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Mechanisms of Dialectical Change[**]

Dialectics as a scientific method has its limitations. Dialectics as an intrinsic aspect of reality is an eminent and essential force in social life. Dialectics is about structures and dialectics is about change. This article shows how dialectic mechanisms work. The general considerations are illustrated by cases of organizational, strategic and technological change. We describe some types of dialectical structures and discuss what conditions may be responsible for activating the dialectical mechanism.

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1.   Introduction

A famous concept in the social sciences that deals with the question of fundamental social change is the concept of "dialectics". The idea of this concept is easy to grasp: contradictory social conditions set in motion forces to overcome the unsatisfactory social situation and the induced social processes (normally) lead to the overcoming of the underlying conflict and (hopefully) to social betterment, whereby the new situation ironically will breed new contradictions. Thus dialectical processes are a motor of action and progress. Benson (1977) describes four principles of Marxist dialectical analysis: *Social construction* which means the production and reproduction of social structure as emerging from the ongoing interaction and task performance in the everyday life, *totality* which means that human behavior can only be understood by considering its social context, and *praxis* which means the capability of humans to act in a rational manner and last not least, the most important principle *contradiction* which refers to the many inconsistencies and ruptures in the fabric of social life. The ultimate cause for the many contradictions that characterize organizational reality is to be found in processes of social differentiation:

> "… [At] the level of organizations, the multiple levels and divisions form differentiated contexts within which social production proceeds in a partially autonomous manner. As a result the fabric of social life is rent with contradictions growing out of the unevenness and disconnectedness of social production" (Benson 1977: 5).

Structural tension is a fundamental and in a sense unavoidable characteristic of any social system. But structural frictions are not necessarily dialectical tensions. One central quality of a dialectical structure is – as mentioned – its contradictory nature, a second quality is its dynamic character. Dialectical structures cause and trigger processes of unrest, they invoke forces directed to harmonize the opposing demands which are deep-seated in its very constitution (for a more extensive discussion c.f. Schneider 1971; Rosenthal 1998; Martin 2006).

Structural contradictions will not unavoidably lead to far-reaching changes. Quite the opposite, they may contribute to the stabilization of the given conditions. Furthermore dialectical processes are not always processes of progress. It was Karl Marx who noticed, that societal progress is no necessity, so capitalism may not be transformed to socialism but also can fall back in barbarism. The general scheme of the dialectical mechanism leading to fundamental change is shown in figure 1. There are negative as well as positive effects of the given structures. The positive (stabilizing) effects "justify" their existence in the first place, because they constitute the foundation of social life, therefore structures which impair the functioning of social systems will inevitably erode. But the contradictory elements of dialectical structures will – prima facies – invoke destabilizing effects, which may cause the replacement of the given system – unless this process is counter-balanced by stabilizing forces. Ideally thesis and anti-thesis bring up a productive synthesis which entails the positive and deletes the negative effects of the respective contradictory forces. But this Hegelian Scheme is only one out of several forms of dialectical processes. In what follows we therefore will ask which other forms of dialectical processes exist. Before that we will illustrate the effects of dialectical mechanisms on organizational, strategic and technological change processes by some selected examples. Finally we will say something about the

conditions which must be given, that the invoked processes will lead to genuine fundamental changes.

Figure 1: Dialectical mechanism promoting social change
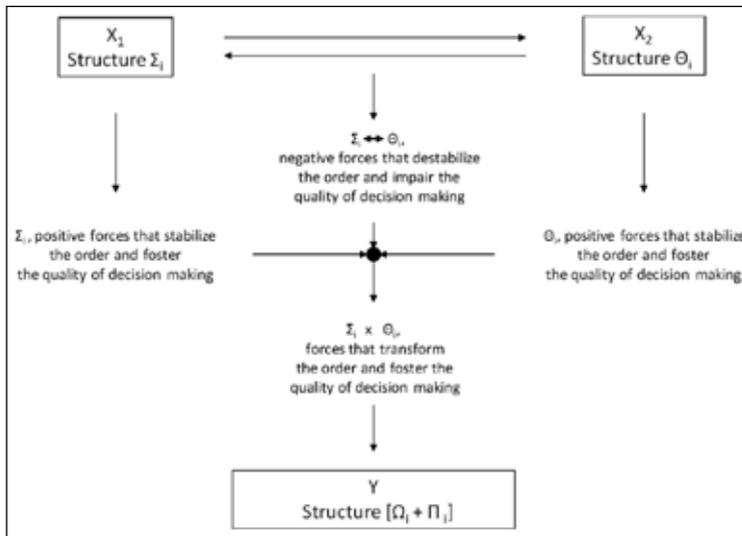
2.   A dialectical reconstruction of organizational growth

In 1972 Larry Greiner developed a now classical model of organizational growth. Thereafter organizational change is the result of the interplay between evolution and revolution. Growth – according to Greiner – with necessity is tied with crisis (see figure 2).

A first crisis occurs when the founder of an enterprise is no longer able to manage the growing coordination problems. The problems in managing the internal processes are very often underestimated. In the built up phase entrepreneurs are most attentive to market processes and easily lose sight of the misfits in the internal setting of the organization, a fact which finally will lead in a crisis of leadership. A possible solution is a more explicit dedication to the leadership task and an obvious means is to hire more managers. But with this goes a new division of labor. Managers who have to do responsible work are not satisfied to be only an organ of the leader. Delegating leadership tasks without changing the leadership structure causes a crisis of autonomy. It will be greater the more the leader notwithstanding delegation wants to keep control about all decisions and is not willing to share power. The crisis of autonomy will not come to an end until a greater decentralization is implemented and until the principal will take a more participative leadership style. But the greater the autonomy of the decentralized units the greater the risk, that they will take a life on its own. The quasi natural reaction to this crisis of control is to establish planning systems in order to guarantee unique corporate governance. The resulting regulations breed the crisis of bureaucracy. A way of coping with this crisis is to implement team structures which propose more agility but on the other hand demand a lot of personnel coordination efforts which overstrain the abilities of the managers (table 1).

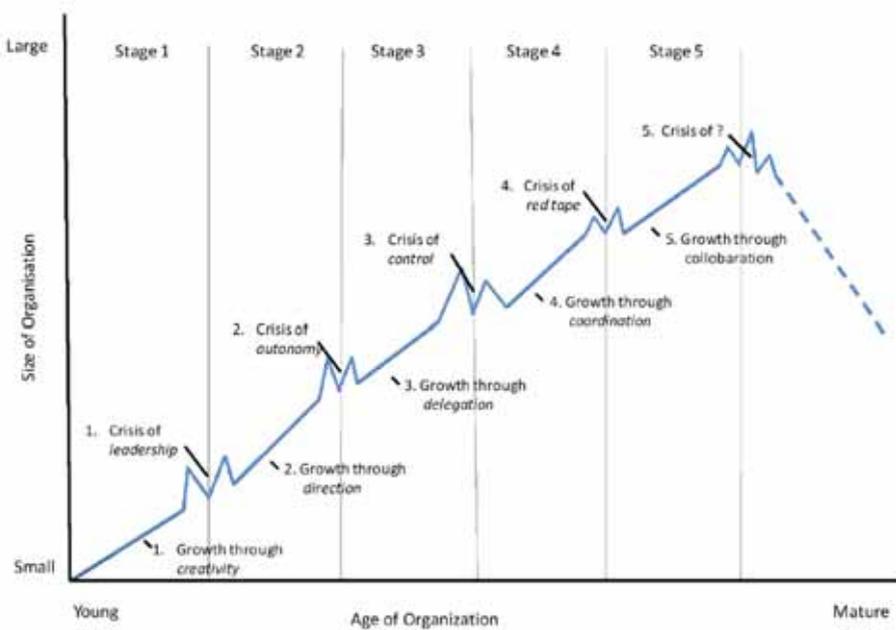**Figure 2: The model of organizational growth** (Greiner 1972)

**Table 1: The six phases of organizational growth** (Greiner 1972, 1998)

Phases	Solutions		Problems
Creativity	Founder as driving force, creativity, spontaneity, flexibility	→	Missing strategic management, missing managerial competencies
Direction	Centralization, work standards	→	Missing discretionary, cumbersome decision making
Delegation	Decentralization, management by exception	→	Departmental egoism, insufficient communication
Coordination	Implementing of staffs, planning procedures	→	Red tape, heavy staff direction
Collaboration	Matrix Organization, staff is replaced by consultants	→	Limits of internal solutions, loss of creativity
Extra-organizational Alliances	Periphery around a central money company holding-structure	→	?

In reconstructing the argumentation of Greiner it makes sense to take a closer look at the problems which dominate the respective development phases:

- unsolved internal management problems because of new participants with new motivations and knowledge,
- constrained managerial freedom because of tense hierarchical control,
- uncoordinated actions of organizational units, the top management loses control,
- mistrust between line managers and the techno-structure,
- over-engineering because of bureaucratic rules and procedures,
- managerial overload.

All these issues are symptoms of only one basic difficulty, a difficulty which is inextricably linked with the task of regulating the activities in an organization. Growth eminently aggravates this task and reinforces the tendency of corporations to oscillate between under-steering and over-steering. The corporation adapts to challenges which goes along with growth processes by changing their organization structures and their management instruments. But the adaptation more often than not goes to excess and so the supposed solutions breed new problems. In figure 3 these interrelationships are shown schematically.

Figure 3: The dialectic of under- and over-steering
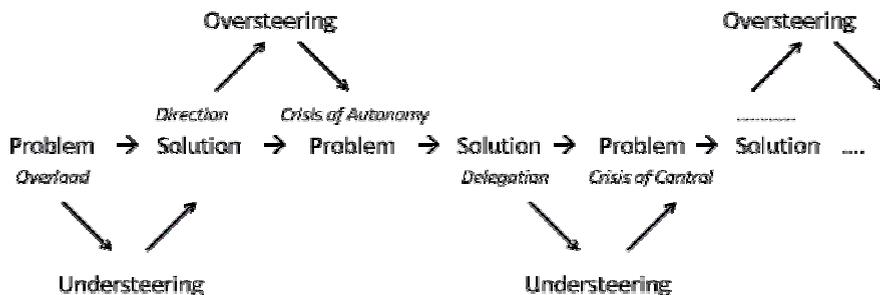
At the base lies a fundamental *structural* problem so that attempts of the actors to come to satisfactory solutions simply by adapting their actions and decisions are only partly effective. Greiner emphasizes the paradox the management cannot escape:

> "…the logic of paradox underlying the [Greiner] model continues to ring true, although it often haunts and confuses the managerial psyche. Managers have difficulty in understanding that an organizational solution introduced by them personally in one phase eventually sows the seeds of revolution" (Greiner 1998: 64).

Howsoever one wants to assess the idealized model of Greiner in detail (Hanks et al. 1993) one has to notice that it describes some elementary structural challenges, which are closely associated with every case of deep seated change. Actually these challenges are always present, i.e. even in normal times – and always simultaneously. So for example managers will always strive for autonomy and thus promote centrifugal forces in an organization. But certainly these and other problems will strongly increase in

times of intense expansion and they can easily produce a crisis of autonomy as is described by Greiner.

3.   Dialectical mechanisms in strategic change

The use of the term dialectics in the social sciences (for its use in the moral sciences see Heiss 1966; Heintel 1984) traditionally refers to the analysis of the structure of societies. So presumably it could also be helpful for the analysis of the structure of organization. And it can deliver valuable insights in studies about strategic and technological change processes, too. To be sure, the dialectical analysis focuses even in these cases on the structural dynamic and not on behavioral dispositions and reactions of single actors. Regrettably there is hardly any study which explicitly analyzes strategic and technological changes with the help of the dialectic concept but one can find in the literature some descriptions which at least touch this aspect of change. An example is found in Mintzberg (1978), who describes the process of strategic reorientation of Volkswagen in the mid sixties, a time which was characterized by the demise of the beetle and by an erratic search for new models. At last it came to a radical break. The air-cooled rear engine was replaced and the new models were based on the stylish Audi models, front-wheel drive and water cooled. The other meanwhile introduced model series were reduced and there was a concentration on only few models with partly identical components. The difficulties Volkswagen had in replacing its strategy rested in the great success in the fifties and in the resulting psychological commitment to its inherited success-strategy. In addition the bureaucratic perseverance forces hindered the decision makers to look for a new path. Actually it was clear to the managers (but not to the CEO Heinrich Nordhoff!), that a strategic reorientation was inevitable, but they did not have the required power to initiate this process. The crucial push came from continuing economic failures and only after the installation of a new top management team.

The dialectic of this case is well known by organization theorists: the conflict between organizational inertia and organization renewal. At Volkswagen for example the management for a long time tried to come along with variants of familiar technologies (more powerful engines, models with a notchback etc.), an expression of the half-hearted attempt to give consideration in an equal measure to an approved concept as well as to new developments. Only the enduring bad successes finally lead to a radical strategic change which remarkably used a new technology which was not developed by Volkswagen itself.

4.   Dialectical mechanisms in technological change

On a first look it seems odd, that technological change should be caused by dialectical mechanisms. Technical products obviously are the result of new insights and practical inventions. Not structural constraints but the imagination and creativity of single persons or of small groups seem to be responsible for technological innovations. But even for a technique the social component is of great importance, at least for its implementation, i.e. their diffusion and application, and the more so, if one does not look on single techniques (as for example concrete products, instruments or programs) but on systemic technologies or basic technologies which deliver the basis for

special applications. A vivid example which demonstrates the significance of structural contradictions in establishing technological innovations is given by Katherine Stone by her portrayal of the change in the production technology of steel in America. In the 19th century the production process was controlled by qualified workers. The foundation was the contract system in which the skilled workers contracted with the steel companies to produce steel.

> "Skilled workers did work that required training, experience, dexterity, and judgment; and unskilled workers performed the heavy manual labor – lifting, pushing, carrying, hoisting, and wheeling raw materials from one operation to the next. The skilled workers were highly skilled industrial craftsmen who enjoyed high prestige in their communities. Steel was made by teams of skilled workers with unskilled helpers, who used the companies' equipment and raw materials. The unskilled workers resembled what we call 'workers' today. Some were hired directly by the steel companies, as they are today. The others were hired by the skilled workers, under what was known as the contract-system. Under the contract system, the skilled workers would hire helpers out of their own paychecks. Helpers earned between one-sixth to one-half of what the skilled workers earned" (Stone 1974: 116).

This system was replaced by a strict hierarchy and tayloristic work methods, differentiated inducement systems and artificial job ladders. Enforced was the new order by violent industrial struggles. The Homestead strike in 1912 which was defeated with repressive means is believed to be the turning point answering the question of power unambiguously and definitely in favor of the management. In this conflict the technology plays an ambivalent role. From the employers the technical innovations (which came along with the implementation of the Bessemer method) were propagated as absolutely necessary to stand up in the competition with German and British firms. The other version calls attention to the fact that the reorganization of work and the application of the new techniques gave the management an immediate access to the work processes.

> "Under the old labor market system, the capitalists reaped profits from the production process but did not direct production themselves. The transition … is the process by which capitalists inserted themselves into a central position of control over production" (Stone 1974: 168).

Anyway, the conflicts about the design of production processes show very clearly that there is no technological determinism and that the concrete technical arrangements do have an eminent political function, an issue which was intensively discussed in the so called labor process debate (Marglin 1974; Braverman 1974; Edwards 1979). The implementation, application and concrete embodiment of technological solutions change the relationship between employers and employees and they change the power structures too. But in discussion about new technologies these considerations seldom gain the attention they deserve. Much more often one talks about greater efficiency, an interest which should unite all involved parties. However efficiency problems are inescapably connected with allocation problems, a truth which refers back to the importance of power structures. Therefore technological change is not at least the result of the dialectic between power and efficiency.

5.   Types of dialectical structures

Dialectical structures and processes take different forms. The Volkswagen case for example illustrates the contradictions that may arise between the "forces of organizing and the economic conditions,"[1] the new technology in producing steel is stimulated by class related contradictions, and the model of Greiner illustrates contradictions that inevitably arise in managing a complex social system.

In particular the following contradictions deserve special attention:

(1)   Structural-functional requirements X_{fa} $\longleftrightarrow$ Structural-functional requirements X_{fb}

(2)   Social structural interests X_{sa} $\longleftrightarrow$ Social structural interests X_{sb}

(3)   Material structures X_{mata} $\longleftrightarrow$ Mental structures X_{menta}

(4)   Mental structures X_{menta} $\longleftrightarrow$ Mental structures X_{mentb}

(5)   Material structures X_{mata} $\longleftrightarrow$ Material structures X_{matb}

The first mentioned issue results from contradictions between functional requirements every social system has to fulfill (Martin 2001). Structures are seldom harmoniously balanced. Some structures for example mainly serve the requirement for performance other structures the requirement for cooperation. Contradictions may also emerge within diverse functional areas, so for example when some incentive structures strongly foster quantitative and other incentive structures in the same degree foster qualitative contributions. The second mentioned issue results from inhomogeneous groups of actors. The third issue describes the classical contradiction between foundation and superstructure ("Basis und Überbau"), being and consciousness ("Sein und Bewusstsein"), reality of life and world interpretation. The fourth issue lies in the structures of consciousness, for example in dissimilar subcultures, in antagonistic ideologies or rotten world views. The fifth and last of the mentioned issues is embedded in life conditions i.e. for example in conflicting behavioral demands, incompatible behavior programs or opposing social processes.

6.   Conditions for change

As already described the existence of systemic contradictions is not sufficient to speak of dialectic conditions. Only when the contradictions are "genuine" contradictions in the sense of an empirical incompatibility, and only if these contradictions induce forces strong enough to move the social system one can expect that behavioral patterns will evolve that follow the dialectical steps of thesis, antithesis and synthesis. In a strict sense one should speak of dialectical structures only if the contradictions are deeply anchored in the social system, i.e. if they define the nature of the system. But even then the dialectics of social processes not necessarily lead to deep seated changes. Therefore one has to answer the question under what conditions the forces which are embedded in dialectical structures actually will cause a real change of social conditions.

This question can be answered if one looks once again at the definition of dialectical contradictions. Two aspects are of decisive significance, firstly the strength of the

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[1]   To paraphrase the diction of Marx who analyzed the contradiction between the forces of production ("Produktivkräfte") and economic relations ("Produktionsverhältnisse").

polarity and secondly its inevitability. The *inevitability* is essentially determined by the question whether the contradictions are entrenched in the deep structures of the social system and therefore with necessity will produce confrontations again and again or whether the contradictions are phenomena which reside only at the surface of the social system, and therefore easily vanish away. Of some importance is also the management of contradictions, because even if basic contradictions cannot be eliminated, the actors may be able – capabilities and institutions assumed – to cope with the contradictions in one way or another and so mitigate their power. The *strength of the contradictions* is determined by the question whether they deliver fundamental contributions for the survival and the functional effectiveness of a social system and whether they are dispensable. In view of the mental side one primarily has to look on differences in value- and belief systems and on the rigidity of common interpretative schemes.

7.   Outlook

Structural contradictions deserve special attention because of the great impact they may gain for the social order. They can be very beneficial, stimulate activity and intelligence, install checks and balances and bring up innovations. The dialectics of thesis, antithesis and synthesis may promote social and economic progress, but for that there is no guarantee. It may as well generate disruption and turmoil, a danger which is enhanced by the very characteristic of structures: their inflexibility, because, once started, change processes may develop great momentum fostered by inertia, the very force that usually prevents change. Structures cannot be changed instantly and their dissolutions cannot be stopped at will. Therefore research on dialectical mechanisms should look for conditions that foster the unfolding of the productive forces of dialectical change and that reduce its disruptive risks.

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