Wolfgang Lassl

The Viability of Organizations Vol. 2

Diagnosing and Governing Organizations

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To Ulli, Veronika, and Armin
for their patience, ideas, and support
and
in tribute to Stafford Beer († 2002)
a brilliant, versatile, experienced
management thinker
who had the courage to explore new ways

Contents

Introduction to Volume 2

Success does not consist in never making mistakes, but in never making the same one a second time.
(H. W. Shaw, American Humorist)

In today's volatile, fast-moving, and competitive world, where supposedly invincible positions in a market (for private-sector companies) or society (for public-sector institutions) are increasingly challenged, not correcting dysfunctionalities is almost unforgivable. After all, one's dysfunctionalities are excellent opportunities for competitors or rival institutions.

And yet, despite their impact, dysfunctionalities are not an easy topic for organizations. Two main reasons render them difficult: First, we need to discover them. The **cognitive problem** here is much more demanding than it sounds at first: How do we know that a specific organizational configuration is dysfunctional? Not repeating a mistake, as the quote at the top of this introduction suggests, requires knowing what the real mistake is.

While in mathematics and orthography it is relatively easy to identify a mistake, in real life, and especially in organizations, this is far more complicated. We are conditioned by our organization. Hence, what we perceive as "normal" is determined by the organization itself. What then is dysfunctional and what is not? one wonders if one does not possess much outside experience. Consequently, it is typically easier for outsiders to recognize dysfunctionalities than for those inside of an organization.

Furthermore, the problem of organizations and their executives and employees is that they are usually not trained to detect dysfunctional patterns. At the macro-structural level, in particular, we see that organizations lack **adequate models and a conceptual language** allowing them to express and represent systemic dysfunctionalities. And yet, without a proper language and conceptual basis, it becomes difficult to articulate and describe a problem concisely.

Second, dysfunctionalities are always **politically and emotionally sensitive issues** in organizations and calls for a change, thus, risk **politicizing and polarizing an organization**. And, who wants to risk triggering a tornado that might even bury oneself? Consequently, we prefer to ignore them and turn a blind eye to them. While there will never exist any remedy to eradicate these sensitivities, they could

be better moderated if organizations possessed and used models that could help them to "objectify" their internal discussions about any possible dysfunctionalities.

Models are usually viewed as purely academic devices, but they also have an important function in "real life": They help to create a common basis of understanding about an organization's fundamental principles of functioning. Without such a common conceptual basis, arguments and calls for necessary organizational changes are vulnerable to becoming branded as **personal opinions motivated by purely personal interests**. Models discipline the discourse and help to prevent debates from becoming too personal, while they also facilitate the expression of observations.

Unfortunately, the problem is that most organizations do not possess any other model of themselves than the **organizational chart** to discuss their organizational dysfunctionalities, particularly at the macro-structural and systemic level. The organizational chart, however, is not a diagnostic instrument and, consequently, cannot guide us in detecting dysfunctionalities. Without any proper diagnostic instruments, organizations fly blind if and when they want and need to change.

This volume pursues two objectives complementing each other: First, we want to show how the Viable System Model (VSM) can assist us in **diagnosing organizations** and **identifying dysfunctionalities** (see also the pioneering works of Pérez Ríos 2012; Espejo and Reyes 2011; Schwaninger 2006; Hetzler 2008; Hoverstadt 2008). The VSM offers a unique graphical language to visualize important aspects of the control and functioning of organizations. By experience: Whoever has gone through the school of the VSM will find it much easier to point at where the shoe pinches in an organization.[1] This volume aims to familiarize us with the language of the VSM and the most common dysfunctional patterns in organizations.

Second, we also want to **deepen our understanding** of how to manage and control organizations. In volume 1, we have only described the VSM structurally, and hence, almost as a static model. In this volume, we will render **the model dynamic** and ask what kind of **management and governance principles** we can derive from it.

This volume is organized into three parts:

In Part I (Chapters 1–6), we will focus on the **architecture of the VSM** and the **dynamic relationships** between the individual system functions. This will lay the necessary conceptual foundations for us to detect and understand many of the dysfunctionalities which can develop in an organization.

[1] At this point a disclaimer: The VSM is a model and as such it can only highlight certain aspects of organizational life. This is the strength but also weakness of models in general. Psychological or sociocultural elements, for instance, are not present in the VSM or only on a very abstract level. For such cases, one clearly needs to choose other models. A good diagnosis should always start with the choice and test of the appropriate model.

In Part II (Chapters 7–13), we will focus on **the systemic governance** of organizations (i.e., the way in which organizations should be managed and governed). To use a metaphor: Whereas the first part focuses on the elements and mechanics of a car in greater detail, the second part concentrates on how the car can and should be driven best. Here, we will discuss the fundamental laws and principles of organizational leadership and governance.

Part III (Chapter 14) is devoted to the **organization's purpose** and its vital influence on an organization's viability. To use the car example again, the purpose we wish to pursue with a car (e.g., for inner-city traffic, for long-distance trips, off-road, or racing) and how much this purpose corresponds to the car's actual technical configuration determines its longevity. Whoever defines the purpose of an organization holds an important key to the organization's viability in hands. If the process whereby the purpose of an organization becomes defined is dominated by a particularistic perspective or by one specific element of the organization, this can impede its viability and even lead to the emergence of what Beer compared to a cancerous tumor in the human body (1995: 412).

Before we start with volume 2, a word of precaution: Some of its chapters belong to the most difficult ones of all three volumes. In particular, Part II might be challenging and appear theoretical to some readers. For this reason, some words of encouragement: The principles and issues discussed in these chapters are of such a fundamental nature that they will guide you through many questions and issues arising continually in organizations. This volume will provide you with a solid and long-lasting in-depth understanding of how organizations function.

If you have only a little time available and need a first rough overview, then use this **fast-track reading plan**, which consists of the following chapters (without the in-depth sections):

- Review
- Chapter 1 to 1.3
- Chapter 2 introduction and 2.1
- Chapter 3 to 3.3
- Chapter 4 to 4.5
- Chapter 5
- Chapter 7 to 7.2
- Chapter 8 to 8.2
- Chapter 9 to 9.3
- Chapter 10 to 10.4
- Chapter 13 to 13.3
- Chapter 14

For VSM experts or readers who want to understand certain aspects in greater detail, in-depth sections have been added and marked as such:

Based on a case study, do you want to know how these auto-correctional processes affect the sustainability of savings projects?
If so, then continue reading here, otherwise, go to Section 1.2

The existence of these auto-correctional processes explains why many cost saving programs or reorganizations do not deliver their intended effects: Organizations are living systems that rebuild what has been taken from them if it is necessary for their viability.

At this point, I wish to thank Prof. Markus Schwaninger, Wolfgang Erharter, and Hannes Timischl for reading through my manuscript and providing invaluable feedback and ideas. I am also very grateful to Markus Wild who undertook the challenging and exhausting task of redrawing my illustrations and making them more appealing to a wider audience.

How can you make **practical use** of this volume? You can, for instance, compare your organization or area of responsibility with the dysfunctionalities described in this volume. Try to evaluate on a scale from 1 to 10 to what extent these dysfunctionalities can be found in your organization. Then, reflect what levers exist to correct these dysfunctionalities.

Instead of doing this alone, it might be even more enriching to undertake this exercise in a group and then compare the (anonymous) evaluations of all participants with one another and discuss the different assessments. You will undoubtedly win an annual program of fruitful ideas for the improvement of your organization.

Last: Perhaps you might feel that this book specifically addresses **your** organization's dysfunctionalities. This might be the case, but it is not intended. Do not worry; we are always talking about other organizations ….

Paris, February 2019

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Review of Key Concepts

Before we begin to deepen our knowledge about the VSM and its possibilities to diagnose organizations' dysfunctionalities, we should briefly review four basic concepts[2] to which we will refer throughout this volume (for those who have not read volume 1 or Stafford Beer's works):

1. **Ashby's Law** and its application to organizations,
2. The **Viable System Model**,
3. The VSM's **four management levels**, and
4. The principle of **recursivity**.

Ashby's Law

In the first volume, we said that the processing of complexity is the basis and livelihood of organizations. For this, organizations need **requisite *eigen*-variety** such as sufficient resources, competencies, and instruments. **Ashby's Law** demands that the variety of the environment and the organization's *eigen*-variety must match; otherwise, the organization cannot become viable, i.e., independent and self-governing (see volume 1).

However, since the organization's *eigen*-variety such as resources and competencies is never sufficient compared to the environmental variety, each organization additionally needs attenuators of environmental variety (represented by the electrician's symbol of a zigzag-line) and amplifiers of its *eigen*-variety (represented by a triangle) to meet the expectations of the environment (see Fig. 1).

[2] All figures in this review chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37), if not specified otherwise.

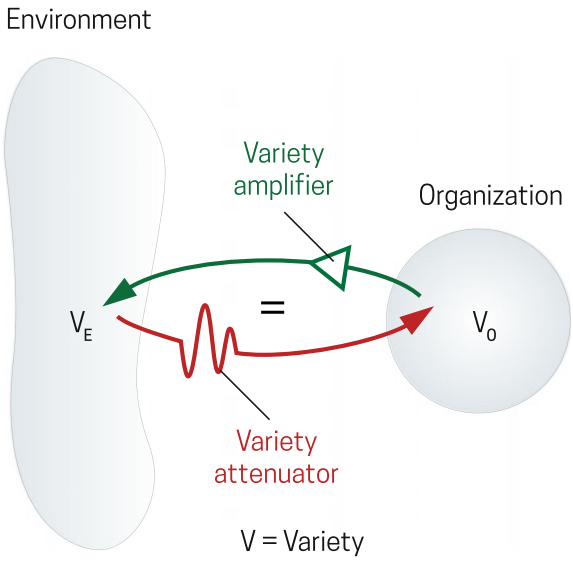

Fig. 1 The relation between environment and organization as an exchange of varieties—(adapted from Beer (1995a: 96, Fig. 21))

The Viable System Model

The general equilibrium relationship in Fig. 1 is not yet sufficient to explain how precisely organizations become viable. The question instead is what kind of internal organizational processes are needed to achieve self-governance and autonomy at all. Starting from this question, Stafford Beer developed the **Viable System Model** (VSM), which identifies the system functions (short: "system") required for an organization to become viable (see Fig. 2[3]):

- **System 1:** Implementing the organization's operational purpose (composed of an operation, its environment and management),
- **System 2:** Coordinating the systems 1,

[3] In this book, we use the term "system 1" for the triad environment-operation-management (the environment, of course is separate but in ongoing interaction with the operation and organization). For Stafford Beer in his later works (1995a; 1995b) system 1 comprises all triads and one triad is called "elemental organizational unit" or "operational element" (1995a: 96 and 121). The reason for the narrower scope chosen in this book and that follows earlier terminology (Beer 1984: 14f and Beer 1995c) is a more parsimonious terminology that facilitates the explanation of the VSM and highlights better the specific task of the metasystem to create unity out of individual elements. By calling all triads as system 1 and using the same color, I also hope to sufficiently express the aspect that together they form the operational core of the organization generating its purpose and belong to the same type of systemic function.To better express the self-coordinating dimension of system 2 envisaged by Beer (1995c: 127f), connecting lines (light blue) between the system 1 management units were added to system 2 in the original model. Due to reasons of simplicity, we only show the channels between the system 1 management units and system 3 and not the channels between these management units in our graphical model. For the same reason, we don't show the local regulatory center in our graphical representation of the VSM, which nevertheless is an integral part of every system 1.

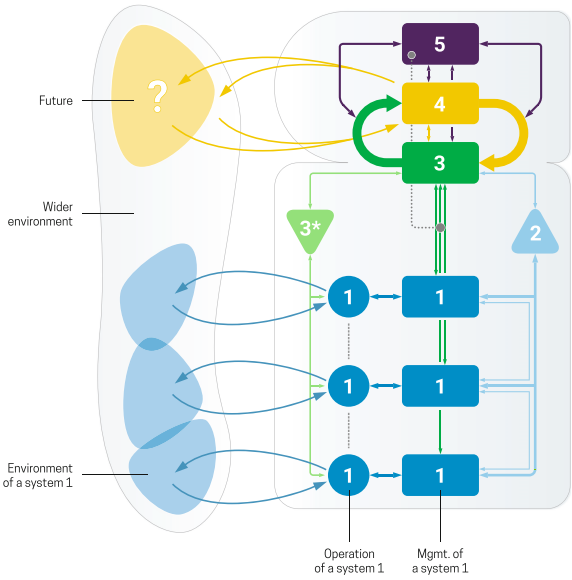

Fig. 2 The Viable System Model—(adapted from Beer (1995b: 136, Fig. 37))

- **System 3:** Controlling the systems 1 as well as allocating resources and synergies,
- **System 3*:** Auditing,
- **System 4:** Observing the wider environment and unknown future, innovating, and developing strategies, and
- **System 5:** Developing long-term policies, principles, and norms.

The Four Management Levels

These system functions can be grouped into four management levels (see Fig. 3):

1. The **operational organization** (consisting of the systems 1), which produces the organization's purpose,
2. The **operational metasystem**, so system 2, 3, and 3*,
3. The **strategic metasystem**, so the strategic side of system 3 and system 4, and
4. The **normative metasystem**, so system 5, the algedonic channel and system 5's ethos.

The Principle of Recursivity

Another important concept in the VSM is **recursivity** (see Fig. 4). Recursivity refers first, to the process whereby an organization becomes vertically differentiated into several levels, and second, on a more fundamental level, to the similarity that needs to be developed between the recursion levels regarding their control models and processes. For an organization to become viable, three conditions must hold regarding its vertical structure:

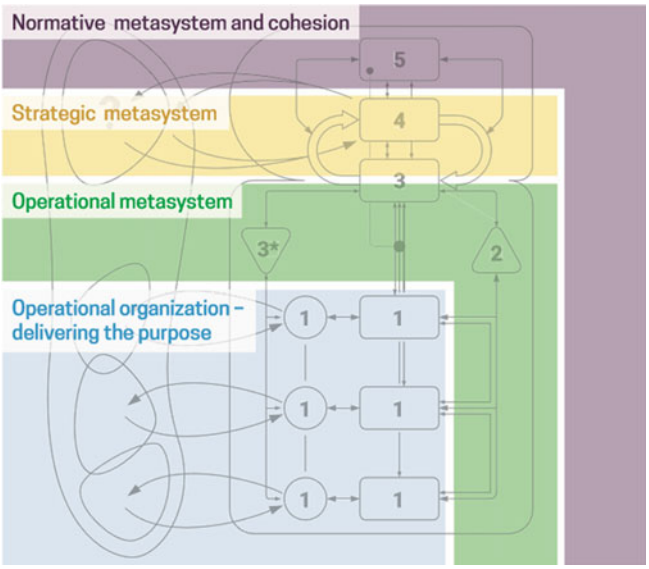

Fig. 3 The four management levels of an organization—contains adaptation from Beer (1995b: 136, Fig. 37)

1. all levels must be fully equipped with all system functions, information channels, and control processes, i.e., be **fully functional viable systems**.
2. all levels must share similar (or at least compatible) **control principles, language, and models**.
3. the levels must be **embedded** in the next higher ones (i.e., connected to them through inter-recursive channels).

With these four basic concepts, we now have all the necessary building blocks to start the second volume ….

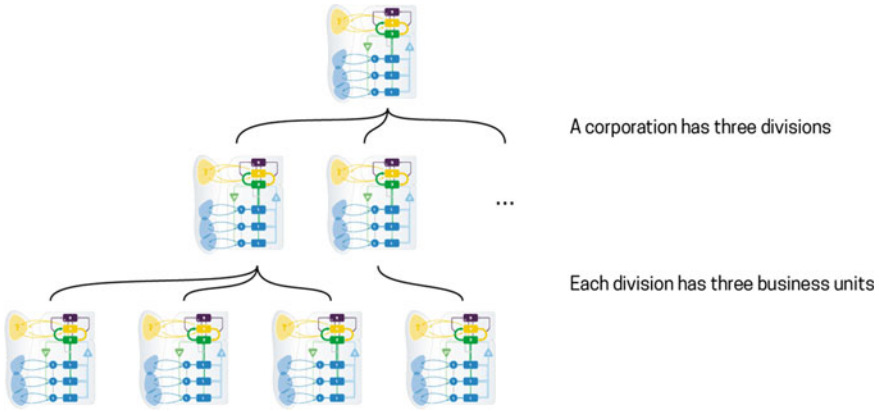

Fig. 4 Recursivity: organizations must have developed a fully viable system at each level—(adapted from Beer (1995a: 315, Fig. 51) and Leonard (1989: 189, Fig. 5))

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Part I
Diagnosing the Systemic Architecture of Organizations

Overview

Admiral Nelson started the Battle of Trafalgar, one of the greatest naval battles of the nineteenth century, with the famous order to his fleet: "England expects that every man will do his duty …" In the case of organizations, every system function and information channel must also be ready, fully developed, and located in the right spot to take over its share of variety processing. However, this is not always the case, and the **dysfunctionalities in an organization's systemic architecture** are what we will discuss in this part of the book:

In Chapter 1, we will get acquainted with the most fundamental dysfunctionalities, such as the lack of certain system elements. Among many insights, this will give us the chance to understand why savings projects might fail to deliver their desired long-term effects if they do not take into account the laws of viability.

The VSM that we have discussed until now has been static. Chapter 2 deepens our understanding of the VSM by presenting it as a system of multiple dynamic equilibria. Chapter 3 builds on this dynamic perspective and introduces us to the many imbalances that can occur within the systems 1. Chapter 4 continues the discussion of this type of imbalances regarding the metasystemic functions, which are often harder to detect than the more concrete dysfunctionalities of the systems 1.

Until then, our discussion will only have focused on the status of an organization at a specific point in time; however, organizations also evolve and face different problems throughout their entire life cycle. Chapter 5 models the development of an organization along the life cycle using the VSM and shows us which dysfunctionalities can appear during the lifetime of an organization. This temporal perspective introduces us to an application of the VSM: the **simulation and testing of new organizational structures**, which is particularly useful for strategy projects. The dictum "the structure follows strategy" is known, but the question is also: "Can the structure follow the chosen strategy?" With the VSM, we can assess beforehand whether an organizational structure allows the implementation of a specific strategy.

Whereas Chapters 1–5 focuses on the dysfunctionalities within one recursion level, Chapter 6 introduces us to the dysfunctionalities related to the **recursivity of organizations**. This allows us to address another set of fundamental design questions, such as: How many hierarchical levels does an organization need? If you now think that the answer must necessarily be "Less!," then get ready for a surprise!

1 "This Has Historical Reasons …"—Dysfunctionalities in the Basic Architecture

"Who actually manages this in your organization ....?"—
"Good question, no idea." (Manager)

In the course of reorganization projects, one quite often and quickly comes to this kind of dialogue. It takes place, for example, if, in an organization, the real decision-making power is not where it is supposed to be according to the organization chart. This kind of dialogue is usually continued with the comment: "You know, this has historical reasons…" which is then often a fairly certain indication that the current structures need to be adapted.

Over time, organizations become museums of earlier structural decisions, where one has not only forgotten to adapt the structures in view of new circumstances but also where one cannot even remember anymore the reasons for the current structure. Executives and employees are often aware that their organizational structures have become outdated and lack logic, but seldom do they actively pursue changes. One reason is the difficulty to conceptualize and picture the problem clearly enough, combined with the uncertainty about one's judgment. One only has a gut feeling, but how does one substantiate and express it? And, what are the alternatives?

Doctors know how a healthy body should, ideally, function and they become trained to recognize pathological patterns. For most people, such an overview showing the main "body functions" of an organization and a set describing possible dysfunctional patterns are still missing. The VSM can help us here because it provides us with a map and systematic guide into the functioning of organizations. It tells us which system functions and information channels are necessary for an organization to become viable and function properly. This enables us to deduce systematically the dysfunctionalities that can occur. In this chapter,[1] we will start with the most fundamental ones, namely, the dysfunctionalities resulting from

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37) if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

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1. Missing system functions,
2. Incorrect connections between the system functions,
3. Divisions within system functions, or
4. Incorrect relationships to the environment.

1.1 Dysfunctionalities Due to Missing System Elements

In volume 1, I told the story of a customer who spontaneously exclaimed after the explanation of the VSM: "Now I know what is missing in our national soccer association: we have no system 4!" I will not reveal the country here, but perhaps this insight applies to many national soccer associations anyway. This comment remains so memorable to me because it confirmed not only how intuitive the VSM is but also how much it can assist us in identifying and naming problems quickly and precisely. And this is one of the key prerequisites of effective management: Only if one can describe problems clearly is one able to address and change them.

This insight of the customer brings us to the first group of dysfunctionalities, namely, the cases in which one of the **system functions is missing** (see Fig. 1.1). These dysfunctionalities are quite common; for instance, poorly managed projects often lack essential control (missing system 3) and coordination mechanisms (missing system 2). The complaint that "everyone is doing whatever he or she wants" is often the expression of missing system 2, 3, and 3* functions. Very

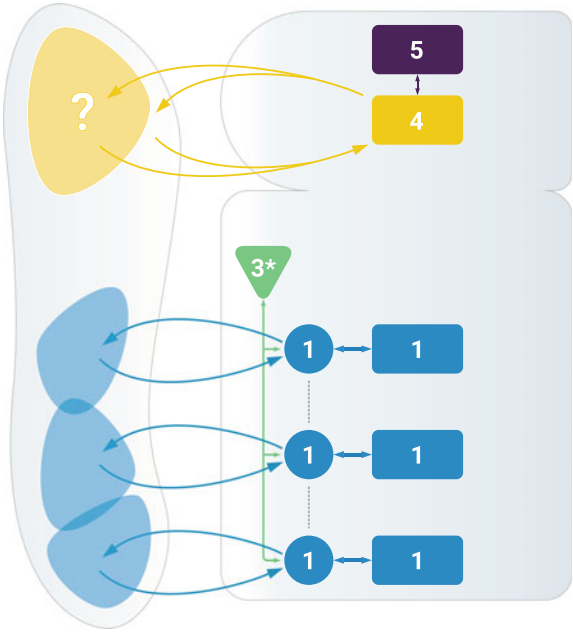

Fig. 1.1 Without systems 2 and 3, no one manages the operational organization

decentralized or young organizations that, at the beginning of their growth phase, have not yet found the time to develop their internal processes face a similar problem (see Chapter 5 for more details). Organizations with a strong consensual culture, with severe internal power struggles, or without a clear power center also typically lack a robust system 3 and 3*.

A severe dysfunctionality consists of a missing system 4 (see Fig. 1.2 and Beer, 1984: 18f, Pérez Ríos, 2008: 409, 2012: 148f). In this case, the organization focuses only on its internal procedures and forgets what is happening around it in the wider environment and how it should prepare for the future. This dysfunctionality is especially dangerous since a missing system 4 remains unobserved for a long time. Its absence does not disturb anyone in the daily routines (as opposed to a missing system 2 and 3). After all, if you are successful and live well with the current strategy and organization, what else do you need?

And yet, a missing system 4 not only has severe consequences for the organization's fundamental adaptability and rate of change but also for its internal governance and decision-making processes; without a system 4, system 5 risks ultimately collapsing into system 3 (Beer, 1984: 18). Deprived of a critical system 4 that questions system 3 and offers new and different approaches, system 5 can only follow system 3's "advice." These are, for example, the supervisory bodies that only rubber-stamp what is presented to them by their executive management; in such a scenario, the organization does not evolve further or only on a linear and very predictable trajectory.

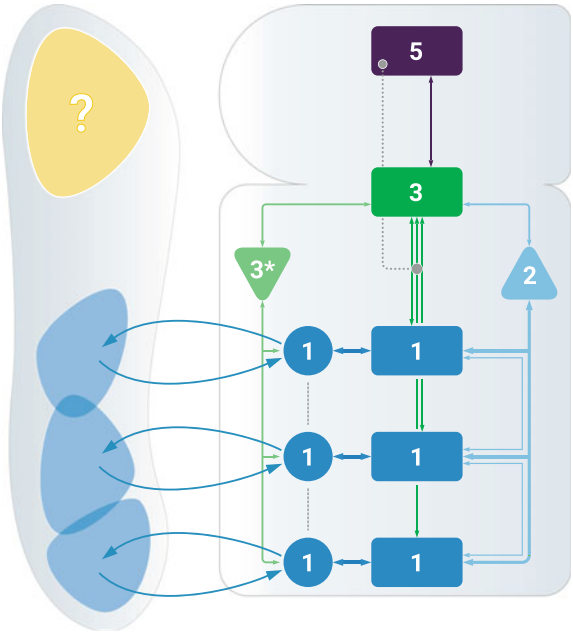

Fig. 1.2 An organization without a system 4—an organization without a future? (adapted from Pérez Ríos (2008: 409, Fig. 22))

In Table 1.1, we generalized these types of dysfunctionalities and described the organizational consequences for every missing system function:

Table 1.1 Consequences of missing system functions (overview)

A missing …	Leads to (examples) …
System 1	… "talk the walk" organizations, where one only talks about projects, products and the possible benefits for the environment, but where these "talks" never become implemented. The concrete products or projects exist only as intentions, ideas, and imaginations without concrete results—many plans, but no or only limited execution
System 2	Conflicts between the systems 1 and a lack of coordination
System 3	• Lack of synergies • Lack of accountability and responsibility for the overall organization • A dominating system 4 that overloads the systems 1 with new ideas since no system 3 filters and dampens system 4's drive for change
System 3*	• Lack of quality control and ignorance of the organization's norms and standards • Lack of operational optimization projects • A culture of "Everyone is doing as one pleases" • Repeatedly occurring "surprises" such as scandals and crises since no one searched for them in their early stages
System 4	No innovation and strategic development of the organization.
System 5	• Lack of a final decision-making authority • Paralysis due to the lack of a common identity, purpose, and decision-making principles

As we can see, it is essential for the viability of an organization that all system functions are fully developed. If not, the organization risks losing its adaptability and becoming dysfunctional.

Furthermore, internal processes risk becoming more complicated, since the areas affected by these dysfunctionalities must develop alternative mechanisms to compensate the missing but vital functions. Consequently, they try to rebuild them. Although these **auto-correctional processes** help to mitigate the problem partially, the downside of these "workarounds" is that they often need to remain undetected, especially if the dysfunctional constellations are created intentionally. These alternative processes hence reduce the self-transparency, controllability, efficiency and effectiveness of the entire organization.

How does one detect missing system functions? Recurring organizational conflicts often are a good indicator of the lack of vital systemic functions. Persistently erupting conflicts should hence not be treated as a nuisance but as a warning signal about deep-seated dysfunctionalities.

Based on a case study, do you want to know how these auto-correctional processes affect the sustainability of savings projects?
If so, then continue reading here, otherwise, go to Section 1.2

The existence of these auto-correctional processes explains why many cost saving programs or reorganizations do not deliver their intended effects: Organizations are living systems that rebuild what has been taken from them if it is necessary for their viability.

In a large logistics company, all controlling units of the business units became bundled into the department of the finance director. Expressed in the VSM language, the reorganization abolished the local regulatory centers of the systems 1 (i.e., the business units) and transferred them into the regulatory center responsible for the whole company (see Fig. 1.3).

This measure had cost saving, but also political reasons, since whoever controls the numbers also controls the discourse and decisions in an organization. However, this reorganization had two negative consequences:

First, the transfer of the controlling functions to the corporate level not only extended the information paths but it also changed the perspective of the controllers responsible for the business units. They were now part of a higher recursion level. Consequently, the reorganization led to recurring translation problems between the different levels and forced the business units to spend more time explaining their problems and strategies.

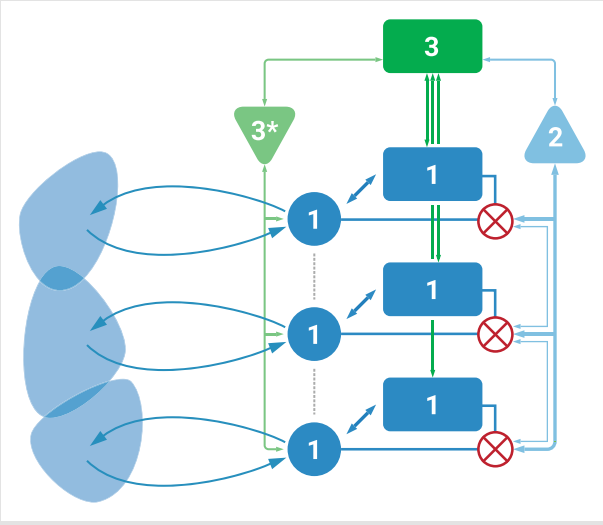

Fig. 1.3 A savings project abolished the BU controller, i.e., the local regulatory systems (crossed-out circles)

Second, as the BU heads lost their controllers to the metasystem, they then had to take over the reporting duties for their BU. They became their own regulatory center and controllers, and hence mainly occupied with writing reports, compiling statistics, and drafting and monitoring plans, instead of making decisions. In this situation, the BU heads no longer found themselves in a position to match the reporting requests by system 3, i.e., the corporate management. They felt they were being overloaded and only worked on explaining the past performance (this is what reporting is mainly about) and not on developing the future as they should.

Since this was not viable, the BU heads began gradually rebuilding their regulatory centers by creating new positions. These positions could not be called "controlling" anymore but were instead hidden behind titles such as "business analyst" or "new business developer." On closer inspection, however, it was clear that the profiles of these new jobs were almost identical to the former BU controllers. The system had, in the end, rebuilt itself. Unfortunately, it had also increased in size, since apart from the central controlling, it now included the new "clandestine" BU controllers.

Thus, while cutting costs is a legitimate and often necessary objective, one must always ensure that the *eigen*-variety of the various organizational units does not become seriously impaired. To avoid such a situation, one always needs to estimate how a certain cost-cutting measure might affect an organization's viability and whether it is indeed the best way to achieve a certain objective.

Organizations, for instance, often centralize processes or units to compensate for the lack of transparency and cohesion, assuming that the closer people sit to the center, the more one knows what is going on in the periphery of the organization and the easier it can be controlled. This can turn out to be illusionary since over time the centralized employees will lose their knowledge about the decentralized units or, even worse, they will face distrust and will be kept at a distance from their former colleagues in the decentralized units. Thus, contrary to the widely held belief, centralization does not mean necessarily that it fulfills its purpose and that one will know more in the end.

Whoever fights the lack of transparency should address the problem directly at its source. A better way could be, for instance, to intensify the flow of information between the decentralized and central units instead of their relocation. Frequent visits to decentralized units and talks with their staff often reveal more than the centralization of staff. After all, the vital point is not primarily where one's office is located, but instead how well the information channels between the central and decentral units function.

1.2 Dysfunctionalities Related to the Control and Information Channels in the VSM

Another dysfunctionality relates to **erroneous connections between the system functions** (see Beer, 1995a: 454ff); for example, if system 5 builds up a channel to the systems 1 and thereby takes over the control function of system 3. In this type of organization, system 5 renders system 3 (see Fig. 1.4) superfluous. At the same time, system 2 and 3* are also often affected. Unaware of all the operational plans, regulations, and standards set up by system 2 and 3*, system 5 commands what it deems to be right, and consequently, in the worst-case scenario, causes confusion and chaos.

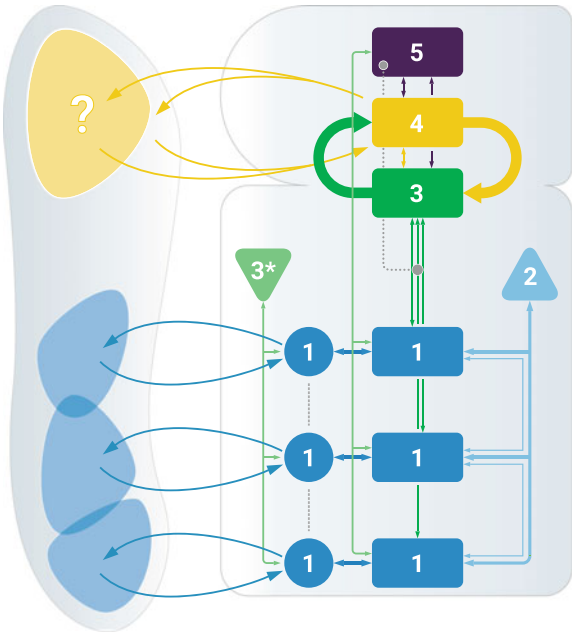

Fig. 1.4 The dysfunctionality of a system 5 committee that manages the system 1 management units directly, ignoring systems 2, 3, and 3*

These are the organizations where, for instance, the supervisory board interferes directly in the operational business by bypassing the management. The problem with this dysfunctionality is that system 5 renders not only system 3 superfluous but also takes decisions without sufficient knowledge of the technical aspects of the operation. It thus risks provoking dangerous oscillations in the organization.

However, channels might not only be wrongly connected but also simply missing; for example, if the accountability and responsibility channel between system 3 and the systems 1 has not been established (see Fig. 1.5). In this case, the commands from system 3 do not reach the systems 1.

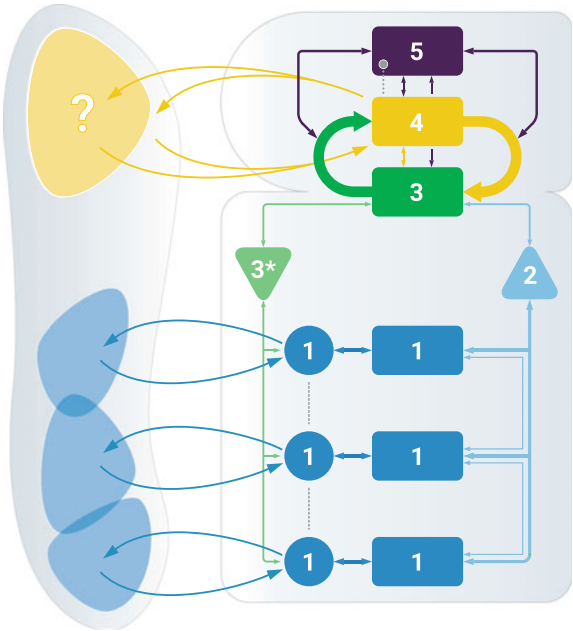

Fig. 1.5 Organization without the central accountability and resource bargain channel

We experience such a dysfunctionality, for instance, in organizations where no mechanisms are in place to make units accountable, where subordinate units can excuse themselves, or where executives do not want to command or sanction their subordinates. The systems 1 can then turn a deaf ear to system 3 without fearing any consequences. As a result, system 3 becomes ineffective, and the systems 1 do whatever pleases them. Agreements between the metasystem and the systems 1 become nonbinding, and the organization risks disintegrating.

Problems related to missing channels are also often found in the context of system 2 (see Fig. 1.6); for instance, if it is not connected to all systems 1. This constellation arises in the cases of too much informal coordination. Informal coordination has the advantage that it is very efficient and requires little energy, but it does not ensure that everyone knows what should be known (see also volume 1). This lack of involvement is often reflected in the amount of "surprise" generated in others regarding what has already been agreed somewhere else in the organization and the subsequent calls for more formalized procedures, transparency, and coordination.

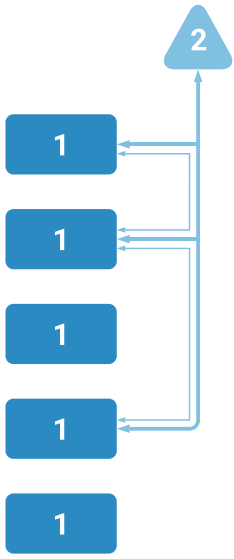

Fig. 1.6 Dysfunctionality of a system 2 that is not connected to all systems 1

1.3 Dysfunctionalities Due to Divided System Functions

Metasystemic dysfunctionalities, where the system functions do not work in a coordinated way, are also highly dangerous to an organization's viability. This can be the case, if, for instance, various executives or managers exercising a metasystemic function work on the same issues without coordinating with each other (see Fig. 1.7). These dysfunctionalities are particularly frequent in matrix organizations where different units pursue different strategies and objectives regarding the same operational area. Companies with two or more owner families who have different ideas about the management of their jointly owned company are also likely victims of this type of dysfunctionality.

The metasystem becomes divided, and the lower levels in the organization must work for different heads—a truly "schizophrenic" situation (see Pérez Ríos, 2012: 147f; Schwaninger, 2006: 965).

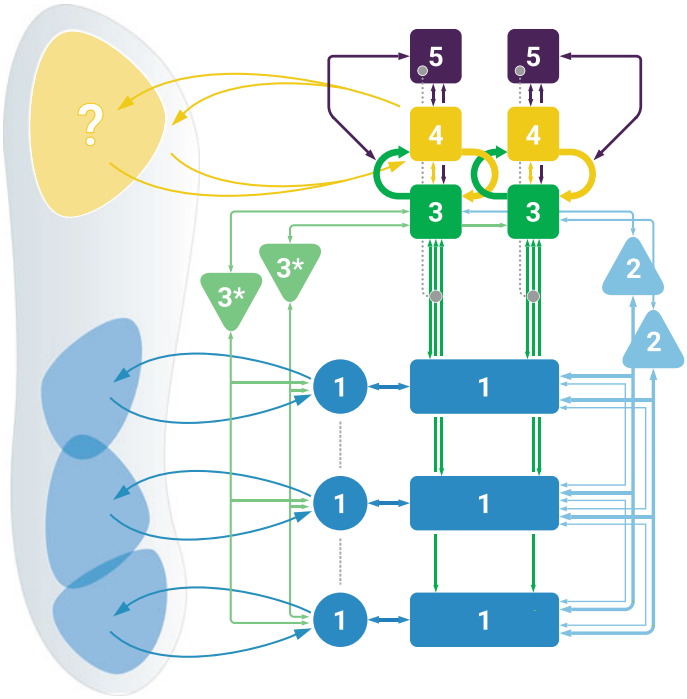

Fig. 1.7 A divided metasystem (e.g., in a matrix organization) (adapted from Pérez Ríos (2008: 410, Fig. 21))

1.4 Dysfunctionalities in the Organization–Environment Relationship

Environment and organization form a mutually responsive system, as previously mentioned in volume 1. Accordingly, the diagnosis of an organization must also include **the organization's relationship to its environment** and more specifically, its boundaries. The environment only becomes an environment and the organization an organization if **a boundary is drawn** between them (in most cases by the organization).

Boundaries are thus constitutive devices for organizations and they help them to carve out a decision-making space that does not constantly become influenced by the environment. Boundaries protect the organization and allow it to organize, structure, and reposition itself (see Luhmann, 1987: 35f and 51ff). Whoever does not create boundaries and a space protected from the environment becomes a plaything exposed to the tides of the ever-changing environment: One can then react only to the changes in the environment without developing objectives, strategies, and synergies (Fig. 1.8).

Fig. 1.8 "Do not cross this line!"—boundaries limit but also create stability and predictability (© Fotolia/stock.adobe.com; artist: Igor Stevanovic)

Such boundaries can be found in many forms, for instance, in legal provisions such as the GTC or warranties offered. These legal instruments determine which variety (e.g., liability claims and complaints) needs to be processed by the organization and which one does not.

These boundaries also need to be drawn, for instance, toward the employees' private life and behavior. Though often overlooked, the employee, as an individual, also constitutes an environment to the organization. Consequently, the onboarding and enculturation process of new employees consists of teaching them what kind of behavior is considered as "professional," acceptable to and expected by the organization once they walk through its gates and which one should be better left to the private sphere.

Managing the organization's boundaries is vital, and in this regard, failure can result in various dysfunctionalities, as we shall see below.

1.4.1 Inadequate Boundaries Between the Environment and Organization

An organization might become dysfunctional, if, for instance, its boundaries are unclear (see Fig. 1.9). **Without any, or with too weak boundaries**, the organization

Fig. 1.9 Without clear boundaries, the organization risks diffusing into the environment

risks diffusing into its environment. Whatever impulses come from the environment pass directly into the organization without any filter. These are the cases where, for instance, everything is done in the interest of the customer. The organization then fails to become self-determined and does whatever the environment demands it to do, and in the end, the organization risks losing its specific identity.

Subcontractors whose employees have become an integral part of the company for which they are working face such a problem. Over time, their employees might feel more attached to the contracting company than to their own, thus causing the inevitable question to arise in their company: "On which side do you stand?"

The other extreme concerns companies whose **boundaries are so firm** that they barely let anything pass from the environment into the organization. In such a situation, an exchange with the environment hardly takes place (see Fig. 1.10). These organizations lead what might be called an **autistic life**.

This dysfunctionality is so dangerous because over time it becomes difficult for the organization to detect it. The reason for its undetectability is that the organization gradually begins to substitute the real environment with a projected image of the environment it wishes to see. The "environment" the organization is referring to is then just the reflection of its own identity, wishes, and self-understanding. This "environment" consequently tells the organization only what it wants to see. The organization has limited chances to detect where it acts wrongly or should act differently. It can only see itself and in an extreme manifestation, the organization's relationship to the environment develops into a soliloquy. Organizations with a particularly strong identity or organizations working in the field of faiths, convictions, and ideologies (e.g., religious organizations or political parties) are especially vulnerable to this type of dysfunctionality.

How can we detect such a dysfunctionality? If an organization is not surprised anymore, if it becomes confirmed in its opinion every time, or if it wants to avoid direct contact with the environment and closes its ears to customers and noncustomers alike, we should become alert: these can be fairly good indicators of a developing "autism."

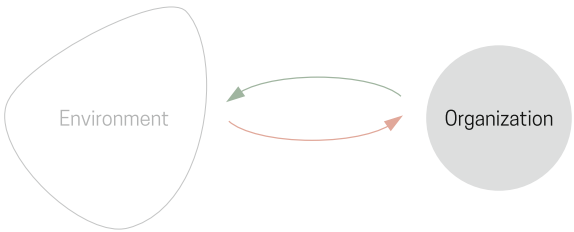

Fig. 1.10 An autistic organization barely notices the environment

Do you want to know how expectations and hope affect an organization's sensors?
If so, then continue reading, otherwise, go to the end of this chapter.

1.4.2 Faulty Sensors and the Role of Expectations, Hope, and the Organization's Self-image

To draw boundaries also requires knowing where to find the environment, how it is structured, and what kind of variety it contains. Here, the organization's **information sensors** to the environment and their **analytical capacities** play a crucial role. Failures in the assessment of the environment can often be the result of insufficient or incorrectly working environmental sensors.

Are the customer and the market where one assumes them to be? Do the assumed and real scope and structure of the environment correspond to each other? Market signals can easily become misinterpreted: Contrary to an organization's initial assumptions, the real customer might have different needs or can be reached only through other channels than the assumed ones. The market might then be in fact somewhere else, larger or more diverse than originally thought or smaller than expected (see Fig. 1.11).

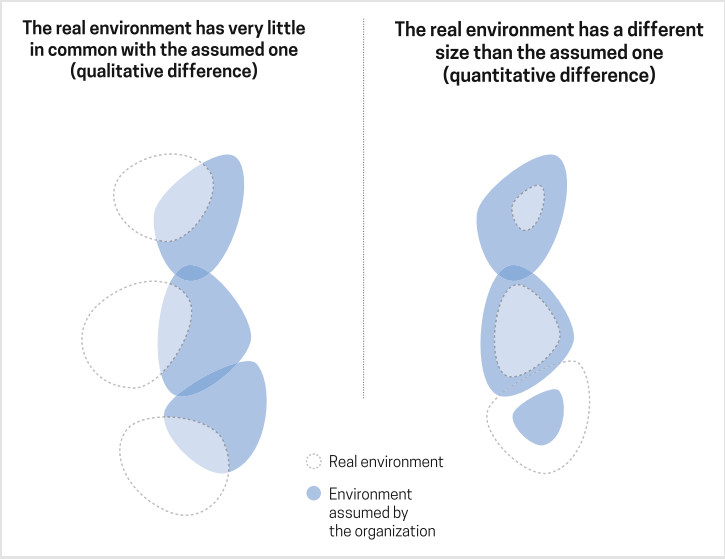

Fig. 1.11 Wrongly tuned sensors and wishful thinking lead to an erroneous perception of the environment

While one must always live with certain margins of error in the assessment of the environment, the problem here is that the organization might be held hostage by the **expectations and promises** it has made; for instance, to the stock market, investors, or owners. Such a setting then might tempt or even force an organization to **tune its sensors** in such a way that they transmit the desired information and signals.

Tuning sensors can especially occur in adverse situations, such as in shrinking markets, which the organization refuses to acknowledge. In this situation, **"hope"** becomes a double-edged sword. Hope lets us accomplish many challenges, but it also lets us deny realities and the necessary adjustments. Hence, it is worth remembering that hope can be a virtue, but also a vice. Companies sometimes fail not because of a lack of hope but due to **too much hope**. False hope lets one see things that are not there. If the "hope" for a market rebound is the only justification left, then this might be an indication that it would be wiser to start recalibrating one's perception. To avoid falling victim to one's hope requires continual questioning of the data obtained from the environmental sensors and allowing expectations and promises to be revised.

A bit similar to this are organizations that have become victim of the so-called "**Street Light Effect**": One does not look for a lost coin at the place where it has been lost, but where it is brighter and searching easier. These are the organizations that secretly know that the customer wants something else, but for the **sake of their convenience**, continue trying to "delight" the customer with the current product, even if it does not make him or her happy anymore. The reasons for this type of dysfunctionality are manifold: They can lie in perceptual or cognitive deficiencies but also in one's **comfort or self-image**.

Sticking too much to expectations, promises, hope, self-image, or convenience might ultimately require the organization to ignore the information provided by its sensors or to "tune" them in such a way that they provide more suitable "information." In extreme cases, these sensors are silenced and removed completely; the organization then becomes blind and deaf to its environment.

1.4.3 The Problem of Overlapping Environments

Another widespread problem for organizations concerns **overlaps and uncontrolled channels between the environments** that are serviced by the operation (see Fig. 1.12). Such constellations lead to interactions between environments and must be regulated by system 2 in an often costly and contra-productive manner (see volume 1). Typical cases are, for instance,

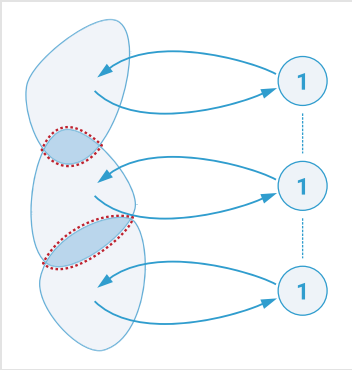

Fig. 1.12 Overlapping environments cause conflicts in the organization

customers who circumvent market boundaries (e.g., gray markets through parallel imports such as in the pharmaceutical industry) or exchange information on products and prices.

Summary

- Dysfunctionalities emerge if the system functions, information and control channels, as described by the VSM, are missing, underdeveloped, or incorrectly connected.
- Organizations must ensure that all system functions and their representatives operate in a unified way. Internally divided system functions, as in the case of matrix organizations, belong to the main causes of inefficiencies or even paralysis in an organization.
- Missing system functions or channels can lead to auto-correctional processes resulting in inefficient workarounds. The emergence of such auto-correctional processes must be monitored by the organization regularly since they can be evidence of deep-seated systemic dysfunctionalities.
- The equilibrium system between the organization and its environment is determined by the organization's boundaries, sensors to the environment, and segmentation of the environment. Faulty sensors, ill-calibrated boundaries, or wrongly segmented environments hinder the varieties to adjust according to Ashby's Law. Consequently, the organization and its environment become misaligned.

Questions for Reflection:

1. How well are the system functions developed at each level of your organization?
2. How much do auto-correctional processes take place in your organization? How much is your organization characterized by unnecessary "workarounds" and "detours" that are put in place to compensate for structural deficiencies (on a scale from 1 to 10; 1 = many workarounds, 10 = very few workarounds)?
3. How much are the system functions in your organization divided?
4. Imagine you ask the environment of your organization (e.g., customers, suppliers, banks): "How do you evaluate our organization's ability to capture and understand you?" How would your relevant environment assess your organization on a scale from 1 to 10 (1 = low, 10 = very good)?
5. How well do employees of your organization know its boundaries? How well are they trained in recognizing and respecting the boundaries?

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2 "Preventing Chaos"— The Dynamic Perspective of the VSM

Looking at organization charts, one might believe that there is nothing more solid, stable, and well-structured in the world than an organization. Don't the rectangles in the organization chart remind us of ice cubes or bricks that immovably weather all storms (Fig. 2.1), and don't the reporting lines give us the impression that everything is under control and transparent? Does not the organization chart suggest to us a calm and level of control that is treacherous and let us fall victim to the famous "calm before the storm"?

In fact, organizations are highly dynamic systems, and this is another important aspect the VSM highlights, as we shall see in a moment. The VSM not only concerns itself with whether all elements of the VSM are in place and rightly connected, as discussed in the previous chapter but also how they interact and whether they are in balance to each other. For this, we must go one level deeper and let ourselves be exposed to the dynamics hidden in the VSM.

Fig. 2.1 Organizations sometimes behave similarly to highly dynamic weather systems (© Fotolia/stock.adobe.com; artist(s): harvepino)

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_2

2.1 Organizations as Systems of Multiple Dynamic Equilibria

So far, we have used a straightforward but only general dynamic model—an organization is viable if it achieves a dynamic equilibrium with its environment, as stated in the first volume (see Fig. 2.2).

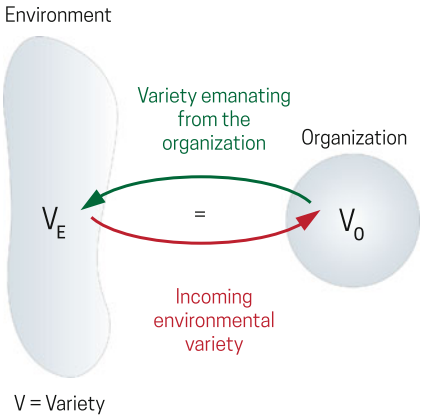


Fig. 2.2 Ashby's Law: The (*eigen*-)varieties of the environment and organization need to balance out (adapted from Beer (1995a: 96, Fig. 21))

In this model, we have so far just summatively portrayed the organization using a circle. In reality, however, the exchange of varieties must occur across the entire organization and between all its elements. Ashby's Law must apply to all relations between the system functions, to all channels, and to all interfaces to the environment as portrayed in Fig. 2.3 (overview):

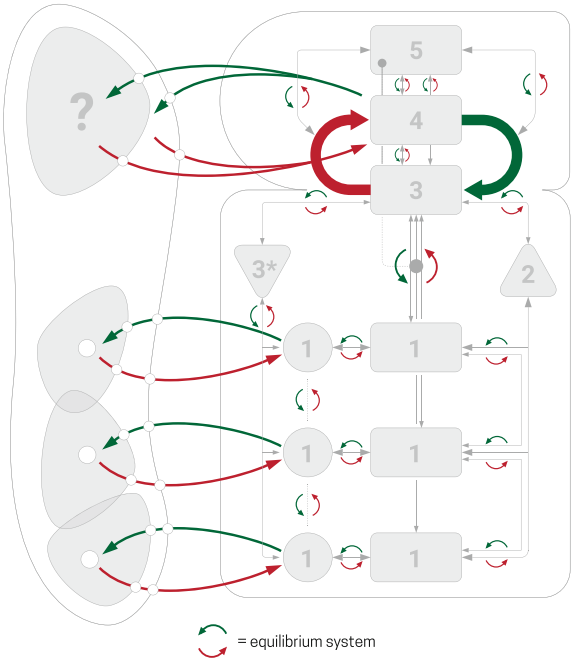


Fig. 2.3 An organization must calibrate multiple equilibrium systems (adapted from Beer (1995b: 136, Fig. 37))

As one can easily see from this image, the actual life of an organization is far away from the static image portrayed by the organizational chart: Managing organizations is a gigantic balancing act in a highly dynamic system comprised of multiple equilibrium systems. "Organization" is not a fortress, but rather, the continuous attempt to rebalance and reorganize all its equilibrium systems. "Organization" is perhaps better described as **a continuous process of organizing and avoiding chaos**.

2.2 The Multiple Equilibria of an Organization

To get a more detailed understanding of Fig. 2.3,[1] we will now briefly discuss the individual equilibrium systems for each system function:

2.2.1 The Equilibria of System 1

System 1 needs to control three main equilibrium systems:

1. The equilibrium between **operation and environment**
2. The equilibrium regarding the **operations of other systems 1**
3. The equilibrium between **operation**, **regulatory center**, and **management**

The main equilibrium of system 1 is, of course, the one between the **operation and the environment**, as previously discussed. It concerns, above all, the balance between the wishes and requirements of the customers (e.g., product features and quality) and the operation's ability to deliver the promises made to the customers.

Since the *eigen*-variety of the operation is inherently lower than the environmental one, an organization needs to **dampen and control the environmental variety through attenuators**. This it achieves, for instance, by defining a product or product norms. The advantage of a product is that it is not only an instrument to attract customers, but that it also specifies what a customer can get from an organization. A product limits a customer's choice: "You can have the product in five different colors, but only in these." Also, customer loyalty measures, switching barriers, technical standards to avoid competition, attempts to influence legislation and the formation of monopolistic structures (Thompson, 2003), are all means to control and limit the customers' variety (i.e., flexibility).

However, not only the operation itself and its attenuators as well as amplifiers but also the **meeting platforms and interfaces** between the operation and environment must have requisite *eigen*-variety regarding the environment (see Fig. 2.4). Imbalances in the organization's interfaces and meeting platforms can occur, for

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37) if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

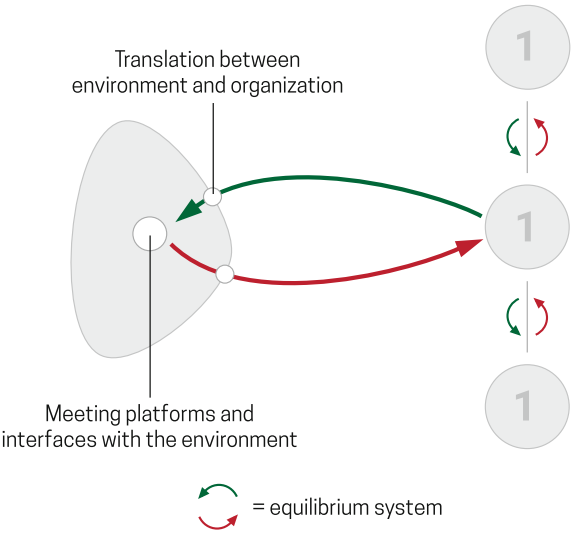


Fig. 2.4 The main equilibrium systems for the operation

instance, if shops or salespersons do not meet the expectations of customers, or if commissioned dealers do not place and sell the product as intended and agreed. Likewise, imbalances can occur if salespersons or dealers promise unrealistic product features or delivery dates that the operation cannot meet.

But the environment–operation relationship is not the only equilibrium of system 1; also, the varieties **between the various system 1 operations** must be balanced out (see equilibria between the operation B and A, and B and C in Fig. 2.4). This takes place, for instance, through intermediate storage facilities that allow adjusting the different production cycles between production processes or plants. Warehouses are not just buildings; from a systemic perspective, they are gigantic adjustment mechanisms between asynchronous processes.

Do you wish to know more about the other equilibria in system 1? If so, then continue reading here, otherwise, go to Section 2.2.2

In system 1 (see Fig. 2.5), we also find the equilibrium relationship between the **operation and management**: Management and operation must mutually understand each other and be open to one another's problems. This means that the management should be sufficiently …

- … **competent** (factual dimension) regarding the challenges of the operation and provide sufficient overview and insight (see volume 1);
- … **available** (time dimension); and
- … **approachable** by applying the right management style (social dimension).

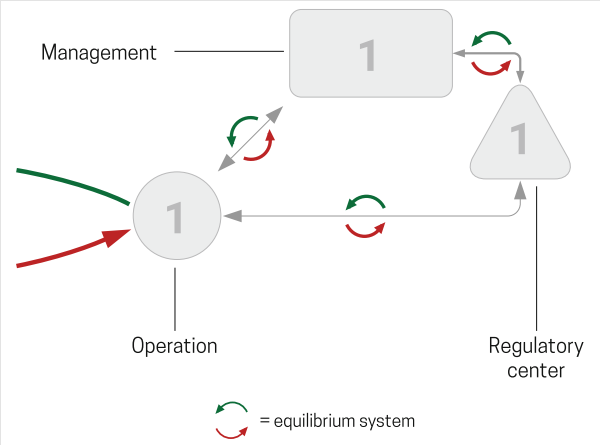


Fig. 2.5 The equilibrium system between the operation, regulatory center, and management

The system 1 management must not ignore the challenges of the operation. And vice versa, the operation must have the right competencies and capacities to handle and implement the decisions, initiatives, ideas, and plans developed by the management.

The necessity to achieve an equilibrium also applies to the **regulatory center**: first, toward the management, but second, also toward the operation. The competencies and instruments of the regulatory center, on the one hand, and the objectives and requests by the management, on the other, must correspond to each other. Imbalances often result if the regulatory center does not plan the implementation of the management's objectives and decisions sufficiently well or if its planning or coordination instruments are insufficient.

The regulatory center must also ensure that its plans match the *eigen*-variety of the operation. Too ambitious plans lead to oscillations that can ultimately destabilize the operation. Its plans must be realistic and logical regarding what the operation can and should perform: The regulatory center must arrange the activities and resources of the operation in a meaningful and understandable way. In the end, ill-devised plans might boomerang on to the regulatory center and threaten its credibility.

Through the VSM, we can also see that the regulatory center can quickly find itself in a **mediating position** between operation and management (Fig. 2.6). It must understand both the challenges of the operation as well as the goals and ambitions of the management. Such a position can lead to ambivalent situations in which, for instance, controllers understand the difficulties of the operation well, and may even sympathize with the operation, but they are, nevertheless, forced to stick to the objectives set by

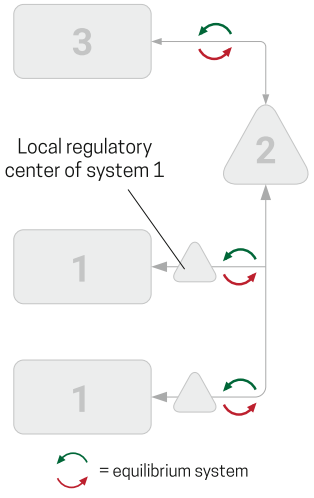
Fig. 2.6 The regulatory center can easily become a mediator between the operation and management (© Fotolia/stock.adobe.com; artist(s): freshidea)

management. The regulatory center then finds itself fast in a "sandwich" position between operation and management. In the worst-case scenario, the operation and the management might even misuse the regulatory center for their conflicts. The regulation center then ends up as a pawn in the game of unequal (*eigen*-)varieties.

2.2.2 The Equilibria of System 2

In system 2 too, different varieties meet and must be balanced out (see Fig. 2.7): First, a balance needs to be found, between the demands of the local systems 2 of

Fig. 2.7 The equilibrium systems of system 2



each system 1, and the **corporate system 2** responsible for the entire organization. Each system 1 has its own (local) regulatory center (i.e., its standards, plans, and regulations, which it wants to uphold). Those who want to develop and enforce group-wide standards are always confronted with the rules and standards defined by lower levels' systems 1 and their regulatory centers.

Second, **system 2 and system 3** must also find an equilibrium. If system 3 demands a higher degree of standardization for the entire organization, system 2 must be capable of fulfilling the demands of system 3. However, **system 3** must also reflect in its decisions and objectives what it can duly expect from system 2. It cannot make decisions without having ensured that system 2 can translate them into rules, plans, and standards.

While searching for a balance with system 3, system 2 must not forget its **balancing function for the systems 1**; after all, it is also a coordinating service for the systems 1 (see volume 1). System 3's requests and decisions impact the equilibrium between system 2 and the systems 1. System 2 must mediate between systems 1 and system 3 similarly to the regulatory center in system 1, and it too can easily slip into a "sandwich-situation".

2.2.3 The Equilibria of System 3

Until now we have talked about system 3 in a very undifferentiated manner. However, on closer inspection, we discover that it is composed of a complex internal equilibrium system of many different control dimensions. The well-known corporate functions often represent these dimensions (see Fig. 2.8), such as production, sales, procurement, or IT (for more details see volume 3), which system 3 must coordinate before it can interact with the other system functions. Only once it has found its internal equilibrium can system 3 then focus on the equilibrium **with the systems 1**.

Here, again requisite *eigen*-variety is required. When negotiating resources, system 3 needs enough competency and experience to evaluate the demands made by the systems 1. System 3 must be able to balance between the systems 1 and the

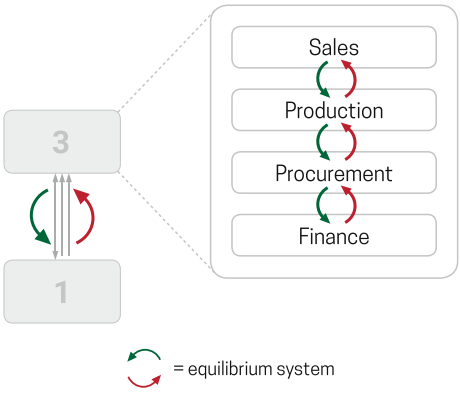


Fig. 2.8 System 3 needs to find an equilibrium between its many control dimensions

greater good of the entire organization. The most commonly used word in the **resource allocation process** (such as in budgeting) is most likely "No." System 3 must be sufficiently knowledgeable to assess when and how to convey it to the systems 1 and courageous enough to do so (see also Beer, 1995b: 39ff). Consequently, system 3 needs to understand how to **control the (*eigen*-)variety of systems 1** and how much and which *eigen*-variety systems 1 need to obtain. System 3 must find the right ratio between preserving the individuality of the systems 1 and the generation of synergies and coherence.

Limiting the *eigen*-variety of systems 1 too severely can backlash, if, at a later stage, it becomes apparent that system 3 was too restrictive toward systems 1 or has wrongly allocated budgets to systems 1 thereby causing the loss of opportunities. System 3, therefore, needs requisite *eigen*-variety in the form of sound judgment and understanding, a sort of "natural authority" regarding the subordinated systems 1; otherwise, it risks losing its credibility.

But not only does the resource channel pose a problem but also the **accountability channel** is difficult to master and calibrate. Recourse-wise, is system 3 in a position to check whether the systems 1 follow its decisions, and is it willing to execute sanctions in the case of non-compliance? The problem in many organizations is that system 3 is often unable (e.g., due to a lack of resources), or even unwilling, to hold the systems 1 promptly and fully accountable. If, for instance, employees are asked to document the results of projects but are never held accountable, we should not be surprised that no one will comply. Insufficient *eigen*-variety in system 3 or system 3* can thus cause the responsibility and accountability channel to collapse. Sometimes, this might be even done on purpose; for instance, in authoritarian regimes that try to undermine justice by reducing the number of judges, prosecutors, and police officers.

2.2.4 The Equilibria of System 3*

The need to conform with Ashby's Law is also one of the most burning problems for system 3* (see Fig. 2.9). Every auditor faces the problem of how to discover the

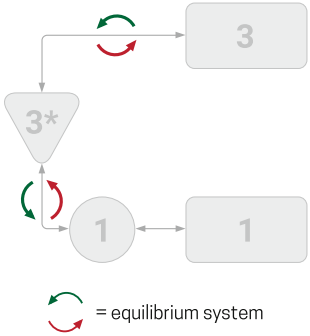


Fig. 2.9 The equilibrium systems that system 3* is facing

still unknown in the **systems 1** (see volume 1). Where is the carpet under which the systems 1 sweep their problems, and that needs to be lifted by system 3*? This situation is particularly difficult if one does not know the systems 1 sufficiently well. The systems 1 are inherently superior to system 3* in their knowledge of themselves. System 3* must therefore significantly increase its *eigen*-variety, for example, by hiring external specialists, benchmarking or surprising the systems 1 in an unobserved moment. It also must generate different perspectives (see volume 1) that allow it to find opportunities for improvement.

However, not only is the equilibrium between system 3* and the systems 1 important, but also the balance between **system 3 and 3***. For system 3, a challenge arises regarding how to deal with the results of system 3*'s audit reports. Often, certain aspects in audit reports are embarrassing, have legal implications, or imply personnel changes. Does one really want to know all the details? "Better not know!" is then often the reaction. The audit report can make the task and life of system 3 more complicated than expected.

Furthermore, system 3* is **not only about auditing but also about improvement**. As such, system 3* might suggest changes (see volume 1) that could disturb the world of system 2 and 3. The proposals by system 3* might require them to change their way of operation. For system 3* to function properly, system 2 and 3 thus need to have requisite *eigen*-variety regarding the proposed changes and how they affect the operational organization; and conversely, system 3* needs to know how much system 2 and 3 are able to change themselves. It needs to build a bridge for them given their current capabilities; if not, system 3* and its proposals will be rejected and soon forgotten.

2.2.5 The Equilibria of System 4

Ashby's Law also applies to the **various elements and processes of system 4** (see Fig. 2.10). Sensors, creativity and innovation processes, simulation and planning tools, and the creation of the overall picture: They must all have requisite *eigen*-variety regarding the wider environment and the future.

Furthermore, system 4 must also reach an equilibrium between its **image of the wider and future environment** on the one hand, and its **image of the status of the current organization** on the other. The image of the future generated by system 4 must not become "utopian"; it must connect to the current organization.

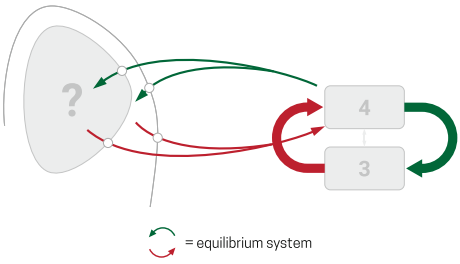


Fig. 2.10 The equilibrium systems of system 4

Conversely, the image of the present organization must also have the requisite variety to allow for changes in the future. Too many strategies are put aside because the operational units disqualify them as "impossible, this cannot be done!" However, is this the case? Often, one later discovers that the current organization had more flexibility and potential built in than initially assumed. System 4 must be able to see through the arguments of the operational organization.

While system 3 is interested in preserving the status quo (because "everything has already been set up and is working properly"), system 4 is pushing for a change. Consequently, there will be intense discussions about what constitutes the right assessment of the **organization's as-is status** (Fig. 2.11). System 4 considers many projects as feasible that are still inconceivable for system 3. It is, therefore, crucial for system 4 to know the current organization and its hidden potentials well enough —a task that consultants often take over as a variety amplifier for system 4.

On the other hand, system 3 must also understand the operational impact of the innovations and strategies developed by system 4, since, in the end, system 3 needs to implement them. System 3 must, therefore, be capable of evaluating system 4 and its proposals correctly so as not to agree to projects and measures that it can not later fulfill. It must understand what system 4 is talking about. It is, therefore, vital that **systems 3 and 4 have requisite *eigen*-variety to each other** and share the same information basis and level of understanding.

This **mutual adjustment process** between the image describing the possible "futures" of the organization on the one hand, and the image of the functioning and capabilities of the current organization on the other, can be well observed in strategy processes, which usually start with the survey of the as-is situation (current organization). Subsequently, the wider environment and future trends are examined. In this context, then, questions and issues often arise that have not yet been sufficiently considered in the description of the as-is situation. Hence, the project team responsible for developing the strategy needs to enrich its understanding of the organization's current status with additional information. This, in turn, may uncover new insights and raise questions regarding the future. So, consequently, the project team must readjust its picture of the future.

Fig. 2.11 Proposing new ways and changes often is a minority business (© Fotolia/stock.adobe.com; artist(s): Michael Brown)

Fig. 2.12 Strategy is the bridge that the organization builds from its present status to its envisaged future

This fundamentally iterative process can only be completed when the organization feels that the picture obtained about its as-is status and the picture of the wider environment and future match and can be connected to each other. **Strategy-making** is, among many things, **building a bridge from the present to an envisaged future state** (Fig. 2.12) and this bridge works only if one succeeds in balancing out and bridging both shores—the varieties of the present, as well as the future state.

2.2.6 The Equilibria of System 5

System 5 must have requisite *eigen*-variety first **toward system 3 and system 4 individually** to balance them out (see individual arrows from system 5 to system 3 and 4 in Fig. 2.13). However, for system 5, this is not yet enough; it must, second, also comprehend **the nature of their interaction** (see arrows to the interaction loop between system 3 and 4 in Fig. 2.13). It must understand **the positions of system 3**

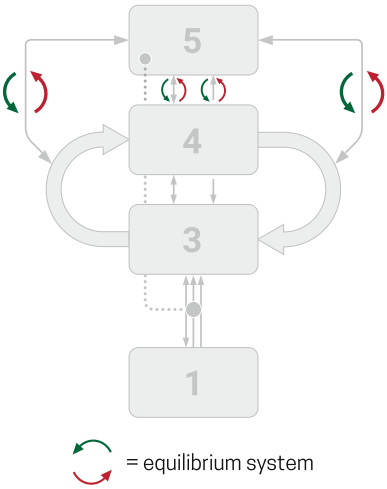


Fig. 2.13 The equilibrium systems that system 5 needs to control

and 4, and how they relate to one another. In discussions, the reasons for different positions are often not clear to the discussing parties themselves; as a result, they often need an outsider with a different perspective that shows them what their conflict is, in fact, all about.

System 5 must, therefore, develop **a higher logical level** beyond the discourse between system 3 and 4. It must be able to abstract from the specifics of the ongoing discussions and distill the **more fundamental, underlying dimension of a question**. Only then can it mediate between both system functions. Put into more concrete terms: System 5 must be able to understand the problem of system 3 and 4 better than they do and lead the discussion away from its actual level into deeper grounds, for example, through questions such as: "is not the real question about …?" or "If we look at the problem from a different and more distant perspective, then …". This requires significant abstraction capabilities and experience on how to put the issues discussed into a new conceptual framework. It is this, the **art of "reframing a question,"** which system 5 needs to master.

This ability is also important regarding what we have already said earlier in volume 1: The decisions of system 5 must be **objective and neutral**. System 5 must find a decision without being partisan. This is only possible if system 5 can find a criterion that is not again part of the arguments and criteria already used by system 3 and 4.[2] Just understanding each system function individually is not sufficient, system 5 must be able to reconceptualize the discussion or even conflict between system 3 and 4.

Finally, system 5 also needs requisite *eigen*-variety regarding the **algedonic channel**: Here, too, it must be capable of understanding and assessing the signals. Is the "pain" of the lower levels "real" or just an exaggeration? What is reasonable for the lower levels? If not, system 5 becomes the puppet of the lower levels, or, in the opposite case, unable to "understand the world" in an almost literal sense, since it apparently has no appropriate sensors, and thus, no feeling for the world (see also Beer, 1995a: 406ff). In the first case, system 5 collapses into the systems 1 (the systems 1 dominate system 5); in the latter case, the algedonic channel becomes capped, and the metasystem a world in itself.

2.3 The Equilibria in the Organization's Information and Transduction System

The information and transduction system of the organization is also subject to Ashby's Law. Both the **information channels** (such as meetings, reports, IT systems, web pages), as well as the **transduction mechanisms** between the languages of the senders and receivers, need to have requisite *eigen*-variety (see Fig. 2.14) regarding the variety of the information transmitted.

[2] System 5 can follow in its decisions either system 3 or 4, but its decision to follow one of them needs to be justified from a higher order perspective so as to appear impartial.

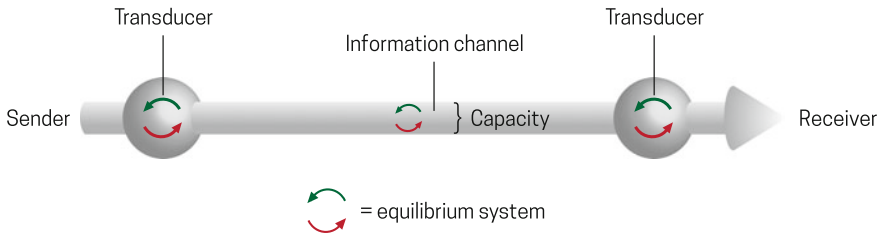


Fig. 2.14 Ashby's Law applies to all aspects of the organization's information and transduction system

Stafford Beer summarized these aspects in the so-called Second and Third Organization Principle[3] of the VSM (Beer, 1984: 12 and 22, 1995a: 99, 101). Unfortunately, these principles are often overlooked in their significance, but they are particularly vital in our information-driven age: Imbalances in the organization are not always the result of insufficient *eigen*-varieties, but also of failures in the information and transduction systems. The sigh, "If only we had known what we already know!" is a vivid expression of this type of problem.

Would you like to see some examples of the information system struggling to provide requisite *eigen*-variety? If so, then continue reading here, otherwise, go to Section 2.4.

Imbalances in the **information channels** in the form of insufficient capacities are particularly evident in today's e-mail floods (Fig. 2.15). While the electronic channels have been markedly improved in their capacity, the "last mile," which is the sensory-biological channel from the screen to the human brain, has lagged (see Simon, 1997: 22). Efforts to adjust this last mile are, for example, attempts by companies to restrict the use of e-mail traffic by directives and communication guidelines.

The need to achieve requisite *eigen*-variety also becomes evident in the challenge to identify the appropriate information channels: Should the employees be better informed about new developments by **an information email** or by an **employee gathering**? An information email has the advantage

[3] The Second Organization Principle states (regarding the systems 1) that: "The four directional channels between the management unit, the operation, and the environment must each have a higher capacity to transmit a given amount of information relevant to a variety selection in a given time than the originating subsystem has to generate it in that time" (Beer, 1995a: 99).

The Third Organization Principle states that, "Wherever the information carried on a channel capable of distinguishing a given variety crosses a boundary, it undergoes transduction; the variety of the transducer must be at least equivalent to the variety of the channel" (Beer, 1995a: 101).

Fig. 2.15 Today, we are flooded by information (© Fotolia/stock.adobe.com; artist(s): master1305)

that the management can define the email's content and wording and thus, better control the variety exchanged.

The problem is, however, that one does not offer a feedback channel for questions and comments: The one-way channel "information email" cannot promptly and adequately absorb potential questions from employees. An information email does not allow the generation of feedback and hence, does not grant the management to sense "the temperature on the ground." In that regard, an employee gathering has a significantly higher capacity, but does the management itself have the necessary *eigen*-variety to respond well to delicate questions within a matter of a few seconds? Employee or shareholders' meetings can quickly generate so much variety that the management board might feel overwhelmed.

Forms and questionnaires often suffer from a similar problem—that those designing them often do not exactly know beforehand how the respondents will understand the questionnaire and whether the predefined questions and answer options allow them to provide an accurate response. While forms and questionnaires reduce the possible variety through a predefined structure, personal interviews allow for more variety. However, interviews again contain the risk of excessive variety: How to structure and summarize the manifold and heterogeneous responses that were provided? This is always the headache for those analyzing them. The practice of testing questionnaires beforehand with a few people is, therefore, the attempt to evaluate the variety of possible answers and to equip the questionnaire with requisite information capacity.

Not only the channels but also the **transduction capabilities** of all employees and executives must have requisite *eigen*-variety. How often does it occur that employees report aspects and concerns that are irrelevant from the managing director's perspective? If new executives are appointed, in many cases, **a mutual "education process"** first needs to take place between the executive and his or her subordinates about what their reports should contain and what they should look like. This process is a necessary adjustment process taking place between the executive and his or her employees to align their transduction logics and the varieties involved in their transduction and information process.

Conversely, we find that managing directors are also confronted with the challenge of how to make their problems and issues more comprehensible to their employees. As a manager and executive, one must master the jargons of the employees, and there might be many of them. Misunderstandings between executives and employees are then often not due to ill will and bad intentions (as they are often understood, unfortunately), but rather to the **lack of requisite transduction skills**. Indicators for such imbalances and attempts to establish equilibrium in the information flow are, for instance, found in requests such as "give me an example" or "please repeat your point for me."

2.4 The Equilibria Between Recursion Levels

Not only do equilibria in (*eigen*-)varieties need to be achieved within one recursion level but also **across all recursion levels** of an organization (see Fig. 2.16). Decisions at one level always influence other levels, and hence, need to be aligned:

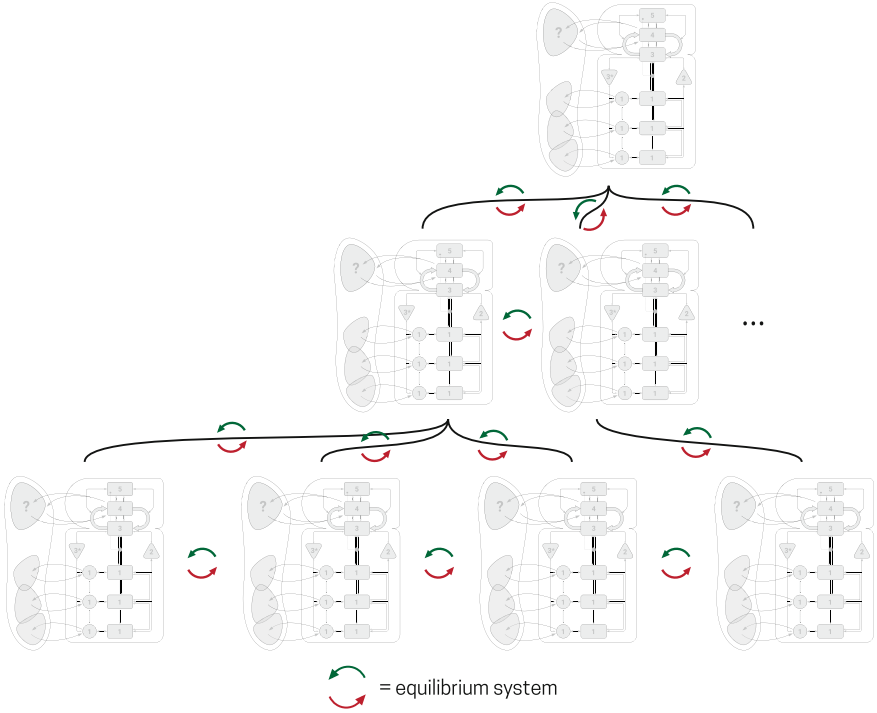


Fig. 2.16 Equilibrium systems also exist between all recursion levels—contains adaptation from Beer (1995a: 315, Fig. 51) and Leonard (1989: 189, Fig. 5)

Misconduct at the "lowest" operational level might, for instance, even lead to corporate scandals and the dismissal of board members at the top level. Conversely, strategic decisions by "the top," such as to strengthen or to restrict product units, might lead to problems at the operational level.

Often, organizations neglect the importance of these inter-recursive connections and the need to keep the recursion levels mutually informed. Strategies that are not verified by the operational level are typical examples. They consequently take much longer to be implemented due to so-called "operational problems" subsequently found by lower recursion levels. Delays, extra costs, and changes to projects are consequences of insufficient information channels between the recursion levels, hindering the recursion levels from balancing out their (*eigen*)-varieties and the processing of variety.

Thus, creating platforms for the exchange of information between the various levels should not occur accidentally and as a matter of courtesy. As part of their communication system, organizations must provide sufficient opportunities (temporal dimension) and places (spatial dimension) for the various levels to meet and interact. From the Carlsberg CEO Cees t' Hart it is reported that he refused a lift keycard allowing him to travel alone in the lift to his office at the top floor. He rejected the card because it would not allow him to meet people in the lift (Hougaard and Carter, 06.11.2018). Furthermore, he moved his office from the 20th to the first floor to be more accessible.

Communication between recursion levels does not occur automatically, and thick fog separates them (see volume 1). Thus, we need to organize the exchange of information actively and systematically so that the varieties to be processed can balance out across the entire organization and its recursion levels. This is important for the speed and accuracy of the processing of variety but also for the cohesion within the organization.

Summary

- An organization is not a static structure but rather a dynamic system consisting of multiple interconnected equilibria. Changes in one equilibrium affect other equilibria and cause reverberations throughout the entire organization. This turns the process of controlling and governing an organization into a continuous learning process and must be understood as such.
- The dynamic nature of organizations, in turn, also allows the organization to adapt to external changes and remain flexible. Thus, although a multiple equilibrium system represents a challenge, at the same time, it increases the organization's *eigen*-variety and makes it more responsive.

- An organization must establish an equilibrium between …
  - … the individual system functions,
  - … the system functions and sensors to the environment,
  - … the capacities of the information channels, transduction mechanisms, and system functions, and
  - … the recursion levels (through the inter-recursive channels).
- An organization is a continuous and collective search process for the right balance between the different (*eigen*-)varieties present and exchanged in its numerous equilibrium systems.

Questions for Reflection:

1. How static is the image that your organization has of itself? What prevents your organization from seeing itself as a continuous and evolutionary adaptation and learning process (e.g., error culture, tradition, etc.)?
2. If you look at Fig. 2.3, which equilibrium systems need to be better balanced in your organization? Which ones will be particularly relevant in view of the future challenges that your organization will be facing?
3. How well do the information channels and transduction capacities and competencies of your organization match the amount of variety that your organization is processing?
4. How well are the recursion levels mutually informed about critical issues and is information flowing between the levels? How strong is the cohesion between the recursion levels?

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3 "We Are Overwhelmed …"—Dysfunctionalities in the Operational Equilibrium Systems

In everyday life, organizations are usually presented as entities with a clear division of factual tasks and a stringent system of command chains (as in the organization chart). The last chapter offered us a whole new perspective and conceptual framework: Organizations as a system of multiple equilibria, where the key challenge is to find a solution that fits all equilibria.

Organizations are not always successful in finding the key fitting all locks, and what is more, it is often not immediately apparent that the current keys do not fit. Dysfunctionalities thus build up over a longer period until they burst like a volcano. With the VSM, one can become better trained in recognizing them earlier.

In this chapter, we will discuss the operational dysfunctionalities that might develop (i.e., those related to systems 1) (see Fig. 3.1[1]); the metasystemic

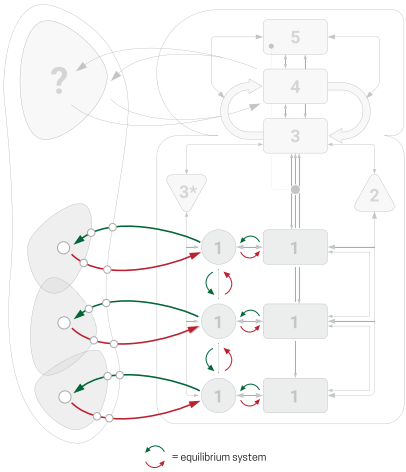

Fig. 3.1 Equilibria within and among the systems 1 (adapted from Beer (1995b: 136, Fig. 37))

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_3

dysfunctionalities are the focus of Chapter 4. In both chapters, we focus on the imbalances concerning the variety processing and (*eigen*-)varieties of the system functions. Power-related imbalances leading to distortions regarding the target equilibrium point are discussed in Chapter 14.[2] Following the convention in the VSM literature, we represent differences in the (*eigen*-)variety by the size of the shapes (see Beer, 1995a: 449; Hetzler, 2008; Pérez Ríos, 2008, 2012).

3.1 Variety Imbalances Between the Environment and Operation

A dysfunctionality often occurring in the operational domain consists of an **operation with insufficient *eigen*-variety.** If we represent the amount of (*eigen*-)variety by the size of the shapes and the amount of variety transferred between, for instance, the environment and operation by the thickness of the arrows, we then obtain a picture as in Fig. 3.2. In this case, the incoming environmental variety (lower blue arrow) is too overwhelming for the operation.

There exist plenty of examples for this constellation: too many customers and customer orders, too many special requests, too many technical or legal and regulatory requirements on the part of the environment, and so forth. The operation becomes flooded by the environment's variety. However, these are just the internal consequences. For the environment, this imbalance implies that the operation offers **insufficient *eigen*-variety** (upper blue arrow), such as products that do not perform well, delivery times that cannot be met, and so forth.

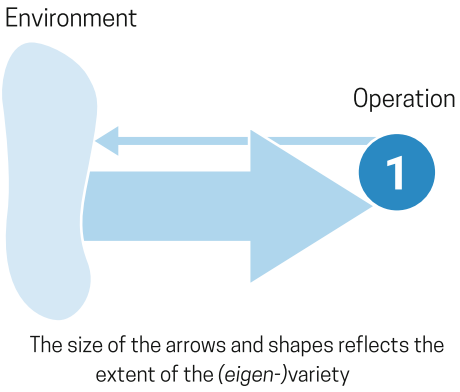

Fig. 3.2 The *eigen*-variety of the operation is too weak compared to the incoming environmental variety

[2] The VSM literature has, in my view, not sufficiently kept these two aspects apart: The domination of the organization by a system element cannot be automatically equated with the amount of *eigen*-variety that this system element possesses. More *eigen*-variety can lead to a dominant position, but not necessarily so; having certain competencies does not imply that one can and will enforce one's position.

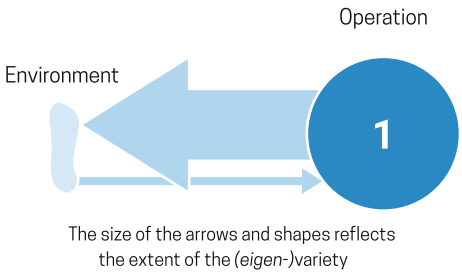

Fig. 3.3 The *eigen*-variety of the operation is too strong compared to the environment

The opposite case can also occur with **operations having too much *eigen*-variety** (see Fig. 3.3). For example, if they produce products that are too complex, have too many options, or are too innovative compared to the actual needs of the environment. Also, companies that have built up more production capacities than the relevant market needs are examples of such unstable situations. All these cases are much like the famous sledgehammer, with which one wants to crack only nuts.

It is easy to see that both states, i.e., too little or too much *eigen*-variety are not durable. In the first case, the operation needs to increase its *eigen*-variety or is forced to reduce the environmental scope of its activities. In the second case, an adjustment must also take place: Either the company succeeds in stimulating the demand for its products, or the operation and its products must be downsized since anything else would be inefficient. One cannot escape the consequences of Ashby's Law: An adjustment must take place, and the relation between the operation and its relevant environment must return to equilibrium.

3.2 Attention: Residual Variety!

If no equilibrium can be achieved, then **variety remains unprocessed**. This **residual variety** is often forgotten or pushed aside too quickly, or perhaps even remains undetected. Organizations must be extremely cautious and alert to this happening: Unprocessed residual variety can lead to dynamics, which can become uncontrollable and even life-threatening to organizations.

Such a residual variety can emerge, for example, in the case of unfilled customer expectations. If salespersons boast about their products too much, they generate expectations that the operation and its product might not be able to fulfill. The organization then not only produces the product, but more dangerously, also a **gap between the product promise and the delivered product**. This gap is not empty as one might assume. Instead, it consists of the many incidents where a customer cannot use the product as envisaged due to its underperformance. If the new car breaks down and you are unable to go on vacation, you cannot relax and reduce your level of exhaustion. The exhaustion remains and, in some cases, you might even end up feeling more exhausted and enervated. In the VSM language, this unprocessed exhaustion represents the unprocessed variety, namely residual variety,

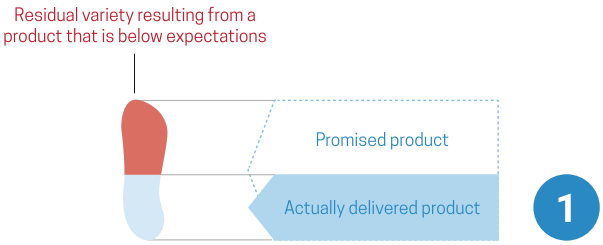

Fig. 3.4 Residual variety in the environment emerges, for instance, if the organization's product does not meet the environment's expectations

generated by the breakdown of your new car (see the red area in the environment in Fig. 3.4).

What happens with this leftover, unprocessed variety? It needs to be reduced, but the challenge is that it cannot simply disappear; it needs to be processed somehow. On the side of the customers, this occurs first through a process, whereby they adapt their expectations and plans to the real performance or quality of the product. In colloquial parlance, this process is called "disappointment" or "disillusionment."

However, this adaptation process cannot be limited to the customers alone since customers are only customers in relation to the organization from which they bought its products and services. The entire relationship needs to return to equilibrium. Thus, if customers are forced to reduce their anticipated *eigen*-variety due to an underperforming product, they want to see the company's pretended *eigen*-variety also to be diminished to what they consider to be the real level.

Ashby's Law needs to prevail, and the equilibrium must be restored, no matter how. The customers accomplish this mainly through producing **negative reviews or bad reputation** (Fig. 3.5), or, in extreme cases, through lawsuits. In doing so, the customers reduce the pretended *eigen*-variety on the side of the company to its real level. As a consequence of the negative reviews, the environment to which the company has access, shrinks as well. The company loses customers and market share and can only serve the market that it deserves based on its real *eigen*-variety. The equilibrium becomes reinstated.

Fig. 3.5 The disappointment about a product cannot disappear; it resurfaces in the form of bad feedback (© Fotolia/stock.adobe.com; artist(s): gustavofrazao)

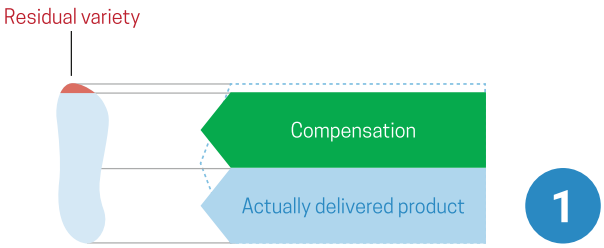

Fig. 3.6 Compensations reduce the residual variety created by unfulfilled expectations

To apologize and compensate customers for their disappointment with a small gift is consequently not only a matter of courtesy; more fundamentally, it is an attempt by the organization to abide by Ashby's Law and restore the equilibrium at the level that it wishes it to be (i.e., before the customer downgrades the organization publicly).

Thus, compensations and apologies by the company are attempts to absorb the residual variety created by a disappointing product (see Fig. 3.6). Organizations try to fill up the gap between the customer's expectations and the product's real quality and performance with a positive value. A gift eliminates the need for customers to reduce the (*eigen*-)variety of the company through bad reputation, retaliatory, or legal actions. As we see, Ashby's Law always works and thus applies: Never leave customers unhappy. Otherwise, the organization will somehow foot the bill.

3.3 Variety Imbalances Between the Operation and the System 1 Management

What we have encountered in the relationship between the environment and operation can also occur in the relationship between the **operation and its management**. If, for instance, **the management is too demanding**, then it becomes frustrated with an operation that cannot keep pace. These are the cases where the management pours out too many ideas, actions, projects, and new targets without the operation being able to digest them. From the operation's perspective, however, its management has lost its "grip on reality." Feared are the famous Mondays: After a relaxing weekend, executives or managers return with new vigor and many new ideas that must then be processed by their employees.

This inequality can only be reduced if either the operation increases its *eigen*-variety or the management reduces its level of activity. If not, the imbalance will eventually lead to resignation on both sides: Either the employees in the operation or the management will quit their function.

In contrast, a **management that is too weak** (see Fig. 3.7) is one that cannot fulfill the systemic tasks demanded by its function (see volume 1 for its specific tasks). Here too, the balance must be restored: Either the management will be

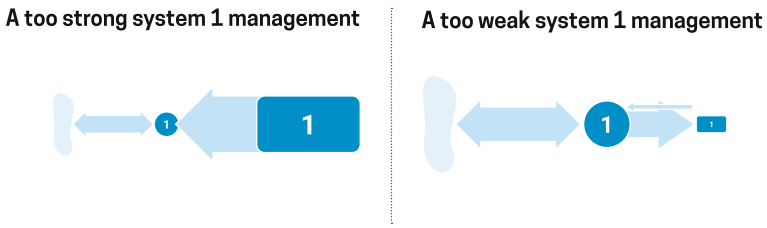

Fig. 3.7 Dysfunctionality of an ill-calibrated system 1 management

replaced eventually, or the operation reduces its *eigen*-variety (e.g., for reasons of frustration). Employees who do not feel challenged or supported will look for other jobs, will reduce their willingness to work, and stop developing their competencies. They will resign internally and continue working to the rule only. These adjustment processes cannot be avoided and are, again, a consequence of Ashby's Law: The (*eigen*-)varieties between the operation and management must adapt to each other. It is one of the key tasks of system 3* to discover these imbalances between the operation and its management before a downward spiral begins.

Organizations, as we learned in volume 1, also apply attenuators and amplifiers to regulate the incoming and outgoing variety. If you are interested to know more about them, then continue reading here, otherwise, go to the end of this chapter.

3.4 The Role of Amplifiers and Attenuators in System 1

So far, we have only compared the variety of the environment with the *eigen*-variety of the operation, but the concept of attenuators and amplifiers allows us to go one level deeper: How do they influence the equilibrium?

3.4.1 Attenuators and Amplifiers—Why Do Organizations Need Them?

If we return to the equilibrium relationship already presented in the first volume (see Fig. 3.8), we see that the equilibrium is not only determined by the variety of the **environment** ("1") and the *eigen*-variety of the **operation** ("2"). The equilibrium also depends on the **attenuators and amplifiers** ("3") used by both sides in this relationship. Generally speaking, we can understand attenuators and amplifiers as instruments organizations use to fine-tune and better regulate the incoming and outgoing (*eigen*-)variety.

What does this mean concretely? Customers are a challenging species: They change their minds and optimize themselves. Organizations, consequently, need to define filters to protect themselves and establish a certain degree of predictability and order. General terms and conditions (see Chapter 1)

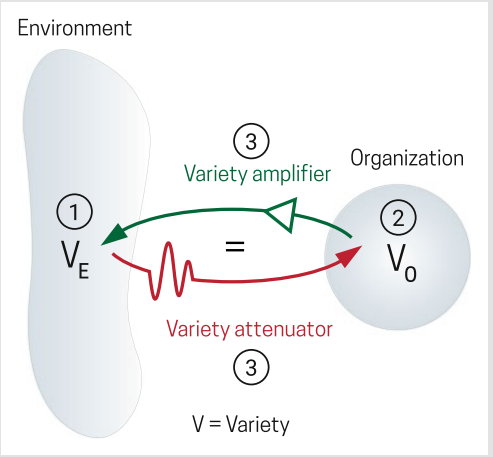

Fig. 3.8 Variety amplifiers and attenuators help to regulate the equilibrium between the organization and environment (adapted from Beer (1995a: 96, Fig. 21))

primnarily but also delivery schedules, return policies, or even defined shopping hours function as such filters. They regulate the relationship between the environment and organization to the level the organization can handle. They filter out variety the organization cannot process. Figure 3.9 shows this graphically: The filter "General terms and conditions" (see "1" in Fig. 3.9) reduces the variety flowing into the organization.

However, organizations also need to increase their *eigen*-variety with specific instruments other than their operational capabilities. It does not suffice to produce excellent products. One competes with other companies for the attention of the customers. Thus, the variety amplifier "advertising measures" (see "2" in Fig. 3.9) increases the *eigen*-variety of the operation; they make the products more visible and attractive to the environment. However, as every

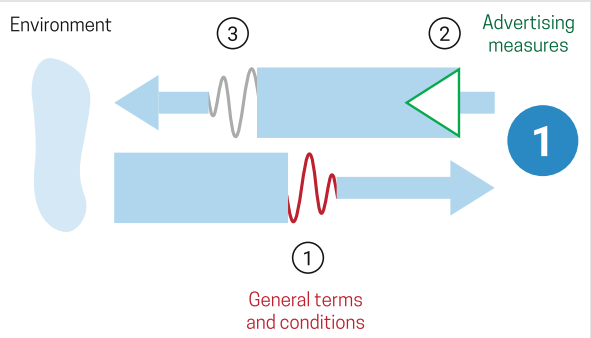

Fig. 3.9 The variety attenuators and amplifiers regulate the flow of variety (symbolized by the thickness of the arrows)

marketing expert knows, the environment also applies its specific attenuators or filters (see "3" in Fig. 3.9): If the advertising campaigns are annoying and unwanted it filters them out, such as throwing the advertising materials away, changing the TV channel, or going to the kitchen or restroom during commercials.

Imbalances between the environment and the organization can emerge if the (*eigen*-)varieties do not match, but also if the **amplifiers and attenuators** are not properly designed and working. In the following section, we will discuss the role of amplifiers and attenuators more in detail: First, for the relationship between the environment and the operation (Section 3.4.2) and second, between the operation and the system 1 management (Section 3.4.3).

3.4.2 Attenuators and Amplifiers in the Relationship Between Environment and Operation

Let us first turn to the organization's most fundamental relationship; namely, between its environment and operation and examine some of the dysfunctionalities related to the corresponding attenuators and amplifiers.

3.4.2.1 Dysfunctional Attenuators

If the **attenuators used are too weak or inadequate**, they let too much variety pass through (red arrow in Fig. 3.10). Weak attenuators can take many forms: Inaccurate or incomplete product specifications or too weak guidelines and commitments to which the customers need to adhere. However, also, overconfidence ("we will make this happen, trust us!") and ignorance regarding the limitations of the production or service delivery can result in too weak attenuation, an overwhelmed operation and consequently, customer promises that cannot be accomplished.

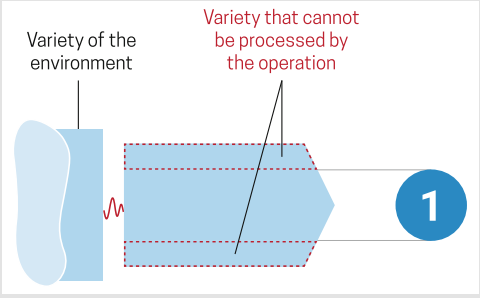

Fig. 3.10 Too weak or inadequate variety attenuators let too much environmental variety pass to the operation

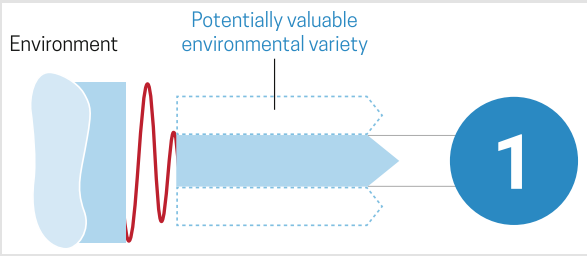

Fig. 3.11 Too strong attenuators shield the operation from too much variety that could, however, stimulate it

However, **attenuators can be too strong** (see Fig. 3.11) as well; for instance, if they do not allow a specific environmental variety to reach the organization indispensable for the utilization and further development of its *eigen*-variety and hence, of its capabilities and infrastructure. Ignorance, preserving one's comfort zone and lack of courage are among the strongest attenuators: One could meet a customer's request and thereby learn as well as improve the product, but this would imply too much effort. So instead, one refuses a customer order. Consequently, the power of the operation and its potential remain unused.

This sounds straightforward at first, but the difficulty for organizations always consists in assessing what their potential could be. Can one shoulder a big and complex project? Who knows the answer to this question? If one builds too many safeguards into one's bid, the customer might choose another and more courageous company, although one could have mastered the project. Hence, the calibration of the attenuators depends a lot on the assessment of the organization's capabilities.

The challenge is that the **organization's performance potential** is and remains one of the great unknowns and mysteries, not only to competitors but also to the organization itself. To know where one's boundary lies, one must sometimes cross the boundary to view it from the other side. Thus, often only significant crises or ambitious projects show an organization of what it is capable and what not. It is, therefore, sometimes necessary to go deliberately beyond the assumed limits of an organization to find its true upper performance boundary.

3.4.2.2 Dysfunctional Amplifiers

Similar to attenuators, problems in the design and use of the amplifiers can arise too. An **amplifier might be too weak**, better known as a "nice try" (see Fig. 3.12), such as marketing campaigns that do not reach their target group or generate insufficient customer interest. Other examples are too few or too poorly executed sales training courses and product tests.

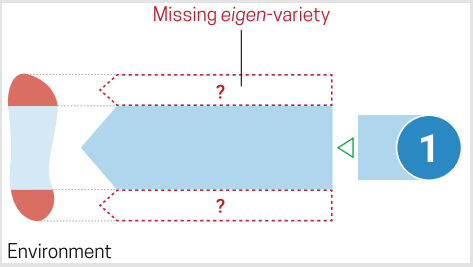

Fig. 3.12 Amplifiers that are too weak fail to compensate for the variety gap between environment and operation

Poorly calibrated amplifiers can reduce the operation's *eigen*-variety reaching the environment or even leave it unused (see Fig. 3.13). The operation could have achieved much more, and the product could have obtained a bigger market share, but "one does not get the horsepower on the road" because, for example, an ill-conceived communication strategy or a weak logistics network obstruct the product and its delivery to the customer. The same applies to inadequate product descriptions, brochures, and instructions preventing a product from becoming used as intended.

Badly configurated amplifiers (see Fig. 3.13) might even become dangerous since they can also "stimulate" the environment in ways not intended. Examples are unintentionally addressed customers who should not buy the product, or uses for which the product is not intended. For such cases, organizations must put attenuators in place, such as product warnings.

An amplifier can ultimately also be too strong for the environment (see Fig. 3.14). Classic examples are too penetrating salespersons or too complex or intense advertising campaigns, or product information and instructions that are too sophisticated, or simply offer too much choice. Such an overamplification exhausts the environment, which might even

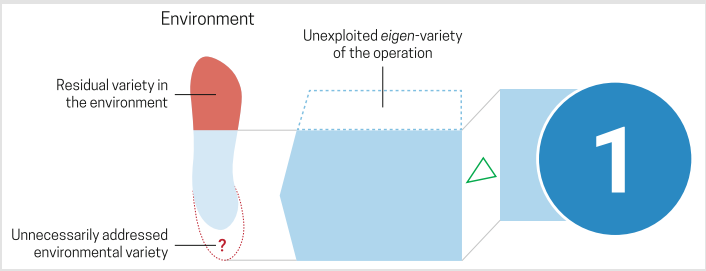

Fig. 3.13 Not well-calibrated amplifiers lead to residual variety, unexploited *eigen*-variety and environmental variety unnecessarily addressed

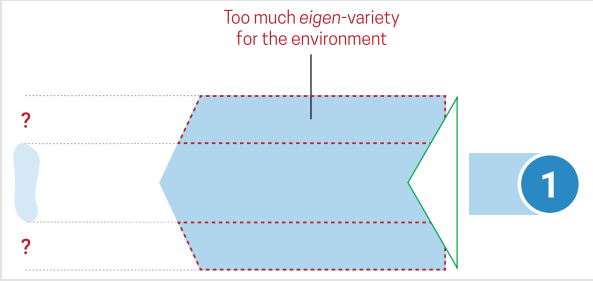

Fig. 3.14 Too strong amplifiers risk overwhelming the environment

lead to the rejection of the organization and its products. The environment then protects itself by applying attenuators such as cognitive filters. In the end, the amplifier becomes not only ineffective but detrimental to the organization's relationship with its environment.

Nevertheless, one should not forget the cases where a strong amplifier can be sometimes useful; for instance, if one wants to stimulate the variety of the environment to encourage customers to buy products with new technologies (e.g., electrically powered cars). Here, the amplifiers are intended to fundamentally alter the variety of the target environment by attracting new customer groups or generating new customer needs.

3.4.3 Attenuators and Amplifiers in the Relationship Between the Operation and Its Management

Not every problem enjoys the same priority, and one uses different tactics so as not to get too much involved. Management's daily life is a continuous process of selecting, sharpening, and reinforcing the organization's priorities. It also must constantly apply attenuators and amplifiers.

3.4.3.1 Dysfunctional Attenuators

Dysfunctionalities related to attenuators can also develop in the operation-management equilibrium, such as a system 1 management applying **too strong attenuators toward the operation** (see left image in Fig. 3.15). Examples are ignoring the problems of the operation, conducting too few or short meetings, showing no interest in operational issues, or intimidating the operational staff. These behaviors prevent the operation's concerns and problems (so its "residual variety") from reaching the management. The (*eigen*-)varieties of management and operation cannot balance out.

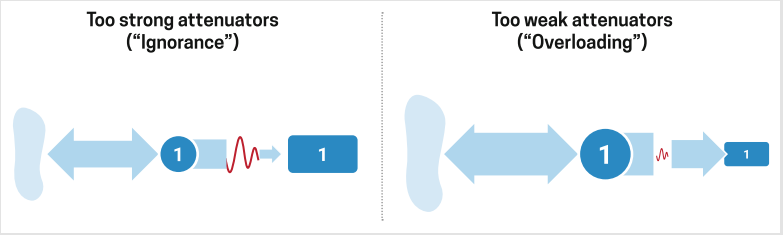

Fig. 3.15 Dysfunctionalities related to the attenuators applied between the operation and the system 1 management

However, the management may also have put **too weak attenuators** in place (see the right image in Fig. 3.15) such as when it might be too accessible to the operation, not capable of saying "No" to wishes from the operation, getting involved in every problem of the operation, or also taking everything too personally. The lack of delegation or missing information filters also falls into this category. In the end, management becomes overloaded.

3.4.3.2 Dysfunctional Amplifiers

The case of **amplifiers that are too strong** (see Fig. 3.16) concerns cases in which the management is overloading the operation; for example, with too many meetings, management instruments, training courses, or too many consultants who are hired to help the management but overwhelm the operation.

The response to this overburdening is also well known: **The operation** builds up attenuators; for example, by avoiding the management, seeing "difficulties," or trying to delay the management's initiatives. Starting too many initiatives could even result in an adverse effect rebounding back to the management: if too many employees do not implement agreed measures and decisions, this can become a new standard, and hence, excusable. Demanding too many action points can then lead paradoxically to a

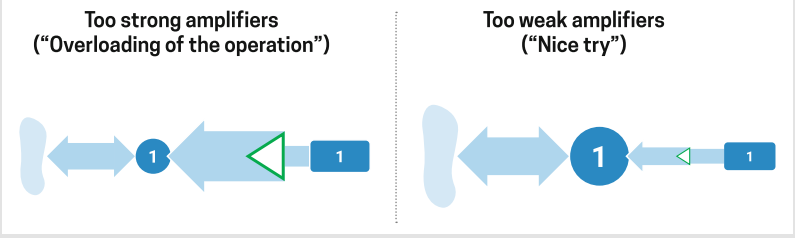

Fig. 3.16 Dysfunctionalities regarding the variety amplifiers between the operation and the system 1 management

standstill, like a sports car on a sand road: If one presses the gas pedal too forcefully, one loses grip and the wheels just spin.

The **amplifiers used by the management might also be too weak** (i.e., the management cannot play out its full *eigen*-variety). These are the cases where the available management instruments, meeting and information structures, or resources (e.g., secretaries, staff) are not suited for the management's intentions and objectives.

3.4.4 What Is the Real Problem?

The distinction between the (***eigen*-**)**variety of the operation**, **the environment**, and **the attenuators or amplifiers**, might perhaps appear somewhat academic, but it is, in fact, a very useful distinction for a sound diagnosis of an organization.

If organizations are confronted with imbalances, the challenge is often to find out what the real causes are. Why was a product not successfully launched? Is the reason the product itself such as its poor quality (***eigen*-variety**)? Or were the marketing campaigns not well designed (i.e., the **amplifiers**)? Or finally, was it the market and customers (**environment**), which were not yet "ready" for the product? Does this kind of discussion, which usually takes place between sales, product development, and production, sound familiar? These discussions are rooted in the problem of not knowing which of the possible sources discussed above (operation–environment-amplifiers/attenuators) are responsible for the imbalance. Here, we must not judge too quickly and analyze each potential source separately.

How important this distinction is, we also see in the area of **job appraisals and assignments**. We all share the experience that employees, managers, or executives can perform brilliantly in one job, but when transferred to another position, they suddenly and unexpectedly turn average or even mediocre. However, the opposite case can happen as well: Not so well performing employees unexpectedly flourish in other fields or organizational units. Was the reason the employee or something else, such as his or her working environment or the tools and instruments given to him or her?

The low performance of an employee can depend on multiple reasons, such as **his or her *eigen*-variety** (e.g., available talents, the daily constitution, and motivation). However, it can also be the result of his or her **working environment**. Perhaps too many and hardly manageable tasks are pouring down on him or her. It can, of course, also be due to the **attenuators and amplifiers**, such as the instruments and resources available to him or her (e.g., the team or software) that diminish the employee's performance. Are these sufficient or is the employees just left in the rain? A good employee appraisal should distinguish between these factors, but is this really done…?

We can also compare this to practicing a sport or game, such as tennis that does not develop as we intended it. The culprit could be either a too powerful opponent (i.e., our environment), oneself ("one had a weak day," technical level), or the amplifiers, for instance, the kind of racket we used. The art of improving consists of knowing which one of these three factors was the true cause… and to be sufficiently honest with oneself. If this kind of analysis is not made, problems will not disappear but reoccur.

At the end of this chapter, a final word regarding the **distinction between amplifiers and attenuators**: In the real world, an instrument used by the organization can be an attenuator and amplifier at the same time. It always depends on the intention of its use. A product catalog is, for most people, an advertising instrument (i.e., an amplifier that increases the organization's *eigen*-variety). However, a product catalog also functions as an attenuator: One can buy only the products in the catalog and nothing else. The catalog limits the choice of the customers and thus allows the company to gain efficiency and economies of scale. This implies that one must first look at the intention of a specific instrument to determine whether it is an amplifier or attenuator. Has it been put in place to reduce or increase (*eigen*-)variety?

Second, this observation also draws our attention to the often-overlooked fact that **many instruments have two sides**. As just said, a product catalog might be originally intended as an amplifier, but then with predefined products, it can also become a limitation. It is this **dual-use nature of instruments or measures** that one must keep in mind and assess beforehand: A measure can enhance an organization's *eigen*-variety but, often unintendedly, it can also limit the organization in other ways. Similarly, a limitation in one respect can liberate an organization to pursue other measures.

3.4.5 Matching Ends with Means—The VSM's Specific Perspective and Contribution

The detailed analysis of attenuators and amplifiers and their role in this chapter also help us to better understand how the VSM complements other organizational models, especially regarding the process perspective. **Process models** focus on the temporal sequence of activities, how individual process steps are linked together and carried out efficiently with a minimum of amount of resources and with the lowest response time.

However, as we all know, the successful completion of a task does not solely depend on whether the sequence of steps is efficient and meticulously followed but whether one also disposes of the necessary resources, skills,

competencies, knowledge, and ideas. To put it into the VSM parlance, the key question thus is also, whether one has the appropriate *eigen*-variety to perform a given process. This is what the VSM forces us to look at. In process analyses, we should consequently not only try to understand and design process chains from a sequential perspective. Instead, we should also ask what kind of *eigen*-variety is needed to perform these processes and how the necessary *eigen*-variety needs to be arranged through organizational structures so to achieve the intended outcome.

A company in the financial service industry (the "outsourcing company") was struggling severely with the outsourcing of some of its operational processes. While the employees of the outsourcee were meticulously trained in the processes, their productivity lagged and was significantly lower than in the outsourcing company previously. A deeper analysis revealed that a key success factor for mastering the processes was not only the knowledge about the processes as such, but more importantly, the expertise and experience about the intricacies of the client relations, the knowledge of how to manipulate the IT systems to compensate for their deficiencies (e.g., finding and retrieving information in the system), and finally, the knowledge about the legal and cultural framework of a market.

This **tacit expertise** had been developed by the outsourcing company over a long period and was only stored in the heads of its employees. Apparently, the outsourcee and its employees did not yet possess this kind of expertise; they lacked an essential part of the *eigen*-variety necessary to perform the processes speedily. The abstract knowledge about the processes, which the outsourcing company taught them, was not sufficient; the employees of the outsourcee lacked the expertise acquired over years of practice, and for this reason, they could not work as fast and accurately as their colleagues in the outsourcing company.

The lesson from this is: Why and how processes work in reality is often unknown to the organization itself and not captured in manuals. It is here that the VSM sets in; its emphasis on requisite (*eigen*-)variety, variety attenuators and amplifiers reminds us that organizational structures and processes are not the only aspects on which we need to focus. In the VSM perspective, organization is first and foremost about organizing *eigen*-variety (e.g., resources, competencies, and knowledge) and balancing it with the relevant environmental variety.

This brings us finally to the classical distinction between **efficiency and effectiveness**. The process perspective mainly concerns the first aspect, and the VSM perspective primarily the second; therefore, the effective use of resources, skills, and competencies. In this sense, the process and the VSM perspective complement each other logically.

Summary

- Operational dysfunctionalities can result from disequilibria between the environment and the operation, as well as between the operation, regulatory center, and the system 1 management. The design of the sensors and interfaces with the environment also significantly influence an organization's ability to find an equilibrium.
- If an organization cannot process all relevant variety, it creates residual variety. This unprocessed variety can become the source of major imbalances over time, and thus needs to be monitored regularly (e.g., by asking for truly critical customer feedback).
- Dysfunctionalities can also arise if the *eigen*-variety of a system function and its attenuators and amplifiers are not mutually aligned. This can lead to losses in performance, unexploited opportunities or to the building up of residual variety.
- An organizational diagnosis must identify whether problems are due to the environmental variety, lack of requisite *eigen*-variety of the involved system functions or misaligned attenuators and amplifiers.
- While the process perspective focuses on the sequence and efficiency of activities, the VSM asks whether an organization is equipped with sufficient *eigen*-variety and how well this *eigen*-variety is arranged so to be used most effectively.

Questions for Reflection:

1. Which of the dysfunctionalities described in this chapter do you find in your area of responsibility and organization? What prevents your organization from resolving these dysfunctionalities?
2. How clear is it to your organization what kind of varieties need to be processed at the operational level (e.g., related to certain types of customer requests and behaviors or operational challenges along the supply chain)?
3. How does your organization ensure that it keeps an eye on the unprocessed residual variety? How well does it deal with the disappointments that it generates in the environment (on a scale from 1 to 10, where 1 = badly and unprofessionally, 10 = very well and professionally)?
4. Where does your organization fail to properly address the variety of the environment? Where does it miss opportunities? What are the reasons for it? What kind of *eigen*-variety would be required?
5. Which dimension of your organization's *eigen*-variety is the weakest: the factual, social, or temporal one?
6. Is your organization more process- or impact-oriented? Does it rather prefer "doing something right" or "doing the right thing"?
7. How much do the processes and structures in your organization help people to develop and share their talents and potential?

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Bureaucracies, Ideologies, Big Brother, and Other Metasystemic Dysfunctionalities

4

In the last chapter, we discussed the dysfunctionalities in the operational area (i.e., regarding the systems 1). However, the metasystemic functions may also not be working optimally and failing to attain their respective equilibria (Fig. 4.1[1]). As mentioned earlier, these imbalances are more difficult to detect and address than the operational ones. First, in the metasystemic domain, the feedback on dysfunctionalities is less immediate and concrete: The environment, especially the customer, is farther away, and exists mainly as an abstraction.

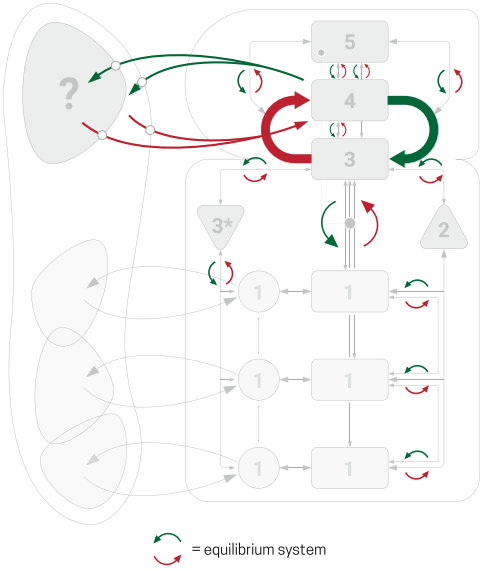

Fig. 4.1 The equilibrium systems in the metasystem (adapted from Beer (1995: 136, Fig. 37))

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_4

Second, many issues with which the metasystem deals are often rather a matter of discretion and judgment. Hence, the right equilibrium point can then be debated and is, in the end, defined by the organization itself. Third, the metasystem is more likely to deal with situations of multicausality, which makes it more difficult to identify dysfunctionalities and pinpoint their causes accurately.

A significant advantage of the VSM is that it provides us, at least, with a formal language for expressing a fuzzy feeling about possible disequilibria more concisely. In this chapter, we will present some of the most important and frequent ones.

4.1 Dysfunctionalities of System 2

System 2 coordinates the systems 1 with the objective of establishing equilibrium among them, as previously stated in volume 1. However, system 2 is not always successful in this endeavor (see Fig. 4.2). If **system 2 and its rules are too weak**, the systems 1 will permanently conflict with each other. In the opposite case, if **system 2 regulates the systems 1 too strongly**, it suffocates them. This system dysfunctionality is often behind what is perceived as "bureaucracy."

However, we might also find deficiencies in the **architecture of system 2**: In volume 1, we mentioned, for instance, that system 2 needs **institutionalized spaces**, where new rules can form, or existing ones be adapted. Without these coordination spaces, system 2 petrifies and becomes unable to adjust to the changes in the varieties of systems 1.

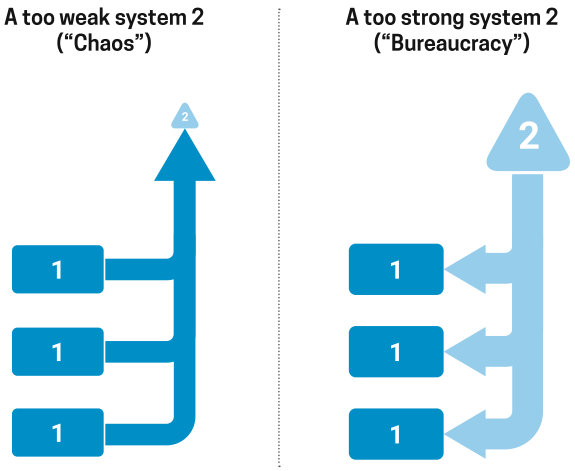

Fig. 4.2 Dysfunctionalities of a too weak and too strong system 2 (adapted from Pérez Ríos (2008: 415f, Fig. 30f))

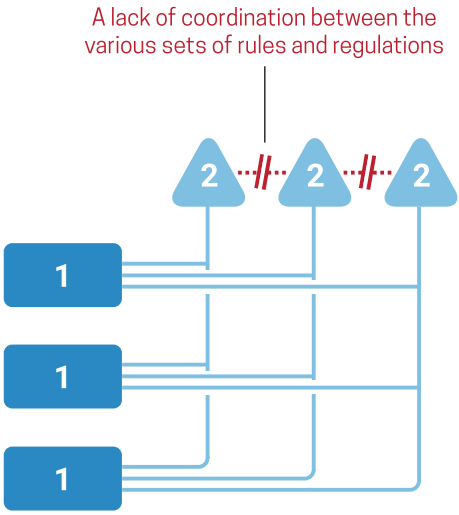

Fig. 4.3 System 2 must also coordinate the different sets of rules and regulations—contains adaptation from Beer (1995: 75, Fig. 19)

In Section 1.2, we also encountered the problem that system 2 may not have **connection channels to all systems 1**. The **lack of connections** might even concern the inner functioning of system 2, for instance, if rules, plans, or standards are not aligned with each other (Fig. 4.3). An example might be a new production plan that contradicts some of the safety regulations (e.g., overtime) or uses employees for tasks other than those defined in their contracts and the company's salary scheme.

Navigating between "One-size fits it all" and "Make everyone happy"—If you are interestedin the calibration of the system 2 attenuators and amplifiers, then continue reading here; otherwise, go to Section 4.2

There might also be dysfunctionalities regarding the **attenuators and amplifiers of system 2** (see Fig. 4.4); for example, if its **attenuators are too strong**, then system 2 does not become aware of the complexity and heterogeneity of the systems 1. System 2 will then develop coordination instruments

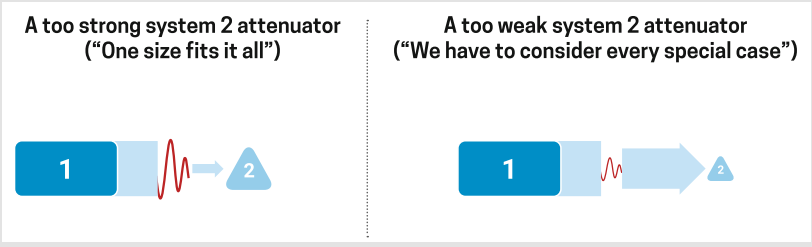

Fig. 4.4 Using too strong or too weak attenuators can result in a malfunctioning system 2

that leave too many specific aspects of the lives of the systems 1 unaccounted for; hence, system 2 then applies a "one size fits it all" approach even if not intended. The systems 1 then become either strangulated or need to use workarounds. The coordination instruments rest then under-complex, they lack *eigen*-variety.

Since system 2 often does not know how much it is dampening, it must therefore always foresee the **possibility of special cases and exceptions**. Most (input) forms have, for this reason, a comment field: It can be used to note what has not yet been identified as an input category by those who drafted the form, but is important to be known. Whatever regulations and standards system 2 develops, it must always provide a channel that allows capturing and treating the special cases.

When friends living in a Western world country had to retest their already registered car regarding its emission values, the connector of the new testing device did not fit into the car's socket anymore because the plastic edge around the socket was just a few millimeters too high. Unfortunately, the old testing devices were not permitted any longer. To resolve this case, the administration up to the level of the provincial government became intensively employed for several days. The proposed "solution" was a workaround typical for a too strict system 2: The car became classified as a truck for some days, for which the old testing devices could be still used, and then, after the taking of the test reclassified as a car. A clear case of a missing exception channel in the regulation and a too strong attenuator that did not allow system 2 to anticipate such "special cases."

The opposite case comprises situations where one lets too much variety pass into system 2: One wants to include every special case in a new regulation. System 2 then needs to find appropriate coordination instruments for too many and too heterogeneous aspects of the systems 1. Without a filter, system 2 becomes overloaded by the complexity and has troubles finding a rule that satisfies all possible aspects and events. In these cases, it becomes necessary to redefine the priorities for system 2 (i.e., what it should coordinate and regulate and what it can leave out).

There are also dysfunctionalities regarding **system 2 amplifiers** (see Fig. 4.5): First, system 2 might provide too many and too complex instruments,

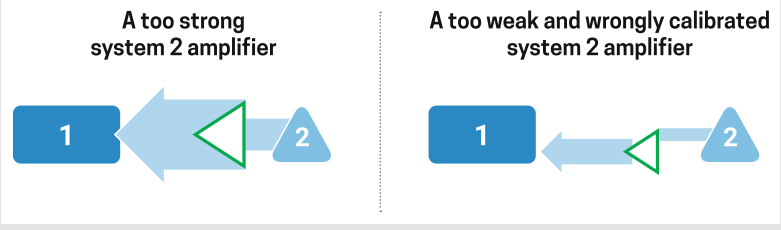

Fig. 4.5 Amplifiers that are too strong or weak can constrain system 2's intention to coordinate systems 1 efficiently

which, consequently, can overburden the coordination process of system 2. Process manuals in organizations sometimes are typical examples of such overly powerful amplifiers: They are well meant as a clarification, but often contain too much information and are not easy to read. The overload of procedural details hinders people to learn and understand the rules and regulations.

Conversely, there might be too little support for systems 1 (e.g., if rules and procedures are not well documented, difficult to find, or badly explained and trained by system 2 representatives). The rules as such might be performing well but only their transmission to the systems 1 renders them ineffective. These are cases where the amplifiers are too weak or even working detrimentally to system 2's intentions.

4.2 Dysfunctionalities of System 3

System 3 has both **dampening and amplifying effects on system 1**. However, mainly its dampening effects spring to mind first, since it is typically system 3's job to curtail the liberties of the systems 1 to generate cohesion and extract synergies for the entire organization.

On the other hand, one should not forget that the systems 1's *eigen*-variety can also benefit from system 3. Through the synergies obtained from others, a system 1 can receive more resources than it would have been able to generate alone. System 3 builds up reserves which can be used to smooth out downturns in business and investment cycles. What one unit might need to give up, it can receive later in return when it finds itself in a downward phase. System 3 might also assist a particular system 1 if it is facing enormous challenges, such as the invention and launch of new products, or the overhaul of production technologies or facilities, by providing additional resources. So, **system 3 can also enhance the *eigen*-variety of systems 1**.

As said earlier, **system 3 should be in equilibrium with each system 1**, but this is not always the case (see Fig. 4.6): System 3 can be, for instance, dominated by the systems 1 regarding competencies, knowledge, and resources. In this scenario, system 3 does not have enough processing power to integrate the systems 1 into the overall organization as it is supposed to do. It becomes outmaneuvered by the systems 1.

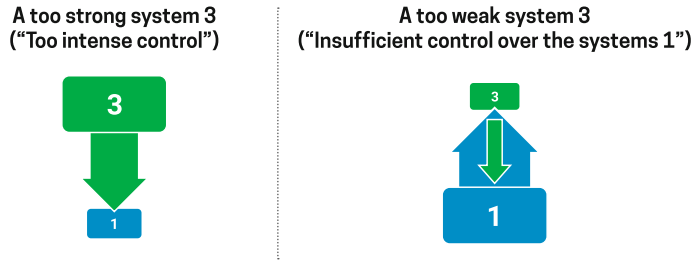

Fig. 4.6 Variety imbalances between system 1 and 3 lead to problems related to the control of the system 1 management

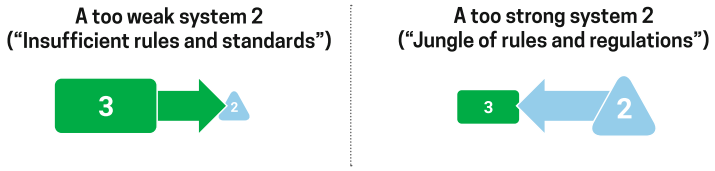

Fig. 4.7 Imbalances between system 2 and 3

In the opposite case, systems 1 are micromanaged or kept on a **too "short leash"** by system 3. Too much reporting, detailed guidelines, and instructions overwhelm systems 1 and, in the end, limit their freedom. Furthermore, it even lets them forget that their primary attention should be directed toward the environment and its customers, and not to system 3.

What we have said above also applies to the **relationship between system 2 and 3** (see Fig. 4.7).

If **system 2 is too weak for system 3**, system 3 cannot sufficiently use system 2 to operationalize its targets. Practically, this occurs, for instance, if an organization's control and coordination systems are too weak. System 3 would like to launch a savings project, but unfortunately, there are no standardized data available on the expenditures or assets of the systems 1. Other cases of a too weak system 2 are no agreed keys for dividing up (overhead) costs or performance bonuses. In these and similar cases, system 2's *eigen*-variety must be strengthened.

And vice versa, the *eigen*-variety of **system 2 can also be too strong** for system 3, which is then obstructed by a "jungle" of rules and regulations (Fig. 4.8) or by an overly complex and incomprehensible reporting system. The task of system 3, then, is to cut a path through the variety of system 2.

Fig. 4.8 Too many regulations can hinder system 3 (© Fotolia/stock.adobe.com; artist(s): corund)

This leads us to an interesting phenomenon that can be found especially in public sector organizations: The systems 1 can use system 2 as a protective shield against system 3. The famous French sociologist Crozier showed, in his pioneering study *Le phénomène bureaucratique* (1971), how regulations, which are typically an expression of hierarchical power, are ultimately turned against the upper levels by the employees of lower levels. The upper levels become managed by their own regulations if the lower levels know the rules and their exceptions better than the upper ones. As a consequence, the real power center then, paradoxically, gravitates to the lower levels.

Do you want to know how system 3 tries to change the variety balance in its favor and why system 3 and 2 also need to be in balance? If so, then continue reading here, otherwise, go to Section 4.3

Naturally, each system function tries to influence the relative balance of (*eigen*-)varieties in its favor. The tactics of the systems 1 consist, for instance, of presenting their world as more complex than it actually might be. The reason is simple: The higher the heterogeneity of the systems 1 is, the more difficult it will be for system 3 to control the systems 1 and generate synergies. System 3 then becomes forced to either increase its resources, knowledge, and competencies, which might be too costly or otherwise, be forced to give up. Then, the (pretended) heterogeneity of the systems 1 works as a barrier to system 3's control ambitions.

This tactic is also known as the "power of facts" or "overloading with details." Based on "examples" and "special cases," systems 1 present "facts" that the system 3 representatives first need to disprove. The fundamental problem for system 3 is that it never knows the operational details as well as the systems 1 do, and, without guidance, system 3 becomes overwhelmed by the operational details and cannot cut through the woods.

A possible counterstrategy for system 3 (see Fig. 4.9) is to increase its *eigen*-variety (i.e., to enrich its operational knowledge). Hiring external consultants or experts or nominating a representative of the systems 1 for a system 3 task are measures that amplify its *eigen*-variety. They increase system 3's competency and knowledge and restore its balance with the systems 1. Another option consists of increasing the reporting duties of the systems 1, and thus, of gradually transferring knowledge from the systems 1 to system 3.

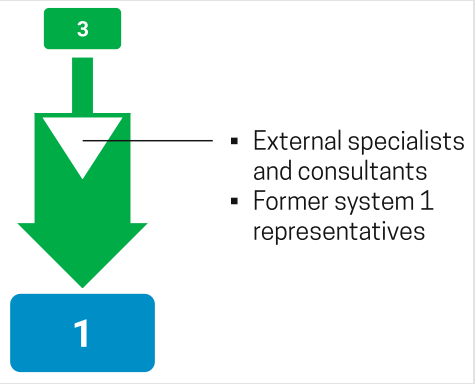

Fig. 4.9 System 3 can use outside experts as variety amplifiers for its interactions with the systems 1

More knowledge means more opportunities for system 3 to influence the systems 1, but it might also make its task more complicated. To avoid such an "overflow of information," system 3 could, in return, try to attenuate the variety originating from the systems 1 by targeted simplifications (see Fig. 4.10). Demanding to show only a small amount of PowerPoint slides or bullet points can be such an attempt to dampen the systems 1 variety to a level that better matches system 3's *eigen*-variety. The challenge is then to know when this leads to oversimplifications and risks overlooking important aspects.

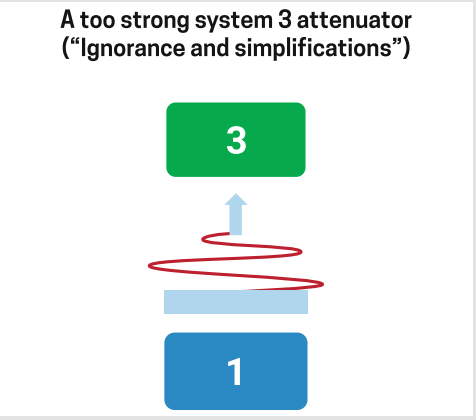

Fig. 4.10 Dysfunctionality of too strong attenuators applied by system 3

4.3 Dysfunctionalities of System 3*

However, one also finds **imbalances between system 3 and 3*** (see Fig. 4.11). System 3 can overload system 3* with too many audit assignments. Conversely, system 3* can produce too many and too provocative audit results that, in turn, overburden system 3. System 3* is intended to show how things could work differently, but it is precisely this otherness (see volume 1), which should be its strength, that renders it ineffective.

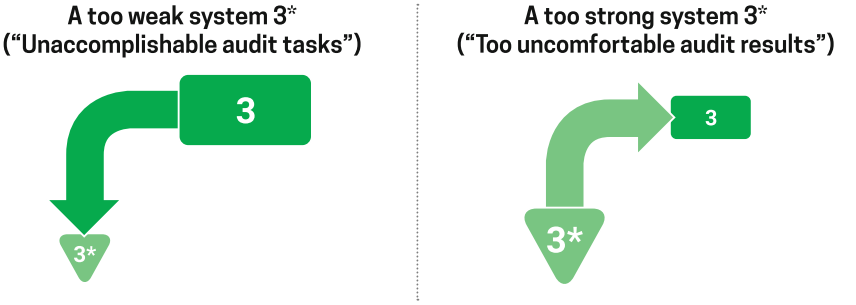

Fig. 4.11 Imbalances between the *eigen*-varieties of system 3 and 3*— left image (adapted from Pérez Ríos (2008: 414, Fig. 29))

In the latter case, system 3 will apply strong variety attenuators to the annoyance of the auditors: Reports become deliberately discarded or simply ignored. The archive, into which these reports disappear, works like a gigantic attenuator for system 3 to rebalance its relationship with the auditors or consultants.

The **relationship between system 3* and the operation** must be in equilibrium too (Fig. 4.12): If **system 3* has too much *eigen*-variety** (e.g., too many auditors and too extensive audits); then, it can paralyze the operation. The operation then

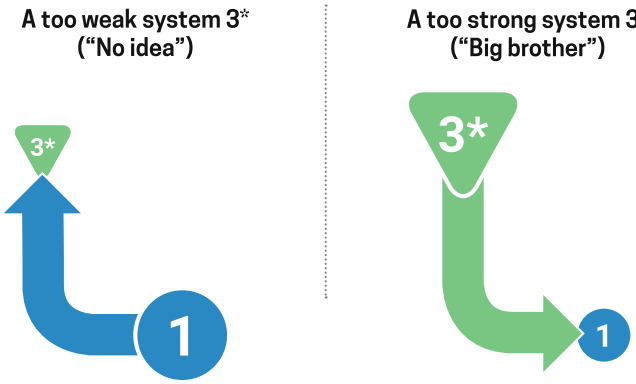

Fig. 4.12 Imbalances between the *eigen*-varieties of system 3* and the system 1 operation—left image (adapted from Pérez Ríos (2008: 414, Fig. 29))

concentrates only on the auditing processes and forgets about its original task and function. The operation's self-organization ability then becomes inhibited. The operation does not dare to make any decision without the express permission of system 3* and becomes in reality controlled by system 3*.

Such a situation also has, of course, detrimental effects on system 3*: It abandons its system 3*function and starts managing the operation. In the interest of the entire organization, the auditors must therefore always keep a distance to the operation and let it continue its work as much as possible. Finally, the opposite case to all this is **a system 3* that is too weak** (Pérez Ríos 2012: 158f). This is the case of the incompetent auditor who does not know where to look for improvements or irregularities in the operation.

4.4 Dysfunctionalities of System 4

System 4 needs requisite *eigen*-variety toward three other system elements:

1. Toward the future and wider **environment,**
2. Toward **system 3,** and
3. Toward **system 5.**

It is easy to understand why the **wider environment and future** might become overwhelming for system 4. However, less obvious is that the opposite case exists as well: the danger that system 4 produces too much variety for the wider environment and the future (see Fig. 4.13). For instance, if it develops a vision of the future so different from the one envisaged by the environment that the environment rejects this vision. One wishes system 4 to be ahead of its time, but this can turn out to be a curse. Galileo was right with his discovery, but the society around him and the church, in particular, were not yet ready for the necessary transformation of the prevailing worldview. The bust of the dotcom bubble at the beginning of this millennium illustrates this problem as vividly as it was distressful to all the shareholders of these early e-commerce companies. Life also punishes those who come too early.

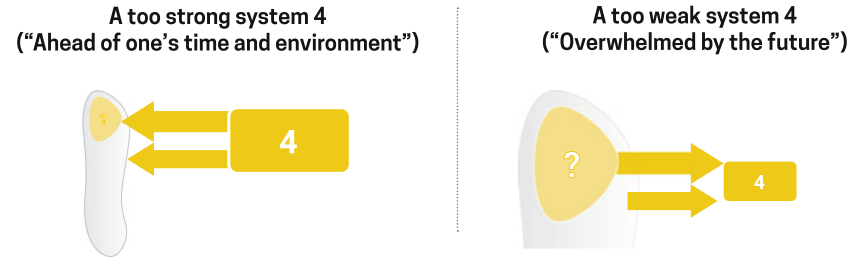

Fig. 4.13 Imbalances can also occur in the relationship between system 4 and the wider environment and future

System 4, however, can also be **too weak**. Hence, it may not be able to recognize trends and consolidate them into an overall picture. System 4's perception of the "outside world" might be too fragmented to generate overview. System 4 could also **be insufficiently innovative and creative.**

However, system 4 can also be too weak compared to system 3. These are the cases in which system 4 understands too little about the current operation and cannot adapt its innovations and strategies to the reality of the operational organization (see volume 1).

System 3 might also be too weak compared to system 4. Such a constellation occurs if system 3 is not sufficiently familiar with the operation, its capabilities, and requirements to correct too demanding innovations and strategies proposed by system 4. This is the case of a system 3 assuring all too willingly that "everything will work," even if it later appears to be a wrong assessment, in view of the actual operational performance level. Such situations occur, for example, with new production managers who are not sufficiently familiar with the operation and challenges of their business, and yet are willing to say "yes" to every proposal of system 4.

System 4 might also be too weak toward system 5 if, for example, it does not have sufficient access to the experiences and history of the organization and cannot question accepted norms, values, and principles. "This has always been the case!"—but perhaps, it was not always so, and one could have implemented a change while still remaining in line with accepted principles and norms. A system 4 that is too weak compared to system 5 means that it does not know enough about the exceptions already granted to individual values, norms, and company policies or about their true intentions.

Finally, **system 4 can also be too strong** for system 5, and may thus demand changes that are not yet compatible with the organization's identity and values and consequently, cannot be processed by system 5. It is a system 4 that is often unaware of how much it stirs up and questions the organization's self-understanding and identity (see volume 1).

4.5 Dysfunctionalities of System 5

System 5 monitors and takes care of the balance between system 3 and 4. For this task, it must have requisite *eigen*-variety too. System 5 must know what the two other system functions are talking about and it must be able to find a higher level of abstraction for the problems discussed between system 3 and 4 (see Section 2.2.6). Otherwise, the norms and policies that it formulates will not match the complexity that system 3 and 4, or the other system functions are facing. Well-intentioned but too simple guidelines do not help; system 5 must be up to the level of the challenge. "The world is more complex," the rest of the organization might then think. In such cases, system 5's *eigen*-variety is too weak for the organization (see left image in Fig. 4.14).

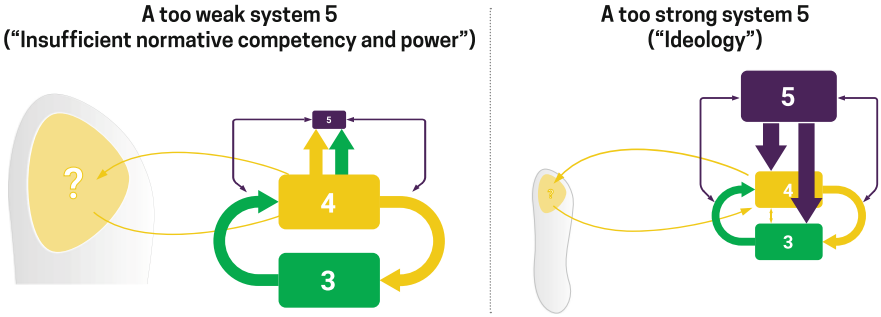

Fig. 4.14 Imbalances regarding system 5—left image (adapted from Pérez Ríos (2008: 407, Fig. 20))

Developing requisite *eigen*-variety in the ethical norming process is one of the most significant challenges for democracies and societies today. In view of rapid changes, such as in biomedicine, IT, or lifestyles, traditional "ethics" or values cannot capture the complexity that the economy and society are facing or even creating. Lawmakers and parliaments always come too late, it seems. Similarly, if voters are called upon to decide but are not in a position or willing to understand the basic issues of the decision at hand—this too is a case of a too weak system 5. What is often not said is that democracy is not merely about choosing, but also about understanding what the choices and their consequences are. Democracy needs voters who engage in the discussion and who try to understand what they choose.

A system 5 without the requisite *eigen*-variety for the problems at hand cannot develop guidelines or make fundamental decisions. Sooner or later, it will become obsolete and contradictory. In recent history, established religions and churches, as well as many political parties, have suffered from this problem. Their norms and values do not seem to correspond any longer to the problems of modern society. They can then no longer perform one of system 5's essential functions, namely, to close the organization or human society. Its decisions fail to decide.

However, system 5 can also be too strong (see the right image in Fig. 4.14) if it no longer mediates between system 3 and 4 but imposes its norms and values solely based on its normative, predefined vision, or if it turns every question normative. It overrules the concerns and proposals of system 3 and 4 resulting, in its extreme form, in an ideology or dogmatism that subordinates reality and its variety to a specific idea.

One might think that ideologies might possess too little *eigen*-variety due to their inherent oversimplifications and narrow-mindedness. However, the strength of ideology comes from its pretense to explain the entire reality (i.e., all open questions) with a few principles. As such, it promises a high amount of *eigen*-variety to its followers: An idea or a principle can explain and process the variety of the entire reality and its multiple facets—this is the promise and fascination of ideologies. This pretense confers an ideological system 5 an enormous potential to close the

organization. In fact, one hardly experiences more closed and determined organizations than those controlled by an ideology.

Whether an ideology can indeed explain everything, especially with regard to the environment and outsiders, is not relevant at first, because system 5 works only within the organization where it must gain acceptance and credibility. The biggest enemy in these organizations is thus the "disbelievers" (i.e., those who see the emperor naked). In ideologically controlled organizations, they need to be silenced or even excluded in order not to endanger the closure of the organization. The strength of an ideological system 5 is, therefore, only relative, namely, it is a consequence of the weakness of the rest of the organization: The other system functions cannot counterbalance the normative force of system 5 and argue against its norms and principles.

In the long run, ideologies are difficult to maintain. Over time, the environment will change and an ideology will increasingly encounter variety that it can no longer process. This residual variety will eventually mount to a level forcing the ideology to change its claims and thus relativize itself, or otherwise, face the fate of being abruptly replaced by an alternative ideology. In particular, in a (post-)modern, globalized, and complex twenty-first-century society, organizations, and their systems 5 can, ultimately, only function properly if they accept **continuous learning and adaptation as a value and guiding principle**. Recognizing the limitations of its norms, values, and principles is perhaps what makes the tasks of system 5 today challenging and paradoxical (see also volume 1), but also renders system 5 more listening and willing to learn.

Not unsurprisingly, **change and changeability** have consequently become one of the fundamental principles of modern organizations. The German sociologist Luhmann saw in "contingency" (i.e., the limitation and provisional character of our observations and concepts) even the form and eigenvalue of today's society (Luhmann, 1992b, 1992a).

While contingency and changeability are thus fundamental characteristics of our time, the question arises as to whether they have not become an ideology themselves. This would be the case if contingency and changeability were used as absolute (moral) norms that themselves are not contingent and subject to review.[2]

If one reads modern popular management literature, one cannot escape this impression. Has not the way how we recommend constant change, adaptation, learning, flexibility, and innovation become an ideology itself? Have the terms "future," "new," "innovative," and "creative" not only become buzzwords but also

[2] If used as a principle in organizations, both contingency and change need also apply to themselves, and thus, allow their opposites, namely, non-contingency and no-change. This paradoxical duality can be observed in the calls for order and against arbitrariness and (constant) change. Contingency and changeability have their limits in view of the organization's need for order, predictability, equity, and stability. Apparently, organizations thus need to live in two opposing modes simultaneously, namely, being contingent and changing, as well as noncontingent and non-changing. The art of management, and one can only call this an "art," is to balance both modes out and not to become one-sided.

rhetorical devices in corporate discourse to silence others, to promote one's agenda, or even to hide weaknesses?

The strength of this ideology lies in the fact that one could hardly disprove it since the future will always be different from what one has assumed. One needs to change because one changes, and this will again lead to change. The need for change and innovation then almost becomes a self-fulfilling prophecy that seems to be always right, even if it were not the case, such as the organizations demonstrate that were destabilized by too much change.

The only conclusion left to draw is that there probably exist only very few ultimate absolute principles, and this might perhaps be the only conceivable principle on which a mature system 5 needs to insist. This implies that system 5 adds to the viability of the organization precisely if it becomes the organization's guard against any kind of ideology and ideologization.

So far, we have considered only one equilibrium, but what happens if we consider several at the same time? If you are interested in an even more dynamic perspective, then continue reading here, otherwise, go to the end of this chapter.

4.6 One Decision, Many Effects—Organizations as Systems of Highly Interdependent Equilibria

If we look at changes over time and not just at one equilibrium, then we obtain an even more dynamic perspective. The VSM provides us with a map of how decisions in one equilibrium can radiate out into other areas of the organization and impact other systemic functions:

Scenario 1: "New product—new challenges!"

If we assume, for example, a scenario (see Fig. 4.15), in which the variety of one operation is enhanced by a marketing campaign or a new product or product feature (see ① in Fig. 4.15). This increase in variety first affects the relationship between the operation and its environment. Consequently, the variety of the environment becomes stimulated and demand increases. This stimulation subsequently feeds back into the operation in the form of more demand and, qualitatively, higher and new expectations (see ②).

However, this stimulation of environmental variety affects not only the operation but also its management (see ③). The introduction of a new product is always a turbulent time, especially for the management, since not everything works out as planned. Thus, the management must also strengthen its *eigen*-variety if it does not want to lose control due to some unwanted or unexpected feedback effects. This explains why managers

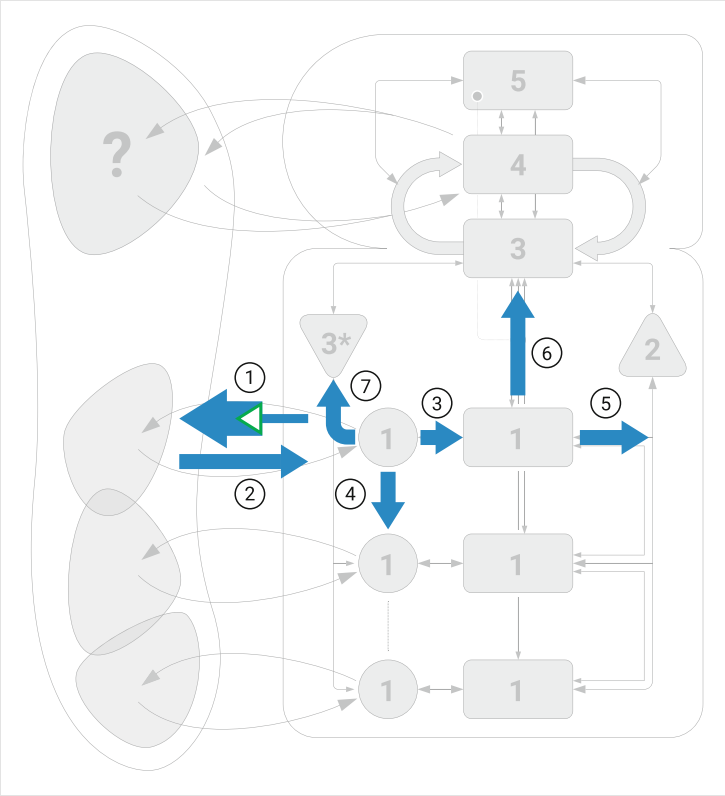

Fig. 4.15 Increasing the outbound variety of the operation into the environment can rebound to the entire organization—contains adaptation from Beer (1995: 136, Fig. 37) (scenario 1)

sometimes shy away from trying out new technologies, products, or markets. They can rebound on them. Consequently, we might witness refusal and even obstruction if it comes to the introduction of something new: Behind technical counterarguments, we see hidden the fear of these repercussions.

However, the impacts might also radiate toward the neighboring systems 1 (see ④), for example, if products are produced in a network. An increase in demand could then result in an increase in the production of intermediate products. It can also imply that customers might want that a new product feature should also become part of the products of other systems 1. The other systems 1, therefore, must adapt their products and productions accordingly to include this feature.

However, there might also be effects on the metasystemic functions since the changes affecting other systems 1 must be regulated and coordinated by

system 2 (see ⑤). Increasing the variety in one operation means that the overall heterogeneity across all systems 1 will most likely alsogrow. Such a situation could then undermine attempts to create common product platforms, standards, or standardized input materials. For system 3, challenges can hence arise regarding the generation of synergies (see ⑥) and consequently, system 3 might need to revisit the impact on synergies and allocation of resources. Finally, system 3* may also need to adjust its *eigen*-variety regarding the new production processes (see ⑦) as it needs to acquire new competencies. From this, we see that changes often are not only local and one-directional but affect multiple equilibria.

Scenario 2: "Tightening the belt"

Let us now take a different scenario (see Fig. 4.16), in which system 3 demands more synergies and savings from its systems 1 (see ①). In this case, the system 1 management and its operation need to reduce their resources, and thus, their *eigen*-variety (see smaller shapes in ②).

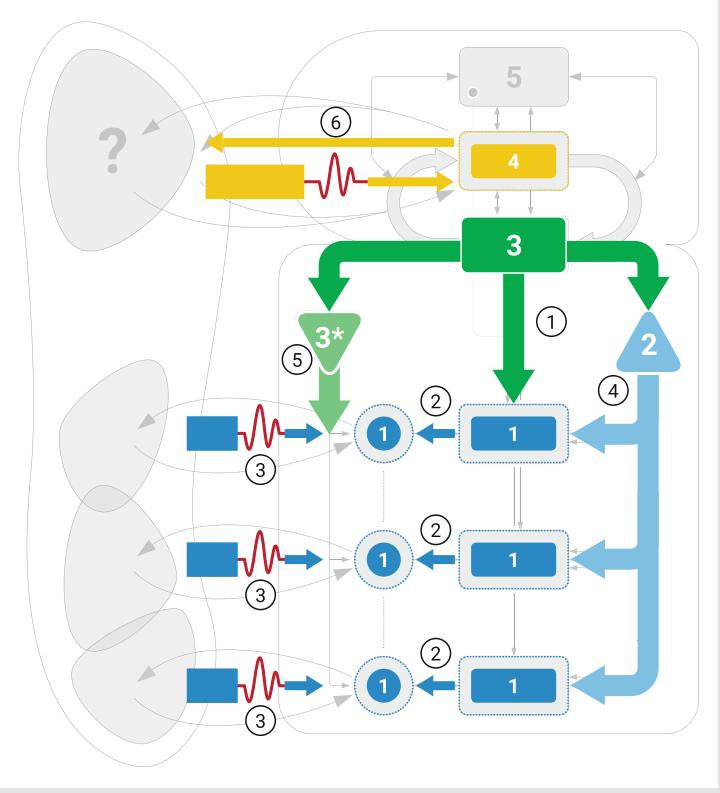

Fig. 4.16 Intra-organizational effects resulting from an increase in synergies (scenario 2)—contains adaptation from Beer (1995: 136, Fig. 37)

Organizations are systems of multiple equilibria and, consequently, changes in one equilibrium affect others and the balance of the entire system.

First, savings affect the relationship between the environment and operation. Why is this so? Savings imply in most cases less *eigen*-variety (i.e., fewer resources). Consequently, the systems 1 have less flexibility and fewer buffers available to absorb environmental variety. Sometimes, organizations manage to keep up the same service level, but in many other cases, the incoming variety needs to be dampened. Thus, the organization must reinforce its attenuators and become more "selective." Typical measures then are, for example, to reduce the number of shops, the product offering, and the number of product variants (see ③).

Second, savings often also require a more intense sharing of resources. Consequently, system 2 needs to increase its coordination and standardization activities (see ④). It must reduce the heterogeneity of the systems 1 to generate synergies. It also needs to support system 3 more actively by, for example, devising plans of how to achieve synergies.

Third, savings also herald a more intense period for system 3* and require it to increase its activities (see ⑤). It must support the systems 1 more strongly and especially the operations in their efforts to improve and save resources. To this end, system 3* must also generate more innovative ideas of how to achieve the savings targets. Finally, it must also verify whether the savings declared by the systems 1 have been indeed achieved. To accomplish all this, system 3* is most likely called to increase its *eigen*-variety from its current level.

Fourth, savings also affect system 4: Some planned innovations and product developments or "futures" will no longer be possible. Not only will they be too costly, but the operational organization will be less apt to use them since its overall *eigen*-variety has become reduced. System 4 must consequently diminish its activities, and thus, its *eigen*-variety (see the smaller system 4 at ⑥). This cutback in *eigen*-variety also implies that it must limit the scope of the wider environment and future it observes. The observation of new trends and the development of new technologies need to perhaps be postponed to a later date.

Fifth, the need for savings might also force one to question "sacred cows" or aspects to which the organization has attached much symbolic value. To achieve substantial savings, organizations often need to go deeper than just slashing numbers; organizations need to question their self-image, identity, and what they value at their current state, such as their specific processes, assets, technologies, products, or customers. How much an organization can save, consequently, also depends on its system 5 and its willingness to change and promote new ways of thinking. We hereby see how the savings project initiated by the metasystem through system 3 bounces back. Savings are not only an operational matter; the metasystem too must change.

From these scenarios, we can draw some **important conclusions**: First, changes in one equilibrium can affect others, and these effects must be considered before one decides to implement changes. In the end, one must ensure that the system as a whole can find a new balance.

Second, the interconnectedness also implies that one might need to change other equilibrium systems before the initially targeted one. If the inertia or even resistance of the other equilibrium systems is too strong (e.g., system 5 and the organization's identity), then changes in the targeted equilibrium system can lead to frictions and imbalances and, in the end, one might then even be forced to abandon the change.

Third, feedback effects can render the system's behavior unpredictable. How a change affects the entire organization and reverberates through it, one just learns in the course of the change. The impact of changes can only be anticipated to a certain degree. How often do we experience it that an initiative, albeit starting with good intentions, ends up as a storm? This implies that one should never just look at changes locally but always take into account all the systemic functions and equilibria within an organization. Thus, changes should be tested out beforehand as much as possible, such as in pilot projects, so as to understand its effects and how they can and should be controlled best. Changes are always learning processes where the only certainty is that the organization gets to know itself in new and surprising ways.

Fourth, the interconnectedness might also affect those who have started the change: The tides of a change may be returning, but are they wanted? These possible feedbacks explain why changes are not started, even if necessary. Change processes are consequently always subject to their own effects; **circularity** is one of their most important emergent properties. Thus, who wants to change an organization must be conscious of these reverberating effects. He or she needs to control the corresponding anticipations and expectations (e.g., fear) and offer assistance to overcome these anticipations.

Summary

- Metasystemic dysfunctionalities are often more difficult to recognize than operational ones. The lack of objective criteria, multicausality, and an insufficient (i.e., only partial) overview of the organization are the most common barriers to diagnosing these dysfunctionalities.
- Dysfunctionalities in system 2 mainly concern the scope and precision of its regulation and coordination activities. Bureaucracy, insufficient adaptation of existing rules, and the lack of coordination between rules and regulations belong to some of the major problems regarding system 2.

- System 3 must assert itself against the systems 1 ("power of the factual"), and, at the same time, not reduce the systems 1's (*eigen*-)variety by dominance or ignorance.
- The dysfunctionalities of system 3* mainly concern the lack of understanding of the operational procedures, but also the attempt to audit the systems 1 too intensely. Finally, a vital success factor is system 3*'s relation to system 3 and how system 3 receives the findings and proposals by system 3*.
- System 4 requires not only requisite *eigen*-variety toward system 3 but also toward system 5 since its proposals can challenge existing values and identities.
- System 5 requires sufficient abstraction capacities to bring the fundamental issues in the discussion between system 3 and 4 to light. It also requires enough *eigen*-variety to evaluate the algedonic signals correctly. Finally, system 5 must also restrain itself from dominating the dialogue between system 3 and 4 by being too ideological and dogmatic.
- Due to the interconnected and systemic nature of organizations, changes in one equilibrium system trigger a chain of reverberations, thereby not only inducing changes in other equilibrium systems but also in the original equilibrium system. The anticipation of these feedbacks already influences change processes long before they have started. Organizations are thus marked by the intrinsic circularity of change processes and need to take appropriate provisions to control it. The road from the present to the future is not a one-way street but bi-directional: the future already influences the present.

Questions for Reflection:

1. Which dysfunctionalities described in this chapter do you recognize in your area of responsibility and organization? What prevents your organization from resolving these dysfunctionalities?
2. How good is your organization at identifying the causes for these dysfunctionalities? Are people blamed in an undifferentiated way for dysfunctionalities or does your organization have a culture of conducting thorough root cause analyses? How constructive is the dialogue in your organization on the causes and possible ways to correct dysfunctionalities?
3. How strong is the willingness to experiment and take risks in your organization? How strong is the fear of repercussion effects released by changes? How well has your organization established a culture of assisting, helping each other out, and forgiving during organizational changes?

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5 "From Juvenile Chaos to Ossification"—Dysfunctionalities in the Life Cycle of Organizations

The dysfunctionalities discussed so far were based on an almost linearly evolving organization. Life, however, is never a straight line, and every organization will experience positive and negative disruptions. But, how does an organization evolve during its entire life cycle and what kind of organizational dysfunctionalities can loom on its way? The VSM can help us here by simulating the organizational changes and challenges during the various life cycle phases to which an organization becomes exposed and needs to prepare itself.

For this chapter, we use the well-known life-cycle model as a conceptual basis to describe the development and evolution of an organization (see Fig. 5.1[1]). This model is, of course, just a rough approximation of the real development of organizations since real life is always more meandering than the model suggests.

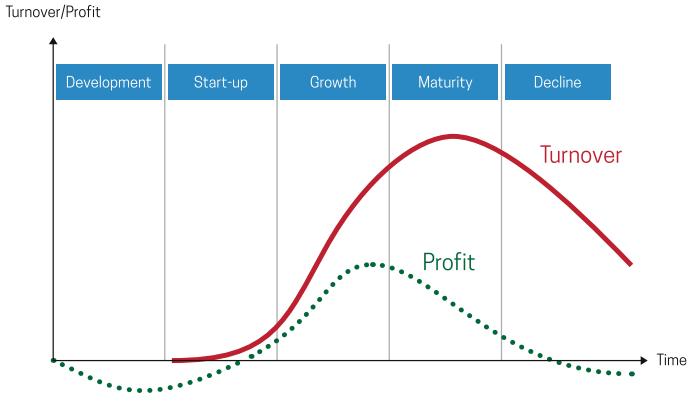

Fig. 5.1 Life cycle curve

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

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5.1 “We Have Got an Idea!” (The Development Phase)

In the development phase, the core of the organization consists just of an idea that will eventually develop into a product. The core of the current organization (see Fig. 5.2) is the development process consisting of a product developer or team. They form the organization’s system 4 and are working in close exchange with their (beta) testers. System 3 exists, but only for budgetary and control reasons—as a “reality check” to point out possible operational and marketing challenges ahead.

The (wider) environment is still largely unknown: The market and its customers exist only as wild guesses and hopes. How the product idea will ever become the basis of a fully functioning company is still mostly unknown to this team. The organization exists only as a big mountain of question marks. However, this does not yet pose any problem because this rudimentary organization lives in the future, or better they are the future, and the future is their present!

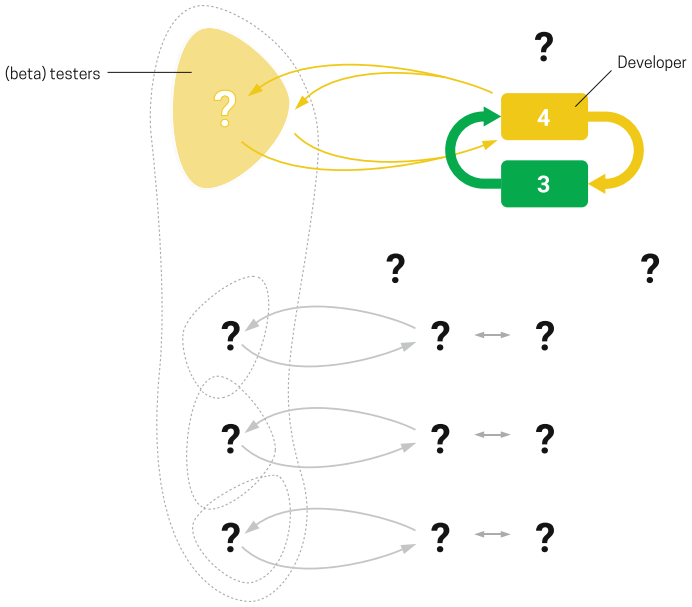

Fig. 5.2 Organization in the development phase

5.2 The First Steps Out of the Dark (The Start-up Phase)

The start-up phase is characterized by the development of a marketable product and first successes in the market. In this phase, there is usually only one system 1 operation (one product and only a few clients). Consequently, no separate metasystem is required. The operational metasystem and the system 1 management are still one and undifferentiated (see Fig. 5.3).

Institutionalized processes, roles, and functions are typically still weak (hence, no or a very limited system 2). Much is still managed through direct and personal contact, which is feasible since the organization is still small regarding the numbers of employees, customers, and products. Everyone does almost everything, and during this phase, it is easy and rewarding to know the company inside out. The company resembles a group of friends who have embarked on a great adventure trip.

In the late start-up phase, as more systems 1 become added, the first major organizational challenge arises. The future system 3 has hitherto been identical with the management of the operation. With several systems 1 being part of the organization, the management tasks and responsibilities must become more clearly differentiated into the system 1 management and metasystemic management unit. Otherwise, the current management will be overloaded and become the bottleneck of the organization. The organization must divide the management tasks up between two positions or units: One entailing the tasks of managing the system 1 and another one responsible for all the tasks that belong to the future system 3 (i.e., the management of the operational organization).

This step is often a tough one since the job owner(s) of the combined system 1 and 3 function must learn to withdraw from managing the operational issues of the systems 1 and let others manage the systems 1. Disengaging from the immediate

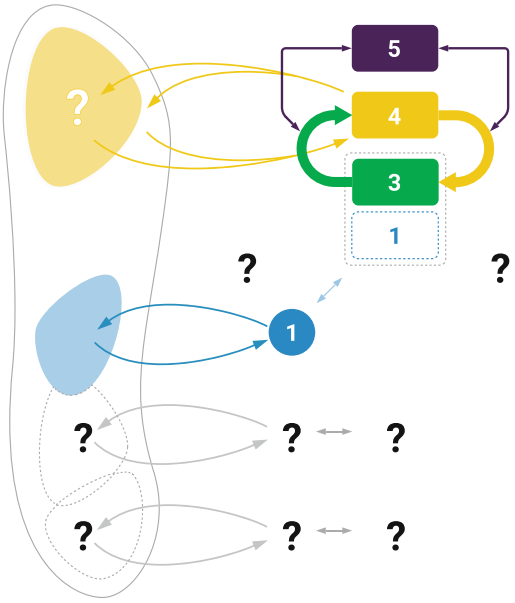

Fig. 5.3 Organization in the start-up phase

operational responsibility and leaving tasks to lower level management units is hard since those who have so far exercised the combined function would like to stay close and involved in the operational business. It is difficult for them to watch others manage it. However, if they do not learn to let go and delegate, they become the bottleneck for the organization's further development.

5.3 "There Was Only One Way: Upward" (The Growth Phase)

With the transition into the growth phase (see Fig. 5.4), the relevant environments and products become more transparent. The central challenge of this phase is the abrupt increase in environmental complexity: The environmental variety often grows exponentially, both quantitatively and qualitatively (more customers and more heterogeneous customer needs). Such a situation requires the systems 1 to grow as well; initially, in their operational processes and resources (for example, more employees or offices), but then also regarding their management capabilities.

Here, we often witness a bottleneck situation developing if the system 1 management cannot increase its *eigen*-variety at the same rate as its operation. The growth momentum is often so strong that companies fail to find and recruit sufficiently experienced managers and executives in time. The system 1 management then typically tends to be too weak, and chaos in the operational processes such as sales, production, and logistics is almost to be expected.

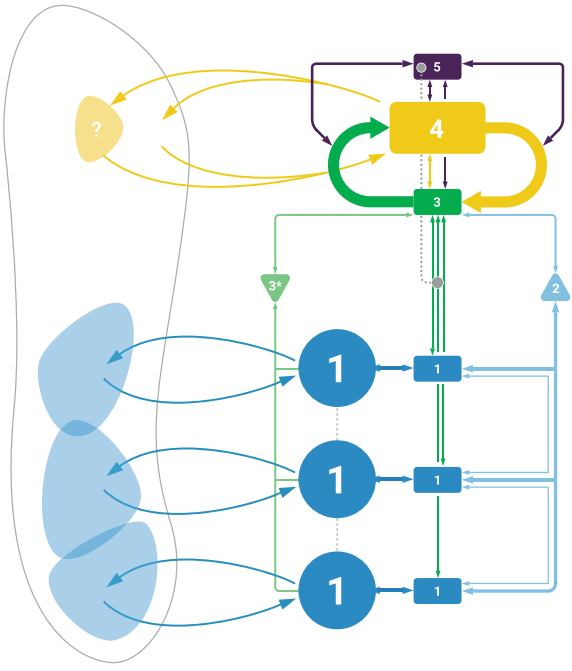

Fig. 5.4 Organization in the growth phase

However, the operational control competency of the metasystem (i.e., systems 2, 3, and 3*) might also initially be too weak in high growth phases. There are no or too few standards, the information systems are weak, standardized KPIs are not yet available (everyone has his or her own reporting system), the control systems are inadequate (mostly based on an assortment of Excel lists on different laptops), and a quality monitoring process barely exists. One is only occupied with satisfying the markets and customers on an ad hoc basis; there is no time left to develop the company internally and add operational depth to it.

This neglect might lead to dangerous, even life-threatening situations: Customers might become aware of the lack of coordination and planning (e.g., deadlines are not met), resources are misused, and the lack of proper auditing processes leads to constant problems and firefighting operations.

Companies in this phase are, therefore, forced to strengthen their internal processes, standards, and instruments and develop appropriate metasystemic structures. Alternatively, they might have even been left with no other choice than to restrict the variety of the environment, such as deliberately delaying market entries, not offering specific product features or not entering markets at all. The organization will then need to deal with the strategic question as to whether such decisions will not bring its growth path to a halt and result in the loss of valuable market opportunities.

The institutionalized structures and rules (systems 2 and 3) that need to be developed in this phase, unfortunately, make the company less personal and intimate. This is a logical consequence of its growth: As the organization grows and the staff composition becomes more heterogeneous the organization can less and less rely on personal relationships and companionship. Rules and standards become necessary first, to reduce the internal heterogeneity induced by the staff's personalities and behaviors and second, to increase the controllability and internal transparency within the organization. The somewhat unpleasant consequence, especially for employees who have been in the company since its foundation, is that the individual as a person counts less and less. The individual employee feels being reduced to just a "number" in the organization's controlling, IT, and HR systems.

In this phase, the known and unknown future perhaps might even overlap, since the organization might obtain the opportunity to become the new future for its environment. These are the companies that succeed in setting the trends for entire markets, customer groups, and generations. Such companies manage to become the institution that develops and shapes the future for the environment; hardly any other future outside these trend-setting organizations, then, is conceivable. Consequently, the organization cannot imagine any other future different from the one it envisages and designs: it is the future. This gives system 4 a high degree of certainty but might render it also myopic, overlooking other developments in the environment.

5.4 "Where Are New Shores?" (Maturity Phase)

In the maturity phase, the systems 1 have stabilized, and the operational metasystem seems to work well. However, this impression is deceptive because the challenges in the environment might have become significant: The number of competitors has risen, and new technological and regulatory requirements must be met since society has also become aware of adverse side-effects (e.g., on the people's health or social behaviors) and possible misuse of its products. Due to a falling customer acquisition rate, the mounting price pressure, and declining margins, the question arises: what will come next? Can we create a new growth market, or do we have to optimize our organization given the more intense competition?

Correspondingly, either system 4 (strategy development, innovation) or system 3 (synergies) are required more than before. At the beginning of the maturity phase (see Fig. 5.5), one might thus find both system functions underdeveloped and needy for a reinforcement: innovation projects are launched with the expectation of triggering a new boost, and synergy projects shall ensure competitiveness and leanness and target greater standardization (system 2) and optimization (system 3*). One now needs to decide in a more controlled way where to invest. Hence, the internal competition and fights for resources, the famous struggle for the "meat pots," intensifies (system 3—resource bargain). To increase synergies might also imply to reduce the *eigen*-variety of systems 1. This, consequently, also is the time when "sacred cows" need to be questioned and too independent systems 1 (so-called "principalities") must be better integrated into the entire organization.

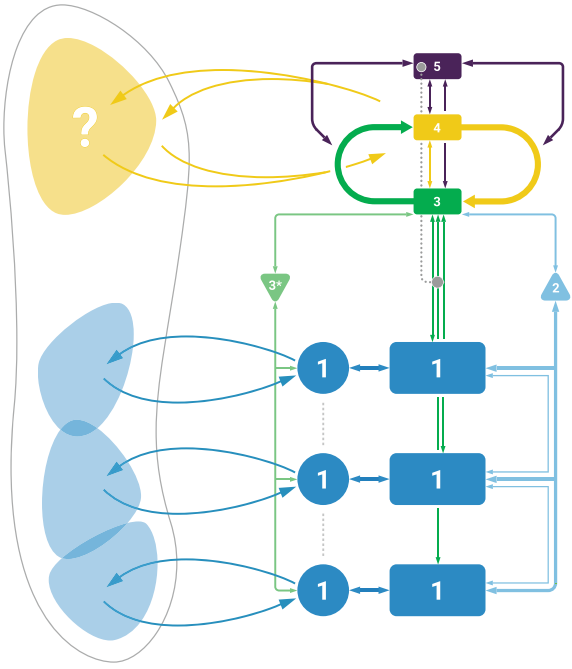

Fig. 5.5 Organization at the beginning of the maturity phase (adapted from Pérez Ríos (2008: 417, Fig. 33))

In the maturity phase, the exchange process between systems 3 and 4 plays a vital role, as it is often not clear whether a growth or consolidation strategy should be the way to go. Since in the late maturity phase, current products or markets have already been largely exploited, a growth strategy would often also imply looking for new shores, hence, necessitating a possibly radical departure from the existing business model or technology. Can one risk this?

In this situation, system 5 will be particularly in demand. System 5 must skillfully balance between system 3 (focus on today and optimization) and system 4 (focus on tomorrow and investment into innovation). System 5 also needs the courage to ask whether the current strategic orientation and identity is the right one, or whether a new business mission and identity needs to be developed, which opens the organization to a new future. The German company Würth started with screws but then mutated into fastening technology with a wider range of products and technologies that even compete with the old screw business. This requires not only a technological change but also one of minds and identities.

5.5 "Hoping in Vain for the Revival of the Golden Age" (The Decline Phase)

The decline (see Fig. 5.6) is typically characterized by a shrinking environment. The primary challenge for organizations then is to perceive this downturn in time and adapt their self-image accordingly (system 4 and 5). System 5, hence, plays a significant role, since this is a new phase for the company without any prior experience and corresponding business policies. The downturn requires significant changes in perspectives and organizational structures. The time has also finally come to face earlier mistakes and acknowledge them—a tough business!

Unfortunately, companies often try to avoid this kind of honesty and continue with their previous strategies and policies instead of changing them. This can lead to discrepancies between the image of the environment upheld by the organization and the actual environment. Wishful thinking and vain "hope" (see Section 1.4.2) without any real foundation become the main obstacles for necessary adaptations in the organization. Often, the existing identity and self-image, so system 5, hinder organizations from implementing the necessary changes, despite the better knowledge available. So, the way to change leads sometimes through revisiting and questioning the organization's self-understanding and self-perception.

As we can see from the discussion above, we can use the VSM quite well to model an organization's evolution and the challenges it faces across its life cycle. In this chapter, we discussed just a few constellations along the life cycle, but we can use the VSM for many more scenarios, such as the entry into new markets or the merger of companies. The VSM can also serve as a useful conceptual framework to assess the organizational consequences of strategies and whether a structure is fit for the intended strategies. The VSM should, thus, become an integral and indispensable part of any strategy process.

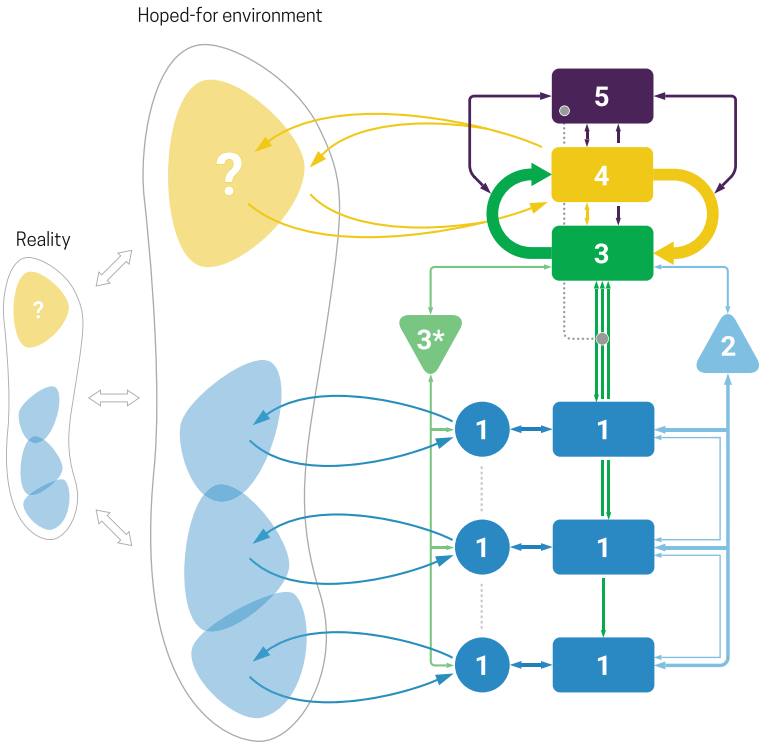

Fig. 5.6 Organization in the decline phase—contains adaptation from Beer (1995: 136, Fig. 37)

Summary

Due to changing varieties, various dysfunctionalities can emerge in the life cycle of an organization. The following typical challenges can be found in the …

- Development phase: The lack of sufficient operational structures and channels to the environment.
- Start-up phase: The necessity to establish distinctive metasystemic functions and recursion levels.
- Growth phase: The requirement to strengthen the systems 1 management, as well as system 2, 3, and 3*.
- Maturity phase: The need to strengthen the system 3 (in particular, regarding synergies) and 4, as well as finding the right balance between both.
- Decline phase: The necessity to adapt system 5 to the new environment (i.e., the organization's identity and self-image).

Questions for Reflection:

1. In which phase is your organization currently, and how much does the description in this chapter correspond to what your organization is experiencing? Where are similarities and where do you see differences to what has been described in this chapter?
2. How do you expect that your organization will evolve in its further life cycle? What will the specific organizational challenges ahead be in the light of the VSM?

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6 “Figureheads” and “Bottlenecks”—Dysfunctionalities in the Recursive Structure

As discussed in volume 1 (see also Fig. 6.1[1]), organizations use the vertical dimension to process environmental complexity in a more differentiated, and thus easier and targeted way. The introduction of divisions, as described by Chandler (2003) in the cases of GM or DuPont, is a good example of how vertical differentiation helps to distribute better the variety that needs to be processed and managed.

However useful verticalization might be to organizations, its organizational implementation is equally difficult. Organizations can all too easily fall victim of various dysfunctionalities. In this chapter, we will discuss **four types of dysfunctionalities**:

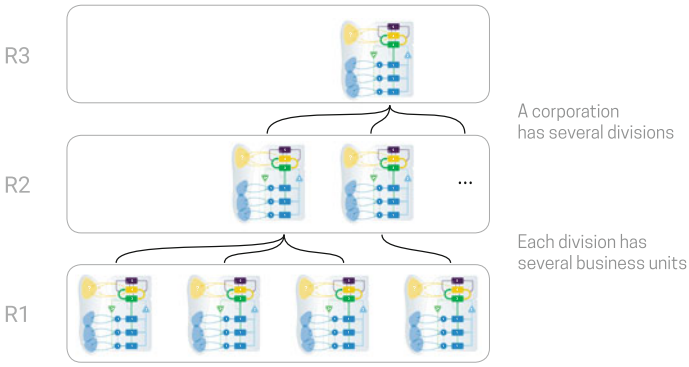

Fig. 6.1 Complex organizations structure themselves recursively (adapted from Beer (1995a: 315, Fig. 51) and Leonard (1989: 189, Fig. 5))

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

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1. No correspondence between recursion and environmental levels.
2. Incorrect assignment of system functions to recursion levels.
3. Lack of inter-recursive channels.
4. Lack of lateral connections between the viable systems.

6.1 No Correspondence Between Recursion and Environmental Levels

6.1.1 Recursion and Environmental Levels—An Explanatory Note

Not only are organizations and their activities divided into recursion levels, but organizations also structure their environment recursively by dividing "markets" into "market segments," and these again into "customer groups," and so forth. Analogous to the recursion levels, the wider environment of one recursion level is only the partial environment of a wider environment at the next higher level in which it is embedded.

Decisive for the viability of an organization is that the (organizational) recursion levels correspond to the environmental boundaries and interdependencies as much as possible (see Fig. 6.2). If the organization's fundamental structure does not match the environmental one, it will be difficult for the organization to process environmental variety correctly and efficiently.

We come at this point to an important **intersection between the development of a strategy and the design of organizations**, since it is the strategy's task to define the scope of the relevant environment and how boundaries in it should be drawn. It does so through questions such as "Which customers do we want to serve and which ones not?," "How do we segment or group our customers?," or "What should be the scope and size of the market?" (a question particularly relevant in antitrust cases). These questions define not only the boundaries in the environment but at the same time also the boundaries within the organization, and especially of the systems 1, such as the scope of product areas or business units. A strategy

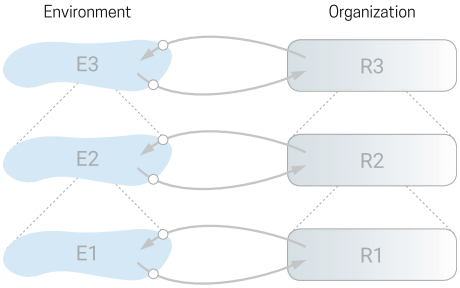

Fig. 6.2 In an ideal situation, the environmental and recursion levels correspond to each other

based primarily on products most likely needs a business unit organization and finds a regional structure cumbersome.

Due to the interdependency between environment and organization, organizational structures should consequently never be considered as a purely organizational matter. They need to embody and reflect the strategic decisions of the organization in order to support them. Only if **organizational structures mirror the environmental boundaries** and **interdependencies** as much as possible, can they then process the environmental variety optimally. To put it into Chandler's famous dictum (2003): **organizational structures need to follow the organization's strategy.**

This implies that whoever wants to reorganize organizational structures must first examine the organization's strategy and objectives regarding their structural implications before addressing organizational questions.

Internal and external boundaries do not always match, however, and thus, we can distinguish the following three dysfunctionalities:

1. Too many recursion levels.
2. Too few recursion levels.
3. A mismatch between recursion and environmental levels.

6.1.2 Case 1: Too Many Recursion Levels

This dysfunctionality implies concretely that some recursion levels do not have a **counterpart in the environment** (see Fig. 6.3).

A recursion level without equivalent in the environment means that its wider environment equals just the sum of the partial environments of its systems 1.

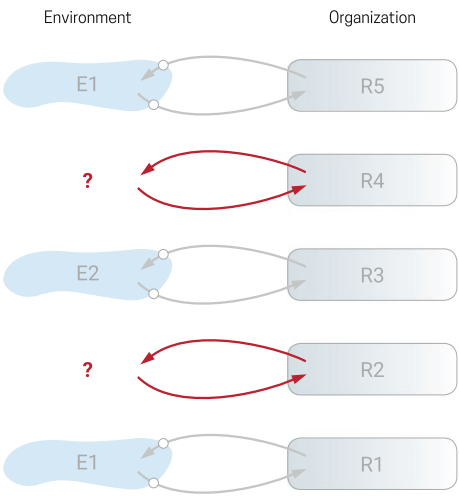

Fig. 6.3 Too many recursion levels imply that some levels have no corresponding environment of their own

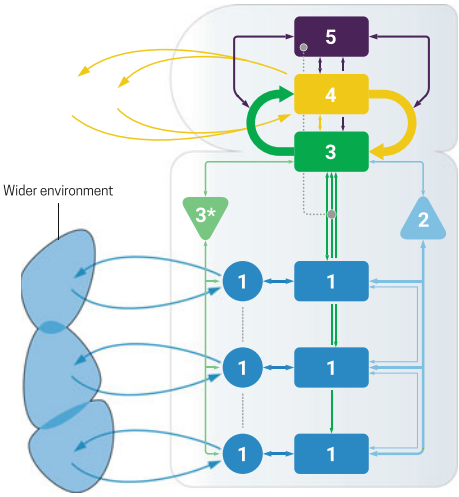

Fig. 6.4 Without its proper environmental level, a metasystem has no wider environment and future to focus on

Without a proper wider environment left to the metasystem (see Fig. 6.4), the metasystem then becomes superfluous. There is no room for it to develop innovations or strategies for its subordinate systems 1. These tasks are already taken over by the systems 1 at the lower level. Equally, the values and norms are already developed and defined by the systems 1, and the metasystem only needs to coordinate these norms. The strategic-normative tasks then fall either into the responsibilities of the lower level systems 1 or the recursion levels above the metasystem in focus.

We are facing here a **trunk metasystem** or, borrowing from Shakespeare, a "**metasystem without a land**" (see similarly Espejo & Reyes, 2011: 239). The metasystem is reduced to administrating the operational organization or, even worse, to function just as a communication channel between its systems 1 and the levels above it. Its main remaining responsibilities are coordinating and planning the allocation of operational resources, auditing, or "passing on decisions or information" between levels. At some point in time, these tasks will eventually become so routine that they can be left to the self-governance of the systems 1. Then, the metasystem will be reduced to an appendix and ends up as an ornament like a figurehead.

In such cases, it would, of course, be better to abolish this metasystem right away and merge the people employed in it with the next higher recursion level, where broader business policies and strategies are developed. Since this would, however, imply giving up positions, freedom, or even prestige, the units that represent the "metasystem without a land" will counteract. For this, these units will undertake measures to conquer pieces of "land" that give them more room to become meaningful again and justify their existence. The seeds for an ongoing conflict are thus sown.

Are you interested in what tactics the "metasystem without land" might use to become more relevant?
If so, then continue reading here, otherwise, go to Section 6.1.3

To become more useful means that the metasystem must obtain the possibility to process variety. Every job exists only because of the unprocessed variety that the organization or environment deems necessary to be handled: no unprocessed variety, no job (see also volume 1). To survive as metasystem, the metasystem without land must hence accumulate unprocessed variety. This it can achieve through the following three tactics:

1. The metasystem can, for example, try **to take away unprocessed variety from other levels**. In most cases, it will choose the lower recursion levels due to its statutory powers over them. These are the cases where a recursion level wants to get deeply involved in the operational business of its subordinated systems 1, even if this is not necessary. The metasystem then attempts to migrate into the metasystems of its lower level systems 1 and to micromanage them. Ultimately, the management function of the lower level systems 1 becomes hollowed out and superfluous. Conflicts about the division of responsibilities between the metasystem and the system 1 management units are then the only too natural consequence and typical symptoms.
2. Another tactic for the "recursion level without land" consists of **creating its own environment**. This can be achieved either by taking away parts of the environments from other recursion levels (visible in conflicts, e.g., over markets, customers) or by constructing or even inventing its own environment; for instance, by creating special markets that the lower level systems 1 cannot handle themselves. Another possibility consists of inventing new trends or challenges that make the "recursion level without land" relevant again and keep it busy, although these trends do not exist at closer inspection and look artificial.
3. Another possibility consists in **artificially increasing the variety that the systems 1** need to process. Declaring customer cases as more complex and making the processing of customer cases more complicated creates welcomed spillover effects for the metasystem: Since these cases then require more control, coordination, advice, and optimization, the "metasystem without land" can justify its existence. This "complexification" occurs, for example, by constructing complicated rules or exceptions. The aim of this overburdening "bureaucracy" is not the processing of complexity, but the opposite; namely, the **generation of additional complexity** so to increase the metasystem's legitimacy. This is also a very common tactic of so-called top-heavy organizations (see later in Section 11.2.2).

Whatever way you look at these tactics, in the end, there is just one conclusion left: There are too many recursion levels in the organization and merging the recursion levels would significantly reduce the internal complexity of the organization. The description of these phenomena coincided once so much with the experience of a seminar participant that, during the seminar, she decided to simplify her organization by at least one recursion level.

6.1.3 Case 2: Too Few Recursion Levels

A mirror image of the dysfunctionality mentioned above, are the cases of **too few recursion levels** (see Fig. 6.5; Pérez Ríos, 2012: 142–145). This type of dysfunctionality develops mostly in companies that have experienced too much growth or undergone too severe austerity programs, where the saving cuts were too rigid and abolished too many levels.

With too few recursion levels left, the existing recursion levels have too much work to do. The vertical *eigen*-variety of the organization is insufficient (see Chapter 9 for more details), and each recursion level quickly becomes overloaded and turns into a bottleneck. These are the situations where executives must assume strategic as well as operational tasks across several levels at the same time or must manage too many and too heterogeneous systems 1. Chandler's famous case studies are illustrations of this situation, where the top management became overburdened by operational tasks and had, in the end, to insert an additional level below to regain focus and clarity at its own. So, when abolishing one level, one should consider not only the costs of recursion levels but also the loss regarding the organization's responsiveness and agility.

This dysfunctionality does not affect only the upper levels but also the lower ones: If the upper levels cannot guide the lower levels, they must take over strategic management tasks from the upper levels. They must then develop strategies or

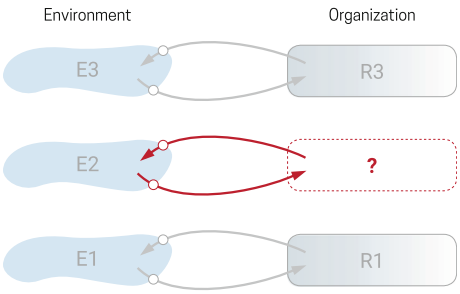

Fig. 6.5 Dysfunctionality of too few recursion levels (adapted from Pérez Ríos (2008: 406, Fig. 19))

make critical decisions that often go beyond their competencies and responsibility. "There is no one to guide us," is often the complaint heard in such situations.

The lack of recursion levels might also occur due to a **wrong vertical segmentation of the environment**. In some cases, organizations fail to understand that the interaction between the partial environments might cause problems going beyond these partial environments. In such instances, the broader systemic interrelationships and interdependencies in these environments are not sufficiently well taken into account and reflected in the organizational structure.

A large property management company consisted of two recursion levels: one that just took care of the individual tenants and the second level that managed the entirety of buildings in the city; for instance, through a centralized unit for maintenance and renovating apartments. No one, however, was responsible for monitoring how the tenants interacted with each other in their building or across neighboring buildings. So, the community of tenants as an emerging social unit and separate level between the individual tenant and the city escaped the organization's attention. Consequently, some social problems, although noticeable through individual complaints could not find a counterpart in the organization. No one was responsible for this kind of environment. Put into the VSM language: the organization lacked an additional, middle recursion level accountable for a group of adjacent buildings and the neighborhood.

There also exist cases where **a level is missing at the top** (see Fig. 6.6). Such a constellation rarely occurs in individual organizations, but rather in a field of organizations; for instance, if organizations discover that they need to coordinate among themselves. Examples are new industries that must yet organize themselves in the form of associations to lobby for new laws or develop new technical standards applicable to all organizations in their industry.

Global supply chain networks and research clusters often face such a problem, if they are set up without corresponding governance structures. Only through time will the companies involved find out that organizational structures and institutions are required to process variety that they cannot handle on their own. An organizational unit (or process) is then installed to coordinate the individual companies and to observe and interact with the wider environment and future on their behalf.

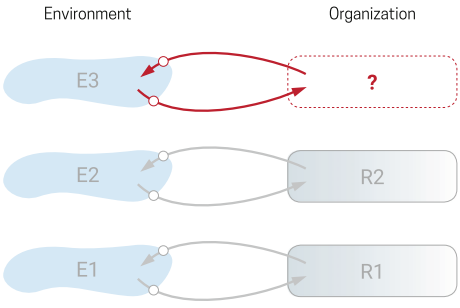

Fig. 6.6 Dysfunctionality of a recursion level missing at the top (adapted from Pérez Ríos (2008: 405, Fig. 18))

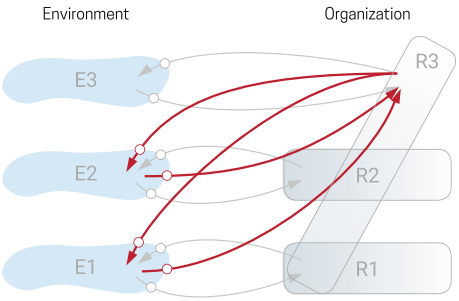

Fig. 6.7 Recursion level 3 crosses several environmental levels

6.1.4 Case 3: The Recursion Levels Do not Correspond to the Environmental Interdependencies and Structures

Finally, there also exists the case where recursion levels lie transversely to the environment and intersect several environmental levels (see Fig. 6.7). In this case, several recursion levels address the same environmental level, such as when global issues are also treated at the local level.

This is the case, for example, when a unit in the HQ takes over the control (e.g., recruitment) of certain local tasks, which are also treated by some country organizations. Conversely, it can happen, for example, that despite the increasing integration of the European states several subsidiaries in the EU continue working independently on European-wide issues, while in the meantime they should be better treated at a higher recursion level that is responsible for EU-wide issues. If environmental and recursion levels do not correspond to each other, ambiguous responsibilities and additional interfaces then result within the organization and need to be clarified.

6.2 The System Functions Are not Assigned Correctly to the Recursion Levels

Even if the recursion levels are correctly defined regarding their corresponding environmental levels, one often finds the case that individual system functions are not correctly assigned to recursion levels and carried out from the wrong recursion level (see Fig. 6.8).

This typically is a characteristic of too centralistic organizations or organizations with a marked distrust culture. Examples are cases where the relevant departments cannot authorize individual expenditures without the approval of the top level (despite already being approved in annual budget rounds and by budgetary guidelines). This dysfunctionality leads to the **extension of decision-making and information channels** and increases the **chances of errors** in the transmission of information. Since higher recursion levels deal with different environments than the lower levels, they always must be put into the right picture and frame to understand

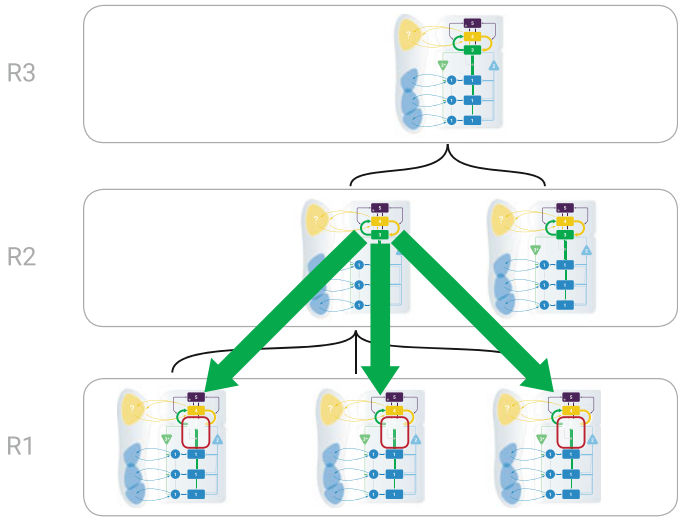

Fig. 6.8 Example of misallocated system functions: The middle level executes system 3 and 3* functions of a lower level (adapted view of Leonard (1989: 189, Fig. 5))

lower levels. This change of perspective costs time and causes both errors and misunderstandings.

The opposite case exists, of course, too: **Decisions about resources are too decentralized** (i.e., they are made on a level and by units that cannot correctly estimate the implications to the rest of the organization). In this case, tasks must be assigned to a higher recursion level.

6.3 Insufficient Inter-Recursive Channels

In volume 1, we have said that verticalization (i.e., the insertion of hierarchical levels) is not sufficient in itself. Verticalization, in this sense defined, means that one has only built the floors in a high-rise building, but not yet the elevators, cables for electricity, or water pipes that connect the floors. Only through the inter-recursive channels can recursivity fully develop so that similar control models and understanding of how the organization functions in its entirety can emerge and are applied at all levels (see volume 1).

These channels must provide **sufficient capacity to integrate all levels**: Changes in one recursion level must be rapidly transmitted to other recursion levels and without any alteration of the content of the information. This brings us to a new class of dysfunctionalities; namely, those related to insufficient or even corrupted inter-recursive channels between the recursion levels (see Fig. 6.9). In this case, the recursion levels do not talk to each other and "live on different planets."

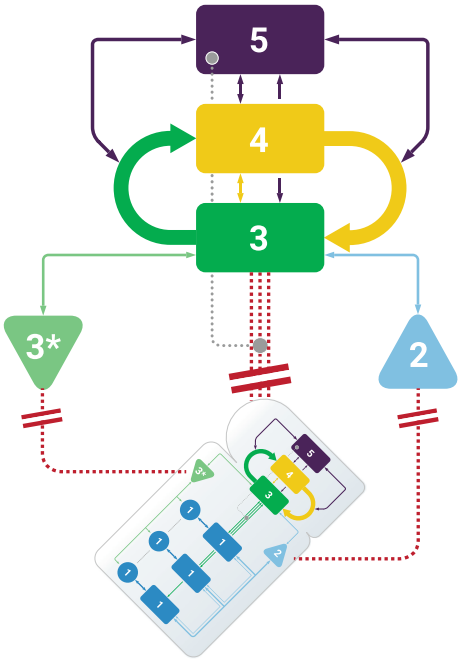

Fig. 6.9 Dysfunctionality of interrupted inter-recursive channels

More specifically, **insufficient inter-recursive channels** mean, for instance, that:

… the various **systems 2** do not work consistently and coherently across all levels and apply different and sometimes incompatible coordination standards, rules, or regulations.
… the **systems 3 and 4** of the different recursion levels do not sufficiently inform each other about strategies, plans or innovations. Since the wider environments and futures differ between the recursion levels, the recursion levels then become decoupled from each other and begin to live in different "worlds." Misaligned strategies are then only one consequence.
… the **systems 3*** of the different recursion levels audit differently (e.g., the lower levels are examined harder than the upper ones or small incidents of overstepping the rules are sanctioned more harshly at higher levels than at lower levels). This leads to a feeling of injustice and a decline in cohesion and identification with the organization.
… the different **systems 5** are not connected. Then, different understandings and conceptions of the organization's purposes, goals, values, and fundamental decisions may emerge across the organization. While, for instance, for the individual researcher, the university is typically a place for the generation and dissemination of knowledge, some of its supervisory board members might be tempted to use the university instead as a platform and instrument for personal networking and social

prestige. This also applies to companies where supervisory board mandates might sometimes rather serve the self-interests of individual board members instead of the original purpose of the organization.

If purposes and objectives diverge between the recursion levels, then the various recursion levels move into different directions, and tensions and frictions build up across the entire organization. Consequently, the organization loses its ability to process complexity and maintain its cohesion.

6.4 Insufficient Lateral Connections Across Entire Recursion Levels

Another dysfunctionality arises from poor lateral connections between the individual viable systems that are not jointly embedded into a higher level viable system. In this case, all communications lines and coordination mechanisms must pass through the metasystem at the higher recursion level instead of through lateral channels that connect the systems 1 directly.

In a large corporation, for instance, the management board wanted to be informed directly by all operational units. Over time, it became the center and switching board of the entire information process, since it was the only connection between the operational units. Consequently, it was forced to coordinate every operational issue (see red line in Fig. 6.10). Being the only gateway, bottleneck situations soon built up, and the board felt overwhelmed. A direct link (see the green line in Fig. 6.10), between the operational areas, could have avoided this situation and speeded up the coordination and decision-making process.

Fig. 6.10 Lateral channels (green) could have relieved the board from coordinating (red line) the operational units

This dysfunctionality results from a purely hierarchical understanding of recursivity in which the top recursion level holds all lines of communication and decision-making in its hands. This view forgets that the vertical structuring of variety is only one aspect of viable organizations: Organizations must also form an **information and coordination network** among all individual viable systems.

Developing such a network is necessary due to the complex nature of organizations. As Nobel Prize winner Herbert Simon (1962) pointed out: Complex systems, such as organizations, are only "nearly decomposable." The elements of a system can interact most of the time along clearly defined hierarchies and reporting lines, but for the long-term development of an organization, the direct interaction between the elements beyond the hierarchical boundaries and lines of communication is equally vital. These lateral connections allow covering those aspects that cannot be clearly decomposed in a hierarchy.

The weak and somewhat accidental social connections ("weak ties") are the ones that help one under challenging situations such as when one needs to solve tricky issues and problems (see also the findings of by Granovetter (1973) regarding the search for a job. It is a common experience that one finds the solution to complicated matters often only thanks to highly accidental meetings with people from entirely different departments, with which one typically has no relationship.

So, instead of a hierarchical representation, the image of circles is perhaps more suitable to illustrate the recursive structure of an organization (see Fig. 6.11). In it, the top recursion level is at the center since it provides orientation and unity. However, it should not monopolize the connections among the individual systems. On the contrary, the top viable system will, in its own interest, ensure that the lower level systems are also connected among themselves (green lines in Fig. 6.11). Through lateral connections, an organization increases its **internal redundancy** and can more easily **avoid bottlenecks**—a structure similar to the Internet: If the central node is overburdened, there always exist other channels through which information can reach its target destination.

Organizations often instinctively know that they need these lateral channels. Consequently, they organize events to nurture these lateral connections, e.g., (top) management meetings, expert communities or company events across all units.[2] The content of these events is less relevant in this context—the objective is instead to allow the employees and managers to form lateral connections. Such connections can then relieve the organization and speed up its response time, especially if the worst comes to the worst.

[2] The canteen fulfills the same purpose: It is not only a place to eat and drink, as one might think initially but also a vital platform to meet, engage socially, connect, and exchange valuable information about the organization.

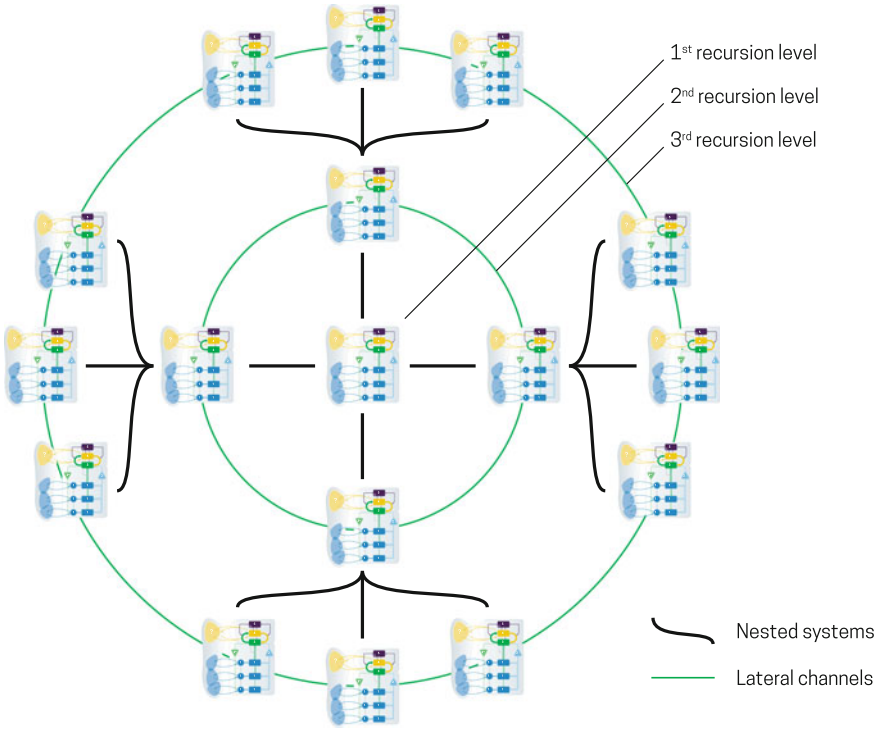

Fig. 6.11 Lateral connections (green lines) in a multilevel organization adaptation from Beer (1995b: 136, Fig. 37)

Summary

- The recursion levels of an organization must correspond to the levels in the environment. Every recursion level needs to develop a fully functioning viable system and be sufficiently connected to other recursion levels through adequate inter-recursive channels:
- Dysfunctionalities can emerge, if …,
  - … there exist either too many or too few recursion levels,
  - … some recursion levels are processing variety intended for other levels,
  - … the system functions are not assigned to the correct recursion level, and
  - … the metasystemic functions at the different recursion levels are not sufficiently connected to each other, and the inter-recursive channels do not have requisite *eigen*-variety.
- Verticalization must not lead to the monopolization of information and coordination channels at the top level. Such a dysfunctionality creates bottlenecks, slows down the dissemination of information, and causes losses of information. Creating lateral connections increases the internal redundancy and relieves the upper levels from coordinating and informing lower levels.

Questions for Reflection:

1. Do you have too many or too few recursion levels in your organization?
2. If conflicts arise between hierarchical levels, in which cases could this be due to the fact that they have too little variety to process? Are these hierarchical levels stepping too much on each other's toes?
3. If you analyze the hierarchical levels in your organization, which ones are real recursion levels, and which ones are only communication channels between two other levels or reinforcements for other levels?
4. How well do the different recursion levels in your organization communicate and exchange with each other on a scale of 1–10 (1 = not very well; 10 = very well)?
5. How well are the lateral relationships developed in your organization? How much is coordinated through the top level, even if it could be organized laterally, on a scale of 1–10 (1 = not very much; 10 = much)?

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Part II
Diagnosing the Systemic Governance of Organizations

Overview

So far, we have only looked at the individual system functions and their place in the architecture of the VSM. Now, we will take a step back and analyze **how the entire organization should be governed from a systemic perspective**. We are looking here not only for the **fundamental principles and mechanisms** but also the **framework for the design and governance of organizations**.

Returning to the car metaphor used in the introduction of this volume: so far, we have discussed only the mechanics and individual parts of a car; now, we are coming to the driving style. What is a good and feasible driving style, what are the limitations and forces that need to be kept in balance, to what should a driver pay attention and how should he or she maintain the car so as to increase its longevity? Executives and managers find themselves confronted with the same type of questions and, consequently, they are often compared to captains: Like them, they must steer their organizations through difficult waters and know how to handle them. It is, therefore, also no coincidence that the discipline, in which the VSM was born, is called *cybernetics*, the science of controlling and governing systems.In this second part, we will lay some of the most important conceptual **foundations for the governance and design of organizations** and thus for volume 3.

Some organizations work "quietly" and efficiently, others "loudly" and cumbersomely. Chapter 7 will show us that the reason for these differences can be found in how organizations combine types of unprocessed varieties, how well they decouple system functions and create zones of stability, and how clearly the responsibilities for the processing of variety are defined in an organization.

The elements of a system 1 must be able to adapt to and align with each other so to form a unity. This is one of the central organizing principles of the VSM. However, adaptation also creates dangers, such as the gravitation to the lowest common standard. The objective of Chapter 8 is to better understand the kind of challenges regarding the **control and governance of systems 1**.

From Chapters 9 to 11, we will discuss the relationship between the **operational metasystem and the systems 1**. Chapters 9 and 10 focus on the explication of one of the central laws of organization and organizational design: the **axiom of the requisite vertical *eigen*-variety**. Behind this axiom, we find the famous "hot potatoes," such as the right degree of centralization, as well as the functioning of hierarchies. Chapter 11 is dedicated to the **six channels** by which the metasystem controls the systems 1 and horizontal variety. This chapter will give us further insights into the functioning of organizations, and we will learn, for instance, why subsidiarity is a vital principle for the governance and design of organizations.

Chapter 12 unfolds the equilibrium systems in the **strategic–normative metasystem**, which needs to ensure cohesion not only within itself but also with the rest of the organization.

We wish for a conflict-free organization, but is the promise of many management models in that regard realistic or even good for the viability of an organization? Chapter 13 examines this question and explores to what extent **systemic opposites** within an organization add to the organization's long-term stability and viability because they increase its vigilance and adaptability. Here, we will come across the **role of conflicts and the importance of having developed a good debating culture** for the viability of organizations.

About "Noisy" and "Silent" Organizations

7

Do you work in a noisy or quiet organization? Anyone who has already worked in different organizations has certainly noticed the difference in activity in organizations. Some organizations are very busy (Fig. 7.1): One constantly coordinates, controls, everyone talks to everyone, and nevertheless, the general impression can be that the amount of activities is still not sufficient. In other organizations, the working climate is more focused; everyone knows exactly what he or she must do and knows what everyone else is doing.

The **"noise level" in an organization** can have many causes; here, we want to focus only on the noise resulting from the interconnectedness of the multiple dynamic equilibria in an organization. The challenge in organizations is, as we learned at the end of Chapter 4, that changes in one equilibrium system can lead to

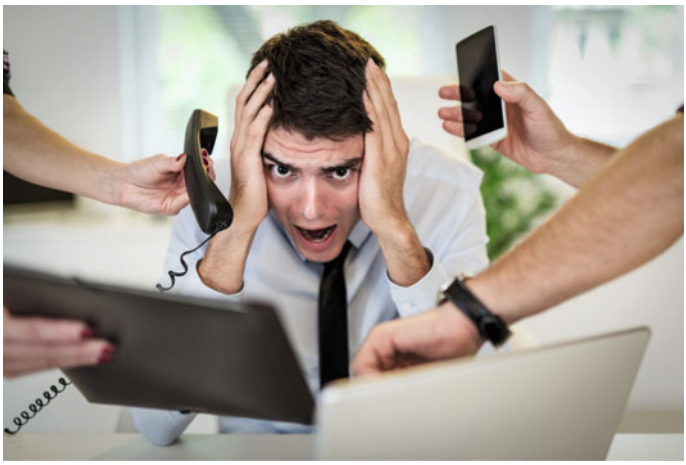

Fig. 7.1 Are you working in a noisy or quiet organization? (© Fotolia/stock.adobe.com; artist(s): milanmarkovic78)

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_7

further changes in all other parts, thus rendering the system's behavior complex, if not chaotic, and therefore, "noisy." Organizations consequently need to control and limit **the level of interconnectedness** in their organization to reduce their internal noise level.

In this chapter, we will discuss three factors that influence the organization's internal interconnectedness, and thus, the noise level, namely…

1. … the **heterogeneity of the varieties** to be processed
2. … the **number of system functions affected by a change**
3. … the **ambiguousness of roles and responsibilities** in an organization

Let us examine these three factors in detail:

7.1 Too Much Heterogeneity

One source of too much "noise" comes from a too heterogeneous variety that needs to be processed. "Heterogeneous variety" is a strange and perhaps even pleonastic term which means that the **types of varieties** with which, for instance, the systems 1 must deal are not the same (see Chapter 1 in volume 1). Let us take one example to illustrate this point: Both, monopolistic and competitive markets possess a certain degree of variety, but their specific variety differs from each other. The market behaviors and mechanisms are not the same; their specific challenges and opportunities differ, and likewise their variety. Thus, if a company has business units that operate in monopolistic and competitive markets, the top management level will see itself confronted with different challenges. It will continuously face the question of how it can differentiate its decisions and actions, and yet preserve the unity of the entire organization. The same problem can be found with conglomerates that operate in different product markets and geographical areas, such as GE or Samsung.

One vital question for the design of organizations consequently is how much one can let these "varieties" differ from one another; hence, how heterogeneous they can be. Let us illustrate this point with a simple example in Fig. 7.2.[1] The difference between the varieties within an organization is expressed by colors in this figure. In the left diagram, we portray an organization whose varieties are highly heterogeneous. This is symbolized by different colors. The right diagram represents an organization that processes more homogeneous varieties (expressed by similar colors).

The use of colors makes the problem with too heterogeneous varieties more comprehensible: If the colors differ too much from each other, it becomes more challenging to find a common color. The compromise between the different colors can only be grayish, and this minimal consensus will not satisfy anyone; it does not

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

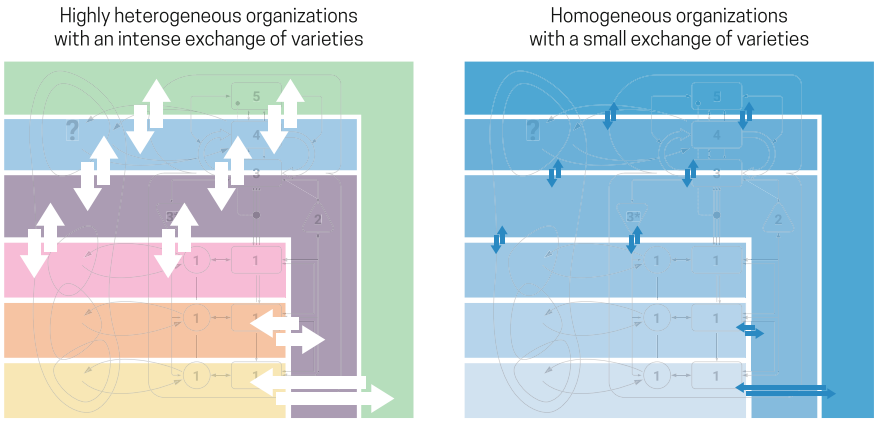

Fig. 7.2 The heterogeneity of varieties to be processed determines how much variety needs to be exchanged within the organization—contains adaptation from Beer (1995: 136, Fig. 37)

reflect any of the original colors' properties. Diversification can help to smooth out business cycles, but it demands much skill to do justice to each system 1 and any other system function.

The more heterogeneous the variety is, the more difficult and complex it will be to achieve a common denominator and balance that satisfies all. The more business units and product areas diverge regarding markets, technologies and resources, the more time and costs are required for their mutual adjustment and coordination. And so too increases the flow of communication and information: The task of finding a common basis requires more effort and the number of meetings and projects increases almost exponentially. This makes the organization busier and "noisier."

If, however, the colors are more similar to each other (right diagram in Fig. 7.2), then it will not only be more natural to align the differences, but the compromise will also be much closer to the specificity of each system function. The mutual adjustment process becomes faster, easier, and more precise. Less information must flow between the system functions and management levels to achieve equilibrium and define a common denominator. The organization can work more "quietly" and focusedly.

Hence, to design sound organizational structures and processes, we need to look first at the varieties that the organization is supposed to process through its structures and processes. Whether a particular organizational structure works not only depends on the willingness of people and their talents but also on the heterogeneity of challenges and tasks that they must process and master. If the activities become too heterogeneous, one perhaps needs to separate activities structurally so as to make the control of the organization easier.

What does this mean concretely? Let us have a look at the following three frequently occurring **reorganization scenarios**:

1. Creating process synergies

People often believe that process synergies will automatically result if processes that share the same name are combined. Having the same name is, however, not the decisive factor for generating synergies. If the underlying factual variety of processes is too heterogeneous, then the combination of the processes will require so much coordination that the synergies are eaten up by the additional costs. A utility company consolidated, for instance, all the sales processes of its business units into one sales department. However, the markets, customers, or products were too different, and so nothing could be gained. On the contrary, the consolidation risked losing specificity and precision, and, consequently, market speed and impact. Consequently, the business units complained, and, in the end, the management of this utility company was forced to reallocate the different sales processes to the different business units so as not to lose market share.

2. Merging units and companies

The same applies to attempts to merge product units, departments, or business divisions under one management. If the underlying varieties that need to be processed are too heterogeneous, then this endeavor costs too much energy (see also Hoverstadt 2008). It also risks reducing responsiveness and agility since the management must now digest very different information stimuli and decision-making situations.

The problem of too much heterogeneity particularly affects mergers between companies. If the companies to be merged are too different from each other, the newly created company must first spend most of its efforts on developing a new common denominator between the different parts. In such cases, one might then be better advised to leave the companies autonomous and start cooperating only in certain and well-defined areas, such as regarding the procurement of commodities, certain research activities, or sales offices in smaller countries. Such a differentiated approach extracts the value better, by not generating too much "noise."

3. New product development and entry into new markets

When it comes to finding a suitable place for the new products and markets in the organization's structure, we must be fully aware of the differences in the varieties that need to be processed. From a VSM perspective, new products and markets inject heterogeneity into the organization. The "new" is *per definitionem* different from what the organization currently does. New products thus need to be integrated into the current technologies and organizational structures and processes. They introduce a new language and conceptual world into the organization. Consequently, the organization needs to develop a new common language, new control models and new decision-making parameters. Life becomes more complicated or "noisier."

However, who wants this, if the old setting had worked so well before the new products were introduced? Therefore, new products, although welcome in principle, are often also resented. To counter the increase in heterogeneity induced by the new

product, the organization will start trying to homogenize the variety of the new products as much as possible since this will be easier than to work out a new common denominator. Consequently, the new products and markets are forced to squeeze themselves into the existing corporate world and language.

The problem is that this comes at the expense of their specificity, and consequently, they turn "grayish," to use our previous color example. Whereas the new products initially shone in bright colors while they were alone, they are forced to adapt themselves to the existing product areas. Due to the homogenization, they cannot fully develop their potential, or they even become marginalized. That is why it is often better to build new product areas outside the parent organization, even if this implies a new location.

7.2 "On the Edge of Chaos"—Too Much Change

The "noise" within an organization can also be the result of how much change occurs in an organization. Organizations are devices to regulate complexity and to bring order and structure into complex relationships. However, as we have said earlier, organizations are systems of multiple interconnected equilibria (see Fig. 7.3) that influence each other. This makes it so difficult to stabilize them.

Today, "change" and "innovation" have a very positive connotation. What is often overlooked is that change can also exhaust organizations and bring them to the edge of chaos. The subsidiary of a paper producing company was reorganized three times in 4 years. At the end of this period, even the simplest processes did not work anymore because the organization had lost its institutional memory on the processes and had become opaque to itself.

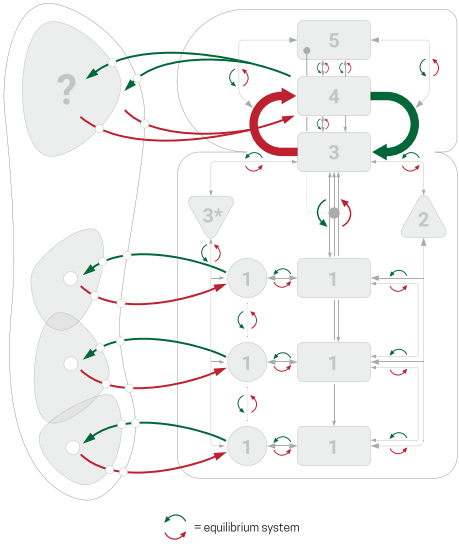

Fig. 7.3 Organizations as a system of multiple dynamic equilibria (adapted from Beer (1995: 136, Fig. 37))

Companies that develop new strategies and overhaul their operational processes at the same time face similar challenges. Too much change easily leads to a standstill: Operational issues cannot be resolved because, without a strategy, they cannot be decided; and vice versa, the strategy cannot progress, because the changes in the operation and their effects on the organization’s performance are still unclear. Apparently, there exists an upper boundary of how much change an organization can absorb. If one moves everything at the same time, in the end, one might end with total paralysis where everything becomes blocked due to the uncertainty introduced and nothing moves anymore.

Organizations need zones of stability. In golf, the head and spine must remain relatively stable throughout the movement. If the head moved with every movement of the body, one would lose stability, direction, and precision. Likewise, organizations also need stable points to execute a movement. They must develop zones that are sufficiently decoupled from each other so that they can assume different speeds, whereby some zones become the stabilizers and others the engine of the dynamic and change. One can contemplate innovations or strategic changes provided that the operation works smoothly. Likewise, one can overhaul the operation if one knows where one wants to go strategically long term. This also applies to the operation itself; one should not change all parts of the entire operation at the same time.

The question then arises as to where the organization can and should decouple the various equilibrium systems from each other and develop zones of different speeds. This brings us back to the management levels that we have already encountered in volume 1 (see Fig. 7.4). These management levels are no

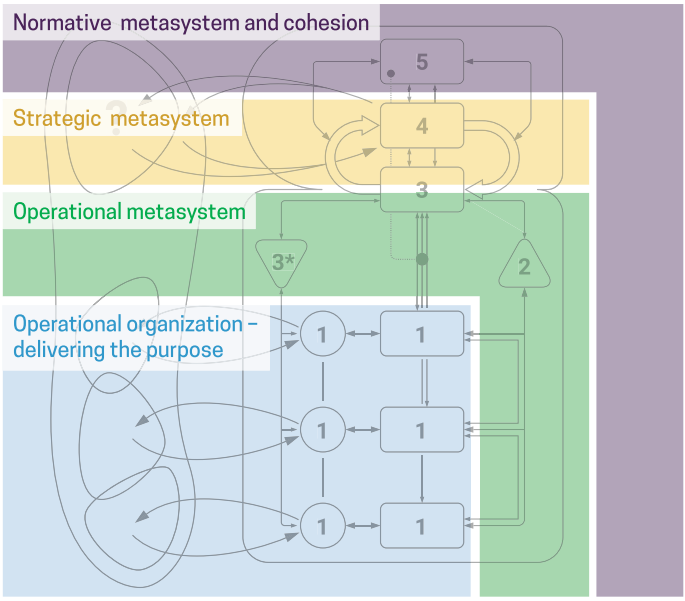

Fig. 7.4 The four management levels—contains adaptation from Beer (1995: 136, Fig. 37)

coincidence. They mark important boundaries at which a certain degree of decoupling can and should occur. They are the result of the fact that some system functions share the same perspective and work more intensely together than others:

- The **elements of one system 1** are systemically more closely related to each other than to any other systems 1 and the entire metasystem.
- The perspectives, tasks, and challenges of **each system 1** have more in common than with the metasystemic functions.
- **Systems 2, 3, and 3*** also have more in common regarding their perspective toward the organization than with the systems 1 or the other metasystemic functions.
- **System 3 (the strategic side) and 4** also have more in common than with the operationally minded systems 1, 2, and 3 (operational perspective) and 3*.
- **System 5** finally focuses on principles and the overall cohesion of the entire system and has concerns different from the other system functions.

We encounter these differences in everyday life. Employees from the operational areas typically differ from those in the HQ regarding the ways in which they speak, think, act, decide, and view the world. Even within the HQ, we find differences such as staff working on the control and coordination of operational units live in a different world than those taking care of the long-term strategies and innovations. The four management levels are, therefore, not a random product but result from the different perspectives, challenges, temporal structures, and specific nature of the variety with which the individual system functions are dealing. It is here, consequently, where the decoupling can occur.[2]

Practically, this means that an organization and its management levels should be designed so that …

- … the **individual systems 1** can function as autonomously as possible without the interference from other systems 1 or the metasystem. The systems 1 should be able to fulfill their purpose with full attention to their environment.
- … the **operational metasystem** should not be continuously involved by the systems 1 in individual issues. The systems 1 should be educated to settle their issues as much as possible by themselves.
- … the **strategic metasystem** should remain undisturbed from the operational issues so that it has enough time and calmness to observe the wider environment and future, think about fundamental changes, to test new developments, and to make directional decisions.
- … the **normative metasystem** should not become involved in every operational and strategic question. This means that not every issue in the organization should almost automatically become a matter of principles, identity, and norms (as it would occur in too ideological organizations).

[2] By "decoupling," we do not mean, of course, becoming completely detached. Instead, it means gaining a room of freedom and independence to pursue one's agenda and not being continuously influenced and determined by others.

7.3 "Who is Responsible for This?"—Missing or Ambiguous Roles, Rules, and Responsibilities

You certainly know the following question between two employees: "Do we have to consult with your superior for this issue or not?" Behind this seemingly everyday question lies a fundamental problem that also decides about the efficiency and internal "volume" of an organization: Where to address an open question? Can one coordinate with one another, or does one need to refer the decision to a higher authority? To quote the famous complaint of a boss to his co-worker: "Why do you always come to me? Can you not solve this alone?" expresses the same problem from the opposite perspective.

One reason behind all these "questions" is that an organization might not yet have developed sufficiently clearly defined **roles** and **responsibilities** about who should be addressed with what kind of issues. Is an issue of strategic and even normative importance or not? There is nothing more distracting to the operational areas than if every operational problem is turned into a major strategic and normative question. Conversely, not every strategic reorientation should immediately necessitate the inclusion of lower level operational areas. This kind of uncertainty increases the **level of interconnectedness** within an organization by involving too many management levels and system functions.

But this is only the cognitive aspect; interconnectedness might also stem from **a lack of willingness to assume responsibility** (Fig. 7.5). Other management and recursion levels are often involved because one does not want to take responsibility. "Involvement of others" then becomes the pretext to dilute responsibility, such as the practice to forward an email to a wide circle of recipients. This problem can be observed in the dysfunctionalities of "**constant delegating upward**" and its opposite "**involving lower levels at any cost.**" Such practices reverse the decoupling within the organization and generate unnecessary reverberations.

Fig. 7.5 Too much delegation instead of assuming personal resonsibility can increase the noise in an organization (© Fotolia/stock.adobe.com; artist(s): jro-grafik)

The reason for these phenomena is unclear roles, rules, and responsibilities in the organization. If we wanted to illustrate this dysfunctionality graphically, we would paint a blurred VSM. So, clear rules and responsibilities are required, but this alone is not sufficient. Three further aspects are required:

- On the behavioral level, **mutual trust** between the system functions and recursions levels.
- The **willingness of everyone to take responsibility** for decisions.
- On a cognitive level, **an understanding of the perspectives of the other system functions and recursion levels**. If one knows what others think and how they decide, one can decide more safely alone.

This brings us back to the **inter-recursive channels**: We see here how much well-developed inter-recursive channels can reduce the "volume" within an organization and decide whether the organization is noisy or works quietly and smoothly. The more all recursion levels share the same perspective, understanding, and models, the easier they can work autonomously and the less they need to involve others.

Summary

- For the design of organizations, one must analyze not only the processes but also the varieties that an organization needs to process. The viability, adaptability, and agility of an organization depend, among other things, on how homogeneous the varieties are. The more heterogeneous and less complimentary the varieties are, the more difficult it will be for the metasystemic functions to forge unity, control the organization, and generate additional value.
- Processes or organizational units should not be merged just because they share the same name but only if they process similar or complementary varieties.
- Organizations can also be subject to too much and thus destabilizing change. To digest change, organizations need zones of stability.
- The efficiency and effectiveness of an organization also depend on how clearly the responsibilities are divided up within an organization. The dilution of responsibilities, e.g., through "delegating upward" or "involving others," should be avoided as much as possible.
- To reduce the "noise level" in an organization, it is important to nurture mutual trust, the development of common perspectives, and the willingness to assume responsibility.
- An organization should be designed and managed in such a way that the operational system 1 units, as well as the operational and the strategic–normative metasystem, can operate with minimal involvement in each other's processes.

Questions for Reflection:

1. On a scale of 1–10: Do you live in a noisy (1) or quiet (10) organization? What are the reasons for the noise in your organization?
2. Does your organization deal with too many different issues simultaneously? Does the current rate of change leave your organization sufficient zones of stability?
3. Do the innovation-producing and strategy-developing functions in your organization have sufficient room and freedom to develop their ideas and strategies?
4. Are the employees in your organization often clueless about to whom they should turn for advice or a decision?
5. Does your organization suffer from too much "upward delegation" or "involvement of everyone"?

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8 “Ecosystems” or “Closed Societies”?—System 1’s Intricate Adjustment Processes

The continuous adaptation of the operational processes to the variety of the environment is a vital process for the organization and its systems 1. Here, at the frontier to the environment, the success and failure of an organization are decided. Moreover, it is here that the plans and strategies of the higher order metasystem will be implemented or fail. The success at the front line of the organization determines the baseline of the P&L.

We have already said much about the system 1 and its equilibria. In this chapter, we want to dig deeper and understand better how the various elements of the systems 1 must play together and adjust to each other (see Fig. 8.1[1]). The balance between the system 1 elements is more multifaceted and delicate than we have discussed so far.

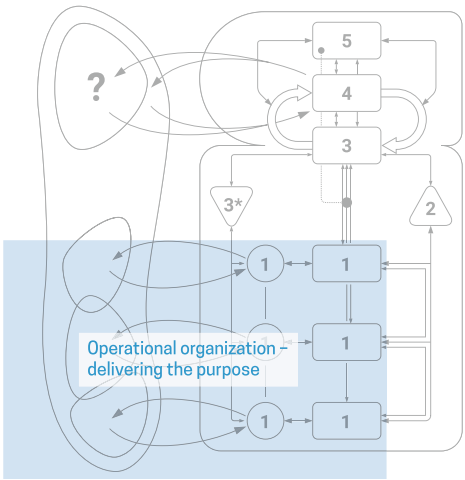

Fig. 8.1 Management level “Operational organization”—contains adaptation from Beer (1995b: 136, Fig. 37)

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37) if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

W. Lassl, *The Viability of Organizations Vol. 2*,
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8.1 Managing the Flow of Varieties Within System 1

Let us start by revisiting how environmental variety should be processed across the individual system 1. We have so far only talked about the need to find a balance between the various elements of the system 1. We have, however, not yet specified how the system 1 equilibria are interrelated to each other and how their equilibrium system and mutual adjustment processes must function to contribute to the organization's viability.

8.1.1 "I Do not Want to Do Everything Myself"—A Common Problem for Managers

If we look at the flow of variety across the system 1 elements, the question arises as to the composition of this flow. Is the variety exchanged between the environment and the operation the same, as, for instance, that between the management and its regulatory center? Should each element and every relation between the system 1 elements deal with all topics? The answer to this question can only be "No" since, otherwise, this leads to duplication and inefficiencies: Every system 1 element would then be required to process more or less the issues that have already been treated by other system 1 elements.

In viable systems 1, the variety to be processed (see blue channel in Fig. 8.2) by the various system 1 elements should, thus, diminish toward the system 1 management (see Espejo, 1989: 80f; Espejo & Reyes, 2011: 68f; Pérez Ríos, 2012: 11):

The variety needs to diminish not only to avoid inefficiencies but also because the *eigen*-variety of the system 1 elements is decreasing too. The regulatory center has fewer staff at its disposal than the operation and the management fewer than the regulatory center (represented by the size of the shapes in Fig. 8.2). For this reason, the objective of any organizational design must be to enable all operational processes of an organization to treat as much environmental variety as possible upfront. Only a few special cases or questions should be left unprocessed for the regulatory center or management. The statement, "We cannot decide for ourselves, you have to ask management," should be heard as little as possible.

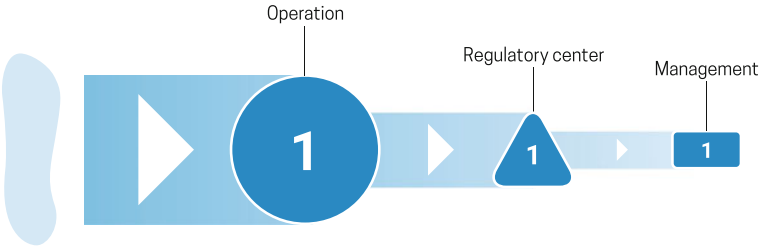

Fig. 8.2 Stable diffusion of variety along the system 1 adapted from Pérez Ríos (2012: 11, Fig. 1.6) and Espejo and Reyes (2011: 69, Fig. 4.12)

However, the variety should not only decrease, but the type of residual variety left to the next element also needs to change. The management should be asked only for decisions and not for concrete and direct help in the production, sales, or delivery processes. The residual variety, which the operation passes on to the management, should entail only problems related to the control of the entire system 1 and that are outside of the scope of the operation and regulatory center; otherwise, this leads to a change of the system 1 management's task spectrum.

Similarly, the environmental interfaces should not leave the task of convincing and selling to customers to the operation, but only questions and issues related to the quality and production of the product. Each system element and process should only pass on the residual variety that is not part of its core tasks and specialization but belongs to the subsequent system elements.

If, therefore, the two criteria "decrease in variety" and "qualitative change in the residual variety" are not fulfilled, the system 1 finds itself in an unstable situation: The various system elements become overloaded as the environmental variety does not become adequately processed and reduced (see Fig. 8.3):

Executives or managers experience this situation, for example, with employees who are constantly asking for advice, not completing their assignments, or not adhering to agreed plans. Such situations cannot last long since the management and regulatory center cannot operate beyond their *eigen*-variety long term (e.g., visible in the amount of overtime, stress, and occurrence of errors). If this happened, this would lead to a situation, where

- Either the management stops exercising the management function for the entire system 1, and the management function thus becomes de facto vacant,
- Or, the same *eigen*-variety as in the operation will be built up in the management, rendering the actual operation superfluous.

It does not take much to see that these states cannot be stable.

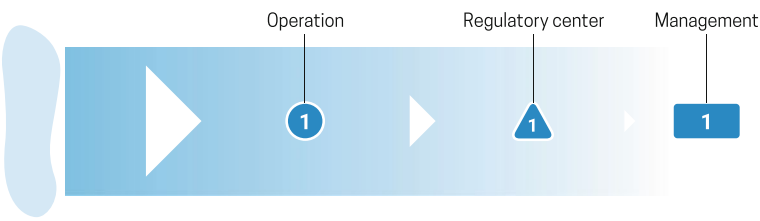

Fig. 8.3 Unstable situation: The operation and regulatory center process too little variety and pass almost all variety to the system 1 management

Fig. 8.4 Many hope in vain that a management position brings (self-)control, peace, and stability (© Fotolia/stock.adobe.com; artist: Ljupco Smokovski)

8.1.2 Management—Not the Place for Hammocks

One might now be tempted to think: The best place within the system 1 is the management because it seems to be the least busy place (Fig. 8.4). Management—the place where one can finally rest?

This impression can arise relatively easily based on what we have said so far. However, this overlooks one fact: While the variety the management needs to face is lower in quantitative terms (e.g., number of calls or orders), it might, at the same time, be more complex. Management deals with fewer cases, but with the ones the operation cannot solve alone.

Following the Conant–Ashby Theorem, good management must have a regulation model of what it regulates, and this includes especially the complex cases. The complex cases are the test cases that prove whether the management's regulation models are apt to their purpose. Thus, while the operation should relieve its management from most of the operational issues, the system 1 management must ensure that it does not lose sight of the complex situations and for this, it must understand the environmental variety in its essentials. Thus, even with the operation in between, the management must always have the variety in view with which the operation is confronted (see the broken lines in Fig. 8.5, which represent the management's

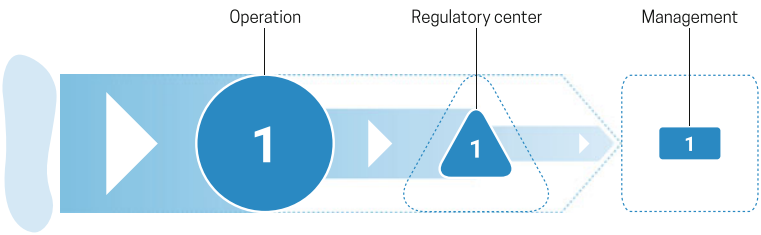

Fig. 8.5 Management and regulatory center must possess the necessary competencies to understand and view the entire environmental variety (broken lines) that the operation is facing

capacity to view and understand the whole environmental variety).[2] So, although the operation processes most of the environmental variety, the management must still confront itself with the environmental variety that it attempts to control through the operation. Otherwise, it cannot develop adequate control models (see volume 1).

For this reason, it is good practice that from time to time executives and managers try selling their products themselves. It keeps the system 1 management informed about the complexity of the environment that its operation is facing.

8.1.3 "Do You Understand Our Products and Manuals?"—The Organization's Influence on the Environment

So far, we have only looked at the variety flowing into the organization. However, not only is the environment diverse but also the organization produces variety for the environment, be it only the variety of product variants or the product's technical complexity. We only need to look at some product manuals and instructions (Fig. 8.6): The time required to read and the difficulty to understand them are good examples of the variety that organizations are imposing on their environment. This also applies to what we have mentioned earlier; namely, when a company produces too many, complex or innovative products that expose the environment to too much variety.

To regain a stable situation, the organization must then stimulate the environment and convince it to increase its *eigen*-variety; for instance, by spending more hours on searching for advice and explanations on the Internet. If, however, the environment does not increase its variety, then, according to Ashby's Law, the organization ultimately needs to reduce its *eigen*-variety (i.e., by simplifying its products, reducing its innovation rate or reducing its production capacities).

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[2] We hereby touch upon the source of a fundamental tension the management faces: How much does it need to understand the environmental variety and how the operation processes variety? What can be expected from the management to know and manage? The management does not need to understand every operational detail since for this, it has the operation. At the same time, it is responsible that its system 1 as a whole performs well. Hence, while it does not need to know every detail, it yet must know enough to keep the operation's performance within the defined target parameters. For this, it must understand at least the essential factors and interdependencies influencing the operation's performance as well as the levers needed to bring the operation back in line with its targets.

To solve this tension, the management can resort to several measures: First, as pointed out above, it must maintain a channel to the environment so that it does not become an ivory tower detached from and ignorant of the operation's world. It needs to develop sensors warning it about possible imbalances in the operational processes developing.

A further option to solve this tension consists of temporarily enriching the management's *eigen*-variety if needed. In volume 1, we stated that in the VSM perspective "management" is conceived from a systemic perspective. The "management" function is not limited to those who bear the title "manager," it can also temporarily include other people apt to solve a problem. Consequently, viable organizations try to keep the size and composition of their "management" fluid and adaptive: Depending on its complexity, a problem can be addressed by a single manager or a management team. To counteract the tendency of sealing off the management function and generating a lack of *eigen*-variety, organizations should regularly encourage their managers and executives to ask others for assistance.

Fig. 8.6 How difficult do we make it for our clients to understand our products? (© Fotolia/stock.adobe.com; artist(s): auremar)

We see thereby: The variety of the environment and the *eigen*-variety of the organization influence each other, and this mutual influence goes beyond mere supply–demand dynamics. **Products change and shape the environment**, its structure, and relationships in many ways. We merely need to look at the effects that the smartphone has had on the social behavior and the communication patterns of people. Products give us more possibilities, but they also change our behaviors, habits, and personality.

The environmental variety is therefore not given absolutely; it is also shaped by the products of the organization. The **environment is likewise the product of the organization** and, as such, reflects its *eigen*-variety: What the market wants is what the organization wants the market to want (which is the function of advertising). And the reverse is true at the same time: What kind of company a company becomes depends on the customers it has. The market and the customers shape the company too. The **concept of "ecosystems"** expresses this mutual relationship: The environment and the organization adapt to each other in their needs and capacities mutually.

8.2 Beer's Principle of the Mutually Adjusting Horizontal Varieties

Viewed from a more general level, this **reciprocal relationship** also exists between each system 1 element: The management marks the operation as the operation shapes the management (Beer, 1995b: 30). So, each side of a relationship always reflects the other side like a mirror image. This insight brings us to what Stafford Beer has summarized in the following principle (or, as he called it, the "First Principle of Organization"; see 1995a: 97):

> Managerial, operational and environmental varieties, diffusing through an institutional system, tend to equate.

With what we said above, we have now gained a better understanding what "adjustment" and "equate" means: To equate does not mean that all these elements become identical to each other, but rather that they need to adjust to each other's (*eigen*-)variety and the variety exchanged in their particular relationship while keeping their specific role. This is similar to a conversation or negotiation: Adjusting does not mean to become identical to others and give up one's position but to attain the same level of arguments. As said earlier, the management should not become the operation and vice versa, but that it should be able to match the level of its concerns.

We can observe the principle mentioned above easily in practice: If the organization's *eigen*-variety does not match the environment, organizations need to react, and for this, they have four options available to them:

1. **Strengthening the operational processes**, e.g., by employing more employees, new technologies, conducting optimization and training programs, and undertaking quality assurance measures.
2. **Strengthening the regulatory center**, i.e., bringing more planning and structure into a problem.
3. **Strengthening the management itself**, e.g., through nominating special project managers, external experts who solve the concrete problems of the operations, or by appointing additional staff. In particularly severe cases, however, the metasystem must even replace the persons exercising the management function, e.g., by external turnaround managers.
4. **Adapting the relevant scope of environmental variety**, e.g., by quitting markets or looking for new customer groups.

If the organization fails to adjust, the adjustment needs to take place by the other side of the "equation," i.e., **the environment**. If the organization cannot satisfy the environment's expectations, the relevant environment will shrink (e.g., fewer customers, fewer and smaller orders). The environment, operation, regulation center, and management thus form a **communicating system** in which the variety of the environment and the *eigen*-variety of the various elements of the system 1 adjust to each other and need to do so consistently and continuously (see the so-called "Fourth Principle of Organization" in Beer 1995a: 258).

Although this sounds very straightforward, this is not always followed in practice and touches upon many aspects, for instance, in the intercultural domain. Global corporations often ask managers to transfer planning and control instruments used in the corporation's home country to units in other countries, yet without adapting them beforehand to the local culture. Without such adaptations, however, misunderstandings, conflicts, and operational problems will result, if these countries are used to other (cultural) rules and principles. Organizations then quickly resort to blaming individuals, but the problem might actually be the lack of the mutual adaptation of the instruments and an insufficiently common perspective.

Before we proceed to the specific challenges that result from Beer's principle, a final note on the terminology: The managerial, operational, and environmental

(*eigen*-)variety of the systems 1 are often called the "**horizontal variety**"[3] of an organization since the environment and the system 1 elements are arranged horizontally in the VSM. Is there a "vertical variety" and, if so, what is its relationship to the horizontal one? We will discuss this in Chapter 9.

8.3 The Challenges of Managing Systems 1

Stafford Beer's principle sounds straightforward, but the adjustment process contains some hidden challenges of which one must be aware:

8.3.1 "Adjusting" but to What Level?

In the long run, an adjustment between the environment and the system 1 elements will take place. However, Beer's principle purposely does not make any statement about **the level** at which this adjustment will take place—an aspect that is often overlooked but essential. The adjustment might perhaps most likely tend toward the level of the element with the least variety,[4] as the saying goes: A chain is only as strong as its weakest link (Fig. 8.7).

Fig. 8.7 The variety processing capacity of the system 1 is only as strong as its weakest element (© Fotolia/stock.adobe.com; artist(s): fuzzbones)

[3] In this principle, the variety of the regulatory center is not mentioned but implied. In this book, the "horizontal variety" also includes the *eigen*-variety necessary to process variety.

[4] To clarify this point again: Adjustment does not mean that every system 1 element does the same, but that every element has sufficient *eigen*-variety to respond to the actions and decisions of the other system 1 elements. Adjustment to the lowest point is the most likely event but it also can happen that in a positive dynamic the *eigen*-variety increases as it happens in the formation of ecosystems that specialize ever closer to their specific needs. While this might appear positive, it also involves certain dangers as we will point out later in this chapter.

An operation with a lame management or without demanding customers will reduce its efforts. Why should it go the famous extra mile or walk the regular miles at all, if not asked? If not continuously challenged, the operation will let its *eigen*-variety degrade, for instance, by losing competencies, forgetting knowledge or lowering quality standards. A downward spiral sets in against which the metasystem should react. Similarly, a management that cannot upgrade the operation's *eigen*-variety will resign internally or even quit its job.

The "tendency to equate" indicated in Beer's principle thus means that, wanted or unwanted, an adjustment will take place and the organization will not remain where it currently is. Without countermeasures, there is a high risk that it will adjust to the element with the least *eigen*-variety. The adjustment of *eigen*-varieties to the right and, in most cases, higher level is **not a given;** it must be stimulated actively and controlled so as to reach the target level.

8.3.2 "Adjustment" is not an Automatism but a Mutual Search, Sensing, and Learning Process

Adjustment and adaptation processes are often considered to occur almost instantly and automatically. This, however, overlooks the fundamental lack of transparency in these processes. We already mentioned in volume 1 that the environment and organization are not transparent to each other. However, we must go one step further: Each system 1 element is not even transparent to itself and needs the others to discover itself.

How do customers know what they want? The problem is that what customers often want, they only know after having seen products. And vice versa: How does an organization know what it can do and achieve? What kind of competencies an organization possesses is only known if it encounters the market, its customers, and competitors, and then often only through challenging situations. **Knowledge is relational**: One knows mainly through others what one knows.

As a consequence, we cannot expect **ecosystems or niches to emerge automatically**. They can only develop through a **dynamic learning and adaptation process**. So, if strategy books advise organizations to "find a niche," this is rarely possible: Niches do not exist beforehand and cannot be discovered like America by Christopher Columbus for the Europeans. Ecosystems are instead the result of an iterative and evolutionary learning process between the environment and the organization, which also generates surprises. Instead, one better understands the adjustment process as a **mutual search, sensing, and learning process** taking its time.

This searching and sensing process also occurs within the organization: One of the key tasks of management is to find out the level of the operation's *eigen*-variety, what the operation can achieve and how well it can work with the operation. This is why managers are given 100 days in a new position to develop their plans and strategies for their units. Operation and management must get to know each other. They need to discover who can what and on how much one can rely on each other.

Therefore, even if an "equation" is insinuated by Beer's principle and Ashby's Law, this adjustment process should not be understood too mathematically and as a matter of instantaneousness. Ecosystems are not the result of equations but of a mutual and dynamic learning process that reduces the lack of transparency about the other and oneself only gradually.

From this, **two control tasks** emerge that quickly become opposites, resulting in a control dilemma for the metasystem. On the one hand, the metasystem must **define and specify the level** to which the systems 1 need to adjust, as we have said above. On the other hand, it must leave **sufficient freedom** to the systems 1 so that they can learn to understand their environment and try out different approaches so to determine the right level. Products can never simply be transplanted from one market to other markets, regions, and cultures as expected and without modifications. The metasystem needs to learn how to balance out **the need for targets** and the **freedom to learn**.

8.3.3 Adjustment and the Risk of Turning Blind

The positive connotation of the terms "adjustment" and "adaptation" lets us forget the dangers involved. The reciprocity of the adjustment process described above points us to a risk; namely, to **turn blind** and **lose a critical reference point and objective measure** over time. Why is this so?

To answer this question, let us revisit the relation between environment and organization: The mutual adjustment process implies that, in the end, only the customers who have adapted themselves to the company and have become compatible with it will remain (the "core customers"). The customers who cannot adapt themselves to the company will ultimately leave and seek other companies. The company thus gets the market and customers it "deserves." It literally creates its (!) customers, to use Peter Drucker's famous quote.

The critical question then emerges as to whether these customers are representative of the market. If the company concentrates on and adjusts exclusively to the existing customers, it narrows down its perception of the market. Fans are good and worthwhile, but they can limit the organization.

This is a problem also encountered in customer surveys: The "customers" asked are only the market participants who have already selected the company. However, what about the others who did not choose it or did not even consider it at all? These are forgotten or ignored. That is why customer surveys report that everything is in order. The **critical reference point** has been lost.

This kind of challenge can also be found in **internal adaptation processes**: the operation shapes its management according to its processing capacities, and directs the management only to those issues or solutions that it can process. The challenge of any new management is to keep its otherness, its "fresh wind" alive and blowing, and to not become "house-trained" (i.e., adapted to existing practices, behaviors, and values).

Without any "external" and critical reference point, the system 1 can select and control the environmental variety that it is supposed to process as desired. The management and the operation select the scope of the environment that fits best to their *eigen*-variety. They start to settle in and make themselves comfortable. They even do not notice it, since they have become "blind"! The tendency to seek a balance thus leads to the temptation to take the current balance as the ultimate and highest standard, objective and good, and thus, to mistake stagnation with stability.

It is notably **the metasystem's responsibility** to monitor this mutual adjustment process of the systems 1 attentively and to take care that the adjustment occurs at the right level by using a critical reference point. The metasystem must ensure that the systems 1 do not exclude the parts of the environment that are necessary for their future development.

The operational metasystem can use inner-organizational instruments such as "objectives" or system 3*, but another elegant way to counteract the narrowing of perspectives or even turning blind is to let the environment wake up the operation and induce extra variety. Whoever requires the system 1 to win demanding customers thereby challenges the system 1 indirectly, albeit more forcefully. In this respect, the **environment is the friend and help of the metasystem** to increase the potential of its systems 1. Trying to win challenging customers to increase the performance is perhaps more effective than top-down commands by the metasystem. The experiences that children go through are often better teachers than their parents, and this applies to organizations likewise. Which customers could not be won and why? What criticism by customers was swept under the table? Consequently, the task of the metasystem is to draw repeatedly the systems 1's attention to these questions and the challenging parts of their environments.

To use this lever, it is, however, important that the **metasystem itself always has access to and a view of the larger environment**. It should not construct its view of the environment from the reports by its systems 1 only. The relation of system 4 to the wider environment, which also includes the parts excluded by the systems 1 is, therefore, decisive for the functional integrity of the metasystem and its ability to challenge the systems 1. The management should consequently also sell its own products to meet the environment and learn about it. It should not just rely on internal figures and reports. The personal encounter with the wider environment is vital for the metasystem's ability to challenge the systems 1 and to move it beyond its comfort zone.

Let us now take a step back from what we have just been discussing because it now becomes clearer that **controlling and managing the operational organization** means again navigating **between two opposites.** On the one hand, one should promote adaptation to the environment as far as possible to achieve a balance and thereby become efficient (also called "specialization"). On the other hand, one must make sure that the organization's horizon is not limited to its niches, but that it also confronts itself deliberately with aspects that lead it beyond the current equilibrium and performance. So, one must, paradoxically, destabilize the organization in such a controlled way that it always moves a bit beyond its present state and "comfort zone."

8.3.4 "Closed Societies"— When Adjustment Leads to Exclusion

The principle of mutual adjustment formulated by Stafford Beer has another important consequence: If the environment and the system 1 seek alignment, this adjustment might exclude others; namely, the remaining environment and the organization itself.

1. Sealing off the systems 1's environment from other environments

If an adjustment takes place, the binding forces between the environment and the system 1 become stronger. One has finally found one's partner who understands one. Due to this stronger bond, the specific environment of the system 1 begins to lose contact with the remaining environment. Whoever has a "preferred supplier" is committed to its technologies that others might have already abandoned.

The concept of the "ecosystem" unfortunately describes only the positive aspect of mutual adjustment. The negative aspect is the **exclusion from other developments outside the ecosystem** and the formation of a **"closed society."** In an ecosystem, people can live optimally because they gradually become accustomed to one another, but where there is hardly any change taking place; in other words, a cushioned environment, albeit somewhat musty, like a pond without a freshwater in-flow. The System 1–Environment relationship turns into a self-contained system without a renewing and rejuvenating in-flow and circulation.

This is fatal to the organization because it depends on the development of its environment. "One also learns from the customer," is a well-known effect, but if the customers do not develop, the organization also falls behind competitors. A healthy sales strategy must, therefore, also ensure that sufficiently innovative, challenging, and different customers are won who open the organization to new developments in their environment and who are developing themselves.

2. Sealing off the system 1 from the remaining organization

The adjustment between a system 1 and its environment also poses a **problem for the rest of the organization**: the boundaries between the environment and the concrete system 1 begin to blur. In the end, it is no longer clear as to whether the system 1 belongs to the original parent organization or whether it has not already become part of the environment (see also Section 1.4). The boundary to the environment has then *de facto* moved into the organization, namely, between the system 1 and the metasystem (and other systems 1) from which the system 1 begins to alienate itself.

This problem can often be seen in the relationship between salespersons and buyers of different companies. Both form a symbiotic relationship which does not always work in the interests of their parent companies. Alignment between the organization and its environment can lead to the blurring of boundaries between the organization and the environment–a development, which the metasystem, especially system 3*, must watch attentively.

Summary

- In a viable system 1, the size of variety to be processed should decrease from the environment to the management. This means, for instance, that the management should only be concerned with the special cases that the operation cannot handle.
- Being exposed to less variety should not lead the system 1 management to lose sight and knowledge of the variety processed by its operation. To counteract a possible "ivory tower" syndrome from developing, the system 1 management should regularly confront itself with the operational processes, challenges, and environmental variety.
- The varieties between the elements of a single system 1 (incl. its environment) tend to adjust to each other (principle of the mutually adjusting horizontal varieties or "The First Principle of Organization"). This adjustment within the system 1 must be carried out across all elements of the system 1 in both directions.
- The internal adjustment of the system 1 to the intended level does not occur automatically: Without demanding objectives and providing support, the adjustment process risks approaching a lower than intended level.
- The adjustment process is an inherently mutual learning and sensing process and requires sufficient freedom for experiments.
- The need to adjust and form an ecosystem bears the risk that one focuses only on the specific ecosystem and turns blind. Systems 1 must not seal themselves off from either the developments in other environments, nor from the rest of their organization. It is the metasystem's task to turn the attention of systems 1 beyond their immediate scope and enlarge their horizon.

Questions for Reflection:

1. Is the variety to be processed sufficiently decreasing toward the management in your organization or area of responsibility, or is the management overburdened with operational details?
2. Where does the operational staff in your organization need to be strengthened so that its management can be relieved from unnecessary tasks?
3. Has the management in your unit or organization a sufficient understanding of the operational challenges? Is it exposing itself regularly to the operational world?
4. With how much variety does your organization confront its environment (e.g., customers, suppliers, authorities)? In which instances is the environment overwhelmed by your organization?
5. Where do you see the danger that the boundary between the operational units and their environments becomes blurred?

6. How well do your customers and suppliers develop? Are they positively stimulating your organization or slowing it down in relation to your competitors?
7. Where do you see the danger that parts of your organization are not going beyond their comfort zone?
8. Do you see signs of operational blindness developing? What kind of measures could reduce it? How would you notice it?
9. Who in the environment of your organization could provide you with a critical and honest view about the state of your organization?

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9 The Axiom of Requisite Vertical *Eigen*-Variety—Managing the Operational Organization (Part 1)

"A country that produces 258 different kinds of cheese cannot be governed."

— Charles de Gaulle (French President)

The reasons why the English fleet won over the Spanish Armada in 1588 are numerous. However, one reason, in particular, was quite trivial in retrospect, and a good lesson for the management of organizations: While the British introduced standardized guns and cannon balls, the Spaniards used balls of different sizes (Fig. 9.1). In the heat of the battle, the Spaniards were then no longer able to assign the

Fig. 9.1 Standardized canon balls helped the English against the Spaniards (© Fotolia/stock.adobe.com; artist(s): typomaniac)

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_9

balls correctly to their cannons (BBC, 2009; Colin, April 2002; Schotter, 31.10.2015). Using standardized cannon balls thus accelerated the supply and loading of all guns and increased the firepower—with a known outcome for the English.

The same is true for organizations: You can only become powerful if you create a coordinated approach among different units. This also is one of the justifications for creating organizations: People join forces to form organizations because they expect to create more value through it than alone. To accomplish this task is the responsibility of the operational metasystem (see Fig. 9.2[1]).

This was also the basic idea of Chester Barnard, one of the founders of modern management theory, which he laid out in his main book *The Function of The Executive* (1968). This idea is also captured in another major economic and management theory, the Transaction Cost Theory, which states that the basis for the existence of an organization lies in its ability to coordinate, monitor, control, and develop different resources better than (external) markets (Coase, 1937; Williamson, 2010). If the market can provide these functions more effectively and efficiently, then the organization's existence becomes eroded.

The relation between the operational metasystem to the operational organization is so fundamental to organizations that it will take us the next three chapters to elaborate all the aspects entailed in it.

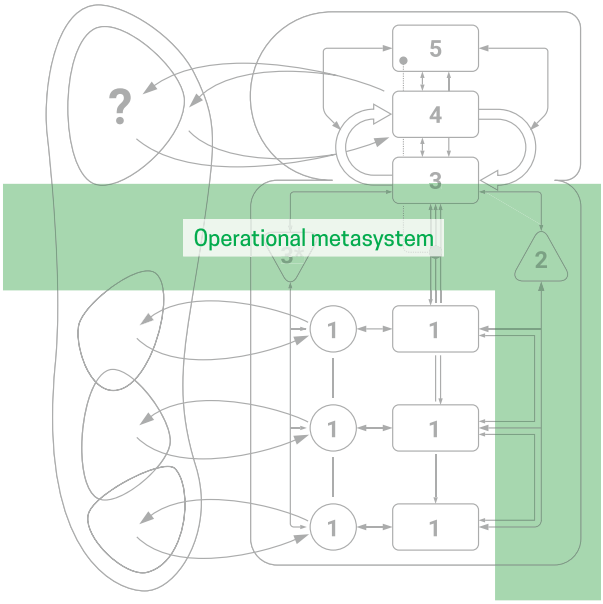

Fig. 9.2 The operational metasystem—contains adaptation from Beer (1995b: 136, Fig. 37)

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37) if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

9.1 "Horizontal Versus Vertical (*Eigen*-)Variety"

The operational metasystem can create and extract additional value from its operating units in several ways, for example, by:

- **Sharing resources** (e.g., production facilities), thereby reducing costs (e.g., fixed cost degression, better utilization of assets, bundled purchasing).
- **Protecting the systems 1 against business cycles** by building up reserves.
- **Coordinating the relationships** between the systems 1 (e.g., uniform rules and governance).
- **Increasing market power** and **visibility.**

This additional value, however, is not earned easily: It can only be generated if one knows **how** (!) the different systems 1 need to be coordinated and connected correctly. Out of the initially highly heterogeneous systems 1, one must yet forge unity, similar to a coach who must form a team out of different players. Here, the challenge for the metasystem is to find and build the structures, rules, processes, and platforms that can be used by all systems 1 despite their heterogeneity and lead to a coordinated course of action. This is the metasystem's main task, challenge, and value contribution.

Merging the systems 1 does not occur automatically since this generates at the same time unprocessed issues that need yet to be resolved by the coordination of processes and information, the allocation of resources, or the development of a comprehensive strategy. It is the task of the metasystem to find a response to this need and have the necessary competencies and resources ready. In VSM parlance, the metasystem must provide the **requisite *eigen*-variety** for processing the additional internal variety created by the combination of the various systems 1 (see Fig. 9.3).

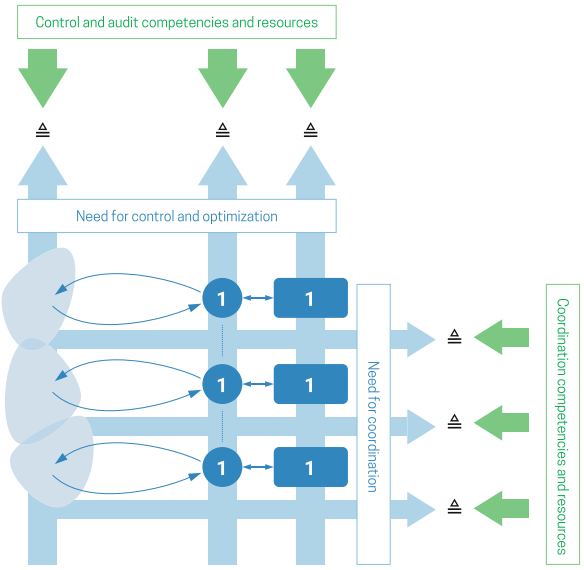

Fig. 9.3 The unification of the systems 1 creates variety (blue arrows) that needs to be processed through specific additional competencies and resources

Beer (1995a: 217) expressed this in the so-called "First Axiom of Management" (see also Fig. 9.4) that can be summarized as follows (to help readers we will use the more descriptive term "Axiom of requisite vertical *eigen*-variety"):

> **In a viable system the horizontal variety of the systems 1 must correspond to the vertical variety.**

The "**horizontal variety**" is, as we recall from the last chapter, the variety of the systems 1 at large. The **vertical variety** of which Stafford Beer talks is the ***eigen*-variety that the metasystem needs to control the horizontal variety**. It mostly consists of the metasystem's competencies, resources, tools, and instruments, but also its control models.

It is easy to see why this fundamental **equation between horizontal and vertical (*eigen*-)variety** must hold: If the metasystem does not have sufficient *eigen*-variety compared to the systems 1, then it cannot generate the necessary synergies and coordination among the systems 1. This is the case with metasystems that, for instance, do not have the time, instruments, and resources to implement the necessary synergy projects, cannot enforce their decisions, or are overwhelmed on a cognitive level, and thus, cannot see the "woods for the trees." In such situations, the metasystem will not be able to produce additional value and might even not keep the operational organization together. In the worst case, everyone does as one pleases. Without adding value in this situation, the metasystem ultimately loses its legitimation and becomes obsolete.

However, the opposite case also exists: Metasystems with too much *eigen*-variety are not stable either since these "top-heavy" organizations possess too much idle vertical *eigen*-variety that is not contributing to the organization. Unused *eigen*-variety such as resources or infrastructure, will either degrade or the systems 1 will start questioning its necessity and thus demand reducing the size of the metasystem. After all, the metasystem is financed by the systems 1.

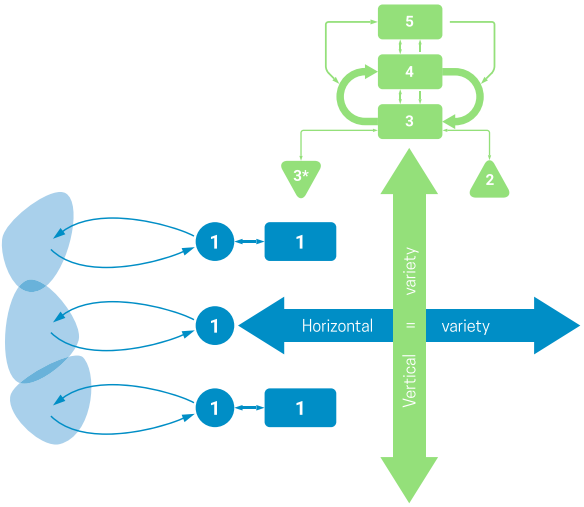

Fig. 9.4 Horizontal and vertical (*eigen*-)variety must correspond to each other (adapted from Beer (1995a: 96, Fig. 25))

A metasystem that is too big will thus search for possibilities to use this extra *eigen*-variety. For this, it has two basic options: Either it can spend it on activities or purposes not related to the company or it will use it to control the systems 1 even more intensely. Both options are harmful: The first one leads to waste and will be questioned by the systems 1 and the next higher recursion level (e.g., shareholders). The second option is even more dangerous, because it leads to overcontrolling, overregulating, and micromanaging the systems 1 similar to the dysfunctionality of too many recursion levels (see Section 6.1.2). This will strangle the systems 1, slow down their responsiveness to the environment, and provoke internal conflicts that prevent the organization from processing the environmental variety.

Only if horizontal and vertical (*eigen*-)variety correspond to each other, will the organization hold together in the long run. Thus, each organization is called to find this "**cohesion corridor**" and choose its "**point of control**", where both varieties are in equilibrium (see Fig. 9.5) and the control of the systems 1 is feasible. This is not an easy task but a **complex search process** that requires a significant amount of **sensitivity and willingness to learn** as to where it might be located.[2]

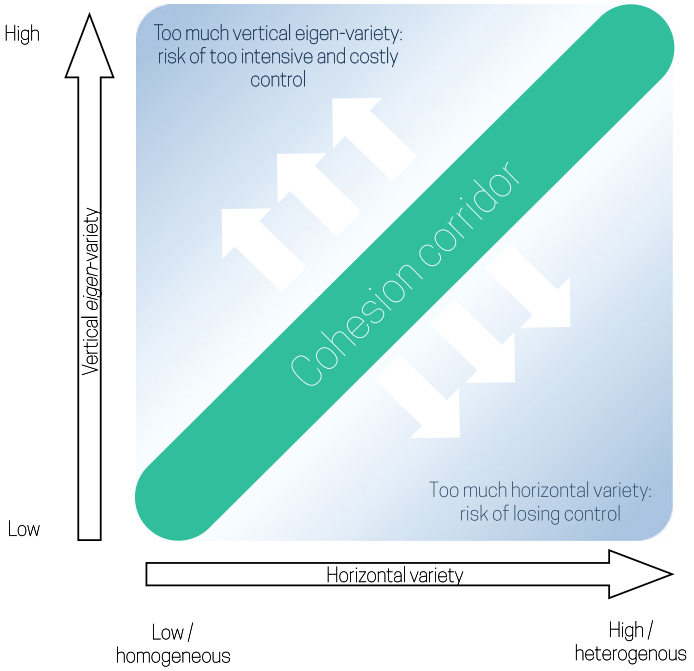

Fig. 9.5 Only if horizontal and vertical (*eigen*-)varieties correspond to each other, the organization can become and remain cohesive

[2] Although the axiom of requisite vertical *eigen*-variety might sound very straight forward, one should not forget how difficult it is to find the right point of control due to the multitude of aspects to be processed by an organization. Here, it is vital that the metasystem develops sensors warning it when it needs to increase or decrease its or the systems 1's *eigen*-variety.

The axiom of requisite vertical *eigen*-variety does not only apply to organizations but also, on a personal level, to any **leadership position**. As leader one is only accepted by employees if one is adequately competent, and if one finds ways to help them with their questions and problems. This does not mean that executives and managers must always know the solution themselves but rather as part of their responsibility to create an overview (see volume 1), they should at least be able to show a way of how to develop a possible solution.

9.2 Example: Corporate Acquisitions and Mergers

Many problems in organizations arise from misjudging the amount of vertical *eigen*-variety necessary to control the horizontal variety; for example, in the case of corporate acquisitions and mergers. These are quickly celebrated with bottles of champagne as soon as the contracts are signed. However, everyone who has already worked on post-merger integration projects knows sufficiently well that not until the moment when the champagne corks are popping up, the real pain starts setting in.

Typically, ahead of the merger one has too little knowledge about the differences between the companies to be merged. Consequently, one plans with too insufficient resources compared to the challenges resulting from the merger. Only when the actual integration starts, one discovers that the vertical *eigen*-variety does not match the heterogeneity of the units to be merged: and that the horizontal variety exceeds the disposable *eigen*-variety of the metasystem. While prior to the acquisition the point of control was well within the cohesion corridor, it now slips far outside the cohesion corridor in relation to the available vertical *eigen*-variety (see Fig. 9.6).

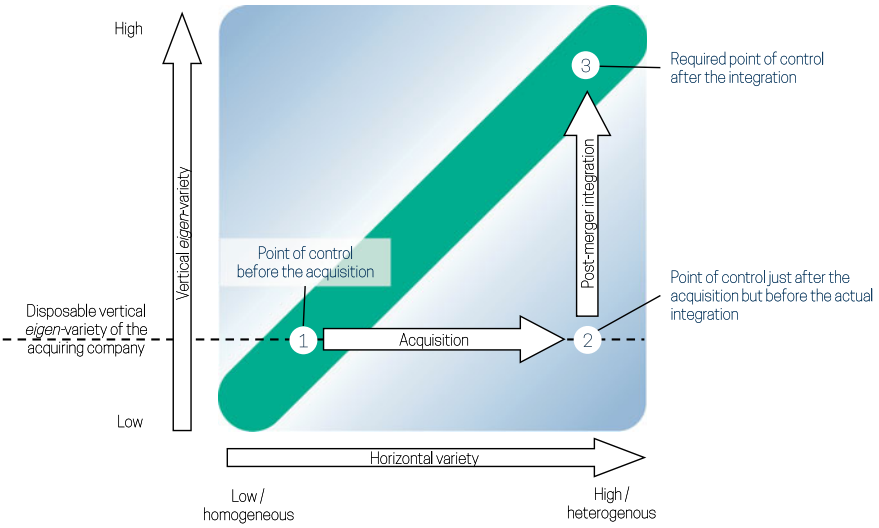

Fig. 9.6 Corporate mergers fail if the point of control remains outside of the cohesion corridor

The integration of the acquired organization risks failing. One hoped to gain more control over the market through a merger, but in the end lost control over one's organization.

In these situations, there are only two **strategies** available to correct such an unstable point of control: Either the metasystem reduces the horizontal variety of the systems 1 or it must increase its vertical *eigen*-variety (see Fig. 9.7). In the case of the first option, the acquiring company must resort to measures geared at reducing the horizontal variety, such as standardizing and limiting the number of product options, markets, and technologies.

As an alternative strategy, the acquiring company can augment its *eigen*-variety by, for example, increasing its know-how and ramping up its resources. To this end, organizations hire, for instance, additional employees or external experts such as consultants to master the integration of the acquired company. Thereby, the acquiring company hopes to achieve requisite vertical *eigen*-variety and to move the point of control into the cohesion corridor.

One should not be mistaken about the difficulty to **reduce horizontal variety**: The path to less horizontal variety is usually not as straight as the arrow in Fig. 9.7 suggests. It often requires much reflection and testing. So, even in these cases, the metasystem will need to **increase its *eigen*-variety at least temporally**. The path to less horizontal variety then, instead, resembles a curve or mountain hike, where one first must climb a peak before one reaches the next valley with a lower point of horizontal variety (see Fig. 9.8).

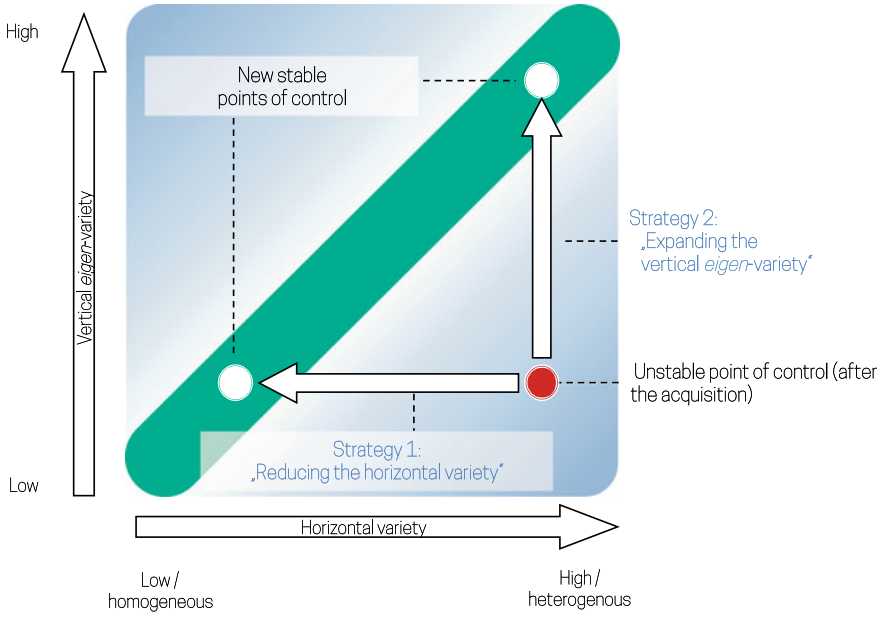

Fig. 9.7 To regain the cohesion corridor, one can either reduce the horizontal variety (strategy 1) or increase the vertical *eigen*-variety (strategy 2)

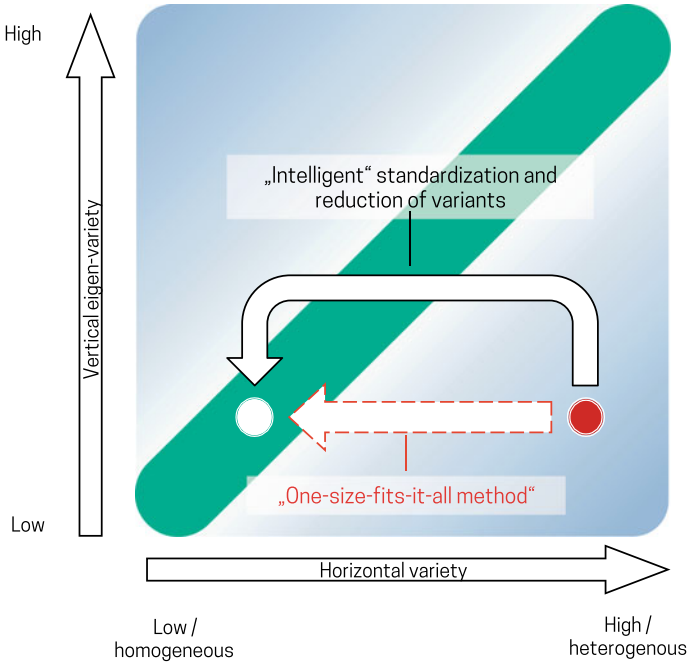

Fig. 9.8 In many cases, the way to less horizontal variety requires a temporary increase of vertical *eigen*-variety

Anyone who nevertheless tries to use the straight line uses a "**one-size-fits-it-all**" approach. This approach, however, risks losing valuable *eigen*-variety of the acquired company (e.g., know-how, talents, and people), since one does not know beforehand what kind of *eigen*-variety the acquired company possesses and how the standardization measures affect its *eigen*-variety.

9.3 "1 + 1 = 3 Isn't It?"—About the Combinatorics of Horizontal Variety

When one wants to integrate units, resources, or infrastructures, one always points to the possible synergy effects and the added value that can be generated almost automatically. "1 + 1 = 3"—isn't it?

However, this mathematical language poses two problems. First, the equality sign insinuates almost instantaneous results, so, therefore, simultaneity. In organizations, however, this is very rarely the case: Synergies are the result of a long adjustment and standardization process. The better representation would be an arrow (so "1 + 1 $\Rightarrow$ 3"), which then leads one to ask the only decisive question, namely, how long this (time) arrow will be and will it take to obtain the synergies.

The much more severe problem is secondly that this "equation" usually only addresses one aspect: The additional value generated. The **combinatorial effects** that increase the variety to be processed exponentially are not taken into account. What do we mean by this? To illustrate this by a simple example: Let us assume a group of systems 1 with a divalent variety (i.e., with just two product variants per system 1). If we assume that the entire organization has 15 different systems 1, then the metasystem is confronted with 30 different possible system 1 states, if viewed individually. For synergies, however, not the individual state of the systems 1, but rather their **combinations** are the decisive factor. Whoever wants to master synergies might then face up to more than 32,000 different states (2^{15}) that a common product platform must be able to master (see Fig. 9.9).

Metasystemic control and the generation of synergies then easily become a nightmare. We see this happening in many standardization and IT projects, for example, when one wants to build comprehensive operating systems: The more heterogenous contract models, rebates, or products are (i.e., for insurance companies), the more internal complexity must be processed by these systems. **Variety produces its proper variety**. In this respect, the Eq. 1 + 1 = 3 is correct, but the "3" might not refer to synergies, as one hopes, but rather to the internal complexity generated. This can lead to a state where the company might eventually even lose control and transparency and is forced to spend all its energy on managing its internal complexity rather than its environment. Everything comes to a standstill. Mergers are good times … but mainly for competitors.

In these cases, the sentence "small is beautiful" indeed applies, and so it is advisable to forgo certain synergies and create smaller units that work independently and are easier to manage than to merge them (so, to increase the decomposability following Herbert Simon—see Section 6.4). It is also worth

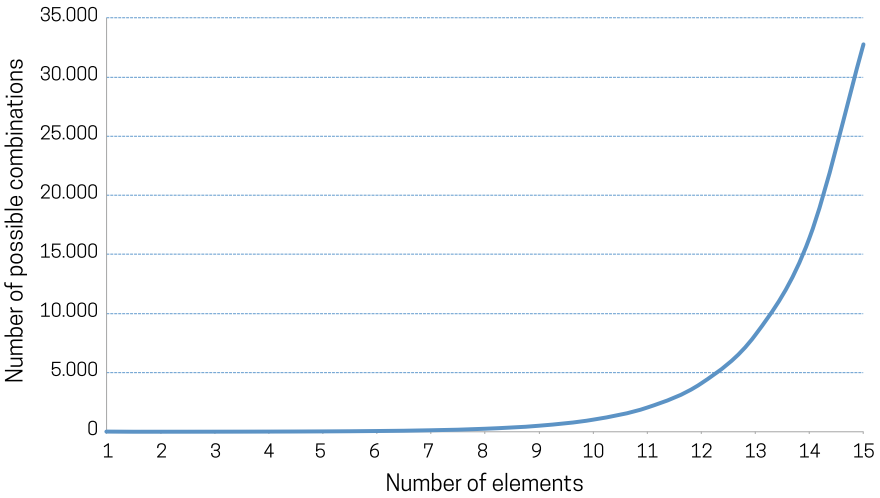

Fig. 9.9 The internal complexity increases exponentially with the number of interconnected elements

remembering what the real purpose of the enterprise is and to try first to get rid of what has been historically grown variety but does not belong to the organization's core activities. Much of the existing variety is often homemade and not required. Sometimes, however, so much internal complexity has already piled up that one can no longer disentangle it meaningfully. Here, one should perhaps reconsider rebuilding the business in parallel with simpler structures.

Thus, one should always remember: "1 plus 1" might sometimes be "3" regarding the to-be-obtained synergies, but often it can also be "0" or "minus 3."

Do you want to know more about which factors determine the cohesion corridor and the point of control? If so, then continue reading here, otherwise, go to the end of this chapter.

9.4 In-Depth View: Factors Influencing the Degree and Corridor of Cohesion and Integration

What influences the balance between vertical and horizontal (*eigen*-)varieties, and thus, the degree of cohesion and integration?

We can identify **five key factors**:

1. The **heterogeneity** of the systems 1 ("horizontal variety"),
2. The ***eigen*-variety** of the metasystem ("vertical *eigen*-variety"),
3. The **strategies, objectives, and purposes** defined by the metasystem,
4. The **self-understanding of the metasystem** regarding its control responsibilities and role, and
5. **The speed and effort** required to activate the vertical *eigen*-variety in the **case of crises** ("emergency mode").

Let us discuss these five factors in greater detail.

9.4.1 The Systems 1's Heterogeneity (Factor 1)

One of the most crucial factors influencing the equilibrium between horizontal and vertical (*eigen*-)variety is the heterogeneity of the systems 1, such as the number of different products, markets, and cultures, technical procedures, systems, standards, or resources. The more diverse the systems 1 are, the more difficult it will be for the metasystem to integrate them into the overall organization, and, in addition, the more knowledge, time, and resources are required. Conversely, the more closely related the systems 1 are, the easier it will be to find common ground, and the simpler it will be to control the systems 1.

This implies that with a given amount of vertical *eigen*-variety, the degree of integration thus needs to decrease, the more heterogeneous the systems 1 are. Figure 9.10 illustrates this relationship: Let us suppose that we have two different groups of systems 1 with different degrees of heterogeneity. The systems 1 of group A are very homogeneous and, therefore, have a low amount of horizontal variety; the systems 1 of group B are more heterogeneous, and consequently, their horizontal variety is greater.

In our example, the metasystem disposes of sufficient *eigen*-variety to control the systems 1 in group A entirely (broken vertical line in Fig. 9.10). The horizontal variety of group B systems 1, however, is too vast; thus, large parts of group's B horizontal variety remain beyond the control of the metasystem. The maximum possible point of control that the metasystem can achieve is, therefore, relatively lower than for group A. For group B, the metasystem must decide what it controls and what it better leaves to the discretion of the systems 1.

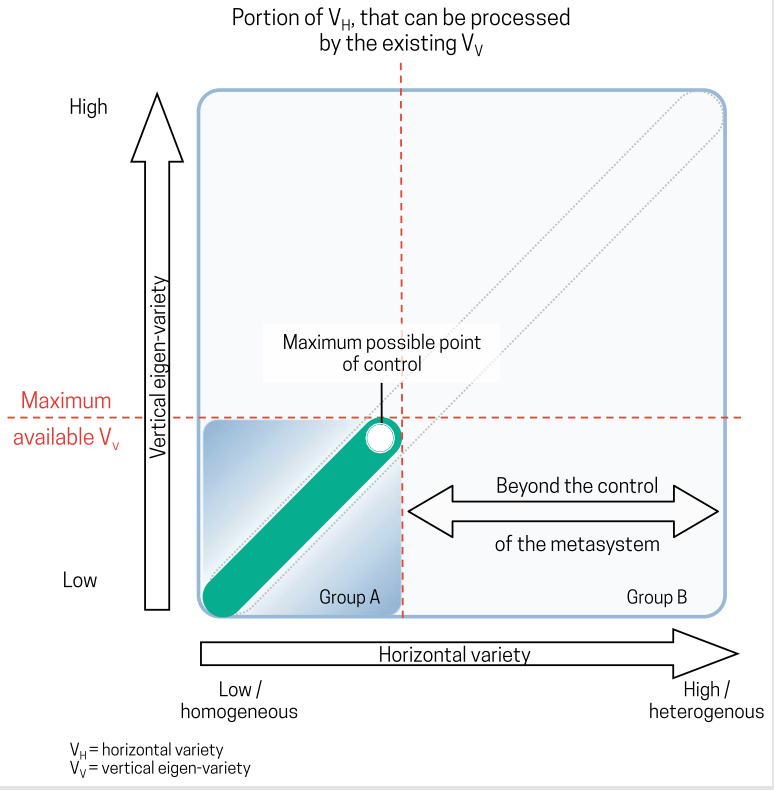

Fig. 9.10 The maximum available vertical *eigen*-variety limits the feasible cohesion corridor

9.4.2 Disposable Vertical *Eigen*-Variety of the Metasystem (Factor 2)

The level of integration does not only depend on the amount of horizontal variety but also on the size of the disposable vertical *eigen*-variety. The greater the vertical *eigen*-variety, such as resources and competencies, the more horizontal variety can be controlled and integrated. The size of the available vertical *eigen*-variety hence determines how far the possible cohesion and integration corridor can go. If the metasystem attempts to control the systems 1 beyond the available vertical *eigen*-variety the situation becomes unstable or critical (see the cohesion corridor turning red in Fig. 9.11). The metasystem then overstretches itself, such as in the case of too ambitious projects, too many action points or objectives. One starts with too much euphoria, but ends with frustration, exhaustion and, if mistakes are made, maybe even losing control.

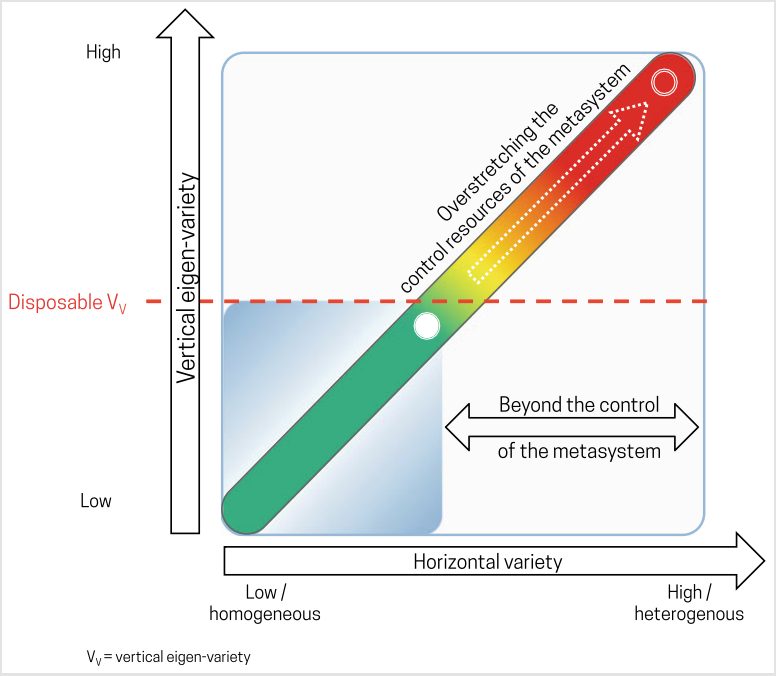

Fig. 9.11 The attempt to reach a point of control beyond the available *eigen*-variety leads to an unstable situation

Good leadership begins by knowing the limits of one's *eigen*-variety and what one can control. For this reason, for example, the project portfolio management methodology has been developed: It is intended to provide an overview, to help prioritize, and plan the projects so that horizontal and vertical (*eigen*-)variety can be aligned to each other continuously.

9.4.3 Strategies and Organizational Purpose (Factor 3)

So far, we have only looked at the balance within the organization. In addition, it is necessary to consider which degree of integration is necessary given the wider environment. So, one needs to take into account the overall purpose of the organization and its strategic position and ambitions. Here, three questions must be clarified: First, how much horizontal variety is needed? Second, what degree of integration is required based on the strategy and purpose? And third, what are the implications if no feasible cohesion corridor exists?

9.4.3.1 How Much Horizontal Variety Do We Need to Process?

How much variety does the entire organization need to process in its environment successfully? How many markets does it need to serve? How many products and product variants should it offer? Which production technology and equipment is needed? How many IT-platforms are required?

Depending on how one answers these questions, the extent of the variety that needs to be processed by the organization varies; or, to put it into more mathematical language, the size of the organization's **variety space** changes (see Fig. 9.12). Accordingly, the necessary vertical *eigen*-variety also needs to vary.

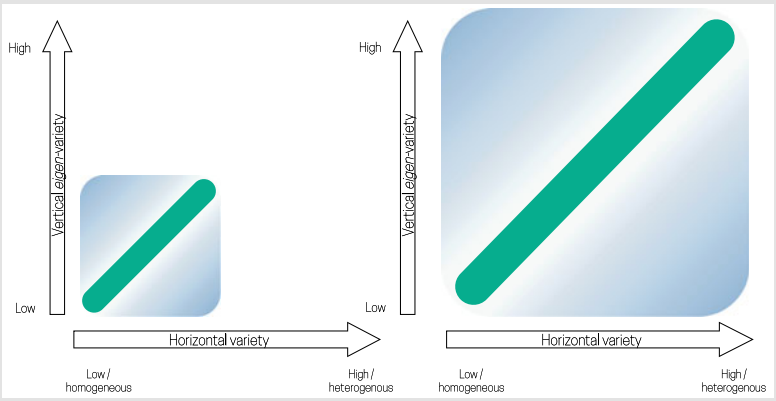

Fig. 9.12 The extent of the necessary vertical *eigen*-variety also depends on the amount of horizontal variety that an organization needs and wants to cover

9.4.3.2 What Degree of Integration do We Need Strategically?

Then, the metasystem must answer which part of the horizontal variety should be controlled by the metasystem. The metasystem does not need to control every aspect of the systems 1, even if it could. It can choose various degrees of integration. With less integration, more horizontal variety remains deliberately within the self-control of the systems 1 and outside the control of the metasystem (see Fig. 9.13). The autonomy of the systems 1 hence increases.

Conversely, the further the point of control in Fig. 9.13 moves up to the right, the more the horizontal variety will be controlled by the metasystem and the smaller the freedom of the systems 1 will become.

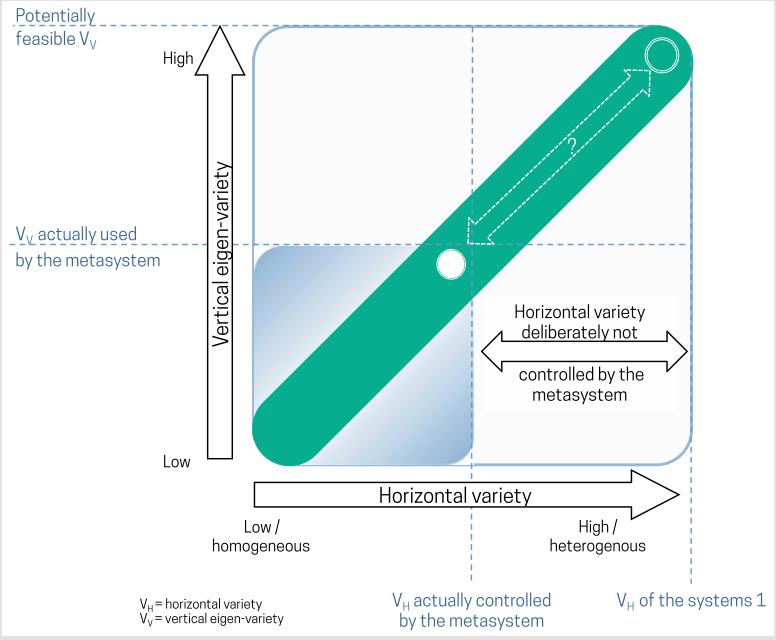

Fig. 9.13 If the metasystem deliberately chooses a lower point of control, the systems 1 can control the remaining variety by themselves

This question lies behind, for instance, the choice of the right holding structure (see Fig. 9.14): How actively should one engage in the operational business? In the case of a financial holding, the part of the horizontal variety subjugated to its control is purposely kept small because, in such cases, it apparently makes only sense to deal with questions of financing, investment, taxes, and corporate law from the top level. Opposite to this constellation, we find an operating holding company, which attempts to generate also operational synergies. Consequently, it is confronted with more horizontal variety and thus needs more vertical *eigen*-variety to achieve a higher point of control.

As straightforward as this might sound, one of the trickiest questions is to find out where the right point of control lies:

If the metasystem controls too little horizontal variety, the metasystem cannot create the additional value in the form of synergies or market power necessary for the survival of the whole organization. Many systems 1 in an organization could not even survive if they had to acquire and develop all resources alone and cannot share production facilities or distribution networks with each other, for example. In most companies, there exists, therefore, a lower boundary of where the point of control can lie. Certain aspects of an organization must be shared to ensure viability.

On the other hand, one also tends to encounter an upper boundary for the integration. If the metasystem controls the horizontal variety of the systems 1 too intensely, it can potentially limit them too much in their responsiveness.

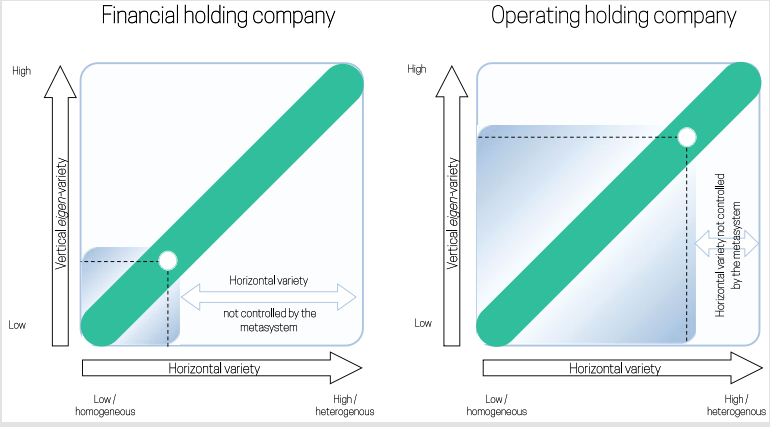

Fig. 9.14 Differences between a financial and operating holding regarding the amount of horizontal variety controlled by the metasystem

The systems 1 will not have enough freedom left to adapt to their environment.

Strategically **necessary upper and lower boundaries** thus reduce the feasible cohesion corridor to a narrower range (see Fig. 9.15).

We now start to see how the principle of reciprocally adjusting horizontal varieties, as stated in the previous chapter, becomes intertwined with the axiom of requisite vertical *eigen*-variety that we are discussing in this chapter. The degree of integration and control chosen by the metasystem must give the systems 1 sufficient freedom so that they can adapt their *eigen*-variety to the environment's variety and vice versa, the systems 1 need to give up some of their autonomy in the interest of the organization's overall viability. Hereby, we encounter the fundamental tension between the principle of the mutually adjusting horizontal varieties (see Chapter 8) and the axiom of the requisite vertical *eigen*-variety that the metasystem is facing: the tension between freedom and responsiveness on the one hand, and overall control, internal coordination, and synergies on the other hand.

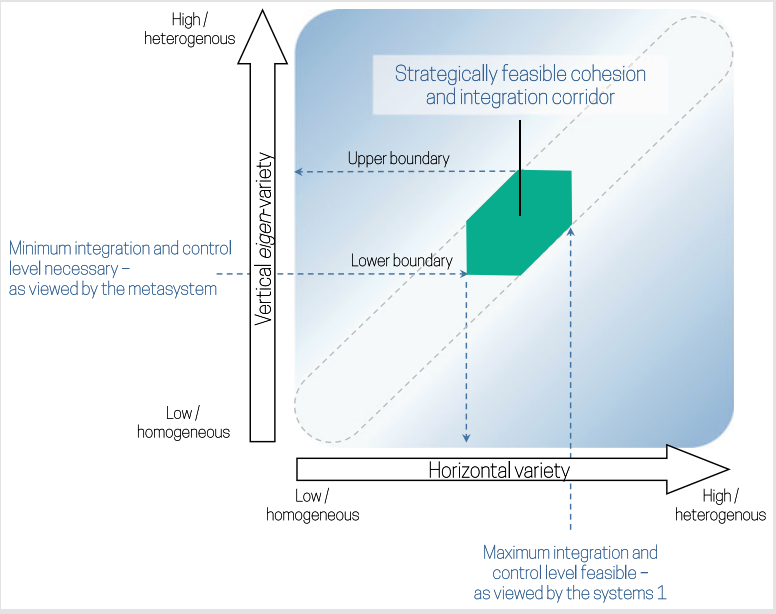

Fig. 9.15 The cohesion corridor that is strategically feasible is mostly only a portion of the cohesion corridor that is organizationally viable

9.4.3.3 "The Value Added" Without Value—The Lack of a Feasible Cohesion Corridor

This leads us to one problematic case in organizations, namely, if the principle of the mutually adjusting horizontal varieties and the axiom of requisite vertical *eigen*-variety cannot be reconciled. The point of control requested by the metasystem is above the one still feasible for the systems 1 (see Fig. 9.16). In this case, the systems 1 require more freedom over their *eigen*-variety than the metasystem can grant them. In such a constellation, either the systems 1 are strangled if they follow the metasystem's orders or the metasystem cannot fulfill its purpose if it only follows the systems 1. This puts the additional value generated by the overall organization into doubt. Would it not be better if the systems 1 (e.g., business units) operated alone than under the umbrella of a metasystem? One wonders.

The inability of systems 1 to fulfill the demands of the metasystem goes beyond its immediate strategic implications; it has, above all, also profound

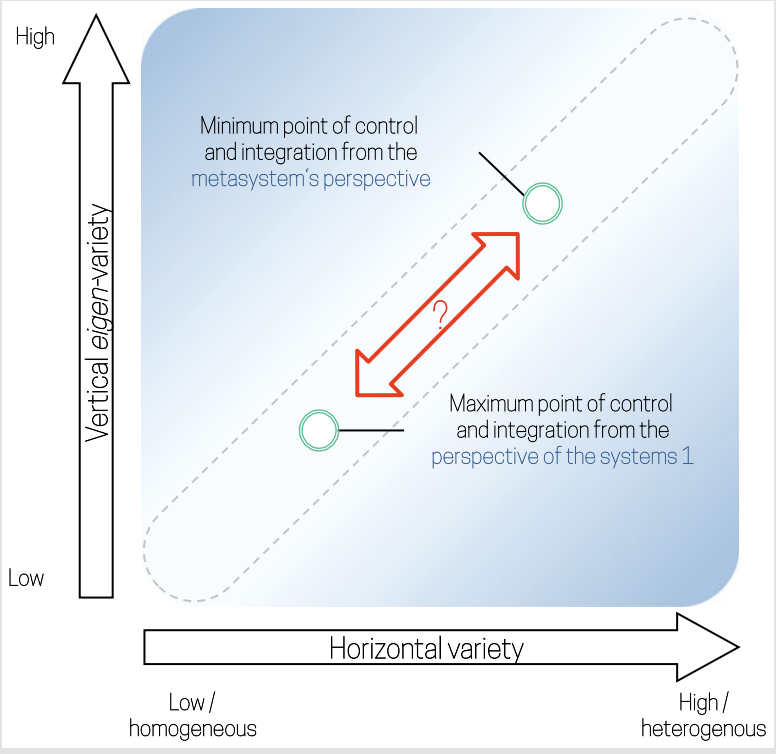

Fig. 9.16 An organization without a feasible cohesion corridor and stable point of control

consequences on the personal behaviors of the employees of the systems 1 and the **organization's governance and ethics**. It affects the health and viability of an organization profoundly. Why is this so?

For this, let us consider how the systems 1 can react to these diverging points of control. There are only two options possible:

Either they openly address the divergence, and it can be resolved, or the divergence is ignored or even negated. In the latter case, the divergence becomes structural and the **organization splits into an official but not practiced version and in an unofficial but practiced version**. The systems 1 pretend to follow the metasystem's standards, guidelines, and orders, but do so only on paper, because otherwise they could not survive in their environment. The systems 1 end up erecting **illusionary worlds**, which function as Potemkin villages for the metasystem. This causes the information and control systems to become schizophrenic: Numbers are fiddled and reports conceal reality.

However, infeasible cohesion corridors do not only create a world of illusions, but more fundamentally, they also lay the foundations for **ethical misconduct, deception, and dishonesty** on the part of the systems 1. And this threatens, in the end, the **oversight and governance function** in the entire organization. The reason is that despite being aware of the discrepancies the metasystem must turn a blind eye to them to save the illusion. Otherwise, it would need to react and acknowledge the discrepancies that could even challenge its position, role, and functioning. While a blind eye saves the metasystem from acting, it also reduces the level of corporate oversight and governance, and with it, the ethicality, values, and culture of the entire organization.

9.4.4 Self-understanding of the Metasystem Regarding Its Role and Responsibilities (Factor 4)

The size of the variety space and level of control exercised by the metasystem are not only decided by strategic considerations, but also by the self-understanding of the metasystem and the role it wants to play. This is important to understand, especially for an organizational diagnosis and design process.

Those who have gained experience with many different organizations know that some of the aspects controlled by a metasystem are not always selected according to strategic considerations but are instead based on "subjective" preferences by the metasystem. For some HQ, the purchase of copy paper is a topic that the group headquarters should take care of; for the HQ of other companies, this might, however, be not an issue with which the corporate units should be bothered at all. Why then do organizations treat identical control issues differently? Often there seems no other explanation left than the **specific preferences and self-understanding** of the HQ and corporate units.

This raises the question as to what extent the self-understanding and self-assigned role of the metasystem still supports or does not otherwise hinder the processing of variety. Are the control competencies of the systems 1 indeed as weak as claimed by the corporate units? Is the metasystemic control actually needed? Here, the metasystem needs to remember the essentials and ask itself critically: first, "What do we as a metasystem really need to control and what not?" and secondly, "Where can we truly generate value?"

The self-understanding of the metasystem, therefore, needs to be related to the organization's initial **purpose, goal, and strategy of the organization**: What should indeed the **metasystem's role and value contribution be?** Especially in times of constant and rapid changes, the metasystem will need to ask itself continuously whether it has chosen the right point of control and integration. Otherwise, the metasystem's self-understanding runs the risk of reducing the flexibility and agility of the operational organization unnecessarily.

However, this not only concerns the case where the metasystemic control is too strong, but the opposite case also exists, namely, where the metasystem does not control the systems 1 sufficiently. The reasons can be manifold, such as ideological reasons ("we believe in autonomy and self-governance") or just comfort and convenience. Here, the metasystem makes it probably too easy for itself, and hence should ask itself whether it needs to increase its level of control.

We see from the discussion above that the metasystem's self-understanding regarding its role and responsibility for the stability and coherence of the organization plays a vital role.

9.4.5 Speed and Effort Required to Activate the Crisis Mode (Factor 5)

The responsiveness to crises leads us to another vital aspect in the choice of the equilibrium and control point, which must not be overlooked: Crises demand an organization to hold the resources of an organization more firmly together than during normal operation. Individual differences must be put aside, and information and resources must be shared … and quickly, at with the press of a button (Fig. 9.17)! The leadership of every organization and the government of every country reserve for themselves the right to seize all resources if needed in a crisis.

Fig. 9.17 The metasystem is responsible for organizing the response to a crisis (© Fotolia/stock.adobe.com; artist(s): ArtemSam)

To change from the standard operation into the crisis mode is the task of the metasystem, for which it also needs requisite *eigen*-variety. Here, the rule applies that the point of control for the normal mode cannot go lower than the minimal level the metasystem needs to make the organization responsive to a crisis. How quickly the "emergency mode"[3] can be activated determines how much the point of control can be lowered in the normal operating mode.

Delegation of control competencies must not result in becoming unprepared for surprises and crises. Even if the metasystem "lets go", gives the systems 1 more freedom and reduces its current level of control, it must still maintain the necessary vertical *eigen*-variety to quickly reestablish control over the part of the horizontal variety that it does not control currently. After all, the metasystem is not discharged from its responsibility for the overall organization.

Furthermore, for the crisis mode, the metasystem must develop additional requisite *eigen*-variety (see Fig. 9.18) in the form of emergency plans, provision of reserves, and simulations of incidents (e.g., "a major customer is breaking away from us").

So, the choice of the point of control for the normal operational mode depends on **how quickly the vertical *eigen*-variety can be activated** in an emergency. Those who respond slower to a crisis must keep the reins closer than those who have built in enough safety nets. The location of the point of

[3] Typically, we have with the terms "crisis" and "emergency" only a negative association; for instance, sharply falling revenues. But the unexpected surge in demand and customers can also constitute an emergency and lead an organization to the brink of dysfunctionality.

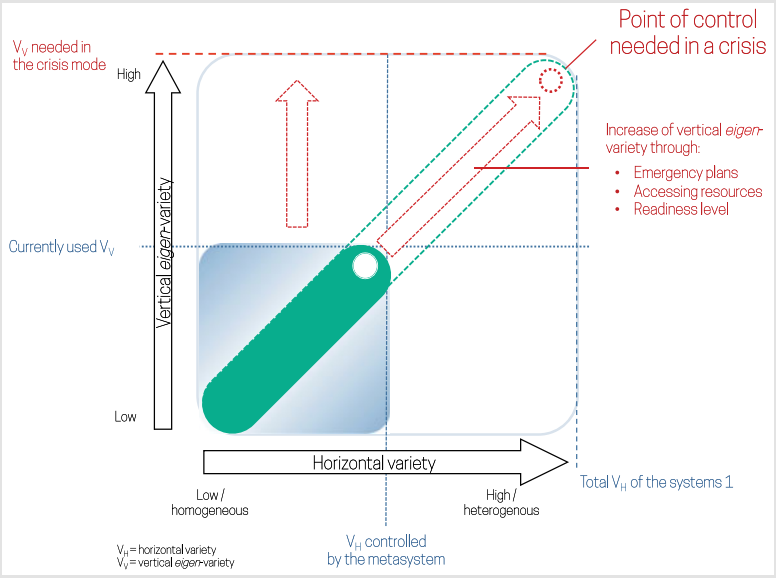

Fig. 9.18 In the event of crises, the metasystem must be able to adjust quickly its vertical *eigen*-variety to the necessary level

control is, thus, also a function of how quickly and efficiently an organization can build up the necessary vertical *eigen*-variety for responding to a crisis.

This implies a further and last point: The possible response time to a crisis is also a question of **awareness**. Those who let loose the direct control over their systems 1 must strengthen and sharpen their **auditing activities** (system 3*) at the same time, so as not to become blind and unprepared: Not in the sense of a police state surveillance, but in the sense of awareness and early detection of instabilities in the operational organization. If one lets go without increasing one's sensors and information channels into the operational organization, one cannot activate the appropriate vertical *eigen*-variety and increase the level of integration sufficiently and within the necessary time frame.

9.4.6 Summary

What do these five influencing factors mean for organizations and the process of designing organizational structures? Organizations are instruments for processing variety, as mentioned at the beginning of volume 1. Their viability depends, among other things, on whether they can attain a balance between horizontal and vertical (*eigen*-)variety. One cannot ignore variety. The reason for many business scandals as well as failed strategies and reorganizations can be often found in the disregard of horizontal variety and the necessary level of vertical *eigen*-variety.

Looking at the relationship between operational units and the control units, organizational design, therefore, also means to think through how these five influencing factors should be calibrated. One should ask oneself the following questions regularly:

1. How much **horizontal variety** is needed and what can be abandoned?
2. What **operational heterogeneity of the systems 1** must the metasystem be able to process?
3. With what kind of ***eigen*-variety** does the metasystem need to be equipped so as to achieve the targeted point of control?
4. How much **freedom** do the systems 1 need to remain viable in their environment? How much **metasystemic control** is necessary to extract sufficient value for the long-term survival of the organization?
5. What **goals and strategies** are required by the organization and how are they to be achieved within the feasible integration corridor?
6. How must the metasystem adapt its **self-understanding** and **role** so that a strategically and organizationally meaningful point of control can be attained?
7. How can the organization better prepare and equip itself for **emergencies** on the one hand, so that it can grant more autonomy on the other?

Summary

- In a viable system, the horizontal variety of the systems 1 and the vertical *eigen*-variety of the metasystem must correspond to each other.
- The following five factors determine the equilibrium and possible point of control:
  - The variety of the systems 1 ("horizontal variety") and the resulting combinatorial effects.
  - The *eigen*-variety disposable to the metasystem ("vertical *eigen*-variety").
  - The strategies, objectives, and purposes defined by the metasystem.
  - The self-understanding of the metasystem regarding its role, purpose, and responsibilities.
  - The speed and effort needed by the metasystem to make all systems 1 responsive to a crisis.
- Grouping closer the horizontal varieties of the systems 1 to create synergies can result in combinatorial effects that increase the variety to be processed by the metasystem exponentially. These combinatorial effects must be taken into account beforehand and reduced by critically reviewing the internal variety.

Questions for Reflection:

1. On a scale of 1–10: How much do horizontal and vertical (*eigen*-)variety correspond to each other in your organization (1 = not at all; 10 = very much)?
2. Do you know how many product variants, rebate systems, IT systems, and contract types your organization has and how many combinations result from them? How significant are the combinatorial effects in your organization? What drives these effects?
3. How well are the areas chosen that the metasystem wants to control in your organization? Where does the metasystem micromanage, where is it too negligent and leaves the systems 1 too much freedom?
4. How does your organization ensure that combinatorial effects before mergers are properly assessed?

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Autonomy or Autocracy?—Managing the Operational Organization (Part 2)

10

So far, we have discussed the relationship between horizontal and vertical *(eigen-)* varieties in a general manner. We now want to see what the axiom of requisite vertical *eigen*-variety means more concretely for the control of organizations. In this chapter,[1] we will thus focus on some related issues such as the degree of centralization, the functioning of hierarchies, and the size of the metasystem.

10.1 The Operational Organization's Organ of Adaptation

Horizontal and vertical (*eigen-*)varieties must correspond to each other, we said in the previous chapter. This might suggest a static equilibrium, but this is not how it should be conceived; the point of control can move widely along the cohesion corridor across time. In some market situations, a high amount of flexibility and individuality is required for the systems 1, such as when new markets are to be conquered (scenario "A" in Fig. 10.1). In another type of market, or at certain stages in the business cycle, a higher degree of coordination and synergies becomes necessary (scenario "B" in Fig. 10.1).

Accordingly, the point of control varies and must be allowed to vary. In the first scenario (scenario "A"), the metasystem will need to leave much discretion to the systems 1 and the way they define their relationship with the environment. Consequently, the point of control will be much lower, and the organization operates in a more decentralized mode. In the second scenario (scenario "B"), the metasystem needs to strive for a higher degree of cohesion and integration. It will, therefore, try to control and exploit many more processes and resources of the systems 1 to generate the necessary synergies than in scenario A. The point of control will then

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_10

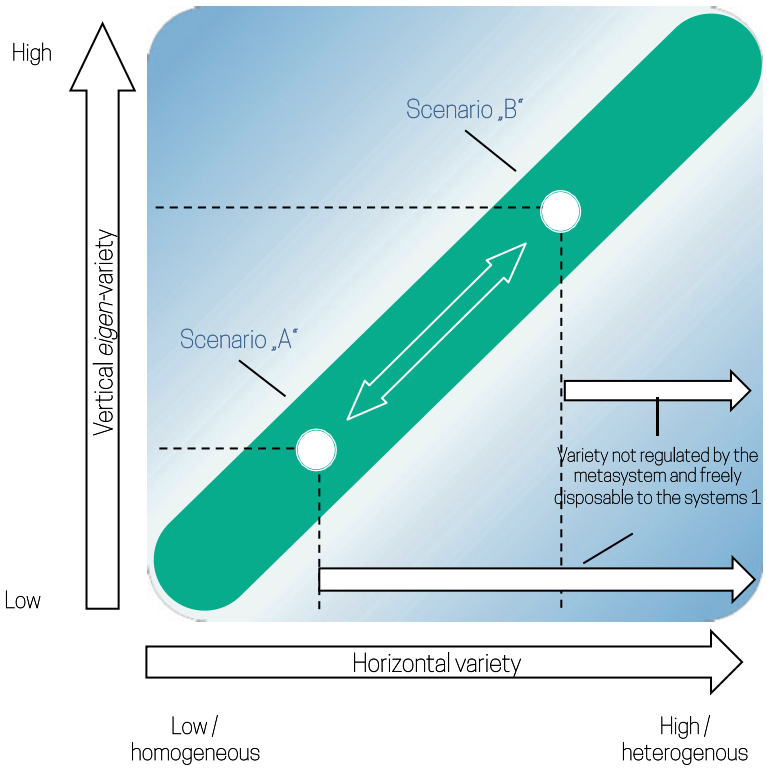

Fig. 10.1 The point of control shifts depending on the (market) environment, strategies, and targets of an organization

be much higher up and more to the right in our diagram (see Fig. 10.1). As discussed previously, the metasystem must, as a consequence, also increase its *eigen*-variety. The organization will become more "centralized," i.e., controlled more tightly.

But not only do the primary markets (i.e., the customers) determine the necessary degree of integration (or "centralization"). The same goes for secondary markets, for instance, through changes in production technologies or IT. New technologies might make smaller production sites more feasible and profitable; or, conversely, new and more powerful machines with higher output capacities might allow for a more centralized production. Today, information technology makes it possible to control more aspects and geographically more distant units centrally than it was conceivable 20 years ago. The world is becoming a small village, which has thus reduced the distances and information costs. Thus, IT has significantly increased the vertical *eigen*-variety that the metasystem can attain and made higher points of control feasible.

The **point of control, at which the organization is in equilibrium, hence is not static but dynamic.** It is continuously shifting along the cohesion corridor and subjects the organization to a **constant search process** for the optimal point of control.

This makes it more transparent why the degree of centralization or decentralization is changing today. It is not always a question of management fashions or the famous pendulum swinging between centralization and decentralization. Changes in the degree of centralization or cohesion are also the result of changing environments to which organizations try to respond (see also Malik, 2008: 97) and of changing strategies. They are thus a manifestation of a vital and fundamental **adaptation process** taking place in organizations (see also Fig. 9.13 in the previous chapter).

Whatever the final degree of centralization is chosen, it thus must satisfy **three boundary conditions**:

1. It needs to be within the **cohesion corridor**, where the available requisite vertical *eigen*-variety matches the horizontal variety (Chapter 9).
2. It must allow the **systems 1 to adjust to the variety of their relevant environment** so that they can create viable relationships with their environment and generate the organization's purpose (see Chapter 8).
3. It must allow the metasystem to **generate additional value as much as feasible**, which, after all, is its foundation and legitimization (see Chapter 9).

These are and must be **the primary guidelines** for determining the right degree of centralization, as far as we have discussed them.[2]

At this point, we need to clarify the term "centralization" more in detail, since spatial connotations emerge all too quickly. "Centralization" then becomes too quickly associated with the bundling and transfer of resources and processes to the HQ. This is what it can mean too but this is just a narrow view.[3] In more general terms, "centralizing" refers to giving a higher level the power to define how the lower levels under its supervision need to accomplish a task, perform a certain process, need to decide and use resources. Consequently, standardizing and mandating processes, standards, and norms already constitute centralizing acts by the metasystem thereby limiting the autonomy of the lower levels.

[2] Other aspects that determine the right degree of centralization are the length of the information and decision-making channels as well as the subsidiarity principle. We will discuss these aspects in Chapter 11. In volume 2, we limit ourselves to the fundamental aspects regarding the degree of centralization; in volume 3, we will discuss the technical issues regarding the design of organizational structures.

[3] Another scenario is, for instance, employees working at different locations but being directed by one central head or unit.

10.2 "What do We Really Want?"—The True Question Behind the Right Degree of Centralization

The question about the right degree of centralization is certainly one of the most burning organizational questions. However, too many discussions on the right degree of centralization remain at the level of organizational structures, but should they? Is the question "centralization or decentralization?" indeed a matter of organizational structures only or does it entail more? What needs to be clarified before one chooses a specific organizational structure? This is what we want to find out in this chapter.

10.2.1 "Centralization Versus Decentralization"—Not Solely an Organizational Question

Let us start with an observation: Typically, one assumes that within a given market and the same preconditions, companies choose the same point of control. However, the reality is more multifaceted: In almost every market, one finds organizations that attach greater importance to global efficiency, standardization, and synergies (and hence to centralization; see point "B" in Fig. 10.2), whereas to others,

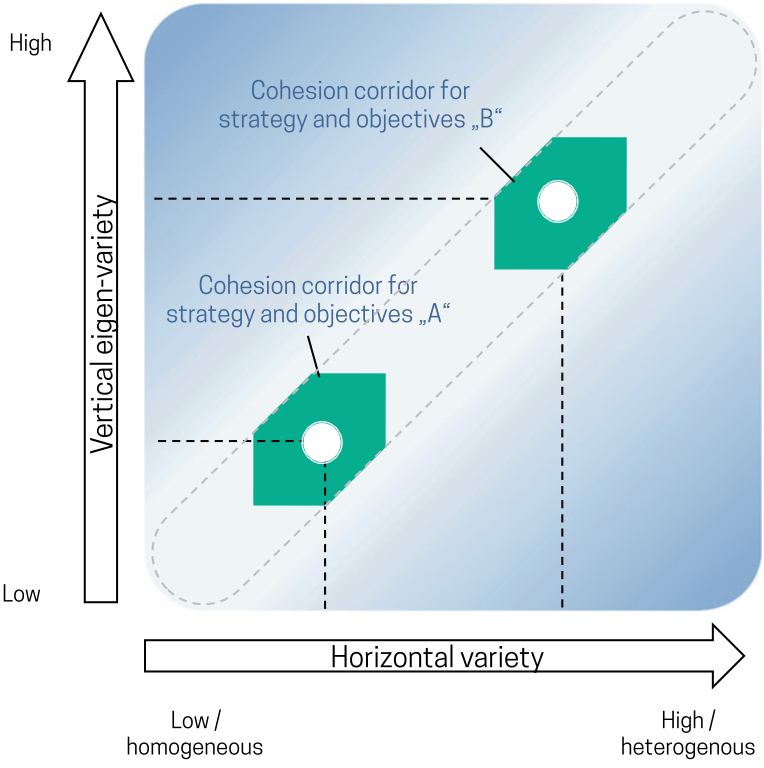

Fig. 10.2 An organization's objectives and strategy limit the relevant cohesion corridor to more narrowly confined segments

individual freedom, local proximity, and innovation (and hence decentralization and point "A" in Fig. 10.2) are more valuable. Apparently, organizations can choose among various degrees of centralization within the same circumstances.

Clearly, companies face certain constraints regarding the minimum profit needed, but within these constraints, it is more a matter of their choice as to how much profit they want to generate. This partly explains why profit targets or other objectives, such as savings and synergies, can vary between companies, even within the same market and with more or less identical preconditions. I vividly remember two companies operating in the same market, where one of them targeted 10% profit and the other one 5%. How far one wants to go also depends on one's determination, objectives, and sometimes willingness to make sacrifices. However, already much less important issues such as regulations for travel expenses (e.g., regarding hotel costs, approval procedures) can vary largely among companies.

In discussions, one observes that the reason for the choice of a particular point of control might sometimes go even deeper than just pure business objectives and strategies; it might be the result of the **organization's self-defined mission, identity, and (ethical) values**. Evidently, for some companies, immediate and pure profit and synergy maximization are their top priority, whereas others choose a more long-term and inclusive view that factors in the consequences of certain measures (e.g., cost savings) on the social fabric and personal interrelationships in the organization.

This brings us closer to the hot potato (Fig. 10.3): "should we centralize or decentralize?" Often the question about the right degree of centralization and synergies is considered as a purely organizational matter in the sense of organizational (chart) structures and processes. And, therefore, many executives look for the organizational structure or processes that can resolve the tension between centralization and decentralization and allow reorganizing without negative side effects and discontentment. Unfortunately, and despite numerous attempts, such a miraculous structure has not yet been found, and this points us to one possible conclusion; namely, that one might perhaps not be able to resolve this tension by looking at organizational structures only. One possibly needs to address this question at a different level first to arrive at a viable solution.

To explain this point further let us disentangle the question about the right degree of centralization: The right degree of centralization can only become a question if there exist several plausible options, and the organization is forced to choose between them (as shown above in Fig. 10.2). If it were clear what the right degree of centralization was, debates about it would not emerge. The degree of centralization becomes a burning issue, precisely because the organization is confronted with several alternatives and has not yet found an indicator that allows it to choose. To find this indicator requires the organization, however, to know beforehand what it wants and values.[4]

[4] The choice of the indicators regarding the right degree of centralization and their relative weight to each other is already a choice about the nature of the specific choice, and thus, the available options.

Fig. 10.3 The eternal hot potatoes in organizations: finding the right degree of centralization (© Fotolia/stock.adobe.com; artist(s): Pixelspieler)

Consequently, the first question to be asked lies at a different and more profound level; namely, at the level of **the organization's intentions** as expressed in the organization's purpose, objectives, and strategy (Beer, 1995a: 158; Jackson, 1989: 417), as well as of its **preferences** as embodied in its norms, values, and identity. In the end, all these terms are the expressions of one question: "What do **we,** as an organization, actually **want**?" If we watch debates on the correct degree of centralization in an organization carefully, we find that this is the real question often underlying a debate about reorganization proposals but which is rarely voiced explicitly. It is mostly hidden in other questions, such as "Do we really want to service our customers less, if we shut done some of our sites and service them centrally and long distance?," "Do we really want to force our people to move to the HQ?," "or "Do we really need to lay people off (be it employees, managers or executives), if we centralize all our activities?," "Can we risk it not to be locally present?," or "Do we need to regulate the behavior of employees that much or can we not trust their responsibility and creativity more?"

Organizational structures, processes and reorganization projects that focus purely on organizational measures cannot provide a final answer to this type of question. The abovementioned questions are rather of a broad and multidimensional nature even implicating ethical issues. They signal that, at a more profound level, the entire organization is still divided regarding its purpose, strategy, and hierarchy of values and the risks that it can and should take. It still lacks orientation and consensus in these dimensions. No reorganization project can resolve such tensions by means of organizational structures and processes alone. From an organizational viewpoint, one can only provide guidelines; namely, which structures are feasible (i.e., are within the

cohesion corridor) and which ones are not viable in view of the variety that needs to be processed. But, within a set of feasible options where the horizontal and vertical (*eigen*-)varieties are in balance and where these options are equally feasible and beneficial, a purely organizational perspective cannot provide the final decision criterion that allows the organization to choose one of them.

Thus, only if it has become clear what the organization wants and which negative side effects and risks it is willing to accept, can a structure be chosen. And only then, the organizational structure and the degree of centralization can become what they are; namely, an expression of what and where the organization wants to be, what it values and prefers. Only then, can the structure follow the strategy, purpose, and will of the organization and can further the organization's viability.[5]

10.2.2 Converging Perspectives and Generating Meaning and Purpose—At the Core of the Organization's Operational Adaptation Process

This insight has significant implications on **the process for choosing the right point of control** and **degree of centralization**: If multiple options are in principle conceivable, then different views on what the organization ought to do and what the right degree of centralization should be will naturally emerge within the organization. A viable balance between horizontal and vertical (*eigen*-)varieties can then only be found if these **views about the organization's purpose, values, and objectives are allowed to converge**.

This **process of converging perspectives** hence lies at the core of the axiom of requisite vertical *eigen*-variety and behind the cohesion corridor between the systems 1 and the (operational) metasystem. Only if a consensus can be reached about where the organization needs to and should go can questions of how to share resources and decision-making powers between systems 1 and the metasystem be solved. No organizational structure, however creative it might be, can substitute **this consensus-building process on the organization's purpose, identity, strategy, and values**. It must come beforehand.

Thus, whenever the question "centralized or decentralized?" is discussed too long in an organization or is continually surfacing, this might be a strong indication that the strategy and purpose of the organization have not yet been sufficiently clarified and agreed among all members of an organization.[6] Are customer proximity and flexibility, or rather, low costs and efficiency, more critical? How much

[5] The opposite case; namely, strategy follows structure, expresses the boundary condition: One can only pursue the strategies that are possible within the framework of Ashby's Law and the axiom of requisite vertical *eigen*-variety. One can only choose a strategy and purpose if the necessary point of control and integration can be attained. But this does not alter one important conclusion: The degree of integration is, first and foremost, a strategic question.

[6] The exception is a power struggle between individuals or units. But even these power struggles are "treated" best if one relates them to the purpose and objectives of the organization, from which the right allocation of decision-making power can be deduced.

profit and synergies do we really need to achieve, or should we not instead relieve the pressure and stress from our employees, managers, and executives? Without a consensus on these strategic and sometimes normative issues, the question regarding the right degree of centralization cannot be settled.[7]

Conducting this convergence process becomes even more important if the decision on the right degree of centralization also has an ethical dimension. Changing the degree of centralization often means changing people's positions and jobs, taking away tasks from them, even laying people off or, more generally, interfering more forcefully on how people should behave and accomplish their tasks. Such decisions are not ones of mathematics and Excel spreadsheets filled with data on full-time equivalents; they affect people and the organization's value system and thus require self-reflection and discernment. This type of decision goes deeper than just rearranging reporting lines; these decisions can hurt because they demand sacrifices. Sacrifices, however, need dignity; for this, they need to generate value and meaning so that one can bear them.

The great deficiency behind many reorganizations often is the **lack of meaning and value**. Not knowing why they are undertaken is frequently the most painful, inhuman, and disrespectful aspect in them. The impression of being exposed to the famous pendulum swinging between centralization and decentralization leads to the emptiness and meaninglessness so often encountered during and after reorganizations: One feels exposed to some invisible and incomprehensible eternal laws but without being able to decipher a deeper meaning behind them.

It is here that we touch the most fundamental level at which the question on the right degree of centralization needs to be solved: the level of **sense-making**. Whatever the decision on the degree of centralization is, **first and foremost, it needs to generate meaning**. An organizational structure without meaning is hollow; it is dead on arrival and destroys the organization's viability and the employees' motivation right at its foundations. Meaning at an organizational level can only be created if perspectives can converge; there is no substitute for it. One might not like a decision on the degree of centralization but one needs to get at least the chance to understand it better. **Generating understanding, meaning and purpose** is what the convergence process of perspectives needs to achieve and to what every leader needs to pay attention.

10.2.3 Debating Culture and Versatility of Minds—The Key Ingredients for Successful Adaptation

This brings us to an important point: The **convergence of perspectives** does not typically occur automatically but rather requires **an exchange process at the cognitive level of each participant**. Debates about the right degree of centralization

[7] The problem of such questions is the lack of reliable data, information, and experiences. In these cases, tests are the only way to determine the right degree of centralization (see Section 13.4). These test results, in turn, need to be discussed to become accepted.

typically emerge if the opponents within an organization have not sufficiently exchanged their perspectives and understood each other's world. One needs to walk sufficiently long in the moccasins of the other side to understand it, as an Indian proverb has it. The **genuinely open debate**, where everyone is sincerely listening to the arguments of the other side, is the **balancing mechanism required for finding the equilibrium between horizontal and vertical (*eigen*-)varieties and the right point of control** (Fig. 10.4). Only through an open debate, where the different views on the organization's objectives, purpose, and strategy but also on the variety that needs to be processed can be exchanged, can the convergence of perspectives start and an equilibrium be found. And this implies that a **well-developed debating culture is indispensable** for organizations to find their optimal integration and cohesion point between the horizontal and vertical (*eigen*-)varieties.

This might be a tedious process, but no organizational structure, motivational workshop, or conflict moderator—only the sincere joint development of a common purpose, objective, and strategy—can pacify centralization conflicts and ensure cohesion in the long term. A "meeting of minds" (Drucker, 2006: 129), in which minds try to converge—this is one of the key success factors of long-term viable organizations.

The convergence of perspectives, however, is and must be bidirectional, and this also means that **"participatory management" must never remain a one-way street**. The systems 1 representatives should not only reiterate their viewpoints, but they also need to understand the objectives, challenges, and constraints of the metasystem. The systems 1 need to shoulder the metasystemic responsibility if they are invited to participate in the metasystem's deliberations and decisions. Participatory management means that the representatives of the systems 1 start also thinking and acting metasystemically.

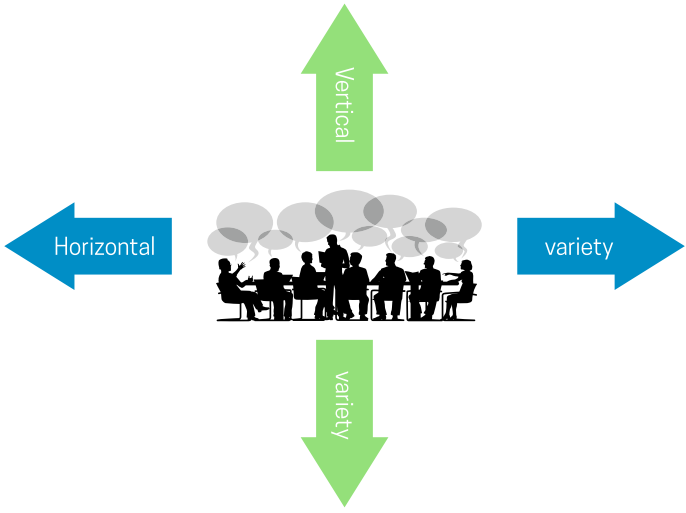

Fig. 10.4 An open debate lies at the center of the adaptation between horizontal and vertical (*eigen*-)varieties (contains adaptation from Beer (1995a: 96, Fig. 25))

A functioning hierarchy thus requires that both the systems 1 and the metasystem consider and integrate each other's perspective in their own decision-making. Without **the agility and versatility to view problems and challenges from the opposite perspective, a hierarchy cannot work**. And this is what change management and transformation processes with external consultants are mostly about: They are instruments for organizations to let people assume the perspective of the other side. Changing perspectives is not a straightforward and easy process, **it needs explanations, patience, trust, and tolerance**, but it is a worthwhile investment since it puts the new organization on solid grounds and eradicates fertile grounds for later conflicts.

It is evident that not every convergence process ends successfully. In the real world, convergence processes might fail, precisely because the participants do not want to see an issue from the other side and the right level. It is here that finally a metasystemic decision, a **"decision from above,"** is rightly needed. As we have already said in volume 1, the organization needs to be closed; it cannot remain undecided on an issue. It belongs to the responsibility of the metasystem to avoid such a stalemate situation, as we already said in volume 1. But having offered the space for perspectives to converge was not a waste of time and resources, as one might think. It has earned the metasystem an **important element and asset**; namely, **the legitimacy to make a final decision**. If discussions fail, everyone understands that a decision is needed in the end. And vice versa, a decision without having listened to and engaged with the people in a discussion makes the metasystem vulnerable to criticism and causes (personal) alienation and organizational disintegration, as we know from experience. The hierarchy cannot function without having given the various perspectives their proper place and chance to converge.

10.3 Hierarchies: Will We Ever Get Rid of Them?

The desire to abolish hierarchies is probably as old as their existence, as well as the need felt in organizations for some kind of hierarchical structure and order. This apparently unsolvable and paradoxical tension seems to be built inherently into the organizational construct of "hierarchies" and organizations in general. And as far as one can see, this tension will continue to be a fertile ground for many new organizational models and management fashions with creative names to come. Let us try to approach this topic from the VSM perspective: What can the VSM tell us about hierarchies?

Based on the above, it has become more evident that **two fundamentally opposing forces** mark the relationship between the operational systems 1 and the metasystem: On the one hand, the systems 1 must react to the variety of their environments according to Ashby's Law. For this task, they naturally claim as much freedom as possible (see Chapter 8). On the other hand, the organization must promote and ensure unity, coordination, and synergies between systems 1, to create a larger overall organization (see Chapter 9). This endeavor, for which the operational metasystem stands, forces the systems 1 to focus not only on their immediate

environment but also on the needs of other systems 1 and their objectives. Being part of a greater unit, however, restricts the individual freedom of the individual system 1.

One cannot avoid these two fundamentally opposing perspectives; there is no way they can be possibly reduced to one another.[8] Consequently, they will always exist as long as we build organizations. To put it even more succinctly: They paradoxically result from the effort to establish community and commonality. Community always means at the same time renouncing some parts of one's individual freedom. Thus, the two opposing perspectives are not accidental, but part of an organization's fundamental logic. Balancing these two perspectives is, consequently, one of the essential governance mechanisms of an adaptive organization, as we also just stated above.[9]

Against this background, we can now gain a deeper understanding of what is meant by "hierarchy": Hierarchy can then no longer be interpreted just as the power-political super- or subordination expressed in spatial terms ("upper" versus "lower"). It can then also no longer be reduced to "levels" or even to only one of them; namely, the upper one. This it can all mean in everyday life and language too but it conceals the fact that hierarchy is, first and foremost, founded on the crossing of these two different perspectives. To put it even more succinctly: **Hierarchy is the interrelationship**[10] **between these two perspectives**[11]; it is this tension between individuality and community, between the individual's freedom and unity, between horizontal and vertical (*eigen*-)varieties.

In our everyday lives, we can experience how these two opposing perspectives characterize hierarchical relationships: hardly are we are called into a higher leadership position, than our perspective starts changing and needs to change. And this change of perspectives is often the most challenging part of a new leadership position. Instead of insisting on individuality, one must then ensure coherence, coordination, and synergies. A superior becomes a superior only if he or she starts

[8] There might exist situations, where both perspectives coincide completely (e.g., in cases of extreme emergency, if the survival of the organization is at stake). But this tends to be rather the exception.

[9] Another adaptive mechanism of the same importance is the adaptation across time, so between system 3, 4, and 5 (see Chapter 12). It deals with the transformation process of the entire organization from the present to a future state. In this chapter, at the intersection between the systems 1 and the operational metasystem, we are primarily concerned with the relationship between the organization and its elements.

[10] Hierarchy must always be conceived as a relationship due to logical reasons: neither can the upper nor lower level establish hierarchy alone. The upper level becomes only the upper level by what it does with and for the lower levels.

[11] Similarly, and very pointedly, Luhmann (1997: 1027) stated: "One can observe autonomy only in view of heteronomy; the other side of the form always remains present. If one forgets or even demonizes the antonym, then only the option to idealize remains, which fails to understand why the real world cannot come to terms with the ideal." (translation by the author). Forgetting that there always exists "another side" and being blind to the dialectic nature of management and organizations might be the reason why so many management fashions and buzzwords remain just that: fashions and not-transferable into the real world.

viewing the organization in its entirety and not just from the perspective of one subordinated unit (and especially his or her former unit).

If a newly appointed executive fails to assume this holistic perspective, he or she becomes problematic for the organization. As a result, he or she will not be able to fulfill his/her function and responsibility, as expressed in a quote attributed to Peter Drucker: "Rank does not confer privilege or give power. **It imposes responsibility**" (similar see Drucker, 1993: 394). Promotion burdens one with the responsibility to assume a holistic and integrative, rather than individualistic perspective. It demands one steps out of the group and leads and sometimes confronts one with unpleasant news and decisions. Not everyone can accomplish this.

This necessary **switch of perspectives** occurs regardless of who is exercising the metasystemic function: It applies not only to individuals but also to a group of individuals, such as committees. Participatory democracy does not cause the "vertical perspective" to become obsolete or disappear. Whichever elected group such as a committee represents a broader group of people in a participatory decision-making process, it must also decide, control, coordinate and create synergies for this group, thus assuming the vertical perspective for the entire group. The representatives must also become responsible for the whole group and not just one part of it.

This leads us to an important insight obtained by Beer: The two opposing perspectives are invariant from who exercises them, whether it be an individual, a group of representatives, or the totality of all members. As Beer (1995a: 116) stated very concisely, "the relationship between the total operational system and its metasystem is a **logical form**, whatever **social form** it is given."

No social form can abolish this so-called **orthogonality of the two perspectives** (ibid., 145) and we can easily observe this in everyday life: The "participation of all" does not reduce the problem of making decisions that will hurt or impair some in their autonomy. Real-life examples also show us that the social form does not guarantee the right leadership mode: Individual leaders can lead very democratically, while teams, especially in their negative form as cliques and elites, can also be despotic.

Unfortunately, Beer's distinction between **a logical relationship** and **its social representation** has, thus far, not been noticed well enough. Otherwise, one can hardly explain the flood of organizational and management models in popular management literature on this issue. Typically, the solutions offered in such books promise to dissolve the logical polarity by a social form such as through new ways to group people, to let them interact socially or form and instill new values. It would be unjust to qualify these approaches as "old wine in new skins," since they can indeed increase an organization's ability to observe itself from a different perspective and stimulate its creativity and willingness to experiment.

However, we need to realize with some modesty that the fundamental tension between the horizontal and vertical perspective will continue to persist throughout all these models without any solution on the horizon. It will be our eternal companion. Organization and the desire to create more unity, always generates its opposite, as we

said; namely, internal tension and opposing perspectives.[12] "Hierarchy," understood as metasystemic control, is the natural consequence of the intention to build an organization and community out of individual elements. Metasystemic management and community are not opposed to each other but come as a pair.

At this point, an insight into the graphical logic of the VSM: Beer did not want to express the relation between the metasystem and the systems 1 merely as a relation of subordination as in the classic organizational chart, but of logical orthogonality. For this reason, he arranged the systems 1 and metasystem in a right angle to each other (Beer, 1995a: 145).[13] Not power and subordination, but the coming together and reconciliation of the two orthogonal perspectives lies at the center of one of the organization's most fundamental adaptation and governance mechanism.

10.4 "To Be or Not to Be Hierarchical?"—This is not the Question!

Based on the section above, the crucial question can no longer be whether we should choose a hierarchical or hierarchy-free organization. This seems to be rather an arduous and potentially irrelevant discussion since organizations will always need metasystemic functions that work orthogonally to the systems 1 to forge greater unity and extract value. And if we look into the real life in organizations, the problem does not seem to be hierarchy[14] per se but rather **how it is exercised**: We all know cases where both worked or did not work, where we had good and bad bosses. Thus, the much more intriguing and important questions are:

1. How must the **metasystem be equipped with requisite *eigen*-variety** so that it can perform its job (Section 10.4.1)?
2. How must the **relationship between the metasystem and the systems 1** be designed so that their varieties can balance out, their perspectives can converge, and thus, conflicts can be avoided (Section 10.4.2)?

To put these two questions and our underlying hypothesis into more colloquial language: competent superiors and a good basis for discussion between levels count more than the question of hierarchy and rank.

[12] We will see in Chapter 13 that the tension between the metasystem and systems 1 is not the only tension inherently built into organizations, all of which are, on the contrary, essential to an organization's viability.

[13] The axis of interaction for the systems 1 in the VSM is horizontal, whereas for the metasystem it is vertical.

[14] At this point, one should perhaps also note the advantages that hierarchies entail, such as creating order and transparency, and producing decisions more rapidly.

10.4.1 Equipping and Designing the Metasystem with Requisite *Eigen*-Variety

The metasystem must be designed in such a way that it has the necessary vertical *eigen*-variety toward its systems 1 and can attain the necessary point of control and integration. This means practically that for each issue of metasystemic relevance, one needs to define with which …

- … **people** (e.g., skills, experiences, style, resources),
- … **social form** (e.g., individual, committees, plenary session),
- … **temporal structures** (e.g., frequency and duration of meetings),
- … **nomination and replacement process**, and
- … **supporting resources** (e.g., infrastructure and tools)

… the metasystem must be equipped so that it can function and fulfill its main functions such as implementing new strategies or promoting cooperation and synergies.

Do you want to know more about the individual items[15]?
If so, then continue reading here, otherwise, go to Section 10.4.2

10.4.1.1 What Skills, Competencies, and Experiences Are Needed for the Metasystem to Function?

The people selected to form the metasystem must be capable of responding to the variety that the metasystem needs to process. They must thus possess the requisite skills, competencies, and experiences. Otherwise, both they and the organization will be overwhelmed by the horizontal variety. This is the simple consequence of Ashby's Law. Hierarchies can only work if the people selected for metasystemic functions possess the requisite *eigen*-variety to process the variety emanating from the viable systems of lower levels.

Often, one individual is not sufficient to form an adequate metasystem (see volume 1); certain metasystemic issues are so complex that several individuals are needed to ponder them. The question then emerges of how to compose such a group. One might instantaneously think about the technical qualifications or factual dimensions that are necessary, but these are not the only ones that matter today. **Experiences and access to different life worlds** count equally.

[15] Since the aspect "supporting resources" such as infrastructure and tools (e.g., meeting rooms, video conferencing) is relatively straight forward, we will not deal with it in this book.

Fig. 10.5 Global companies need globally experienced minds (© Fotolia/stock.adobe.com; artist(s): McCarony)

The board of directors of a global group should be, for instance, composed of people with sufficiently international experience to understand its global business (Fig. 10.5). In too many companies, the boards still suffer from a so-called **home market bias** (i.e., an overrepresentation of the home market). This reduces the capability of the board and organization as a whole to understand and respond adequately to challenges in other markets.

However, **geographical experience** is not the only criterion; other experiences may also count. Beer, quite provokingly, remarked (1995a: 242) that the future can be best accessed by an organization through its junior employees and managers, but unfortunately, in many cases, they are not part of the top management level. The future quite often has no representation in the top decision-making bodies. So, the **age composition** at the top level is an important factor too, especially in fast-changing times.

Generally speaking, one seeks a composition of the top level where the biological (e.g., gender, age), social (origin, education, economic affluence, descent) and educational variety of the organization's primary environments are adequately represented. Only then can the metasystem mirror and become fully receptive and responsive to the organization's and environment's variety.

When it comes to the composition of the metasystem, **two dangers loom**: first, overly **dogmatic use of selection criteria**. One should not forget that these criteria are just an approximation and a snapshot of the competencies and experiences needed by the metasystem. Being a man or a woman, old or young, American, Asian, or European, does not imply per se that one can contribute to the metasystem's vertical *eigen*-variety as required for the governance of the lower recursion levels and their variety. What counts above

all is the "functional difference" of each individual (i.e., his or her specific contribution to the processing of the organization's variety) (Krawiec, Conley, & Broome, 2016: 82). Thus, the guiding question should rather be whether the selected people have the necessary experiences, competencies, and perspectives to deal with the organization's variety instead of looking at abstract social, biological, or geographical criteria.

Second, one should never forget that **variety (or diversity) in committees and boards is not an end in itself**. On the contrary, diversity can also become an obstacle, especially, if one must decide rapidly (Krawiec et al., 2016: 90) and, consequently, needs to find a common language and purpose quickly. Members with different backgrounds can be an asset, but one needs to consolidate first their different experiences and value systems before proceeding to the decision that has been tabled. With a too heterogenous board, a purely operational decision can then quickly assume normative dimensions (system 5) causing delays and possibly divisions in the organization due to different values and purposes. If one takes Ashby's Law seriously, the key to viability is, thus, not variety alone, but **requisite (!)** *eigen*-variety is what one searches for, nothing more.

10.4.1.2 All Time in the World?—Choosing the Right Temporal and Social Structure for the Metasystem

"We have all the time in the world," is an all-time classic by the jazz musician Louis Armstrong. Unfortunately, this does not apply to the metasystem in organizations. The way temporal limitations and structures possibly affect the social structure, size, and composition, as well as the decision-making and communication procedures of the metasystem can be twofold: first, by the **time available** for a decision, and second, by the **time horizon** of a decision (short- versus long term). The metasystem must thus be equipped with a social structure that matches the temporal structures and limitations:

If decisions are needed quickly (e.g., emergencies) or have a rather short-term impact, then one will entrust them probably to a rather small group or even to individuals. If time is scarce, the number of possible social relations must be kept low. For decisions that have a long-term impact, organizations resort to a larger group of persons. Only then can one learn and take into account the various aspects sufficiently and ensure cohesion and identification within the overall organization.

How large a group can be, then also depends on the available **communication channels** and **decision-making procedures** (types of majorities): How long does it take for this group to convene and decide an issue? More people can be included the faster these two factors operate.

10.4.1.3 Nominating the Right and Replacing the Wrong People—Not an Obvious and Easy Task

To know what kind of people are needed is one aspect but the other equally important aspect is to ensure that the right people are put in place. This aspect entails three different critical elements:

1. **Time needed to recruit and develop qualified people**

   In many cases, the right people are not there, when needed. Many organizations suffer from a shortage of qualified people. Thus, either the same people always get the demanding and difficult jobs, or unsuited people are entrusted with metasystemic responsibilities. For this reason, it is of paramount importance that organizations establish a systematic people development process and recruitment strategy. An able metasystem requires long-term planning of careers and training of people.

2. **Selection process: does it promote the right people?**

   Knowing what kind of people one needs and having them developed does not yet suffice. One also must ensure that the **selection process itself promotes the right people**, and this is not an automatism. The best candidate does not always get elected due to internal power structures, formal procedures or personal preferences.

   Following the logic of Ashby's Law, two formal requirements must thus be met: First, those who select must have the requisite *eigen*-variety regarding the choice. This means that they must understand what is required from the selected person.

   Second, the selection process must be made **transparent** to ensure that it follows Ashby's Law. Only through transparency are the selecting people forced to consider the full variety of the company ("given all circumstances") and to search for a candidate who best processes the variety.

3. **Replacement process—does it provide a face-saving exit strategy?**

   Finally, one must organize an important yet touchy, and thus, rarely openly discussed issue: How to replace people who are unfit for their position? Organizations must deal with the consequences of the famous Peter principle, according to which in a hierarchy, every employee tends to rise to his or her level of incompetence. Organizations always face the problem of having chosen people who are unfit for their position and who thus create imbalances in the processing of variety.

   Organizations must thus develop processes, routines, and narratives that allow people to quit a posting in all decency and in a face-saving manner; otherwise, the metasystem's *eigen*-variety cannot adjust and rejuvenate itself.

10.4.2 About Style, Dialogical Capacity, and Sensors—Equipping the Vertical Command Channel with Requisite *Eigen*-Variety

In our everyday understanding, **hierarchy is often equated with "giving orders"** and becomes mostly epitomized in the vertical command channel (Fig. 10.6). The command channel has its purpose, especially if time is scarce and one needs a decision.[16] However, giving orders is not an end in itself; it is, rather, a measure of last resort. An order forces the recipient to accept the perspective of the issuer, but the problem with giving orders is that it might succeed only extrinsically and superficially. Valuable perspectives of others might thus become "overruled" and "ignored."

Solely relying on orders thus risks that too much variety is left unconsidered and unprocessed. Unprocessed variety, however, increases the centrifugal forces in an organization and tears it apart. Giving orders can unite in the short-term, but if orders neglect important variety, they weaken the cohesion within an organization.

Fig. 10.6 Giving orders is one way of aligning perspectives, but risks leaving much variety unprocessed (© Fotolia/stock.adobe.com; artist(s): taa22)

[16] In ancient Rome, the "dictator" had the function to save time in the internal decision-making process if time was scarce. The "dictator" could only be nominated in the cases of crises and his mandate ended with the termination of the crisis or after six months. The dictator thus was a sort of "emergency mode" for the early Roman republic.

The executive or manager then, ultimately, loses the loyalty and engagement of employees, and will soon find him- or herself alone.

Experienced leaders, therefore, always consult and prepare themselves beforehand with their employees before deciding and issuing orders. **The objective must be, as we said, the convergence of perspectives**. Hierarchy only functions if perspectives can meet and converge on what to do next. Good leaders are not those who command a lot, but those who are able to convince and persuade their followers. **Convincing is the intrinsic commanding the extrinsic alignment of perspectives**. One thus should lead, above all, through argumentative persuasion and only in exceptional cases by subordination.

At this point, three aspects become apparent that concern *the modus operandi, eigen*-variety and effectiveness of the channel between system 3 and system 1 and that are rarely explicitly mentioned: the **style used,** the channel's **dialogical capacity and sensors**.

Do you want to know more regarding the style, dialogical capacity, and sensors of the vertical command channel?
If so, then continue reading here, otherwise, go to Section 10.5

1. Style

Whoever has played a chord instrument knows that a string can be struck very differently and that every musician has his or her proper style. One can play warmly or very clinically, subtly or harshly. The quality of a piece of music and whether it captures the audience does not only depend on the piece but also on how the musician plays the instrument.

This applies to the system 3-to-system 1 channel as well: This channel is represented only as a single thin line, but a better image is a string that can and must be played with an indefinite range of styles. Like a musician, a leader must learn first, that this channel needs to be played with different styles and second, how to choose the appropriate one (Fig. 10.7). The art and mastery of leadership consist in having developed **a broad repertoire of different styles of how to play this central channel** and the experience to know which style is appropriate and demanded. Only then does the central channel develop its potential, or in the VSM language, its *eigen*-variety. With the wrong style, the metasystem can lose its audience; however, with the appropriate style, it can capture the systems 1 and deepen their allegiance with the organization. The sound makes the music; likewise, the way commands are issued by system 3 decides how they are perceived and implemented.

Fig. 10.7 The metasystem must develop a rich repertoire of styles and experience regarding how to "play" its channel to the systems 1 (© Fotolia/stock.adobe.com; artist(s): Africa Studio)

At this point, however, we need to clarify one aspect to rebalance our emphasis on the convergence of perspectives: Mastering different styles means both the ability to be soft and engaging, but also to have the guts to be harsh and frank. Sometimes, only a very clear word brings perspectives and minds together. As Beer (1995a: 388) once stated: "Successful managers are never bland."

2. The channel's dialogical capacity

The system 3-1 channel might appear like a pneumatic tube into which one can put messages and then forget them, which is how we typically use emails. Such a practice works if the messages are clear and unambiguous. Otherwise this approach might offer too little variety to settle all the differences between the metasystem and the systems 1. The risk that variety on the side of the receiver remains unprocessed is too high. Hence, it is not enough to just send out information without feedback; this risks overlooking aspects, or leaving misunderstandings unexplained!

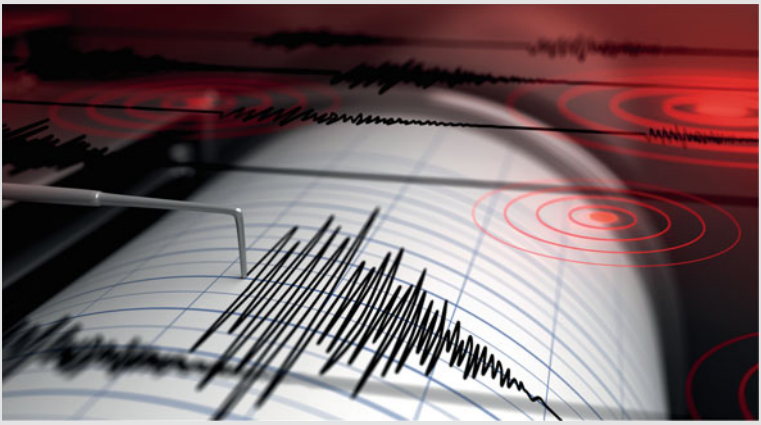

Fig. 10.8 When does the volcano in the system 3-1 relationship erupt? The metasystem needs seismographs to answer this question (© Fotolia/stock.adobe.com; artist(s): Petrovich12)

We remember from volume 1 that creating a common overall perspective is not a mechanical process but requires the convergence of the mental models and perspectives of all participants. For communication to succeed, "worlds" must be exchanged, and this is especially relevant to the interaction between the systems 1 and 3. Minds never converge simply by "handing over" information as the "tube" image might suggest. One-way communication does not have sufficient variety. The system 3 and 1 channels must thus be designed so as to offer sufficient capacity to enable and allow a dialogue through which the varieties between system 1 and 3 can exchange such as the necessary space, atmosphere, and time buffers.

The channels sensors for imbalances

Finally, the system-3-to-1 channel requires an additional feature, since not every subordinate demands a meeting if it seems necessary. Here, the metasystem needs to sense like a **seismograph** early when a hidden volcano is about to erupt (Fig. 10.8). Thus, system 3 must also have the **sensors** developed to detect whether an expansion of the channel's dialogical capacity and which style is required.

10.5 The Size and Dysfunctionalities of the Operational Metasystem

A question often asked by managers is how big headquarters should be. Here, the VSM can provide us with some guidelines: If horizontal and vertical (*eigen*-) varieties need to correspond to each other, then this gives us an indication of what influences the **size of the metasystem**, and thus, of most of the HQ functions. The size then depends *inter alia* on (see also Section 9.4):

1. the relevant horizontal variety,
2. purpose of the organization and the resulting degree of integration required,
3. the available vertical *eigen*-variety, and
4. the changes planned by the strategic-normative metasystem.

Let's discuss these factors in detail (see also our discussion of the size of system 2 in volume 1):

1. Regarding the horizontal variety, we can say that the **more homogeneous the systems 1** are and the fewer interfaces they have, the smaller the metasystem can be (see Fig. 10.9). Homogeneous units can be controlled more easily than those that are, for example, active in different markets. Likewise, a proper segmentation of the systems 1 without too many and large interfaces facilitates the coordination effort.

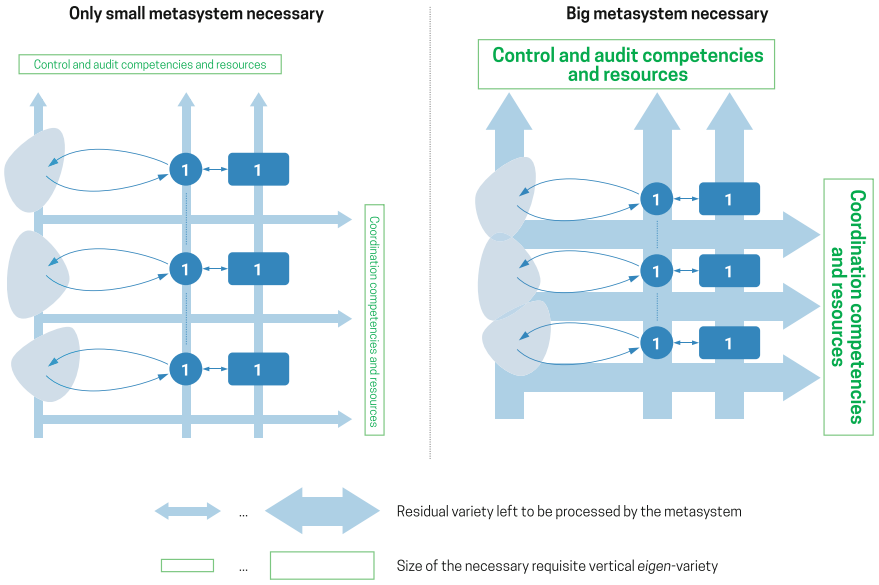

Fig. 10.9 The size of the metasystem results from the necessary control and coordination effort

This can also be illustrated regarding the question of the right span of control. It is commonly said that the optimal span of control is five to seven people. However, this is only an average value. If the activities of the employees are the same and if they have a good understanding of their activities, there will be hardly any need for guidance—the span of control can then be very high (20 persons and more).

In the case of activities that are very challenging, constantly changing and requiring employees to consult with their superiors a span of control of five people will often be the upper boundary. The span of control, therefore, always depends on the horizontal variety and the available vertical *eigen*-variety (time, resources, energy).

2. The size of the metasystem also depends on the **purpose, objectives, and degree of integration** required and desired: The more synergies need to be generated, the bigger the metasystem needs to be. More synergies increase the scope of the relevant horizontal variety that needs to be managed by the metasystem: It must deal with more operational aspects and more deeply.
3. Ultimately, the size of the metasystem is also **determined by the changes ahead**: restructuring or acquiring another company will temporarily force the operational metasystem to increase. Similarly, growing systems 1 (growing markets) or qualitatively changing systems 1 (e.g., new technologies) let the horizontal variety increase and imply that, accordingly, the operational metasystem must grow in preparation for these phases.

It is not always easy to (re-)calibrate the size of the metasystem; in such cases, the dysfunctionalities of a **too large or too small metasystem** start to emerge (see Fig. 10.10). These are the famous "top-heavy organizations" (too big metasystem) or the organization in which the tail tries to wag the dog (too small metasystem).

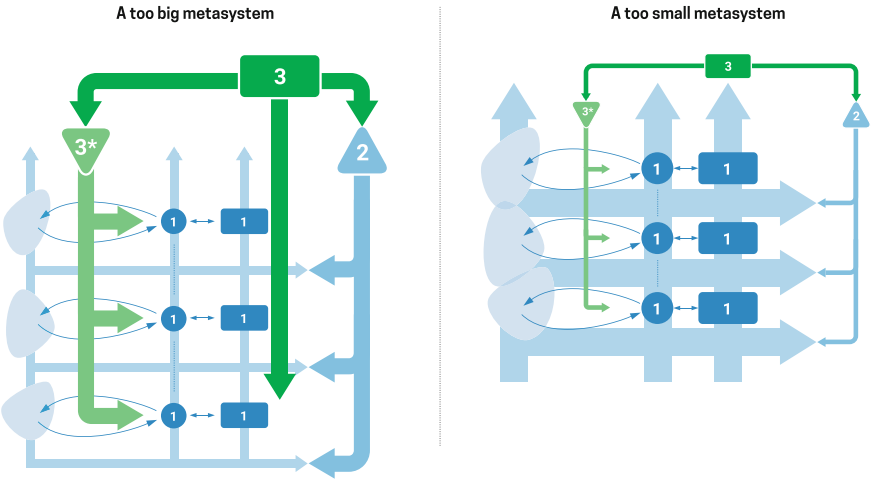

Fig. 10.10 Dysfunctionalities regarding the size of the metasystem

Both are not sustainable long term: In the first case, the metasystem needs to be reduced, or perhaps even dissolved, especially if the whole company cannot create additional value; in the second, the metasystem must be increased to generate the possible benefits and to be able to control the systems 1.

As we have seen throughout our discussion, the axiom of requisite vertical *eigen*-variety is one of the central principles for governing organizations and designing their structures correctly. We will refer to this axiom continuously throughout volume 3.

Summary

- The relationship between horizontal and vertical (*eigen*-)varieties is dynamic and responds to changes in the environmental variety, as well as the organization's strategies and purpose.
- The choice of the specific equilibrium point within the cohesion corridor is, in most cases, primarily a strategic question, not an organizational one. Therefore, the question of "centralization versus decentralization" should not be solved by organizational means only; it also requires a clarifying of the organization's strategy, purpose, and values.
- At the center of the adjustment process between horizontal and vertical (*eigen*-)variety lies a discussion process aimed at converging the different perspectives and ideas about the purpose and strategy of the organization.
- Hierarchy in the sense of metasystemic governance is the result of two opposing logical perspectives that emerge by creating a greater unity out of individual elements.
- In the VSM's perspective, the logical and social dimension of a hierarchy must be kept conceptually apart. While the logical orthogonality of these perspectives is given, the design of the social and behavioral dimension can vary (such as the composition of people, social structures, communication channels, and leadership styles).
- The question of how to best equip the metasystem with the requisite *eigen*-variety is mainly determined by:
  - … the staffing (number of people, skills, experiences, style, and personalities),
  - … its social form (individual, committees, and plenary session),
  - … temporal structures,
  - … the nomination and replacement process, and
  - … the supporting resources.
- The *eigen*-variety of the central command channel, and thus, its effectiveness depends on the style used, the dialogical capacity provided, and the accuracy of the sensors developed to detect instabilities.
- The size and scope of the metasystem depend on the horizontal variety to be processed and the equilibrium point to be achieved.

Questions for Reflection:

1. How well is the convergence process developed in your organization regarding the organization's purpose and objectives?
2. How naturally do debates between the representatives of both perspectives (systems 1 and the metasystem) flow in your organization, or have they become politicized? How well do people respect each other's perspectives as legitimate and necessary to the development of the organization?
3. How much are debates on centralization versus decentralization focused on the varieties to be processed (e.g., challenges), and on the organization's strategy instead of influence and power?
4. During the design of the metasystemic units, committees, or jobs: How much attention is paid to the requisite vertical *eigen*-variety with which these bodies or positions need to be equipped?
5. How well is the repertoire of styles and the dialogical capacity in the central command channels of your organization developed?
6. How well does the size of your metasystem correspond to the horizontal variety of your operational organization?

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"To Command or Not to Command?"—Managing the Operational Organization (Part 3)

11

So far, we have discussed the relationship between the systems 1 and the metasystem in general terms. Now, we need to ask ourselves in greater detail, which channels the metasystem possesses to adjust and regulate the systems 1 and how it should use them. In our traditional understanding of organizations, shaped by the organizational chart, the central channel between system 3 and 1 is the only channel available to guide lower levels. This is why executives and managers place so much emphasis on "reporting lines." There are no other channels shown in the organizational chart.

Considering how many different situations, issues, and questions must be clarified through this channel, we understand how infinitely rich this channel must be regarding the necessary *eigen*-variety so that all the variety passing through it can be processed. This risks overburdening the central channel and system 3.

In Section 10.4.2, we already highlighted the importance of style, dialogical capacity, and sensors as vital mechanisms to enhance the *eigen*-variety of the central channel. The problem of insufficient *eigen*-variety in the central channel, however, persists, since no matter how well system 3 differentiates and adapts its style in this channel, the aura of "issuing commands" will never be completely eradicated, and system 3 will always remain implicated. Thus, in the interest of the viability of the organization, alternative channels are needed to relieve system 3 and the central channel.

As we shall see, the metasystem and, more specifically, system 3 have more than just one channel available than the reporting line between two units as the organizational chart suggests. What are these channels and how should they be used in relation to each other? This will be the guiding question of this chapter.[1]

[1] All figures related to the six channels in this chapter are or contain adapted (detail) views from Beer (1995b: 83, Fig. 21) if not stated otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_11

11.1 The Six Channels Influencing Horizontal Variety

According to Beer (1995b: 81–84), the operational metasystem can use not just one but in total six channels to influence the horizontal variety and the degree of autonomy of the systems 1 (Fig. 11.1):

1. The resource and accountability channel[2]
2. The corporate intervention channel,
3. The channel of system 2,
4. The channel of system 3*,
5. The interfaces between the operations of the systems 1, and
6. The interfaces between the environments of the systems 1.

The resource allocation, accountability, and corporate intervention channel form together the central (command) channel between system 3 and system 1 management (Beer, 1995b: 56), as we know from volume 1; the others emerge from the interfaces between the other elements of the systems 1: The environment, operation, and regulatory centers.

Let us now go through the channels in greater detail:

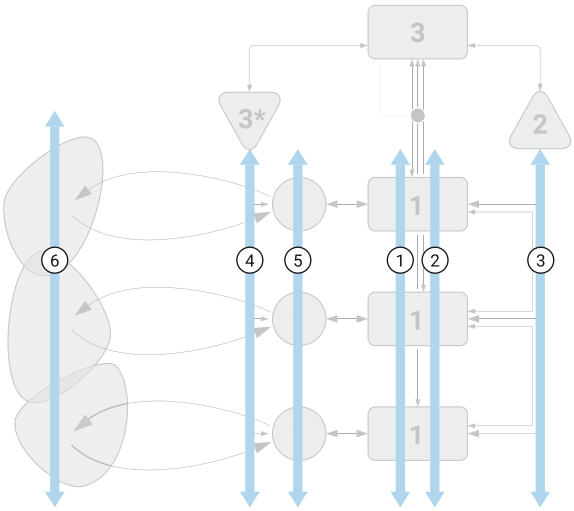

Fig. 11.1 The six vertical channels to influence and control the horizontal variety (adapted from Beer (1995b: 83, Fig. 21))

[2] Since the resource and accountability channel complement each other, Beer treats them occasionally as one integrated loop (1995b: 52), as he does here.

1. The resource allocation and the accountability channel (system 3)

The allocation of resources (Fig. 11.2), such as money, people, knowledge, and time, always has a direct influence on the (*eigen*-)variety of the systems 1—the more resources the systems 1 receive, the more powerfully and versatile they can act. Conversely, a restriction of resources reduces the scope and flexibility of the systems 1, thus their *eigen*-variety.

The resource allocation channel, however, is not sufficient as a control channel, since the systems 1 can utilize the resources at their discretion once handed over. Here, the accountability channel is an essential complement to the resource channel: Demanding accountability limits the use of resources. In this way the accountability channel completes the resource channel and thus forms an integrated loop. Corporate scandals often provide vivid testimony of cases, where the loop is interrupted or the accountability channel missing completely.

An accountability channel without resource channel, however, is equally not viable. This is the case when someone is held accountable without having received the necessary resources. As we see, the accountability and resource channel must always come together.

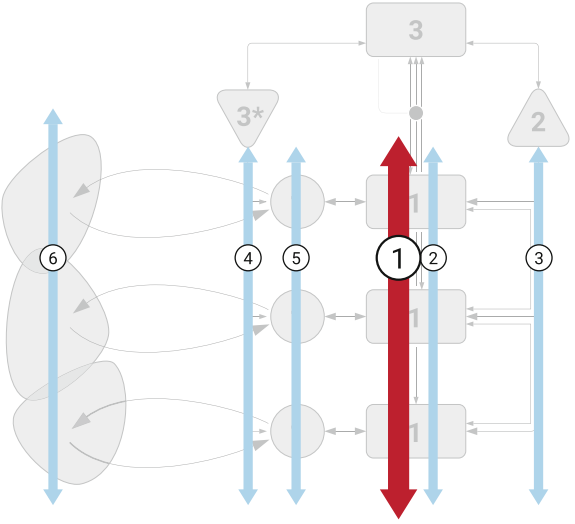

Fig. 11.2 Resource allocation channel

2. The corporate intervention channel (system 3)

The corporate intervention channel (Fig. 11.3) represents another powerful and direct way to alter the (*eigen*-)variety of the systems 1: By defining the statutory and legal requirements, regulations, and rules[3] to which the systems 1 must abide system 3 limits or enhances their autonomy.

Further, by assigning tasks and areas of responsibility to the systems 1 or taking them away, the metasystem defines the scope of the variety with which the systems 1 can deal. By entrusting the systems 1 with additional areas of responsibility, system 3 increases their horizontal variety and, conversely, by removing areas to other systems 1 or outsourcing them entirely it diminishes the systems 1's horizontal variety.

Here again we encounter an important interdependency between the channels. Simply changing organizational boundaries does not suffice: Increasing the variety of a system 1 through new responsibilities is only successful if the *eigen*-variety of the system 1 becomes expanded at the same time. Whoever gets more tasks and responsibilities might also need the necessary additional resources. If these resources are not allocated to the systems 1, they are then forced to operate beyond their *eigen*-variety. Viable corporate interventions must, therefore, always be echoed in the resource channel.

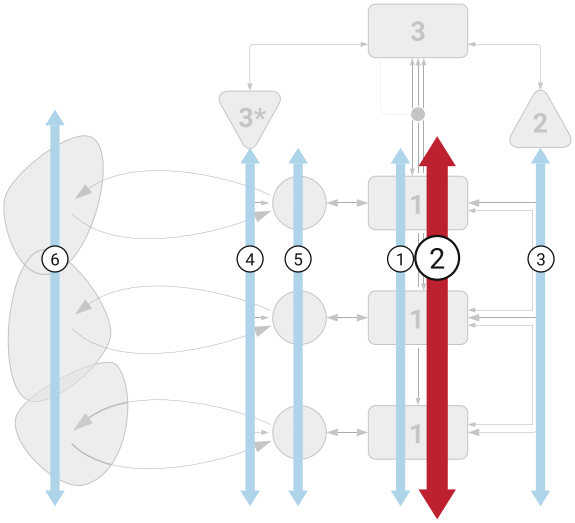

Fig. 11.3 Corporate Intervention channel

[3] Here, we are not dealing with the coordinative aspects of rules or regulations (so system 2) but with their boundary-setting function (e.g., minimum ethical and legal standards).

3. Coordination and anti-oscillation (system 2)

System 2 offers a further possibility to regulate the (*eigen*-)variety of the systems 1 (see Fig. 11.4). The higher the degree of coordination and standardization, the smaller the (*eigen*-)variety left to the discretion of the systems 1. To this end, the metasystem can apply a wide range of measures, such as introducing new standards, uniform reporting processes, standard IT tools, or homogenizing the company's culture.

The challenge for the metasystem is to know how far the coordination can go without harming the systems 1's responsiveness to the environment. This requires good knowledge of the systems 1 and their variety. Standardization projects often start too naively in that regard although initiated with good intentions. They then either develop too rigid coordination standards or get lost in the heterogeneity of the systems 1 and are unable to find a consistent coordinating and standardizing logic.

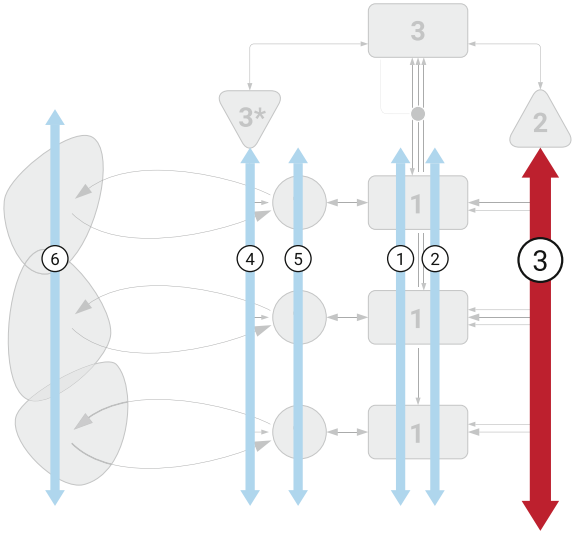

Fig. 11.4 Coordination channel

4. Audit channel (system 3*)

An audit (Fig. 11.5) can also be used to control horizontal variety: The more often and intensively systems 1 are audited, the more the systems 1 will be restricted. However, audits do not only work as instruments to control and limit variety; they can also induce new ideas or suggest improvements that strengthen the *eigen*-variety of the systems 1.

Moreover, audits can also benefit the *eigen*-variety of the entire organization. Often only through an audit will unknown talents, creative ideas, and innovative practices come to light that then can be shared with the rest of the organization. Without the audit, one might not have discovered them.

An audit can, therefore, work in both directions: Reduce (e.g., by saving resources or limiting certain practices), as well as increase horizontal variety (e.g., by inducing and distributing innovative practices across the organization).

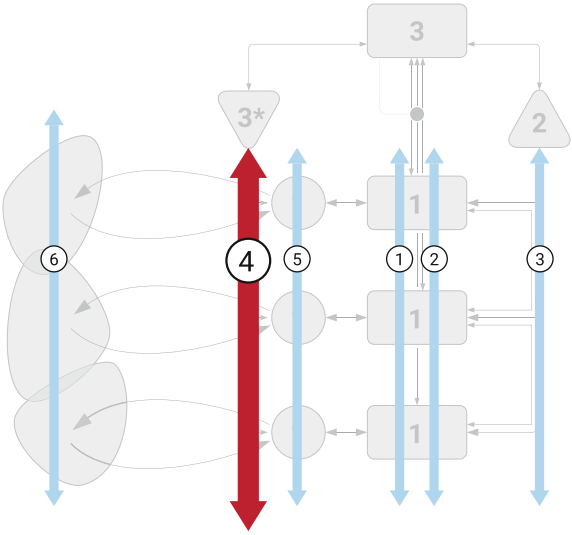

Fig. 11.5 Audit channel

5. Interfaces between the systems 1

The horizontal variety of the systems 1 can also be controlled through the operational connections between the systems 1 (Fig. 11.6). If the systems 1 are forced to work more closely together (e.g., through platform strategies) then the systems 1 must adapt better to one another. Collaboration reduces their liberty and limits part of their (*eigen*-)variety.

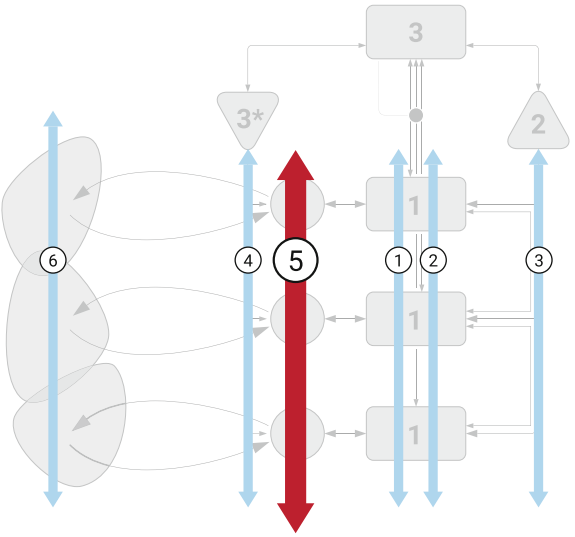

Fig. 11.6 Interfaces between the systems 1

The power to homogenize horizontal variety through this channel should not be underestimated, especially in post-merger processes. Giving the units to be merged an ambitious task that can only be achieved together, unites, aligns, and coordinates these units often more quickly than any new coordination instruments or corporate culture project commissioned by the metasystem. Sweating together for a common goal unites!

6. Interfaces and boundaries of the systems 1's environments

A major lever for influencing the horizontal variety is changing the boundaries, scope, and interfaces of the systems 1's environments (Fig. 11.7). Thereby, one uses the principle of the mutually adapting horizontal variety (see Chapter 8): If the variety of the environment changes, the *eigen*-variety of the operation and management also needs to adjust.

One could compare the influence of the environment on the (*eigen*)-variety of a system 1 with the opening and closing of windows with curtains: If one pulls the curtains in front of the windows away, then more light flows into the house, and it becomes brighter and warmer inside. If the heat becomes too high during summer, then one closes the curtains to reduce the heat flowing into the house. Similarly, increasing and reducing the number, size, and relevant variety of the environments to which the operation and management are exposed, regulates the horizontal variety as does changing the level of detail and differentiation at which the systems 1 need to operate (for example, standard mass products versus custom-made products).

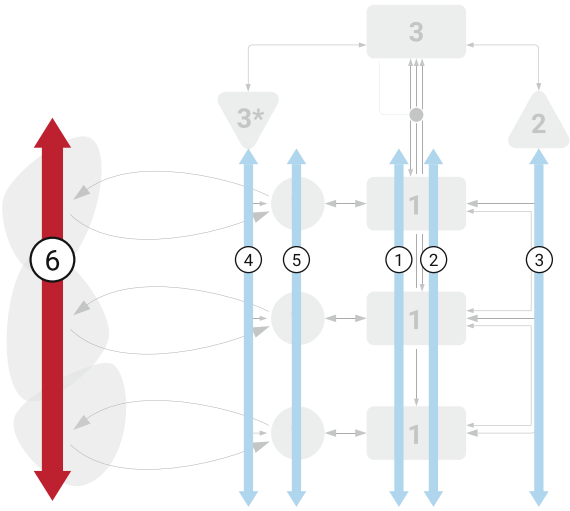

Fig. 11.7 The interfaces and boundaries of the systems 1's environments

Changing the extent and nature of the environment may seem somewhat peculiar because we usually associate environments as something objectively given. This, however, is only partially true; organizations also define the scope of their relevant environment. For example, the market boundaries of the systems 1, such as the business units "Europe except the UK" or "Middle East and Africa," exist only on the company's maps, but not in reality. Likewise, customer segments or typologies are also primarily conceptual frameworks applied by organizations and not how the customers perceive themselves.

A further lever for affecting horizontal variety is the **interfaces or overlaps between environments**: Overlaps (e.g., customer segments, internal competition products in multi-brand groups) lead to conflicts between the systems 1 ("my or your customer?") that must be regulated by system 2 (see volume 1). Reducing overlaps diminishes the potential for conflicts and, thus, the complexity system 2 and 3 must absorb.

As already stated, these six channels work in both directions; **they can reduce as well as increase horizontal variety**. Through a "corporate intervention," new products can be entrusted to a unit or statutory requirements eased (system 3—intervention); the room for manoeuvre hence increases. System 3 can also stimulate a system 1 by allocating additional budgets for innovations or market campaigns to it (resource channel). Reducing burdensome reporting requirements (accountability channel) also frees up time to take care of customers. Allowing a system 1 to enter new markets with new products also enhances the potential horizontal variety accessible to this system 1 (environment).

Do you want to know some examples illustrating the six channels? Then continue reading here, otherwise, go to Section 11.2

The following everyday examples illustrate the functioning of the six channels: Let us assume that a city wants to reduce the speed of cars on a certain road. For this purpose, it will install speed signs (system 3—Corporate Intervention). It may also use stationary radar traps or mobile laser guns (system 3*) or intensify law enforcement measures (system 3—accountability). However, it can also "slow down" the driver through the environment, for example, by installing speed bumps on the road (environment).

Car drivers may also be forced to share the road with other people such as pedestrians, bicycles, or small motorcycles (system 3—resource bargain). This measure limits the drivers in how fast they can drive. One might also change the rules and level of coordination, such as who has priority on the street or introduce pedestrian zones or protection zones for school children (system 2).

Turning to the corporate world, let us take the example of **product areas** that make losses. In such cases, several measures can be undertaken to rebalance the (*eigen*-)variety of the systems 1 such as reducing and concentrating markets (environmental channel), increasing synergies and efficiencies (resource and coordination channel), reinforcing the level of accountability for the product area managers (accountability channel), and conducting optimization projects (audit channel).

The six channels are also used in **power conflicts**: Too powerful and unwelcome employees, executives, or units are often "trimmed down" by taking away tasks (corporate intervention) and budgets (system 3—resource bargain), by reinforcing the reporting requirements (system 3—accountability channel), and increasing the level of surveillance and inspections (system 3*), or by taking away parts of their markets or clients (environmental channel). The principle "divide and impera" is nothing else than a redistribution of horizontal variety regarding access to resources and environments. It rebalances the equilibrium in favor of the vertically operating metasystem; the importance and power of a system 1 diminish by losing access to parts of its environment.

These examples show that the six channels are not a purely theoretical concept but can be well observed in everyday life. If we compare them with the organizational chart, we see how the VSM enriches our understanding: Where the chart shows us only one line, namely, the central command channel, the VSM points us to the existence of many more channels that can be used to regulate an organization.

11.2 Governing the Operational Organization Through the Six Channels

As we see, the horizontal and vertical (*eigen*-)variety can be balanced out by many channels, but in what proportion should one use these channels? How should one lead the operational organization?[4]

11.2.1 The Correct Use of the Six Vertical Channels

The central vertical channels from system 3 to the systems 1 have certain advantages for the metasystem: They work more directly and the responses are immediate since system 3 can operate them in the command mode (and this is how they are mostly perceived). However, using them also increases the information exchange between system 1 and 3. The system 1 management must devote more time and resources to the discussions with system 3 (see Fig. 11.8 and Pérez Ríos, 2012: 33f) and it cannot excuse itself in this case: If system 3 wants to talk with system 1, then it would like and should talk with the management of system 1! Consequently, the system 1 management will neglect the remaining system 1 and environment. Its *eigen*-variety becomes mostly directed toward responding and reporting to system 3 than adjusting the operation to the environment (see also Espejo & Reyes, 2011: 245).

Overusing the central channels between system 3 and 1 thus risks that the systems 1 become less attentive and adaptive to the environment. This implies that in the interest of the organization's viability, the central channels should be used only minimally and not for every issue. From this insight, Beer (1995a: 218) formulated his own version of Ockham's famous razor, which defines the parsimony

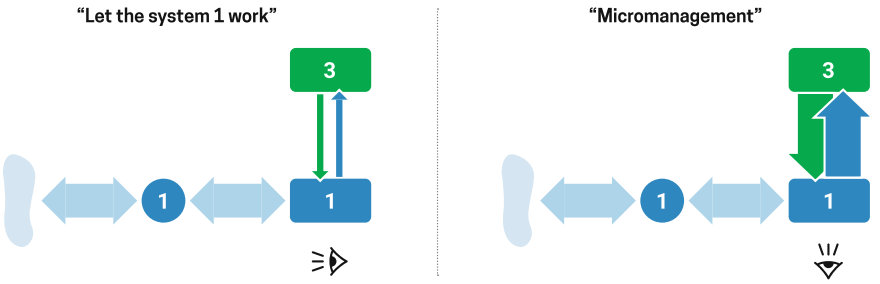

Fig. 11.8 If system 3 controls too firmly, it risks that the system 1 management focuses too much on system 3 (right image) instead of the operation and environment (left image) (adapted from Beer (1995a: 214, Figs. 36 and 37))

[4] Here, we only focus on the operational metasystem. The horizontal variety can also be controlled through other aspects such as innovations (system 4), principles, norms, and values (system 5), and other recursion levels (inter-recursive channels).

principle for scientific models. "Beer's razor" demands organizations not to "**... use the central command channel without necessity**."

How else then should one lead an organization? In essence, the organization should be directed mainly through the other channels that we have discussed so far. Let us take a project as an example to illustrate this point. A well-managed project can be identified by the fact that it does not only achieve its objectives but also how it is managed; and more specifically, that it hardly needs any direct intervention from the project manager. Good project managers achieve this since they …

- Make sure the targets and tasks that need to be accomplished in the various subprojects or work packages (task environment of the subprojects) are well defined,
- Have the objectives well operationalized (regulatory center) and the project plans, and standards sufficiently specified (coordination mechanisms),
- Have built up excellent cooperation and coordination channels among the project members (interfaces between the systems 1, system 2), and
- Check the quality of the work done (system 3*) regularly.

Consequently, the project members can control and coordinate themselves mostly alone without asking the project manager for a decision or information or forcing the project manager to intervene in almost every issue. In a well-run project, the direct intervention by the project manager is instead an exception rather than the rule and good project managers are those who know how to use the other four channels next to the central command channel. In fact, the project is mainly managed through the other channels (see Fig. 11.9). From this example, we also see that and how the other channels relieve the central command channel between system 1 and 3.

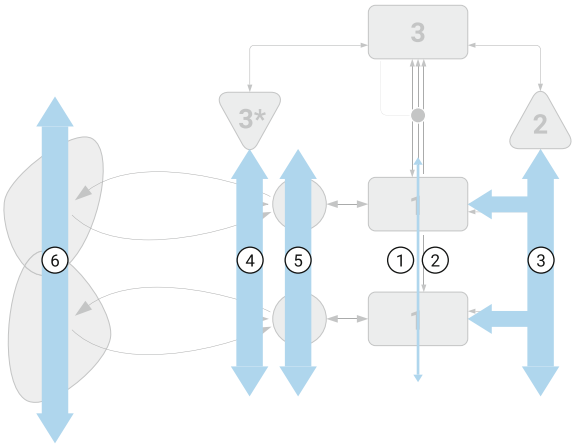

Fig. 11.9 Optimal control of the operational organization: The central command channel from system 3 to 1 is relieved by the other channels—contains adaptation from Beer (1995b: 96, Fig. 25)

We now come to one key element of the VSM's vision regarding the management of the operational organization: Like the organs in the human body adjust themselves almost autonomously without our explicit intervention, the systems 1 should be able to regulate their work autonomously (within the given architecture). Taiichi Ohno, the inventor of the Toyota Production System and Lean Manufacturing, used an image similar to the VSM for his famous production system (Ohno, 1988: 45ff). For him, the factory should work like the autonomous nervous system and be largely self-regulating: "The plant should be a place where such judgments can be made by workers autonomously" (ibid.)

This vision of the VSM also allows us to better understand the interplay between rules and freedom, extrinsic control, and autonomy. Management should direct the work of its employees less directly and instead try to set up the right framework that enables them to perform well. It should only lay down the framework and general rules, while the specifics should be left as much as possible to the systems 1. They are closer to the operational specifics and possess knowledge that the metasystem does not have.

Often, however, the management of an organization focuses too much on details instead of the overall framework. This overburdens management as it restricts employees. A playground only needs a fence and defined rules, but within it, children are free to move. They can freely choose what and how they want to play their games. It would be unnatural if the parents dictated the children every minute and in detail how they must play. General rules and limits relieve parents and provide the space to the children to develop their creativity. In organizations, we, however, see the opposite happening: Micromanagement instead of defining just the necessary framework conditions and rules—would a children's playground work like this? Certainly not, and organizations do not either.

11.2.2 Where Should Decisions Be Made?—The Subsidiarity Principle

This brings us to the famous **subsidiarity principle**, which states that tasks should only be decided from an upper level if the lower levels are not able to execute them. However, why is this so?

If we look again at Fig. 11.8, we can easily see that the involvement of system 3 and higher recursion levels requires at least one additional information channel. Additional and more extended information and decision channels, however, increase the **need for transduction** and the **risk of information losses**: One needs to provide more information and more often. The additional use of the central command channel, therefore, **reduces the efficiency of the information system** in the organization, if an issue could be solved by the systems 1 alone.

A further complication lies in the fact that the *eigen*-variety of **system 3** is limited and must be shared among systems 1. Using the central channel too intensely increases the risks of creating bottlenecks in the internal decision-making processes; every system 1 needs to wait until system 3 has found time to consider its issues.

Involving system 3 too intensely also **risks duplicating *eigen*-variety**. If system 3 engages too much in the system 1 management and operation, it also needs to develop the necessary knowledge to understand the specific challenges and intricacies. System 3 would then be required to develop the same *eigen*-variety as the system 1 management and thus duplicates it.

Thus, involving system 3 too intensely, **renders the system 1 management superfluous** in the end—it becomes a mere transit point for the messages from and to system 3. Beer commented ironically that, in this case, system 3 would be better advised to replace the system 1 management with a computer (1995b: 97).

These considerations demonstrate why the subsidiarity principle is crucial to the viability of organizations and why the decision-making authority should be delegated as much as possible to the units that are closer to the environment. The subsidiary principle puts an upper boundary to the degree of centralization—the next higher level should manage as little as possible if (almost) the same value can already be generated by the lower ones. The subsidiary principle also relieves us from the question, which channel should be used: The optimal outcome is, of course, if no channel needs to be used at all.

Although the VSM thus argues for rather decentralizing organizations, there are also limits, namely, if the organization's cohesion, identity, purpose, and objectives are endangered. According to Beer, decentralization does not mean that the metasystem gives up its right to say "stop" and set limits (1995b: 125).

11.2.3 Dysfunctionalities of the Operational Metasystem

From the discussion above, we are now able to derive dysfunctionalities related to the control and management of the operational organization. These dysfunctionalities center around the interplay and use of the six channels. The most well-known and familiar dysfunctionalities (Fig. 11.10) are a too strong command channel and distrust culture (too strong system 3* channel).

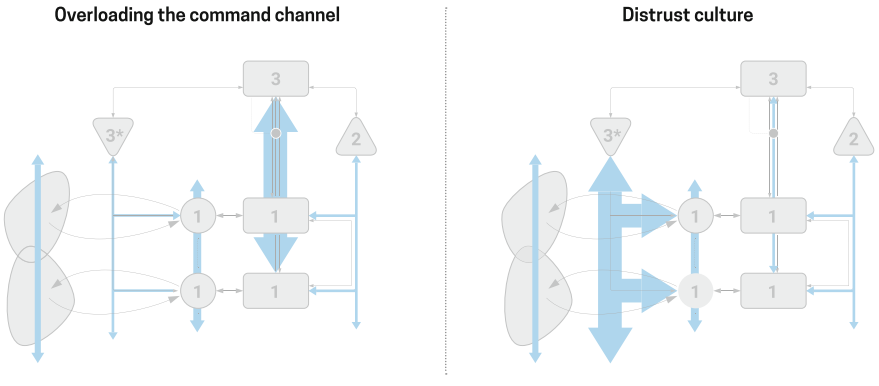

Fig. 11.10 Dysfunctionalities in the exercise of the six control channels—left image (adapted from Beer (1995b: 96, Fig. 25))

However, also, the system 2 channel (too much coordination), the operational interface channel (creating too many operational interfaces), or the channel for the adjustment of environments (too many changes of environmental boundaries and interfaces) can be sometimes used too heavily by the metasystem.

11.3 One Always Has at Least Two Options Available—The Two Types of Control Channels

As we have seen, there are two basic options available regarding how the operational organization can be controlled: Either through the central system 3-to-1 "command" channel that controls the systems 1 directly (red channel in Fig. 11.11) or through the other channels that influence the operational organization more indirectly (blue channels in Fig. 11.11).

The advantage of the latter is that the second type of channels respects the self-organization capabilities of the lower level systems 1 better. The possibility to use channels other than the so-called central command channel (Pérez Ríos 2012: 153f) is no coincidence but constitutes one fundamental feature regarding the control of organizations. The two types of channels can also be found regarding system 4 and 5.

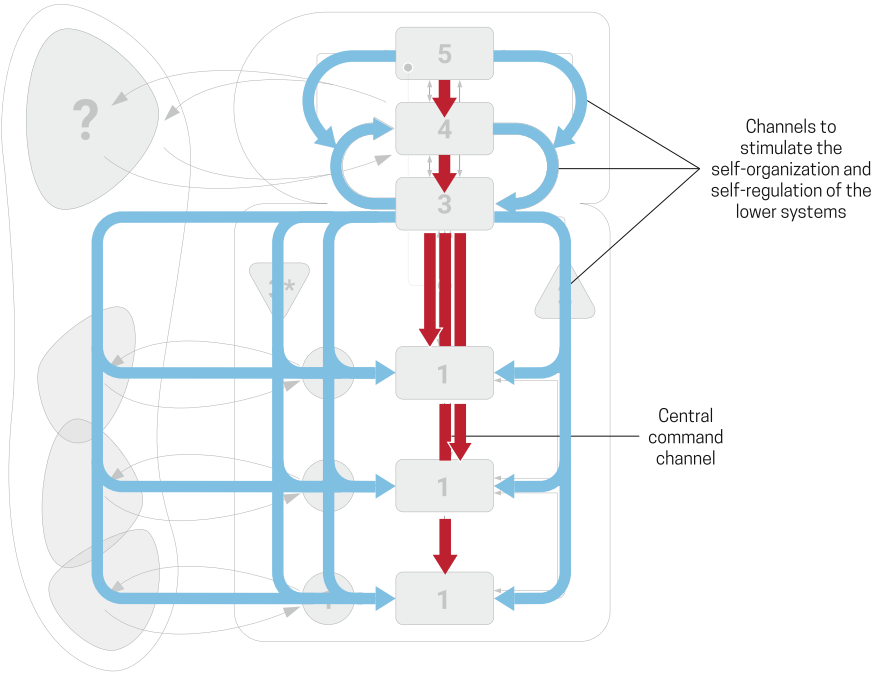

Fig. 11.11 The two different types of channels to control an organization—contains adaptation from Beer (1995b: 136, Fig. 37)

System 4, for instance, can simply command the implementation of a new strategy from system 3. However, the more elegant, fruitful and robust way to shape the relationship between system 3 and 4 is to engage system 3 in a joint debating and reflection process and for which the "operations room" stands (see volume 1). Instead of commanding, one lets the arguments play out. This has the advantage that system 4 is less likely to overlook the operational information essential for the execution of its strategy or innovations.

System 5 can also either command its decisions directly or just monitor and guide the discussion between system 3 and 4 indirectly (see volume 1). The latter approach prevents system 5 from becoming too dogmatic and ideological, but instead, helps it to find a solution that processes best the variety exchanged between system 3 and 4. The latter approach consequently preserves the autonomy and self-organization capability of system 3 and 4.

However, why then is the central command channel needed at all? This channel has a very important function since it paradoxically supports and stabilizes the other channels. If everyone knows that a decision could be imposed from above as a last resort, with which one then must live, one is more willing to engage in a dialogue and concede to compromises beforehand. Better to find a solution together than to receive orders!

Experienced leaders use this mechanism: If an agreement cannot be found, they issue an ultimatum. They, of course, do not hope that the ultimatum will be ignored and that they need to resort to a top-down decision. Instead, they assume and wish that the ultimatum and threat of a top-down decision help to reignite a stuck discussion and overcome hurdles. Viewed from this angle, **the command channel creates the stimulus and motivation to find a solution through self-organization**.

Last but not least, the central command channel also offers the advantage to react quickly in a crisis and gives the organization the necessary (*eigen*-)variety in the temporal dimension.

Thus, we see how the two types of control channels complement each other and how their simultaneous existence increases the maneuverability of the organization, its *eigen*-variety, and finally its degree of self-organization. The art of managing an organization, consequently, does not consist of relying on just one of these channels, but using them together. To command or not to command and rather lead indirectly?—both ways are needed and should be mastered.

Summary

- The operational metasystem has six channels to influence the horizontal variety of the systems 1:
  - The resource and accountability channel,
  - The corporate intervention channel,
  - The channel of system 2,
  - The channel of system 3*,
  - The interfaces between the operations of the systems 1, and
  - The interfaces between the environments.
- The central command channel of system 3 should be used as little as possible so as not to distract the systems 1 from their tasks and purpose.
- An organization should follow the subsidiarity principle and delegate responsibility as much as possible to increase its efficiency and agility.
- The metasystem possesses two types of control channels: The central command channel and others that stimulate the self-organization of the lower levels or system functions indirectly toward the intended target.

Questions for Reflection:

1. How well does the operational metasystem in your organization use the different six channels? How much does it rely just on the central command channel?
2. How well is the subsidiarity principle implemented in your organization on a scale from 1 to 10 (1 = not at all; 10 = very much)?

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"With Mind and Empathy"—Managing the Strategic–Normative Metasystem

12

The operational metasystem that we have discussed in the previous chapters is mainly concerned with the integration of different units into one greater unit. How to forge unity out of diversity, is the lead question there. However, organizations are confronted with another type of cohesion problem namely, across time. The issue here is how to manage the transition from the current to the future state of the organization so that the organization does not get torn apart but remains sufficiently coherent, and yet, dynamic. This is the task of the strategic–normative metasystem (see Fig. 12.1).

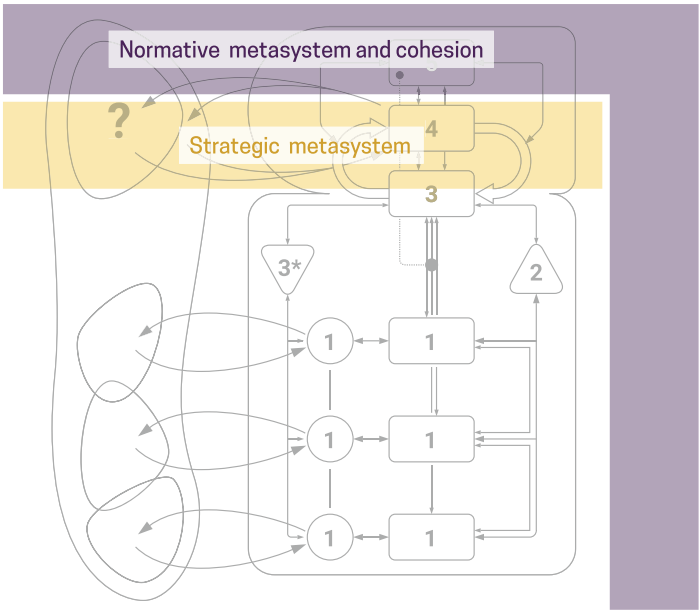

Fig. 12.1 The strategic and normative metasystem—contains adaption from Beer (1995b: 136, Fig. 37))

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7_12

And, this is again a bit like a golf swing: How does one need to swing the golf club and transfer the weight without losing one's balance and risking a desynchronized movement?

In the organization's swing and turn toward its future, we see two equilibrium systems at work, as we remember from volume 1: First, the balance between system 3, 4, and 5. This equilibrium, however, concerns only the "head" of the organization; a second equilibrium system must be considered too, namely, the one between the metasystem as a whole and the operational organization, as we already discussed it in volume 1. Where the head wants to go, the feet must follow. Usually, this should not be a problem, since system 3 is supposed to represent the operational organization in the metasystem's discussions. However, this might not always be the case. Ultimately, system 5 needs to have a separate connection to the operational organization to ensure cohesion. And, this was mainly the function of the algedonic channel as we saw it in volume 1.

This double equilibrium system reminds one a bit of a scene in the all-time classic British sitcom "Yes Prime Minister." In the episode "The Bishop's Gambit" (Lynn & Jay, 1989), the Prime Minister faces the choice to protest the imprisonment of a British nurse in Qumran or to tolerate it in the economic interests of the UK. Which option should he choose: should he be "heartless" or rather "mindless"? Leadership means having a clear and objective mind, but one also needs to be in touch with the overall organization. Conversely, one needs not only empathy but also a clear mind to remain viable. In this chapter, we want to revisit these two equilibria in greater detail and see what underlying tensions we find there.

12.1 "To Make Up One's Mind"—The Multiple Balances in a Decision

The term "mind" in the context of the strategic–normative metasystem is very intentionally chosen here because it forces us to refine our understanding of the strategic–normative metasystem (see Fig. 12.1[1]). Only then can we know what kind of balances it needs to achieve.

12.1.1 What "Is" the Strategic and Normative System?

To identify the operational organization is always relatively easy because it is linked to very concrete and tangible objects, results, machinery, and processes. This is, however, more difficult regarding the strategic and normative metasystem. One common mistake is to identify it with certain institutions, positions, or processes, such

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37) if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

as directors, strategies, projects, or board meetings. While these can be manifestations of the metasystem too, one must not confound them entirely with the entire strategic and normative metasystem. A board meeting can quickly become very involved in operational business, and then it clearly loses its strategic-normative character. We find this echoed, for instance, in the complaints that no one is thinking strategically anymore in an organization. Conversely, if employees are developing ideas or issues that finally feed into the formal strategy process; are they not part of the metasystem?

Thus, the strategic and normative metasystem comes alive if, when- and wherever strategic and normative issues are debated and decided in an organization. The strategic and normative metasystem "is," in its essence, the organization's joint reflection and deliberation process about its future adaptation.[2] However, deliberations, as such, are not an end in itself. The purpose of the strategic–normative metasystem is to let the organization transition from the current to its future state, and this requires one specific process—a decision. Decisions are the ultimate "output" of the strategic and normative metasystem, one could say. A metasystem that does not decide is a waste of time and resources; it is not up to its job.

"One just needs to make a decision," one often hears, and deciding sounds to be the most natural activity. This overlooks the fact that making decisions, especially those in the strategic–normative metasystem, is probably the most arduous process in an organization at all. Decisions need to be firm and instill necessity into the organization. Yet, at the same time, they are very fragile events, and organizations need to spend a significant effort to ensure that decisions are observed and become implemented.

The reason for this difficulty is that decisions of the strategic–normative metasystem need to balance deeper-seated equilibria and dimensions. Three of them can be observed in almost any strategic and normative decision[3]:

1. The balance between **competencies, opportunities, and obligations** or what is also expressed by the three **verb modalities**: "can," "should," "must."
2. The balance between the **variety included and the variety excluded by a decision**.
3. The balance between **the self-reference and the external reference of the organization**.

A well-functioning strategic–normative metasystem must keep these three equilibria in mind and scrutinize every decision, to see whether they reflect these equilibria appropriately. What this implies we will discuss in the subsequent chapters.

[2] This allows us to conceive the size of metasystem as much larger than we normally do. Decisions are not just formed in the board room meetings and strategy projects. Often, they have already been shaped beforehand and outside the official institutional frameworks in all kinds of mutual consultations and conversations among people such as during the casual talks in the corridors and the canteen about the future of the organization. This is where opinions are mostly formed and negotiated.

[3] Of course, there are other equilibria to be considered as well, such as political and personal ones.

12.1.2 The Internal Balance Between the Organization's Capabilities, Opportunities, and Obligations

The architecture of the metasystem in the VSM is no coincidence but points us to a very important equilibrium that lies at the heart of every strategic decision. The poles of this balance are best captured in the following three questions, respectively, **decision aspects** (building on Beer, 1994: 156):

1. **What can we do? (represented by system 3)**
   or: what are we capable of achieving with the current organization, and what not?
2. **What should we do? (represented by system 4)**
   or: what are our opportunities that we should not miss and what are the threats that we should avoid?
3. **What must we do? (represented by system 5)**
   or: what are our (normative) obligation and duty to do based on our internal principles?

What are our capabilities, opportunities, and (normative) obligations? In the end, all strategic decision-making wanders between these three irreducible decision aspects and searches for a solution that satisfies all three equally. The first two aspects find themselves expressed, for instance, in the famous SWOT-analysis, which has remained, as basic as it might still appear, one of the cornerstones of every strategy process. In the SWOT analysis, an organization attempts to find a balance between what it is (and what it is not) and what the outside world offers or demands it to do.

Achieving this balance is crucial, since if, for instance, the opportunities dominate, then one overburdens oneself leading to chaos. If the (current) abilities dominate ("can"), then one learns nothing and dares nothing new; if the normative "must" dominates, then one decides only on principles without considering one's capabilities, opportunities, and threats. Only when all three aspects fit together, is a decision stable and viable.

This equilibrium seems trivial and obvious at a first glance, but how challenging it is in reality, we notice only, when, we are, for instance, asked to define **objectives or strategic goals**, which are one of the most critical decisions that the metasystem must take. Very easily and quickly one paints ambitious visions in strategy projects, but when it comes to writing them down and making them binding, hesitation and a watering-down process sets in.

A good objective should never be just the prolongation of the present status, otherwise, objectives would not be needed. Objectives need to change the current organization, they need to disturb it. Consequently, they must be sufficiently demanding, but not too utopian regarding the organization's capabilities as well as values and identity. A good objective must set the organization into motion, but not too much so as to destabilize it and not too little so that it falls back to its current status and nothing changes at all. Setting the right objectives is, thus, almost an art and needs a good deal of reflection and judgment of what an organization can, should, and must do.

Achieving equilibrium between these aspects is challenging, since on an even more fundamental level, the metasystem faces the problem that it is never totally obvious what an organization can, should, and must do. What are one's competencies? One rarely knows; one often can accomplish more than one thinks or overestimate one's capabilities. What are the opportunities? What looks like a strategy and plan with hindsight was in reality perhaps only the coincidence of different events and decisions (see Pascale 1984, Mintzberg, Ahlstrand, & Lampel, 1998: 189ff). To what one felt obliged (i.e., to the owners or shareholders), was in fact not meant so. What seemed to be clear in abstract concepts becomes foggy the closer one comes to reality.

It is the challenge and the key task of the strategic–normative system to bring light into this situation through testing out its real competencies, exploring its opportunities, and clarifying its obligations.

12.1.3 The Equilibrium Between the Included and the Excluded

The equilibrium between the aforementioned three aspects is not the only one that the strategic–normative metasystem must consider; every decision produces not only a decision **for** something, but equally importantly, a decision **against** (many) other options. The function of decisions is, after all, to exclude other options.[4]

An often-overlooked aspect of decisions, then, is that the rejected options do not just disappear after a decision has been made. The negated options continue to be present in the organization's consciousness until they are either strictly proven wrong or replaced by new decisions, and then, are eventually forgotten. Metaphorically speaking, organizations live on an island of positive decisions surrounded by a vast sea of rejected options and disregarded aspects.

The challenge for organizations is that these excluded options represent a potential source of instability, and hence, must be controlled. The negated options knock for a long time on the doors of the organization; for instance, through the awareness of "risks" or the bad conscience that one of the negated options might have, in fact, been the better choice. What is excluded in a decision always remains present, even after a decision has been made (e.g., in the risks that an organization must monitor). Consequently, every **organization always needs to demonstrate that it has chosen rightly and wisely** until the excluded options are either disproven in view of facts or have become forgotten. This means that in a viable organization, (consciously) excluded and included aspects of a decision must correspond to each other in their variety. And, this means practically that one should always be able to defend the selected option against the excluded (i.e., rejected) ones.

[4] Only by excluding other options and limiting the organization to one, can the organization let the present become past and start the future.

How much organizations endeavor to create requisite variety to control the space of negated options can be seen from many processes and activities in organizations that follow a decision, such as persuading people to accept a decision, trying to make the organization forget other options, or immunizing opposing opinions and opponents. These processes only become necessary because the presence of the negated options is still felt and it influences the organization's equilibrium. Doubts or discussions about wrong decisions continue to reemerge as residual variety, if the selected options do not have sufficient variety to control the excluded options (i.e., if they lack arguments).

One extreme example of restoring balance is the process of "scapegoating." The Bible reports the ancient tradition of the scapegoat that is charged by the people of Israel with all sins and then expelled into the desert and forgotten. In organizations, something similar happens: A person becomes identified as the culprit for errors (whether rightly or wrongly does not matter) and is forced to shoulder all the guilt so as to clear the rest of the organization. In this way, the guilt (i.e., the wrong decisions) is expelled, the organization regains its inner balance and, as a result, peace and stability can return to the organization; or, at least, this is what it hopes. This "hope," however, might be deceptive, because very seldom are mistakes in organizations the fault of just one person: Mistakes are often the result of many people and organizational structures. They can thus resurface at a later point and after the "culprit" has been expelled from the organization.

The variety that was left unprocessed through a wrong decision should thus be better appropriately processed than attached to a culprit and then become ignored. Processing such residual variety happens, for instance, by talking openly about mistakes and conducting a thorough and honest postmortem analysis. Openness is one of the most effective catalysts to clear up the residual variety of mistakes and wrong decisions.

However, if balanced out, the negated and excluded options also have a **positive function**; they give the chosen option shape and contours. If, for example, one does not know why something has been decided, then this might be because one does not know anymore what has been rejected. For this reason, the discarded options or the arguments for a certain option are typically recorded in meeting minutes to understand a decision better at a later stage.

The negated options are important for another reason: They belong to the foundations on which an organization's identity is formed, since it is not only **important to know what one is, but also what one is not** (Schwaninger, 2006: 151). Often, an identity can be more easily defined by the excluded than the included aspects. Organizational boundaries like any border, must always have two sides: They are created and maintained by the included as well as the excluded, and this also applies to the identity of an organization. If the identity cannot determine what it is not, it becomes unstable. Conversely, if an organization's identity defines itself only by what the organization is not, this might not be sufficient either, since every organization, like any individual, needs to have a positive core and to know what benefits it generates.

12.1.4 Mediating Between Self-Reference and External Reference

People always look at other organizations and compare them with their own. They then observe that decisions might vary significantly between organizations, even for similar problems and settings. Subsequently, the question quickly emerges as to "Why did we decide this way and our competitors differently?"

Decisions are thus not only about right and wrong; they also reflect the specific identity, values, and preferences of an organization. How an organization reacts to an issue does not only depend on the environment, but also on what has become dear to it. Hence, each decision by an organization always reveals a part of its "Self." One of the key questions in every significant decision hence is whether the organization's "Self" and identity still fits the decisions that need to be made. Does the organization still have the right identity and values to deal with a specific question, especially if one observes that others regularly decide otherwise? How adequate still are the elements, factors, and processes, by which the organization's current identity, norms, and principles are formed?

These are the questions that the strategic–normative metasystem faces in its decisions. Consequently, the question of how to deal with a concrete problem can then fast become the catalyst for questioning oneself. Decisions thus create not only stability ("an issue has been clarified"), but also instability and doubts regarding one's identity, values, and principles, as well as one's distinctive view of the environment. In every decision, consequently, the organization does not only decide an issue but also must mediate between its self-reference and external reference.[5] One of the tasks of the strategic–normative metasystem is, therefore, to calibrate the balance between its image of itself and its image of its environment in its decisions.

Do you want to know how self-reference and external reference develop, how they refer to each other and how the balance between self-reference and external reference affects strategy-making? If so, then continue reading here, otherwise, go to Section 12.2

Self-reference and external reference are not static and do not evolve isolated from each other, but always dynamically and in relation to each other (see Luhmann, 1997: 92f). To illustrate this point at the personal level: Experiences with others are always experiences with oneself and vice versa. With each new experience, we get to know each other better, and, at the same time, we start knowing more in-depth who we are, what we want, and what we do

[5] The Self is hereby understood as the differentiated unity of self-reference and external reference (see Luhmann (1997: 45).

not want. And by understanding ourselves better and thus differently, we start perceiving our environment more in-depth as well.

This also applies to organizations: In a two-sided process of self-referencing and external referencing the organization simultaneously redefines itself as well as its relationship to the environment. From this process emerges what we then can call the "Self" of the organization, which becomes visible to the environment through a unique pattern of values, principles, and behaviors.[6]

But, why are self-reference and external reference constitutive for organizations? Why do self-reference and external reference need to be in balance with each other, and what does this imply for transformation processes such as the development and implementation of a strategy? Let us consider these questions more in detail:

1. **Why are self-referencing and external referencing constitutive for organizations?**

   Much is happening around an organization, but what should it recognize as relevant? What should it process and what should it ignore? Organizations consequently need to continually select and deselect (environmental) variety. The organization as such is already founded on a selection, namely regarding its purpose and boundaries with the environment. Selecting, however, means deciding, and this, consequently, presupposes an act of self-determination.[7]

   To this end, the organization needs to discern what **it** (!) wants, values, and what "viability" means to it (see Beer, 1995a: 114) … and this might most likely entail different aspects and meanings for every organization. Thus, the simple question "What do we want?" never refers just to the factual contents (the "what"). It also demands the organization to reflect about itself, to form its "Self" ("we") and to decide what it values and in which order (the "want"). Correspondingly, **business missions** and **strategies** as the more elaborate versions of this simple question, are never about factual issues only (system 3 and 4). They are ultimately also about the organization's preferences and identity (system 5). They are an **expression of the organization, its identity, principles, and values**.

[6] We leave it intentionally open as to in which form the "Self" exists or what it "is" precisely, since this would go beyond the scope of this book. Instead, we limit ourselves to the processes and manifestations, where it can be observed, namely during the process of self-referencing and external referencing and as a unique pattern of values, principles, and behaviors.

[7] Even if selection criteria are suggested by external sources such as experts, friends or studies, they always need to be accepted by the organization that decides. Accepting criteria thus requires beforehand internal clarity about the nature of the choice of the criteria ("are these the *right* criteria?") and the criteria's effects on the choice ("are the criteria *impartial* with respect to all options?"); and this is only possible through self-reflection.

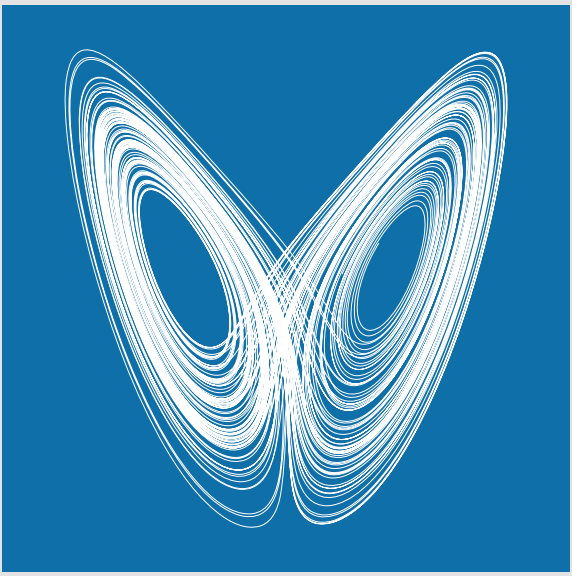

Fig. 12.2 Strange attractors

It is, therefore, no coincidence that **self-consciousness** (Beer, 1995a: 392ff), **self-knowledge** and **self-control** (Drucker, 1993: 441) are always considered as essential prerequisites for effective leadership. Only by knowing itself, the organization also knows what it wants and what its business mission and strategy should be. The "Self" is also what differentiates a mechanistic and purely administrative organization from an organization that has succeeded to become an institution with a clear profile or "personality" in its field allowing it to influence and shape its environment (Selznick, 1984).

The organization thus needs to develop its "Self" to become viable and a truly self-determined actor[8] as discussed in volume 1, which it accomplishes through the simultaneously occurring self-referencing and external referencing process. Metaphorically, one can compare this self- and external referencing process with attractors from mathematics (e.g., the

[8] The organizational "Self" does not become constituted automatically but is often born only after a very difficult discussion and joint reflection process. How painful this process sometimes can be, we are able to observe in the exclamations after long hours of debate, where no conclusion can be reached: "Finally, what do **we** want!?" What becomes evident in such a situation is that the organization is still too fragmented and lacks a unified vantage point that allows it to gain a clear perspective on what it wants.

strange attractors[9]) (Figure 12.2), which develop over time in dynamic systems. Similarly, in an organization, **identity patterns and decision criteria** (such as values, principles, and preferences) emerge as the result of recurring experiences and reflections. They represent the organization's "eigenvalues" in the sense of Luhmann (1992c: 312; 1997: 580ff; 868ff) and find their expression, for example, in the form of values, symbols, norms, or principles. In them, the specific peculiarity of the organization's self-reference and external reference manifests itself; they are the expressions of the organization's "Self."

To have these selection criteria in the form of **values, preferences,** and **principles** developed also is important to the environment since without knowing what the organization wants, the environment will not know what the organization stands for and how to deal with it.

2. **The challenge: confronting and balancing self-reference and external reference with each other**

While self-reference and external reference always need to go together, self-reference also requires a certain decoupling from the environment and its dynamics. To generate the view on itself, the organization needs a protected space independent of the environment (Luhmann, 1997: 45). This we also see in practice: If there are too many new things happening around an organization and if it feels itself directed too much by the environment, then it prescribes itself, for instance, a management retreat in a peaceful and secluded environment to process the new aspects and issues. It is also no coincidence that a unique atmosphere of calm and concentration is often cultivated in executives' offices, which are often the main decision-making centers of organizations and where it goes to the heart of a matter.

However, a certain decoupling of the self-reference from the external reference must not lead to a constant "self-circling": One also needs to look outward to the other; that is, the new and unknown. Only new experiences allow us to develop our identity. A sound "Self" needs sufficient environmental stimulus; otherwise, it becomes naïve and unworldly. A mature "Self" is always one that knows about the world. It is not enough to develop only the "we," it must be an informed and experienced "we." The organization needs to know what else is happening around it and how its "Self" refers to others.

At this point, organizations are consequently facing a central challenge: With each experience, the organization gains new possibilities to get to

[9] Attractors are conditions toward which a dynamic system tends to evolve over time. Strange attractors are characterized by the unpredictable behavior of the system due to the sensitivity at the initial situation of this system.

know itself, and thus, to develop its identity and strengthen the stability or "maturity" of its decisions. However, through the exposure to the "new" and "other" organizations also recognize the limitations of their self-image. What is new and different risks questioning the existing identity and past decisions: The new and different, which is not yet "decided," conceptualized, and mastered, can invalidate previous decisions and decision criteria, and thus, lead to instability.

We often experience this in discussions: Certain options or opinions are often not tabled by participants, precisely because they could interfere with the self-understanding, and thus, the stability of the organization. Stability is a very precious asset to organizations. Too much openness toward the environment can lead to instability. So, organizations often try to limit or at least control their employees' access to new experiences and ideas. From history, we know that the discovery of "new worlds," such as the discovery of the planetary orbits around the sun, the circumnavigation of the world ("the earth is not flat"), and evolutionary theory, brought down old identities in society and contributed to societal changes. Those who brought these new ideas forward were often punished and became famous only after their death.

Organizations thus find themselves in the fundamental tension to consolidate their identity and Self on the one hand, but on the other, to keep it open against new, still unknown experiences. Organizations need to be open and prevent their self-understanding from becoming "anachronistic" (too much self-reference); however, at the same time, organizations need to refrain from following too many fashions and trends (too much external reference). The self-reference and the external reference must be in balance, but in constant exchange. And, this brings us back to the first chapter in volume 1, where we stated that an organization must move to remain stable, but also needs a stability mechanism so that it can remain dynamic. To find the equilibrium between stability and movement is one of the central tasks of the strategic–normative metasystem. For this, no algorithm exists; it only can **listen to itself** and sharpen its (self-)awareness to detect possible imbalances between its self-reference and external reference.

3. Why strategic decisions are also about where one's heart beats

The necessity to establish a balance between self-reference and external reference explains why fundamental adaptation processes (e.g., in strategy projects) can become tedious or even fail. When developing a new strategy, one can often observe that one does not only treat factual issues but often implicitly the balance between the organization's self-reference and external reference. Any new strategy must fit with the organization's self-image and the image it has about its relationship to the environment.

Consequently, strategy or innovation processes must not be reduced to just the processing of information, in which numbers, data, and facts can be calculated according to an algorithm. They are, at the same time, **important**

self-reflection processes and always challenge the organization's self and identity. If something "goes to one's heart," it is not always only about factual aspects, but also about one's identity, self, and fundamental values and principles. In strategy projects, one then must often make a detour and adapt the organization's specific self-reference and external reference before one can proceed to decide a new strategy. Otherwise, the new strategy will fail to become accepted and implemented.

The quality of strategy processes can then also be assessed as to whether they have not only elaborated a strategy or a business mission factually but also if they have revisited and further developed the organization's self-understanding, identity, and decision-making criteria. Many (innovative) strategies often only become possible if the existing self-understanding and identity get questioned and the company enters the well-known "greenfield" on which everything can come under scrutiny, even the "holiest of the holiest of cows."

12.1.5 Dysfunctionalities of the Strategic–Normative Metasystem

Based on the above, we can derive a set of dysfunctionalities of which we want to outline a few briefly:

One type of dysfunctionality relates to the equilibrium between the three decision aspects mentioned above (see Fig. 12.3). Ideally, these aspects should correspond to each other. What one should do ought to correspond to what one can and what is demanded in a situation normatively. However, this congruence does not emerge automatically. Either, there exists no common ground (i.e., there is no decision possible that satisfies all three aspects) or one dimension dominates the others. Fascinated by opportunities, organizations decide strategies and actions that exceed their capabilities, and that perhaps do not fit to their identity and ethical values. This type of dysfunctionality might appear self-evident, but one only needs

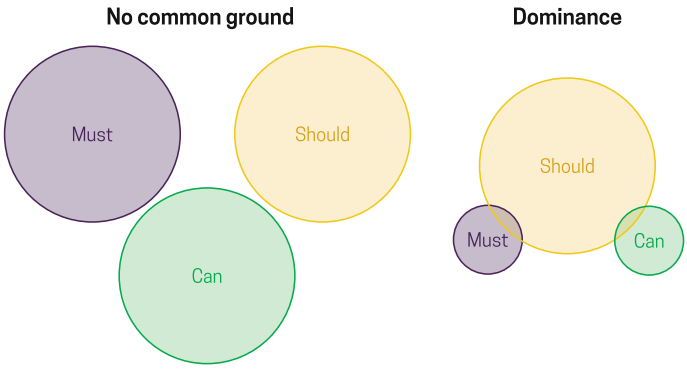

Fig. 12.3 Dysfunctionalities regarding the equilibrium between the three decisions aspects (capabilities, opportunities, and obligations)

to check how many strategy processes lead to overestimations, and ultimately, discredit the entire strategy process.

Also, organizations need to find a balance between the included and excluded aspects of decisions. Typical imbalances are too weak arguments for a certain decision or wrong decisions that are swept under the carpet in the vain hope that they might be forgotten there, or finally, aspects that are overlooked on purpose. This hope, however, might be treacherous since, deep inside the organization, wrong decisions continue to exist and cause misunderstanding, dissent, alienation from the organization, and mistrust toward the metasystem. Wrong decisions, if not remembered, become reactivated every time varieties cannot be processed as they should be, and employees notice the discrepancies between what their tasks demand of them and the decisions taken by the metasystem.

As discussed earlier, the excluded is not just a negative byproduct of a decision; it also fulfills an important and often-overlooked positive function for the organization. It helps to define the organization's boundary; namely, what it is not or does not want. Every decision does not only clarify an actual problem, but it also defines the organization and its identity.

Here, organizations also need to find a balance (see Fig. 12.4) between how strongly the identity becomes defined by the included (white) and by the excluded (blue/black). Sometimes, organizations tend to define themselves too much by what they are not (see the right image in Fig. 12.4). Such a mainly negatively determined identity can hold an organization together, especially in times of significant internal frictions when one rather knows what one is not and does not want to be. However, fighting against something is not enough; every organization also needs to make a positive contribution. It must be driven by a positively defined purpose and value and by what it stands for.

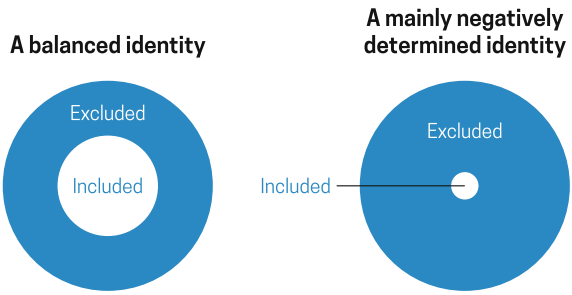

Fig. 12.4 Dysfunctionalities regarding the organization's identity (part 1)

Conversely, organizations that define themselves mostly by whatever they want to be but do not know what they should exclude might also find themselves in an unstable situation (see left image in Fig. 12.5). In a similar situation, there are organizations that want to be always on both sides (e.g., being innovative but also traditional). One's identity must, in the end, also be a conscious decision of what one does not want to be. Otherwise, the organization cannot create focus, and eventually, gets torn apart. Organizations need to draw a boundary between what they are and what they are not, even if this is an unpleasant business.

Organizations with multiple, conflicting identity cores experience a different problem: Identity is fluent in organizations, and one will always find different variants of the organization's identity—this is to be expected. Sometimes, however, one finds organizations who harbor several "identities" entirely unrelated to each other and having no common denominator, or even contradicting each other. This can happen, for instance, in the case of mergers, where the merged units have managed to preserve their specific identity. The merged company lives with different identities.

Regarding the dynamic balance between the self-reference and the external reference, there are also, of course, dysfunctionalities that essentially consist of the overemphasis of one aspect: Either the "Self" is too strongly emphasized, then an organization concentrates only on itself and circles merely around itself, or, in the other case, the organization is oriented only toward the outside and cannot build up an identity. Decisions are then made arbitrarily, depending only on external circumstances, impulses, and fashions. This reduces the organization's stability and continuity, and the customer begins to miss the common thread running through all the organization's decisions and actions: "what do they want and stand for?" Becoming more understandable to the environment also involves, paradoxically, distinguishing oneself from the environment.

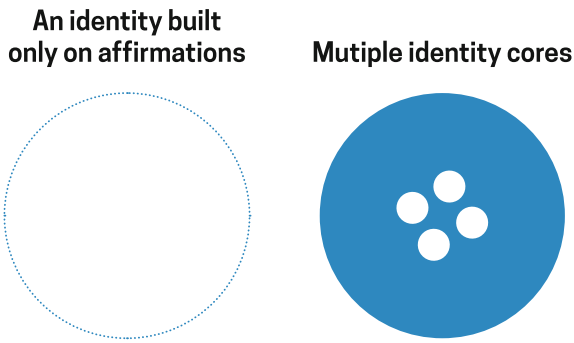

Fig. 12.5 Dysfunctionalities regarding the organization's identity (part 2)

12.2 "Care and Compassion for the Entire Organization"—Taking Care of the Organization's Internal Cohesion

In addition to the decision-making and target setting process mentioned above, system 5 is also ultimately responsible for maintaining cohesion across the entire organization (see volume 1). But how is this done and what are the transmission channels?

12.2.1 The Invisible Power of "Ethos"

One way for system 5 to communicate its concrete decisions is the vertical downward command channel, as we have already learned in volume 1. However, in addition, and perhaps more importantly, system 5 can also ensure cohesion by what Beer called the "ethos"[10] of an organization (1995b: 125). Ethos can be described as **system 5's implicit expectation** toward the remaining organization regarding what is allowed and what not. Ethos is generated through system 5's decisions on principles, norms, and values, but also the way its decisions are communicated and how system 5 behaves. They provide important clues to the rest of the organization as to how system 5 thinks and acts and what it values.

The ethos is not to be understood in the sense of an explicit information and reporting channel from system 5 to the rest of the organization.[11] System 5 does not inform explicitly about its ethos; rather, it creates ethos implicitly through its decisions as a constantly present background which infuses the entire organization and against which the other system functions weigh every one of their proposals, decisions, and ideas (Beer, 1995a: 354; 1995b: 124). Ethos emerges almost automatically, and system 5 cannot prevent it from happening. We can observe this emerging property in the dilemma of top decision-makers and decision-making bodies, that even if they do not decide and act, they implicitly generate information about their value system and hence influence the prevailing ethos. Not deciding can signal either prudence or avoiding conflicts, risk aversion, and even timidity—depending on the context of a decision. But whatever the context might be, **system 5 cannot not generate ethos**.

Ethos is an important governance and decision-making mechanism in organizations. We can assess its power and influence if we consider how many questions are solved in an organization, without system 5 being formally asked for a decision (e.g., a supervisory board meeting), since the employees already know the mindset of its

[10] The term "ethos" refers to phenomena such as the spirit, character, culture, and character of an organization. Ethos, in this sense, must be differentiated from ethics, which, as a discipline, reflects about the foundation and validity of moral and societal norms. This self-reflection is part of system 5 too, however, ethicality is not an implied property of an "ethos." Organizations can have an ethos, even if this ethos is untenable from an ethical perspective.

[11] For this reason, the ethos is not represented by any kind of channel in the VSM.

organization system 5 and how it would decide if asked. This knowledge helps the other system functions to decide for themselves without involving system 5.

With this in mind, one then understands better how much time ethos saves organizations and how much it prevents countless conflicts. System 5's mere expectations of how others should behave and decide suffices; one does not need to say anything more. Ethos allows system 5 to govern and lead an organization in an extremely economical and efficient manner and keep the organization's variety within the desired bandwidth.

It is, therefore, not surprising that modern management approaches try to replace the traditional hierarchy by values and culture. The latter are more effective and economical than any hierarchical command channel: The more people share the same values and know what is expected from them, the less one needs to command them. One does not need to tell employees what can and should be done and what is not permitted. Ethos regulates behavior without any saying (Beer, 1995a: 354). This does not mean that ethos works entirely without the central command channel: The firmness to react, together with the vertical command channel as a last resort, is sometimes necessary to uphold the ethos (see Section 11.3).

12.2.2 "Circular Leadership"—Who Leads Whom?

System 5, however, is subject to a paradox, as already stated in volume 1: On the one hand, its final decisions are supposed to be the "last word" on issues and should thus consider all aspects of a question. On the other hand, decisions only reflect its specific perspective and, as a result, each decision is always provisional and will eventually become corrected over time. So, system 5's current ethos risks of becoming outdated or at least leaving new aspects unanswered. And this might be problematic since the variety of system 5's ethos and the variety of the remaining organization, especially of the operational parts, must match each other. Otherwise, internal tensions will arise.

Consequently, the remaining organization must have the opportunity to voice a different opinion and ask system 5 for a revision of its ethos. Usually, this is done through the central upward information channel, which one needs to take if values, models, and cultures no longer provide an answer to the questions and problems of the operational organization and consequently, need to be adapted. In cases where system 3 might block the operational organization, the algedonic channel comes into play which splits off from the vertical information and decision channel just before system 3, as we have discussed it in volume 1 (see Fig. 12.6).

Through the algedonic channel, system 5 is confronted with the variety that it has not hitherto seen or ignored, but that is critical to the viability of the organization. Human rationality is limited, and organizations need to filter complexity out. The algedonian channel is the channel drawing the metasystem's attention to the **relativity of its and the entire organization's perception, cognition, and**

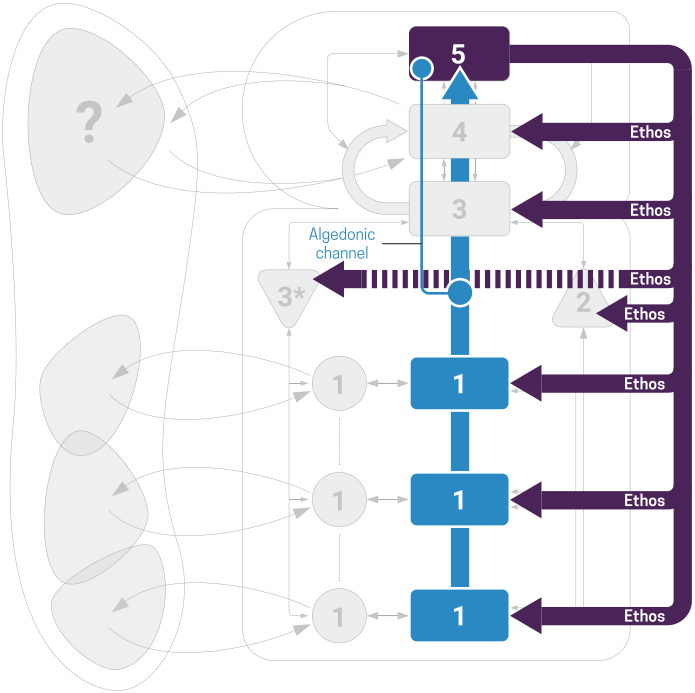

Fig. 12.6 The ethos regulation loop from system 5 into the rest of the organization (adapted from Beer (1995a: 353, Fig. 61))

perspectives.[12] The algedonic channel forces the metasystem to consider and experience the operational reality and foundation of the organization, where the purpose of the organization is concretely created. Put into more metaphorical language, it connects heaven and earth, especially if something is disturbing and wrong or, as the German language expresses it quite nicely, "something cries to heaven."

The algedonic channel as the channel that is supposed to ultimately guarantee the metasystem's cohesion with the organizational basis (Beer, 1995a: 407) functions as a security valve if the organization's cohesion is in danger. The algedonic channel in VSM points us to a paradoxical constellation all too familiar to leaders: system 5, if it wants to be successful long-term, **must** (!), in the end, listen to the

[12] In Section 10.3, we have said that the metasystem takes a perspective different from the systems 1. In a logical sense, it acts orthogonally to them. The algedonic channel exercises a similar function regarding the metasystem itself and should not be viewed as any other channel in the VSM. It is the channel that opens up a further logical dimension for the metasystem and its complexity processing: It stands in a logical sense stands orthogonally to the metasystem itself and operates critically to it (see Beer 1995a: 406: "The alerting system is orthogonal to the calming system.")

systems 1 and to the lower recursion levels in general. The algedonic channel does not leave system 5 any other choice if it does not want the organization to break up. It needs to integrate their views into its decisions. No leader can lead sustainably without listening to his or her followers.

Not unsurprisingly, before elections, politicians often emphasize how much they listen to their electorate and care for them. Listening to the needs of the people is nothing else then reactivating the central information and algedonic channel that, in most cases, have been forgotten since the last election. Similarly in organizations: A vision, strategy, or plan only becomes executable if it can credibly connect with the remaining organization and demonstrate how to bridge the present state of the organization to its future state.

Seen from this perspective, the ethos downward into the organization and the upward central information channel thus complement each other and now transpire to be an integral feedback loop. Through its ethos generating capacity, system 5 connects the entire organization to itself. Its ethos as the decision-making background for all other system elements allows system 5 to hold the organization together. Through the central information and decision-making channel and the algedonic channel, however, the remaining organization brings forward its concerns (i.e., the residual variety that cannot be solved by the current ethos). It asks system 5 for a decision that helps to process the residual variety by either adapting old decisions or creating new guidelines. **Only if this loop is closed** (see Fig. 12.6) **can the organization become truly cohesive**.

This brings us to an important aspect: System 5 then is neither the top nor the bottom of the organization, but needs to be better understood as one element of a larger loop of continuous decision-making and readaptation of earlier decisions. As early as 1938, Chester Barnard, then president of the New Jersey Bell Telephone Company, described a very central concept in management; namely, that all **leadership is circular** (see also Luhmann & Kieserling, 2002: 27f). One becomes a leader only if the followers accept the authority of the leader, and by this acceptance the leader becomes a leader and the followers followers. It is the employees, paradoxically, that make the leaders by accepting their leadership (Barnard, 1968: 163ff; Beer, 1995a: 68). If one's leadership is not accepted by those who one is supposed to lead, then one is a leader on leave.

In this respect, it becomes, in fact, difficult to determine precisely who leads whom: People seek leadership and guidance. However, at the same time, the followers also lead the leaders because, as a leader, one needs the consent of the followers. And this is what we notice: No matter how much power we may receive institutionally, we are always confronted with the question, whether our actions and decisions will finally be accepted and executed by those who are supposed to follow us (even if undesired). Here, we are reminded of the drawings inspired by Escher, Penrose, and others (see Fig. 12.7), where the lower part is at the same time the upper part to the upper part, and the upper part the lower part to the lower part.

Fig. 12.7 Who leads whom in an organization?—leadership is circular and thus often a paradoxical task (© Fotolia/stock.adobe.com; artist(s): vectalex)

In practice, we can observe this paradoxical relationship quite well. If a situation is out of balance, supervisors ask their subordinates to "speak freely." Usually, they do not make this invitation voluntarily, but only if they are forced due to serious problems arising on the horizon. The upper level knows that it needs to listen to the lower level so that it can balance out the varieties between both levels. The "hierarchy" becomes, in effect, reversed, and through the listening process, the lower level becomes the upper and the upper the lower level and the organization can start (re-)experiencing itself in its entirety. Aspects that have been overlooked become rediscovered; what has fallen apart, becomes reintegrated, and the organization can rejuvenate itself. Apparently, this paradoxical relationship seems to be a fundamental component of well-functioning and viable organizations: It reconnects the metasystem and entire organization back into itself, thus building a cycle that allows the organization to recognize, address, and process the challenges of an organization in timely fashion.

In recent decades, the popular management literature has strongly emphasized the aspect of leadership and the individual leader. However, there are also opposing views: Henry Mintzberg, one of the most important modern management thinkers, calls for a departure from such leadership approaches (2006, 2015): "Enough Leadership. Time for Communities!" Leadership must once again be anchored in community and communities.[13] But are communities the solution? One wonders.

Perhaps, it is one of the great achievements of the VSM not to have fallen victim to one-sidedness, but to have withstood the tension that arises through opposites. It needs both, leadership as well as community; neither can exist without the other nor should they collapse into each other. We shall see in Chapter 13, what kind of great sources of viability are hidden in keeping up dialectic tensions.

[13] This, however, does not imply the other extreme; namely, that the installation of teams or communities suffices to solve problems. Communities and teams can fail as well. Just setting up a team does not guarantee its success. Teams also need people who take initiatives and lead them.

12.2.3 Lacking Cohesion— Dysfunctionalities in the Ethos Loop

This loop that ensures cohesion throughout the organization can fall victim to certain dysfunctional constellations, for instance, if the loop becomes interrupted (see Fig. 12.8). A frequent problem in organizations are, for example, cases, in which the ethos does not reach everyone equally or is not strong enough, or simply if different ethenes exist in the organization. This dysfunctionality can be felt in complaints that a certain rule does not apply to everyone or in cultures with different values and incompatible norms. After mergers, we find, for example, the problem, that the ethenes of the different merged companies continue to exist beyond the legal merger. Similarly, we see that across the recursion levels different ethenes might develop if the inter-recursive channels are not sufficiently developed. The top level has a different ethos than the employees at the bottom of the organizational pyramid have.

A further dysfunctionality, as already indicated in Section 1.2, concerns a missing or poorly functioning algedonic channel. The pressure from below cannot surface and eventually breaks up violently. Another dysfunctionality occurs if the algedonic channel starts to replace the regular information and command channel. This way system 3 becomes bypassed.

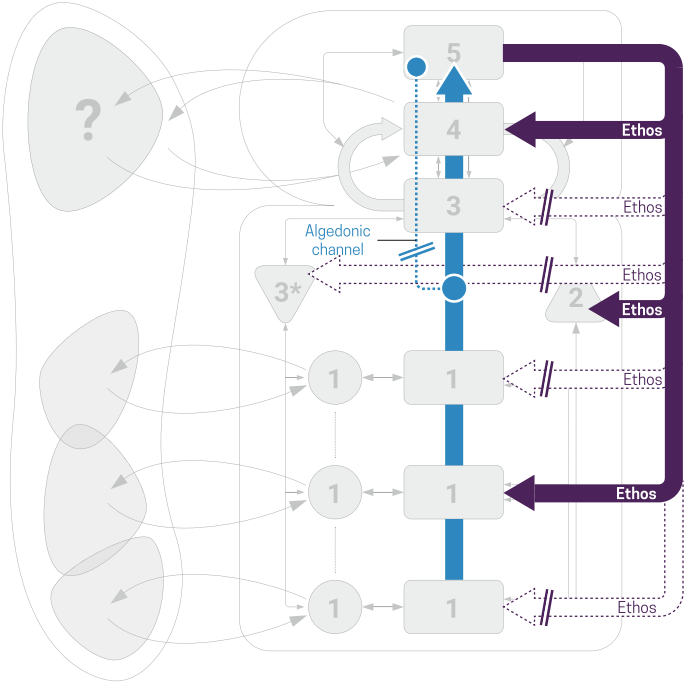

Fig. 12.8 Dysfunctionality related to the ethos and cohesion loop—contains adaptation from Beer (1995a: 353, Fig. 61)

Another type of dysfunctionality relates to the question who, in an organization, defines its ethos in reality. As we have already noted in this chapter and in volume 1, the *de facto* system 5 does not always consist of the official officeholders, institutions, and processes such as executives and boards. Instead, it can happen that the institutionalized system 5 officeholders and boards might not even be part of the organization's ethos formation process. Instead, the norms and culture of the organization might be defined by a group of people who hold the actual (decision-making) power in their hands, e.g., unions or the retired "patriarch" in a family-owned business. In these cases, the ethos channel is in fact divided into a formal and official but irrelevant channel on the one hand, and an informal but relevant ethos channel on the other.

Attempts to correct this dysfunctionality is often the target of cultural change projects. In such situations, executives are confronted with norms and values, the so-called "culture" within an organization, that they need to change but have difficulties to achieve because they are excluded from the internal ethos formation process in the organization. This type of cultural project then has *inter alia* the objective to realign the official with the informal ethos formation process.

12.3 Asking the "Right" Questions—System 5's Duty and Contribution to The Organization's Viability

System 5 must mediate between two equilibria; it must have a "mind", but also a "heart", we said at the beginning of this chapter. If it focuses only on the strategic–normative metasystem, it becomes detached and big-headed; and, if it listens too much to the operational organization, it becomes hypochondriac and inward-looking, focusing only on the immediate needs and shying away from painful, but necessary measures (see also volume 1). The current French prime minister Édouard Philippe and his advisor Gilles Boyer quite pointedly described this balancing act in their novel *Dans l'ombre* (2012: 12): "[A politician needs the aptitude …] to make people understand that one is like them but at the same time also different, that one is capable of understanding them but yet above them."[14]

Unfortunately, there is no magic wand that allows determining the equilibrium point accurately. The only measure that system 5 can take is to ensure that its decisions do not unintentionally overlook and forget what the entire system (i.e., the organization and the environment) is all about and how it functions. This implies that system 5, as the ultimate decision-making process, should know in principle what "all" means or at least, could mean (Beer, 1995b: 126). It should educate itself about what the relevant system is and how it functions. To this end, system 5 must develop a model of the entire system (see volume 1) across all its recursion levels (see Fig. 12.9).

[14] Translation by the author: [Un politique, c'est un aptitude] „à leur [les gens] faire comprendre que l'on est à la fois comme eux et différent, capable de les comprendre et pourtant au-dessus d'eux."

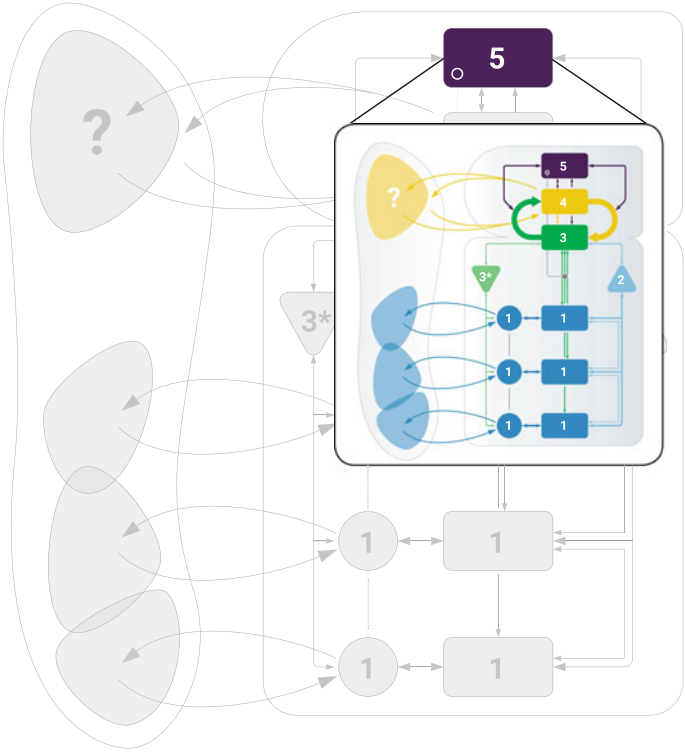

Fig. 12.9 System 5 must have the entire system in its "mind"—contains an adaptation from Beer (1995b: 136, Fig. 37)

This is why people, once they are promoted to a leadership position, need to become generalists. They need to leave their specialist area and consider all the various functions and aspects of their organization, the wider environment, in which the organization is embedded and in the end, the variety and history of human society and mankind. This is also why especially at the top of organizations profound humanistic questions arise belonging to areas such as ethics, philosophy, and sociology.

This brings us back to the Conant–Ashby Theorem that we encountered already in volume 1, when we discussed the prerequisites of a viable management function. The theorem states that "every good regulator of a system must be a model of the system." This might sound a bit tautological, because what else would one expect …? However, this impression can only occur if not viewed from a process perspective and as an ethical imperative. What the Conant–Ashby Theorem formulates is instead the ideal state toward which system 5 must evolve. System 5 will never have a perfect model of the system it is supposed to control. No model is complete, but it is its responsibility to do the utmost to come close to a perfect model. A well-functioning system 5 must thus ensure that it continually questions its model

of reality and adjusts it accordingly. A system 5 is well functioning, when and if it knows about its limitations, opens itself up, is never satisfied with its understanding, and thus, forces itself to learn and adapt its model of reality continuously. Viability requires a continuously questioning, learning and self-correcting system 5 at the head of the organization. In volume 1, I recounted the anecdote of Alfred Sloan, CEO of GM, who interrupted and postponed a board meeting in full agreement on a decision and asked for more time so that the participants could develop sufficient disagreement to better understand the issue (The Economist 2009). A viable system 5 needs a critical distance to itself to remain alert and keep the organization moving (see Beer 1995a: 406ff on the danger of system 5 falling asleep).

This critical distance also includes its relationship with the environment. Organizations are susceptible and can even become dominated by external thinking, fashions, scripts, and reasoning. Viability in the sense of self-governance (see volume 1) also means to have a critical stance toward the environment: The environment is not always good and to be followed, just because it is the environment.[15] For this reason, organizations need to develop and preserve a critical stance toward the current environment, its dynamics, norms, behaviors and (political) decisions. In the VSM, the organization and environment are shown as interrelated but being apart from each other. They must not collapse into each other (see also Section 1.4).

The ambivalence of the current environment is also the reason why in the VSM, the environment does not only consist of the present but also the future environment. The future is and needs to be the challenger of the present. The future is and should be different from the present. In that regard, the future is not only a threat in the form of the unknown (see volume 1) but also represents the hope that some overdue changes will finally take place.

The question mark in the future environment thus is not just a question mark representing the unknown and possible threats and opportunities. It also symbolizes the questioning of the current status quo, its norms, practices, structures, and behaviors. As such the future can also be understood as a duty and an ethical imperative to the organization to change itself and the current environment for the better. Thus, keeping the future always in mind is not only a sign of the organization's need to innovate; it also reminds the organization of its responsibility for the development of itself and the environment. To accomplish this, system 5 and the strategic-normative metasystem in general need to develop a special skill: namely, finding and asking the "right" questions. Only then will it get a full picture and keep the organization alive.

[15] For this insight, I would like to thank my colleague Ms. Isabell Egger-Peitler.

Summary

- At the foundation of the strategic–normative metasystem lies a collective reflection and discussion process. This process needs to be kept fluid and in-depth as much as possible. Attention should be paid to how much the existing institutional framework, infrastructure, and atmosphere support this process.
- In its decisions, the strategic–normative metasystem must balance between …

  – the organization's capabilities, opportunities/threats, and obligations,
  – the included and excluded aspects of a decision, and
  – its self-reference and external reference.

- Through the ethos, system 5 holds the organization together and relieves the central command channel. The ethos speeds up the organization's internal information, decision, and execution processes.
- The ethos, the central decision-making/information channel, and the algedonic channel form a self-correcting feedback cycle generating a circular leadership–follower relationship.
- A well-functioning system 5 must develop an adequate model of the entire organization and the environment to arrive at sound and sustainable decisions. To this end, it must be capable of finding and asking the "right" questions.

Questions for Reflection:

1. On a scale from 1 to 10: How well is the strategic–normative metasystem in your organization developed as a joint reflection and discussion process?
2. How well is the framework and the temporal and spatial infrastructure of your strategic–normative metasystem designed to support this reflection and in-depth discussion process?
3. How much do the dysfunctionalities listed in this chapter occur in your organization?
4. How much does your organization make use of its ethos? How much does your organization's ethos enable employees to decide on their own, and hence, allow the organization to become more self-governing, efficient, and agile?
5. What is the understanding of leadership in your organization? How close is it to the "circular" understanding of leadership? How well can executives deal with the paradoxical tensions arising from the circularity of leadership (e.g., listening versus commanding)? How well are they supported by the organization in balancing out this tension?

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Why Do Organizations Need Conflicts?

13

Discussions and conflicts are exhausting, and it is therefore understandable that as an executive one intensively wishes for the day when everything is "running like clockwork" (Fig. 13.1). The "conflict-free organization" in which everyone understands one another without any differences—this is, for many, the holy grail of organizations.

Unsurprisingly, one finds the promise of this holy grail and the end to every conflict in popular management literature quite frequently. Notably, substituting the hierarchical through a nonhierarchical organization is a recurring theme. Where one

Fig. 13.1 Even if we desire it: Organizations are and should never become clockworks—otherwise, they cannot adapt and correct themselves (© Fotolia/stock.adobe.com; artist: Martin Hahn)

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faces conflicting opposites that cannot easily be reconciled, these authors promise a new miraculous model or way forward that until then has been unknown to the wider audience.[1] However, does such a new way exist? And if so, why has not it already been put into practice? Are organizations and their leaders not smart enough and just clumsy? One wonders.

The causes of conflicts within organizations may be due to personal or (political) reasons, lack of willingness to learn, or insincerity. Clearly, such conflicts should be minimized as much as possible, and new methods mitigating and facilitating the resolution of conflicts are highly welcome. However, conflicts need not be negative, and in this chapter, we would like to shed a new and different light on the function of conflicts. It could be, as we will argue, that some conflicts are, in fact, good for the "health" and viability of an organization. If a miraculous "new way" ever existed, it might be that through opposing perspectives learning processes become initiated in an organization that allow it to understand and solve issues better.

13.1 The VSM as a System of Polarities

To elaborate this new perspective more closely, let us now briefly return to our previous chapter, in which we discussed the feedback loop going through system 5 and the algedonian channel. This loop has offered us a remarkable insight: Viable organizations do not seem to end either in the top or bottom of the organization. Instead, the top and the bottom seem to be intrinsically linked to each other in an ever-self-correcting feedback loop.

If we look closely at the VSM, we can detect that an organization contains many more pairs of interrelated system elements that are opposite to each other. What are these pairs of opposite system elements? The following table presents some of the key poles in organizations (see Table 13.1).

[1] See, for instance, the organization system "holacracy": "Holacracy is a new way of structuring and running your organization that replaces the conventional management hierarchy. Instead of operating top-down, power is distributed throughout the organization, giving individuals and teams more freedom to self-manage, while staying aligned to the organization's purpose." (quoted from: www.holacracy.org/) That holacracy is nevertheless hierarchically organized has already been pointed out by Denning (2014).

Table 13.1 Internal opposite poles

No.	Self-correcting and mutually stabilizing opposites	Manifestations
1	**Organization versus environment**	• The organization's objectives and strategies versus the environment's • The environment's image of the organization versus the organization's self-image and image of the environment
2	**System 1 versus system 3**	• Individual or overall optimum? • Freedom or cohesion? • Self-determination or determination through system 3? • Centralization or decentralization of tasks and responsibilities?
3	**System 2 versus system 3***	• Relying on plans and rules or expecting irregularities and the need for improvements? • Routine or new approaches for the operational organization?
4	**System 3 versus system 4**	• Optimizing the existing (exploitation) or changing and reinventing it (exploration)?
5	**Within system 4: The "known future" versus the "new and unknown future"**	• Incremental or radical innovation?
6	**The system 3–4 exchange versus system 5**	• Preserving or changing the current purpose, identity or basic principles? • Temporality or "eternal validity" of decisions and principles?
7	**Metasystemic decisions versus algedonic channel**	• Following the current needs of the operational organization or initiating strategic changes as seen necessary by the metasystem? • Sticking to the principles or bending principles for specific individual cases?
8	**Self-regulation channels versus command channel**	• Stimulating self-organization versus command-and-control leadership?
9	**Between recursion levels**	• Overall or detail view? Macro or micro? • Short-term or long-term?

If all system functions and channels as described in the VSM are required for an organization to become viable, then these opposites too are an integral part of any organization and cannot be avoided. They emerge as the consequence of how organizations need to structure their processing of variety.

Are you interested in a more detailed discussion and description of these opposite poles?
If so, then continue reading here, otherwise, go to Section 13.2.

1. The most well known tension is the one between the **environment and organization**. Even though the objective of any organization should be to form ecosystems with its environment, this should not let us forget that a boundary lies between both. This boundary and the resulting tensions cannot be eliminated and, on the contrary, must be maintained: Neither can the organization diffuse into the environment, nor should the organization become autistic and neglect the environment (see also Chapters 1 and 14)

   Apart from differences in intentions, purposes, and roles this tension also results from the fact that the environment and the organization generate their separate and different image of themselves and each other. "Why can't anyone see that one cannot treat customers like this …?!" This type of customer criticism does not only address operational problems but is also directed toward the organization's self-image and relationship to the environment. How the organization sees its purpose and role also determines its relationship to the environment. Its image of itself and its environment influences its attentiveness to and interaction with the environment. The environment might, however, create a different image of how the organization interacts with it, which then constitutes a source of constant irritation to the organization's self-image and self-understanding.

   However, not only the environment generates a critical perspective toward the organization, but also the organization needs to develop a critical stance toward the environment's perspective, as we said in Chapter 12. First, one cannot innovate without having identified problems in the environment and potentials to improve it, and second, not everything that the environment proposes or demands is good. The organization must be sufficiently critical toward the environment and not follow every trend and fashion. Organic food companies or NGOs are prominent examples of organizations taking a critical stance toward the present environment.

   Dysfunctionalities occur when organizations try to avoid and shortcut this tension, either by neglecting the feedback by the environment or by following whatever the environment demands and values.

2. The opposition between **system 1 and the operational metasystem** is relatively easy to understand and does not require any further explanation at this point of the book.
3. The opposition between **system 2 and 3*** is also easy to understand: Rules and regulations create their own exceptions; every rule can be bypassed. Whoever only believes that system 2 suffices, will necessarily become surprised. One needs to search for the exceptions to the rules actively and accordingly. System 3* not only counterbalances system 2 but reminds system 2 of its limitations.

   However, the opposite is true as well for those who only focus on system 3* and who want to see the world full of special cases, exceptions and reasons to mistrust one another. If one cannot rely on that others abide by the rules, life becomes extremely difficult. Organizations need rules and routines; exceptions should remain what they are: Exceptions. System 2 reminds system 3* that audits and inspections or constant optimizations can prevent the organization from operating smoothly.
4. Then, we find the opposite poles between the present and the future (i.e., between **system 3 and system 4**) (Espejo, 1989: 86), which we have already discussed at great lengths in volume 1. Should one "just" optimize the existing structures or change and innovate them radically?
5. However, even within **system 4**, we find opposite poles, since system 4 is confronted with two different environments: The wider environment and known future on the one hand, and the unknown, still to be invented future on the other hand. This tension is reflected, for instance, in one of the key strategic questions for organizations: Should one develop incrementally and follow existing trends or should one better reinvent oneself radically in the sense of Schumpeter's "creative destruction" (1992, 1994).
6. But not only system 3 and 4 form opposites to each other, **their mutual adaptation process is also opposed to system 5**.

   The changes proposed by system 3 and 4 might require a new identity and values. New strategies might run into trouble because they do not correspond to the purpose, identity, and basic principles of the organization. What is already clear for system 3 and 4 might not yet be so evident for system 5. For tradition-conscious organizations, changes need to be justified simply because they are changes. For innovative organizations, however, that consider themselves as "cutting edge" and as the engine of change in a market, a new strategy that proposes to continue as hitherto represents a truly fundamental (!) problem touching the organization's self-understanding: One must justify that one is **not (!)** changing.

At this point, we thus need to become very careful and attentive: Does the new strategy make sense from a purely strategic point of view (system 3 and 4 equilibrium) or has it instead been chosen because it fits the organization's self-understanding, identity, and values (system 5) better?

System 3 and 4 thus challenge the all-time truths of system 5, and, conversely, system 5 challenges system 3 and 4. Is a new fashion indeed something new and to follow, or should one instead stick with old principles and traditions? Change versus tradition, future versus past, agility versus continuity, new versus old—these are the tensions that we find in the dialogue between systems 3, 4, and 5.

7. For **system 5**, there exists the opposition between the decisions made by the metasystem, on the one hand, and the pressing needs of the lower level and operational organization made known through the algedonic channel, on the other. How should it treat these special needs? Should one stick to principles and its decisions or be rather lenient?
8. As we have seen in Section 11.3, organizations always possess **two ways to influence lower system functions** (see Fig. 11.11): The central top-down command channel, but also the other more indirectly working channels that induce self-organization. Organizational life and leadership are always characterized by this duality and tension between the two different and possible leadership styles: between direct orders and the more indirect channels of influence.
9. Finally, there are the polarities resulting from different **recursion levels**: the global or local level, "micro" or "macro"? We find this tension in many decisions, such as the state versus the individual, the company versus the product, the organization versus the employee.

13.2 Conflicts—Eye Openers for What Is Underneath the Surface

What is the function and purpose of these opposites more precisely? Are they and the resulting ambivalence just a deplorable consequence of organizational structures or do they have a more profound function?

To find an answer to this question, let us return to the function of boundaries (see Section 1.4) and attenuators (see Section 3.4): Organizations need them because they must reduce the complexity of the environment to remain functional. They must select because they cannot be everything to everyone and all. However, this reduction creates one-sidedness: There is always complexity left unprocessed. To put it even more pointedly: One does not even know precisely what one reduces (Foerster, 1993: 27). One creates a blind spot precisely by concentrating on an objective and a purpose. Concentration on something is only possible if one does

not consider something else. "Insight" means a deeper understanding, but it also creates a narrower view (we cannot see what is beyond our perspective).

The organization cannot circumvent this reduction and the resulting blind spots. It can, however, mitigate this one-sidedness by constructing and institutionalizing opposing perspectives which mutually correct each other. Four eyes see more than two, but only if they have a different way of looking at an issue—and this also applies to organizations.

Thus, these opposing perspectives within an organization allow it, in fact, to become more attentive and receptive to the complexity reduction. Experienced executives are known for their interest in conflicts and often provoke them because conflicts and debates open the organization to the extent that they would typically not be able to see. Opposites and the resulting conflicts are real eye openers since they compensate for the complexity reduction that the organization is continuously undertaking and that can render it rigid and unresponsive.

Thus, conflicts offer the organization the opportunity to understand itself better. Provided that conflicts are not politically motivated, they usually make one wiser, but never dumber. They allow the organization to take a glance at itself and its specific perspective from the outside. In fact, conflicts are not an illness, but a sign of a functioning "immune system" of the organization, which draws our attention to hidden imbalances. As the famous German sociologist Luhmann expressed it in a remarkably concise way (1987: 506f):

> The system does not immunize itself against the No, but with the help of the No. It does not protect itself against changes, but with the help of changes against solidification through outdated behavioral patterns that are no longer adequate to the environment.

Hence, conflicts between opposites are not something that one should fight against but are a source from which an organization can renew itself.

These antagonisms, by which organizations can question their way of "organizing," are thus an important engine for the further development of the organization and its continuous search for ever better solutions. By looking at both sides of opposites, the organization is moving and is forced to (re-)organize and adapt its processes, structures, and rules to ever better ways of processing variety. And through this constant (re-)organizing in response to opposites, it ultimately remains in balance and maintains its viability.[2]

In designing organizations, we are looking for the holy grail that not only dissolves all these opposites but also prevents them from arising at all. However, perhaps this grail is not what we should search for; perhaps the grail of the conflict-free organization is a glare? Perhaps "pacification" and the suppression of these opposites are just those dysfunctionalities that we must carefully watch out and prevent.

[2] In the algedonic channel, Beer (1995: 408) saw, in addition to the regular information and decision-making channels, a crucial key to viability and cohesion within the organization. It helps to keep the metasystem awake and alert.

13.3 "I like Your Argument …"—Appreciating (Constructive) Opposition and Contradiction

How important opposition and contradiction are for survival, can be seen in the case of the fall of the US bank Lehman Brothers, which occurred not only due to financial, but also organizational and managerial reasons. For McDonald, a former vice president at Lehman Brothers, one of the main reasons for the decline in the US bank at the beginning of the financial crisis in 2008 was the lack of debates in the top management and of other opinions (Szalai, 2009). The problem of Lehman was not that no one in the organization was aware of the risks; there existed sufficient internal warnings before the crisis. The problem was rather that the management tried to suppress them with an "iron fist" approach (ibid.).

What should we then concretely do to avoid such a situation in the interest of the viability of one's organization? Here, I would like to mention some of the most important measures—they are not new insights as such, but instead meant as a reminder since they are rarely practiced and yet important for the viability of an organization:

1. Developing a healthy dose of criticism and a good debating culture.
2. Developing an organizational mentality that leads one to see criticism factually and not personally.
3. Developing a culture of appreciating dissenting opinions.
4. Letting people view and experience conflicts as a collective learning process.
5. Never letting the organization forget the value that has already been achieved, especially through past debates and conflicts.

1. Viable organizations need a healthy dose of criticism and debating culture

If a presentation ends without a question and discussion, then one is, at first, delighted, because "everything went smoothly," although a queasy feeling remains behind: Has one seen everything correctly? What do the others think really? Only the questions and subsequent discussion with the audience can indirectly confirm that one was on the right path, and has spotted all the critical points, and escaped the blind spots.

A presentation without critical questions is, therefore, peculiar and like a concert without applause. It is the moment where the suspicion dawns that one has only spoken to oneself and that the abovementioned immune system of the organization has fallen asleep. Furthermore, it might imply that the organization does not generate sufficiently different perspectives anymore, and thus, can no longer correct itself or even does not want to.

Contradicting is a sign of the organization's health and of a functioning organizational "immune system", we said, but it is not a given. Since organizations tend to harmonize, regulate, and restrict variety (and with good reasons), one is usually confronted with a deficit in opposing views and debates. They must be stimulated and nurtured actively. Especially, as an executive and supervisory board, one needs to ensure a lively as well as sincere debating culture to overcome the people's intimidation because of one's authority.

2. The critics are your best friends

To view contradiction not as a threat and personal attack does not come naturally and requires the self-discipline to see counterarguments and criticism factually. "We may fight each other, but afterward we can have a beer together," an executive once told me. This approach is only possible if one has built up a culture that trains to **separate the personal from the factual**.

"Rubbing generates heat," another executive told me, thereby expressing his personal conviction that conflicts generate value for an organization. Despite his rather authoritarian leadership style (his nickname was derived from the model of a Soviet tank), he appreciated opposing arguments and a heated discussion because he knew that he would win many insights allowing him to secure his position in the long term.

As an executive, one should generally have a healthy distrust of those employees who talk too much and too often "to the mouth" and only reaffirm one's own opinion. These employees prevent one not only from improving but even worse, they also reduce one's perception and let one too easily fall victim to manipulation.

Contradiction must not be confused with disloyalty: The contradictory and critical spirit is often the more loyal companion because it draws one's attention to the risks which have not yet been perceived and which can endanger one's position and future. "Why did not anyone tell me anything?" many leaders complain after a crisis has broken out. With more opposition, debate, and a more open climate beforehand, the crisis might have been prevented.

3. Developing a culture of appreciating dissenting opinions

Contradicting is not easy for most people. It costs courage, since it exposes oneself. Who criticizes can easily become the victim of criticism and retaliatory actions. Consequently, it is always easier to say "Yes" and conform with the group opinion. Voicing different opinions thus needs to be encouraged and seen as what they are often originally intended: The **will to help the organization** and, as such, to **contribute to the development of the organization**.

Every argument has its positives and deserves to be considered with appreciation, one executive told me once who incredibly excelled in the art of finding even in the most flawed arguments a positive point. This helped people to speak out and confide in him since he preserved their dignity.

Appraisals of others are not just rhetorical ornaments, but an important tool to keep the **information system** in an organization alive: They allow creating a culture that **encourages people to voice their ideas and concerns** the next time; and this is not a given if they were already dressed down once.

4. Conflicts as a common learning opportunity

Appreciating the statements of others is a vital lubricant for facilitating disputes, but it also can quickly become just a matter of courtesy and perhaps even a rhetorical device to appear likable and professional and to win the audience's favor. People must develop a deeper understanding than this; they need to realize and keep in mind the **systemic function and value of debates and conflicts**; namely, to reverse the variety reduction and regain a more holistic picture of an issue (see above). They need to see conflicts[3] in organizations as **a vital (information) mechanism** by which the organization reconstitutes itself and tells itself what it has been overlooking.

This is easier said than done since, during debates and conflicts, people often have difficulty to see or forget this vital organizational function and consequently, remain too much confined to a too narrow perspective. They risk seeing conflicts too personally and just as a "me against others." One thus needs to turn debates and conflicts explicitly and actively into a **joint learning process and anchor it as such in the participants' minds**.

To this end, one should put the participants during a conflict regularly into a **learning mode**; for instance, by asking "So far, what does the issue that we have discussed teach us?" or "What have we learned together so far from this debate." Conflicts as an enrichment of one's learning and life: This understanding needs to be trained regularly in organizations. Only then can debates and conflicts be carried out honestly and with the necessary motivation.

5. Always keep in mind what has already been achieved

Conflicts risk tearing an organization apart. In addition to the centrifugal forces, one must, consequently, also reinforce the **centripetal forces**: Besides the purpose, which we will discuss below more in detail, remembering past achievements and the value that has been created so far help to counterweight the centrifugal dynamics.

The **value created, especially through past debates and conflicts, functions as an anchor to the organization** holding everyone together. In conflicts, one should, thus, never lose sight of the successes and how precious and not self-evident the current position of the organization is. It raises the costs of breaking up and failing. After all, one does not want to destroy the value that has already been created.

This presupposes, however, a culture that is built on **performance** and the **contribution of the individual**. The creation of value and performance must always be at the center of every debate and conflict.

[3] Our focus here is on conflicts related to organizational issues and not personal matters, such as behaviors, personal motivations, or character traits.

13.4 "Can't We Just Simply Try It Out?"—Why Organizations Need "Test Sites"

Conflicts and opposition are good, but at the end of the day, one needs to find a solution through which the opposites can be reconciled. In many cases, it will be sufficient to reanalyze existing data and rework the existing control and decision-making models. But this is often only a textbook approach since the challenge for many of the conflicts mentioned above (see Table 13.1) is usually that there are not sufficient data available, but only opinions and judgments.

"How far can we centralize sales activities without the customer noticing?" But who knows exactly what's going on in the market? With this type of question, one typically enters **new territory**, and no model, no data analysis, or comparison with competitors will give the necessary certainty. One can only find possible solutions to these questions by carefully entering this new territory and trying out. Just as pharmaceutical companies are testing new drugs in clinical trials before they put them on the market, organizations also need "**test sites**" to assess how the opposing poles in a decision need to be calibrated.

Such "test sites" are essentially areas whose interdependencies to the remaining organization and environment can be controlled. As a consequence, changes in these areas will have little or no effect on the rest of the organization or the environment. These test sites can be loyal customers, organizational units, or processes in the organization with which one can study the changes without interfering too much with the overall equilibrium system. Test customers are precious but often overlooked assets for organizations since they are more tolerant than normal customers, and let the organization experiment. For the evolution of the organization, it is thus vital to possess and develop such test customers.

Cultivating such "test sites" is hence a vital leadership task: Whether an executive who wants to induce change in an organization will be successful also depends on whether he or she has access to such test sites (e.g., well-intentioned branch managers or customers who are ready to walk the new path). If one does not have access to such "test sites", one will find it hard to prove the correctness of a new approach and convince the rest of the organization to change the run-in tracks. Maintaining relationships with test customers, suppliers, or authorities, but also to employees or units who are willing to test new approaches is therefore not a question of courtesy, profits, and networking. They are vital for the ability to decide difficult internal decisions, induce chance and, in the end, for becoming a successful and effective executive or manager.

13.5 "We Need a Purpose and Business Mission!"

Sometimes, however, despite numerous analyses and tests there remain several options on the table without any clear indications as to which one should be chosen. Organizations then need an ultimate point of reference that helps them to decide and close the organization (see volume 1). This is the function of the **purpose** (or business mission) that the organization has defined for itself. The purpose creates a brace that holds the opposite poles together and guarantees the organization's coherence and continuity (Barnard, 1968: 87, 94f). Only if the organization feels obliged to a purpose and mission in the world, will it finally also take a decision whatever compromises this may entail.

How vital the purpose is to overcome a conflict one notices well in practice: if debates are stuck, then referring or even appealing to a concrete purpose or mission of the organization is sometimes the only instrument left to reframe conflicts and make stuck debates fluid again. Questions such as "In everything we have discussed, we should not forget that our mission is to …" or "what is really important to us?" or "what do customer(s) want ultimately?" help the organization to overcome its internal differences, to look from on high on the conflict and develop a joint way forward. They are enablers to relativize and put the conflict into a proper perspective.

Thus, while conflicts open eyes, one must also ensure that a commitment to a common and concrete (!) purpose is created at the same time; otherwise, the organization will be torn apart. The more **complex a company** becomes the more important it is to have the organization's purpose well developed. Thus, in the case of unsolvable conflicts, one should return to the organization's purpose and put it in the center of everyone's attention, before continuing the debate. Where purpose and shared mission are missing, conflicts will endure. This, of course, requires that one know the purpose and sense the need and urgency to implement it. It, consequently, belongs to one of the fundamental tasks of the strategic-normative management to have the (business) mission sufficiently **clarified** and always **at the center of the organization's attention**.

If through the purpose, it becomes possible to define how and where the organization finds its final equilibrium, this also highlights the pivotal role that the **purpose** plays within the organization. Through the purpose, one can influence the entire organization, its multiple equilibrium systems, and in the end, the level of its viability. If consequently so much hinges on the purpose, then it also becomes evident what an important door to misuse the process of defining the purpose for the organization can potentially become. This aspect will be the topic of the next and last chapter of this volume.

Summary

- Organizations and the individual system elements reduce variety through specialization. This way, vital variety may become neglected and remain unprocessed. This residual variety can potentially destabilize the organization, a danger of which the organization must make itself aware.
- The architecture of viable systems consists of pairs of opposing perspectives that allow the organization to become aware of the excluded residual variety. These opposing perspectives and the resulting conflicts allow the organization to gain a new perspective on itself and the way it processes variety.
- Conflicts and opposites are, therefore, a vital source of adapting the way the organization processes variety. They are a source for rejuvenating the organization. They open the organization and help it to understand itself better ("eye-opener"). They are, thus, a vital management instrument that allow governing an organization better.
- Organizations should, therefore:
  - Foster a good debating culture and sufficient opposing views.
  - Build a culture in which conflicts are seen positively and not personally.
  - Foster the discipline to distinguish during conflicts between the person and the legitimate concerns brought forward. This should be complemented by a culture of mutual appreciation.
  - Learn to understand conflict as a source of collective learning.
- Organizations need test sites to find solutions for how to reconcile opposing views to a decision.
- The purpose that the organization defines for itself ultimately determines where the equilibrium point between opposites lies.
- Organizations must ensure that the purpose becomes clear to everyone and that it remains at the center of the organization and everyone's mind. (Re-) Focusing on the purpose helps the organization to make stuck debates fluid again and to overcome opposing perspectives.

Questions for Reflection:

1. How much does your organization experience conflicts as an enrichment?
2. How much are conflicts swept under the carpets in your organization?
3. Evaluate your organization and area of responsibility regarding the five suggestions discussed in Section 13.3. How well are they implemented on a scale from 1 to 10 (1 = not at all, 10 = almost perfect)?
4. How can you promote the awareness of the organization's purpose more strongly and bring it into the foreground in conflicts that do not advance?

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Part III
"Purpose and Power"

We have already learned about the central function of the purpose in the chapter on the axiom of the requisite vertical *eigen*-variety (see Chapter 9): Depending on the purpose, the equilibrium point between the horizontal and vertical (*eigen*-)varieties shifts accordingly. This, of course, applies not only to the specific equilibrium between horizontal and vertical (*eigen*-)varieties, but to all other equilibria as well. Depending on the purpose, all the opposites mentioned in the previous chapter need to balance out differently. Who defines the purpose determines all the equilibrium points of the organization.

The term "purpose" suggests something objective, but nothing is further from it. Although a purpose is subject to certain external conditions (such as demand, technology, and profitability), it is ultimately also the result of a selection process by the organization. The actual purpose of an organization can often be very different from the declared one. Stafford Beer insisted that the true purpose of a system can only be recognized by what the system actually does (1995: 11).

Not always do the product and customer constitute the real purpose for which an organization operates, as it might be declared in its vision statements. Social prestige or the personal fascination with a certain product, technology, or even the founder of the company, to whom the "juniors" want to show what they can achieve, also determine the organization's orientation and its "purpose".

The ultimately central question then becomes: Who determines the purpose in an organization or has the power to do so and what does it imply for the organization? The danger for any organization is that the purpose of an organization can become usurped by a few who have the power to do so. To understand the consequences thereof, we dedicate this last chapter of this volume.

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14 "Whoever Owns the Gold Makes the Rules"—Dysfunctionalities in the Organization's Purpose

"Whoever has the gold makes the rules!" Unfortunately, this also applies to organizations as well. We always find certain units or individuals in organizations that have for whatever reasons the political power to bend and monopolize the purpose, business mission, and focus of the entire organization to their own interest (Fig. 14.1). They define what the purpose of the organization should be and accordingly, which of the many equilibria should be the most important in the entire organization.

Fig. 14.1 Who owns the gold makes the rule but do these rules benefit everyone else? (© Fotolia/stock.adobe.com; artist(s): nerthuz)

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The problem for the other system functions is that these internal power constellations prevent them from exercising their systemic function fully although they would possess in principle the requisite *eigen*-variety. So, unlike the dysfunctionalities in Chapters 3 and 4, we see here fully developed systems functions that could operate as supposed, if they were only allowed to do so. Often, system elements are, in principle, capable of handling their specific variety, but are unfortunately hindered by others because the equilibrium point has been shifted unilaterally in favor of these system functions. "I could do more if one only let me do it …," one often hears.

In this last chapter, we will discuss some of the systemic dysfunctionalities related to the definition of the organization's purpose that endanger the viability and longevity of an organization. Like in the ancient myth of King Midas who discovered that turning everything into gold with a touch (including his daughter) was a curse, equally, usurping the organization for particularistic purposes threatens the very heart of an organization's viability. Whoever subjugates the organization to his or her particularistic ambitions and desires might risk ruining the organization's livelihood like King Midas.

14.1 The Equilibrium Point Lies in the Operational Organization

In this subchapter, we will focus on the dysfunctionalities that can occur in the operational organization; and hence, around the systems 1.

14.1.1 The Customer is King

In general, the principle "the customer is king" is true insofar as the customer is the source of an organization's income and for whom the organization produces its products and services. The customers, however, can become problematic if they start dominating the organization (see Fig. 14.2[1]).

The reasons are easy to see: First, "customers" do not come as standardized units but in a multitude of different preferences and wishes. Therefore, if the organization tries to mirror every customer request, it lets the entire environmental variety flow into the organization. This fragments the organization and makes it impossible to create the necessary internal stability and control within the organization.

This is why organizations need "products." The advantage of a product is not only that one can offer something, but that it also standardizes customer preferences and wishes and as such attenuates variety. A product establishes a boundary

[1] All figures in this chapter related to the VSM are or contain adapted (detail) views from Beer (1995b: 136, Fig. 37), if not specified otherwise. For the corresponding permission details, see the reference section at the end of this chapter.

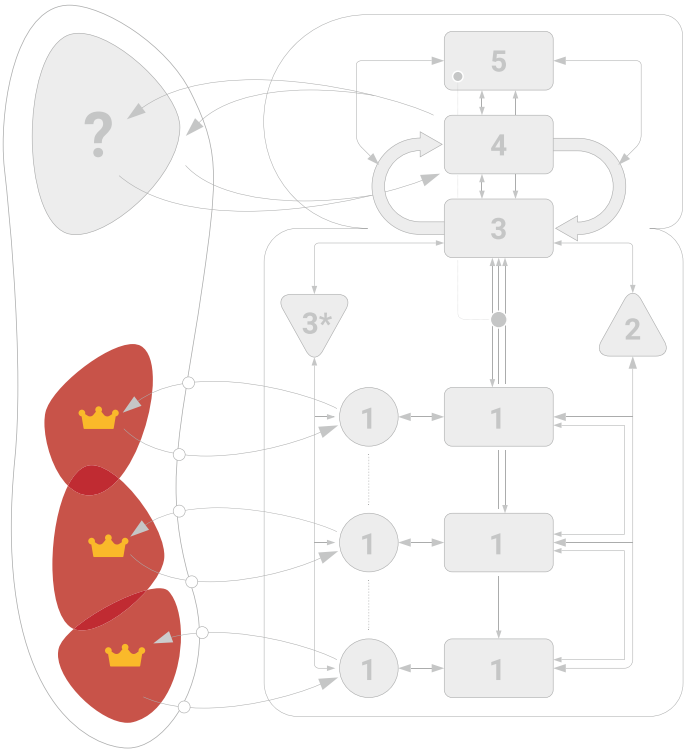

Fig. 14.2 "The customer is king" can be sometimes dangerous

between the organization and the environment (see Section 1.4.1). One can buy this product, but nothing else! A product limits the number of choices and thus the influence of the customer over the organization.

Second, not all customer groups are equally relevant to the long-term success and development of a company. Being captivated by certain customers bears the risk of losing connectivity to other customers and important trends (see Section 8.3).

One of the reasons why the German model railroad manufacturer Märklin had to report insolvency in 2009 appears to have been the dominance of its fans ("Die wundersame Rettung von Märklin," 2010; Hoppe & Kneip, 2009: 81). The desire for increasingly precise models (i.e., rivets with a diameter of 0.3 mm) and a continuous flow of special editions (unfortunately in small quantities) led to an explosion of costs, products, and product variants. Märklin seems to have become over time a so-called "fan company"—too much focused on and tyrannized by the collectors of its trains (ibid.: 81).

The problem of this dysfunctionality is the lack of a counterweight, which restores the balance in favor of the organization: The customer is not everything and must also be controlled. This is quite nicely expressed in a popular addition to the principle in the title of this chapter: "The customer is king, but we are the emperor."

The relation between organization and environment is an equilibrium, in which both sides are equally important.

This dysfunctionality applies, of course, not only to customers, but to other environments too: banks, trade unions, and governments should not dominate an organization.

14.1.2 Operational Dominance (“My Workshop is My Castle”)

This dysfunctionality emerges if the concrete operational activity becomes the prime purpose of the organization (see Fig. 14.3). Any other aspects such as synergies and coordination with other units, strategies, and innovation or long-term values, standards are subordinated to the operation.

This dysfunctionality occurs, for instance, if one falls in love with one’s current (production) technologies, production sites, the design of workplaces, certain production resources or people. Nothing should be changed. Maintaining the operational activities in their present form is the primary purpose and determines all decisions in the organization. Consequently, the organization narrows its scope and

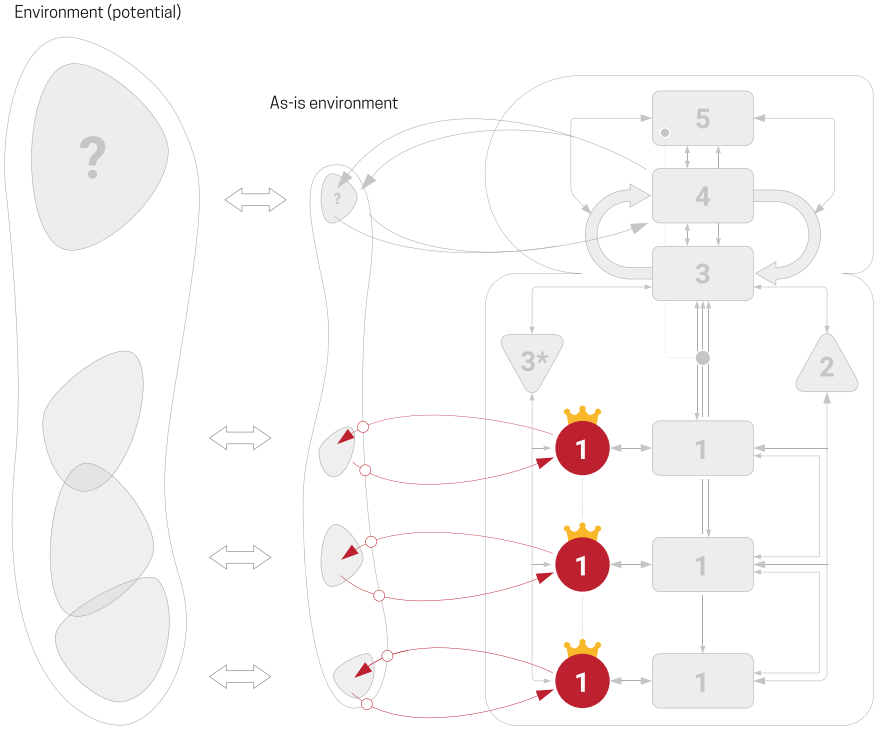

Fig. 14.3 Dominating operations

potential: Regarding its primary environment, the customers, but also concerning greater technological changes and innovations taking place. The future and the wider environment start falling outside the organization's focus.

14.1.3 "Principalities" or "Dominating Systems 1"

This dysfunctionality is characterized by dominant systems 1 (see Fig. 14.4 and Pérez Ríos, 2012: 164; Hoverstadt: 2008). What is important is one's "kingdom" and one does not look to the left or right of this kingdom. The system 1 and its preservation are more important than the overall organization. The organization becomes, essentially, reduced to the sum of its systems 1. Characteristics of such a dysfunctionality are the lack of synergies and cooperation between the systems 1, the preservation of vested rights and resources, and the attempt by the systems 1 to seal them off, especially against system 3. Such organizations fail to see that beyond the actual systems 1 there are opportunities that could be gained. Preserving the position of the systems 1 as they are is the sole purpose of this dysfunctional organization.

In some respects, this dysfunctionality is similar to the operational dominance, but it differs from the latter in that the focus is not on the actual operational activity

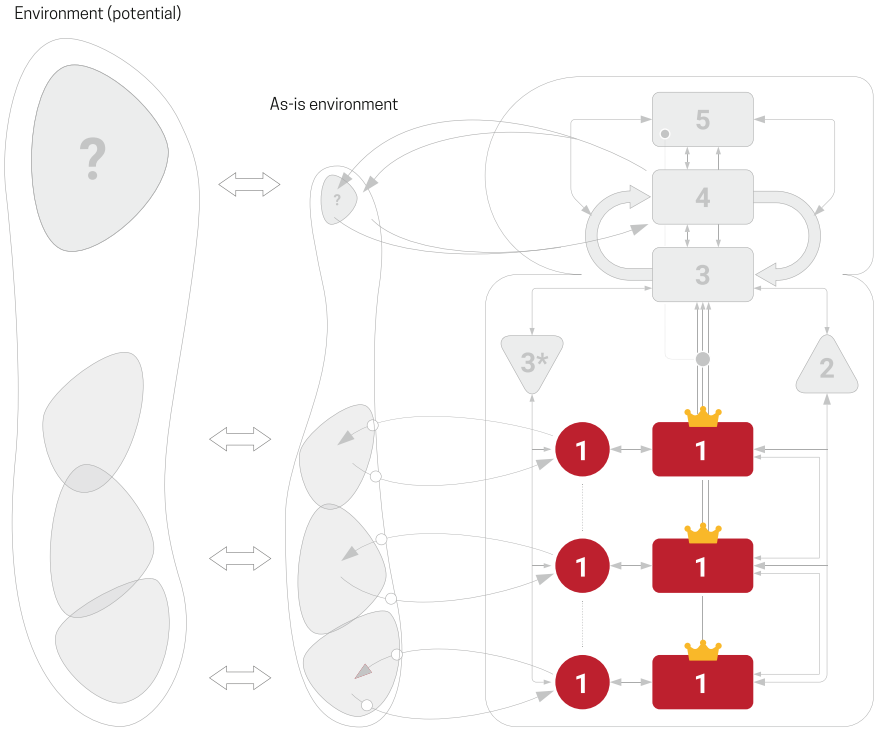

Fig. 14.4 Dominant systems 1 ("Principalities") (adapted from Pérez Ríos (2008: 417, Fig. 33) and contains adaptation from Beer (1995b: 136, Fig. 37))

but more on the strategic and political position of the systems 1 within the organization. The sole purpose of the systems 1 is defending their sphere of influence against other systems 1 and the metasystem. The metasystem's task is only to preserve the autonomy of the systems 1 as much as possible.

This dysfunctionality can often be found after acquisition processes where the acquired units refuse to accept the acquisition and relinquish control, or after growth phases when the consolidation of resources and the generation of synergies are resisted by systems 1.

14.1.4 A Dominating System 1

A particular case of the "Dominant systems 1" dysfunctionality represents the problem of one or a small group of dominant system 1 (Beer, 1995a: 448f; Pérez Ríos 2012: 163). It can very often be found in expansion phases, but also if specific products dominate the organization technology and revenue-wise (e.g., monopoly vs. competition markets). At the core of this dysfunctionality lies the challenge that one system 1 determines the rules, standards, and objectives according to which the other systems 1 must operate. The organization as a whole is oriented toward this system 1 and its purpose. In fact, an overarching company and its management barely exists. The organization is in reality, albeit hiddenly, managed by this system 1. The purpose of the organization is to replicate the dominant system 1 in all other systems 1.

This dysfunctionality appears, for example, in and immediately after expansion phases, and finds its expression in a so-called "home market bias" (see the instructive case study by Hetzler, 2008: 30–32): Although physically represented in different countries and regions, the mentality of the company is still dominated by its home market. This bias is stronger the larger the home market is. Due to its size and age the home market system 1 becomes the reference point not only for all other systems 1, but also for the entire metasystem. All coordination mechanisms and resource allocations (e.g., in product development and marketing) are aligned according to the standards and guidelines of the dominant system 1. Strategies that have worked in the home market must also work in the other markets, is the unquestioned assumption.

The same can also be seen in companies whose businesses are simultaneously active in near-monopoly markets and in competitive markets. The first group of businesses is usually more profitable, and therefore, determines the fundamental orientation of the company as a whole. The dominance of the systems 1 that operate in monopolistic markets causes the overall management to react insufficiently to the demands of the business areas in the competitive markets. For the latter, the organization's internal decision-making processes are too long, the reporting systems too complicated, the administration costs too high, and the speed of innovation too slow.

Typically, system 3 should be aware of this and take countermeasures. However, since system 3 is also mostly composed of representatives of the dominant system 1 and deals mainly with issues relevant to this system 1, it can hardly fulfill this counterbalancing function. The dominant system 1 management has become the *de facto* system 3 of the entire organization.

14.2 Only the Metasystem Decides the Direction

This chapter tries to elucidate the dysfunctionalities that can emerge in the metasystem, so related to system 2 to 5.

14.2.1 "The Love for Rules and Regulations" and "The Peacefulness of Cemeteries"

In some organizations, one finds a preference or even love for a pronounced system 2 (see Fig. 14.5 and Pérez Ríos, 2012: 160f). In these organizations, the transformation of any disturbance into rules and maintenance of harmony and peace has become the ultimate goal and purpose to which everything else is subordinated.

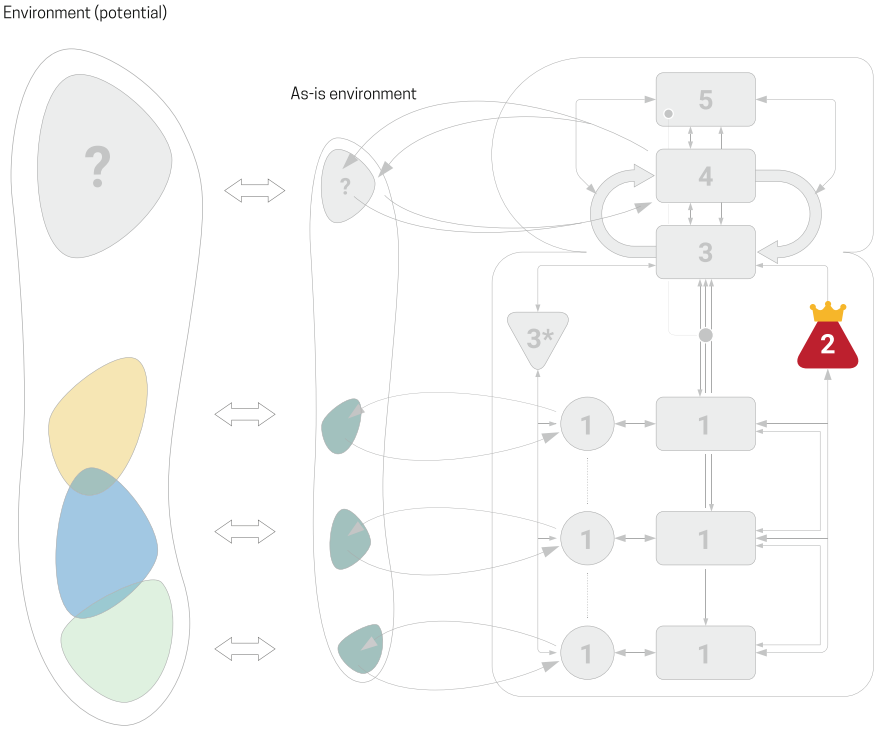

Fig. 14.5 Love for rules, regulations, and harmony lets one ignore and reduce the variety of the environment to one standard

Since no rule is perfect but can provoke conflicts concerning other rules, these organizations end up with rules and regulations of such a sophisticated elaborateness that they are not much inferior to the exquisite architecture of late Gothic cathedrals.

In these organizations, a fatal reversal of priorities typically occurs: Not the content counts anymore, but form and rules. One focuses more on the way in which system 2 regulates than what is being regulated: The focus lies on the ornamental elaborations of rules instead of the processing environmental complexity. This may even extend into areas of system 2 that are not directly related to the organization's operational processes, such as language, etiquette, and behavioral norms.

In job application interviews, for example, applicants are then judged rather by how much they fit to the organization's culture and behavioral repertoire than by their actual competence. Steering committees or board members then spend significantly more time discussing the formal quality of PowerPoint slides (e.g., "are all lines parallel?" or the colors used) than the content presented on the slides.

This dysfunctionality is also characterized by a desire for harmony and consensus-orientation. Such organizations prefer multiple coordination meetings with everyone to smooth out any potential controversies, rather than making "courageous" decisions. Typical of these organizations is that conflicts tend to become either sugar-coated or, even worse, swept under the carpet. Accordingly, one can expect to find quite a number of "white elephants" in these organizations, which cannot be addressed, and as taboos, they inhibit the organizations from further development.

This also has consequences regarding the handling of the environment: To maintain system 2 (i.e., the rules and harmony) disturbances must be filtered out of the environment. The environment becomes "trimmed" down and reduced to the part that is compatible with the organization's inner harmony. Where the environment is colorful, it becomes reduced to one standardized environment (see grey versus colored environments in Fig. 14.5). Customers who disturb this inner harmony become branded negatively as "troublemakers" and are avoided. Such an attitude jeopardizes further development, as uncomfortable customers can often be sources of innovation and product improvement as well as indicators or even incubators for new trends. The search for harmony leads to a "sleepy" organization that misses new developments because the inner harmony is too important to the organization.

14.2.2 "Big Boss"—Showing Power and Squeezing the Lemon

A dysfunctionality occurring relatively frequently in large established companies consists of a system 3 that is too dominant (see Fig. 14.6 and Pérez Ríos, 2012: 156f). In these organizations, the use of budgets and resources is too strongly determined by the company's overall view, and its emphasis on coherence, synergies, and overall optimization. The differences in the needs of the systems 1 are

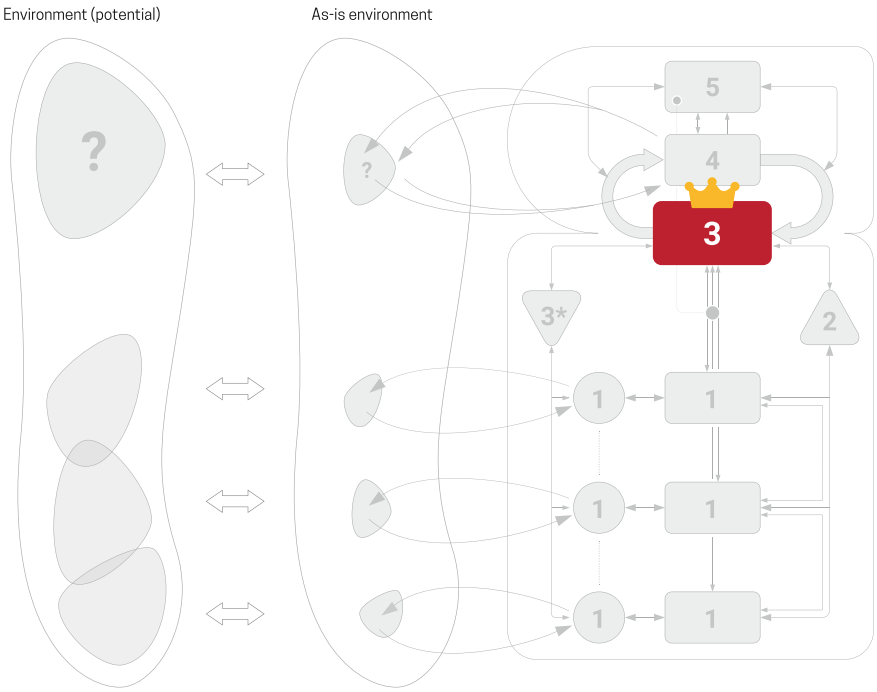

Fig. 14.6 Big Boss—A dominating system 3 Contains adaptation from Pérez Ríos (2008: 413, Fig. 28) and Beer (1995b: 136, Fig. 37)

negated and marked as unimportant. Essential is being the big boss no matter what, even if this harms the systems 1.

As a result, the systems 1 are limited in their freedom and flexibility and can no longer adequately react to the requirements of their respective environments. They cannot exhaust the full potential of their markets. Satisfying the metasystem becomes more important than customers. The requirements of the individual environments are subordinated to internal criteria: The level of profitability is more important than customer satisfaction, market share, business opportunities, or growth.

A dominant system 3 not only affects the operational organization but also the metasystem since such organizations aim to preserve the current state of the organization. They rather focus on its optimization ("Optimization down to the last detail") than on how to initiate development, change, and innovation. Such organizations keep the outward eye (system 4) largely shut.

14.2.3 "Trust Is Good, Control Even Better"

Organizations of a dominating system 3* (see Fig. 14.7) have two main types of objectives to which they subordinate all other decisions and activities: First, the complete elimination of surprises and risks, and second, the mastery and absolute perfection of operational efficiency. "Control freaks," "spies," and "risk minimizers," on the one hand, but also "penny pinchers" on the other, are thus the dominant personality profiles that can be found in such organizations.

The first type of objectives ("avoiding surprises and risks"), leads to a paralysis of the system 1 operations since they will try to avoid any risks as far as possible and reduce the environment to the purely calculable part. For system 4, too much emphasis on control leads to a particularly unfavorable context, since innovation and creativity increase the unforeseeability, and are, therefore, dangerous. Too much control thus results in a reduction of internal *eigen*-variety and to less adaptability. Paradoxically, the search for more certainty can then lead to its opposite; namely, a higher degree of uncertainty and risks due to the lower *eigen*-variety.

The second type of objectives ("optimizing operational efficiency") can lead the organization into an ever-tighter efficiency spiral. Savings seem to be "always

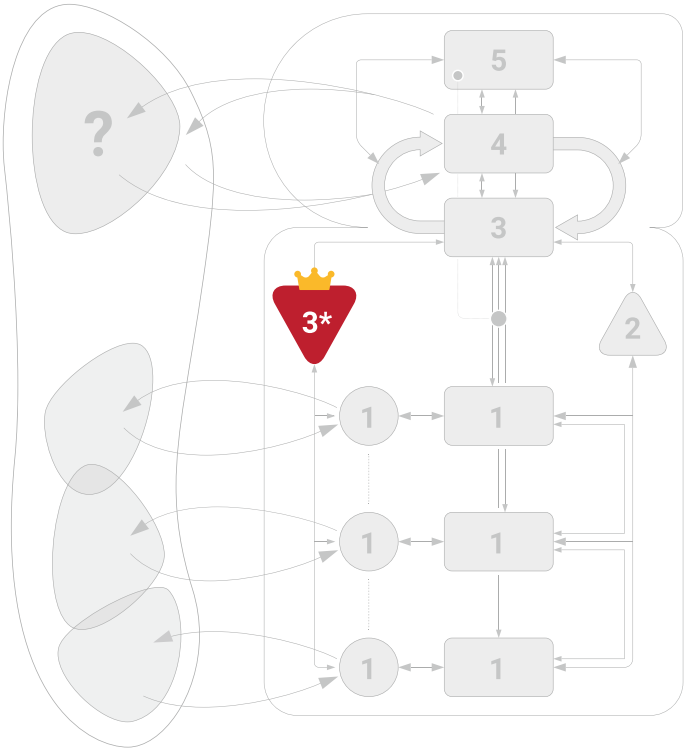

Fig. 14.7 Control freaks, penny pinchers, and cowards

possible" and so, one finds no possible end to squeezing the organization dry like a lemon. The consequence is, of course, that it reduces the *eigen*-variety and leaves no room for other important processes, such as the development of innovations that require a playful environment and generosity, or the development of a corporate identity, culture, and ethos through, for example, company outings with employees. As a result, system 4 and system 5 become endangered since the efficiency drive might eventually exhaust the "soul" of the company.

14.2.4 "Happy Engineering" and "We All Have to Be Creative"

If system 4 dominates (see Fig. 14.8), the company only lives in and for the future (see also Hoverstadt 2008). The current organization is just an annoying appendix that needs to be shaken off. The company's primary purpose is then to be a laboratory for inventions and creativity. In a manufacturing company in the automotive industry, for example, the R&D department saw itself as the core and primary purpose of the company. If the company had been an engineering office, this would have been true, but not if the purpose is the manufacturing of automotive-related products.

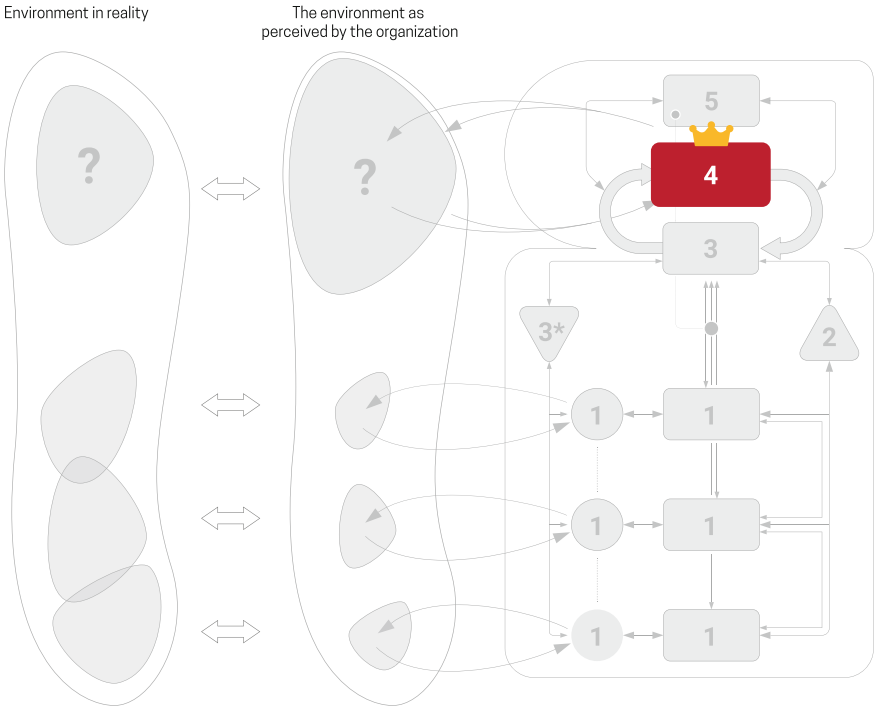

Fig. 14.8 Happy engineering and creativity workshop

A dominating system 4 can lead to disruptions regarding the operational organization and the environment if both cannot follow the speed of system 4 and are not allowed to voice their concerns. These are those tragic companies whose innovations were "ahead of their time and organization". Also, organizations that focus too much on the generation of ideas and less on their implementation or executives who come up with ten new ideas every morning and where their employees have not yet managed to work through the ten new ideas of the previous day are examples of a possibly too dominating system 4. Here, innovation and the operational part of the organization are not synchronized, and the operational organization cannot absorb the variety of system 4.

14.2.5 "Cultivating Traditions" and "Living in an Idealistic Dream World"

System 5 can dominate too. In these cases, decisions are made in favor of the preservation of specific values, norms, ideas, ideologies, and identities, neglecting the fact that the leading norms and ideas in the wider environment have changed and do not match with the organization's norms (see Fig. 14.9). In such instances, system 5 starts isolating itself from the operational organization and from the people or units developing the strategy or innovations (system 4) and ignores any advice or information regarding overdue changes.

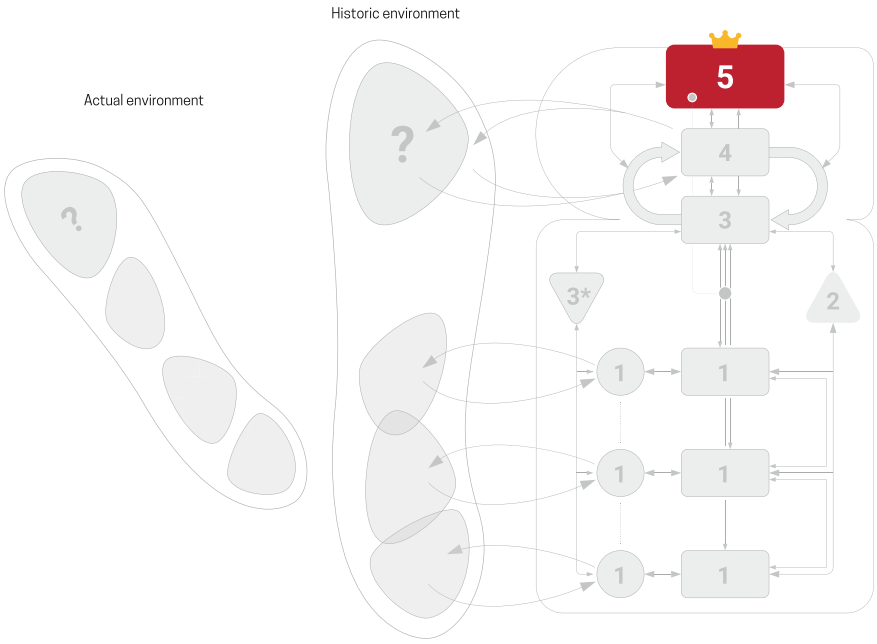

Fig. 14.9 Domination of the identity and history

Organizations built on ideological foundations, such as political parties, churches, and ideological associations, are especially vulnerable to such a dysfunctionality. A dominant system 5 can also develop, for instance, in old-established family enterprises, which are controlled according to the philosophy of the patriarch and founding fathers. The fact that the environments relevant to the organization are changing or even shrinking is accepted, even positively reinterpreted ("the sacred rest," and "the true customers are the ones who can value our work") to preserve the values and basic convictions from earlier times. One lives in a world as it should be or perhaps once was, and not how it is. To keep this imaginary world alive and not disturb its inner balance, the organization starts readjusting its relevant environment.

14.3 "L'Organisation Pour L'Organisation" ("Organizational Cancer")

If one wishes to summarize the dysfunctionalities mentioned above under a common principle, then it is the attempt of certain system functions within the organization to monopolize the organization and refocus the whole organization on themselves.

For Stafford Beer, however, these are not yet the most severe dysfunctionalities (1995a: 409f). A more serious situation arises when, for instance, the purpose of the organization is no longer to generate value for the environment, but if the sole purpose and goal of the organization has become the organization itself. The sole purpose of the systems 1 is to maintain the organization: The actual product of the systems 1 is not the product for the customers, but rather, the preservation of the higher system functions (see Fig. 14.10).

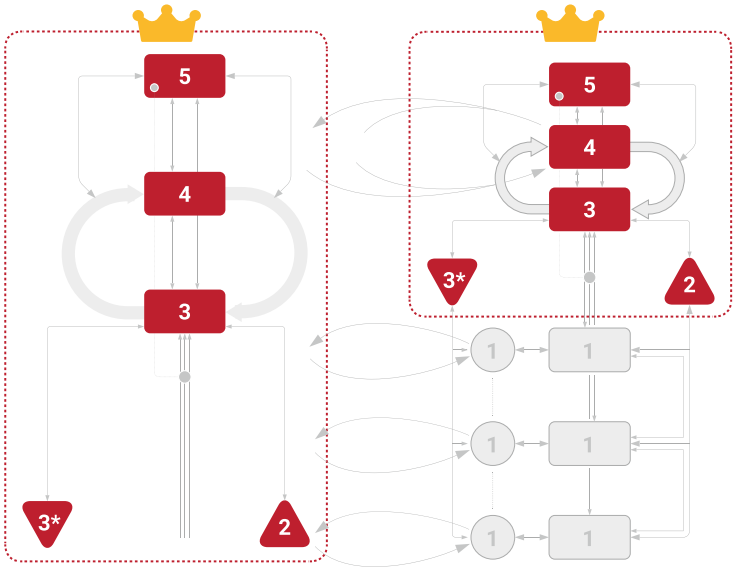

Fig. 14.10 The purpose of the organization is the organization itself

As a consequence, the real environment as a reference point disappears and becomes replaced by the organization itself as the new reference point. The organization becomes its environment. Stafford Beer described this with the image of organizational cancer (Beer, 1995a: 412; see also Hoverstadt: 2008): The meta-systemic functions take over and become the focus of the systems 1.

Similar to this dysfunctionality are dysfunctionalities in which the organization serves a purpose alien to its original purpose: The organization is then used as an instrument for other purposes, such as to prove oneself to or someone else (e.g., one's parents) or to cultivate social networks. The organization's primary environment such as customers becomes replaced with another (secondary) environment.

14.4 The VSM as Leadership Model and Assessment Instrument

One of the fascinating aspects of the VSM is that it cannot only be applied to organizations but that it also functions as a leadership model describing essential leadership tasks. If one takes a closer look at the day-to-day life of executives, one can see that they exercise many systemic functions described in the VSM: An executive or manager always needs to coordinate, control, allocate, optimize, audit, and keep an eye on new developments.

However, the importance and time allocation of the individual system functions may vary with the position and its complexity. For some management positions, the coordinating aspect is more important, while for others the operational management or the developments of strategies will be more important for a specific position.

From this, one can define a to-be profile for each position and compare it with the as-is profile, for example, regarding the time spent (Beer 1995a: 449ff) or the priorities set (see Fig. 14.11). In most cases, an executive should focus on

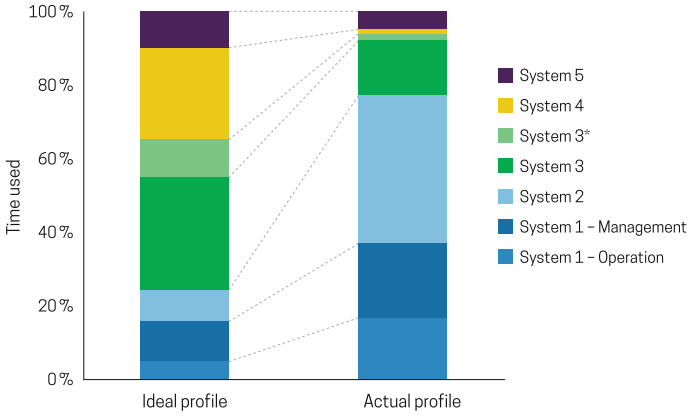

Fig. 14.11 Actual and ideal activity profile of an executive based on the VSM

controlling the operational organization (system 3) and developing a strategy (system 4). However, is this indeed the case? The reality is often different: Instead of working in the upper area of the metasystem, executives are too often involved in the day-to-day operations and its coordination.

Thus, the VSM provides us with an intriguing logic to illustrate imbalances in one's job. From there, one can then conduct a more specific root-cause analysis. Why is one more occupied with coordinating than with developing a strategy? Is it due to the individual, to colleagues, to the working environment or to the organization?

Similar to the organizational dysfunctionalities described earlier in this chapter, we can also use the VSM to illustrate **problematic management styles,** such as:

1. The **"Hands-on practitioner"** (operation/system 1 dominance):
   These are managers and executives who do not want to lead strategically and conceptually from behind a desk but instead prefer to work in the operational area with a wrench and hammer in their hand. They develop too little overall view and insight for their organization, and fail to see the opportunities and the need to develop synergies, new products, and strategic options.
2. The "**Coordinator and harmony addict**" (system 2 dominance)
   For managers and executives of this kind, standardized procedures and avoidance of conflicts are the top priority. Therefore, too little attention is paid to painful decisions such as regarding synergies, changes in structures and strategy, and the need to abandon what is dear to the organization but obsolete.
3. The "**Big Boss**" (system 3 dominance)
   These executives are fond of the "command channel," and the possibility to impose their will. Individual customer wishes and needs of the systems 1 are less important.
4. The "**Auditor**" and "**Control freak**" (system 3* dominance)
   The quote frequently attributed to Lenin that control is better than trust, best describes this group of leaders. The fear of being surprised or a fundamental mistrust of subordinates dominates their leadership style. The constant monitoring reduces the self-initiative of their employees, their attempts to solve problems (everything must be approved from above) and their creativity.
5. The "**Visionary**" (system 4 dominance)
   These are the managers for whom the present has already become the past, and who live only in the future. Changing the current organization cannot happen too fast enough. This not only overburdens the operational organization but also the environment, which cannot identify the common thread among all the changes and new ways proposed. These executives fail due to their speed, which others cannot match.
6. The "**Ideologist**" (system 5 dominance)
   There are also, of course, those who want to see everything as a matter of principles or want to reduce every question to fundamental principles. This, however, costs time and flexibility. In today's world, where principles or at least

their application must be more flexible, the organization loses agility and responsiveness. Too much is then judged from a "dogmatic" perspective, without taking the specific challenges into account pragmatically.

7. The "**Big picture thinkers**" or the "**Lovers of detail**" (wrong recursion level) These are the managers who work and think at the wrong recursion level such as managers who can only think in the big picture (changing the global markets) but forget the operational details, where their great plans might ultimately fail. Conversely, there are those executives who focus only on operational details and do not realize that in the wider overall environment, their operational processes will change dramatically.

Whatever leads to these dysfunctionalities—the personality of the executive, his/her employees, or the structure—the VSM provides a first practical framework to diagnose and express the one-sidedness of certain leadership behaviors. This type of analysis can, of course, also be made for an entire management team. Often it helps to ask for different assessments regarding existing processes and structures and confront them with each other (e.g., through a 360° feedback).

Summary

- Dysfunctionalities of the purpose can occur if an individual system element becomes the primary purpose of the organization. The way a system element wants to process variety then determines and limits the entire organization.
- A serious dysfunctionality emerges if an organization becomes an end in itself. The organization then no longer possesses a corrective function and cannot counterbalance its variety reduction.
- VSM can also be applied as a template to diagnose leadership dysfunctionalities such as when executives or managers exercise some system functions to an extent not compatible with their job profile and responsibility.

Questions for Reflection:

1. Which dysfunctionalities from this chapter do you recognize in your organization?
2. To what extent does the organization place more importance on itself than on its environment?
3. What does your personal leadership profile look like (see Fig. 14.11)? Does your as-is profile correspond to the profile that is expected regarding your position and function?

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Epilogue

A Word of Caution and Outlook to Volume 3

During this book, I suspect that you may have found some dysfunctionalities that apply to your organization. However, one must be careful with a too rushed judgment for two reasons.

First, most of the dysfunctionalities are of a **relative nature** (i.e., they express only an inequality). What appears to be a weakness can perhaps be so because the other side is too strong. Is the real problem the weakness of one system function, or instead, the dominance of the other system function?

Representatives of system functions also tend to recognize failures in other system functions more rapidly than in their own. System 3 tends to describe itself as less likely to be dominant but rather attributes this dysfunctionality to its systems 1. Conversely, systems 1 also tend to see themselves as confronted with a too strong system 3. Since the truth is always subjective, the correct relationship can only be found in the precise understanding of the varieties to be processed, and to achieve this requires a discussion with the representatives of the different systemic perspectives (i.e., system functions and recursion levels).

Second, dysfunctionalities might **arise temporarily in response to other dysfunctionalities** so to correct them. Only by becoming transitionally dominant can system 3 reduce the dominance of the systems 1. This **overshooting effect**, results from the accumulation of necessary critical mass to rebalance internal equilibria and is thus not necessarily a dysfunctionality. From this perspective, a dysfunctionality, if only temporary, can be quite useful. The overshooting only becomes dangerous if it leads to permanent oscillations in which the organization is thrown from one dysfunctionality into the next.

Having come to the end of volume 2, we have now reached a more profound level of understanding of what viability means and what it needs for organizations to flourish. In volume 3, we will return to our traditional image of organizations and

W. Lassl, *The Viability of Organizations Vol. 2*,
https://doi.org/10.1007/978-3-030-16473-7

seek to understand what the VSM can teach us regarding the design and the changing of organizational (chart) structures. Much of what we have discussed in this volume forms the basis for volume 3. We have successfully laid a solid groundwork, now we can build the house.

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