking at the development in the German society, this situation has ever more often being described as a “burning glass effect”. Here are some of the elements¹⁶ (from macro to micro):

- the dependence on vulnerable international chains of products (f. e. drugs and other health related goods);
- the existence of multiple functional subsystems of society: some were even rediscovered under the headline “system-relevant” (like nursing care, pre-school institutions, transportation) – often described as insufficiently validated (low pay inclusive);
- the negative capturing effects: especially the privatization/economization of public tasks during previous decades (clinics for profit, scientific research/virology and others); understanding the necessity of redundancy (slack resources) – and its disregard;
- the ambivalent functions of the digital media systems – as support of communication at a distance, but also as a spreader of fake news and conspiracy theories¹⁷;
- the dependence of many subsystems on decisions/support/coordination by PAS-segments – often combined with a critical view on their general architecture: separation of powers, federalism, citizens participation;
- the growing awareness: implementation matters (contrasting output-, input-, and impact - legitimacy);
- the deficiencies of infrastructure and tools (f. e. hygiene facilities in schools; digital tools for home office);
- the high stress within families – especially with low income and poor housing facilities; this led to a general recognition of cleavages in the German society;
- but also: the partial recovery of nature (less pollution, no masses of tourists in various country-sides in the first phase of the pandemic etc.).

To summarize the follow up of reactions to the pandemic in Germany: by looking at the problems of countries like Italy and Spain, the first concern dealt with the strengthening of parts of the medical system (prevention, intensive care) and the corresponding sciences. With the lockdown, the observation of other subsystems became more important: public administration, economy, education (pre-school, school), civil society – and the various degrees (differences) of living conditions within the population (quality of inclusion): concerning health, labor, income, housing, mobility, discrimination etc. In general terms: the contingency of the pandemic is not just a question of “virus-flow”. It is the *combination with the contingency of the human beings* as part of the natural (i.e. physical, psychical, behavioral) environment¹⁸ and their participation in

¹⁵ It is rather typical, that a study (Johns Hopkins University) from 2019 came to the conclusion that the (neo-liberal, economy-based) polity of UK and US will best be prepared for such a challenge. We have seen: the quality of persons acting/communicating in these architectures makes the difference. Perhaps the counter-argument is more solid: Germany has managed the pandemic quite good, because the still existing features of a social welfare state are supporting a functional differentiation and the inclusion of the population.

¹⁶ It is not surprising, that in the beginning of the pandemic the subsystem of medical services was especially in the focus; later on the vulnerability of other functional subsystems (esp. Fun-Services) got more attention.

¹⁷ This somehow follows the same line as the communication concerning the explaining or the denying of climate change effects (f. e. Schick 2020). The US is again a good example for possible effects of communication content: in comparison to Germany the proportional death rate in the pandemic was more than five times higher (October 2020: 10.000/83Mill. vs. 224.000/330Mill.).

¹⁸ This has been observed in many places: after the first shock and strict restrictions, the behavioural contingency has steadily increased. Meanwhile the private meetings/parties had become the main source of infections.

communication processes. The respective observations revealed old (known) strengths and weaknesses and new ones. The reactions (if any) concentrated on “here and now” – all segments (subsystems) being concerned with their own special problems and interests: little resources to observe and influence the others. Therefore, it is not possible to preview the long term changes, which might be nudged by the pandemic – between recovering old modes and developing new arrangements for the future. This includes the question, whether concepts for the future, which have been already discussed and approved (f. e. in the context of sustainability), will “survive” the pandemic. This question draws the attention to the media system and civil society – the communication about the (long term) future in the public.

b: The war in the Ukraine and its global consequences

Whereas the first excursion has focused on the relationship between social systems and nature (as an environment of the world society) this second excursion refers to the conflicts between social systems (societies, nation-states). Whereas for pandemic developments international empathy and mutual support might be arising, the war is triggering various forms of antagonisms and even conflicts – starting with the military part of the public security functions (of the PAS) and expanding to many other functional subsystems: economy, law, media, science, civil society, arts etc.¹⁹ If one of the basic goals of the war was the attack on the liberal democratic systems and their cohesion (esp. in the western world), this goal was missed at first hand. It rather strengthened national and international developments (transatlantic, EU, UN) – which had already been declared as failed/destroyed. And, in addition, it has triggered a new discussion about the (esp. economic) cooperation with failed or despotic states. One of the key topics is the observance of human rights (Afghanistan or China as recent examples). Thereby, a shift from the focus on one subsystem only (often economy) to the ensembles of subsystems can be observed. This might also put some pressure on countries with “resource course”: their access to functional subsystems of other countries (universities in the US, hospitals in Switzerland, tax havens in Panama, retirement-resorts in Spain etc.) could be reduced.

However, also the “other side” of this development should not be ignored. As Russia is an example of “resource course” (fossil energy sources), the conflict shows the dependency on countries with these resources - and also the conflicts between countries about the access to new discovered options (Mediterranean Sea, South-east Pacific, North Polar Region). Although the shift toward sustainable energy is on the way, this may last long and often needs other natural resources (metal etc.). Cooperation with autocracies often cannot be avoided.

These observations and discussions may even result in a general review of the (dis-)similarities of subsystem-arrangements in “liberal democratic” countries. This has to look beyond wordings and to focus on practical procedures (implementation). The EU is a prominent example, because these cases are visible through the unanimity rule and the fines against deviant practices (see Poland (law) or Hungary (press, and now the vote against an EU oil embargo against Russia) for example – and the long process of membership application in general. The war had not changed the preoccupation with special interests: the discussion about majority decisions on the EU-level will probably be enhanced in the near future. Although these issues are affected by the growing

¹⁹ Krzysztof Matuszek (2007) describes in his study wars as autopoietic systems – focussing on the observation, that military actions are primarily “answered” by military actions: little chance for other types of “irritations” from the outside of the warfare-system.

number of member countries, they are not new – as the following topics (earlier suggestions) show: “the EU of different paces”, “centre versus periphery of the European arrangements”, “we want our country back (Brexit)”, refining the EU to economic cooperation etc.

2.3 Summary: Challenges for the “management” of a functional differentiated society

The excursions have shown an increasing awareness about the necessity to observe the benefits and prospects of the societal architecture with a multiplicity of functional subsystems. However, also multiple challenges have kicked off controversial debates – even if the international interdependencies are left in the background:

- * each functional subsystem constitutes society – but only as a part of it; there is no “centre of command” for the societal system
 - * each functional subsystem has developed ever more complex architectures for and modes of communication – leading to complicated mutual observations and irritations within and between autopoietic systems
 - * the functional sub-systems often have no inherent stop-rules; they always tend to extend the scope of their operations: government expands its domains and jurisdictions; economy looks for more products, customers and profit – also in the science system or in the health system
 - * the restrictions for a subsystem most often have to come from other subsystems or large collectives of the population : f.e., the PAS is restricted by the limitation of money (drawn from economy by taxes etc.); the economy is restricted by political priorities and public policies (laws and regulations enforced by administrative directives and control), and by scientific knowledge
- All this demands for mutual observations and (possibly) for resonance. Direct interventions are most often not possible without capturing/destroying the performance and inclusion levels of the affected systems. Climate change and sustainability offers many insights for multilateral inter-systemic relationships because the natural environment of the social systems is a global problem.

Before these questions are taken up, some additional elements of resonance analysis should be briefly described. The term “resonance” is used in many social settings – especially with regard to persons and their environment (see Rosa 2016). In the following it is used as an “umbrella term” for interdependencies between functional subsystems (or within subsystems)²⁰. The social systems under observation are closed (on the basis of the modes of communication) but also open with regard to observation of other systems. Therefore, the interdependencies can be described with different focus points and with varying intensity - for example! -:

* *Observation of other systems*: scope and intensity.

As all systems are depending (somehow) on (many/all) others, observation is an almost universal feature; however, the scope and frequency might be very different – between overload and ignorance; - between permanent and sporadic observation. In many systems special “watch-units” have been installed.

* *Irritation of the systems as a result of observations*:

Irritation can be an internal effect of observations – it might change the internal operations on a regular (“retention”) or sporadic/situational base; it might even function as a kind of stop-rule –

²⁰ Within each functional subsystem many social systems can be differentiated and observed. Lanfer (2016) describes “resonance-differentiation” as a mode of innovation within functional subsystems.

f.e. when observing the legal system²¹. The scope of irritation is influenced by the scope of observation. The intensity of the effects depends on the ability of the systems to adopt new elements into their (specific) communication processes.

* *Double coding and structural coupling*:

There are fields of communication which are closely coupled: like public administration and law or education and science. The processes within one system are depending on external conditions (other systems) – without being substituted by these environments. The most important example is the “*conditio humana*” as a precondition of communication (“interpenetration”) and their co-evolution – as long as robots have not taken over.

* *System capture (destruction)*: Although such a situation seems to be unlikely in a society in which each subsystem depends on the fulfilment of other functions by other systems, it still happens (like in Turkey today – or even in EU-countries like Poland or Hungary²²). This can be the beginning of the destruction of a functional differentiated society: chaos (failed states) or back to old models (like authoritarian systems; dictatorship – with close control of the population) – can be observed more often than expected and desired.

It is not difficult to understand what happens if the functional differentiation does not work: the lack of specialization of subsystems leads to poor performance with regard to the different functions/tasks - as it has been observed in the state economy in the earlier Soviet Union or in East Germany. But the same is true if an economic system is dominating the PAS as in some policy fields (i.e. environmental protection, social aid), where public/political rules are ignored by businessmen, administrators and party members on behalf of personal profit and wealth (i.e. corruption, nepotism, lobbyism etc.).

This theoretical reconstruction also offers an interpretation, why public-private partnership is a complicated, often unsuccessful model - or why the transfer of tools from the private business (like in the NPM context) is only of limited value for public administration. The organizations of the public sector have to fulfil quite different demands than private enterprises: to use the same word (i.e. city = holding) does not help much. The public sector organizations have to be able to take decisions with regard to different values, preferences, and steering principles (hierarchy, majority decision, bargaining, building up slack resources etc.) at the same time – even if they are changing rapidly. “Changing the wheels while driving at full speed” is a common description of this in Germany. And, public institutions cannot be closed down easily; and there is no owner, who can take his money for a carefree living to the Bahamas. This does not imply that the functional subsystems cannot arrange successful mutual institution-transfers. But it has to be expected and accepted that this is not always practical, and that a successful “one to one” transfer is very rare.

Although all subsystems together constitute society and are depending on each other, the PAS has a specific role in observing *almost all* other subsystems in many of the modern societies¹⁴. As an

²¹ The difficulties to establish and enforce stop-rules are well known as a kind of escalating process – whereby new rules are the consequences of strategic ignorance of previous ones (f.e. corruption, tax-evasion, crime...) and at the same time the new rules are blamed as an excessive bureaucratization.

²² These examples can also be seen as a warning about the consequences: loss of societal capacities.

indicator the various departments of public administration can be used: ministry for finance, economy, health, education, science etc. Therefore, the “balancing” of subsystems is an important function of the PAS. In the future this challenge will be even more than today a key element of relevant resilience: the dangers of imbalance, mutual capturing or disruption are very high – especially in a globalized world setting with many options of withdrawal.

By following this analysis the extraordinary role and challenge of climate change and sustainability goals becomes evident. Each functional subsystem, the mutual resonance and the ensembles of countries in the world are – more or less - affected. It is ever more difficult to use “not in my backyard” and “not in my lifetime” as an excuse for ignorance. The agenda of SDG2030 has indicated the complexity of the challenges. But it has also (somehow) shown the difficulty to find a common base for system-specific and inter-systemic communication. Luhmann has addressed this situation in his book on ecological communication some 40 years ago. Hölz has titled 2012 her dissertation “Der Globetrotter sustainable development. Auf den Spuren eines Leitbildes mit der Luhmannschen Systemtheorie als Landkarte.”²³ Her conclusion was rather pessimistic – and quite similar to new movements – especially in the younger generations: “Friday for future”; “How dare you”? - etc. The necessary resonance with regard to natural systems has the disadvantage that nature does not talk to us; people have to communicate on behalf of nature. However, in many respects nature allows fact finding - despite of the lots of fakes communicated by lateral thinkers. Fact finding can help to specify and evaluate measures of mitigation and adaptation to climate change. The calculation and comparison of carbon-based emission rates is a typical example.

Climate change and its various consequences in the world society direct the attention also towards the individual level of its observation and analysis. If the ecological developments affect all subsystems of society, it also affects all individual members of it – even if their inclusion might be quite selective with regard to a specific (sub-) system. However, this could also imply a very different, unjust, even discriminative impairment of living standards and options for the future. This is well known with regard to natural disasters. It is also well known, that the empty missile silos in the US have been “captured” by rich people very fast. Described in general terms, the quantitative and qualitative inclusion/exclusion of the population into various functional subsystems of their society shows its positive as well as its negative effects first and foremost in situations of high contingency levels (conflicts, crisis, catastrophes etc.). If mutual trust between functional subsystems – especially with regard to the PAS - can be expected as a central path to reduce complexity, the deficits of inclusion might lead to massive conflicts. The consequences will also be observed as a strong impulsion for migration – also between countries from low levels of functional differentiation to those with higher levels. In other words: the global effects of climate change can be perceived as a push for transferring the knowledge, tools and resources for organizing a functional differentiated society: “system competition” in times of increasing climate hazards?

These topics highlight the role of communication again – now in a global dimension. The three focal points of observation/analysis are also examples of the advantages and possible dystrophies of the new communication technologies – between “connecting” the world population and “cyber-warfare”. This topic needs an additional (separate and voluminous) analysis and

²³ The globetrotter sustainable development. On the track of a guiding principle with the system theory of Luhmann as a (mental) map.

discussion with regard to functional differentiated societies and dictatorial systems – and their competition. A successful sustainable future development presumably cannot be achieved, if the various masters of the (micro-, meso-, macro-) universe of digital communication have not been “tamed” and/or imbedded.

3. Strategies of strengthening the performance of functional differentiated societies

Some of the problems are taken up to look at recent and possible future improvements: balancing functional subsystems: mutual observation, irritation and resonance; internal and external red lines (stop-rules); networking; hybrid organizations a. o. A short reference is made to institutional variations (“functional equivalents”) and their implications for global networks.

The previous description of three global challenges (climate, pandemic, war) has endorsed the necessity to choose a complex analytical tool as indicated. The usefulness of a system-theoretic perspective is enhanced by these cases of global complexity and contingency. It has been shown, that the focus on modern functional differentiated societies is neither in theory nor in practice an “easy” choice. Although some arguments about the evolutionary dynamics for the enhancing and stabilizing resilience of societies and their population have been summarized, it is all but sure, that the world society will develop into this direction, that there is no danger of a “roll-back”. The increasing debate about a global “system-competition” (f.e. China vs. US – see Rudd 2022) has increased the awareness, that a further enhancing and stabilizing of a functional differentiated society is necessary. This has not only to include the notion of inclusion but also the ability to take a role in managing global issues.

Especially these global challenges have been intensified drastically by the latest developments: global arrangements – especially also in the economic sphere - cannot be based on one functional subsystem: leaving out issues of human rights, freedom of information, political participation, religious beliefs etc. But these requirements have to be addressed in each country (society) at first. The following arguments, therefore, will be concentrated again on the level of the societal system with its subsystems of communication networks. They start with the requirements addressed to each functional subsystem and concludes with the necessary “balancing” of these “autopoietic” systems – a function that has to be addressed especially to the PAS.

The following (short) list of suggestions is not to be seen as a (climate-related) review or substitute of the long catalogue of sustainability goals. It is dealing with premises to overcome the ignorance concerning climate change and setting the course for future developments. The approach chosen refers to a general concept of societal evolution; it refers to indicators which sometimes are applied even world wide (official statistics as well as data from watch organizations); it uses illustrative examples of good or bad practice; it might include recent experiences with the pandemic. The final question about the possibility of effective action is addressed to the subsystems politics, administration (PAS) and law – which have quite a few horizontal and vertical lines of observation and incitation.

- The quality of some functional subsystems with special relevance for the effects of climate change (like economy, science, education, media, and?): strength and weaknesses; degree of influencing/capturing other subsystems; degree of being influenced by other subsystems.

For many functional subsystems there are indicators available, which describe their outcome/quality/effects (BIP, education/Pisa/IQ, science, medicine, free press, political participation) – but many countries are not included (f.e. confined to OECD) or with questionable data (production). With regard to mutual capturing of subsystems the economic system is often on the “top” position: corruption is not only related to the PAS but also to the legal system, science, medicine, media, education and others²⁴. There are also specific observations, which might be used to characterize the quality of functional differentiation: the fact that less than 100 persons have the same “wealth” as 3, 5 billion inhabitants on earth; the fact, that the rotation of political leaders (leave office after 8 years or so) is increasingly abolished or “avoided” by the manipulation of elections procedures (see China, Russia, Turkey, South America and others; even the US - with “Trumpism”- was “in danger”). The pandemic has provided examples of the global consequences of insufficient developed or captured functional subsystems – especially the medical system, but also food supply and education and mass media.

- The overall quality of balance between the subsystems – including an indicator of the inclusion of the population and the size/density of “parallel societies” (clans, mafia etc.).

Even more than in the pandemic a *balanced ensemble* of subsystems is a necessary indicator for resilience potentials with regard to climate change. Failed or failing states can be used as examples of the opposite. Balancing means a mutual observation and resonance between the subsystems. It includes irritating signals, if a subsystem has not developed stop rules by itself. Whereas there are indicators of captured and capturing subsystems, there is none with regard to the overall balancing/mutual observation between the subsystems²⁵. The quantity and quality of inclusion of the population into various functional systems is another central indicator for climate related resilience. Especially important is the inclusion of the younger generations: they are the most affected by future changes. Fairness between parts of the population does also mean intergenerational justice – with regard to balanced subsystems and with regard to challenges of the natural environment.

- The position of the Politics, Administration, Law in the “ensemble” of subsystems – (including the degree of corruption); their role in the balancing process.

The role of the political system as a potential coordinating agency is especially important. This has been seen during the pandemic, when the PAS has declared some areas of society as “system-relevant” or as prerequisites for survival - and intensified the cooperation with them. The PAS has the obligation to observe all other functional subsystems. This observation can often be supported by the media system, civil society (watch organizations), law and science. It also has to avoid parallel societies or the escape of the very rich to other countries (resource curse) to save

²⁴ It should be noted that “capturing” can also be observed and described with reference to the population.

Worldwide more than 20 billion US\$ are spent for advertisement – leading to mass-consumption of unsustainable products and to a high indebtedness of large parts of the population.

²⁵ These indicators are not just a tool for comparisons, but also a help for proposing necessary changes. It should be emphasised again, that the functional subsystem must not look alike (f. e. in terms of organizational arrangements and practices): it is a question of fulfilment of functions/tasks/goals on the basis of special communication codes – within a specific architecture.

the money, get a surgery, buy fancy cloth or buy a university degree²⁶. The exercise of controls and sometimes even punishment might have to rely on “insider”- information. It is important to protect those insiders (whistleblowers). Because of this central role of the PAS in the “ensemble” of the subsystems it is necessary to install mechanisms of self-control and self-defined stop rules. Some of these mechanisms are already embedded in a functioning public administration and the legal system. This is a way to hinder corruption among persons in office or recently retired from office²⁷.

A very important component of most of these issues and challenges is *digitalization*. It helped to prevent lockdown situations and many other restrictions during the pandemic – by transferring relevant information and by providing a platform for broad and controversial debates. At the same time, it is also a severe threat to productive/constructive communication within and between societies. Capital accumulation of platform economy has increased rapidly during pandemic. Often it is the basis of fake information, conspiracy theories, mobbing and antidemocratic propaganda, hacking of data-networks etc. The almost monopolistic platform companies are by far the richest in the world – but don’t pay their fair (tax) share to the public expenses. Sometimes the damage by digital viruses has even been compared with the damage by the corona virus.

This includes the high demand for energy, for the attention of the people and for gathering personal data. Any concern with a better balance of functional differentiation in the world society will also have to be concerned with the misuse of digital networks²⁸.

- The special performance of the respective PAS with regard to sustainability standards.

There are many areas of political goal-setting and decision-making which have little significance and impact on other subsystems. However, this is different with the sustainability standards. As the pandemic has shown: all functional subsystems have been affected – if not directly (like the medical system), so at least indirectly (like education, business/fin-services, parliament, religion etc.). The special function of the PAS asks for resonance of all functional subsystems – which is highly demanding: because it is not nature which is communicating; because there are various types (qualities, intensities) of irritation/intervention – which might evoke protest reactions in the civil society²⁹. There are and will be ever more “merchants of doubt” communicating against the “panic-industry” of sustainability politics. It is important to have a continuous communication about this topic in as many functional subsystems as possible – especially if their “common standards” (f. e. like production and consumption) are affected. As the pandemic has shown³⁰, there might be small scale and large scale problems, which have to be observed and solved by the PAS. Therefore, often the vertical communication is also an important area of necessary

²⁶ The difficulties were visible after the explosion-catastrophe in the harbor of Beirut – and lots of international help. Many of the proposals for help included suggestions of a redesign of the societal system. This was complemented by a growing unrest and protest by the population.

²⁷ There have been quite some scandals in Germany because new rules for “lobby-control” had been ignored.

²⁸ It is not surprising, that the highest risks for the next decades - beside climate change, as described by ICCP-reports - are seen in digital attacks/warfare, as described by a consortia of insurance companies.

²⁹ The paradox is: this will happen especially in countries with a fairly good functional differentiation: you will not see this happen in China (now also in Hong Kong), in Russia, in Turkey... – without being arrested. In Germany, there was a protest communicated against the Green Party, when it proposed one (!) day per week with vegetarian food in public canteens.

³⁰ A typical example is the education (schools): who should decide about the procedures of teaching/learning/testing? A teacher, a school, the city, the regional government, the national ministry ...?

resonance. Communication has to “move” in both directions³¹: the policies have to be acknowledged by local administration (implementation); the experiences and capacities of local administration should be incorporated in the political programs. The cutback-strategies to suspend all forms of slack resources – which might be copied from the business sphere - are not feasible for a public sector, because it might have to implement fast reforms without reduction of ongoing task fulfillment³².

- International sustainability standards (esp. SDG2030) and their national implementation. Options for the stimulation of the functional differentiation and broad inclusion in as many countries as possible.

Although the climate change will not have the same speed, contingency and range as the spreading of the virus, it is likewise important to have the complete globe “on board” when mitigation, resilience and adaptation are to be discussed and organized. This includes denial of any climate change as well as fans of NIMBY or NIMLT in all countries³³. The international coordination has first of all to evaluate and stipulate functional differentiation in all countries. The second set of tasks concerns the balancing of the subsystems with regard to climate challenges: how about sustainability in politics, in the economy, in education, in the mass media, in science, in civil society etc. A societal system (altogether) should not be “green-washed” by a few initiatives – f. e. electro-mobility, food quality, reduction of plastic bags, less inner-European flights etc. And in addition: from the pandemic we have learned, that some background problems have not only become more visible (burning glass effects) but also more severe with detrimental consequences: increasing the divide between social classes (wealth); ever more financial fraud with regard to public subsidies; access to good education and the cleavages between different parts of the population. Altogether the quality of inclusion might be negatively affected. This means, that not just the situation “here and now” is a topic of a comparative observation/evaluation, but also recent trends and their management (coping with contingency).

- Mechanisms of an effective implementation of the standards worldwide – f. e. by economic exchange/support and by political/administrative cooperation.

The (international) comparative view on sustainability standards for each subsystem, for the mutual resonance between the subsystems (balance of the ensemble) and the coordinating tools and effects of the respective PAS offers lots of examples and insight worldwide to the good and the bad. Such a situation might be new with regard to the balanced functional differentiated society – and far from the reality of failed states -, but it is not new with a large number of indicators and examples of good practice. The SDG2030 is a part of it. What can be done to reach practical results – beyond the delivery of paperwork? The application of sustainability standards on an international level (!) could and should be supported by the transfer of resources and/or by the withdrawal of resources. As the analysis has pointed out, the most important approach is related to the global economy – with all of its successful as well as its disastrous activities³⁴. The

³¹ It is well founded, to use the terms input-legitimation and output-legitimation in combination.

³² The most instructive example from the pandemic in Germany is the public health sector, which carries a high burden of the fight against the virus.

³³ It is no surprise, that many officials start their speeches with the words: for our children and grandchildren. Many of them will share the globe (2100) with almost 11 billion people worldwide.

³⁴ This should not exclude initiatives with regard to exchanges in other subsystems (administration, science, medicine, law, education etc.)

pandemic has presented a good example/proposition: the stop of tourists could be tied to a specific level of sustainable activity/ignorance: no tourists to Australia – as long as the coal burning is not reduced; no tourists to Rio – as long as the burning of the rainforest is not stopped; no tourists to US – as long as fracking is not reduced; no tourists in Africa – as long as child labor is still prevailing; no tourists to Germany – as long as the spoiling of agriculture-territories has not been stopped; no tourists to Malta – as long as it hosts “tax refugees”; no tourists to everywhere - as long as the sources of natural water are sold to private companies.

Most important would be the broad international support of such kinds of strategic decisions. It is easy to see, that in the case of sustainability various kinds of ignorance will be more widespread than in the pandemic. The ignorant countries would try to exchange the tourists between them. Therefore multiple restrictions might be necessary and possible. This might lead to a general de-globalization of parts of the economic system³⁵ - at least in a long-term perspective.

It is evident from international comparisons, that many countries will have difficulties to develop an effective functional differentiation and to apply sustainable standards. Good examples as orientation (i.e. functional equivalents), counseling and resource transfer are necessary elements of any attempt to reduce the ever increasing differences in the living conditions of the still growing world population and to induce a higher international level of sustainable action in all countries and their functional subsystems. It should be mentioned again, that functional differentiated communication systems are not tied to a specific personal and organizational architecture: however, the various “functional equivalents” could and should be objects of worldwide comparisons to see their advantages and disadvantages – even without a catastrophe behind the world’s back.

4. Summary with special reference to the future (coordinating) role of the PAS concerning sustainability in a functionally differentiated society

The previous parts of the paper have put the emphasis on the following arguments:

- a. the necessity to have “the elephant” (society or even world society) in mind – even if special issues and problems of its (future) development are addressed
- b. the recommendation, to focus on the evolution of a growing world population by referring to a system-theory based analysis of functional differentiated societies: their multi-level organization and necessary mutual resonance; and their inclusion of the population
- c. there are many reasons, why this focus of observation and analysis often cannot be confined to one society (nation) only: the EU is an important experiment for an international adapted functional differentiated system; recent “burning glasses” are the pandemic, the war in Ukraine and – with a long term perspective - climate change and sustainability: they are demanding for (additional!) global cooperation in many respects
- d. new challenges are developing in the format of strategic competition on the global level (esp. US vs. China) – which somehow can also be defined as a competition (sometimes even aggression) between functional differentiated (“liberal democratic”) countries and autocratic (“totalitarian”) countries; one of the prominent projects is the “New Silk Road”
- e. if this all is a basis for a “normative turn”, goals and options for an improvement of (national) subsystem-performance and quality of inclusion are important topics – also for

³⁵ Some of these processes are already underway as consequences of the pandemic – in the production of pharmaceuticals and other system-relevant products.

scientific analysis and advice: even if concerned with specific rules, institutions and procedures – the scrutiny on the “whole elephant” (here at least in the sense of the societal system) should be incorporated

- f. if the “normative turn” is agreed upon, international comparisons are also helpful - as topics for comparing functional equivalents and as examples of experiments and good practice; the EU often offers examples, because some basic components of “the elephant” are coordinated/harmonized

Although Nassehi (2021) has described the complex and contingent starting points for the necessary discussion as encumbered by “Unbehagen” (uneasiness) – there is little chance for avoidance or even ignorance.

In order to avoid a kind of “repair shop” – perspective, the context of “the elephant” should be included³⁶, - if possible on behalf of a **sustainable development**.³⁷ Therefore, the three topics – which are *suggested for discussion* - are putting the PAS in the main focus of observation and analysis:

- A. STOP-RULES within functional subsystems: what are the “red lines” defined within the PAS, how are they justified, implemented, controlled? Is there an impact assessment available? Who pays for failures? How is the relationship with invasive impact from other functional subsystems (economy, media, civil society etc.). Are there important actors involved (whistleblowers)? What are the effects/results, possibilities of evasion (green-washing)?
- B. BALANCING multiple functional subsystems (especially: induced by the PAS): the different **communicative basis** of the subsystems have to be considered: how are sustainability issues and goals presented in different societal subsystems (their modes of communication); how can exchange be organized: hybrid organizations, committees, media (?), “the parliament of functional subsystems” (Nassehi)?
- C. INCLUSION of the population: what are the **indicators of integration/discrimination**, – also with regard to different regional, national, ethnic etc. groups (“harmonious society”; “Zusammenhalt”); facing an ever increasing mobility: what kind of programs have been initiated in the PAS to prevent parallel societies and foster civilized behaviour: integration by “taking the role of the other”?; which expectations have been formulated toward other subsystems: is there a kind of information/practice, which covers various subsystems (cui bono principle etc.)

³⁶ Suggestions about another framework of/for the elephant are also of interest.

³⁷ “Let us try to help the *myriapoda/centipede* to start moving again”.

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