A self-organization perspective on strategy formation

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"(P)eople who write about methodology often forget that it is a matter of strategy, not of morals. There are neither good nor bad methods but only methods that are more or less effective under particular circumstances in reaching objectives on the way to a distant goal"

(Homans, 1949: 330)

7.1 Introduction

This chapter concludes our exploration of strategy formation in terms of self-organization. The next section summarizes the findings of previous chapters. Subsequently, we will reflect on some methodological issues. Finally, some remarks on the potential of self-organization models are made and some general conclusions regarding this study are drawn.

7.2 Summary

There is some consensus that 'strategy' concerns survival and deals with changing environments, or in other words, the way we try to cope with the world around us. Organizational strategy therefore involves the way organizations and their members cope with their environments.

This study addresses the question: how do organizations form strategies and what kind of image(s) may lead us to understand strategy formation? This study set out to provide a self-organization perspective for understanding strategy formation. More specifically, the purpose of this study is

(a) to provide a useful (set of) image(s) which helps us to understand strategy formation as a whole and not only parts of it;
(b) to elaborate this image in a systematic manner toward specific propositions;
(c) to evaluate the validity of these propositions.

The methodology of this study involves imaginizing and grounding theory. The emphasis thus lies on generating rather than testing theory. Chapters one to five pertain to theory generation, whereas chapter six especially deals with a test of the propositions put forward in earlier chapters.

Chapter one considers the existing schools of thought in strategy formation research. These are compared with an exposition of self-organization thought. This chapter distinguishes between nine schools of thought in strategy formation research, but focuses on three schools of thought: the
cultural, environmental and learning school. The cultural school emphasizes the forces of collective ideologies and cognitions on the creation of strategy. These forces tend to sustain current strategies and impede strategic change. The environmental school attributes strategy formation to the environment, especially relying on contingency thought. Certain kinds of situational conditions favor specific kinds of strategy. The learning school characterizes strategy formation as a process of adaptation by means of small, incremental steps. The focus here is on sensemaking processes conceived as continuous, incremental streams.

Subsequently, this chapter provides an exposition of self-organization thought. The following assumptions serve as an outline of the self-organization perspective to strategy formation:

1. Strategy formation takes place in a specific social system, the strategy system;
2. the strategy system involves complex flows of forces;
3. the strategy system is self-referential;
4. the strategy system develops or maintains its autonomy;
5. the strategy system combines closure (in making sense) and openness (in actions) toward its environment.

Self-organization thought emphasizes the reciprocity of openness and closure. Accordingly, strategy formation combines closure and openness: in its actions a strategy system may open up toward environmental influences, but it does so in the context of rather closed sensemaking. In this respect, self-organization thought may bring together major ideas of the cultural, environmental and learning schools. In addition, the self-organization perspective appears to offer a bridge between the so-called content and process approach.

Chapter two extends self-organization thought with dialectics, the concept of tight/loose coupling, and the concept of the dominant group. The precise nature of the reciprocity between closure and openness remains undefined in systems theory. A solution to this problem may lie in the adoption of dialectics. Dialectics provides a set of assumptions allowing for both open and closed system dynamics. The concept of tight and loose coupling denotes the degree of responsiveness within or between separate elements of a strategy system. Strategy systems are constituted by simultaneous loose and tight coupling. Looseness and tightness can be assumed to relate to each other as dialectical opposites. Finally, the dominant group is adopted as the strategy system under study. The dominant group involves the central social mechanism in strategy formation. This social mechanism may or may not connect enough people with the appropriate interests and resources.
Chapter three specifies a preliminary self-organization model of strategy formation. First, six theoretical categories, pertaining to the phenomenon of strategy formation, are presented. Basically, these categories arise by imagining how strategies form. These categories are:

1) difficulties of the dominant group
2) formation of and perception by the dominant group
3) repertoire of the dominant group
4) actions induced by the dominant group
5) actions autonomous to the dominant group
6) environment of the dominant group.

Generally speaking, the forces between these categories are dialectical in nature and may be either loose or tight.

In the second half of chapter three, observations by strategy researchers serve to identify several forces in strategy formation. We distinguish between changes around a certain steady state and changes toward substantially different states. In the steady state part of the model, the repertoire of the dominant group remains unchanged. This part of the model can be summarized in the following propositions.

Proposition 3.1a:
Difficulties activate the current repertoire.

Proposition 3.1b:
The current repertoire filters difficulties to those which can be acted upon.

Proposition 3.2:
The cohesiveness of perception supports the tightness of the repertoire (that is, higher cohesiveness will bring about a tighter repertoire), and vice versa.

Proposition 3.3a:
The level of cohesiveness of perception determines the selection of new difficulties.

Proposition 3.3b:
Major (new) difficulties tend to decrease group cohesiveness.

Proposition 3.4:
The repertoire induces group members to act, but also tends to constrain autonomous action. Tight repertoires tend to focus on inducing actions in line with the repertoire and impede autonomous actions by group members. Loose repertoires tend to tolerate more autonomy in action.

The other part of the model deals with changes toward a new repertoire of the dominant group. These changes can be described in terms of forces breaking down the old repertoire and forces forming a new repertoire. The
following propositions summarize these processes.

**Proposition 3.5a:**
Breakdown of the old repertoire is triggered by major unintended consequences of induced action. Once these unintended consequences are included in the difficulty set, they constitute misfits (anomalies) to the old repertoire. In addition, they tend to undermine group perception (i.e. decrease its cohesiveness), and, thus, support for the old repertoire decreases.

**Proposition 3.5b:**
Formation of a new repertoire is triggered by autonomous actions of (new) dominant group members. These actions introduce new perceptions into the group, and possibly also change its composition. In turn, new perceptions stimulate the emergence of a new repertoire and enable the recognition of previously neglected difficulties (e.g. unintended consequences). In addition, these difficulties increasingly fit the new repertoire.

**Chapter four** aims at a model of the formation of vertical integration strategy. As such, this chapter elaborates the model in the previous chapter, especially regarding vertical integration. Vertical integration leads to the joint administration of two separable production stages. Does the self-organization model lead us to understand the formation of vertical integration strategy? In order to answer this question, chapter four formulates a model of vertical integration strategy. The propositions put forward in the previous chapter guide the assessment of a vertical integration case as well as the evaluation of existing explanations and observations in the vertical integration literature.

According to the propositions developed in chapter four, the forces specified in the general model are also at work in vertical (dis)integration strategy. In particular, we emphasize the role of so-called behavioral difficulties, which involve threats arising from opportunistic behavior of competitors, suppliers or buyers. Such difficulties constitute severe threats to transactions with suppliers or buyers and are conceived as unintended consequences of induced action. The following three propositions are depicted.

**Proposition 4.1:**
*If* the dominant group perceives one or more behavioral difficulties that evoke complete integration
*and if* the cohesiveness of dominant group perception decreases substantially, *then* the repertoire will tend to include complete integration.
Proposition 4.2:  
If the repertoire includes complete integration and if behavioral difficulties evoking complete integration persist through time and relative to other difficulties (impeding complete integration), then complete integration will be induced.

Proposition 4.3a:  
Behavioral difficulties (evoking complete integration) arise as unintended consequences of current modes of organizing transactions with suppliers/buyers.

Proposition 4.3b:  
Change in cohesiveness of perception is triggered by autonomous actions of (new) dominant group members.

Chapter five sets out to elaborate the self-organization model with regard to innovation strategy. For dominant groups, innovation involves self-renewal by generating and adopting new ideas. As in the previous chapter the argument pertains to a specific application of the general model put forward in chapter three. A review of some previous studies in innovation strategy suggests that dominant groups have key roles in inducing as well as impeding innovation. Their repertoire is of major importance to the ability to innovate. Moreover, the formation of innovation strategy can be understood in terms of justifying new ideas to the members of the dominant group.

The literature on innovation strategy also suggests that in many cases innovation involves generating autonomous action by taking care not to suppress it. Dominant groups which incorporate such rules in their repertoire may be better able to renew themselves. However, the dominant group should exert some control over autonomous action in order to increase the chance that its results are beneficial to the dominant group. Some other studies point at the possibility of direct dominant group involvement in innovation. Direct involvement of dominant group members is observed especially in smaller and younger organizations.

Subsequently, this chapter reports the results of an extensive case-study of a Dutch agribusiness firm. Finally, a self-organization model of how innovation strategies form is formulated. This model incorporates conclusions from the literature review as well as some of the results of the case-study.

Proposition 5.1a:  
New ideas (cf. difficulties) which to a large extent fit the current repertoire activate the repertoire.
Summary and conclusion

Proposition 5.1b:
The current repertoire tends to filter away new ideas which to a large extent misfit the repertoire.

Proposition 5.2:
The ability of the dominant group to transform its repertoire is positively associated with a moderate group cohesiveness. Too high cohesiveness as well as too low cohesiveness will be dysfunctional in this respect.

Proposition 5.3a:
The level of cohesiveness of perception determines the selection of new ideas. (Thus, higher cohesiveness tends to decrease the selection ratio for new ideas.)

Proposition 5.3b:
Major new ideas tend to decrease the cohesiveness of perception of the dominant group, or, alternatively, they tend to decrease the cohesiveness between perceptions of the dominant group and major actors in its periphery.

Proposition 5.4:
When new ideas fit the current repertoire, the emphasis is on induced action. When new ideas largely misfit the current repertoire, the emphasis will increasingly be on autonomous action.

Proposition 5.5a:
Induced action with high dominant group involvement may produce new ideas which, if adopted, do not require substantial change of the repertoire.

Proposition 5.5b:
Autonomous action with low dominant group involvement may also produce new ideas which tend to be - at least initially - loosely coupled to the current repertoire. If these ideas are adopted by the dominant group (which may involve substantial change of its repertoire), autonomous action changes into induced action. Alternatively, autonomous action may also be completely decoupled from the dominant group.

Finally, the argument turns to testing theory. Chapter six deals with a test, based on Boolean logic, of some of the propositions presented in previous chapters. Such a test requires both an in-depth scrutiny of cases and a systematic comparison between those cases. For this purpose, a comparative method using Boolean logic is outlined. Some brief comments on the potential contribution of this method to strategy research are also provided. Subsequently, we turn to the selection of ten cases and a number of categories and variables which provide the coding system which is applied to these cases. Next, the coding procedure is described more extensively. The results of the coding procedure provide the data for the subsequent
In general, the results of this analysis give support for the propositions generated in chapters three and five (the propositions presented in chapter four are not included in this test). The analysis involves, first, an attempt at falsification, and second, an attempt at identification of the propositions. None of the propositions tested is falsified. Most propositions are identified but three propositions could not be identified. These three pertain to (elements of) propositions 3.5a and 3.5b, which describe how repertoire change occurs. Although the forces described in chapters three and five do seem to matter, change in the content of repertoires appears to be far more complex.

In addition, the analysis suggests that proposition 3.1a ('difficulties activate the repertoire') can be extended by the following statement: new difficulties tend to either loosen or tighten the repertoire.

The results of the analysis also point at some kind of confluence of forces. That is, forces may reinforce each other. For instance, repertoire change may only occur when such a confluence of several forces takes place. This phenomenon can not be dealt with by the analysis in this chapter. To some extent, reinforcement between forces follows from the complex nature of the strategy system itself.

Finally, the Boolean comparative method is evaluated. This method appears to enrich the toolbox for strategy research. It compensates for some of the weaknesses of the case-study and provides a way to systematically address large numbers of cases without forsaking complexity. However, the study in this chapter shows that the Boolean method cannot adequately deal with confluence of forces. In addition, the results of Boolean analysis may suffer from limitations in the coding system and coding procedure.

7.3 Methodological reflections

The aim of this study was to generate relatively new theory on strategy formation. Conventional methodology and its philosophical underpinnings (e.g. Popper, 1972) is concerned with the critical testing of existing theory and not with how this theory is generated. Thus, conventional methodology texts have nothing to offer to rebut the rather unconventional methodological position taken by, for instance, Feyerabend (1978). According to the latter, 'anything goes' when we try to generate new knowledge.

The position taken here is that the generation of new theory might benefit from the same systematic and cumulative ambition that guides the testing of theory. That is, researchers should make their point of departure as clear as
possible, especially in terms of the assumptions and images underlying their initial views. This is the *imaginizing* or deductive part of theory generation. In addition, one should use empirical procedures which link observations to theory in a simple, straightforward manner. This is the *grounding* or inductive part of theory generation.

The result of imaginizing and grounding new theory is some kind of model. Models are simplifications of the real world, or in other words, less complex systems than the real world systems they intend to describe. To a large extent such models are driven by certain favored images which lead us to see and understand phenomena in distinctive yet partial ways. At this point the fundamental question arises whether we can step *outside* these images, for instance, in order to 'test' their usefulness? Generally speaking, this author is tempted to answer: no! This position also follows from the assumption of self-reference adopted in this study. It would be naive to recognize the self-referential character of many organizational processes, and yet to continue to think of our own research activity as if it were *not* self-referential.

Some qualification of this position is necessary. First, the propositions generated with help of a given image *should* be tested. Researchers should go to great lengths to increase and test their understanding of real-world systems. In principle, conventional validity and reliability criteria can guide these attempts. However, such criteria are applicable merely to rich, well-developed theories. Most validity and reliability criteria are insufficient in exploring new ways of looking at reality, especially when the latter can only be assessed in qualitative terms. Explorative research is a *craft* activity which involves not just the application of a formal set of techniques and rules, but also the application of skills, knowledge and the personality of the researcher in varying settings (Pettigrew, 1989). As craftsmen we deal with a continuous dialogue between images, assumptions, propositions and observations. In this respect, scientific research has its subjective and artistic aspects in addition to its intersubjective and formal sides.

### 7.4 Outlook

Self-organization thought carries the potential for major breakthroughs in the study of strategy formation and the study of organizations in general.

As was pointed out in the introduction to this study, the state of the art of strategy research falls into two distinct approaches. The so-called *content* approach especially attends to the actions and positions taken on, for instance, product markets. It views the organization as made of tangible parts, such as structure, people, (e.g. administrative) systems, tasks and resources. Implicit in most content studies is the perspective of the rational manager who adapts to environmental conditions by (re)designing structures
and systems, formulating tasks and employing resources in the pursuit of simple goals, such as profit maximization. As such, the content approach is rather deterministic in kind and tends to value prescriptive inferences more than the descriptive validity of their models. That is, the primary interest is in questions such as 'how should managers formulate strategies', and not so much in the actual conditions and complexities of strategy formation.

The so-called process approach attends to the cognitive and political processes by which actions come into being. Organizations are considered here as made up of especially less tangible, symbolic processes (e.g. decision making, politics, values, cognitive frameworks). The process approach starts from evolutionary, stochastic assumptions which acknowledge the unpredictable, complex nature of strategy formation. In contrast to the content approach, recent studies in the process approach tend to value the correspondence of their models to reality more than their prescriptive usefulness.

Self-organization models may be able to transcend the traditional demarcation between these two approaches. They incorporate both the tangible and symbolic dimension of strategy systems. In addition, although the intention of the self-organization model in this study is primarily descriptive in kind, the step to prescriptive inferences may be fairly easy. In all likelihood, the prescriptive value of self-organization models is advanced by taking the perspective of the actors themselves, for instance, dominant group members.

However, if we are to accomplish this ambitious task, several fundamental questions will have to be answered. These questions constitute a research agenda:

- This study assumed that strategy systems are closed and open at the same time. This is a fundamental assumption underlying self-organization models. However, an important question remains to be answered: is it possible to develop a consistent paradigm based on open and closed system dialectics?

- Management research has offered us quite a lot of insight into what managers actually do (e.g. they emphasize informal, personal contacts instead of formal, desk work). But how do managers actually cope with the multiple and changing forces they face? Which management skills, if any, determine success and failure in this respect?

- The terminology of 'self-reference', 'flows of forces', 'repertoire', etcetera, is not used by most mainstream strategy researchers (in the content as well as process approach). The central assumptions, concepts and propositions of self-organization models therefore need to be linked to the predominant terminology in mainstream strategy research. How to do this? Perhaps we also need additional concepts?
- What kind of research methods, in addition to those employed in this study (in-depth case study and comparative analysis), contribute to the further development of self-organization models? What is the potential contribution of, for example, simulation techniques?

7.5 Conclusion

Having come at the end of this study, I hope to have accomplished the
(a) provision of a useful image which may help to advance our understanding of strategy formation;
(b) elaboration of this image in a systematic manner toward more specific models and propositions, which in turn may trigger more extensive research;
(c) (preliminary) demonstration of the validity of most of these propositions.

I am aware of certain general shortcomings of this study. A major shortcoming follows from the fact that the paradigmatic underpinnings of self-organization thought are still somewhat ambiguous. In addition, the propositions have been tested in an imperfect and preliminary way. Finally, prescriptive inferences have not been obtained. (Note that the intention of this study is descriptive in nature.) On balance, self-organization thought poses intriguing questions and deserves further exploration. This kind of research may constitute a challenging avenue for students of strategy formation.
Het begrip 'strategie' heeft betrekking op overleving in een veranderende omgeving. De strategie van organisaties betreft de wijze waarop organisaties en hun leden met ontwikkelingen in de omgeving omgaan. Deze studie behandelt de tweeledige vraag: hoe vormt men in organisaties strategieën en op welke manier kunnen we hier het beste naar kijken? In het antwoord op deze vraag staat het zelf-organisatie perspectief centraal. Dit perspectief leidt middels 'imaginizing' (conceptuele verbeelding) en 'grounding' (empirische onderbouwing) tot inzicht in strategievorming in organisaties. Het accent ligt in dit proefschrift derhalve op het genereren van nieuwe theorie en slechts in beperkte mate op het empirisch testen van deze theorie. Kort samengevat, is het doel van dit proefschrift

(a) het ontwikkelen van een perspectief op strategievorming dat niet alleen inzicht verschaft in de componenten maar ook in het geheel;
(b) het op een systematische wijze uitwerken van dit perspectief in termen van concrete proposities;
(c) het toetsen van de validiteit van deze proposities.

Hoofdstuk 1 tot en met 5 zijn gericht op het genereren van theorie en hoofdstuk 6 bespreekt een empirische test van de meeste proposities die in voorgaande hoofdstukken zijn gepresenteerd. Hoofdstuk 7 bevat een samenvatting en afsluiting van dit proefschrift.

Hoofdstuk 1 bespreekt de bestaande 'denkscholen' in het onderzoek naar strategievorming en vergelijkt deze met een eerste aanzet vanuit het zelf-organisatiedenken. Nadat een onderscheid is gemaakt naar een negental denkscholen, besteden we aan drie scholen uitgebreid aandacht: de culturele, omgevings- en leerbenadering.

De culturele benadering benadrukt collectieve ideologie en cognitie als ontstaansbodem van strategie. Dergelijke krachten ondersteunen vooral de bestaande strategie en remmen strategische veranderingen over het algemeen af. De omgevingsbenadering wijst op de omgeving als ontstaansbodem voor strategie. Verschillende omgevingscondities en andere situationele factoren (bijvoorbeeld de grootte van de organisatie) leiden tot verschillen in strategie en strategievorming. De leerbenadering beschrijft strategievorming in termen van een aanpassingsproces dat bestaat uit kleine, incrementele stappen. Deze school benadrukt met name de rol van veranderingen in betekenisgeving door actoren in organisaties (ofwel hun leergedrag).

Vervolgens bespreken we in een korte uiteenzetting van het zelf-organisatie gedachtegoed de volgende veronderstellingen:

- strategievorming vindt plaats in een bepaald type sociaal systeem, namelijk het strategie(vorming)systeem;
- dit strategiesysteem is complex en zelf-referentieel, en tracht relatief

**Hoofdstuk 2** behandelt een aantal conceptuele kaders die een aanvulling vormen op het zelf-organisatiedienen. Deze kaders zijn gebaseerd op achtereenvolgens dialectiek, strakke en losse koppeling, en dominante groep. Het ontstaan en de ontwikkeling van een *dominante groep* kan beschouwd worden als het centrale sociale mechanisme in strategievorming. In het overige deel van deze studie nemen we derhalve de dominante groep als strategiesysteem onder de loupe.

In **hoofdstuk 3** beschrijven we de ontwikkeling van een algemeen model van strategievorming in en door dominante groepen. Eerst worden een aantal theoretische categorieën beschreven:

- problemen van de dominante groep;
- formatie van en perceptie door de dominante groep;
- repertoire van de dominante groep;
- acties die door de dominante groep tot stand worden gebracht (geïnduceerd);
- acties die autonoom zijn ten opzichte van de dominante groep;
- de omgeving van de dominante groep.


**Hoofdstuk 4** ontwikkelt een model van de vorming van verticale integratie-strategie. Dit model bouwt voort op het meer algemene model in het vorige hoofdstuk. De ontwikkeling van het model vindt plaats middels de beschrijving van een casus (Hendrix' Fabrieken) en de verschillende verklaringen van verticale integratie die in de literatuur te vinden zijn. Dit resulteert in
een drietal proposities.

In hoofdstuk 5 gaan we nader in op het vraagstuk van innovatie door dominante groepen. Na een bespreking van de literatuur over innovatie, volgt een beschrijving van een uitgebreide case-studie van een Nederlandse 'agribusiness' onderneming. De resultaten van literatuur- en case-studie worden vervolgens samengevat in een model van innovatiestrategie, dat voortbouwt op het model uit hoofdstuk 3. Ook dit model wordt beschreven in een aantal proposities.

De proposities uit de voorgaande hoofdstukken worden in hoofdstuk 6 getoetst in een vergelijkende analyse van tien cases. Deze analyse maakt gebruik van Boole'se logica. De meeste proposities uit hoofdstuk 3 en 5 worden door de resultaten van deze analyse ondersteund. (De proposities uit hoofdstuk 4 kunnen niet via deze analyse worden getoetst.) De resultaten wijzen echter ook op tekortkomingen in het model dat in hoofdstuk 3 is beschreven, met name wat betreft de wijze waarop veranderingen in het repertoire van de dominante groep plaatsvinden. Bovendien blijkt dat de (versterkende of neutraliserende) interactie tussen de afzonderlijke krachten niet adequaat door het model wordt beschreven.

Hoofdstuk 7 bevat een samenvatting van hoofdstuk 1 tot en met 6, enkele methodologische overwegingen en een vooruitblik. Tot slot spreekt de auteur de hoop uit dat deze studie
(a) een aanzet geeft tot een zelf-organisatie perspectief op strategievorming dat niet alleen inzicht verschaf in de componenten maar ook in het geheel;
(b) dit perspectief op een systematische wijze uitwerkt naar concrete proposities;
(c) de validiteit van de meeste proposities in voldoende mate aantoont.