

Reinterpreting Social Processes: How System Theory Can Help To Understand Organizations And The Example Of Indonesia's Decentralization

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The complexity of social systems is characterized by the possible occurrence of simultaneous or sequential processes of structural change. This paper is focused on certain types of structural change: (i) those produced by assembly and disassembly and (ii) those resulting from decisional and/or behavioral processes, including both bottom-up and top-down processes. These general concepts from system theory are applied to the case of Indonesia's decentralization. The well-known story of Indonesia's remarkable transition to a democratic society and decentralized nation is presented here in an alternative manner that has allowed us to identify types of structural changes in empirical events. Ultimately, this analysis offers a better explanation of the intrinsic complexity of any social organization and demonstrates an approach to similar problems.

Introduction

As suggested by its name, system theory is a theoretical and empirical framework dedicated to the interdisciplinary study of systems. Defining a system is not an easy task both because there is no single definition of a system and because 'system' is an abstract concept based on a rational procedure that allows us to distinguish a phenomenon. In general, one can argue that a system is comprised of any set or combination of real and/or imaginary elements that are interconnected, thereby forming a whole¹.

In general, a system is considered to be a closed and deterministic whole. In accordance with this tradition, any kind of social system is also assumed to adhere to exact causal relations. Whether or not these assumptions are justified, the general system theory provides helpful clues for understanding human societ-

1. The concept of wholeness is one of the main concepts underlying system theory. A system is either more or less than the sum of its parts.

ies. The difficult, however, relies on the fact that social systems exhibit emergence.

Emergence is a natural phenomenon that involves the development of change over time, as very often systems show features not previously observed that are not deducible from the properties of the isolated parts. These new features give rise to revised or new structures within the system, known as structural change. Despite the inherent complexity of any social system, the system approach offers guidelines and techniques for a better understanding of social processes and policy implications.

This paper, therefore, reviews some system-related concepts and structural change processes. Additionally, it examines the concrete dynamics of structural changes such as those that have arisen out of a country's political and economic decentralization processes. A theoretical introduction is presented in the next section ("The Essentials Of Structural Change Processes") that emphasizes the two specific types of structural change given by Domingo and Tonella (2000): (i) those produced by assembly and disassembly, and (ii) those resulting from bottom-up versus top-down decisional and/or behavioral processes.

In the last two sections, the case of Indonesia's decentralization is analyzed². Indonesia presents unique characteristics, including its complex geography, large multi-ethnic and multi-religious population, as well as its colonial heritage. Its decentralization has become a point of great contemporary interest for academics and non-academics, and it has been frequently studied from the perspective of governance and economic performance. Indonesia is examined here not only because of the current interest in its decentralization, but also because it clearly exemplifies multi-dimensional processes of structural changes. Indonesia's decentralization, which took place following the Asian crisis and the sudden collapse of Soeharto's regime in 1998, illustrates the intrinsic complexity of political, economic and social relations as a consequence of a change in the rules governing the system. Ultimately, this paper presents an alternative version of the well-known story of Indonesia's decentralization, whereby some outcomes of this process are examined under a systems perspective.

2. Decentralization is defined as the process of distributing, dispersing and/or delegating a country's governmental roles, responsibilities and decision-making from its central government to individual provincial and regional governments.

The Essentials Of Structural Change Processes

System Theory: Basic Concepts

For the purpose of this paper, it is important to define general concepts that characterize structural change processes. While avoiding debates about specific definitions, some brief comments about these terms are necessary.

A system is commonly defined as a set of elements positioned in interrelation among themselves and with their environment (Bertalanffy, 1969), with these interdependent parts forming a completely connected set (Ackoff & Emery, 1972: 18)³. Systems, especially social ones, are constantly changing. These changes may be quantitative and/or qualitative. Qualitative changes, which typically require simultaneous quantitative changes, are defined as structural changes. More specifically, the properties of the parts and the relationships within systems are expressed in values. When these values change for one or more of the parts and/or relationships but the system retains its identity, the change is only quantitative. In this case, the parts and/or their relationships remain the same. However, structural change takes place when some parts and/or relationships disappear, change or appear anew. Consequently, structural change appears when the identity of the system changes (Domingo & Tonella, 2000: 212)⁴.

Moreover, systems may pursue goals. Those systems that can change goals (as well as the means to pursue them) in the same and in different environments are defined as purposeful systems (Ackoff & Emery, 1972)⁵. People are the most familiar example of such systems. In a social system—and hence in social organizations—the elements are purposeful individuals (Ackoff & Emery, 1972: 215). In any social organization, purposeful individuals are able to make choices with respect not only to their own purposes but also to the purpose of others. In some circumstances, the individuals in the systems may be instruments of the whole. Alternatively, the individuals may use the system as an instrument (see section concerning “Selected Processes Of Structural Change”). Such systems are dynamic because purposes may change over time, triggering structural changes.

3. Examples of systems include a cell, the brain, a company, a wheel, an engine, the economy, a family, a computer, an atom, the human body, an industry, a football team, a government and a nation. In many cases, a part of a system can be a system itself (i.e., a subsystem).

4. Naturally, these concepts are more complicated and may even involve philosophical issues. For the purposes of this paper, these simple and brief definitions are adequate.

5. All of the things that are related to the system but do not belong to it comprise the environment of the system. The parts and relationships that are inside and outside the system are chosen when a system is represented in a model. In this way, whenever one looks at a system, one is looking at a particular model or representation (i.e., a bounded reality).

Social organizations are therefore complex and difficult to understand. Yet, by using two basic types of structural change (i.e, assembly versus disassembly and top-down versus bottom-up) it is possible to describe concrete dynamics in political, economic and social spheres.

Assembly And Disassembly Processes

Structural change involves various processes, including those produced by assembly or disassembly. The former refers to those processes in which various elements unite to form a whole (or a system). The latter refers to the disaggregation of a whole (or a system) into elements (parts or other sub-systems). Figures 1 and 2 illustrate these two processes⁶.

In the process of assembly, which includes the establishment of a system, certain 'new' or emergent properties that were not present in the individual parts appear in the whole (see section on "Emergent Properties"). These properties result from the interaction between parts within a system, which may lose or gain properties as well as relationships when they unite into the new system. Alternatively, the process of disassembly involves similar processes. Here the system is split into two or more elements or separate subsystems. The properties of the whole may disappear altogether, as they may no longer characterize the single parts, and the parts or subsystems may gain or lose properties or relationships. Domingo and Tonella (2000: 213-4) presented a simple elucidatory example of the assembly and disassembly processes:

The bricks, assembled in a wall, lose mobility and gain reactive forces that they apply to other bricks: the wall displays a size and shape not present in the individual bricks. If the wall is dismantled by separating its bricks, the reverse process of disappearing and appearing properties will happen. [...] the loss of mobility is caused by the force-transmitting properties of the unions (by friction or sticking) and the elastic and gravitational interactions between the entity that apply the force, the brick, the wall and the earth. The explanation is based in laws of elementary mechanics, but when details are analyzed it is by no means trivial. With these laws and properties the immobility and its limits could be explained and even predicted before any observation of them. In general, the explanation of the emergent properties is very complicated as compared with the simple test of the presence of these properties in the whole (Domingo & Tonella, 2000: 213-4).

The outcomes of assembly and disassembly processes are not easily distinguishable. This is often the case when one deals with social systems, while in systems such as a brick wall, new properties can be deduced from the laws of mechanics. The complexity of social systems is moreover characterized by the possible

6. The drivers of assembly and disassembly processes are usually called "actions" or "forces," which may be endogenous or exogenous (Domingo & Tonella, 2000: 214).

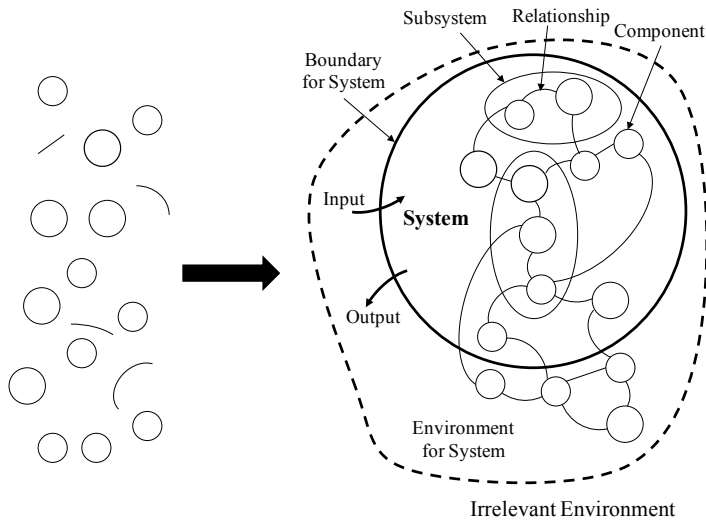


Figure 1 Assembly Process
(Source: authors' representation based on Dallenbach 2003)

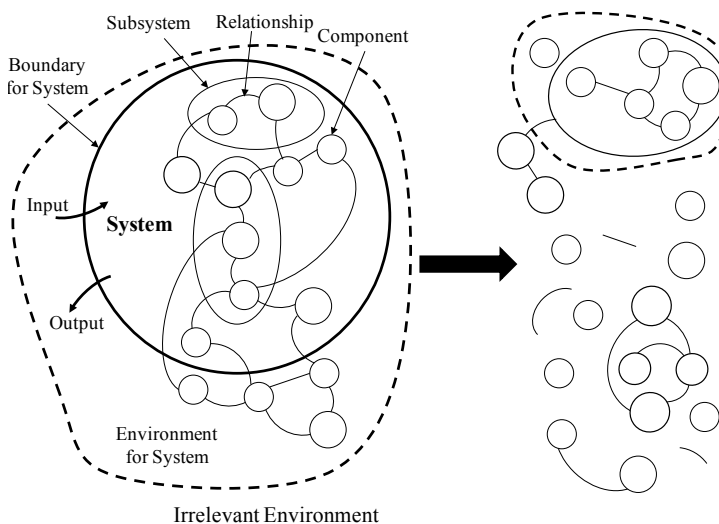


Figure 2 Disassembly Process
(Source: authors' representation based on Dallenbach 2003)

occurrence of simultaneous or sequential processes of structural change. The above processes may occur in combination with distinct decisional and/or behavioral processes, as the ones described below.

Top-Down And Bottom-Up Processes

Once the system is formed through the assembly process, its parts interact. This interaction often generates endogenous processes in which the whole system (or a subsystem) affects the parts or *vice-versa*. The interaction is bottom-up whenever the relationships between parts have consequences for the whole

system. In contrast, when the whole system determines the behavior of the parts by restricting or allowing certain properties and/or relations between them, the interaction is called top-down. These two processes are represented in general terms in Figure 3.

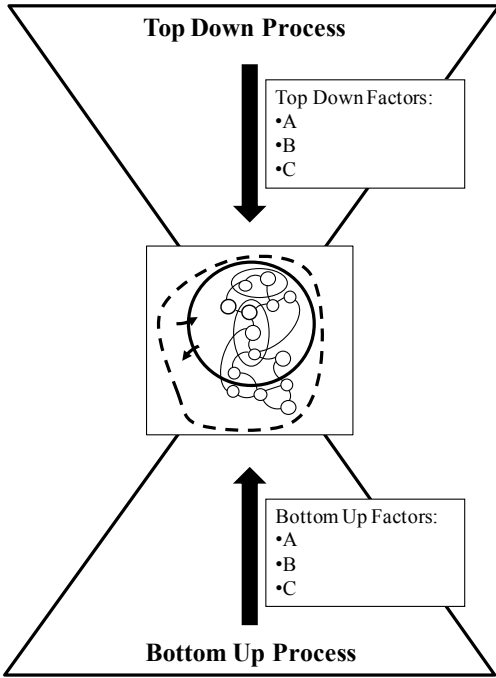


Figure 3
Top-Down and Bottom-Up Processes

Top-down and bottom-up interactions, particularly in the social sciences, are understood to be closely related to decision-making processes, and therefore with the organization of a system. Moreover, defined as strategies, bottom-up and top-down relations have been used to set and coordinate actions in economic systems to achieve certain goals and objectives. Top-down strategy can encourage an action plan based on objectives imposed from above and involves a holistic strategy of centralized control. Bottom-up strategy instead starts from elements at the individual level and moves upwards⁷.

The definition and execution of the strategic plans of social organizations—including governments—can be viewed in terms of combinations of top-down and bottom-up strategies. These strategies are not mutually exclusive and they are often used in a complementary manner. This can be observed in many gov-

7. For example, in a dictatorship, the government is ruled by one person or a single political party that exercises its power in a top-down manner. In a democracy, the power is vested in the people, and political sovereignty is driven largely by bottom-up decisional processes that are directed by citizens.

ernmental strategies throughout history. For instance, the centralized public budgeting process implements both top-down and bottom-up strategies. While budget allocation (e.g., among regions, provinces, cities and so on) is decided in a top-down fashion, the management of public expenditures (e.g., procurements and investments) is undertaken in a bottom-up manner and carried out by each individual region.

Selected Processes Of Structural Change

The occurrence of the above described processes can take place separately, in simultaneous or sequential combinations. Bottom-up or top-down processes may result in the assembly of parts to form a system or in the disassembly into parts to form different systems⁸.

There are particular types of assembly versus disassembly and top-down versus bottom-up combinations. The top-down processes that involve assembly and the bottom-up processes that involve disassembly are called integration and diversification processes, respectively. Integration (or, in extreme cases, forced unification) occurs when top-down processes result in the assembly of one or more parts into a more homogeneous system. Diversification occurs when bottom-up processes disassemble parts to become more independent and diverse units, which then perform new activities and have new goals. An extreme result of the later process is the complete disintegration of the system.

Although the processes of integration and diversification usually take place through top-down or bottom-up processes, respectively, there are examples in which different combinations are possible. Both integration and diversification can result from bottom-up and top-down processes. There are bottom-up processes that may assemble parts into more homogenous systems. Examples would include the formation of cooperatives and marriages⁹. Alternatively,

8. The changes may be accelerated or slowed through self-reinforcing or self-extinguishing mechanisms, respectively (also referred to as feedback loops). In the short term, the changes produced in the system are only quantitative variations, which may eventually trigger qualitative or structural changes. Self-reinforcing mechanisms play a key role in economics (e.g., the relationship between food and population growth; dissemination effect of advertisement, propaganda, political parties, religious organizations and military recruiters; fashions effects; learning effect when 'learning-by-doing'; etc. Arthur (1988) categorized types of self-reinforcing mechanisms: (i) interaction effects, (ii) network effects, (iii) scale effects, and (iv) learning effects. Regarding self-extinguishing processes, one example is the market mechanism, that is, the demand and supply interaction, which allows for the stability of a system through the regulation of prices (or interest rates or wages). These processes are beyond of the scope of this analysis.

9. Another example is systems with fractal geometry, such as clouds, the shape of the coast (coastline), the trees or a galaxy. These kinds of systems have geometrical shapes formed by similar parts that reproduce the shape of the system on a smaller scale (i.e., integration by a

there are top-down processes that generate diversification, such as a policy to induce competition. As will be explored further in the next section, the decentralization process is one good example of top-down diversification. The central government induces (through a top-down strategy) administrative and fiscal decentralization to increase local autonomy.

Moreover, there are types of processes that involve bottom-up responses to balance top-down actions (see “Evolutionary Changes”). Responses may involve further assembly or disassembly. One common effect of bottom-up responses as a mechanism to balance top-down actions involves agreements between the parties and assembly processes. Many examples of these patterns of structural change can be observed across various fields and domains, some of which are presented in Table 1.

Evolutionary Changes

As mentioned in the previous section, deliberate or enforced top-down or bottom-up actions may result in either unification or disintegration and thus produce remarkable changes in social or economic systems. For example, the forced unification of a country may be the result of top-down action by an autocrat or the military, and may have the consequence of paralyzing the society. Alternatively, some bottom-up processes may result in the destruction of the system (e.g., revolutions, anarchy, etc.). However, there are systems that react to top-down actions by generating bottom-up responses and vice versa. In these cases, top-down and bottom-up actions are not strong enough to destroy or paralyze the system, and so the system progressively generates responses¹⁰. When a top-down or bottom-up process takes place, it usually results in assembly or disassembly. However when there is a continuous trade-off between top-down and bottom-up processes, the result includes adaptive and evolutionary changes (see Figure 4). Evolution refers in fact to the process of gradual, progressive change or development.

Adaptation is, in biological terms, a process of change to fit into a changing environment¹¹. This is a key term in economics often used to interpret competitive dynamics in certain types of markets. Social systems also exhibit forms of self-organization and generally have the internal capacity to reconfigure themselves

bottom-up process).

10. Education is an example that implies a trade-off between these two processes. Education is a progressive learning process in which there is a continuous interaction between knowledge (i.e., top-down transmission) and performance (i.e., bottom-up implementation).

11. Typical examples of adaptation is migration, which involves all types of populations, defense and assault (as in the case of wars) and adjustments to body temperature, which involves further adjustments in a number of parts of the body. This concept is here used as metaphors to describe social processes—and it is not consider under any particular viewpoint or perspective.

Processes		Examples
STIMULI	RESPONSES*	
Top-Down	Assembly	<p>Changes in laws, regulations, norms to support international economic or political agreements (e.g., trade blocs and international organizations) [INTEGRATION]</p> <p>Advertised international fashion collections that homogenize consumer tastes [INTEGRATION]</p> <p>Socialist and dictator governments, including their redistributive actions, to homogenize parts in terms of economic wealth (e.g., the social and economic systems that occurred in the Soviet Union and Cuba) [UNIFICATION]</p>
	Disassembly	<p>Counterrevolutions such as the insurgency of the peasants in Vendée (1793) during the French Revolution and the attempts of the White Army during the Russian Revolution (1917-1921) [DISINTEGRATION]</p> <p>Policy-induced market competition [DIVERSIFICATION]</p> <p>Central government policy that induces administrative and fiscal decentralization [DIVERSIFICATION]</p>
Bottom-Up	Assembly	<p>Nations that agree to form an economic bloc</p> <p>Social, religious or legal union of individuals in which parts become more united and similar [INTEGRATION]</p> <p>Political parties that combine their actions to reach a common goal [INTEGRATION]</p>
	Disassembly	<p>Dissolution of marriage or any other kind of union such as the dissolution of a commercial company by shareholder agreements [DISINTEGRATION]</p> <p>Bottom-up responses to fundamentally altered political power (e.g., revolutions against colonial power, civil wars, etc.) [DISINTEGRATION]</p> <p>Revolutions against autocratic governments such as monarchies (e.g., Russia's Tsar) and dictatorships (e.g., Indonesia's Soeharto, Cuba's Batista) [DISINTEGRATION]</p> <p>Differentiated individualization by following fashion or styles [DIVERSIFICATION]</p>

() The cases that imply particular types of assembly versus disassembly and top-down versus bottom-up combinations are explicitly indicated by brackets.*

Table 1 *Examples Of Combinations Of Structural Change Processes*

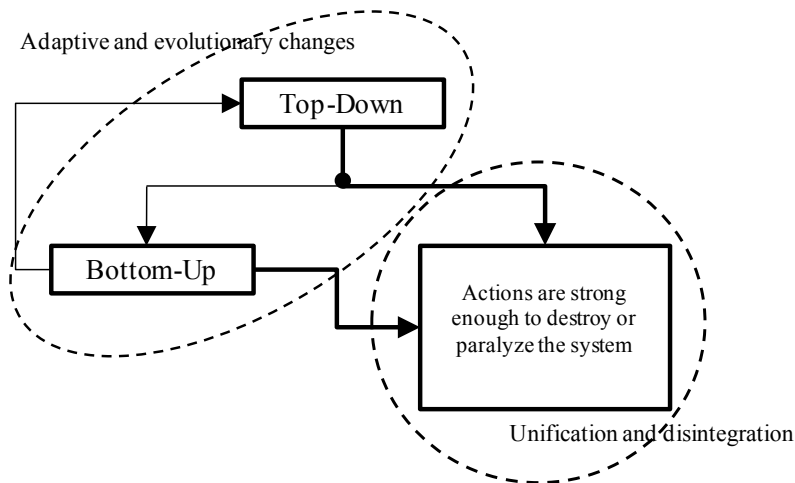


Figure 4 *Possible Responses To Stimuli*

after episodes of drastic change¹². According to Kiel (1994: 15), rather than falling back to a previous state of equilibrium, social systems self-organize into a new order and create new ways of contending with their environments. Thus, they transform through instability. This change is qualitative because the system evolves into another form¹³.

In this manner, the social processes of change continually alternate between order and disorder (or so-called chaos) because the organization of systems moves towards new ways to achieve its goals. This has been called the adaptation and production of new structures at the “edge of chaos” (Kauffman, 1993: 189-208). The evolution of societies is a good example, because it is based on the bottom-up balance between the diversity of individual behavior (produced by genetic changes, the environment and social roles) and the top-down unifying forces of education and socialization (Domingo & Tonella, 2000: 218)¹⁴.

Reproduction is an additional related concept that is useful to understand top-down and bottom-up processes. Biological reproduction is the process through which new individuals are generated and the species is perpetuated. When ap-

12. This capacity of self-organization is associated with the purposefulness of social systems.

13. Self-organization can lead to fundamental structural changes in which change is the orderly behavior that emerges from the spontaneous interaction among parts following simple rules. For more on this topic, see Kauffman (1993). For example, although certain competitive markets are nonlinear, they usually reach an approximate equilibrium in which the many changing and conflicting demands of consumers are all satisfied.

14. Complexity theory and the overlapping but separate theories of chaos and self-organization are associated with the so-called complex adaptive systems. Stacey (2007: 195) defined complex adaptation as a large number of agents, each of which behaves according to some set of rules, which requires each individual agent to adjust its action to that of other agents.

plied to systems, reproduction refers to the capacity of a system to produce a multiplicity of similar objects. This might happen as a consequence of certain top-down or bottom-up processes in which the system either (i) produces similar objects or (ii) disintegrates into parts that maintain the system's properties. The franchising model is an example of the production of similar objects because the franchisees replicate the business model and the trademark of the franchisor. Meanwhile, decentralization is a good example of a disassembly into parts that maintain some of the system's properties, whereby each part (that is, provinces and lower-local government levels) reproduces many of the central government's roles and activities.

Finally, it is possible to recognize an organizational hierarchy among the parts of social systems. Therefore, processes of structural change may involve different organizational levels. Accordingly, it is crucial to bear this hierarchy in mind when analyzing social processes:

[...] in many cases, structural changes are unexpected, because the usual observation is made at one level and the change is triggered off by processes at different levels. A socio-political revolution may surprise the authorities that observed the apparently regular social and political facts, but, at local and individual levels, changes are taking place in opinions, expectations, and perceptions of many individuals. These create a hidden structure that abruptly emerges in the whole (Domingo & Tonella, 2000: 219).

Each of the processes described above, or a combination thereof, triggers structural changes and involves the creation of emergent properties. The dynamics of the system are thus characterized by successive and frequently unexpected structural changes. This intuition is confirmed by many examples in political and economic history and in everyday life. One can therefore claim that the principles and ideas of system theory permit when applied to concrete situations, a better understanding of many social dynamics.

Emergent Properties

All of the processes mentioned above may generate emergent properties. Emergent properties constitute new properties that a system exhibits that are different from the properties of the isolated parts or from the properties of the same parts arranged into a different system¹⁵. Identifying and explaining the origins of emergent properties is difficult because they are neither the result of any single event nor do they follow any specific rules.

Emergent properties result from structural changes. The way in which one or more basic processes—assembly, disassembly, top-down, bottom-up—drive structural changes is clear when considering the wholeness, purposefulness

15. This is not a new idea—it dates at least from the time of Aristotle—but it has persisted among philosophers and social theorists. See, for example, Mead (1932) or Morin (1977).

and hierarchical organization of the system defined above.

According to Morin (1977, Vol. 1: 121), a system is something more than just the sum of its isolated parts. As a result of an assembly process, the resulting system acquires (i) an organization or structure, (ii) unity or totality (the Gestalt) and (iii) new qualities or properties that emerge from the whole¹⁶. These properties cannot be easily deduced or estimated *a priori* from the properties of the elements of the system. One reason is because emergent properties imply a sort of novelty and thus involve features not previously observed.

Moreover, although social systems are purposeful systems with only purposeful elements, there is a constant tendency toward increasing or decreasing the variety of behaviors among the elements (Ackoff & Emery, 1972: 215). Diversification and integration processes defined above refer to this emergent—increasing or decreasing—variety. According to Ackoff and Emery (1972: 215-17), the system is variety decreasing (integration or unification) when the elements are instrumental to the system, restricting the purposeful behavior of the elements. The system is instead variety increasing (diversification or disintegration) when the system is instrumental to its elements, usually driven by an ideal¹⁷.

Finally, emergent properties refer to global patterns (or global-level structures) that arise from local interactions. Contemporary complexity theorists focus on how global structure arises not only from local interaction but also from interactions based on relatively simple rules. Yet, the rules do not, in themselves, predict global behavior and structure (Eve *et al.*, 1997: 31). It is indeed possible to identify systems in which assembly (or disassembly) is the goal of a resolution. In these cases, assembly (or disassembly) results from a deliberate plan and is the outcome of a decisional process, which happens to be top-down. However, even in such situations and with extensive planning, emergent properties often cannot be entirely foreseen. A good example of these interactions is the decentralization case presented in the following section.

Systems Concepts To Support Understanding Of Social Organizations: The Case Of Decentralization In Democratic Indonesia

The term decentralization embraces different dimensions, such as political, legal, administrative and fiscal ones. In general, these procedural dimensions of decentralization take place sequentially, for example, beginning with deliberate political and legal changes and followed by administrative and fiscal decentralization. However, the detailed sequences of the decentralization process are often difficult to predict because structural changes occur simultaneously across these multiple dimensions. Moreover, the dynamics and outcomes of decentralization along these different dimensions may differ across

16. The same logic applies to a disassembly process.

17. Ackoff and Emery (1972: 237-247) defined these systems as “ideal-seeking systems.”

countries. Each country has its own distinct history and institutional forms, as well as a unique context and timing with respect to the implementation of reforms.

Nevertheless, since decentralization involves qualitative institutional and organizational changes, it always implies structural change. In particular, all decentralization cases involve top-down and bottom-up actions and decisions as well as assembly and disassembly processes. All of these aspects can be observed in the Indonesian case, in which decentralization impacted most country's institutions¹⁸.

Indonesia is the world's largest archipelago and fourth most populous country; it enjoys a high degree of economic, ethnic and cultural diversity. Indonesia's democratization and decentralization processes have had a wide-ranging impact on the country's political, economic and socio-cultural institutions. Because of this, Indonesia has become the focus of great contemporary interest. However, Indonesia is examined in this paper not only because of this current interest but also because Indonesia's multi-dimensional decentralization process (i) clearly illustrates the types of processes of structural changes considered in Section 2; (ii) shows how certain patterns of change can be determined in complex systems even if they are erratic by nature; and (iii) provides insights that permit a better understanding of social systems. This analysis may ultimately shed more light on Indonesia's decentralization—it offers a different version of the story—and also help to explain certain processes that maintain Indonesia's *status quo*.

The Starting *Reformasi*: Indonesia Pre-1998

After more than three decades of authoritarianism and strong centralized control, Indonesia experienced a dramatic democratization process in 1998 resulting from Soeharto's forced resignation¹⁹. Democratization was followed by the country's decentralization. The beginning of these great changes defined the country's *reformasi* (reform) era.

Social systems are generally capable of reacting to top-down stimuli, inducing bottom-up responses and, consequently, multiple assembly and/or disassembly processes. As observed in many episodes throughout world history, the preponderance of top-down regimes that maintain centralized control often results in failures and the ultimate disintegration of such systems. This is clearly demonstrated in the case of Indonesia. Despite a positive track record of economic growth and development, the top-down concentration of thirty-two years of power created a tense and fragile state of unity that was shattered when the

18. This is evident if one thinks of fiscal decentralization and its effects on political stability, administrative and fiscal institutions, economic growth, the business environment, etc.

19. The period before Indonesia's democratization in 1998 is beyond the scope of this paper. For a summary of this period and the role of intergovernmental fiscal relations, see Ford and Brodjonegoro (2007).

regime was confronted with severe economic crises and political pressures, resulting in its disintegration.

The relationship between the central and local governments during Soeharto's regime was authoritarian and centralized²⁰. Soeharto's regime represented, in all its dimensions, an example of the unification of parts (i.e., islands, provinces, districts and municipalities) into a system (i.e., a country) that resulted from the prevalence of top-down control of the geographically-administered state structure and the similarly centralized, top-down budgetary arrangement²¹. In particular, Indonesia was administratively divided into provinces headed by appointed governors, which were in turn divided into districts and municipalities headed by local regents and city mayors, respectively. Even if the legislative bodies at the central and regional levels were elected, their role was mainly of an advisory nature, reflecting the high degree of centralized decision-making²². From a budgetary and fiscal perspective, regional and local governments depended on central government budgeting guidelines, fund allocations and transfers²³. In short, the dominance of Soeharto's central apparatus helped to administer and control the country as a unified system (i.e., maintenance of unity and homogeneity of parts by top-down assembly).

The 1997 Asian financial crisis deeply affected Indonesia's economy. The policies of Soeharto's regime (e.g., autocratic and centralized control, widespread and ingrained corruption, etc.) and crisis countermeasures (e.g., repression of student movements, IMF-imposed austerity measures that resulted in severe economic hardship, etc.) eroded domestic confidence in the regime. The demonstrations and riots of the Indonesian May Revolution of 1998 were examples of bottom-up responses to Soeharto's top-down oppression. However, the ouster of President Soeharto raised further regional dissatisfaction. In particular, when Soeharto's regime came to an end and his vice-president, Jusuf Habibie, came to power, many provinces expressed dissatisfaction with the how the central government had treated them (Asanuma & Brodjonegoro, 2003: 111-2). They demanded broader regional autonomy, including the devolution of power and fiscal decentralization. Some demanded that the unitary state be changed into a federal state, while others demanded independence from Indonesia.

Several factors triggered and accelerated this bottom-up (and ultimately disinte-

20. The power of Soeharto and his dominant Golkar party was further solidified through their close business and political interactions with a number of domestic economic elites that comprised large family-owned business groups.

21. A detailed account of budgeting in decentralized Indonesia is available in Brodjonegoro (2005b).

22. Indeed, during local elections, the Golkar party kept winning, while provincial governors were often retired generals loyal to Soeharto.

23. Local governments only received a very small proportion of their own sources of revenues.

grative) process, especially the pressure from resource-rich provinces (including Riau and East Kalimantan) to control larger portions of the revenues generated by their oil, gas, agricultural and mineral resources. Together with the ongoing political separatist movements in Aceh and Papua, President Habibie and the People's Consultative Assembly were pressured to formulate the so-called decentralization laws²⁴. Habibie responded through reforms aimed at decentralization, which were subsequently endorsed by a number of foreign governments and multi-lateral agencies, to accommodate the pressure for broader regional autonomy.

Social systems are constantly changing, and any change implies further successive changes, ranging from radical to evolutionary shifts. In Indonesia's case, any change from autocratic oppression, including regional dissatisfaction and Soeharto's resignation, triggered further changes. In fact, the beginning of the Indonesian decentralization story already showed multiple structural change processes, as discussed in the previous section. The democratization of Indonesia began with bottom-up processes to balance the historically authoritarian and absolute top-down control. These processes, especially the regionalist movements, led to the country's subsequent decentralization and thus to the country's gradual disassembly into more autonomous and diverse political and economic units.

The "Big Bang" Of Decentralization

Laws 22/1999 and 25/1999 were the starting points for the extensive and drastic decentralization process in Indonesia. Law 22/1999 provided the basis for political and administrative decentralization, while Law 25/1999 was the basis for fiscal decentralization. These two laws were issued to avoid the potential breakdown of unity in Indonesia. As a result, Laws 22/1999 and 25/1999 provided the basis for distributing government functions and financial resources.

Although decentralization laws involved a phase-based plan, they represented a "big bang" change to the system's purpose. Indonesia's new rules and their implementation triggered unforeseen situations that required further reforms to pursue the goal of decentralization. The initial challenges faced by the government in implementing the decentralization program demanded further legislative steps²⁵. In 2004, decentralization Laws 22/1999 and 25/1999 were revised through Laws 32/2004 and 33/2004, respectively. Law 32/2004 introduced direct elections at the district and municipality levels²⁶ and Law 33/2004 provided

24. Separatist pressures not only came from resource-rich regions but they were also prevalent in socio-politically and/or ethnically more diverse regions.

25. The revision of these laws took place during the Megawati presidency in 2004.

26. This includes the direct election of the president, provincial governors and local executives (i.e., district and municipal heads) starting in 2004 as well as the direct election of central and local legislative members starting in 2009.

more details on intergovernmental transfers, placing more emphasis on local financial management.

Under Law 22/1999, the organization of local government and policy decision-making has shifted from a top-down exercise of power by the central government to a bottom-up exercise of power by local governments²⁷. In Indonesia, the devolution of power and authority initially occurred between the central government and the second-tier levels of local governments, that is, the district (*kabupaten*) and municipal (*kota*) levels. This devolution was quite dramatic because Indonesia had previously been characterized by a strong, centralized top-down governmental structure²⁸. Indeed, the democratic election held in 1999 was only the second multi-party election, the first having been held in 1955.

Additional progressive changes in the relationships between executive and legislative bodies took place, such as the first direct elections of the president and parliament in 2004 and the elections for national parliament, provincial legislative seats, president and vice-president in 2009. Although designations were similar to those of Soeharto's era, an extensive structural change process was initiated, which is still ongoing. One of the most curious observable outcomes has been the emergence of local oligarchies. Though Soeharto's authoritarianism ruled country for so many years, decentralization facilitated the emergence of more localized networks of patronage that were autonomous of the central state, bringing local elites, such as powerful families or clans, into power (Hadiz & Robinson, 2004). In this way, Indonesia's decentralization embodied a top-down decision to disassemble budgetary and administrative power into parts that maintained some of the properties present during Soeharto's regime (i.e., reproduction).

Law 25/1999, pertaining to the fiscal balance between central government and the regions, focused on intergovernmental finance. In so doing, it established a new organizational hierarchy within the system. It introduced a revenue-sharing system related to the exploitation of natural resources and it reorganized the transfer system. Four categories of regional government revenues were defined in the new transfer system, namely, natural resource revenue sharing, tax sharing (especially property tax), general and special allocation funds (DAU and DAK, In-

27. For a detailed review of Law 22/1999, see Suwondo (2002).

28. The demand for broader regional autonomy in governing Indonesia lies in the very strong tendency toward the centralization of power and resources in the past three decades. Under Soeharto, Indonesians voted for political parties, not individuals. However, the local government at all levels was subordinated to the central government in all important respects. It was the President who appointed the Governor and it was the Minister of Home Affairs who appointed the Regent and the Mayor. Under this structure, the central government made all important policy decisions, the role of the provincial and local governments was to implement the decisions of the central government, with very little input from the people in the provinces, districts and municipalities (Asanuma & Brodjonegoro, 2003: 112).

donesia acronyms, respectively). The general grant (DAU) replaced the previous central government grants, giving full discretion to local governments to spend these funds according to their own priorities through bottom-up decision-making. However, fiscal revenue sharing was (and still is) limited to the sharing of property taxes and to increased revenue allocation from the resource sector and minor local taxes (e.g., taxes on advertising boards and garbage dumps)²⁹. This revenue sharing does not involve the sharing of more lucrative income and corporate taxes; the most important tax revenues are still monopolized by the central government (Kuncoro, 2006: 27).

In every system: (i) top-down processes may result in assembly or disassembly processes and; (ii) a change in the rules (and/or goals) affects the dynamics of each part of the system, which then affects the performance of the whole system. In Indonesia, decentralization laws generated disassembly and diversification processes, triggering an unstable period (still underway) due to the interplay of structural changes required by any adapting system. More precisely, Indonesia (i.e., the system) has implemented in a top-down manner a set of new rules (i.e., democratization and decentralization laws) to reorganize the governmental structure. Change in the rules has affected the dynamics of each part of the various systems (i.e., provinces, districts and municipalities), which have in turn affected the performance of the country as a whole. There has been a sequence of successive top-down processes with bottom-up responses. While rule changes altered some administrative and budgetary processes, many processes of the centralized era, especially in terms of actions and behavior, prevail in the current system. As a result, a multiplicity of surprising outcomes has moved the country away from the intended goals of decentralization.

Ongoing Democratization And Decentralization: Indonesia After 1999

In Indonesia basic structural change processes (assembly versus disassembly and top-down versus bottom-up) have resulted in some surprising outcomes. In the following paragraphs, some examples are discussed with a particular focus on those emergent properties resulting from the introduction of decentralization laws.

Among the most visible but surprising outcomes are the new political and administrative divisions introduced by Law 22/1999³⁰. The devolution of power and authority from the central to local governments, including districts and municipalities, was exacerbated by the desire for regional and local governments to gain more autonomy (especially in managing their own resources), triggering

29. For a detailed account of changes in the distribution of natural resource revenues, see Ford and Brodjonegoro (2007: 26).

30. A change in political and administrative divisions of a country (especially in terms of provinces) usually implies a lengthy juridical process, but this was not the case in Indonesia. Nevertheless, the proliferation of provinces has diminished over time.

the proliferation of new provinces, districts and municipalities³¹. Since 1999, the number of units in each tier has changed almost annually. Prior to the enactment of decentralization laws, Indonesia had 26 provinces and 314 districts and municipalities. Within a period of four years, from 1999 to 2004, these numbers increased to 33 provinces and 440 districts and municipalities. This administrative disassembly process continued after 2004, as an increasing number of local ethnic groups also demanded their own jurisdictions. The recent riot for independence in Tapanuli province (currently part of the North Sumatra province) is one example of this. By the end of 2008, the number of districts and municipalities increased to more than 490.

Another example is related to changes in the natural resource revenue-sharing schemes. According to Law 25/1999, natural resource revenues are defined as fiscal income from the oil and gas, mining, forestry and fishery sectors. These revenues are to be shared among central and local governments³². After Law 25/1999 increased the percentage of revenues to be transferred to the local districts and municipal governments from all four sectors, the main beneficiaries of the fiscal decentralization law were those districts and municipalities that were richer in oil, gas and mining resources, such as East Kalimantan, Riau, Papua, South Sumatra and Aceh³³. As a consequence of the concentration and uneven distribution of non-food natural resources across the country, resource revenue sharing has worsened regional differentiation and income disparities³⁴. Furthermore, because resource-rich provinces typically have more opportunities to increase the variety and levels of local taxes and levies, this regional disparity is further amplified (Bhasin & Venkataramany, 2008: 7, 9). It should be noted that while inequality is not an intended result of fiscal decentralization, there is evidence that decentralization can adversely affect the equity of distribution (Prud'homme, 1995)³⁵. In actual fact, diversification is a common outcome of

31. Because a system is different from the sum of its parts, more parts do not mean more properties or a larger system. The possibility of formation (or amalgamation) of parts is an emergent property of the new system.

32. Under the new sharing arrangement, for example, 15% of oil revenues are distributed among local governments, as well as 30% of gas, 80% of license fees on forest enterprise, 80% of mining land rents, 80% of fishery enterprise fees, etc.

33. According to the Indonesia's Central Statistics Agency (2009), five provinces out of 33 account for 58% of the country's Sector GDP in 2008 (i.e., East Kalimantan of 23%, Riau of 19%, Papua of 9% and South Sumatera of 7%).

34. According to the United Nations Economic and Social Commission for Asia and the Pacific (2004) the Gini coefficient between 1999 and 2002 rose from 0.31 to 0.34. The Gini coefficient in 2005 was 0.39 (Human Development Report, 2009).

35. There is evidence that a reduction in income disparities does not necessarily correlate with a reduction in regional income differentials. If income levels in a poor region are more equally distributed than in a higher-income region, transfers to poorer citizens will primarily benefit the richer region and actually increase regional disparities (Prud'homme, 1995).

bottom-up processes.

A further consequence is the reproduction of the moral hazards and opportunistic behaviors that characterized Soeharto's regime. This is clearly an emergent property because it is not only an unexpected outcome but also a counterintuitive one. The degeneration of Soeharto's regime (and its patronage system) was due to excessive corruption and over-centralized power in the interest of personal rule, among other reasons. However, decentralization seems also to have been characterized by widespread corruption and the old policies that benefitted minorities within local governments. For example, the increased revenue assignments and the transfer of expenditure responsibilities to the local governments, coupled with the introduction of the special and general allocation funds (DAK, DAU), has resulted in weaker spending discipline and increased moral hazards, especially in regions that are rich in natural resources³⁶.

Finally, the expected impacts of decentralization are usually related to improvements in economic and cost efficiency, which one might expect to be almost immediately achievable when considering that decentralization enhances the responsiveness and accountability of government. However, in many countries, negative outputs have been associated with decentralization. An explanation for this undesirable effect of decentralization is related to the concepts reviewed above (i.e., structural changes, complex adaptive systems, emergent properties, etc.). Emergent properties in particular cannot be deduced from the properties of parts at lower levels (and/or based on causal interaction), and so their eventual identification is an *a posteriori* exercise. In the ongoing process of Indonesia's decentralization it is possible to recognize emergent properties, such as cases of disintegration, reproduction and counterintuitive results (e.g., HDI misperception, de-industrialization, rampant corruption, etc.). These examples are presented in detail below³⁷.

- East Timor independence: the separation of East Timor in 2002 was initiated as part of the country's overall disassembly process and induced by bottom-up ethnic separatist responses to military suppression. The separation was also aided by the interests of the international community. However, in this particular case, the disassembled part of the system became not only more independent but so differentiated from the other parts that it became a new country. This represented a disintegration process.

36. For example, local district and municipal heads are now incentivized to report lower local taxation revenues and higher budget requirements, including less useful projects such as amusement parks (or any kind of projects that will not be started) only to achieve and maintain higher levels of fund allocation.

37. Emergent properties can have either positive or negative repercussions in the system. In the case of Indonesia and particularly in the examples used here, these repercussions have had negative effects on the system. However, this does not mean that Indonesia's decentralization reform has not had positive effects on economic and social performance.

- Misperception of public service quality: one effect of decentralization in Indonesia has been an improvement in public service delivery. However, the general social perception of public service quality remains negative. As reported by the World Bank (2003 and 2005), the country has witnessed an expansion of its infrastructure, including roads and health and education facilities³⁸. Despite this fact, many national newspapers continue to report on the deterioration of the country's infrastructure and that local governments appear to be pay too little attention to improving the quality and efficiency of public service delivery³⁹.
- Regional de-industrialization and underperformance: along with decentralization, the manufacturing sector has declined in importance (Brodjonegoro, 2005a: 8, 20). Although local governments should assist in site development by offering incentives to attract industries and new business, it is possible to observe manufacturing growth rates that are lower than they were before 1998. Some regions showed negative or near-zero growth in the manufacturing sector between 1999 and 2002. In addition, regional economic growth rates between 2001 and 2006 (the recovery phase after 1997 financial crisis) were lower than during the Soeharto era of centrally controlled growth.
- Flourishing of religiously-oriented parties: the less corrupt districts have generally been more supportive of secular parties. Despite the country's Muslim population of 90 percent, Islamic parties managed to secure only a very small percentage of seats in the 1999 legislative election. Due to increasing corruption, however, voters in districts that were originally less corrupt changed their political views and started voting for the Islamic parties in the local elections since 2004 (Kuncoro 2006: 36-7). According to a survey conducted in 2005, devout Muslims were believed to be less willing to pay (and accept) bribes and the two major Indonesian sects of Muslims were more inclined to vote for Islamic parties (Henderson and Kuncoro, 2006).
- Negative investment climate: as stated by Prud'homme (1995), local competition may be desirable as a result of decentralization, particularly if it encourages efficiency. However, too much competition may be destructive (i.e., a preponderance of bottom-up processes). The diversification of local rules has indeed increased the uncertainty, difficulty and costs of doing business at the regional and local levels⁴⁰. Investment and production costs

38. According to the Human Development Report (2009), the Human Development Index (HDI) increased between 1985 and 2000 from 0.562 to 0.673 and to 0.734 in 2007.

39. The central government is trying to change this perception by promoting the implementation of minimum service standards to encourage nation-wide improvements in public services (Brodjonegoro, 2005a: 4).

40. In particular, mining companies are extremely concerned about the increased investment risks in this sector (Bhasin & Venkataramany, 2008: 7, 9).

have increased due to the many new local rules (e.g., the creation of additional local charges and levies) that have distorting effects on companies' investment and business (Brodjonegoro 2004: 130-6).

Each of the aforementioned emergent properties results from a basic structural change process (i.e., assembly versus disassembly and top-down versus bottom-up). They also involve self-organization and adaptation processes. Because social systems are purposeful systems, they have the ability to learn (see first section above). They select goals and the means to pursue them, but they also change those goals and means. Learning might result from being surprised (Gharajedaghi, 2006: 75), so the emergent structures are not only an outcome but also influence future events, making the evolution of qualitatively different systems possible (Eve *et al.*, 1997: 33). Purposeful systems are therefore based on continual learning and adaptation. Accordingly, the emergent properties that have resulted from Indonesia's reforms are, while only rarely deducible in advance, merely part of the adaptive nature of the system itself. Indonesia is still in transition from a rather stable period (i.e., Soeharto's regime) to a new and still unknown period (i.e., the expected democratized and decentralized Indonesia).

Reinterpreting Indonesia's Decentralization Process

This section summarizes some of the dimensions along which structural change processes have taken place in the decentralization and democratization of Indonesia, including some of the initial conditions of these processes.

Complex systems are hard to design and understand; these difficulties often stem from the multiple interactions that occur among many components at different levels. As stated by Gharajedaghi (2006: 12), social systems indeed have to be understood on their own terms⁴¹. As such, this section does not aim to model Indonesia's decentralization. Instead, it attempts to show some of the main dimensions along which structural change processes took and are taking place. The difficulty involved in this exercise is clear when considering the behavior of social organizations:

In contrast to machines, in which integrating of the parts into a cohesive whole is a one-time proposition, for social organizations the problem of integration is a constant struggle and a continuous process. Effective integration of multilevel purposeful systems requires that the fulfillment of a purposeful part's desires depend on fulfillment of the larger system's requirements, and vice versa. In this context, the purpose of an organization is to serve the purposes of its members while also serving the purpose of its environment (Gharajedaghi 2006: 12).

41. Gharajedaghi (2006) defines social organizations as "multi-minded systems" and thus multilevel purposeful systems.

In this way, the diagram in Figure 5 is a static and simplified version of a rich reality, designed to relate the language of system theory to Indonesia's decentralization process. The most relevant set of initial conditions that facilitated Indonesia's *reformasi* were the regional separatist movements, Asian financial crisis, and reforms prescribed by international organizations⁴². However, decentralization is almost always the result of intentional decisions by policymakers (Manor 1999: 7). In Indonesia, decentralization was the result of a top-down process through which new laws—Laws 22/1999 and 25/1999—were introduced, which stipulated changes in the country's administrative and fiscal structure. This resulted in bottom-up responses as well as multiple subsequent structural changes, involving adaptive processes across the country's institutions (See Figure 5).

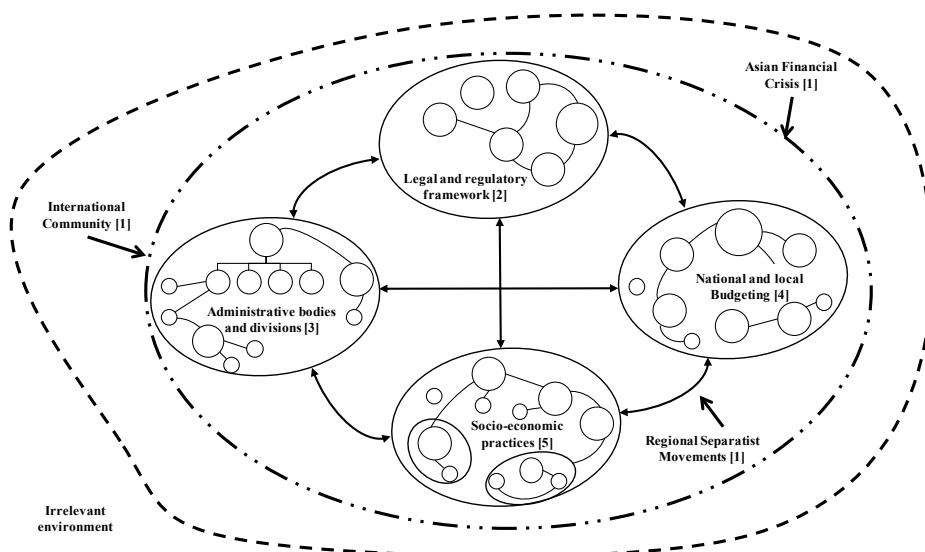
Conclusions

As stated by Aswicahyono, *et al.* (2009: 366), crises in the developing world are frequent but have unpredictable consequences. This is not only true in times of crisis and in developing countries but is valid for any kind of change and in all social systems. These systems are subject to constant changes, and because they are complex by nature, most of the changes have unpredictable outcomes. It is therefore difficult to develop an analytical framework that can foresee policy outcomes and recovery trajectories. For this reason, this paper uses system theory to examine a case study, namely, Indonesia's decentralization process.

Indonesia is the fourth most populous country in the world, and it has been called the largest unknown country (Pramodhawardani & Rieffel, 2007: 1). Its decentralization process, which started after Soeharto's downfall in 1998, has been analyzed by many scholars and is still a topic of great interest. Although this paper presents the well-known story using system theory, an alternative version is presented. This version allows us to identify the types of structural changes involved in real-life events and to understand the intrinsic complexity of any social organization.

This paper is indeed a useful intellectual exercise to understand the various types of structural change. It is also a practical exercise in which general ideas are applied to a specific case. It reveals that a social system's new properties cannot be anticipated and that the goals of stability and order are increasingly difficult to maintain. By applying these concepts to the Indonesian case, it is also possible to identify some of the processes that maintain Indonesia's *status quo*. Formally, systems change when there is a transition from one rather stable period to a new period. Indonesia is currently in facing the transition from a highly centralized country to a democratic and decentralized one. The observed instability in

42. According to Wasson (2006: 36), "a system's initial operating conditions consist of the physical and operational states of the system and its surrounding operating environment and the beginning of a system mission phase, operation or task."



[1] The initial conditions mainly comprised (i) grassroots pressure from the domestic citizenry in several resource-rich and ethnically distinct regions followed by Soeharto's downfall and (ii) the system's environment: the Asian financial crisis period coupled with the political and economic reforms prescribed by multilateral institutions. Both the Asian financial crisis and international community's prescriptions were exogenous actions, while regional separatist movements were endogenous.

[2] Top-down legal and regulatory reforms comprised decentralization and democratization process. These were initiated by a series of constitutional and legislative initiatives.

[3] The central bureaucracy was disassembled into regional administrative units. The top-down stimuli of changes in the legal and regulatory framework induced bottom-up responses, resulting in the disassembly and diversification of the system into numerous autonomous local governments. The proliferation of local governments still continues today. Moreover, central administrative bodies, ministries, organizations and functions were partially dismantled, rearranged, moved and functionally delegated to local governments.

[4] Disassembly and diversification of local government budgets and successive adaptive changes increased local budgeting autonomy. As a consequence, regional income disparities have been amplified and there have been widespread inefficiencies, moral hazards and opportunism at the local levels.

[5] In line with democratization and administrative and fiscal decentralization, many adaptive changes in social practices have taken place. For example, the *reformasi* process allowed a more open and participative social environment in Indonesia with greater freedom of speech, legislative and direct presidential elections, etc. A further example is the shift of historically centralized business relationships towards local district and municipal governments. Due to this change in hierarchy, local governments started reproducing central government practices. Business- and industry-related incentives, risks and practices have shifted the focus to lower government hierarchies. The adoption of the previously centralized informal rules and networks in the context of local socioeconomic practices, have resulted in unpredicted consequences at the macro-level, such as de-industrialization, the rise of poverty, increased pollution, etc.

Figure 5 *Indonesia's Decentralization System And Subsystems*

the case of Indonesia is inherent to the process of change in any social system. This instability allows the country to re-organize itself from its previous state (centralized structure) and respond to the changes imposed by decentralization laws. Transformations are part of a system's adaptation and evolution.

Finally, the title of this paper, "reinterpreting social processes," calls the reader's attention to the fact that the characteristic disorder of transitional periods is often overlooked and interpreted as program failures or ineffective policies. It is true that many developing countries are trapped by inefficient governance (and Indonesia is not an exception), but looking at the problems in traditional ways without understanding their essence cannot lead to effective solutions. A systems view offers an awareness of the nature of a given social system. This view also provides insights that permit a better understanding of the situation and can promote organizational renewal through better policy design.

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