Chapter 6
Setting up the Decision Support

When facing a complex planning problem requiring strategic decision making the concerns initially relate to gaining insight into the 'nature' of the problem and to 'sweeping-in' all aspects of relevance. This initial phase is of utmost importance as it will influence all activities along the way towards making the 'best' strategic choice later on in the process by assessing the decision alternatives that have been identified. Ideally we can consider the following main steps:

- Scanning
- Scoping
- Assessing
- Choosing

Scanning may be perceived as a kind of broad, principally non-bounded search. In this respect Tables 5.1 and 5.2 can inspire us generally as a kind of multifaceted 'cognitive billboard' and more specifically by the way it frames and makes available different, explorative modes of enquiry. In practice—recognising the previously stated circularity between scanning and assessment—scanning with an intent, seen even loosely as just getting informed about the actual strategic decision task, expresses the commencement of the scoping that aims at finally producing a range of decision choice alternatives. These can be seen as the scoping condensation of the horizon of possibilities.

Setting up decision support will require that we, in principle, avoid any constraining of the way we deal with the problem. In practice on the basis of the principles on which the systemic planning (SP) approach has been set out this means that all the five modes of enquiry (MOEs) should be adopted. Hereby we seek to include in principle a 'sufficient' range of matters that we judge as important.

The validity of proceeding like this will be discussed more closely in the final Chap. 8. From a practical viewpoint the MOEs in the SP framework are seen to represent a rather wide range of possible ways for exploring a complex planning problem.

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Table 6.1 The five modes of SP enquiry

Systemic planning (SP) mode of enquiry (MOE)	Mainly involves the following methodology
Core performance	Hard methodology
Wider performance	Hard and soft methodology
Fairness	Soft methodology
Diversity	Hard and soft methodology
Robustness	Hard and soft methodology

Below the five MOEs are reiterated with some consideration of their main use when placed in a context of planning and strategic decision making:

MOE 1: FUNCTIONAL aiming at improving goal seeking and viability
MOE 2: INTERPRETIVE aiming at exploring purposes
MOE 3: EMANCIPATORY aiming at ensuring fairness
MOE 4: POSTMODERN aiming at promoting diversity
MOE 5: COMPLEXITY aiming at recasting systemic perceptions

Based on Tables 5.1 and 5.2 each MOE is meant to inspire and guide exploration along one particular axis of insights; evidently the cognitive search in this respect can in no way be finished. Therefore we have to speak of modes and not of activities. As each mode in the tables is set out in a general way and not particularly for planning relating to complex strategic choices, we have to come to terms with how the MOEs can become most 'cognitively effective' when applied in a context of planning and strategic decision making.

As concerns MOE 1 and MOE 2 goal seeking and viability together with exploring purposes may become precise if seen as relating to *core performance* and *wider performance* respectively. These formulations set focus on efficiency and effectiveness as will be described below. MOE 3 and MOE 4 about *fairness* and *diversity* respectively, can enter directly into methodology, while MOE 5 is seen as having its focus on *robustness*, also to be treated further below.

With these modifications the five SP MOEs in Table 6.1 have been outlined, which will guide the practical aspects of applying SP for complex strategic choices.

The following sections will specify the methodology. First scoping will be treated in Sect. 6.1 and afterwards assessing in Sect. 6.2. Both sections serve to lay a basis for the treatment of the topic of choice intelligence addressed in Sect. 6.3. Choice intelligence is coined in this presentation as a collective term for judging more closely the overall effort and capability relating to decision support.

6.1 Scoping the Strategic Choices

The main purpose of scoping is the sweeping-in of all relevant information for the determination of a preliminary set of strategic choice alternatives. The choice alternatives are described as preliminary as each of these can be modified later in

the process if such alteration is desirable for some reason. What matters, however, in this early stage is that we do not exclude an option that could later on—in case it had been included—turn out to be a serious competitor among the alternatives to come forward as the best choice. In a way then scoping is concerned with a kind of boundary setting between what may loosely be described as included in the decision space vs. excluded from the decision space. In a more mathematical language we would describe this as omitting the fallacy of engaging in suboptimisation.

Experience shows that sometimes scoping is paid too little attention as the alternatives to be worked on more or less seem to present themselves. This may, of course, be true in some cases. In complex, strategic decision making, however, scoping becomes important as the boundary setting it represents is generally a main element of the challenge represented by a complex plan problem.

On this basis all relevant modes of enquiry ought to come into play as they explore our cognitive capability for what may facilitate the transformation of a complex strategic decision problem into a set of choices that represent some initial constraining of the decision space. Therefore this constraining should generally be influenced by concerns of core and wider performance, fairness, diversity and robustness, see Table 6.1.

Typically the strategic decision challenge arises on a background triggered by either an opportunity or a threat or a combination of both. As it can be assumed that the team addressing the strategic decision will have some preknowledge about the possible core performance of alternatives—some screening may be available with rough estimates—the wider performance and the fairness, diversity and robustness issues come into the fore. Scoping therefore makes it reasonable to dig deeper into the MOEs exploring such issues, and as already indicated in Table 6.1 this is the field of the soft methods in the toolbox.

6.1.1 The Soft Methods in the Toolbox

The following soft methods are included in the toolbox:

- Brainstorming (BS)
- Mind mapping (MM)
- Strengths, weaknesses, opportunities and threats (SWOT)
- Critical systems heuristics (CSH)
- Soft systems methodology (SSM)
- Stakeholder analysis (STA)
- Futures workshop (FW)

The first three methods are well known and practised in a number of more or less formal versions (Leleur 2008). Brainstorming may range from ‘free-and-open’ discussion to a version based on rules, where a facilitator conducts the session that will typically contain a sequence of questions; mind mapping is also relatively

well known, where ideas and especially how they interrelate are brought forward successively as the process goes on and ends up presenting the team involved with what is sometimes called rich pictures. Especially wider concerns and diversity issues can be shed light on using brainstorming and mind mapping in combination. A more structured way of thinking about the complex, strategic problem can be obtained by a SWOT analysis, where internal and external factors are approached by imagination and consideration of respective strengths versus weaknesses and opportunities versus threats leading to a SWOT-matrix that can facilitate the further process of scoping the alternatives.

What constitutes the differences between the methods is their balance between being unstructured and thereby allowing open discussions and being more structured and thereby securing a relevant result (in some respect) to come out of the efforts; needless to say that no right balance in this respect can be prescribed.

A concern always present in processes preparing decision making is the amount of time and resources being consumed. If the team includes—in addition to analysts—a number of senior people from either the middle or maybe even the top-level of the organisation this concern becomes even more outspoken. Typically this will inhibit the use of methods more demanding in time than brainstorming, mind mapping and SWOT. However, there may even on this background be good reasons to apply a more demanding soft method that has shown a capability to 'dig out' knowledge about the decision problem in hand and have a critical influence on the outcome of the process. In the systemic toolbox the available methods are critical systems heuristics (CSH), soft systems methodology (SSM), stakeholder analysis (STA) and futures workshop (FW). Of these four methods the first two will be described below with regard to their potential. The latter two methods are less demanding in prescribed content but not in time, and they are treated explicitly as part of the demo-case in Chap. 7. As this is not the case with regard to CSH and FW, the following two subsections will concern CSH and SSM, both of which have a strong record of practical applicability, for which reason they are part of the SP toolbox.

6.1.2 Critical Systems Heuristics

Critical systems heuristics (CSH) was developed by Werner Ulrich in the 1980s and has had a profound influence on management thinking based on systems theory. It presented around 12 questions which enable the team to reflect upon circumstances of critical importance, see Table 6.2 (Ulrich 1983, pp. 240–264; Jackson 2000, p. 318).

It should be noted that the 12 questions in Table 6.2 are given in "is" mode (Who is the actual client …, etc.) and that Ulrich in parallel to this uses the same questions in an "ought" mode (Who ought …, etc.). By using CSH, the answers to the questions lead towards a first mapping of critical issues of relevance for the formulation of decision choice alternatives.

Table 6.2 Critical systems heuristics (CSH) as methodology based on 12 questions

Critical systems heuristics as 12 questions
1. Who is the actual *client* of the systems design?
2. What is the actual *purpose* of the systems design?
3. What is the built-in *measure of success*?
4. Who is actually the *decision-maker*?
5. What *conditions* of successful planning and implementation of the system are really controlled by the decision-maker?
6. What conditions are not controlled by the decision-maker (i.e. are in the *environment*)?
7. Who is actually involved as *planner*?
8. Who is involved as *expert*, and of what kind is the expertise?
9. Where do the involved seek the *guarantee* that their planning will be successful?
10. Who among the involved *witnesses* represents the concerns of the affected? Who is or may be affected without being involved?
11. Are the affected given an opportunity to *emancipate* themselves from the experts and to take their fate into their own hands?
12. What *world view* is actually underlying the design of the system? Is it the view of (some of) the involved or of (some of) the affected?

Adapted from (Jackson 2000, p. 318)

The intention behind the CSH tool is that all 24 questions consisting of the 12 "is"-questions and the 12 "ought"-questions should be carefully dealt with. However, in practice—evidently depending on the actual problem—it is the experience of applying CSH as part of the SP framework that it is perceived as cumbersome (at least by some people participating in the team) to pay the method full respect in this way. Therefore an alternative way of making use of CSH is to concentrate on the questions that seem to be most relevant and productive with regard to obtaining new insights concerning the particular problem dealt with. However, CSH used in this selective way can also be really worthwhile.

6.1.3 Soft Systems Methodology

Soft systems methodology (SSM) was developed by Peter Checkland in the 1980s in the same years as CSH originated. While CSH is basically a critically reflecting type of questionnaire, SSM is set up as a learning cycle (Checkland 1981; 1985), with a prescribed content of process to be carried out.

The structure of SSM is made up of seven interrelated activities, which proceed from 'finding out' to 'taking action'. The activities are: (1) Problem situation: unstructured, (2) Problem situation: expressed, (3) Root Definitions of relevant human activity system, (4) Conceptual Models of the system concepts named in the Root Definitions, (5) Comparison, (6) Changes: desirable and feasible and (7) Action. As a principal trait of the methodology, it should be noted that

activities nos. 1, 2, 5, 6 and 7 are embedded in what Checkland terms the real world, while nos. 3 and 4 are seen as systems thinking about the real world. The structure described is shown in the upper part of Fig. 6.1.

The principle of SSM can be understood by surveying the stages of the methodology. Stages 1 and 2 try to build as rich a picture of the problem situation as possible. This implies collecting several perceptions. Specifically, it has been found relevant to investigate both a slow-to-change structure and a continuously changing process. By relating structure to process, essential characteristics of the situation may be revealed. The function of the initial stages is to obtain an expression which can serve as a background for relevant choices.

The subsequent stage 3 concerns what Checkland calls Root Definitions. Their purpose is to define one or more relevant systems in a way that makes it possible to discuss their nature more openly. Such definitions constitute a survey of the problem situation and provide the base from which such a survey and its implications can be further developed. It should be emphasised that we are not dealing with real-world problems in stages 3 and 4, but with intellectual constructs or ideal types. In this way, each Root Definition (RD) or set of Root Definitions is an abstract ideal type of a purposive system that Checkland calls a Human Activity System.

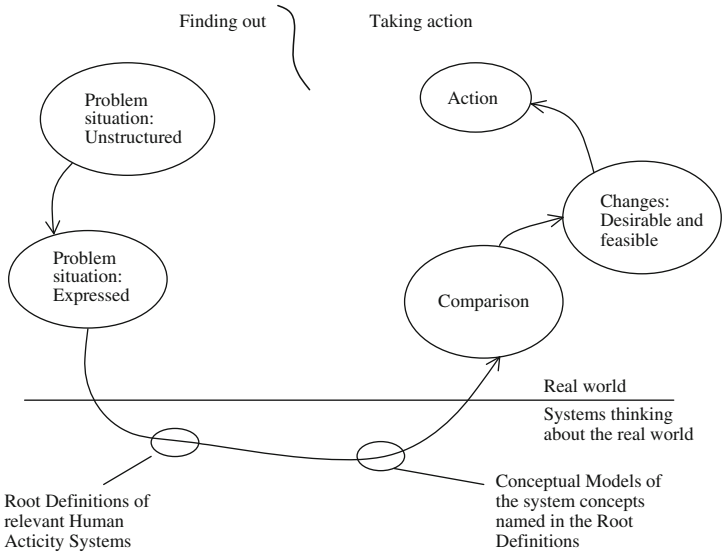
In stage 4, what Checkland calls Conceptual Models is formulated. This can be done by simply bringing different verbs together, but more formal systems rules formulated as part of the methodology can also be applied. Conceptual Models can be seen as structured sets of activities combined logically in accordance with their underlying Root Definitions. Thus, these models are not 'in' the real world either, but are a refinement or further building up of the ideal thinking.

The aim of stage 6 is to make use of the comparison results obtained in stage 5 to discuss possible, relevant changes. These should be both desirable on the basis of the insights from Root Definitions and Conceptual models and they should also be culturally feasible in the actual context.

In stage 7, action should be taken on the basis of the outcome of stage 6, whereby the learning cycle is closed and a new situation obtained.

The outlined SSM stages can be based on further explanation. Among other things a mnemonic "CATWOE" has been devised that can function as a kind of checklist for further considerations. Each letter indicates a type of question or consideration to be reflected upon, for example W for "Weltanschauung", where the German word for world view has been chosen to indicate a certain view behind a specific Root Definition and its associated Conceptual Model. The other letters in the mnemonic are explained in the lower part of Fig. 6.1.

Next, in stage 5, a comparison is carried out between the findings from stage 2 and the suggestions derived from the Conceptual Models in stage 4. Now we are dealing with real-world problems once more by asking what features of the Conceptual Models are especially different from present reality and why.



Consideration		Amplification
(1)	"Ownership" (O)	Ownership of the system, control, concern or sponsorship; a wider system which may discourse about the system
(2)	"Actors" (A)	The agents who carry out, or cause to be carried out, the transformation process(es) or activities of the system
(3)	"Transformation" (T)	The core of the RD; a transformation process carried out by the system; assumed to include the direct object of the main activity verb(s)
(4)	"Customer" (C)	Client (of the activity), beneficiary, or victim, the sub-system affected by the main activity(ies); the indirect object of the main activity verb(s)
(5)	"Environmental and wider system constraints" (E)	Environmental impositions; perhaps interactions with wider systems other than that included in (1) above, these wider systems being taken as given
To this list is added the sixth item which is, by nature, seldom if ever explicit in a root definition but is always implicit and always relevant:		
(6)	"Weltanschauung" (W)	The (often unquestioned) outlook or taken-for-granted framework which makes this particular RD a meaningful one

Fig. 6.1 Soft systems methodology (SSM): Process and a mnemonic checklist ("CATWOE") for particular considerations. Adapted from (Checkland 1985, p. 19)

We can sum up the meaning and potential of SSM the following way (Leleur 2000, p. 201):

- It is important not to restrict the planning unintentionally, that is not to impose any kind of unwanted closure
- Basic choices with regard to concepts (Root Definitions) and their use in modelling (Conceptual Models) fundamentally bias the whole planning process, and
- Radical considerations may be made possible if alternative ideal constructs are cultivated and confronted with an expressed real-world problem situation.

6.2 Assessing Consequences and Risks

Assessing consequences and risks become important when scoping has produced a set of strategic choice alternatives. With the core performance of the alternatives addressed at best in doing a screening based on rough estimates in the scoping, it now becomes essential to take a closer look at each alternative by asking fundamentally whether it remains attractive with a view on both its core performance and its wider performance. Scrutinising each alternative in turn will also lay the basis for a subsequent exploration of their relative attractiveness.

While scoping was conducted principally on the basis of the soft methods in the toolbox, examination of the attractiveness, at least at the beginning of the assessment process, will be dominated by analytic methods referred to as belonging to the category of hard methods.

6.2.1 The Hard Methods in the Toolbox

The following hard methods are included in the toolbox:

- Cost-benefit analysis (CBA)
- Analytic hierarchy process (AHP)
- Simple multi-attribute ranking technique (SMART)
- Scenario analysis (SA)
- Preference analysis (PA)
- Risk analysis based on Monte Carlo simulation (RA)
- Composite methodology for assessment (COSIMA, SIMDEC)

The examination of core and wider performance will primarily draw on the functional and the interpretive MOE respectively.

Generally the core performance will comprise economic issues such as gains termed benefits and expenditures termed costs. The wider performance of a choice alternative will concern other issues that cannot be treated in money terms.

Therefore in SP, core and wider performance are approached as economic and non-economic assessments respectively.

Not surprisingly economic assessment in organisational decision making is a prominent issue and rightly so as organisational development (or in a more pessimistic mode: organisational survival) depends on a combined outcome of decisions made (strategic, tactical and operational) that at the end of the day—or better in an accounting perspective: end of the year—should consist of black figures on the bottomline instead of red ones. What complicates this matter when focusing on strategic decision making is that often it is not possible to obtain an economic assessment that covers the attractiveness of the decision choice alternatives in a satisfactory way. *With complex strategic choices we typically face the challenge that matters of importance are non-economic*.

In the SP framework this is treated by assessing the core performance by use of cost-benefit analysis and the wider performance by use of multi-criteria analysis. Both methods belong to the hard methods in the systemic toolbox. To see them as analytic (requiring a functional MOE) and semianalytic (drawing also on the interpretive MOE) respectively, will follow from the way they are described in the subsections below. As concerns the other hard methods, scenario analysis and preference analysis will be part of the demo-case description in Chap. 7, whereas a description of risk analysis as applied in SP will follow after the subsections below about cost-benefit analysis and multi-criteria analysis.

6.2.2 Cost-Benefit Analysis

With the strategic choice alternatives laid down, the assessing of the consequences will depend on the nature of the consequences identified. In our 'monetised' world the first issues addressed are often those where consequences are identified by being described in money terms such as expenses and gains, or in the language of economics as costs and benefits. This type of assessment is what we know as cost-benefit analysis (CBA). No doubt CBA is the most commonly known methodology; in the sphere of private firms it is also known as financial analysis (FA). The way of thinking is the same in CBA and FA. However, it should be noted that the CBA comprises primarily societal consequences, whereas FA may delimit its focus solely on the firm. There need not, however, be an easy way of delimiting such a focus as, for example, the BP Explorer accident in the Mexican Golf in April 2010 and the subsequent mitigation efforts demonstrate.

The approach of CBA is quite simple: What does it cost? What comes out of it? The logic of the analysis consists of selecting the decision choice alternative that gives 'the most' for 'the least'. This should accordingly result in a favourable situation with a 'surplus' by implementing the identified best decision alternative.

Considering a set of alternatives, the choice is thus determined by implementing the alternative that causes the greatest surplus. In a strict sense, this can be modified to choose the alternative which will lead to the highest return per

invested monetary unit. This modification becomes especially relevant when it is not possible to provide the investment required by the typically expensive alternative that will produce the highest net surplus. Economic theory has developed a series of investment criteria known as net present value (NPV), benefit-cost rate (BCR) and others that according to economic theory provide guidance on what should be done under given conditions (Leleur 2000).

As mentioned the consequences covered by CBA are referred to as the economic consequences. This has made it relevant to address all those highly diverse consequences that cannot be covered by a CBA as the non-economic consequences. In general it can be stated that complex strategic choices will comprise not just economic consequences but also non-economic consequences. Actually the latter will tend to dominate in many strategic decision situations making their inclusion in deliberate strategic decision making simply necessary. In somewhat self-contradictory terms one can say that non-economic consequences count (!) in strategic decision making. The non-economic consequences are treated by using multi-criteria analysis.

6.2.3 Multi-Criteria Analysis

Multi-criteria analysis (MCA) differs from CBA as direct pricing of the different elements as in a CBA is not possible. Instead weights are used to replace the missing monetary unit prices. Whereas CBA was established within economics as a decision making approach in many countries and problem contexts back in the 1960s, a similar development has not taken place as concerns MCA. It should be noted also that MCA compared to CBA has a different disciplinary origin as MCA was developed within operations research as one of several specialised fields for utilising mathematical methods and models. Thus basically MCA is concerned with the relative importance of different criteria as opposed to CBA where unit prices reflect some sort of objectivity. Two quotations can shed light on the differences between CBA and MCA. The first one sets focus on the importance of user input in MCA:

> *Multi-criteria analysis is a fairly recent method for assessing and selecting projects exerting complex socio-economic effects. In this method, the individual assessment elements are taken separately and measured in the appropriate dimensions. … the criteria will have to be weighted among each other because they are not of equal relevance. Determining the weights requires much responsibility and expertise from the decision-maker as the weights have considerable influence on the results of the assessment.* (ECMT 1981, pp. 16, 23).

The second quotation has a focus on the short-comings of market pricing and perceives MCA as an engineering approach in contrast to an economics approach. In a comprehensive presentation of MCA methods for regional planning from 1988, it is stated that:

> *… there exists the situation where the market price mechanism is not any longer well functioning and for which alternative evaluation criteria have not yet been well established. The market price mechanism combined with the efficient allocation of resources has not worked as the proper evaluation index for planning. This problem is known as "market failure". A major subject of MCDM (multicriteria decision methods) research is thus to resolve the theoretical evaluation problem. … this research … highly intends to take problem-solving as well as problem-findings aspects into major consideration: thus this is an "engineering" approach in contrast to an "economics" approach.* (Seo and Sakawa 1988, p. xiii).

Hence, MCA methods are informed by preferences that are available from decision makers. For this reason MCA accommodates an open-ended process much better than is the case with CBA. One may say that in this way CBA takes on a tinge of objectivity compared to MCA. The purpose of MCA is therefore not to find some kind of correct, hidden answer but rather to assist the decision makers in mastering the (often complex) information involved and advancing towards a solution (Gissel 1999; DMG 2010).

Two main branches of MCA methods have been found particularly useful for assisting decision making regarding complex strategic choices. One concerns using multi-attribute utility theory and is represented in the toolbox with SMART (simple multi-attribute ranking technique). This type of method consists of scaling and weighing the different attributes of the alternatives to achieve the one which scores the highest. The other branch proceeds by applying pairwise comparisons, which has been found useful in the way decision makers can be involved in the assessment. This methodology is represented in the toolbox by AHP (analytic hierarchy process). AHP is by far the most wellknown of the pairwise MCA methods. Another method is REMBRANDT (ratio estimation of non-dominated alternatives); REMBRANDT can overcome certain difficulties that may arise in an AHP session. The practical use of the SMART and AHP methods is presented in Chap. 7, and further information about SMART, AHP and REMBRANDT is given in Appendices A and B about the COSIMA and SIMDEC methodologies.

6.2.4 Uncertainty and Risk

Other hard methods in the toolbox address the core and wider performance of the alternatives as regards uncertainty and risk. These types of examination draw on the MOEs of fairness, diversity and robustness. Typically these can inspire "what-if"-questions of a wide range. In this respect scenario analysis (SA) is a well-known methodology, where critical assumptions are derived from scenarios representing what is perceived as possible, plausible and internally consistent images of the future (Leleur 2008). Preference analysis (PA) is a kind of hard version of the softer stakeholder analysis (STA). Typically analysts and modellers can identify certain parameters that they interpret as being sensitive with regard to the different decision interests involved (Ibid.). In the general demo-case in Chap. 7 it will be seen

that the employees and management of the company TRANS-IT Consult have different opinions, which may have an influence on what is the 'best' relocation decision.

Uncertainty may hamper the expected outcome of a decision. Therefore complex strategic choices clearly involve various types of risks. The higher complexity involved due to the open-ended type of change earlier seen as characterising the strategic decision (with tactical and operational decisions seen as related to closed and contained change, respectively) means that the risks involved are important. In the SP framework risk analysis (RA) by use of Monte Carlo simulation is included as one of the hard methods in the systemic toolbox. But as will be underscored in what follows—mainly in Chap. 8—this type of calculation has to be accepted with caution. Uncertainty and risk analysis is also treated in Appendices A and B about the COSIMA and SIMDEC methodologies linking, respectively, cost-benefit analysis and multi-criteria analysis in COSIMA and multi-criteria analysis and risk analysis in SIMDEC.

6.3 Creating Choice Intelligence

In Chap. 4 a systemic process was outlined and in Chap. 5 a systemic toolbox was presented, which in this chapter has been specified as concerns the potential of the individual seven hard and seven soft methods to contribute to providing decision support for complex strategic choices. How can this lead to better strategic choices?

Some information will be given in Chap. 8 based on ten cases where SP has been applied. At this stage the question will be reformulated and answered in a more indirect way: Is SP able to create what I will term choice intelligence?

Answering this makes it necessary to take a closer look at intelligence as a concept in general and try to distil what kinds of intelligence are in demand when undertaking complex strategic choices. The following definition of intelligence has been set out by the Board of Scientific Affairs of the American Psychological Association (APA):

> *Individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought. Although these individual differences can be substantial, they are never entirely consistent: a given person's intellectual performance will vary on different occasions, in different domains, as judged by different criteria. Concepts of "intelligence" are attempts to clarify and organize this complex set of phenomena. Although considerable clarity has been achieved in some areas, no such conceptualization has yet answered all the important questions, and none commands universal assent. Indeed, when two dozen prominent theorists were recently asked to define intelligence, they gave two dozen somewhat different definitions.* (Neisser et al. 1995).

There seems to be no definite way of defining intelligence, but as part of the quotation we get to see that attempts to clarify and organise complex phenomena are a kind of indicator. Coining the more specialised concept of *choice intelligence* we can define this as:

An ability to clarify and organise complex phenomena concerning foresight and related decision making based on constructive circularity.

Specifically this clarifying and organising centre around a process that builds on in principle unending *scoping* of a range of 'best possible' choice alternatives and *assessment* of their consequences and risks, which can point out 'the best' among the alternatives. That the process is in principle unending is due to the constructive circularity paid attention to earlier in Chaps. 2 and 3 stating that the scoping will frame the assessment and the assessment will frame the scoping.

6.3.1 SP as Multi-Methodology Approach

Combining methods from the SP toolbox builds on the assumption that a more coherent and comprehensive understanding of a complex strategic choice situation can be obtained using different ways of 'epistemic seeing'. The contrasting of a Simplicity paradigm with a Complexity paradigm and the introduction of the five SP modes of enquiry, see Table 6.1, have this assumption as their rationale. We will generally refer to this type of epistemological thinking as integrative or cognitive pluralism (Mitchell 2004).

In practice cognitive pluralism in management thinking is behind the advocacy of methodological pluralism, where the following three types have been categorised (Mingers and Gill 1997, p. 9):

Loose pluralism: encourages a variety of paradigms and methods but does not specify how or when they should be used.
Complementarism: different paradigms are viewed as internally consistent and based on different assumptions about their context of use, such that each paradigm would be seen as more or less appropriate for a particular situation.
Strong pluralism: assumes that a situation often would be dealt with more effectively with a blend of methodologies from different paradigms.

In SP it is common for both soft and hard methods to be used. Thereby—given the methods represented in the toolbox—all five modes of enquiry (MOEs) ranging from core performance, wider performance, fairness, diversity and robustness can be utilised. Clearly this represents a cross-paradigmatic multi-methodology approach, see Tables 5.1 and 5.2, which adhere mostly to the category of strong pluralism.

6.3.2 SP as Teamwork

In Chap. 4 the systemic process leading forward towards a situation where a decision about complex strategic choices could be made was related to the building of competence, and in Chap. 5 a systemic toolbox was formulated with individual methods and techniques categorised as being either hard or soft. What characterises the use of formal models and group deliberations? Gilboa has raised the issue of how unqualified decision making can be avoided:

> *… the use of formal models may be of great help … working in groups and brainstorming often helps. This should be qualified, because group decisions are not always better than individual decisions. Groups that differ in their motivation may find it hard to make coherent decisions, and if they do, the decisions may be very conservative, and may also be swayed by charismatic personalities. But individuals who discuss a problem together and then go their own ways to make individual decisions will generally make better decisions than they would on their own. Groups tend to be better than individuals in sheer analysis, with many ideas being brought up, challenged by others, compared, and analyzed.* (Gilboa 2011, p. 20).

No doubt, according to Gilboa, group processes aiming at preparing and maybe also taking a decision are beneficial if motivation is shared by all participants and the decision problem is one that encourages the participants to come up with ideas. This is how we may often see a situation with complex strategic choices. At the same time, however, Gilboa makes the point that working in groups should be qualified and thereby carefully designed and prepared.

It is essentially the purpose of SP to qualify such group processes. In the underpinning theory some effort has been made to see such an endeavour as being secured by drawing on and combining different epistemic lenses and paradigms. Specifically, the cognitive billboard, see Tables 5.1 and 5.2, has helped formulate the SP toolbox. The billboard can, however, also be used more directly in the SP process as a means to make the individual members of the team 'cognitively alert'. This is done early on in the process simply by letting the team members discuss what the individual patches 'really may express' and whether their messages are relevant for the complex planning problem in hand. Experience of using such 'free-styling' shows that this can be a way of getting the team together around the complex planning problem to be dealt with.

Taking the advice as set out in the five-stage learning model by Dreyfus and Dreyfus at its face value and seeking to climb the different competence levels add up to what may be a quite cumbersome, demanding and time-consuming process. In practical strategic decision making the process cannot in principle be unending. In practice decisions need to be taken—or they will sometimes take themselves as no strategic decision is also a strategic decision. We can say with Stacey that the future is under perpetual construction.

So when is a person or a team ready for a decision?—with Luhmann ready to move forward in the unending process made up of the following steps: (1) forced to select → (2) contingency → (3) risk → (1) forced to select etc.

Even acknowledging that highly successful strategic decisions may have been taken by one single person with a short time to prepare it, it is the idea and message of this book that for important complex decisions it is worthwhile to spend time and accumulate a certain amount of efforts for preparing decision making. At the same time it is worthwhile—with the way the SP framework has been set up—to organise the strategic decision making as a group effort. Therefore SP is best pursued as teamwork as will also be the case in Chap. 7, which presents an example of company relocation. For a company to relocate its headquarters, this type of problem is certainly an issue involving a situation with complex strategic choices.

Main points and findings of this chapter

- When facing a complex planning problem requiring strategic decision making the initial concerns relate to gaining insight into the 'nature' of the problem and to considering in principle all aspects of relevance. With this as our point of departure two major activities are scoping and assessment. *Scoping* aims at determining a preliminary set of choice alternatives, whereas *assessment* aims at identifying the most attractive of the choice alternatives.
- In the scoping mainly the soft methods in the systemic toolbox assist the planners in their deliberations, while mainly the hard methods are applied in the assessment for the determination of the consequences and risks that relate to each of the choice alternatives.
- Scoping and assessment are necessarily interrelated activities. What matters in scoping is that an option or choice alternative is not excluded if it later on in the assessment could have come forward as a serious competitor to the alternative assessed as being the most attractive one. Therefore the scoping should be returned to and reconsidered on the basis of the assessment.
- All the 2×7 methods in the toolbox have their particular functions and relate in different ways to the five MOEs behind their inclusion. As the later case descriptions bring forward they are used in combinations that were found suitable in the specific study.
- Use of group processes arranged as *decision conferences* and making use of soft and hard methods in combination are major characteristics of systemic planning. Finally in this chapter some evidence is given that the blending of methods, known as multi-methodology, and making decisions as teamwork are both effective and beneficial for the end result. The validation of SP as a decision support approach is carried out after the detailed demonstration of one possible use of SP in the following Chap. 7.

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