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1. INTRODUCTION

1.1 Purpose of this research

This dissertation is about 'corporate identity'. The purpose of this dissertation is to develop a method for finding a concise representation of an organization which will be recognized and supported by its employees, which can be used to introduce it to the outside world and which will be recognized by those already acquainted with the organization. In order to develop such a method it is necessary to provide an outline of the criteria underlying the concept of 'corporate identity' and to make the concept useful for corporate communication, directed at both external and internal audiences. If these requirements are met, they should help to ensure communication with an informative content. This informative content, in the end, reflects the central values of an organization. Subsequently, this dissertation will proceed to show how such values can be found empirically in an organization. The measurement results will be useful in management decisions on how to communicate with the outside world, and in management decisions on how to improve a corporate identity deemed unsatisfactory.

A major problem in the area of corporate identity is the lack of consensus as to the basic concept of 'corporate identity' (Balmer and Wilkinson, 1991). 'Corporate identity' seems to be a general-purpose concept that serves as an alibi for a variety of activities like designing a new logo, interior decoration, sales force training, all the way up to changing the corporate culture. Much of the terminology used within and around the identity activity is rather loose (Olins, 1995). Most authors do not define corporate identity explicitly. The only element which they appear to have in common is that 'corporate identity' means 'something that symbolizes the organization as a whole'. Whereas it is possible to represent a whole organization by just assigning a symbol to it, symbolizing the organization becomes more difficult if information has to be communicated on what the organization is about and if a certain degree of correspondence between the symbol and the organization itself is required. For instance, the Mercedes star itself, as an emblem for Daimler Benz, stands for the Daimler Benz organization. On the other hand, it can be perceived to embody certain values when representing the organization. Then the focus of interest changes from the symbol itself to the content of the symbol, i.e. 'to what the organization is'. This changed focus is equivalent to how Webster's dictionary (1990) describes 'identity' : 'who a person is or what a thing is'. In this dissertation, the definition of 'corporate identity' as 'what an organization is' is used until a more definitive definition has been developed in chapter 3.

The problem of 'symbolizing the organization as a whole' is a key problem in corporate communication. In order to communicate an organization's identity, one has to know what that organization is. This is a sine qua non for effective corporate communication (Van Riel, 1995). However, literature on how to establish an organization's identity empirically is virtually nonexistent. Summarizing, the main questions addressed in this dissertation are:

1. How can we develop a conceptualization of corporate identity which is suitable for communication purposes?

2. Using this conceptualization, how can corporate identity actually be measured?

This dissertation will develop a representation of an organization's identity which is suitable for communication purposes, and it will present a method of measuring an organization's identity empirically.

1.2 The role of corporate identity in corporate communication

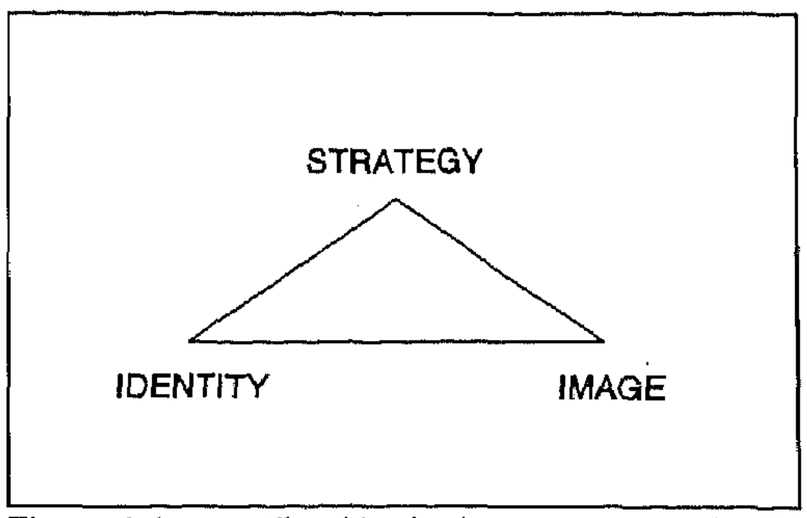

Figure 1.1 The identity-image-strategy triangle (Source: Van Rekom and Van Riel, 1993)

Whenever an organization wants to communicate something about itself as a whole, it has to consider its 'corporate identity'. Van Riel (1995) defines 'corporate communication' as 'the instrument of management by means of which all consciously used forms of internal and external communication are harmonized as effectively and efficiently as possible, so as to create a favourable basis for relationships with the groups upon which the company is dependent'. All forms of communication are taken into consideration for potential orchestration into a coherent whole. Everything an organization does, makes, and sells, everything it says, writes down or displays should contribute to its identity (Olins, 1990). The basic philosophy underlying corporate communication is to direct the company's communications from within the 'corporate strategy, corporate identity and corporate image triangle' (Van Riel, 1994). Strategy can be described as 'the pattern or plan that integrates an organization's major goals, policies, and action sequences into a cohesive whole' (Quinn, Mintzberg and James, 1988). Image is not identity: it is the result of identity, the perception of others (Bernstein, 1995). Managers concerned about corporate image cannot ignore the organization's corporate identity. An organization's distinctive image starts with its corporate identity. The organization's identity is perceived and interpreted by stakeholders in terms of its image. This perception and interpretation by stakeholders may be critical to the survival of an organization. Based on the image they have of an organization, stakeholders may decide to start or finish business relationships with that organization, and it will influence whether they supply it with resources. Therefore, one of the tasks of strategic management to influence the image that stakeholders hold of the organization, directly and indirectly, by adapting an organization's corporate identity (Van Rekom and Van Riel, 1993).

The purpose of corporate communication efforts is to achieve a certain desired corporate image among target groups, including the own employees. Dowling (1986) defines 'image' as 'the set of meanings by which an object is known and through which people describe, remember and relate to it'. It is the net result of the interaction of a person's beliefs, ideas, feelings and impressions about an object and resides in the head of that person. 'Corporate identity' has been defined above as 'what an organization is'. By analogy to Dowling's definition of 'image', 'corporate identity' can be rephrased as 'the set of meanings by which an object allows itself to be known and through which it allows people to describe, remember and relate to it'. Whereas 'corporate image' resides in the heads of the stakeholders, 'corporate identity' resides in the organization.

The desired image may be different from the actual image. In order to reach the desired image an organization may need to provide and communicate meanings to the stakeholders which are different from those provided so far. A primary strategic decision concerns the degree to which a company wishes to exert influence on *what* will be communicated about a number of basic matters. If management wishes to influence the content of the innumerable messages the organization sends consciously, and perhaps unconsciously, into the world, management has to do so within the constraints within which a company can communicate with various target groups. These constraints are a function of what the organization actually is at a certain moment in time (its actual corporate identity or 'ist-Identität, cf. Birkigt and Stadler, 1988), of what management wants it to be (desired corporate identity, Birkigt and Stadler's 'Soll-Identität'), and of what the stakeholders are willing to believe about the organization's identity. Most communication literature concentrates either on the communication strategy itself, or on image (cf. Van Riel, 1995, for an overview). This dissertation focuses on the first of these factors, the actual identity of an organization at a certain point in time ('Ist-Identität'), and points out the constraints on communication imposed by its existing identity. Within these constraints, it shows how a thorough understanding of the organization's identity can give managers valuable insights about the company's internal strengths and weaknesses that could form the basis for corporate image development and projection.

- **Actual corporate identity as a constraint on corporate communication**

The fit between an organization's actual corporate identity and its communicated corporate identity is a crucial factor determining the effectiveness of communication (Van Riel, 1995). Idealistic, PR-inspired messages tend to ignore the present cultural values and the employees' attitudes (Merkle, 1992). There is more risk in handling an identity badly internally than there is from external threats (Olins, 1995). Employees may dissociate themselves from corporate advertising campaigns, and even oppose them. The Commerzbank in Germany had to withdraw its slogan 'The bank that knows its customers'. The bank wanted to attract the general public, but the employees were not really willing to deal with numerous small private customers, and preferred the big business accounts (Keller, 1990). A Scottish engineering company thought it knew what it was and decided to run a series of corporate advertisements to tell the financial world about its size, development, profits and successful labour relations. The labour force had not been consulted. They read the advertisement, saw the reference to profits, put in a heavy wage demand (which was refused), and went on strike. Within six months the company had ceased trading (Bernstein, 1986, p.241).

The role of an organization's corporate identity as a constraint on corporate communication is primarily relevant in the short term. In the long term, management can influence the organization's identity, and, depending on management's chosen corporate strategy, can realize an improved or repositioned corporate image, or corporate images for different stakeholder groups.

- **Corporate identity as a source of inspiration**

A good reason to start corporate positioning from an organization's identity is the value of what the organization expresses. Organizations which are governed mainly or exclusively by external information run the risk of claiming a position that their competitors might equally claim if their operations are similar. However, if an organization is capable of incorporating differentiation into their culture and infrastructure at a deep level, it becomes more difficult for other companies to understand, and if they do, costly to duplicate (Laundy and Rogers, 1995). The organization's central value orientations, which permeate all its behaviour and are consciously or unconsciously present in the minds of an organization's employees, can form an excellent source of inspiration, especially if they are unique for the organization in question. This may sound obvious, but in practice it is not - exactly because the central values which permeate the employees' behaviour are so self-evident to them.

Summarizing, corporate communication can benefit from a thorough understanding of an organization's identity by determining the constraints within which a company can communicate credibly with its stakeholders, and by drawing inspiration from it.

1.3 Basic premises in the approach to corporate identity

Not only do the definitions of the concept of corporate identity vary widely, also the basic points of view from which authors approach this subject diverge. This section explains where this dissertation stands in terms of empirical focus, the conditionality of corporate identity and where it stands among the variety of disciplinary approaches.

1.3.1 The degree of empirical focus

Authors vary strongly in their degree of empirical focus. Only very few among them have made an attempt to measure an organization's identity. Many authors, especially in the strategic field, consider the existence of corporate identity to be dependent upon the existence of a more or less explicit strategy defining it. This view implies that identity can only be measured in the cases where such a strategy exists. Many authors have limited themselves to theoretical aspects of corporate identity, such as how to define it (Tanneberger, 1987), how to convert a desired identity into strategy (Birkigt and Stadler, 1988) or how to change an organization's identity (Mittmann, 1991).

Other authors have done more empirical work. Lux (1982) has worked out a method, actually an extensive checklist, which he uses to assess an organization's identity. Bernstein (1986) has developed a practical measurement method to assess an organization's desired identity in a relatively short time. Larçon and Reitter (1979) use a case-study like approach to analyze an organization's identity, showing how some French organizations have reached their specific solutions to problems in dealing with their environment, and Balmer (1995) analyzed organizations in a grounded-theory framework. Chapter 2 gives a more complete overview of the empirical work done so far. This dissertation also approaches 'corporate identity' from an empirical point of view: its purpose is to develop an operationalization of 'corporate identity', and a measurement method.

1.3.2 Conditional versus unconditional existence of corporate identity

Measurement of an organization's identity assumes that the organization to be measured has an identity. Not all authors agree that organizations always have an identity. Birkigt and Stadler (1988), for instance, include the clause 'strategically defined and operationally implemented' into their definition of corporate identity. According to these authors, if an organization has not defined a strategy regarding its corporate identity, it simply does not have a corporate identity. Larçon and Reitter (1979, p. 32) write that an organization has an identity, if it brings a coherent, stable and specific solution to the 'problem of the relationship between the actor (employee), his reference groups and the system as a whole'. Reitter and Larçon's condition implies, that first the relation between the employee and his reference groups and the 'system as a whole' must be investigated before an organization can be said to have an identity. Their view is an example of what Kammerer (1988, p. 64) calls 'conditional identity': an organization only has an identity if it fulfils certain conditions.

Not all authors subscribe to this view of corporate identity being dependent upon certain conditions. As Margulies (1970) put it: 'A company has an identity from the first moment it opens it doors, which it communicates in everything it says and does, controlled or not'. This view is shared by Merkle (1992, p. 71) and Olins (1984). The latter urges companies to remind themselves that, 'whether they like it or not, their identity exists - and the question that they have to answer is, whether they control it or it controls them'. Most authors focusing on empirical measurement do not seem to subscribe to the conditional view of identity. The kind of empirical procedures used by Bernstein (1986) or Lux (1988) can be applied to any entity specified before the research; there is no need to assume any kind of 'conditional identity'.

Corporate identity has been defined preliminarily as 'what the organization is', which implies that corporate identity can only be non-existent if the organization does not exist. A measurement instrument should be applicable to any organization, as specified by the one who wants it to be measured, however unarticulated or unplanned that organization's identity may be.

1.3.3 The disciplinary perspective; from a pure design to a corporate communication approach

Whereas in the beginning 'corporate identity' was a pure matter of design, increasingly it has become the target of holistic approaches. Different themes of interest dominate scholarly traditions in Germany, France, the Netherlands, the United Kingdom and the United States. Occasionally, language area and country of origin do have an impact. The majority of the literature in the field of corporate identity stems from the areas of design and communication. The word 'identity' is derived from the Latin 'idem', meaning 'same', and has probably a connection with the Latin 'identidem', meaning 'the same each time' or 'repeatedly the same' (Bernstein, 1986). The interpretation of identity from dictionary definitions, e.g. 'the fact of being the same in all respects' (Webster's Dictionary, 1990), 'absolute sameness' or 'the characteristic or condition of complete agreement, absolute or essential similarity, condition of being' provided design specialists with a strong argument to press companies to be consistent in their use of symbols (Van Riel, 1995).

When interest in corporate identity emerged, in the 1940s, corporate identity was associated primarily with design, in particular logo's, house style and staff clothing. An absence of interest in design was often interpreted as the absence of corporate identity. Illustrative is the remark by Selame and Selame (1975): 'Corporate identity is the visual statement to the world'. Corporate symbols obviously have a positive impact on recognition and maybe even on appreciation. However, conveying an organization's identity cannot rely upon visual means alone. People do not rely on visual elements alone, but use all their senses in order to construct their image of an organization (Tanneberger, 1987).

In the early eighties, awareness grew that design and communication were not enough to convey a complete and coherent image to stakeholders (Keller, 1990). The feeling grew that behaviour was an essential element of 'corporate identity'. The newer, more holistic conceptualization made the concept of 'corporate identity' converge with the concept of 'corporate culture' to some degree (cf. Körner, 1991). Authors thinking along these lines include Bernstein (1986), Birkigt and Stadler (1988), Ramanantsoa and Thiery-Basle (1988). In the different language areas there has been a historical tendency to apply different points of view. Although in the Anglo-Saxon world authors like Bernstein (1986) and Olins (1990) occupy prominent positions, no single-centred school dominates the field. This is different in Germany and France. In France work on corporate identity has been greatly influenced by the work of Larçon and Reitter (1979). They tried to understand and explain corporate identity with concepts from the literature of organization science. Internal organizational processes and driving forces are major factors in their conceptualization of corporate identity. Their conceptualization and definition of corporate identity seem to have given the lead throughout French literature. In German literature the strategically oriented work of Birkigt and Stadler (1988, which first appeared in 1982) fulfils a similar role. Many later German dissertations have been applications of the work of Birkigt and Stadler to specific branches, like the retail branch (Merkle, 1992) or to specific problem areas, like conveying an organization's identity through product design (Kammerer, 1988). The Dutch literature on corporate identity adopts a rather interdisciplinary perspective. A major Dutch contribution to the field is the concept of 'common starting points for corporate communication' (Van Riel, 1992). Other Dutch-speaking authors working in this area are Fauconnier (1988) and Blauw (1994).

The different approaches are integrated from the perspective of corporate communication, as illustrated by Van Riel (1994). In Van Riel's model, the choice of a communication policy is based on information about corporate strategy, the internal organization, the driving forces on corporate and business unit level and the environment. This way, corporate communication integrates the previous contributions from all the disciplines described.

This dissertation will tackle the subject of corporate identity from the corporate communication perspective. Its aim is to make a substantial contribution to corporate communication, and in this way to influence the corporate image. Therefore it cannot afford to concentrate on only one disciplinary area, as everything an organization says shows and does contributes to its image. Corporate identity, then, as it will be operationalized in this dissertation, includes the whole of what happens in an organization.

1.4 Albert and Whetten's criteria for corporate identity

Not all conceptualizations of corporate identity may yield measurement results equally suitable for communication purposes. Albert and Whetten (1985) formulated three requirements, that adequate statements of corporate identity should satisfy (see overview 1.1). The three requirements are not so far removed from Larçon and Reitter's (1979) requirements for the presence of a collective identity: they required coherence, stability and specificity for a collective identity to exist. For the purpose of defining corporate identity as a scientific concept, Albert and Whetten consider each of these three criteria necessary and as, a set, sufficient.

1.4.1 The criterion of 'claimed central character'

1. **Claimed Central Character**:
   features that are seen as the essence of the organization

2. **Claimed Distinctiveness**:
   features that distinguish the organization from others

3. **Claimed Temporal Continuity**:
   features that exhibit sameness over time.

Overview **1.1** Albert and Whetten's (1985) three-criteria definition of corporate identity

Albert and Whetten's first criterion is the criterion of 'claimed central character', which points to features that are seen as the essence of the organization. The conception of an organization's identity, whether proposed by a scientist, by another organization or by the organization itself, must be a statement of identity which distinguishes the organization on the basis of something important and essential: the central character.

Albert and Whetten consider essential those characteristics of the respective organizations which are the focus of important decision making activities. Albert and Whetten seem to think of decisions at higher management levels, as they list as examples of important decision making 'making an acquisition' and 'court battles over a firm's tax classification'. Organizational leaders attempt to define the organization's central characteristics as a guide for what they should do and how other institutions should relate to them. Their attempts are influenced by the needs of the situation. Features become important for a certain purpose. No theory provides a list of organizational features that could be said to be important universally. Therefore, Albert and Whetten do not believe that 'central character' can be defined as a definitive set of measurable properties. However, there may be more fruitful ways of identifying an organization's 'essential' properties, other than having recourse to a 'universal' list of characteristics. How these central features can be revealed is the subject of chapter 4 of this dissertation.

Most organizations are not naturally conscious or thoughtful about their central properties. As a rule these are implicitly enshrined in the way they get on with their business (Olins, 1995). It is doubtful whether organizations do have sufficient insight into the self-evidences of their daily life for them to be able to claim their essence in a way which will be enforced by the employees' behaviour and recognized by stakeholders. Keller's (1990) example of the German bank and Bernstein's (1986) example of the Scottish engineering company (page 3) suggest that self-insight is often lacking.

So far, the criterion of 'claimed central character' has not been operationalized beyond an intuitive stage. The research procedure must ensure that the results remain attributable to the organization, not to the specific research effort. This problem will be dealt with and a workable operationalization will be developed in chapters three and four.

1.4.2 The criterion of 'claimed distinctiveness'

Albert and Whetten's second criterion is the criterion of 'claimed distinctiveness' from other organizations, pointing to features that distinguish the organization from others. Identity is a classification of the self that identifies the individual as recognizably different from others. Although theoretically it may be possible to identify two organizations which are exactly equal in all aspects, intuitively this case is hard to imagine. Therefore, several authors (e.g. Larçon and Reitter, 1979; Margulies, 1970; Olins, 1995) assume each organization to be unique. Nevertheless, if uniqueness has to be established in terms of one or more narrowly specified criteria, the distinctiveness of each depends upon the spectrum of comparison. Organizations may be unique in a certain region, or within a certain group of competitors, but perhaps not nationwide or worldwide.

How 'distinctiveness' from other organizations is defined depends upon how an organization wishes to position itself. Whenever a distinctive identity is prized, one might expect organizations to select uncommon attributes for interorganizational comparison (Albert and Whetten, 1985). Claims made in corporate communication are more effective, presumably, if the organization is the only one able to make them.

However, the implementation of this principle seems problematic. Statements of corporate beliefs, in the form of 'corporate philosophies', 'corporate bibles', and the like are becoming increasingly common in companies (Alvesson and Berg, 1992, pg. 193). However, Berg and Gagliardi (1985) found a considerable degree of consensus in their contents. Such statements may therefore reflect what society accepts as basic principles for good management rather than being genuine expressions of the company's fundamental identity. Martin, Feldman, Hatch and Sitkin (1983) investigated claims to uniqueness expressed through organizational stories. These stories turned out to share common elements and to express common concerns that were therefore not unique at all. For instance, at IBM, the story was told of chairman Thomas Watson Junior not being allowed to enter a room because he was not bearing the right badge. The same story was told, with slight modifications, at many companies other than IBM. This is what Martin et al. (1983) call the 'uniqueness paradox'.

So far, most organizations' claims to their uniqueness do not go beyond the status of unproven assertions. Claims to uniqueness may be more solid if they have an empirical basis, which can be provided by the measurement of an organization's identity. Empirical research methods must have the potential to reveal truly organization-specific results. Therefore, corporate identity research should start with a qualitative stage in which organization-specific elements are gathered in a completely open-minded way.

1.4.3 The Criterion of 'Claimed Temporal Continuity'

Albert and Whetten's third criterion of corporate identity is 'claimed temporal continuity', which is sameness over time. 'Central character' and 'distinctiveness' do not only apply at a given point in time, but also over a certain period of time. A severe enforcement of the continuity criterion is problematic: organizations change over time, the same way as individuals do. Changing market conditions, changing labour conditions, as well as internally-induced deliberate changes are factors that lead the organization to change over time (cf. Kammerer, 1988). Checking continuity empirically implies measuring the same organization consecutively at several points in time.

Summarizing, Albert and Whetten (1985) offer the criteria of 'claimed central character', 'claimed distinctiveness' and 'claimed temporal continuity' to prescriptively define an organization's corporate identity. A step which still has to be made is, however, how to derive adequate identity statements from an organization's actual corporate identity.

Albert and Whetten's 'centrality' criterion seems the most difficult to operationalize. The centrality criterion implies that statements on an organization's corporate identity make sense if they allow the organization to be recognized as a whole. This criterion is difficult to apply in modern organizations. Work is divided across the different jobs. Many employees perform totally different tasks within the organization, and they may have totally different working styles and ways of behaviour. It is questionable whether any organization could emerge as one single unity under all circumstances. Complete agreement may be nonexistent within organizations. Strictly speaking, identity elements which apply to only one department cannot be considered elements of the identity of an organization as a whole, i.e. of its corporate identity. The method suggested in chapter 4 of this dissertation offers a solution to this operational problem.

Conclusion

This dissertation focuses on corporate identity from the standpoint of corporate communication. In order to be effective in safeguarding an organization's meaning to stakeholders, identity statements should in some way reflect the criteria of suitability for communication purposes, as discussed in this chapter, namely: centrality to the organization, distinctiveness from other organizations and continuity over time. The measurement of an organization's identity should focus on looking for the coherent, constant and specific elements in an organization. Measurement at one point in time can deliver the coherent elements, and if it is repeated over time, it can also show what the continuous elements have been. Statements about of an organization's distinctiveness from other organizations,

however, do not get beyond the stage of unproven assertions. Therefore, the empirical investigation of an organization's uniqueness may not go far beyond a heuristic comparison with a limited set of similar organizations.

Even though identity research would not deliver elements which completely fulfil all three conditions, it can come up with elements which may be valuable for communication - and an empirical representation of an organization's identity can still fulfil its role in corporate communication, both as a source of inspiration for potential new messages and as a check as to whether what the organization is planning to communicate is not at odds with its existing corporate identity. As Olins (1995) puts it:

'Measurement of corporate identity should provide the organization with an opportunity to play its strengths: the outcome will consist of a central idea which reveals the organization's personality and a vision which emphasizes its sense of purpose and which helps it to seize the marketing high ground. It ideally is a concise description of the organization, getting to the heart of the matter. It outlines a concept which is both specific to the organization and recognised as realistic by those who work for and deal with it.'

1.5 Outline of the dissertation

The purpose of this thesis is to develop a definition and an operationalization of 'corporate identity', following the derived criteria of suitability for communication purposes, i.e. 'centrality to the organization', 'continuity' and 'specificity'. In chapter 2, approaches in the literature on corporate identity are reviewed, and the concept of corporate identity is compared to the related notions of corporate strategy and corporate culture. In chapter 3, a new definition will be developed, based on notions of 'identity' stemming from the fields of philosophy and the social sciences. Messages about 'what an organization is', as argued in chapter 3, are informative in so far as they deal with what an organization does. Therefore, the actions of an organization will be the point at which its identity will be measured. The new definition will lend itself to operationalization and usage in management practice. It will serve as a guideline to develop the measurement instrument, which is based on the 'laddering technique' (Reynolds and Gutman, 1984). Its application is illustrated with empirical investigations of organizations' identities. The result of the measurement procedure is a representation of an organization's identity. In this dissertation, the laddering technique is extended for the purpose of measuring corporate identity. The measurement results will be validated using quantitative surveys among the organization's employees. Comparison of the laddering results with the outcome of surveys underpins the validity of the use of the laddering technique and facilitates effective interpretation of the outcome of this kind of research. Chapter 6 will further investigate the semantic nature and direction of means-end relations. Chapter 7 will illustrate how the measurement results can directly be applied to corporate communication.

2. CORPORATE IDENTITY IN THE LITERATURE

In this chapter existing approaches to the concept of 'corporate identity' are reviewed. An overview is given of the more recent authors who treat the concept of corporate identity explicitly, following the distinction between the views of 'corporate identity' as the 'strategy regarding an organization's identity', as 'the identity of an organization as it is to date', and as 'the perception of an organization's identity'. The concept of 'corporate identity' is contrasted with the related notion of 'corporate culture'. Methods of measurement designed to capture 'corporate identity' in either of the mainstream approaches to corporate identity are reviewed and compared to find out to what extent their respective measurement results satisfy the criteria of suitability for corporate communication, as developed in the preceding chapter.

2.1 Major themes in the definitions and operationalizations of corporate identity

The lack of a generally agreed definition of corporate identity has led to a proliferation of different meanings, both among practitioners and scientists. As observed in the introduction, 'corporate identity' seems to stand for anything that symbolizes the organization. Merkle (1992, p. 30) attributes the existing confusion to the absence of an acknowledged general theory which is sufficiently complete, precise, and consistent to give something to hold on to for argumentation purposes. Its meanings reach in scope from the organization's logo, as described in the design-oriented literature, to holistic conceptualizations of the complete organization. For instance, Carter (1982) defines 'corporate identity' as 'the logo or brand name of a company, and all other visual manifestations of the identity of a company', whereas Thomas and Klein (1989) define the concept as 'what an organization really is'.

The use of the term varies according to profession and nationality. In 1993 the British design company Henrion, Ludlow and Schmidt published the results of a telephone survey done by MORI in 11 European countries (MORI, 1993). The interviewers asked 160 managers who bore ultimate responsibility for the corporate identity of their companies and whose firms numbered amongst the top 500 in these countries: 'How, in brief terms, would you define corporate identity?'.

Table 2.1 shows the major definitions of corporate identity. Some of the respondents spontaneously focused on external image and recognition (50 %), 27 % defined it in terms of graphics and design, and 20 % linked it to organizational values and culture (MORI, 1993). This confusion greatly hampers communications on the subject. The widespread belief that corporate identity is the same as corporate image (50 % in Table 2.1) does not help matters (Van Riel, 1995). The 'expression of culture and values' and 'behaviour of staff' correspond to 'identity' as defined in this study.

Table 2.1 Definition of Corporate Identity in several European countries. N = 160. Source: Mori, 1993 (via Van Riel, 1995)

Question: How, in brief terms, would you define corporate identity?

Country	Total	Britain	France	Germany	Scandinavia	Austria	Benelux	Spain
Public image/ external projection	50	51	50	38	53	50	60	55
Visual presentation/logo	27	44	10	33	40	15	5	20
expression of culture/ values/philosophy	20	4	20	40	13	35	20	15
Internal projection/ behaviour of staff	18	7	13	38	10	45	15	5
Advertising/ communications support	4	2	5	5	5	0	0	5
product/brand support	4	5	8	5	8	0	0	0

The numbers in the cells reflect the percentages of respondents agreeing to a definition

The scientific community does not really show much more agreement than the managers interviewed by MORI. In literature all three corners of the triangle in Figure 1.1 are occasionally called 'corporate identity'. The remainder of the chapter will be dedicated to the review of each of the three approaches in the literature. Firstly, the *strategically oriented literature* on 'corporate identity' will be dealt with. Authors in this area are mostly concerned with how corporate identity fits in with global strategy, and with how to work out a corporate identity strategy. The use of the word 'identity' where 'strategy' is actually meant is not uncommon (Tafertshofer, 1982, Kammerer, 1988). In order to avoid further confusion, Weber (1985) proposed reserving the term 'corporate identity' for strategy and introduced the concept of 'Unternehmensidentität' (company identity). Secondly, attention will be focused on the concept of 'company identity': the organization's *actual identity* at a certain point in time. This concept refers to the social-psychological identity of an organization; it deals with recognizing an organization in its specificity (see Merkle, 1992). Since Weber (1985), most German authors have used the word 'corporate identity' for the strategy which deals with the identity of an organization, and 'Unternemensidentität', whenever the actual identity of an organization is meant. Corporate identity in the sense of company identity was the focus of Larçon and Reitter's (1979) investigations. Often, it is equated - or confused - with the concept of corporate culture. Thirdly, authors interested in *organizational identification* will be dealt with. A key determinant in organizational identification is the set of beliefs among organization members as to what their organization is all about. Therefore, 'organizational identity' is sometimes referred to as 'the members' shared beliefs about what is distinctive, central and enduring about their organization' (Dutton, Dukerich and Harquail, 1994). Organizational identity creates feelings of belonging or alienation, and has the potential to influence employee motivation (Van Riel, Smidts and Pruyn, 1994). The diverse approaches lead to different ways of establishing empirically an organization's identity. These will be reviewed in the last section of this chapter.

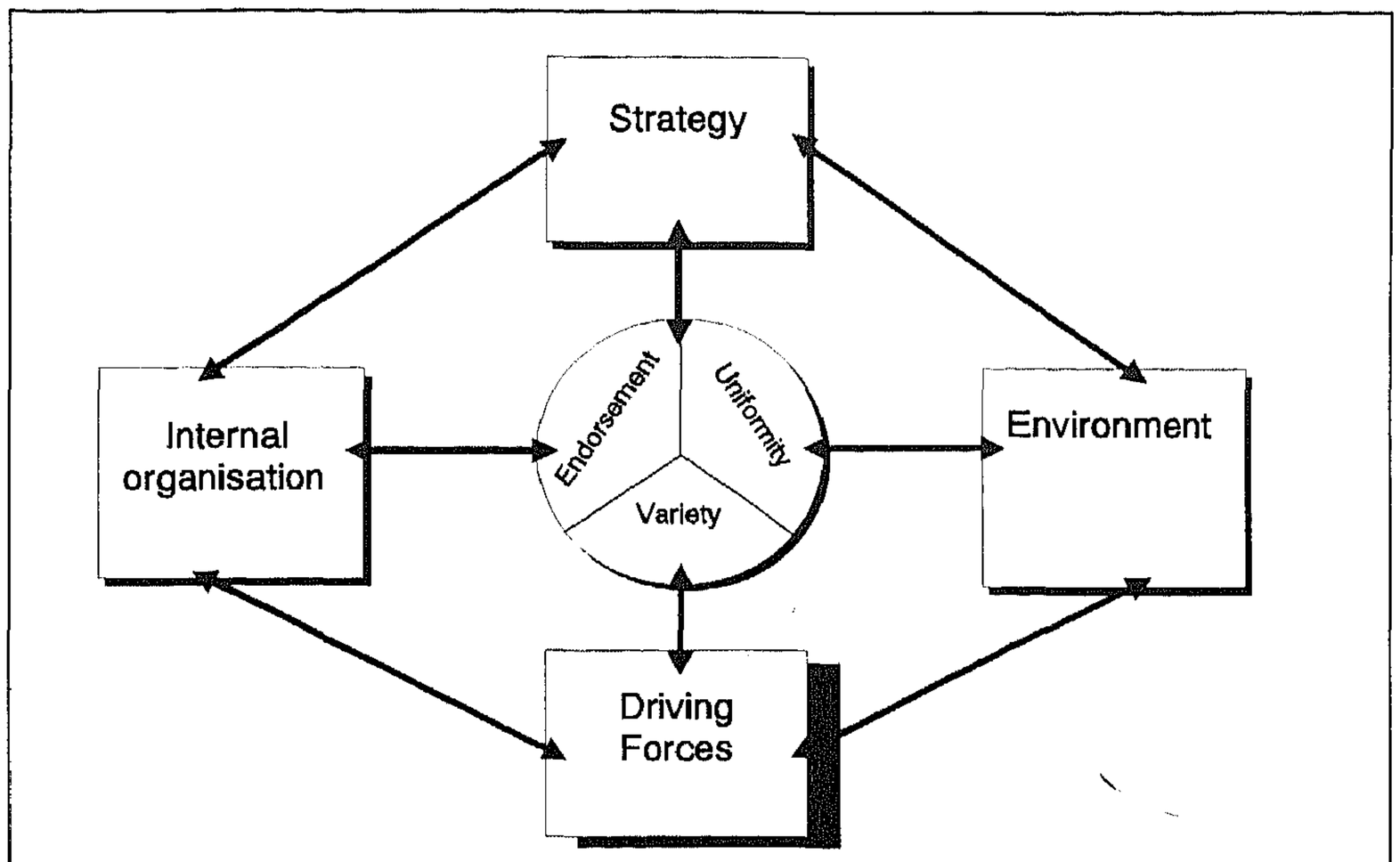

Figure 2.1 The SIDEC model for choosing a corporate communication policy (Source: Van Riel, 1994)

2.2 Strategically oriented literature on corporate identity

2.2.1 Corporate identity as a result of management decisions

Van Riel (1994) developed a comprehensive framework for the choice of a corporate identity policy, the SIDEC model (Figure 2.1). 'SIDEC' is an abbreviation of Strategy, Internal organization, Driving forces, Environment and Communication policy. In this model, the choice of a communication policy is based on the balance between the character of corporate strategy, the homogeneity or heterogeneity of motivations on corporate and business unit level ('driving forces'), the way the internal organization has been arranged - in particular regarding the planning and control of corporate headquarters over the business units - and the kind of environment in which the organization operates. Corporate identity, conceptualized in this model as the desired communication strategy for the organization, is influenced by all these variables, and therefore appears in the centre of Figure 2.1. A company can choose from three basic theoretical options for corporate identity policy: the uniformity model, with a uniform identity at corporate, business unit and product level, the variety model, where identity is different on all three levels, or the endorsement model, a compromise between the first two extremes (Van Riel, 1995). The SIDEC model highlights the role of corporate identity within the broader strategic development of the organization.

Without clarity on the strategic choices it is difficult to formulate a successful corporate communication policy. The internal organization is the second element in Van Riel's (1994) SIDEC model. The internal organization is the result of the constant negotiation processes between top management and the several groups within the organization. Larçon and Reitter (1979) give several illustrations of such negotiation processes.

The third element, the driving forces, encompasses the common motivation influencing the employees' day-to-day behaviour at all corporate levels. The degree to which an organization can be perceived as distinctive depends primarily on how the employees deal with its stakeholders. The degree to which employees see congruence between their own motivation and the perceived organizational values is an important factor in determining organizational identification (Van Riel, Smidts and Pruyn, 1994).

The environment is the fourth element in the SIDEC model. Organizations have to respond to numerous and diverse stakeholders. Image is a primary factor determining what the organization's stakeholders are receptive to. No matter how frank and open an organization's communication is, there is no guarantee that it will create a positive image in the minds of most members of the target group. There are various external factors which influence the image of an organization, like rumour formation and the sometimes (apparently) irrational ways in which members of the target groups select the information they pay attention to (Van Riel, 1995).

2.2.2 Elaborating a corporate identity strategy

Most strategically oriented literature on corporate identity can be classified according to Birkigt and Stadler's (1988) model of corporate identity (Figure 2.2). They laid the basis for many dissertations in the German-speaking area. In analogy to ego-identity, they see corporate identity as the logical coherence of visual symbolism, words and actions of an organization with its deeper essence, which they assume to be embodied by 'corporate personality. For management practice, they define corporate identity as 'the strategically planned, operationally implemented internal and external self-presentation and actions of an organization. The self-presentation and actions are based on an explicitly defined corporate mission, a long-term setting of objectives and a well-defined desired image'. Birkigt and Stadler's conception of identity is an example of 'conditional identity' (see Kammerer, 1988). Identity only exists if the organization has an explicitly defined corporate mission, a long term setting of objectives and a well-defined desired image.

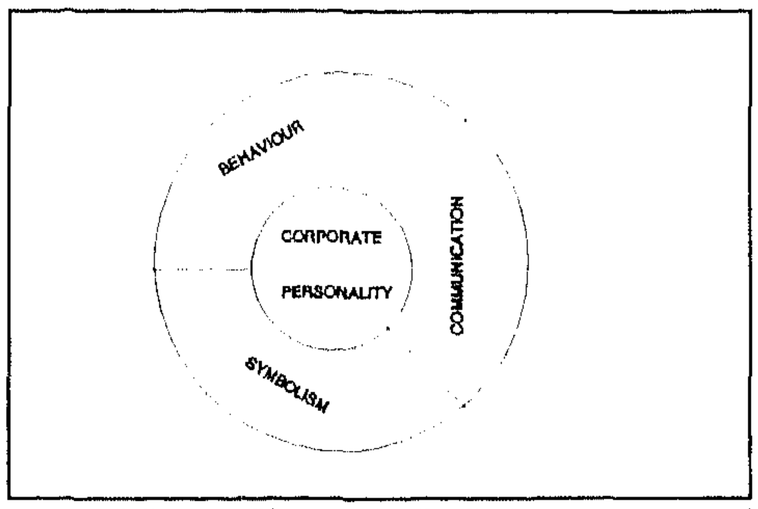

Figure 2.2 Birkigt & Stadler's conception of Corporate Identity (Source: Birkigt & Stadler, 1988)

Corporate personality contains the organization's own view on its actual situation and the corporate goals. Corporate personality is 'the dynamic core of an organization, which can realize its self-actualization with the instruments of 'corporate behaviour', 'corporate visual symbolism' and 'corporate communication''. In analogy to the marketing-mix, they call the whole of these three instruments the 'CI-mix'. The three instruments are at least partially overlapping: an organization always communicates using symbolism, symbols only have meaning if they communicate something, and every act of communication is a form of behaviour - and not really separable from an organization's personality. Nevertheless, Birkigt and Stadler's model covers the whole field of relevance of corporate identity. Corporate identity as a strategy fulfils the will to realize all behaviour instruments of an organization internally and externally within a uniform framework (Birkigt and Stadler, 1988, p. 23). However, one single uniform identity for an organization as a whole may not always be the ideal thing. Olins (1989) and Kammerer (1988), have addressed this subject. Olins (1989) proposes three categories of structures of identity by which an organization can make clear its structure, goals and size:

1. The 'monolithic identity'. The whole organization uses one visual style. The organization uses the same symbols everywhere and can be recognized instantly. Such companies have usually developed as one unity within relatively homogeneous surroundings. Examples include KLM Royal Dutch Airlines, Shell, and BMW.

2. The 'endorsed identity'. Subsidiaries have their own style, while the parent company remains recognisable in the background. The different divisions can be distinguished, but it is clear which is the parent company. Most organizations with an endorsed identity are diversified organizations. Their divisions have retained a substantial part of their own culture and brands. General Motors and L'Oréal are examples of endorsed identities.

3. The 'branded identity'. The divisions have their own style, and the parent concern is not recognizable to the 'uninitiated'. The separation of the brand from the identity of the parent concern limits the risk of product failure, but it also means that the brand cannot benefit from any favourable reputation the parent company may enjoy. The French chain Accor, for instance, uses different brands for different segments of the hotel market such as Sofitel, Mercure, Novotel and Ibis, has a travel agency called 'Wagons-Lits'; and for instance in Amsterdam an incoming touroperator under the name 'Key Tours'. The parent name Accor is seldom visible behind this variety of brand names for the different organizations with their very diverse fields of activity and different cultures. Unilever is a another example of an organization with a branded identity.

Seldom will a company strictly conform to such a typology. The Dutch tour operator Holland International, for instance, is a good example of monolithic identity, but it also operates in the lower-priced market segments under the names of 'Fit' and 'Eurojet', which consumers will not associate with the parent organization. Holland International itself, in turn, belongs to the much larger TUI organization and has become increasingly integrated with its sister organization 'Arke'. The drawback of most typologies of corporate identity is that they emphasize purely visual identity, especially the choice of the name and the logo. This is only a segment in Birkigt and Stadler's (1988) model of corporate identity (Figure 2.2). The strong focus on design creates the impression that the choice of the corporate communication policy depends exclusively on the extent to which management wishes to reveal the parent behind the brand, its 'parent visibility' (Van Riel, 1995). On the other hand, more behaviourally oriented authors like Mittmann (1991) pay hardly any attention to the design side. A fair majority of authors only emphasize part of Birkigt and Stadler's (1988) model.

Van Riel (1995, p. 44) proposes a more complete framework, including the dimensions of 'parent visibility', taken care of by the design-oriented literature, and 'content guiding', which reflects the degree to which an organization wishes or is able to supervise the content of organizational unit's communication policy on a number of basic matters. In the end, *what* will be communicated is at least as important as the organization's parent visibility. Different organizational units may or may not wish to communicate the same message, independently from whether they show the symbols of the same parent organization. Figure 2.3 shows how the Dutch ING bank chose different shadings on both dimensions for its different business units.

The choice of the central values determines what will be communicated about which basic matters. These central values serve as a basis for translation into all forms of communication practised by the organization. Therefore, Van Riel (1995) calls them the 'Common Starting Points' for corporate communication. Well chosen common starting points should be fit for communication, and are therefore subject to the three criteria developed in Chapter I: centrality to the organization, distinctiveness from other organizations and continuity over time. It is necessary to carefully examine the identity of an organization as it is at a certain moment in time in order to establish potentially fruitful Common Starting Points. The later chapters of this dissertation will address this problem.

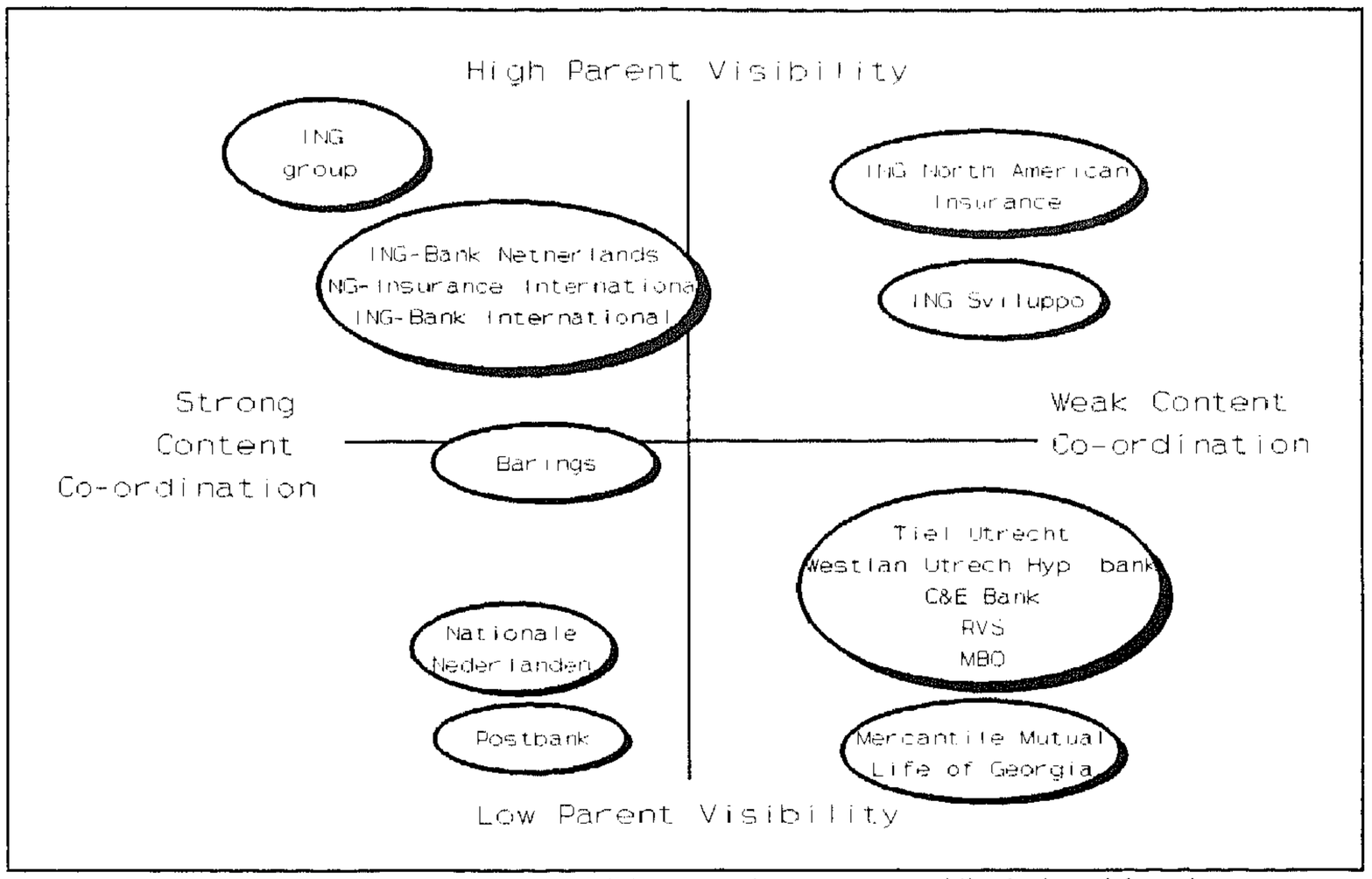

Figure 2.3 Combination of 'parent visibility' and 'content guiding' in elaborating corporate communication policy (source: Van Riel, 1995b)

2.2.3 Conclusion

The strategically oriented literature on corporate identity provides helpful ideas to managers who want to influence their corporate culture and corporate image. Its emphasis is rather normative. In the design field, very practical and operational work has been done. In the behavioral field, however, it has never really moved beyond the theoretical stage, and 'corporate identity' as such has remained an issue which has not yet been operationalized. The object of the strategy, what Merkle calls the 'social-psychological identity', is generally left unanalyzed, in spite of the frequent claims that research is needed (e.g. Jackson, 1987, Mittmann, 1991). In order to establish fruitful potential common starting points for corporate communication it would be useful to examine the actual, existing corporate identity at a certain moment in time. This dissertation will further focus on the definition, operationalization, and measurement of the actual identity of an organization. In the next section conceptualizations of the organization's identity (Merkle's 'Unternehmensidentität') are reviewed, together with the empirical approaches given in literature.

2.3 Company identity: corporate identity as the organization's actual identity at a point in time

Weber (1985) introduced the concept of 'company identity' in order to distinguish the actual, existing organizational identity from the interpretation of 'corporate identity' as 'strategy'. French authors in particular are concerned with understanding how an organization's actual identity comes about (Reitter and Larçon, 1979, Ramanantsoa and Thierry-Baisle, 1988). Other authors equate it with the concept of 'corporate culture' (Körner, 1991). The various approaches are reviewed below.

2.3.1. The search for a common core underlying an organization's identity

Authors approaching corporate identity as the actual identity at a certain moment in time often search for a core of relative agreement underlying the heterogeneous actions and characteristics observable.

Johannes Weber (1985) uses the conceptual framework of Habermas (1981) to make an organization's identity explicit. In Habermas' (1981) 'Theory of communicative action', 'reaching understanding' (*'Verständigung'*) is the central mechanism for coordination of action. 'Reaching understanding' involves the pre-theoretical knowledge of competent speakers, who can themselves distinguish situations in which they are causally exerting influence upon others from those in which they are coming to an understanding with them, and who know when their attempts have failed (Habermas, 1981, Vol 1, p. 386). The implicit background knowledge is embodied by the participants' 'lifeworld' (*'Lebenswelt'*). The 'lifeworld' represented by a company encompasses a set of forms of life and language, each with its own rules (Weber, 1985, p. 125). The application of Habermas' theory of communicative action to organizations seems at odds with his assumption that action within organizations falls under the premises of formally regulated domains of action, where formal rules have taken the role of mutual understanding. However, even within formally defined domains of action, interactions are still connected via the mechanism of reaching understanding - as shown by the existence of informal organization (Habermas, 1981, vol.2, p. 459). Therefore, Weber's application of Habermas' concept of *Verständigung* to commercial organizations appears conciliable with the spirit of Habermas' work.

Only part of an organization's culture is important to identity: the basic values and norms, which are unquestioned and have a fundamental status in the organization. An organization's identity is based on the more constant consensus on central norms and values (Weber, p. 130). The structure of rules underlying the actions of organization members creates the observable reality of an organization (p. 138-139). These actions are heterogeneous, and their number of variations is infinite. Therefore, the rules must have a relation with concrete actions similar to the relation between Chomsky's (1968) generative grammar rules with concrete sentences in a language: a limited set of rules determines how an infinite number of sentences are formed, which can be varied endlessly. Describing an organization's identity implies reconstructing that finite number of rules which are followed by the organization members. These rules constitute their implicit knowledge which generates the observable surface structure of organizational actions (p. 148). The rules are passed on from one

generation of employees to the next. Corporate identity, seen this way, consists of a limited number of fundamental rules, which possess a very high degree of 'generative capacity' (p. 149). Weber wants to capture organizational identity by capturing the rules which determine the behaviour specific to the organization.

Ramanantsoa and Moingeon (1991) define corporate identity as 'the whole of the organization's characteristics giving it specificity, stability and coherence, and therefore making it identifiable'. They use Bourdieu's (1989) concept of 'habitus' in the same sense as Weber uses Chomsky's generative grammar. The employees see the world through the spectacles of their 'habitus': the cognitive structures which social agents implement in their practical knowledge of the social world. These are internalized social structures. When the possession of certain properties allows an agent to obtain material and/or symbolic profits, Ramanantsoa and Moingeon (1991) call it a 'capital'. As a function of his capital, an agent will occupy a position in the organization. Ramanantsoa and Moingeon portray the organization as a field where certain rules, stakes, and agents play a role. Even in conflicts, agents agree on the value of what is at stake in the fight. The identity of the firm can be analyzed through the perception of the position of the employees and through their struggles to reach those positions. The agreement between the agent about what is worth struggling for refers to shared beliefs in what is at stake (p. 10). These values and beliefs are common in the organization. It is the communality which opens the possibility for conflict. It is the employees' habitus compelling him to adopt a strategy in the organization. Similarly to Weber's approach, Ramanantsoa and Moingeon highlight the role of more homogeneous rules which, often at an unconscious level, determine the identity of an organization.

2.3.2 Understanding the origins of an organization's actual identity

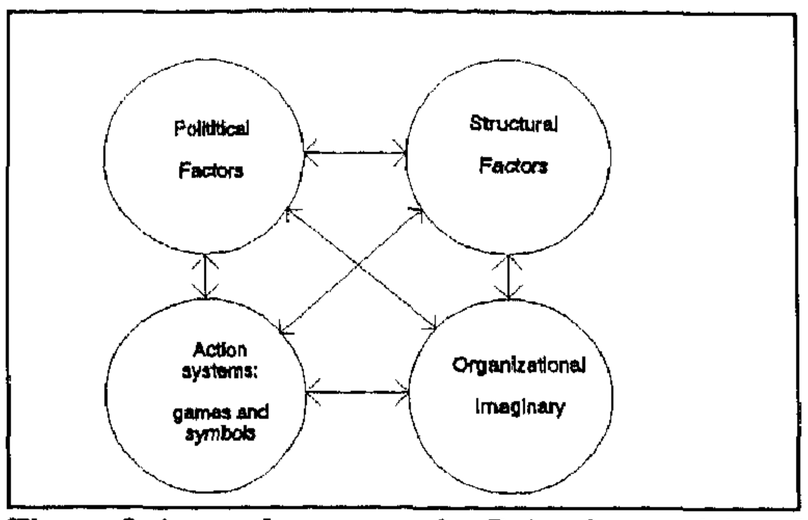

Figure 2.4 Larçon and Reitter's model of Corporate Identity (Source: Larçon and Reitter, 1979)

Larçon and Reitter (1979) devote considerable attention to how an organization's identity is formed and maintained. They define (p. 22) 'feeling of identity' as the 'feeling of existing as a coherent and specific being, accepting one's past, having its role within the collectivity and acknowledged as such by the others'. An organization's identity has to be captured at four levels (Figure 2.4). Firstly at the political level, where a number of persons endowed with power formulate the plan of the enterprise and set up the organization. Secondly, there is the structural level where the project of the political leaders is worked out through structures and procedures. These two factors form the roots of an organization's identity. A social group constituted this way consequently produces its own dynamics in two ways. On the one hand, the individuals form their whole of images of the organization, of the groups surrounding them, and of their own place within both. Larçon and Reitter label the complex of these three interwoven images 'the organizational imaginary'. This is the third level at which they capture corporate identity. On the other hand, the organization produces results which are symbolic as well as concrete, which are called 'action systems'. The actions systems consist of the political games allowed within an organization and the symbolism used (myths, rites etc.). They make up the fourth level of identity analysis.

Larçon and Reitter illustrate their model with several case studies, focusing on one or more of the elements in their model of Figure 2.4. They seem mostly concerned with explaining how an organization's identity comes about. Similarly, Ramanantsoa and Thierry-Baisle (1989) explain how corporate identity can be understood studying an organization's history. History allows the researcher to grasp the micro-social element in the organization: the accumulation of events, changes in leadership, strategic changes, and difficult periods are complemented by many internal stories. These are the stories of the groups and individuals. Stories are the accumulated sediments of daily life. They make up the organizational identity in the sense that they form the organization's symbolism and its imaginary.

Larçon and Reitter's model offers cues as to how one can gain understanding of how an organization's identity comes about, but it does not make matters simple and concise; the four elements in their model summarize a fairly large portion of the body of knowledge of organization science. As Merkle (1992) observes: 'Corporate identity encompasses everything happening in an organization, so everything taught and practised in business administration can be of help in understanding the phenomenon'.

Understanding how an organization's identity has come about is not the same thing as explaining what it consists of at a certain moment. The problem of how the identity of an organization can be measured in a systematic way did not fall within the scope of Larçon and Reitter's study.

2.3.3 The concept of 'corporate culture'

A concept very closely related to 'corporate identity', conceived as 'actual identity', is the concept of 'corporate culture'. Often there is a great deal of overlap between 'corporate culture' and 'corporate identity'. Several authors (Gagliardi, 1990, Reitter et al., 1991, Mittmann, 1991) consider understanding corporate culture to be a condition for corporate identity management. The number of definitions for 'corporate culture' is as extensive as it is for 'corporate identity'. Opinions about the differences between the two concepts vary accordingly.

Generally, authors in the organizational culture field argue that an organizational culture has to do with assumptions, priorities, meanings and values shared by the organization members - i.e. patterns of belief are shared (Alvesson and Berg, 1992, p. 76). 'Culture' is an umbrella word that often encompasses a whole set of implicit, widely shared beliefs, traditions, values and expectations that characterize a particular group of people. Unfortunately, attempts to define 'corporate culture' run into difficulties which remind us of the problems with the concept of 'corporate identity'. Most definitions disagree mainly on *what* is shared among organization members (Kilmann, 1985). Linton (1945), in what is according to Pizam (1991) one of the most quoted definitions, relates to culture as: 'a configuration of learned behaviours and results of behaviour whose component parts are shared and transmitted by the members of a particular society'. Van Doorn and Lammers (1979) define 'culture' as 'norms, expectations, values and goals, shared by several persons, and which serve the purpose of specifying and stabilizing behaviour' (p. 108).

Although definitions of culture do not necessarily include behaviour, behaviour is a central element in many definitions. Barnouw (1963), for instance, defines culture as 'a way of life of a group of people, the configuration of all of the more or less stereotyped patterns of learned behaviour, which are handed down from one generation to the next through the means of language and imitation'. Hofstede (1980) gives a broader definition, going well beyond behaviour and allowing for assumptions and evaluations to play an explicit role in culture. He defines culture as 'the collective programming of the mind which distinguishes the members of one human group from another. It is the interactive aggregate of common characteristics that influence a human group's response to the environment'. Hofstede stresses the mind-set influencing the behaviour, rather than behaviour itself. Terpstra and David (1985) define culture in a similar way as 'a learned, shared, compelling, interrelated set of symbols whose meaning provide a set of orientations for members in a society'. Kilmann, Saxton and Serpa (1985, p. 5) define culture as 'the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes and norms that knit a community together'. Kilmann, Saxton and Serpa (1985) distinguish three cultural levels: Just below the surface of experience there is the level of behavioural norms. These are the unwritten rules of the game. At a somewhat deeper level lie the hidden assumptions - the beliefs behind all decisions and actions. These assumptions pertain to the nature of the environment and to what various stakeholders want and need. At its deepest level, Kilmann et al. consider culture as the collective manifestation of human nature - the collection of human dynamics, wants, motives and desires that make a group of people unique. Pizam (1991) ends his overview of definitions with Schein (1985), who sees culture as ' a pattern of basic assumptions invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and integration - that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems' (p. 9).

2.3.4 The relation between 'corporate culture' and 'corporate identity' in literature

The variety of definitions reviewed implies that the relations perceived between the two concepts are at least equally diverse. Few authors consider both 'culture' and 'identity' explicitly. Alvesson and Berg (1992, p. 144) see corporate identity as a concept which is similar, but more instrumental than corporate culture. German authors comment on the difference in the same vein. Martin Körner (1990, p. 63) sees three broad differences. Firstly, in the corporate identity-concept the instruments of identity construction are derived from the existing corporate identity, whereas in the corporate culture concept, the formation of culture is the result of the symbol systems, based on the central corporate values. Both definitions do not make a large difference because earlier (p. 14) Körner stated that 'corporate identity' is the self-concept of an organization, which has to be defined in terms of its basic values (literally 'Grundeinstellung'). Körner seems to say that the concept of 'corporate identity' has a managerial, top down connotation, whereas 'corporate culture' has more of a bottom-up connotation. Körner's interpretation seems inspired by the strategic concept of 'corporate identity' often found in German literature (Birkigt and Stadler, 1988, Kammerer, 1988, Merkle, 1992), which gives it a rather top-down flavour. Secondly, there is a historical difference in the origin of both concepts; the 'corporate identity concept' has its roots in communication science, whereas the corporate culture concept stems from American empirical research - often done by sociologists (p. 65).

Therefore, corporate identity has a rather external reference framework, and corporate culture an internal one. Körner's third distinction is that corporate culture is rather inwardly directed, corporate identity is rather outwardly directed (p. 75). With respect to design and communication, Grabherr (1991) thinks the concept of 'corporate identity' to be more encompassing (p. 76). Corporate culture is the basis on which corporate identity can be built (p. 61). But, after all, culture and identity are tied up in a process of continuous interaction, and are barely separable, if not practically identical (Körner, 1991). The differences relate to the way scientists and practitioners tend to use the concepts rather than to their content.

French authors perceive more difference between 'identity' and 'culture'. Reitter, Chevalier, Laroche, Mendoza, and Pulicani (1991, p. 21) distinguish 'corporate culture' in the broad sense and in the narrow sense. In the broad sense, they define 'corporate culture' as 'the perceptions of internal and external reality of the organization which every group member has to know in order to be part of the group and be accepted, together with the behaviour flowing forth from it'. They define 'corporate identity' as 'a coherent whole of organizational characteristics which allow anyone to identify the organization and - eventually - to identify with it'. They see culture as a carrier of corporate identity. They observe a difference in manageability: if it is already possible to arrange a culture, it is hardly imaginable to manage an organization against its identity. 'Culture in the narrow sense' consists of: the collective practices, organizational myths, taboos, norms of behaviour, values and symbolic acts. Culture in the narrow sense forms an ingredient of corporate identity (p. 24). Ramanantsoa and Moingeon (1991, p. 4) see culture similarly as 'the symbolic signifier of identity'. For them, 'identity' is the foundation, the roots of culture'. Weber (1985, p. 130) sees a similar difference: 'For the identity of a collectivity, only a subset of its culture and its domain of action is important: those fragments of basic values and institutions which enjoy fundamental status within the group'. Gagliardi (1986) sees the relation between 'corporate identity' and 'corporate culture' differently: corporate culture and the distinctive competencies of an organization determine together its identity, in so far as they determine the organization's borders, its form, the image and therefore its recognizability (Gagliardi, 1986). Also Balmer (1995) seems to endorse the idea that 'identity' flows forth from culture: 'Corporate identity comes into being when there is a common ownership of an organization's philosophy which is manifest in a distinct corporate culture'.

The texts on the difference between identity and culture do not lead to a clear distinction between the two concepts. Kilmann's three levels offer a cue as to how to approach this matter from a corporate communication perspective. It may be arguable whether the organization's expectations of its stakeholders belong to the organization itself or to its stakeholders - these expectations may be specific to external stakeholders rather than to the organization, thereby violating Albert and Whetten's criterion of 'distinctiveness'. On the other hand, the collection of human dynamics, wants, motives and desires may form part of the 'unwritten rules of the game' which Weber (1985) calls 'corporate identity'. This way, Kilmann, Saxton and Serpa seem to offer a cue as to how corporate identity, conceived as 'actual identity', may be related to 'corporate culture'. This subject will be tackled further in chapter 7, after a more thorough treatment of the concept of 'identity'.

2.3.5. Conclusion

Approaches toward corporate identity as an organization's actual identity at a certain point in time seem mostly concerned with understanding an organization's identity. In Weber's (1985) work, 'understanding' means coming to grips with the fundamental rules underlying the way employees in an organization behave. These rules constitute the core of an organization's identity which may lend itself to corporate communication; they are supposed to be central to the organization, longer-lasting than concrete behaviour, and they may be fairly organization-specific. Also Larçon and Reitter (1979) are concerned with 'understanding'. Their model, which is rather general in approach, is based on concepts from organization sciences. Their case-study based approach can also come up with organization-specific aspects, but compares them with the rather general dimensions of their model.

Authors differ in how they view the difference between corporate identity and culture. While some, like Körner (1991) see both concepts as practically identical, most French authors see culture rather as the 'symbolic signifier of identity', and identity as 'the roots of culture'. The three levels of culture identified by Kilmann, Saxton and Serpa (1985) seem to offer a point of view which fits in well with the view of 'identity' as the roots of culture: the wants, motives and desires and the hidden rules of the game are easier to attribute to the organization itself than the organization's assumptions on the nature of its environment and its stakeholders. In order to work out this differentiation more precisely, however, the concept of 'corporate identity' must be further operationalized. Then, in chapter 7, the issue will be dealt with once again and dealt with more definitively.

2.4 The organizational identification approach

Dutton, Dukerich and Harquail (1994) explored the organization members' cognitive connection with their organization, derived from images that each member has of the organization. Elaborating on Albert and Whetten's (1985) work, they define corporate identity as 'the members' shared beliefs about what is distinctive, central and enduring about their organization'. When a person's self-concept contains the same attributes as those in the perceived organizational identity, Dutton et al. define this cognitive connection as 'organizational identification'. Ashforth and Mael (1989) base their account on the social identity theory (Tajfel and Turner, 1985). People tend to classify themselves and others into social categories, among others in terms of organizational membership. This is one of the most elementary forms of human reasoning (Fiske, 1992). Categories are defined by prototypical characteristics. This social classification enables individuals to locate or define themselves in the social environment. Identification implies that organization members personally experience the successes and failures of the organization. The organization is seen to embody characteristics perceived to be prototypical of its members. Ashforth and Mael (1989) distinguish three general consequences of the social classification mechanism: Individuals tend to choose activities congruent with salient aspects of their perceived own identities, and they support the institutions embodying those 'identities'. A second consequence is that social identification may engender intragroup cohesion, adherence to groups values and norms and homogeneity in attitudes and norms. Thirdly, identification will reinforce the very antecedents of identification, including the distinctiveness of the group's values.

Alvesson (1990) illustrates how employers regulate their professional identities by means of particular kinds of expressions and verbal symbols. Employees of one advertising agency, for instance, like to talk about other agencies as amateurs, defining in such a way the borders between them and the incapables. Such discourses are thereby involved in temporal regulations of identity and influence the employees experience of the organization's coherence, distinctiveness and continuity over time. The effects do feed back into the organization. Through its internal perception an organization's identity can have severe strategic consequences via its influence on employee motivation (Van Riel Smaak and Pruyn, 1994; Keller, 1998).

The internal image plays a pivotal role in the organizational identification approach. Many authors conceptualize corporate identity similarly to the way Birkigt and Stadler (1988, p. 23) differentiate corporate identity from image. They define corporate identity as the organization's self image, whereas corporate image means the organization's external image (Birkigt and Stadler, 1988, p. 28). Such a conceptualization seems at odds with Wicher's (1985) conceptualization of corporate identity as rules constituting the organization members implicit knowledge which generates the observable surface structure of organizational actions (p. 148). If employees have an image of their own organization in their minds it is not sure at all whether that image corresponds to the organization's identity. For the purpose of measuring an organization's actual corporate identity, the organizational identification approach does not seem to offer the most effective approach. The conceptualization of 'corporate identity' as the 'actual empirically observable identity of an organization at a certain point in time' seems the most viable way of measuring corporate identity.

2.5 Approaches to measuring corporate identity

Attempts to measure corporate identity empirically have not very often been made, perhaps due to the absence of consensus on what 'corporate identity' means. As Jackson (1987) puts it: 'Millions of booklets, miles of video film, acres of advertising have been lost by companies who have decided what and how to communicate purely on the thoughts of a chief executive, on a gut reaction from the personnel manager or an inspired idea from the head of marketing. The thoughts may have been accurate, the feeling may have been correct, but without empirical research this approach has much in common with Roman emperors reading forthcoming events in a pigeon's entrails.'

Nowadays, literature offers several methods which can be used to approach an organization's identity. Van Riel (1995) has made a comprehensive overview of the state-of-the art in this area. He classifies them according to Birkigt and Stadler's (1988) conceptualization of corporate identity as consisting of personality, behaviour, communication and symbolism. Some methods measure it as a whole, others concentrate on one or more of Birkigt and Stadler's four components of corporate identity. The research methods available are discussed in connection with the conceptualizations to which they apply. Overview 2.1 lists the measurement methods.

I	Methods for analyzing Corporate Identity as a Whole I-1 Bernstein's Cobweb method I-2 Atamer and Calori's 'Diagnostic Général' I-3 Lux' Star method I-4 Weber's Method of Understanding Reconstruction 1-5 Todd Lief's Working Impressions™ questionnaire 1-6 Keller's Mannheimer CI-Test 1-7 Rotterdam Organization Identification Test (ROIT) 1-8 Balmer's Affinity Audit
II	Methods for analyzing components of the Corporate Identity Mix II-1 Behaviour - De Cock's Okipo-methods II-2 Communication - Communication Audits II-3 Symbolism - Facilities Audit - Graphic Design Audit

Overview **2.1** Methods for measuring corporate identity

In many approaches, 'corporate identity' encompasses everything an organization does. Peter Lux (1988), for instance, defines the identity of an organization as 'the sum of its characteristics'. Making an inventory of all the characteristics of an organization of more than a thousand employees at one moment in time would not be a feasible task, bearing in mind what all those employees might do at any such moment. Pursuing this line of research might lead the researcher into the trap described by Bonini's paradox: the more realistic and detailed one's model, the more the model resembles the organization itself, including resemblance in terms of incomprehensibility and indescribability (Starbuck, 1976, p. 1101). In some way, a measurement instrument pretending to measure corporate identity must provide a facility to effectively summarize everything happening in order to produce a representation which can be communicated to stakeholders.

The measurement methods will be compared on the suitability of their results for corporate communication, discussed in chapter 1:

- **ability to satisfy the requirement of 'central character'**

The measurement instrument should capture in particular behaviour which is common across organizational departments, and stays the same toward the different interaction partners. This criterion can be met by either making an inventory of everything that happens in the organization, or by taking a sample and providing a measure of the degree to which this is representative for what happens across the organization, and then looking for the elements 'central' to this data. Of course, methods which measure only one of Birkigt and Stadler's components, such as the design audits, can only lead to conclusions about that component.

- **ability to satisfy the requirement of 'distinctiveness'**

A measurement instrument should be sensitive to organization-specific items in order to capture potentially unique features. In the eyes of some authors, this requirement is so problematic that is even prohibitive to the development of a measurement instrument. Weber (1985, p. 209), for instance, writes that because of the specificity of an organization's identity little can be said beforehand about how an organization's identity can be measured.

The specificity criterion is not at odds with the desire to measure an organization's identity. Specificity can be captured, provided the measurement instrument is open to the content of what is being measured. The sensitivity of a measurement instrument to organization-specific features depends firstly upon the way the items are collected (standard questionnaires at one end of the spectrum versus completely open interviews at the other); and upon the way these items are summarized. Some measurement methods are designed to capture corporate identity in an open-minded way, others are designed to capture predetermined characteristics and to compare organizations on the basis of these characteristics.

- **ability to satisfy the requirement of 'temporal continuity'**

The common behaviour patterns should be performed consistently over time. Their continuity can be established by repeated measurements over time, but, ideally, a measurement method should offer cues as to what features will be more continuous compared to other features. Such cues will reduce the need for repeated measurement, and any eventual costs this might entail.

Criteria for choosing a method for measuring corporate identity, and how they can be met

Ability to capture:

- Central Character
  - Total Inventory
  - Sampling
    - With statistical tools to check representativity
    - Use of other cues

- Distinctiveness
  - Item collection: open versus standard items
  - Summarizing algorithm: following the logic of the data versus comparison against pre-set dimension

- Temporal continuity
  - Ease of repetitive measurement
  - Measurement results themselves give cues to continuity

Overview 2.2 Issues in choosing a method for measuring corporate identity

The choice of the research method depends upon the researcher's problem. Sometimes he may want to compare organizations on their score for dimensions supposed to be common to other organizations. Then, the identity measured is rather the reflection of the organization's identity in the researcher's mirror; the instrument is like a sieve, which only captures the aspects the researcher expects to find. Essentially, the aspects established before the outset of the research become the focus of attention, and the researcher is rather measuring those specific aspects instead of the organization's identity. For purposes of communication, comparison on specific aspects is relevant in so far as stakeholder groups (e.g. customers) judge the organization and its near competitors on these dimensions.

Summarizing can be done in two ways: either by extracting summarizing dimensions from the data following a logic which is provided by the data themselves or by comparing data to a set of predetermined dimensions. Following the logic in the data has the advantage, that the research stays open for the unique aspects of an organization's identity and is able to provide organization-specific 'essential' features. The disadvantage is that one cannot be sure whether the results will be comparable with data resulting from research in other organizations. In order to capture organization-specific items, an instrument for measuring an organization's identity should preferably collect the features in an open-minded way and summarize them following the logic provided by the research data themselves, instead of comparing them against researcher-specified dimensions. This is the only way to ensure that the measurement method can meet the criterion of 'distinctiveness'. Overview 2.2 summarizes the issues relevant to the judgment and choice of a measurement method.

A) *Methods for analyzing corporate identity as a whole*

For the purpose of measuring 'corporate identity' as a strategy, a whole list of methods could be drawn up including all measurement instruments measuring one or more organizational characteristics. It is easy to see that typologies like Porter's (1980) or the typology of Miles and Snow (1978) give insightful descriptions of organizations as a whole. Nijssen (1992) gives a description of the application of the Miles and Snow typology in two Dutch industries, showing how organizational characteristics can be described with it. Their typology measures and summarizes the measurement results against pre-set dimensions of organizational strategy. It does not measure identity as such - neither does it pretend to do so. This section concentrates on methods designed more specifically at capturing an organization's identity.

- Bernstein's Cobweb Method

Bernstein (1986) developed a method of measuring an organization's identity. The method is easy to apply and can serve as a means of reaching consensus among managers about the desired corporate identity. It is a popular technique providing results in a short time.

At the start of a session the managers are asked to mention the attributes which have played a role in corporate history, and which will be important for the organization's further development. This list has to contain all essential values, whether they are still subscribed to or not. In the subsequent discussion among the participants, the total number of values is reduced to not more than eight values which all participants consider important. Bernstein (1986) advises these eight values be represented as the spokes of a wheel. Every spoke is marked on a nine-point scale, with the zero at the axis and the nine at the rim. First the managers indicate how they think relevant stakeholders judge the organization on these eight scales. They are then asked to give their personal ratings, and then the variations between the collective rating of the participants and the estimate of the stakeholders' ratings are discussed. The results of both 'investigations' can be shown simply and quickly with the aid of an overhead projector. Figure 2.5 shows an example of the pattern, actually a kind of cobweb.

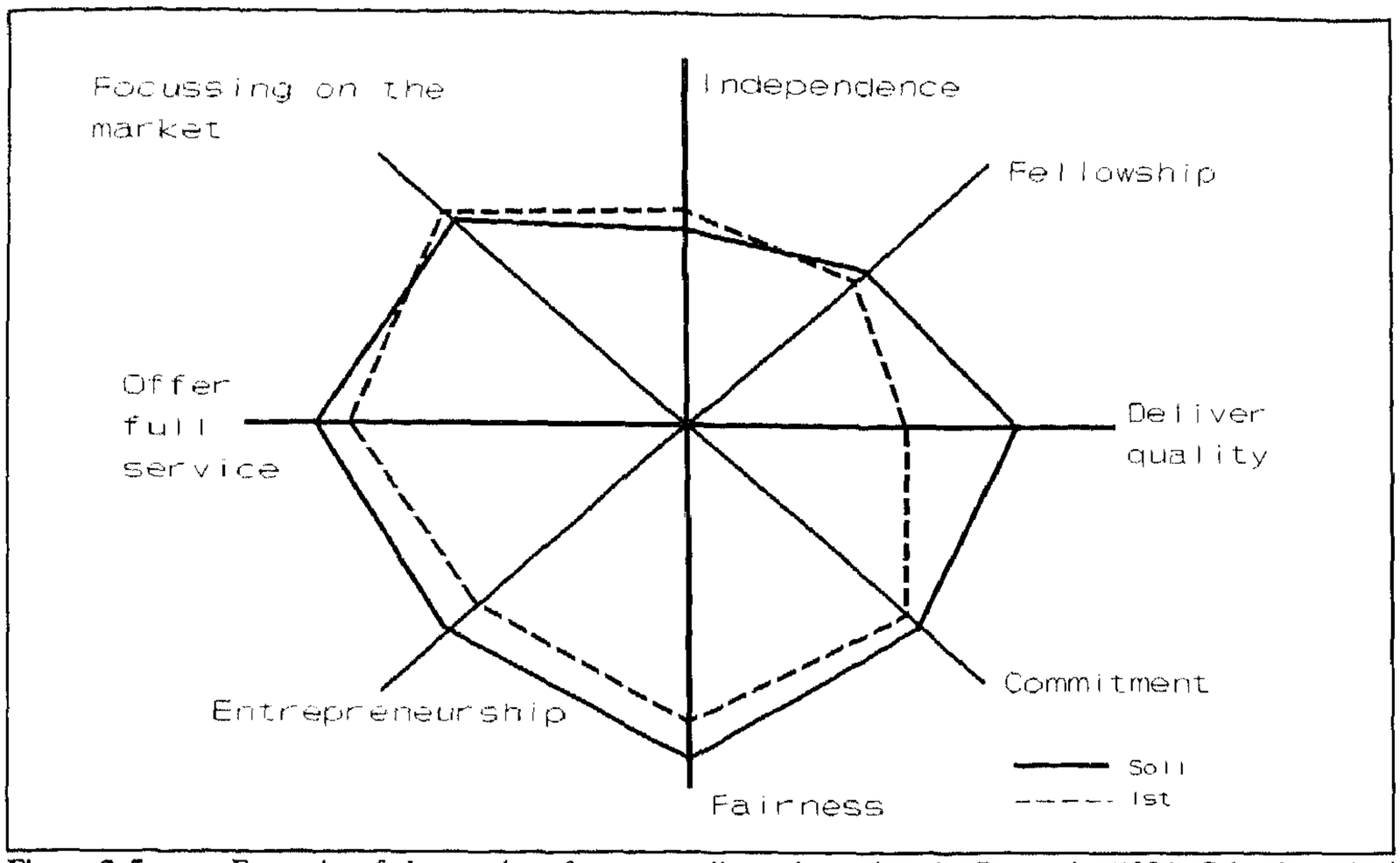

Figure 2.5 Example of the results of a group discussion using the Bernstein (1986) Cobweb method
(Source: Corporate Communication Centre, 1992)

The most important function of Bernstein's (1986) method is to make managers aware of the dimensions in which they think. It visualizes internal conflicts within the management team and it helps establishing the desired corporate identity. The cobweb method summarizes the data according to the logic of the organization. All possible characteristics are gathered, and in a group discussion among managers of the organization they are brought back to the eight most essential characteristics. The measurement, however, is applied to only a small fraction of the organization: its management team. The summarizing algorithm is open-ended: there are no pre-established dimensions. The outcome therefore can be very organization-specific, and as such, it may lead to informative conclusions on an organization's identity. The consensus which is required among the participants on the importance of the values may be considered as a cue to continuity of these values; they are less likely to be abandoned quickly. Bernstein's 'cobweb method' is a useful method to start the discussion on the organizational objectives, and on the choice of a desired identity.

- **Atamer and Calori's 'Diagnostic général'**

Atamer and Calori (1993) developed a method for the explorative analysis of an organization's identity. They distinguish four components of identity, each of which is tackled by separate measurements: its general goal orientation ('finalité'), its values and norms of behaviour, its management system and its strategic recipe ('recette stratégique').

In terms of the general strategy of an organization, Atamer and Calori ask the management team to rate the priority they give to growth, rentability and the organization's social value, its risk attitude, its desire for independence and its attitude toward prestige. Regarding the second component, consisting of the organization's values and norms of behaviour: if the dominant cultural traits of an organization have been made explicit, in for instance a mission statement, management makes an assessment of the degree to which these values have been put into practice. If such a statement does not exist, every member of the management team mentions the five values most characteristic of the organization. For every value management mentions two ways in which they have been put into practice. In the second stage every member of the management team points out which values or norms should be reduced in importance and which should be introduced and fostered. The management system makes up the third component of organizational identity. It is measured by the answers to four questions: which concrete practices reveal the planning effort, which ones reveal the attitude toward adaptation to risks, which ones the decentralization of decisions and which practices reveal their centralization. Atamer and Calori's fourth component of identity is the organization's strategic recipe as perceived by management: the domain of organizational activity, the organization's distinctive competencies and its actual strategy.

Atamer and Calori's method help a consultant to get an impression of an organization's strategic attitude. However, it only addresses identity through the perceptions of top management and therefore rather measures the organization's image in the heads of its managers. Furthermore, it is only susceptible to an organization's specific characteristics when dominant cultural characteristics are assessed; only then, managers are free to provide any input they like. Because of the predetermined dimensions of measurement, it is less sensitive to organization-specific features than Bernstein's (1986) cobweb method.

- **Lux' Star Method**

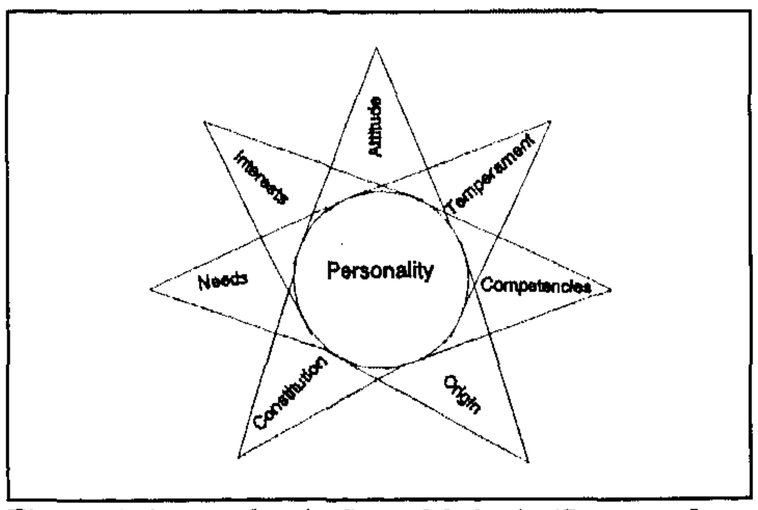

Figure 2.6 Lux' Star Method (Source: Lux, 1994)

Lux (1988) represented the seven main dimensions he could distinguish in organizations in the form of a star (Figure 2.6). He derived the seven points of his star from Guilford's (1959) personality research. Guilford found seven main factors underlying over 4000 adjectives with which people described each other. Lux adapted these dimensions to the corporate context:

1. Needs: Internal and external motives and drives. These constitute the central aspects of the corporate personality and are the basis of the motivation of an organization's behaviour. Examples are: growth, security, and a healthy corporate climate.

2. Competencies: the organization's distinctive competencies.

3. Attitude: the organization's philosophy and political background. This dimension

reflects, how the organization sees itself and its surroundings.

4. Constitution: the physical locations, structural chart and legal form of the organization. It encompasses buildings, location, organizational structure and such like.

5. Temperament: the way in which the organization gets things done or lets things be. It determines the strength, the intensity, the speed and the emotionality of its behaviour.

6. Origin: the link between corporate personality and its past.

7. Interests: the organization's mid-term and long-term goals and objectives.

Basically, Lux' star method is a checklist for interviewing and observing employees, and for desk research. The checklist is more of an auxiliary means when measuring identity than a measurement instrument in itself. The method of collecting corporate signals has not been defined, only the method of summarizing: all data are compared with the seven dimensions. Therefore Lux' method is very suitable for a global comparison of organizations, but the degree to which the measurement results can be used as a basis for informative communication depends upon the observing skills of the consultant. The method itself does not offer any cues.

- **Weber's Method of Understanding Reconstruction**

Weber (1985, p. 184) proposes a method which he calls 'understanding reconstruction' of organizational identity. Employees perform purposeful actions. Their purposefully structured behaviour should be understood by the researcher (p. 195), who places himself in the position of the actor. Only then understanding is relatively unproblematic, when the researcher is a participant in the investigated object area. The investigation of an organization's identity takes on the character of a 'rational reconstruction' of the organization's intuitive knowledge (p. 199). As the standard form of an understanding analysis Weber proposes the 'practical syllogism', which implies that an actor's action can be understood through the goals and targets underlying that action (p. 203). When the understanding of an organization's identity is involved, the action orientations have to be investigated at a collective level. The researcher enters a discourse with the organization members, in which the organization members have to legitimate their behaviour as 'rational'. Weber proposes two alternative methods for reaching this. Firstly, Weber proposes the 'narrative interview' (p. 224), in which the respondent is requested to tell all. The interviewer lets him talk as he likes. At the outset the researcher only proposes a general, global theme and invites the respondent to just talk about it. As soon as the respondent is at the end of his story the interviewer asks more questions in order to get more 'narrative sequences'. The main purpose is to sustain the respondent's narrative power and let him complete his narrative thread on his own. Alternatively, Weber proposes ethnomethodologic approaches which reveal the methods already used 'since forever' by the actors in order to constitute and organize their social world (p. 214). The approach proposed by Weber is Garfinkel's (1967) 'method of alienation', in which daily routines are made problematic by

providing 'nasty surprises'. Garfinkel hopes to reveal the implicit and self-evident by a purposeful questioning of what used to be routine. He uses as research procedures provocation, purposefully created misunderstandings and stubborn requests to illicit explanation of the meaning of daily routines.

Weber proposes a process-oriented approach: the researcher does not tell the organization members what their identity is, but instead helps them to reconstruct their corporate identity themselves. The researcher builds hypotheses, which he tests in subsequent discussions. He gives employees feedback and helps them to get a better picture of their organization's identity until consensus is reached, so that the 'identity story' represents sufficiently the organization's 'true' identity. The researcher who has adopted Weber's method operates more like a consultant, who speaks with organization members, and provides them with a clearer image of their own organization, tuned to the whys and wherefores of what they are doing. Weber talks with organization members about his conclusions, but he does not develop an empirical representation of an organization's identity.

- **Todd Lief's Working Impressions™ questionnaire**

Todd Lief (1995) developed a questionnaire to tackle the slippery and invisible abstract attributes which characterize complex business and organizational systems. In his view, meaning always shows up in a context defined by sets of impressions, attitudes and feelings. Intangible forces behave as a collective swarm of individual impressions, rather than objective scientific data. His questionnaire consists out of contrasting word pairs, like the semantic differential scale, (e.g. 'warm-cool', 'spicy-mild', 'involved-detached') to stake out the conceptual space in which shared impressions and attitudes exist. Employees have to follow a set of instructions like 'Please circle the word in each pair which is most like this company as you see it today' and 'Please circle the word in each pair that a nasty competitor might use to describe us'. Completed forms are then examined for terms unanimously selected by all participants. Only these unanimous choices will appear in the final report. Other terms are ignored. This discipline of unanimity lets members see total agreement. Lief goes on to state that this previously undocumented, otherwise inaccessible information now forms a new reference vocabulary and a new common language in which people can start to talk with each other.

What is less clear in the Working Impressions method is, where Lief gets his word pairs from. Lief himself describes his instrument as 'flexible, adaptive'. Although not stated explicitly, his 'examples form the list of 52' [word pairs] suggest that these pairs are fixed. The summary algorithm, which consists of selecting only those items on which consensus exists, is data-driven. It follows that what has been filled in by respondents and the data are not mapped on pre-established dimensions.

- **Balmer's Affinity Audit**

Balmer (1995) designed an method to explain the driving forces which sustain an organization's corporate identity. Balmer uses the principles of grounded theory (Strauss and Corbin, 1991) in order to reveal the psychological process underpinning corporate identity. Employees have an affinity with a range of values and beliefs. The mix of values and beliefs in their composite forms defines the corporate personality of the organization. Access to the organization is achieved by referring to the everyday language, ideologies, rituals and beliefs. The researcher relies on a variety of methods of data collection, primarily consisting of semistructured interviews, observation and reference to organizational documentation. Balmer employs a basic four-stage process, the second of which involves the actual measurement.

- establish the corporate mission and strategy
- reveal the dominant system of values and beliefs in the organization
- evaluate such systems of values and beliefs against the corporate mission and strategy
- nurture those values and beliefs which support the corporate mission and strategy.

- **Keller's Mannheimer CI-Test**

The Mannheimer CI-test is based on the Mannheimer CI model, which assumes that a certain corporate identity evokes identification reactions with internal and external stakeholder groups. These identification reactions have their impact on corporate culture, and therefore indirectly on corporate behaviour (Keller 1990). The test measures the internal effect of corporate identity. The Mannheimer CI-test distinguishes five dimensions, which together are supposed to measure employee identification:

1. Identification ability: the potency of the individual employees to identify with anything or any kind of organization at all.
2. Need to achieve: employees' willingness to achieve something in general and in the their current job in particular.
3. Satisfaction: the degree to which employees are satisfied with their job, subdivided into satisfaction with their profession, and satisfaction with their job in the organization.
4. Corporate style: mix of elements regarding corporate information style, management style and corporate climate.
5. Example function: the degree to which people think it worthwhile to identify with the organization.

Keller (1987) developed a questionnaire which measures these dimensions and their determinants. Employees have to fill in a questionnaire saying whether they agree or not with a large number of statements about themselves and the organization. Similar the method used in psychological tests, a total rating is computed for each factor. These scores can be compared to the industry averages. The questionnaire has been amply tested and used in Germany but it seems to be somewhat culture-dependent: an exploratory study in the Netherlands turned up with a factor structure quite different from the structure found in the original German version of the questionnaire (Corporate Communication Centre, 1991, internal report).

The Mannheimer CI-test can be used like a thermometer: if the employees' score on the dimension 'willingness to achieve something in general' is significantly lower or higher than their score on their 'willingness to achieve something in their current job', or, similarly, if their 'satisfaction with their profession' is significantly different from their 'satisfaction with their job in the organization', something must be wrong. The dimensions of 'satisfaction' and 'motivation' fulfil the thermometer function.

The Mannheimer CI-test measures the internal effect of corporate identity (Keller, 1987), rather than an organization's corporate identity itself. It is an instrument for making a diagnosis of the workforce motivation or measuring the employees' degree of identification with the organization. It measures some aspects which can play a role in corporate identity. The data collection method is a statistically validated sampling method which summarizes the data on a number of preset dimensions. It is an excellent instrument for comparing organizations. A databank has been developed in order to compare organizations with their industry averages (Keller, 1987). However because of its pre-structured questionnaire character it is unable to uncover unique characteristics.

- **The Rotterdam Organization Identification Test (ROIT)**

As in the Mannheimer CI-test, the focus in the Rotterdam Organization Identification Test (ROIT; Van Riel, Smidts and Pruyn, 1994) is on the identification of employees with their organization. Based on the social identity literature (like Ashforth and Mael, 1989) a 15-item organizational identification scale was constructed, including affective elements, but excluding behavioral intent. In order to determine an individual's strength of identification with an organization, the questionnaire establishes to which degree en employee experiences:

- perception of belonging
- congruence between goals and values
- positive evaluation of membership
- need for affiliation
- perceived benefits of membership
- perceived support
- acknowledgement
- acceptance
- security

The ROIT summarizes the data according to preset dimensions. Van Riel, Smidts and Pruyn are developing a databank with which organizations can be compared to each other on these dimensions. However, just like other tests which use standard questionnaires and pre-set dimensions the ROIT test itself cannot grasp unique organizational characteristics.

B) Methods for measuring elements of corporate identity

I Measurements of corporate behaviour

There are measurement instruments available which measure cultural dimensions underlying behaviour, such as De Cock's (1984) VOKIPO-method.

- *De Cock's Okipo-methods*

An organizational climate measurement method which is popular in Europe is the Organizational Climate Index (Okipo, in its Flemish abbreviation, which literally stands for: Organisatie Klimaat Index voor Profit Organisaties, i.e. 'Organization Climate Index for Profit Organizations'), developed at the University of Leuven in Belgium. This measurement instrument has a more compact version, the 'Vokipo'. This test assumes that the organization is continuously confronted with two questions:

1. Do people have the opportunity to fulfil their potential within the organization (people-oriented) or do the organizational objectives prevail (organization primacy)?
2. Does the organization strive for flexibility with respect to the environment or does it strive for control of the status quo?

With these two dimensions a typology of four kinds of organizations is developed, which determine some main characteristics of the internal organization:

a. interest in flexibility and people-directedness gives the degree of 'support'
b. people orientation combined with a control orientation gives 'respect of rules'.
c. control and organizational primacy gives the 'goal-oriented information flow'.
d. organizational primacy in combination with flexibility results in an 'innovative organization'.

The VOKIPO, the shorter version, has become popular with consultants, in particular in Belgium and the Netherlands. With a simple standard questionnaire, the organization is classified in this typology, and after numerous empirical surveys, norms for several kinds of organizations have been established. In the same way as the Mannheimer CI-test or the ROIT, this test takes a selective sample of the things which exist in an organization; a limited number of items is rated where the employees are asked about their perceptions of what happens in an organization; in essence, the OKIPO and the VOKIPO could be described as an internal image questionnaire. The employees' ratings are summarized along four predetermined dimensions. In the same way as Keller's Mannheimer CI-Test, this method can be used for establishing the score on certain dimensions underlying employee behaviour. Comparison of different organizations is easy, but it is virtually impossible to isolate unique organizational characteristics.

II Communication

Inspired by the developments in management control, audits have become increasingly popular in the communication discipline. An audit is not only a descriptive instrument, but it can also be used to judge communication effort. An audit is often the occasion for changes in management practice (Van Riel, 1994). Several audits are known. The most simple variations only list the existing communications of an organization and give a more or less subjective judgment, in particular on their consistence and impact. Since the seventies, more 'thorough' audits have been developed of the overall organizational communication (Goldhaber, 1986). They are generally directed to measuring the organization's score on pre-established dimensions and items. Most audits gather employee perceptions regarding the communication climate in the organization. Redding (1972) identifies five dimensions required in order to achieve the ideal communication climate in an organization: supportiveness, participative decision making, trust, openness and high performance goals. Van Riel (1992) lists the most prominent audits:

- *Organizational Communication Questionnaire (OCQ)*

Roberts and O'Reilly (1973) developed the OCQ in order to compare organizations on the efficacy of their communication, on thirteen explicit dimensions and three implicit dimensions. These are (1) desire for action; (2) upward directionality; (3) downward directionality; (4) lateral directionality; (5) accuracy; (6) summarization frequency; (7) gatekeeping; (8) overload; (9) satisfaction; (10) written communication; (11) face-to-face communication; (12) telephone communication; (13) other channels of communication. The implicit variables are: trust in superior, influence of superior and mobility aspirations.

- *Communication Satisfaction Questionnaire (CSQ)*

Downs and Hazen (1977) developed a questionnaire where the respondent has to rate eight variables on communication satisfaction, six variables on job satisfaction and five general demographic variables.

- *Communication Audit Questionnaire (CAS)*

The Communication Audit Survey questionnaire (Greenbaum, Clampitt and Willihnganz, 1988) continuously compares the actual situation with the desired situation for dimensions similar to the questionnaires mentioned above.

The audits mentioned have all been judged for reliability and validity by Greenbaum et al. (1988). For a more detailed overview of these questionnaires, see Van Riel (1994), pages 65-72. Similarly to the Mannheimer CI-test and the VOKIPO, these audits approach corporate identity by gathering employee ratings on standard items. The items are summarized along dimensions which have also been established beforehand. The audits discussed are excellent instruments for inventorization of organizational performance on certain dimensions and for comparison between organizations. The use of standard questionnaires, however, prohibits the gathering of really organization-specific characteristics and dimensions. Audit questionnaires are used frequently in communication research, the advantage being that they are simple to implement and lead to immediate results. In general, communication audits are

diagnostic instruments, mainly intended for internal use. Although items in the individual questionnaires could be investigated for their relevance to the whole of the organization, these questionnaires measure, in the first place, the communication climate in the organization. Only if that is exactly what the organization wants to communicate about itself does this kind of measurement lead to informative statements.

III Symbolism

Van Riel (1992) lists two design audits: the 'Facilities Audit' and the 'Graphic Communications Audit' (Napoles, 1988). The 'facilities audit' lists all objects which might be used to carry the visual messages of an organization. It is more a listing of visual communication potential than a measurement of the status quo. It is an open-ended method, which, however, does not summarize. This last activity is a task for the interpreter - be it a consultant or a manager in the organization. The 'graphic communications audit' lists all visual cues in an organization's printed material. It is an open-ended listing of all cues. These cues can then be compared in terms of their consistency and meaning. No specific procedure for summarizing has been established. The symbolism audits just make an inventory of the design material. They have even less to offer than the communication audits in terms of cues to the organizational climate, let alone to the identity of the organization as a whole.

2.6 Discussion: Empirical approaches to corporate identity

Table 2.2 gives a summary of the measurement methods reviewed. The qualifications in the table are given from the viewpoint of measuring corporate identity for the purpose of deriving statements about corporate identity which are central to organization, distinctive and consistent over time. Most of the methods presented have been designed for purposes other than measuring the actual identity of an organization. Actually, none of them has been designed for the purpose of collecting organization-specific data from the whole of an organization and summarizing them into a limited, manageable number of relevant terms.

Half of the measurement methods listed in Table 2.2 use standard questionnaires, summarized across pre-set dimensions, which enable them to compare organizations with each other. When an organization's identity is measured, they all gather those elements which have been foreseen by the designers of the measurement instrument. These instruments, which have been validated across numerous organizations, cannot capture those elements which are characteristic of one specific organization, and which give it its unique identity. But this is exactly why they can compare organizations on the dimensions found. Some of the authors who developed the methods even set up complete databanks for that purpose. Comparison among organizations is the strength of these questionnaires, but their insensibility to highly organization-specific items limits the degree to which they are informative for corporate communication purposes; they will never generate features which are unique to a single organization. This applies to a somewhat lesser degree to standard questionnaires which are summarized in a data-driven way, like Lief's (1995) working impressions questionnaire: if consensus is the sieve to filter out the main dimensions, the number of dimensions is as large as the number of items in the questionnaire. But still, only organizational characteristics which match the items of the questionnaire can be captured.

The design audits are able to make an inventory of organization-specific signals, but only in the domain of design. They do not provide facilities to directly summarize the data in a meaningful way or to compare organizations directly with one another. They are useful when management wants to optimize the opportunities for showing organizational symbols or to inform itself about the designs actually used.

Four measurement methods in Table 2.2 seem to correspond somewhat closer to Albert and Whetten's criteria: Lux' Star method, Balmer's Affinity Audit, Bernstein's cobweb method, and Weber's method of Understanding Reconstruction.

Bernstein's (1986) cobweb method measures the perception of a small group, the managers. This perception is the image these managers have of their organization. The only cue as to whether the outcome is valid for the whole organization is the consensus among managers that this is the case. Their opinion may be different from what happens on the shop floor. The cobweb method does not necessarily show the links which may exist among the dimensions found. Those links, however, might form a way to further summarize the data, following the logic of the organization itself - and not some externally imposed logic, e.g. the researcher's. Some of the dimensions uncovered by the cobweb method may count among the 'rules of the game' which Weber tries to find out with his method of 'understanding reconstruction'. Weber supposes his rules of generative grammar to be constitutive of actions across the organization, and to remain constant over time. Moreover, Weber allows for a structure among those rules which may give more insight into an organization's identity. Weber offers a very interesting line of thought to measure corporate identity for communication purposes: like Bernstein's method, it is sensitive to highly organization-specific items, able to summarize them along organization-specific dimensions, not limited to a certain group in the organization and, because of the 'ethnomethodologic' way of proceeding, able to make explicit what is self-evident to organization members. However, Weber feeds his research results directly back to organization members, and does not come up with a concrete and concise empirical representation of an organization which can be used to communicate its identity to the outside world. Balmer's Affinity Audit enjoys the same strengths as Weber's method; it employs the full strength of the openness of the grounded-theory approach and seems about as powerful as Weber's approach. What does not become clear, however, is whether the Affinity Audit penetrates as far into the self-evident of daily corporate life as Weber's method does. Lux' Star method does not specify items in advance, but it summarizes along dimensions specified by the researcher; therefore, its outcomes may show to a lesser extent what dimensions are central to the organization's identity than for instance Bernstein's (1986) cobweb method. Lux's star method is the converse of Lief's (1995) working impressions questionnaire. Lief's questions are set, but the summary dimensions vary according to the data. These summary dimensions, however, can never be more organization-specific than what has already been formulated in the questionnaire.

Summarizing, there is no measurement method which really fulfils the criteria of usefulness to corporate communication. A new measurement method is needed. In the next chapter, therefore, a new methodology will be developed to capture the characteristics of an organization which permeate the whole of its activities - those characteristics which may constitute useful potential 'Common Starting Points' for corporate communication (Van Riel, 1995). This method will be illustrated and validated in the later chapters of this dissertation.

Table 2.2 Comparison of methods for measuring corporate identity

Techniques	Purpose for which the measurement method has been designed	Informants	Kinds of questions asked	Methodology	What is being measured	Output	Ability to capture Centrality	Ability to capture Distinctiveness	Ability to capture Continuity	References
Bernstein's Cobweb method	Foster discussion on the organization's desired identity	managers	Prime dimensions of relevance to the organization's strategy	Group discussion	perceptions of managers	8 principal dimensions with the organization's perceived scores	moderate	moderate	moderate	Bernstein (1986)
Atamer and Calori's Diagnostic General	Obtain a quick organizational diagnosis	managers	scales established in advance	survey	perceptions of managers	score of the organization on preset scales	low	moderate	low	Atamer & Calori (1993)
Lux's star method	Checklist for establishing a diagnosis of an organization's identity	sample of all employees	scores of the organization on seven preset dimension	observation/ open interviews	perceptions of employees, observations of researcher	scores of the organization on seven preset dimension	moderate	moderate	low	Lux (1988)
Weber's Understanding Reconstruction	Help organization members discover their corporate identity themselves	sample of all employees	people are asked to legitimate what they are doing in their job	conversation and confronting discussions with employees	central values and legitimations	an understanding of the organization's identity	moderate	moderate	moderate	Weber (1985)
Lief's Working Impressions™ method	Measure consensus on organization descriptions	sample of all employees	fixed set of semantic differential-like scales	survey	perceptions of employees	items on which complete consensus exists	moderate	low	low	Lief (1995)
Balmer's Affinity Audit	Establish match between mission statement and dominant system of values and beliefs	mission statement and sample of employees	observation, semistructured interviews, documentation	grounded theory	match of beliefs and values of employees and corporate mission	match between mission and dominant system of values and beliefs	moderate	moderate	moderate	Balmer (1995)
Mannheimer C I test	Measure organizational identification	sample of all employees	fixed set of binary scales	survey	identification of employees	diagnosis of employee identification	low	low	low	Keller (1987)
Rotterdam Organization Identification Test (ROIT)	Measure organizational identification	sample of all employees	fixed set of seven-point scales	survey	identification of employees	diagnosis of employee identification	low	low	low	Van Riel, Smidts & Pruyn (1994)
Organizational Climate studies (OKIPO)	Measure the culture of an organization	sample of all employees	fixed set of seven point scales	survey	perceptions of employees	diagnosis of working climate in an organization	low	low	low	De Cock et al. (1984)
Communication Audits	Measure the communication climate in an organization	sample of all employees	fixed set of five- to seven-point scales	survey	perceptions of employees	diagnosis of communication climate	low	low	low	Greenbaum Clampitt & Wilihnganz (1988)
Facilities Audit	Optimize opportunities for showing organizational symbols	inventory objects fit for showing logo or design	no life respondents	observation and inventorying	physical objects	overview of all opportunities to show corporate design, logo etc.	low	low	low	Napoles (1988)
Graphic design audit	Overview of all design actually used	inventory of all design in use	no life respondents	observation and inventorying	applied design	overview of the different types of design in use	low	low	low	Napoles (1988)

3 CONCEPTUALIZATION OF CORPORATE IDENTITY AND ITS OPERATIONALIZATION

3.1 Introduction

In chapter two, approaches to corporate identity in the literature were reviewed. None of them operationalized the concept or developed a method of empirical measurement which generates common starting points for corporate communication. It seems virtually impossible to develop a method which can live up to Albert and Whetten's (1985) criteria of centrality, distinctiveness and continuity simultaneously. The difficulties encountered in developing an operationalization may be due to lack of agreement on the definition of the concept of 'identity'. Authors have been using implicitly different basic notions of 'identity' and applying them to organizations in their own way.

Therefore, in this chapter, the notion of 'identity', and in particular of 'personal identity', will be reviewed. Different basic perspectives regarding 'identity' are considered: the perspective regarding 'identity' as one's self-consciousness ('subjective identity'), the perspective regarding 'identity' as a set of characteristics ('objective identity') and the perspective regarding 'identity' as the feeling of togetherness of a group ('intersubjective identity'). The perspective regarding identity as a set of characteristics seems most suitable for the purposes of corporate communication. The question under discussion is, what kind of statements of characteristics can lead to meaningful information about the organization. Stating characteristic in the form of verbs and verb phrases appears to be potentially most informative. In successive steps, this still very broad preliminary definition will be restricted to a more concise and operational definition. A review of the literature on attribution theory points to the organization's actions as the starting point for measuring corporate identity. From the variety of things an organization brings about, a description in terms of intentional actions, from the perspective of the performers of these actions, may provide the most reliable and valid results.

People performing an action usually know several ways of describing what they are doing. The descriptions which they may give are connected by means-end relations. The network of relations by which the descriptions are connected provides a 'grammar' for the organization's actions, in which some actions occupy very central positions. Literature in the area of cognitive structures and organizational processes points out that constructs in the higher and more central positions in such a network tend to be the more continuous and common elements in the structure, and therefore also in the organization's actions. The summarizing power of these structures will help us to develop a more restricted definition of corporate identity, which satisfies Albert and Whetten's (1985) criteria for statements on an organization's identity. Corporate identity will be defined as those elements in the means-end pattern of an organization's intentional actions which occupy a central position in this pattern.

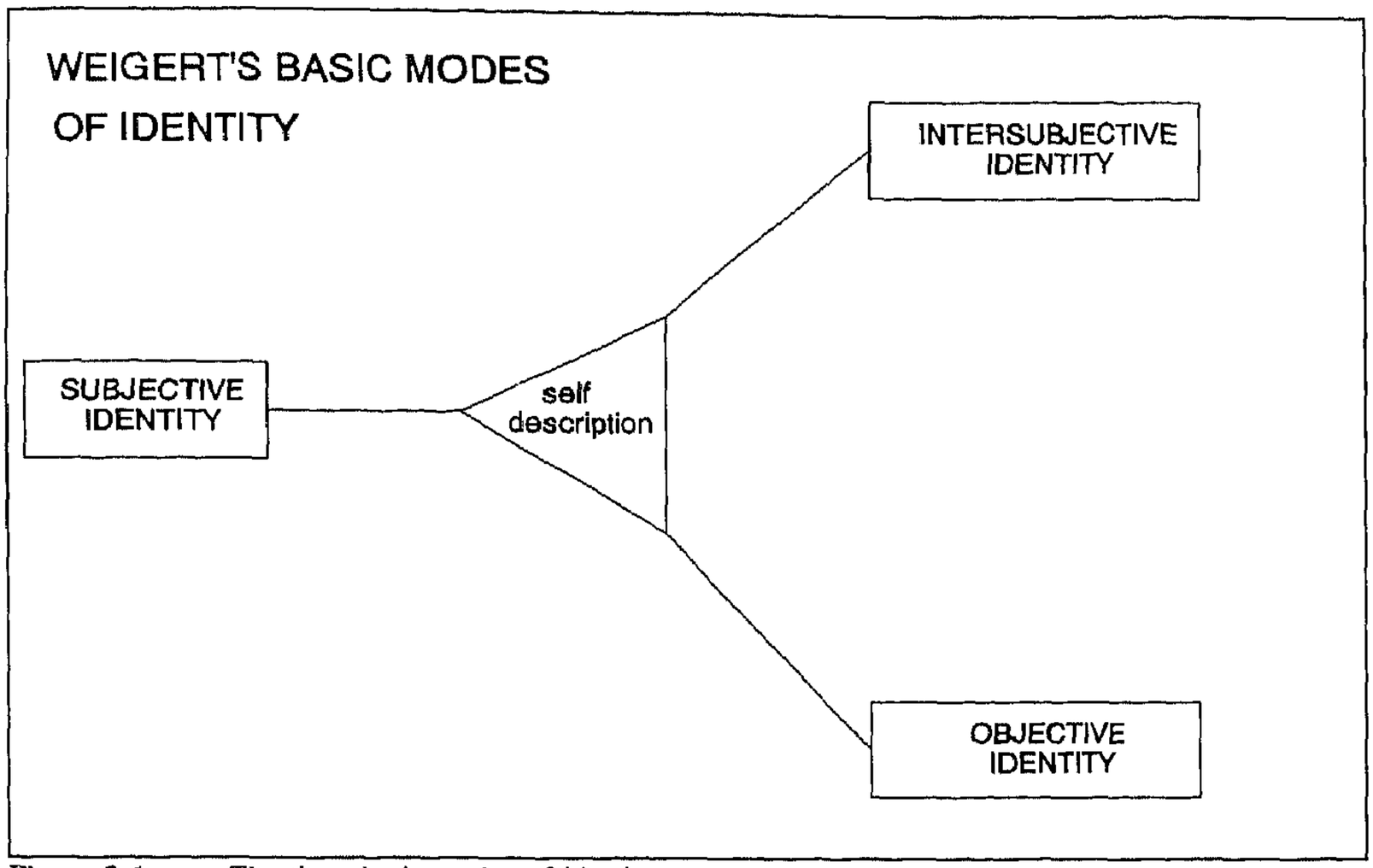

Figure 3.1 The three basic modes of identity

3.2 Basic approaches to identity

The investigation of the general notion of 'identity' is a first step in the clarification of the concept 'corporate identity'. Weigert (1986) has given a codification of American interactionist and social phenomenological writings. He starts from the sense of identity in a member of society who asks the basic question: 'Who am I?'. The answer can be given from three fundamentally different perspectives, which Weigert calls the three 'basic modes' of identity. The first answer at hand is the self-awareness that individuals take as the central reality of all that happens to them and of everything they do. The other extreme in the spectrum is the derived reality of structures that constrain and 'objectify' experience, the composite conglomerates people form when socializing, such as nations or organizations. Beginning with self-awareness, Weigert discusses his three basic modes of 'identity'; Subjective Identity ('I'), Objective Identity ('Me') and Intersubjective Identity ('We').

3.2.1 Subjective identity

Humans are aware of themselves as agents during their actions. Self, as the concomitant *subject* of self's knowledge, is the first mode to answer the question: 'Who am I?'. Nothing more is required for identity over time than one's awareness of persistence of the 'self' or 'I'. Weigert (1986) labels this 'pure *I* mode' of identity 'subjective identity'. Concomitant awareness is not constantly activated, but it is at hand for the individual who can reflexively focus on it. The reflective self is aware that *'I'* am acting, intending, etc., while simultaneously performing these actions.

Discussions adopting this perspective on identity date back to the seventeenth century. They were originally inspired by religious concerns. The philosopher John Locke wanted to provide an account of personal identity which would make sense of the Christian doctrines of human immortality, the resurrection of the dead and the Last Judgement. He was, in particular, looking for an answer to the question: which facts in which life could the dead be held responsible for on Judgment Day after their resurrection. According to Noonan (1989), all subsequent writings on the topic of personal identity consist merely of footnotes to Locke. The core of Locke's view is that personal identity is constituted by identity of consciousness. Continuity in consciousness is required in order to consider a person the same at two different points in time: 'As far as his consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person' (Locke, 1991, p. 162, Essay XXVII, 9). Where identity of consciousness is interrupted, one person will have two beginnings of existence. 'Self' is that conscious thinking which is concerned for itself as far as that consciousness extends. Locke's view is rather inwardly directed and corresponds to Weigert's concept of 'subjective identity'.

Conceptually, subjective identity has nothing to do with identity of personality traits (cf. Noonan, 1989, p. 46). Subjective identity resists definition in other terms. The *Me* mode of self is irreducible to the *I* mode of self as subject (Weigert, 1986). That 'self' is independent of any kind of description. If somebody wakes up the next morning as a beetle, like Gregor Samsa, the main character in Kafka's (1960) 'Verwandlung', he will still have the experience of being the same person - no matter how his characteristics, like his number of legs, or the number of antennae on his head, may have changed. The 'I' mode does not enable me to tell others about *Me*. The *'I'* mode of identity cannot be communicated to others - the mere subject of action is something different from the action itself. This dilemma is known as 'Hume's Paradox'. By the end of the eighteenth century, David Hume tried to give an account of what constituted personal identity over time (Noonan, 1989, p. 77). He came to the conclusion that 'identity' was a fiction. The only problem was the 'problem of specifying the psychological causes of the universal but mistaken belief in the existence of enduring persons'. One of the best-known passages in Hume's chapter on personal identity is Hume's denial, that he is introspectively aware of any self or mental substance (Hume, 1961, p. 228): 'For my part, when I enter most intimately into what I call *myself*, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch myself at any time without a perception, and never can observe anything but the perception ..... I may venture to affirm to the rest of mankind, that [these perceptions] are nothing but a bundle or collection of different perceptions'.

3.2.2. Objective identity

The perceptions Hume refers to correspond to descriptions of one's own identity, but they have no direct link - if any link exists at all - with the experiencing 'self', Weigert's (1986) 'concomitant self'. Concomitant awareness, as awareness, is private. Its symbolic content is not (Weigert, 1986). Hume's perceptions, like any other kind of descriptions, are formulated in terms of language. Language is a more or less generally accessible medium, established by socially agreed upon rules - in contrast to the concomitant self, which is only accessible to one's own consciousness. Therefore, any description is inevitably in more general terms, and coupled to the object described through the mechanism of attribution.

Weigert calls this mode of identity 'objective'. The word 'objective' is used in its grammatical sense; it refers to the object of the identity description. The identity of an object corresponds to its definition, with the object's characteristics as its defining features. This raises the subsequent question: under what conditions does an object's 'objective identity' allow its unique definition? How can it be differentiated from other objects? The problem of determining an object's unique identity has puzzled philosophers for ages. Many discussions have been centred around the 'Paradox of Identity', brought up originally by Plato in his Theaetetus (Williams, 1989).

Plato's problem with statements about the identity of objects was that they either seem to state trivially that something is the same as itself, or to state falsely that one thing is the same as another. Wittgenstein (1918, 5.5303) expresses it as follows: 'To say of *two* things that they are identical is nonsense, and to say of *one* thing that it is identical to itself is to say nothing at all'. If a statement of identity, such as 'Andrew = Peter', holds for two different individuals it is necessarily false. And otherwise, it is tautological. Any expression about identity seems senseless. This is 'Plato's Paradox' (Williams, 1989).

Frege (quoted via Williams, 1989) tried to find out under which conditions identity propositions could escape from Plato's paradox and be informative. He conceptually separated the object of an identity statement from its description. In his paper 'über Sinn und Bedeutung' he writes: 'Nobody can be forbidden to use any arbitrarily producible event or object as a sign for something. In that case the sentence a = b would no longer refer to the subject matter, but only to its mode of designation. We would express no proper knowledge by its means.' Frege gives examples of how 'proper knowledge' can be conveyed in identity statements: A priori proper knowledge is for instance expressed by the sentence: 'The point of intersection of line *a* and line *b* is the same as the point of intersection between lines *b* and *c*, where *a, b* and *c* are the lines connecting the vertices of a triangle with the midpoints of the opposite sides'. Empirical knowledge is illustrated by the astronomical discovery expressed in the sentence: 'The morning star is the same as the evening star'. Frege's solution to Plato's paradox rests on his use of the word 'meaning (Bedeutung)': The meaning of a name is the object it names. What makes it worthwhile to say that the point of intersection of *a* and *b* is the same as the point of intersection of *b* and *c* is that, though both have the same meaning, they have different senses. It is their having the same meaning, which makes the proposition true: it is their having different senses which makes it informative. Different people may attach different senses to the same meaning, and therefore, they now can communicate something to each other which 'makes sense'.

Plato's paradox emerges every time, when those senses are made up of proper names, i.e. in propositions where 'is the same as' is flanked on either side by a proper name (Russell, 1956, p. 54). Proper names are actually denoting phrases which do not denote anything. Strings of words, according to Russell, only have meaning if we take the complete sentence in which they occur and spell out what they mean. This becomes clear if we think of people we have become acquainted with only recently or know only vaguely. Generally, these people only have a meaning for us in terms of the few things they have done and which are known to us. Take for instance the proper name 'Sir Walter Scott'. Some readers might only know him as the author of *Waverly* and in this sense, the name 'Scott' is to them an abbreviation of 'the one who wrote *Waverly*'. The same man, however, also wrote *Marmion*. A useful identity statement, here, would take the form of '*the one who wrote Waverly*' is the same as '*the one who wrote Marmion*'. Williams (1989, p. 14) concludes, that Russell 's solution of the paradox involves the use of verbs and verb-phrases to produce genuine, informative, useful identity propositions. They take the form of 'the one who fell down the staircase yesterday = the one who wrote this year's greatest bestseller'. The only relationship between these two statements is the identity of the actor: the grammatical subject in the first sentence is identical to the subject in the second.

An identity proposition which fulfils this condition does not necessarily uniquely determine the identity of a person or of an object. The statement 'the man who wears the green coat is the same as the man who visited Paris' does not distinguish between two people who both wear green coats and who both visited Paris. How can we be sure that we really have two different people, or just one and the same? In the eighteenth century, Leibniz formulated his two axioms today known as Leibniz' Laws (Noonan, 1989, Williams, 1989): the 'Law of the Identity of the Indiscernibles', which entails that if two objects have all properties in common, they must necessarily be the same, and its reciprocal version, the 'Law of the Indiscernibility of Identicals: Two objects which are the same have all properties in common. Leibniz' laws imply that each discernible person, object or organization must be unique. In the same vein, Merkle (1992, p. 45) mentions the 'inner-psychological organization principle of individuals: 'every individual has a certain number of properties, which as a combination will not be found in any other person in the world'.

The notion of 'objective identity' does not necessarily imply that the object itself exists in an objective world beyond human cognition. In fact, it is neutral with respect to such a world view: an object can be identified by its characteristics, if it is defined in terms of these characteristics. Such a definition can occur independently from whether an objective world, outside of human perception, exists or not.

Summarizing Williams (1989), informative identity statements describe identity in the form of verb-phrases. The propositions contain things that happen and are attributed to the object. A person's or an organization's 'objective identity' at any given point in time consists of his or its characteristics. The approach to corporate identity as 'objective identity' can be fruitful to corporate communication. It can help management to communicate the organization's characteristics effectively to the outside world.

3.2.3. Intersubjective identity

The characteristics which constitute a person's or a group's objective identity at the same time form the building blocks for a person's being part of a group, i.e. his or her 'intersubjective identity'. Vice versa, a person's group membership comments on individual features. An employee of a very customer-friendly organization may be expected to be customer-friendly as well. Descriptions often serve as a guideline whether individuals do or do not belong to a group. People whose actions do not fit in with the way other organization members behave can easily become outsiders. Identities create a sense of belonging or alienation. They locate an individual in society (Weigert, 1986). The social identity theory (Ashforth and Mael, 1989, Ellemers, 1991) gives a more detailed account of intersubjective identity.

People tend to classify themselves and others into social categories, such as organizational membership, religious affiliation, gender etc. Categories are defined by prototypical characteristics abstracted from the members. Social classification enables the individual to locate or define him- or herself in the social environment (Ashforth and Mael, 1989). Mead (1934, quoted via Weigert, 1986) already noted the construction of the *We* mode in social processes. Self-experience and its definition derive from membership of a group. The *We* mode is grounded in taken-for-granted rules and assumptions about the group's identity, which can be unpacked by analyzing the 'right to say 'we''(Spiegelberg, 1974, quoted from Weigert, 1986).

Self-experience and definition derive at least in part from membership of a group. Brewer (1991) explained how, for her personal identity, the most immediate frame of reference for social comparison is constituted by her social psychology colleagues at UCLA. The most salient features of her self-concept in this context are those research interests, ideas and accomplishments that distinguish her from the other social psychologists in her faculty. Her social identities, by contrast, include the interests and accomplishments of her colleagues. Her first level of social identity for herself is as a member of the social area within the department of psychology at University of California at Los Angeles (UCLA). Now the department provides the relevant frame of reference, and the social comparison is with other areas of psychology. At this level the most salient features of her self-concept are those which she perceives herself to have in common with other members of the social area and which distinguish her group ('us' as she writes) from cognitive, clinical and developmental psychology. At this level of self-definition her social colleague and herself are interchangeable parts of a common group identity - her self-worth is tied to the reputation and outcomes of the group as a whole. A yet higher level of social identity is the Department of Psychology within UCLA. At that level, the campus becomes the frame of reference and other departments the basis for comparison. The employees' self-concept is expandable and contractable across different levels of social identity with associated transformations in the definition of self and the basis for self-evaluation (Brewer, 1991). At each level, another set of features defines the social identity.

Basing himself on his anthropologic research in Afghanistan, Barth (1970) illustrates how 'the right to say we' in the Pathan community is dependent upon three central characteristics: *hospitality* - taking care of a guest's security and providing for his needs, *councils* - taking group decisions collectively and unanimously, and *isolation of domestic life* from public life - a Pathan strictly separates his family life, i.e. what happens within his household from what happens in public. Barth describes how Pathans chose to convert to other tribal identities in circumstances where they are not able to live up to these values. In the extreme north-east of Afghanistan returns on agriculture are modest. There, Pathans can no longer live up to the value of 'hospitality'. History has shown how Pathan communities changed culture and language and have become 'Kohistani' (Barth, 1970, p. 131). Barth's example illustrates the link between what a group thinks it is and what the members achieve and shows how belonging to a certain group implies the urge to realize certain values.

The social identity theory describes three basic processes: The first process is the process of social categorization, in which people order their social environment by forming meaningful groups or categories of individuals, as illustrated above. The second process, social identification, refers to the extent to which people define themselves as members of a certain social category. Finally, social comparison is necessary to determine what the relative score on certain group characteristics is (Ellemers, 1991, p. 6). The outcome of this process is an individual's tendency to stick to an organization or to leave it. It determines a group's feeling of togetherness ('Wir-gefühl', Keller, 1990).

Objective and intersubjective identity cohere closely: objective identity includes the characteristics which serve to define the 'corporate we'. An organization's objective identity provides the building blocks for its intersubjective identity. These include the characteristics which make it possible for employees to identify with the organization. To the extent an organization is perceived to embody the characteristics of its members, it can help the employees fulfil their needs, providing them with meaning and connectedness (Ashforth and Mael, 1989, p. 22).

subjective identity:	The awareness of oneself as the concomitant subject of self's knowledge
objective identity:	The set of characteristics which serve to describe oneself or an object
intersubjective identity	The feeling of togetherness of a group

Overview **3.1** Weigert's (1986) basic perspectives on identity

3.2.4. Suitability of subjective, objective and intersubjective identity to corporate communication

The basic perspectives of subjective, objective and intersubjective identity are not equally fit for corporate communication. In organizations, as is the case in groups of people in general, it is very difficult to speak of one single, experiencing self. There is no one single centre of consciousness, which can unambiguously be designated as the corporate 'I'. Moreover, the pure 'I' mode of identity is of little help in communication - as Weigert (1986) puts it: 'the pure 'I' mode of identity does not enable myself to tell about 'Me''. Therefore, at group level, only the basic approaches of 'objective' and 'intersubjective' identity can be applied.

Approaches to corporate identity as objective identity are not new in literature. Lux (1988) defined 'corporate identity' as 'the sum of an organization's characteristics'. From a corporate communication perspective, anything an organization does is a potential signal. Therefore, Van Rekom, Van Riel and Wierenga (1991) defined 'corporate identity' as 'the total of cues regarding an organization, such as it appears in behaviour, communication and appearance'. Both the objective and intersubjective mode of identity are included into what Reitter et al. (1991) call 'the simplest definition of group identity': 'a coherent whole of characteristics proper to the group, which allow everyone to identify it and to identify with it, and which allow the group to recognize itself as a group'. The first part, 'a coherent whole of characteristics proper to the group, which allow everyone to identify it', comprehends the group's objective identity, which makes possible the intersubjective identity of the group: 'and which [allow people to] identify with it and which allow a group to recognize itself as a group'.

From a managerial point of view 'corporate identity' thanks its relevance to its potential to influence the image that stakeholders have of the organization. Corporate communication can perform an active role in realizing the presentation, and guide the respondent's interpretation and validation of the organization's 'objective identity'. For purposes of corporate communication, or the fostering of organizational identification, the 'objective mode' offers promising perspectives. Operationalization of 'corporate identity' following the basic approach of 'objective identity' may yield an empirical presentation of an organization's existing identity. Such a representation is open to different kinds of use in corporate communication, reaching well beyond the areas of social categorization and comparison which are the realm of the approach to identity as 'intersubjective identity'.

Corporate Identity consists of the whole of verb-phrases which apply to an organization

Overview 3.2 Preliminary definition of Corporate Identity

3.2.5 Conclusion

Weigert's basic approaches to corporate identity as 'objective' and as 'intersubjective' identity can be applied to organizations. Many effects which can be realized by corporate communication, such as organizational identification and organizational status, fall within the realm of 'intersubjective identity'. The basis for reaching these results can be created by approaching corporate identity as 'objective identity': the organizational characteristics which form the ingredients for meaningful communication to the stakeholders. Russell (1956) points out that these characteristics must be stated as verbs or verb phrases in order to be informative. At this point, after reviewing the comments of Russell on verb-phrases and envisaging Leibniz' Laws, corporate identity can be defined as 'the whole of verb-phrases which apply to the organization' (overview 3.2). The characteristics which are the elements of objective identity are relevant to the processes of image formation among the various stakeholders of the organization. As such, the realm of 'objective identity' reaches well beyond that of the approach to identity as 'intersubjective identity'.

The operationalization of 'corporate identity' as 'objective identity' offers perspectives for developing a measurement instrument which can make an empirical assessment of such meaningful characteristics. This is what this dissertation will further concentrate on.

3.3 Actions as the key to corporate identity

Dealing with an organization's identity as a total of verb-phrases which apply to an organization is not entirely unproblematic. It is not a priori clear how to deal with the huge mass of possible descriptions and there is no unambiguous way to describe the actions themselves which make up the organization's identity.

The totality of organizational characteristics poses two kinds of problems: one of a conceptual nature and one of an empirical nature. Severe enforcement of Leibniz' criteria means that, over time, neither any human nor any organization will stay the same. Humans change simply and solely because of biological processes, and organizations change too. This would mean that the organization which changes minimally becomes another organization, from one moment to the next. Strict adherence to Leibniz' criteria of identity would foreclose the possibility of an organization being the same from one moment to the next. After the first moment, something may have changed, and not all characteristics may have stayed the same. Therefore, according to Leibniz' Laws, the organization is no longer the same organization. It seems virtually impossible to apply such a view of 'objective identity' while respecting the criterion of 'continuity'.

In theory, the strict application of Leibniz' Laws would require a complete description of all properties. The number of possible descriptions is infinite, the same way as the number of possible actions performed by all organization members at a certain moment in time is infinite. Employees can continuously produce new actions. In the time required to make an inventory of them these organization members have performed a countless quantity of actions to be added to those already inventorized. As a consequence of Albert and Whetten's (1985) continuity criterion, the preliminary definition of corporate identity has to be narrowed down from 'everything an organization does' to something more specific. This section will handle this problem step by step. Firstly, a review of the literature on attribution theory restricts the verb phrases to human actions. Secondly, applying Albert and Whetten's continuity criterion to human action narrows this action further down to intentional action. For reasons of reliability and validity, intentional action has to be described from the performer's perspective. Then the structure of means-end relations between alternative descriptions of actions is used to identify these actions that satisfy Albert and Whetten's criteria for statements on corporate identity.

3.3.1 The attribution of action

The preliminary definition of corporate identity as 'the whole of verb-phrases which apply to the organization' is still somewhat imprecise. There are many things happening in and around an organization, and it is not always exactly clear whether an action used to describe an organization can really be attributed to the organization. In order to be of use to corporate communication, a representation of an organization's identity should, firstly, describe the organization in such a way that informative statements about the organization can be directly derived from it and, secondly, potential communications can be checked for their compatibility with the organization's actual identity. In order to fulfil these requirements, the content of the statements must be attributable to the organization. This section is concerned with how attribution to the organization can be ensured or improved.

In an overview article on attribution theory, Lipe (1991) posits that 'counterfactual reasoning' constitutes the basis of all attribution theories. 'Counterfactual reasoning' means that people examine whether an event would have occurred if a proposed cause had not been there. Counterfactual information is often not available, and as proxies, people are inclined to use covariation data, i.e. data on how often the cause and the hypothesized effect go together. For example, a plane belonging to XYZ Airlines takes off and lands exactly on schedule. For the counterfactual question 'would the plane have been punctual if the plane had not been an XYZ-plane?', proxies to counterfactual information are the number of years that XYZ Airlines has flown without suffering a single delay, and the number of other airlines that fly without any delay. Although such data cannot tell us whether, under different circumstances, this plane would not have been on schedule, they do provide information that is helpful in evaluating the likely answer. Furthermore, if there are alternative explanations available (Lipe, 1991), e.g., if the distance is short and the weather conditions are perfect, the punctuality is less likely to be attributed to XYZ Airlines. According to Kelley (1967) people use four kinds of information in order to establish whether a person or an organization is the cause of an event: distinctiveness information about the way other organizations respond to the same stimulus ('do all airlines fly exactly on schedule?'), consistency information regarding the organization's reaction in other situations and regarding different targets ('are

XYZ airplanes on other routes also punctual?'), consistency information about the way the organization has performed over time and mode of interaction ('has XYZ Airlines always been punctual on this route?'), and consensus information regarding the opinion of other observers. This last type of information, however, involves the observers' interpretation rather than what the organization itself does. Therefore, it rather to the organization's image rather than to its identity, as defined in section 1.2, and it will not be addressed in depth here.

Attribution to XYZ Airlines is more likely if what happens is characterized by low high consistency across modalities, i.e. over time and across occasions and high distinctiveness (McArthur, 1972, p. 172). The punctuality is likely to be attributed to XYZ airlines if, firstly, XYZ planes are also punctual on other itineraries. In such a case, distinctiveness across occasions is low: XYZ Airlines does the same thing under different circumstances, which implies a high degree of 'sameness' in XYZ's actions. Secondly, if XYZ airplanes were punctual before there is a high degree of consistency; it is normal for XYZ airplanes to be punctual, which implies high continuity in what XYZ airlines does. Thirdly, if other airlines do not take off and land exactly on schedule there is a low degree of consensus. This implies a high degree of uniqueness to XYZ-airlines.

Attribution of an action to the organization leads to the conclusion that the organization has a certain inclination to that action and leads to the expectation that the organization will respond in the same way to others (Van Raaij, 1986). Then XYZ Airlines can use its 'punctuality' in a credible way in its corporate communication: people working within the organization will recognize it, passengers who fly with XYZ Airlines will see the message confirmed, and, if other airlines are not that punctual, it differentiates XYZ Airlines from its competitors. It is the sameness across situations and interaction partners, the consistency over time and the specificity of its punctuality, which allow XYZ Airlines to communicate it credibly to the public. If this punctuality is stressed in corporate communication, XYZ Airlines may become synonymous with 'punctuality' in the eyes of potential passengers.

Summarizing, attribution to the organization will take place at:

- A high degree of 'consistency' across occasions and interaction partner: i.e. the organization shows the *same actions across situations and stakeholders*.

- A high degree of 'distinctiveness': the organization is the only one performing the action. A low degree of consensus implies, that the action is very *specific* to the organization. 'Punctuality' satisfies this requirement if XYZ airlines is the only punctual airline in the branch.

- A high degree of consistency over time or '*continuity*': the organization does so consistently over time. In the XYZ-example, this implies that 'punctuality' is not a fad which disappears after some period of time, but employees try to maintain punctuality throughout the time they are working for the organization.

Requirements for a useful concept of Corporate Identity from the perspective of Kelley's (1967) attribution theory:

- Sameness in behaviour across situations and interaction partners
- Specificity to the organization
- Continuity over time

Overview 3.3 The requirements for a useful *Corporate Identity Concept* from the perspective of Kelley's (1967) attribution theory

Although the terminology used is slightly different, Albert and Whetten's (1985) three criteria definition of corporate identity (overview 1.1) and the requirements derived from the attribution theory (overview 3.3) show a high degree of overlap. Albert and Whetten's criteria of 'distinctiveness' from other organizations and 'temporal continuity' are the same as the criteria of 'specificity' and 'continuity over time' derived from the attribution theory. The essence of Albert and Whetten's criteria seems to be to ensure that actions in identity statements can be attributed to the organization. Including the attribution theory explicitly allows us to develop a further operationalization of the concept of 'corporate identity', such that in the end it can be measured.

Verb phrases reflecting action or achievement are the most powerful descriptions: McArthur (1972) discovered that such verbs show a stronger attribution of the action to the subject than verbs reflecting perception or opinion. Apparently, someone's actions are the most effective key to his identity. Narrowing down the possible verb-phrases to verb-phrases reflecting action or achievement makes the verb-phrases more informative about the object of communication. As a consequence a narrow interpretation of 'verb phrases' in overview 3.2 as 'what the subject does' restricts the possible descriptions to those better fit to communicate about the nature of the organization.

Description of identity in terms of 'what the subject does' raises the question of how subjects are identified. If a subject's identity can only be described meaningfully in terms of his actions, his identity only exists in terms of the actions attributed to him. Therefore, White (1992) defines 'identity' as 'any source of action not explicable from biophysical regularities and to which observers can attribute meaning'. In this sense, the concept of 'identity' can be disconnected from physical entities: one person can have multiple identities, and at the same time a large conglomerate of people and organizations can have one identity. This dissertation will not go that far: it will stick to the identity of an organization, as specified before the start of its measurement, and follow the criteria of attributability to this organization, whose borders have been specified in advance.

Corporate Identity is the whole of an organization's actions, as far as these actions satisfy the criteria of:

- Sameness across situations and interaction partners
- Continuity over time
- Specificity to the organization

Overview **3.4** Definition of 'corporate identity

Both approaches may diverge only on one criterion: Whereas Albert and Whetten speak of 'central character', the approach via the attribution theory leads us to think of a high degree of sameness of action across situations and interaction partners. This leaves us with three questions. Firstly, what does 'central character' concretely mean? Secondly, what is the link between 'central character' and 'sameness of actions across situations and interaction partners'? And thirdly, how can we identify these 'central' elements? Also the criteria where both approaches overlap leave us with further questions: how can 'continuity over time' and 'specificity to the organization' be operationalized? How can we find cues to the continuity of a feature, and to its organization-specificity? One might look for some kind of pattern which may exist in the actions of organization members. This will be worked out in the following sections. Summarizing: the definition of corporate identity has been restricted to those actions which can be attributed to an organization (overview 3.4). This still leaves the question of how actions can be identified which satisfy this - in comparison to overview 3.2 - slightly more restricted definition.

The word "action" in overview 3.4 should be interpreted in its broader sense, as in Vallacher and Wegner's (1985): any action, goal or value humans intentionally strive for.

3.3.2 The actions of individual employees as the starting point

Corporate actions can always be traced back to the actions of individual employees. In other words, they can only be found at the level of individuals (Allport, 1962). Action in the sense of a meaningfully understandable orientation of one's own behaviour only exists as the action of individual persons (Weber, 1972, p. 13). Group forces arise out of the actions of individuals, whose actions are a function of the group forces they themselves (or other individuals) have brought into existence (Asch, 1952, p. 251). Organizations are products and constellations of specific behaviour of individual people (Weber, 1972, p. 10). As Collins and Porras (1996) put it: 'The secret is to work from the individual to the organization'. Any assertion that 'organizations act' can be decomposed into some set of interacts among individuals, such that if these people had not interacted and meshed a specific set of their actions, then the organization would not have performed the act attributed to it (Weick, 1979, p. 34). Strictly speaking, the organization's identity, consisting of the signals it emits, boils down to the signals emitted by the individual employees in that organization. Therefore, the starting point of investigations will be individuals' actions. What we have to look for are

those actions by individual employees that satisfy the criteria for attribution of action to the organization. These criteria may also help us solve the empirical problem related to the totality of characteristics - their sheer quantity and variety.

In order to measure corporate identity in a way that makes sense and may satisfy the criteria of the definition of 'corporate identity' shown in overview 3.4, the question has to be answered on what kind of actions do we have to concentrate.

3.3.2.1 The key to corporate identity: actions as intended by the organization's employees

In the end, a corporate identity measurement instrument should represent organizational actions which can reasonably be attributed to the organization. However, can we include all actions into the measurement scheme?

The bus driver who inadvertently causes an accident on a slippery road will probably not repeat the same action again. A cook who happens to cause a fire in the kitchen of a hotel may take more care to prevent this from happening a second time. Such actions are not likely to satisfy Albert and Whetten's (1985) continuity criterion. Continuity is more likely in the actions which employees perform intentionally. A measurement procedure focusing on intentional behaviour is less sensitive to random variations in behaviour, providing more reliable measurement results and satisfying the 'continuity criterion'. By leaving out unintentional action, it is possible to get rid of an important random component in the measurement of corporate identity.

Behaviour is intentional if the person performing it intended to perform it. Intentional action is action performed for a reason (Anscombe, 1957). Behaviour gets its intentional character from being seen by the agent or by an outside observer in a wider perspective, from being set in a context of aims and cognitions (von Wright, 1971, p. 115). The performer's knowledge of his or her action constitutes the intentionality of his or her action, its association with an intention to achieve something (von Wright, 1971, p. 114). People's knowledge about their intentional actions, in combination with the actions themselves, constitute a language game in the Wittgensteinian sense: it is the whole of the language and the actions with which the language is interwoven (Wittgenstein, 1953, § 8).

A typical feature of intentional actions is that the performer knows about them without observation (Anscombe, 1957). This makes it much more difficult for an external observer to establish whether actions are intentional or not. This complication must be added to the already existing difficulty of observing an agent externally. The range of possible descriptions is enormous, and the number of possible interpretations is at least as large as the number of interpretations available to the performer of the action. Part of what organization members do is perceived by stakeholders with whom the organization interacts. There is no reason to assume that the stakeholder's interpretation matches the organization's action definition. The same concrete action can have a totally different meaning for the stakeholder. Therefore, observation may not be the most appropriate method of determining what people are doing.

Normally the stakeholder enters the interaction with the organization with a different goal in mind from the organization itself; clients buy an organizational product to fulfil one or more of their needs, the organization wants to make a profit. Employees may work in order to make a career and earn their living, whereas the organization may want to have cheap labour force. A purchasing organization may want to have its materials as good and cheap as possible, whereas a supplier wants to make a profit as large as possible. These examples illustrate how the criteria for defining and judging the same action may differ between the organization and its stakeholder. The common sense notion that an organization's image is a mirror to its identity must be seen as mistaken. The mirror, at best, is a carnival mirror.

The researcher's observations are not necessarily a better indication of the organization's identity than the impressions obtained by any other external observer or stakeholder. Even on the relatively rare occasions where there is a possibility of identifying the meaning of an action from the context and the appearances alone, all that is really produced is not more than just a hypothesis concerning what the act means (Campbell, 1996, p. 121). The essence of an organization in the eyes of an external observer by definition consists of the observer's perception of these actions, in the observer's theory about the organization. The waiter who can be observed holding the door open for a client, is he providing service, trying to get a tip, or just holding the door open? Bougon, Weick and Binkhorst (1977) found that observation lead to research results which were completely different from the participants' own perceptions. Pieters (1993) did an experiment at a scientific conference. All people present in a room completed a brief questionnaire, containing the question: 'Describe in one sentence as clearly and honestly as possible what you were doing just before receiving the questionnaire?'. While most people had their eyes on the presenter or on the paper in front of them, some reported that they had been 'thinking', others 'listening', two had been 'discussing', and one person had been writing. In short, an investigator who favours his own observations over those of participants is at great risk (Bougon, Weick and Binkhorst, 1977).

The difference in perspective is fundamental to the choice of a form of operationalization: if the essence of an organization is to be found in the rules in the employees' lifeworld (see Weber, 1985), the organizational actions have to be analysed in the terms used by the employees performing the actions. In any case, the perspective on actions as seen from the employees performing those actions gives a better view as to which actions may be intentional. Campbell (1996, p. 121) puts it more strongly: 'The meaning of action can only be established by consulting the actor concerned'. At least, the description of actions from the viewpoint of those performing them makes the description more reliable, because the frame of reference of the describer now becomes fixed. This way it is independent from the choice of the external observer who has to register and interpret actions performed by others. Therefore, intentional actions will be approached from the perspective of the employees performing them.

3.3.2.2 The relationship between alternative descriptions of action

Authors like Anscombe (1957), Goldman (1970), Mele (1992) and Pieters (1993) have shown how many descriptions can be used for the same action. These descriptions are not identical, and the choice of description does matter. How can we describe our own intentional actions most appropriately? And, if there are different alternatives available, are these alternatives related in a way that can help us in our analysis?

Suppose that some gentleman, called John, does each of the following things (each at the same time): (1) moves his hand, (2) frightens away a fly, (3) moves his queen to king-knight-seven, (4) checkmates his opponent, (5) gives his opponent a heart-attack, and (6) wins his first chess game ever. Has John here performed six actions? Or has he performed one act, of which six different descriptions have been given? Again, suppose that John (1) moves his finger, (2) pulls the trigger, (3) fires the gun, (4) kills Smith. Are these four distinct acts that John has performed, or are all of these one and the same act? (Goldman, 1970, p. 1). Anscombe (1957) would consider all these actions as one and the same. There is but one act,

described in a variety of ways. She gives the example of a man who moves his arm, operates a pump, replenishes the water supply and poisons the inhabitants. In Anscombe's view, moving the arm up and down with his fingers round the pump handle is, under these circumstances, operating the pump, is under these circumstances, replenishing the water-supply; and, is under these circumstances, poisoning the household (Anscombe, 1957, p. 45-46). Goldman calls this the 'identity thesis': the relation between the man's moving his hand, operating the pump, replenishing the water supply and poisoning the household is that of identity. Following Leibniz' criterion of indiscernibility of identicals, if two acts are identical, they must have all properties in common. Are the act of John's pulling the trigger and John's killing Smith really identical? John's pulling the trigger has the property of causing the gun to fire, whereas John's killing Smith does not have the property of causing the gun to fire. Since one of these acts has a property which the other lacks, they cannot be one and the same act (Goldman, 1970, p. 2). Many pairs of actions which in Anscombe's view would be identical fail to satisfy Leibniz' principle of indiscernibility of identicals: they fail to have all properties in common.

A further difficulty confronting Anscombe's (1957) identity thesis stems from the relationship that holds between many of these acts which are said to be identical. We often say that a person performs one act 'by' performing another. We say, for example, that John turns on the light 'by' flipping the switch, or that he checkmates his opponent 'by' moving his queen to king-knight-seven. The term 'by' expresses a relationship that holds between actions. Goldman (1970, p. 5) expresses this relationship by saying that the one act is a 'way' or 'method' by which the other act is performed. It explains how John's checkmating his opponent was performed, by moving his queen to king-knight seven. This relationship is asymmetric: John turns on the light by flipping the switch, but he does not flip the switch by turning on the light. Furthermore, this relationship is irreflexive. We can explain how John turned on the light by indicating that he flipped the switch, but not by indicating that he turned on the light by turning on the light. Alternative descriptions of the same action are not completely equivalent, but that they are related by an asymmetric semantic relationship: in one direction it may be read as an equivalence relationship, but not in the opposite direction. Goldman (1970) points out that this semantic (cf. Spradley, 1979) relationship between verbs is characterized by the preposition 'by'. The relations between the pairs of actions are made up of 'by'-relationships.

Even if this 'by'-relationship links different descriptions of intentional action, the performer needs not be equally conscious of both descriptions of action. Mele (1992) questioned the intentionality of subsidiary actions, which are linked to an action through the 'by' relation. Imagine Alice, walking to work - intentionally. Presumably, the various steps that she takes are intentional. But is each step itself intended? Perhaps Alice has no reason to take exactly this step, a wholly routine one; and it might be a mistake to insist that she intends to take exactly this step. Mele sees the step as intentional in virtue of its being a routine part of an intentional action - Alice's walking to work. The intentionality of the step is inherited from the intentionality of the larger action of which it is part. Many, if not all, actions can be decomposed into more subsidiary actions. It depends upon the focus of attention of the performer, which action is intended and which actions are its subsidiary routine actions and which are their intended or perhaps self-evident effects. Let us consider again John, playing the chess game described before. Figure 3.2 represents John's actions schematically:

John's moving his hand	⇒	John's moving his queen to king-knight seven
John's moving his hand	⇒	John's frightening away a fly
John's moving his queen to king-knight-seven	⇒	John's checkmating his opponent
John's checkmating his opponent	⇒	John's giving his opponent a heart attack

Figure 3.2 The pairs of actions in John's chess game. Adapted from Goldman (1970)

We can say that John moved his queen to king-knight seven *by* moving his hand; that he checkmated his opponent 'by' moving his queen to king-knight-seven; and that he gave his opponent a heart attack 'by' checkmating his opponent. Goldman (1970) calls the relationship which obtains between pairs of actions such as these 'level-generation' or more simply 'generation'. When a person says that he does A *by* doing B, action A is understood to be at a higher level than action B. Inversely, that person can conceive of the same action as doing B *with the effect of* achieving A. Achieving A, when attributed to oneself, usually is formulated as *doing* A. Goldman used these relationships to draw act diagrams, combining the 'by' relations to complete trees, as shown by Figure 3.3.

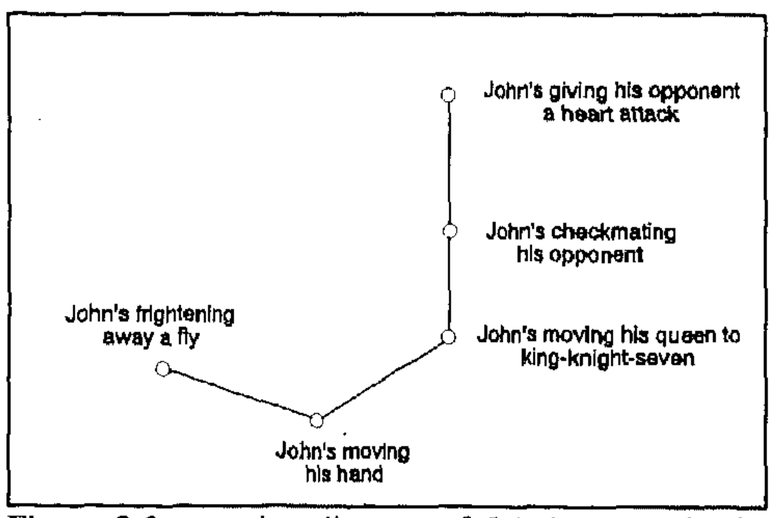

Figure 3.3 Act diagram of John's move in the chess game. Adapted from Goldman (1970).

Sometimes people know about the side effects they cause by their actions. In firing his gun, a sniper who is trying to kill a soldier knowingly alerts the enemy to his presence. Runners know that when running, they wear down their shoes. Consider the case that John, while playing chess, has noticed the fly but did not think about it any further. This means that, only intentional actions are the focus of interest, the relationships between alternative descriptions are only useful for the measurement of corporate identity if both the 'lower-level' and the 'upper-level' actions are intentional. A 'by-relationship' satisfying this condition is a means-end relationship.

One of the actions in Figure 3.3 is not intentional: John's frightening away the fly. Similarly, it is not clear whether John's giving his opponent a heart attack is intentional. Both concepts, along with the 'by-relationships' linking them to the other concepts, will have to be left out if only intentional actions and means-end relationships are of interest. The by-relationship is asymmetric, irreflexive, and also transitive: John's moving his hand generates John's moving his queen to king-knight-seven, which in turn generates John's checkmating his opponent. John's moving his hand therefore indirectly generates John's checkmating his opponent.

So far, in our attempts to get to grips with corporate identity we have narrowed down our focus firstly on the actions of employees and secondly on intentional action, from the perspective of the performer of the action. But even then, numerous non-equivalent descriptions of the same action are possible, linked through means-end relations. We have to find a cue as to where to start looking for the most appropriate description of these actions. Since we chose the performer's perspective, the best way of proceeding may be to follow, how the performer himself identifies his or her own action. People may not know their own minds (Clegg, 1993), and not be aware at all of the complete structures like those shown in Figure 3.3, but in some way they may be able to describe their intentional actions.

Vallacher and Wegner (1985) provided empirical evidence of how people switch between alternative descriptions of actions. They showed how someone's focus of attention can change from intended actions to subsidiary actions and vice versa. In general, people seem to understand what they are doing. At least, they can always offer an account of it (Vallacher and Wegner, 1985, p. 18-19). For a given action at a particular point in time, only one explanation is dominant. Vallacher and Wegner (1985) call this dominant definition of the intended action its 'prepotent identity'. More generally, people select from the array of potential descriptions of an action the description that most clearly reflects their motives. Action can be said to be organized hierarchically: it can be decomposed into several distinct levels, each of which is comprised of more specific actions at the level below it, which Mele (1992) calls 'subsidiary actions'. These are the levels identified by Goldman (1970), linked through 'by' relationships. The search for a paper clip, for instance, can be described in terms of a number of meaningful levels. At a basic level, the action consist of discrete movements of one's hand, fingers, eyes and perhaps lower limbs and the entire body. These discrete movements, in turn, are organized at a higher level into more recognizable actions - opening and closing drawers, and rustling through papers, for example. Finally, the prepotent description of the action - searching for the paper clip - can be seen as the integration of these specific actions (Vallacher and Wegner, 1985, p. 21). Searching for a paper clip in turn can be seen as a component of the still higher level action of ordering one's desk. Vallacher and Wegner conclude, that there must be an organizing principle for act descriptions that parallels the organizing principle for action itself. In essence, the relations between different descriptions of the same actions are means-end relations. This reflexive monitoring of conduct is the consequence of the intentional character of human action. This intentionality is a routine feature of human conduct, and does not necessarily imply that actors consciously keep definite goals in mind during the course of those activities (Giddens, 1979, p. 56). Eliciting the reasons why an individual performed a particular act or discovering the motive lying behind it is not to refer to some other entity or process but simply to achieve a fuller description of the original act (Campbell, 1996).

How an action is exactly defined depends upon the moment in time and the degree of difficulty involved in an action. The level of people's definition of their action depends upon three mechanisms (p. 25-28). Firstly, people tend to stick to the definition of an action which prevails at that moment. Secondly, when an action can be defined at both a more abstract (goal oriented) and a more concrete level, there will be a tendency for the goal-oriented definition to become prepotent. However - and this is the third principle - when an action cannot be performed in terms of its dominant definition, there will be a tendency for a definition in more concrete terms to become dominant. This is also true for 'routine behaviours' to which we give little conscious thought. Only if the usual sequence is

interrupted or frustrated in some way do we need to attend to what we are doing and so turn our conduct into the proper form of meaningful action (Campbell, 1996, p. 58).

Representations corresponding to concepts can be better understood as schemata in long-term memory (Johnson-Laird, 1983). Such schemata include information about how concepts are to be used to construct mental models in working memory. These mental models are extracts taken from the knowledge base of long-term memory which are built temporarily in one's consciousness, according to the requirements of the moment. They encode how instances of the concept interact with one another and with other objects and forces in the real world. As implicit inferences based on background knowledge and theories about how the world works affect the construction of mental models, context effects emerge in a natural fashion from the mental model approach (Komatsu, 1992). At any single moment, however, the influence of context is limited. The action description an actor is conscious of is related to the situation the actor finds himself in, but is not reducible to it (Giddens, 1979, p. 73). Context determines which description is most likely to be chosen out of the array of possible action descriptions available to the subject, where the starting point for search is the action's description most readily available to the mind's operating system, which 'loads' it into the subject's consciousness (cf. Johnson-Laird, 1983, p. 473-477). It is this operating system, which tells the subjective 'I' what it is doing, and which links a person's 'objective identity' to his 'subjective identity'. However, the content of this consciousness is highly volatile, steered by the need of the moment, and therefore quite unable to satisfy Albert and Whetten's (1985) criterion of 'continuity over time'. The limited capacity of conscious processing (Schneider and Shiffrin, 1977) means that the overview of consciousness on the full array of action descriptions is always going to be incomplete. Consciousness is best comparable to what is visible by the light of a torch in a large dark hall encompassing all information which is conscious as well as subconscious or unconscious. Our hope of establishing objective identity is vested in finding a way of accurately representing the information in that large hall, not on the consciousness of any employee at any specific moment. Consciousness is the gateway to the information stored in this large hall. The procedure for measuring corporate identity should provide an algorithm for handling this very precious torch.

Vallacher and Wegner's (1985) research results support the plausibility of the mental models approach. People seem to build their instantaneous mental models according to the need of the moment. Vallacher and Wegner traced how people define their own actions, and how this definition varies in time and with the degree of difficulty attributed to the action. The important factors become identifying the pattern by which these actions are linked, and determining which elements in this pattern satisfy Albert and Whetten's criteria for features of 'central character', 'distinctiveness from other organizations' and 'continuity over time'.

In short, the most appropriate way of identifying someone's actions is to ask the performer to describe the action himself. The higher level actions are commonly called goals and values. The different definitions of the same action are related through means-end relationships. If need be, people trying to perform an action seek alternative descriptions of that action through the means-end relations developed around these concepts. These 'by' relations, read inversely as 'desired effect' or 'means-end'; they link the different actions to each other. These relations, therefore, link actions which are completely specific to individual employees to those actions and desired effects which may be common among employees across the whole organization.

3.3.2.3 The conceptual structure of intentional action

Goldman's (1970) assumption that the by-relations linking different descriptions of actions are transitive implies that it may make sense to combine the means-end relations between them into a complete structure. Is there any further evidence that the structure of relations between alternative descriptions of actions can be used for the analysis of these actions?

In essence, such a structure of intentional actions, linked to each other by means-end relations, is a conceptual structure in the mind of the person performing these actions. The specifications of verbal relations in a speaker's lexicon can be based on some mechanism akin to a semantic network (Johnson-Laird, 1987). The network of means-end relations then contains the definitions of what is being done. A definition can be regarded as a statement of a semantic relationship between a concept being defined and one or more concepts, presumed to be known to the hearer (reader), and having properties considered relevant to the term being defined (Spradley, 1979, p. 109).

Psychologists have traditionally equated knowing the meaning of a word with knowing the concept labelled by a word. In most psychological approaches, a concept is assumed to be the mental representation of a category or class. Such mental representations have been taken to explain a wide variety of phenomena, including people's knowledge of linguistic relationships (e.g. synonymy), how people recognize the objects, events and so on, how people understand novel combinations of a word with other words, and the inferences people are able to make about an object or event labelled by the word (Komatsu, 1992). Komatsu (1992) distinguishes five general views on what conceptual structures may look like. According to the 'classical view', the concept of 'writing a book' represents information about the necessary and sufficient attributes of writing a book. According to the family resemblance view, the concept of writing a book is a summary representation that abstracts across specific instances of writing of books to give information about what writing a book is usually like. In the 'exemplar view' the concept of writing a book consists of representations of past exemplars of writing a book that a person has experience with or heard about, rather than a single summary representation of all instances of book-writing. The 'schema view' suggests that the concept of writing a book consists both of representations of exemplars of writing a book and of information about what writing a book usually is like. All these views have one common denominator: they are based on some notion of similarity. But in the 1980's, similarity-based views were no longer considered to provide an adequate explanation of why certain classifications were privileged and tended to cohere. To deal with this problem, several cognitive scientists developed variations of Komatsu's fifth view, the 'explanation-based view' of concepts. The distinguishing feature of the explanation-based view, in comparison to the previous views, is its assumption that the relationships between concepts are transitive - the same assumption underlying Goldman's (1970) act diagrams.

In the explanation-based view, a concept includes information about the interaction of concepts with other concepts, as well as information about the relationships that hold among the different properties of the concept (Komatsu, 1992, p. 500). As a consequence, well-developed concepts will be more like theories than simple descriptions (p. 512). Instances of a concept cohere because some set of relations links them with one another. The availability of information about how instances of the concept relate to the world and of the

relations that hold among attributes of the instances also helps increase the informativeness of explanation-based representations. Such relations help one decide how he or she should go beyond the information given with a particular new instance or with an old instance in a new situation. For example, if a person was told only that some new calculation technique is spectacularly fast and easy, he or she would probably predict this technique to work with a simple formula and not too many variables, based on of his or her understanding of the requirements of fast and easily calculation. Similarly, relational information is taken to explain how it is that attribute relevance varies with context or with different tasks.

Goldman's (1970) suggestion that by-relations between alternative descriptions of action are transitive seems to be reflected by the increased possibilities it offers to explain empirical phenomena in Komatsu's (1992) 'explanation-based view' of conceptual structure. This transitivity assumption paves the road for studies of networks of means-end relationships.

3.3.2.4 The position of actions in their conceptual structure used as a guideline to select actions satisfying the criteria for statements on corporate identity

The next question to be answered, then, is how these networks can best be studied in order to measure corporate identity. The obvious starting point would seem to be the three criteria used for the definition of corporate identity: sameness across situations and interaction partners, specificity to the organization and continuity over time. On the level of the individual employee it may still be difficult to conclude that concepts which are important to that individual are central or specific to the organization. What may be possible though is to try to establish whether concepts are likely to be stable or not, and in this way provide cues to their continuity over time.

Research on conceptual structure suggests that new concepts are easier learned if the new concept contains features already known in the person's existing conceptual structure. Wattenmaker, Dewey, Murphy and Medin (1986) found the ease with which people are able to learn different concepts is affected by the activation of possible underlying explanations of the relationships of features. Pazzani (1991) found that the relative difficulty of learning concepts is affected by their consistency with the subjects' prior causal knowledge. Existing conceptual structure may therefore serve as a selection mechanism, giving priority to concepts which fit well into the existing structure and to creating higher barriers for other concepts. A question emerging in this context is, whether all concepts in a conceptual structure play a comparable role in 'defending' the existing conceptual structure or whether some concepts in the structure are more crucial than others.

Goals are likely to be more constant than the concrete behaviour engaged upon with the aims of reaching them. People may care about reaching goals they have in mind, and try to maintain these goals, rather than engage upon the concrete action required to reach that goal. Hershberger (1987) gave the analogy of a furnace. It is snowing outside and the setting of the thermostat is high. The furnace is 'on' for long periods of time. Then, briefly, it is 'off', and then it is 'on' again. The thermostat setting is the constant, and the behaviour of the heating system is the variable which is changed in order to reach the pre-set temperature. If the heating system could care about something it would care about the room temperature, and

not about the pattern of switching the furnace on and off (Pieters, 1993). Hinkle (1965) investigated the relative resistance to change of concepts in people's cognitive structure. Using the Kelly Repertory Grid (Kelly, 1955) with 28 respondents he generated ten basic concepts, and at each concept he asked for its implication. 'Implication' refers to the effect of a means on its end in a means-end relation. Having been told about the implication, he asked for the implication's implication, and so on, until either the respondent was unable to give further implications or until he reached up to ten levels (in the sense in which Goldman (1970) used the word). The next step involved respondents being asked to indicate for all possible pairs of concepts which of the two they were most willing to change. Hinkle found (p. 51) that the relative resistance to change of personal concepts was directly related to (1) the number of implications, i.e. the number of ends to which the concept was a means, (2) to the level of the concept. Furthermore, concepts at a higher level in the structure had a larger number of implications (concepts to which it served as a means) and a larger number of lower level concepts, concepts to which it served as an end. When Hinkle (1965) facilitated change in lower level concepts by the prior stabilization of the higher level implications of that concept, the most 'resistant' concepts were those which were higher in level. Higher level concepts also tended to be the more central concepts. Therefore, the central position of a concept in a network of means-end relations may also be an indication of the continuity of that concept.

Summarizing; structural properties of the network of means-end relations give cues to the degree to which people adhere to their activities. Higher-level and more central activities tend to be more stable over time. So far, however, only the 'continuity' criterion of Albert and Whetten and of overview 3.4 could be applied. So far, no cue has been found which could show to what degree structural properties of concepts in networks of means-end relations can be related to the other criteria for statements of corporate identity, i.e. the criteria of 'specificity to the organization' and 'sameness in behaviour across situations and interaction partners'.

3.3.2.5 Conclusion

Summarizing, the structure of intentional actions corresponds to the explanation-based view of conceptual structure. The features of intentional actions are their means-end relations with other actions. These are likely to be directly or indirectly related to each other. People draw on the complete conceptual structure to build temporary mental models in their working memory in order to deal with the demands of the situation. Empirical research by Hinkle (1965) has shown that the concepts which figure at a more central and at a higher position in such a structure are the more stable constructs. Therefore, tapping the individual's conceptual structure and tracing the more central and higher concepts in the structure seems a viable option for measuring corporate identity, provided that these phenomena can also be discovered at the corporate level.

3.4 Implications of a means-end structure of action at corporate level

The possible characteristics, stated as verb phrases, include an unlimited number of possible descriptions. These descriptions need not be common at all to an organization but may only apply to one department, thereby violating the attribution criterion of 'sameness of behaviour across occasions'. Many descriptions do not apply to an organization for a long time; organizations change, as people change. Such descriptions do not comply with the criterion of 'continuity', required for use in corporate communication.

Means-end schemata, which so far have been investigated on the individual level, may be shared organization-wide. Sameness of action across situations and interaction partners can be realized whenever the action involved is common among the organization's employees. It implies that the organization's departments behave the same way, across the whole organization. An action which is highly common across the organization brings coherence to other, related actions carried out by organization members. Therefore, 'sameness across occasions' may often be translated operationally into 'communality' among the organization members. For instance, if everybody in XYZ airlines is concerned about 'punctuality', one can speak of a high degree of communality. Schemata for reasoning are rarely purely individual constructions; rather, they are likely to be a product of the schemata more widely available (Sirsi, Ward and Reingen, 1996).

3.4.1. Looking for the organization's 'essence'

In general, surface features are frequently constrained by, and sometimes generated by, the deeper more central parts of concepts (Medin and Orthony, 1985). These central features work like a kind of grammar. Medin and Orthony adopt the perspective of an external observer. Presented entities are perceived and interpreted in terms of an observer's existing set of concepts. Similarity judgements, which are Medin and Orthony's concern, are always made with respect to representations in the mind of an observer. If, however, the 'essence', as it permeates the organization's identity, can be communicated to the stakeholders, these may obtain a more adequate picture of the organization and develop a better understanding of what the organization does. That understanding can then be reinforced by watching the organization's employees at work.

According to Merkle (1992, p. 62), the problems with the quantity and heterogeneity of an organization's characteristics can only be overcome if the accidental is separated from the essential: what really matters is that the essential, the typical, of an object can be recognized in the course of time. Merkle considers two concepts as identical if they can be substituted for each other in a proposition, while the proposition stays true. Merkle's main criterion is whether the essence of an object will stay recognizable over time. This implies that the aspects of an object which stay constant make up its identity. In case of a more complex object, like an organization, 'essential' characteristics, on a cross-sectional basis, would be those characteristics permeating the whole organization. For purposes of corporate communication, the requirement of 'being essential' implies in the first place that the actions involved can be attributed to the organization; if they have to be attributed to the surroundings or to the interaction partners they may at most be 'accidental'. The number of possible 'essential' descriptions is still enormous and subject to endless variation.

Johannes Weber (1985) has devoted considerable attention to the question of how the essential characteristics of an organization can be distilled. He starts from the criterion of 'continuity'. He conceptualizes 'corporate identity' as 'the essential structures with the help of which an organization can be identified during a longer period of time as the same organization (p. 137)'. These essential structures consist of the normative core, which the organization's members share. In the course of time, a normative consensus of rules has been formed; successful answers to challenges have been accumulated into a background knowledge on 'how things are done here'. This background knowledge has the character of a set of rules which the organization members know and follow. There is no need for those rules to be formulated explicitly. The core of an organization's identity, then, consists of the structure of rules which underlies the actions of the organization members, and as such creates the visible and tangible reality of the organization (Weber, 1985, p. 138/139).

3.4.2 The analogy with linguistics

There is a certain analogy between organizational actions, as described by Weber (1985), and languages, as described by Chomsky (1965). The number of possible actions performed by all organization members at a certain moment in time is infinite, as is the number of sentences which the speakers of a language can produce. Members can continuously produce new actions, the same way as new sentences and new expressions are continuously created. Similarly to Weber's normative core of an organization's identity, the rules governing the formation of sentences are mostly not explicitly known to the speakers of a language.

Chomsky (1965, p. 24) wanted to develop a grammar as a theory of language which correctly describes the intrinsic competence of the 'idealized' native speaker who knows and obeys the rules of the language. A grammar describes a potentially infinite set of patterns in terms of a finite lexicon and a finite set of rules or constraints that specify allowable combinations of the elements in the lexicon (Pentland, 1995). A linguistic theory must contain a specification of the class of potential grammars. A theory is descriptively adequate if it makes a descriptively adequate grammar available for each natural language. Similarly, a theory on corporate identity is descriptively adequate if it provides a descriptively adequate algorithm for describing each organization's identity. The rules of interest to Chomsky are those which allow a speaker to create all the sentences he wants to create and understand the sentences of others. Similarly, in an organization, these rules must be those which allow a member to perform all the actions he wants to perform and to interpret the actions of other organization members. Grammars do not predict particular patterns of actions. Rather, they generate the set of possibilities open to the actors. Chomsky distinguishes two kinds of rules: firstly the generative rules, the basis which makes up the deep structure of a language, and the transformation rules, which translate the deep structure into the surface structure (Weber, 1985, p. 145). The traditional focus on the observable surface structure has lead to the registration of regularities. These regularities, however, cannot explain why certain sentences can be produced in a certain language and others not. A language is structured according to a limited number of central concepts and the relations of those concepts to the surface concepts (i.e. words). A language can only really be understood, if this deep structure is revealed.

Analogous to Chomsky's model of language, Weber (1985, p. 147) models the observable behaviour as the performance, generated by a specific grammar. The 'grammar' reconstructed by a superficial observer does not correspond to the rules followed intuitively by the organization members in their behaviour. What seems similar in the surface structure can be based on totally diverse depth-structures, and vice versa. Weber supposes the existence of a limited number of abstract and general rules which make up the implicit, intuitive knowledge of the organization members. The identity of an organization is not determined by the observable surface structure, but in its in-depth structure. Describing an organization's identity implies reconstructing the rules - the 'grammar' - which constitute the implicit knowledge and which generate the surface structure, i.e. the observable actions (Weber, 1985, p. 148). In this way the rules of the organization's generative grammar may constitute the core of an organization's identity, which is shared across the organization, stable over time and which generates time and again new surface structures (p. 171). The organization's corporate identity, then, consists of these rules which define the game of the specific organization.

In essence, the idea of 'generative grammar' is an analogy. Unlike words, actions are not single discrete items about whose easily identifiable boundaries there is common agreement (Campbell, 1996). Rather, they can be identified differently following the means-end pattern in which they are embedded (cf. Anscombe's (1957) example of the man moving his hand, pumping poison into the water reservoir and poisoning the household). The application of the concept of grammar does not imply merely the employment of fixed, given rules. It is more, people apply a 'rule-governed creativity' by which new sentences are generated. The generation of new sentences, or here, of new actions, is at the same time the medium by which the grammatical rules are reproduced and hence, in principle, by which they can be modified (Giddens, 1979, p. 18). Means-end rules may largely be learned over time, and therefore not as decontextualized and ahistorical as deep structures are sometimes supposed to be (cf. Pentland, 1995). The appealing feature of the grammar analogy is the limited number of rules which are able to show what is central, shared, and continuous to a language and which describe what is specific to that language.

3.4.3 Summarizing an organization's actions through the central actions in its means-end structure of employees' actions

Weber (1985) assumes a more concise structure to exist behind the heterogeneity of organizational action. A way to reconstruct such a structure is by tracing the means-end relationships between the actions performed. The whole of means-end relationships form a network containing the possible definitions of what the organization members are doing. The basis of Weber's (1985) procedure for understanding human actions is von Wright's (1971) 'practical inference':

A intends to bring about *p*

A believes that he can only bring about *p* if he does *a*

As a consequence, A does *a*

Put simply, understanding an action implies reconstructing the goals and intentions on which actors base their actions and which they could explain in order to give their actions a rational foundation. An attempt to understand an actor's actions implies, that the researcher does not take the role of an external observer who tries to explain what he sees, but that the researcher adopts the perspective of the actor himself (Weber,1985, p. 197). Not the understanding of an isolated action of an organization member according to the 'practical inference' is of interest, but the understanding of the internal coherence of the actions of all organization members (Weber, 1985, p. 199). For Weber, understanding an organization's identity takes the character of a 'rational reconstruction' of intuitive knowledge.

The structure of representations of intentional action in the heads of organization members fits Walsh's (1995) definition of 'knowledge structure' as 'a mental template consisting of organized knowledge about an information environment that enables interpretation and action in that environment'. Lyles and Schwenk (1992) argued that an organizational knowledge structure consists of core aspects, roughly relating to shared ideas about the organization's goals, and peripheral aspects, which are the means to achieve these goals. The goals, which organization members want to bring about may constitute the core of a limited number of rules which Weber supposes to constitute the organization's identity. Different organization members may chose different actions in order to reach the same goals in the end. The ability to substitute equivalent elements and nest them together is an important part of grammar (Pentland, 1995). If there exists such a core of rules, it must be identifiable through the means-end structure behind organizational action.

The characteristics which are common across the organization and which are more likely to satisfy the continuity criterion are those actions towards which the heterogenous actions of the individual employees are directed. Bougon, Weick and Binkhorst (1977) found status-quo reinforcing patterns of reasoning especially for those concepts which frequently served as goals. Therefore, these characteristics are likely to figure as central goals in the network of means-end relations in which organizational action is structured. In actual fact, if the core of formal or informal rules exists and is applied by organization members, it must appear in the array of identifications organization members give of their own actions, as discussed by Vallacher and Wegner (1985) and Goldman (1970), which were described in the previous section.

The central position in the network of means-end relations may reflect Albert and Whetten's (1985) 'criterion of central character'. A statement of identity satisfying this criterium must be a statement that distinguishes the organization on the basis of something important and essential. If concrete actions converge to some central goals in an organization, the use of a network of means-end relations will automatically detect goals of such a 'central character'. If issues become important for a purpose (Albert and Whetten, 1985), a pleasant feature of a network of means-end relations is that it is able to show for which purpose features of 'central character' are important.

If the actions and their means-end relations are established in an open-minded way, they may also be very organization-specific. Such a network structured by the means-end relations between the concepts might solve the problems associated with the conceptualization of corporate identity as objective identity, which were mentioned at the beginning of this section:

- At the level of individual characteristics:

  Department-specific behaviour or function-specific behaviour can contribute to organization-wide goals. Also concrete behaviour which is not organization-wide, but contributes to organization-wide goals and values, can be grasped this way. Actions which in neither way satisfy the criterion of 'central to the character of the organization' can be communicated as part of the identity of an organizational sub-unit, but not at the corporate level.

- At the level of the totality of characteristics:

  The more concrete characteristics may be less continuous and less 'essential'. The more central the position of the actions in the overall network of organizational actions, the more 'essential' these actions may be.

Empirically, the network structure linking the more concrete actions to a limited number of central activities allows the researcher to make a sample of the concrete organizational activities instead of having to make an inventory and describe all of them. If the heterogeneous actions can be summarized in a concise number of central activities, diverse concrete actions will lead to these same goals. This avoids the necessity of listing all actions performed by an organization, which would make the measurement of the organization's identity problematic.

3.4.4 Concluding remarks

Describing the organization in terms of the actions performed by organization members seems the way towards informative descriptions of organizations. This informativeness, however, risks being hampered by the enormous heterogeneity of actions performed by the organizations, even if we restrict the action descriptions to the way the members who perform the actions see them. The solution to this problem may be offered by representing what is done by the organization from the employees' own perspective. The alternative descriptions available to the people performing them are related to each other via means-end relations. These relations build up a complete network structure. This resulting network may provide an adequate means for summarizing the organization's identity. 'Centrality' of actions in that network may turn out to be an effective means for summarizing the enormous number of heterogeneous actions produced by organizations. The interest in the use of a network of means-end relations to discover the key features of an organization's identity is based on Weber's (1985) assumption of the existence of a limited number of 'generative rules'.

'Corporate Identity' consists of those elements in the means-end pattern of organization members' intentional behaviour which occupy a central position in this pattern.

Overview 3.5 Operationalization of Corporate Identity

3.5 Conclusion: Corporate identity operationalized

The general approach most suitable for getting to grips with an organization's corporate identity is the approach to identity as 'objective identity'. Its focus is on the organizational characteristics which can form the ingredients for meaningful communication to stakeholders. In order to be informative, these characteristics must express what the organization does. What the organization does boils down to the actions of individual employees. The more continuous element in their behaviour are their own intentional actions, as they themselves would describe them. These actions are related by means-end relations which, together, form a complete network of the organization's actions. This means-end network of actions is able to express the organization's specific features. Or, as Simon (1955) puts it: 'The hierarchy of means and ends is as characteristic of the behaviour of organizations as it is of individuals'. Especially the concepts figuring at a higher and more central level in the individuals' cognitive structures tend to be maintained as they are. The elements figuring at the more central and higher positions in the means-end structure of organizational action are likely to be the more common and continuous elements in organizational behaviour. These are the most likely candidates for playing the role of a 'generative grammar' of the organization. One may hypothesize a link between the level of an action and its generality: at the lowest level of a structure of intentional action, one may find very concrete actions, only applicable to specific jobs and individuals, at the highest level, action descriptions may be so general that they apply in nearly any domain. The level where actions are organization-specific, then, must be somewhere inbetween. This may be the case, but that is a question for further research, that at the same time the central concepts turn out to be highly organization-specific.

'Centrality' in the network structure of organizational action seems to subsume the three criteria for corporate identity as developed by Albert and Whetten, and to cover equally well the criteria derived the attribution theory: it provides a cue to the degree to which an activity is the same across occasions and interaction partners, a cue to the degree to which it is continuous over time and - to a less certain extent - a cue to the degree to which it might be specific to the organization. It shows an organization's 'central character' in a very operational way. Thus Albert and Whetten's criterion of 'central character' corresponds to 'sameness of behaviour across occasions', the feature required for attribution of an action to the organization. This sameness, however, does not apply to all concrete behaviour, but rather to the central concepts in the organizational structure of action; the organization's central values. Therefore, corporate identity can be defined more precisely as follows: 'corporate identity' consists of those elements in the means-end pattern of intentional behaviour of organization members which occupy a central position in this pattern (overview 3.5).

A technique designed to measure corporate identity should be able to make an adequate sample of intentional organizational behaviour, and uncover the means-end pattern in this behaviour in such a way that analysis of the structure of the behaviour becomes possible. Then such a technique will be able to summarize the heterogeneous concrete activities in more concise terms. These are descriptions of the same concrete actions. Investigating the corporate characteristics in their means-end pattern may solve the problem posed by the enormous heterogeneity and quantity of organization members' actions in two ways:

- by summarizing manifold concrete acts of behaviour in terms of a more limited number of terms. This way, the description of an organization's identity can be made as concise or as detailed as management wishes. The summary algorithm remains data-driven; it follows the means-end relations among the employees' actions. This does not guarantee organization-specificity of the measurement results, but it ensures openness to fully organization-specific actions.

- by mapping concrete and more abstract properties of organizations in such a way that it becomes clear which concrete properties are linked to which more abstract properties and vice versa. No abstract concept will stay meaningless, and vice versa, it shows the deeper meaning of the diverse heterogeneous actions. The 'sameness' hidden behind the heterogeneity in the signals emitted can be made visible.

4 MEASURING AN ORGANIZATION'S IDENTITY

Overview of the chapter

In this chapter, we will develop a measurement instrument for corporate identity. This instrument is based on the operationalization of corporate identity as 'those elements in the means-end pattern of organization members' intentional behaviour which occupy a central position in this pattern'. Interviews are conducted among organization members. Employees are first asked what they are doing. Then the interviewer traces the 'ladders' of implications which respondents derive from those actions. These ladders are the empirical reconstructions of chains of Goldman's (1970) by-relations (cf. Figure 3.3).

The interview texts are then analyzed in three phases. In the first phase, of open coding, the analyst asks exactly the same questions, but this time working from the text. Each potential concept is scrutinized as to whether it can be seen as the respondent's intentional action. Tables of concepts and of relations between the concepts are made up. Then the network made up by the identified concepts and relations is reconstructed. In the third phase of analysis the network is condensed in such a way that it provides insight into the organization's identity. Different methods for calculating a concept's centrality are discussed. Then the most central constructs are assessed, which correspond to the operational definition of corporate identity given in the previous chapter.

The chapter is organized as follows: first the procedure as a whole is described. Next three issues which warrant closer attention are discussed: how the sample of employees has to be taken, the reliability of the procedure is discussed and different ways of calculating centrality are described. The choice of the right method of calculating centrality depends upon the assumptions made about the means-end relations. The chapter ends by formulating questions for testing the assumptions regarding the means-end pattern of actions. The answers to these questions may help refine the method of deriving an organization's identity from this network of means-end relations and may serve to underpin its validity.

4.1 Means-end analysis in literature

In chapter 3, the means-end pattern of relations between intentional actions was chosen as the mechanism to approach an organization's identity. The next step is to reveal this means-end pattern and identify the central actions in it that make up an organization's corporate identity. Although the concept of means-end relations dates back to Weber (1972, original edition 1922), their empirical assessment has never really been developed beyond a rudimentary level. The oldest mentions of empirical means-end analysis stem from the field of psychology. Hinkle (1965) developed the 'implication grid technique'(p. 37-38), a methodology by which a person can communicate aspects of his networks of means-end relations in a standardized and systematic fashion. He investigated the effect of the change of one self-description on a respondent's other self descriptions. In the area of artificial intelligence, the methodology developed by Hinkle has been referred to as the 'laddered grid technique' as well (Rugg, McGeorge and Shadbolt, 1990, Hoffman, Shadbolt, Burton and Klein, 1995).

The conceptual 'discovery' of means-end chains in marketing in the 1970s is more recent than in organization science, where e.g. Talcott Parsons (1949) worked with them extensively. In organization science, however, means-end analysis seems to have stayed mainly a theoretical idea, whereas in marketing, the step towards empirical assessment of means-end chains was made from the outset.

Young and Feigin (1975) developed a first application of means-end analysis in marketing, the 'benefit chain'. Their research procedure begins with a description of the product and product attribute which makes the product preferable to available alternatives. Respondents individually write down on a sheet of paper two benefits that they associate with the preferred alternative. Then, on each of two successive layers of paper with carbon, they write two additional benefits derived from the previous benefits. This procedure is repeated a third time and results in a total of fourteen product-related and emotional benefits per respondent. Other early authors in marketing treated means-end structure as a kind of hierarchical structure among values (Vinson, Scott and Lamont, 1977). They distinguish global values at a person's most central level. These are the most abstract and generalizable. At an intermediate level they distinguish domain-specific values. These are functionally related to an individual's global values (p. 45). The relations between global and domain-specific values can be interpreted as means-end relations. At the peripheral level, the lower end of the hierarchy was made up by evaluative beliefs, i.e. beliefs about the desirable attributes of products or brands. Howard (1977) explicitly characterized the relations between values as means-end relations. He distinguished terminal values, which he equated with 'being', from instrumental values, equated with 'doing' (cf. Rokeach, 1973). In the means-end chain, values are served by choice criteria (p. 92). These are 'mental counterparts of the attributes by which a consumer judges a brand' (p. 28). He called the total meaning of a brand its 'semantic structure' (p. 41).

Gutman (1982, p. 63) included product attributes and consequences of product attributes into such structures. He defined consequence as 'a state of being produced by an act of consumption'. At the lowest level of inclusiveness he identified product attributes. At this level meaning is ascribed to products by grouping them together with other similar products using one attribute as group label. Since Gutman, the distinction between attributes, consequences and values has been maintained throughout marketing literature on means-end analysis. Reynolds and Gutman (1984, 1988) worked out Gutman's model into a complete measurement technique, which they called 'laddering'. It is an in-depth, one-to-one interviewing technique which Reynolds and Gutman used to develop an understanding of how consumers translate the attributes of products into meaningful associations with respect to self (Reynolds and Gutman, 1988, p. 12). It involves a tailored interviewing format using primarily a series of directed probes, typified by the question: 'why is that important to you?'.

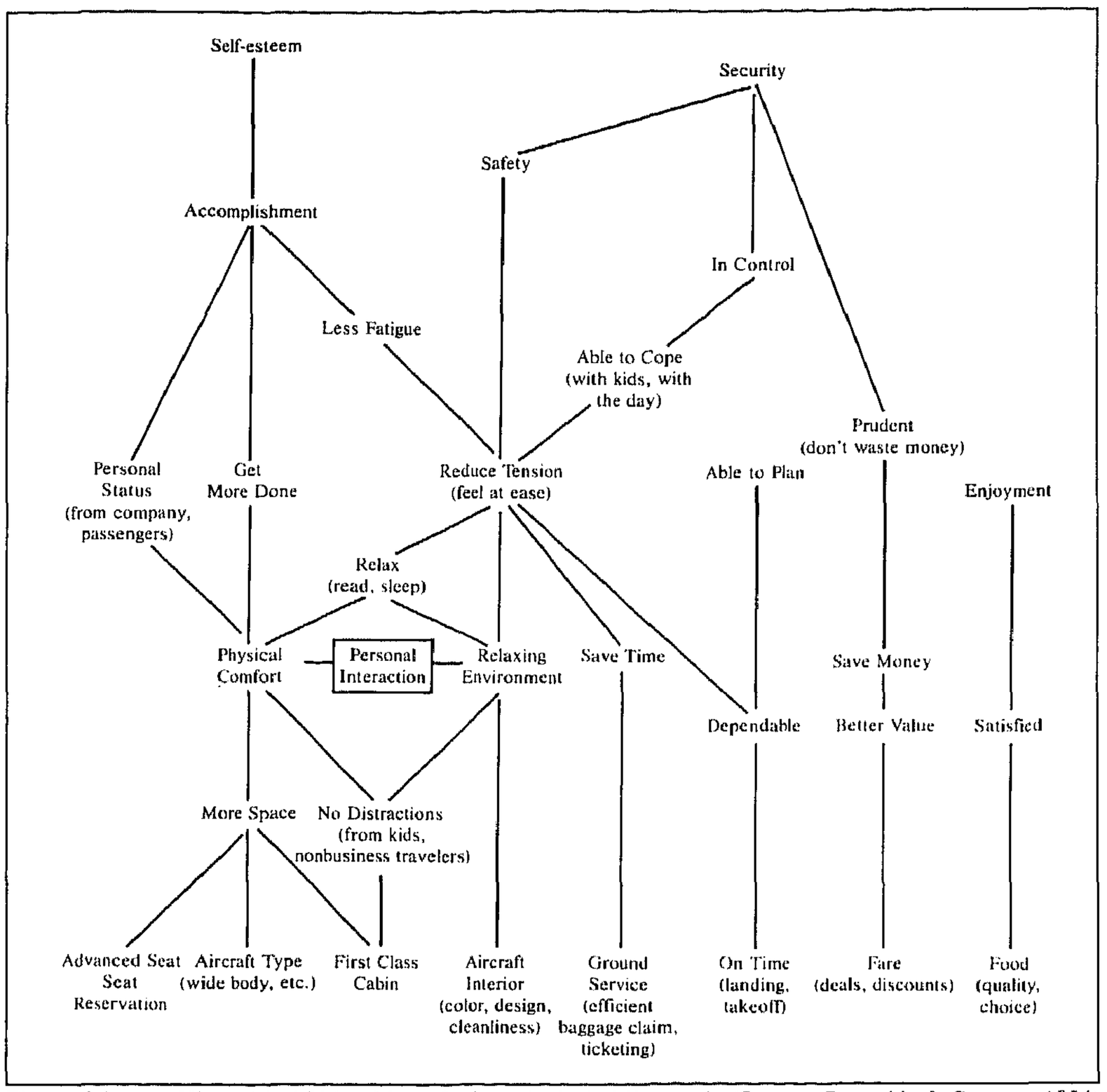

Figure 4.1 Hierarchical Value Map of a hypothetical airline study (Source: Reynolds & Gutman, 1984)

The typical laddering interview starts probing for concrete starting concepts. In product image research, these are typically meaningful perceived differences between product brands. These are Gutman's (1982) 'grouping level distinctions'. These can, for instance, be found using the Kelly Repertory Grid method (Kelly, 1955), natural grouping (Verhallen, 1988) or by having the respondent himself deliver the criteria directly ('free elicitation', Pieters, Steenkamp and Wedel, 1992). The respondent is then asked which of the groups distinguished by that criterion is preferred, and why. Then the interviewer asks him, why that last reason is important to him. At each answer given by the respondent, the interviewer repeats the question 'why is that important to you?', until the respondent is unable to give any further answers. With the interviewer's help, the respondent activates different aspects of his or her stock of knowledge, which are then revealed in the conversational give-and-take of the interview (Holstein and Gubrium, 1995). The outcome of these interviews are networks of means-end relations. Figure 4.1 shows for instance the results of a hypothetical

study of businessmen choosing their airline. Reynolds and Gutman (1984) call such a figure a 'Hierarchical Value Map'. These networks shed light on the users' motives underlying choice behaviour and the association pattern activated in such situations. Most literature on the laddering technique, so far, has focused on consumer product choices, not on human action as such.

In essence, laddering is a simple technique, open to issues which may be organization-specific, providing a network structure of means and ends from which inferences can be made about the degree to which actions are continuous over time, central to the organization and about the degree to which the actions identified may be distinctive for the organization. It may be very worthwhile applying this technique to the analysis of organizational action. Means-end chains have been identified as theoretical constructs defining the division of labour in organizations (March and Simon, 1958), and as characteristic of the behaviour of organizations (Simon, 1955), but so far, nobody had taken the trouble to assess such chains empirically. This dissertation is a first endeavour to do that.

4.2 The research procedure

In this section, the procedure of conducting means-end analysis on organization members' actions will be explained. First, open interviews are conducted, as described in section 4.2.1. In those interviews, the respondents' concrete actions have to be identified. The laddering technique is applied to identify the connections between these actions and their underlying goals and values. The interviews are transcribed, and the research results are translated into a systematic notation of means-end relations between the actions, goals and values, described in section 4.2.3. In the course of analysis the data are broken down, compared with each other, reconceptualized and put back together in a new way. Strauss and Corbin (1991) call the first part of this process 'open coding' (p. 61-62). It consists of breaking down the data into discrete parts, examining them, comparing, conceptualizing and categorizing them. Intentional actions are inventoried from the interview texts and means-end relations between them are identified. The output of the phase of 'open coding' are two lists. One list contains the concepts representing the organization members' intentional actions. The second list shows all relations between these concepts, as they have been mentioned in the interview texts.

Section 4.2.4 describes the second phase (in Strauss and Corbin's terms (p. 96): 'axial coding'). The data are put together again, following the list of means-end relations. Then the network built up by these relations is reconstructed. Section 4.2.5 explains how the core elements in this structure can be found and how the most central elements can be assessed. In principle, a Hierarchical Value Map (Figure 4.2, Figure 4.3) can be drawn, showing the data graphically. It may be difficult to make sense of such a figure, however, because of the sheer overload of information. Selection of the data now will have to take place in such a way, that the result becomes comprehensible ('selective coding', Strauss and Corbin, p. 116).

The researcher should enter into the research with an open mind. Identifying the organization members' actions implies that the researcher cannot take the role of an external observer who tries to explain what he sees. He has to adopt the perspective of the actor himself (Weber, 1985, p. 197). The researcher should avoid introducing his a priori hypotheses into the research. The risk that then the results will represent the researcher's rather than the respondent's cognitive structure will be fairly great (Grunert and Grunert, 1995). Throughout the interview the respondent is the principal speaker while the interviewer, except for the questions outlined in this chapter, limits himself to short supporter contributions as a recipient. Moreover, if interviewers act in a 'neutral' fashion by refraining from evaluative comments and restricting reactions to minimal response, they may elicit more elaborate answers than would have been produced otherwise (Mazeland and ten Have, 1996).

4.2.1 Identifying the respondent's concrete actions

The first step in the interview is to determine the concrete actions of the respondent. In product choice decisions, determining the level of action to start with is easier: the choice itself is the basis for starting the laddering interview. Choice situations can be evoked by using the Kelly Repertory Grid (Reynolds and Gutman, 1988) or the natural grouping method. The context of the choice is given by their presenting the alternatives and evoking the choice situation. Generally, the set of alternatives and the evoked choice situation are the same for all respondents. When zooming in on organizational action, however, such uniform starting contexts do not exist. Employees from different departments do different jobs and perform very diverse activities.

It is advisable to let the respondent himself start explaining the job they have in the organization. This helps ensure the openness required for capturing organization-specific elements. The answer to the question 'what do you do?' is easily given. As a rule, individual people do not experience a great deal of uncertainty about that. They arrive at descriptions of their actions quickly, without much conscious deliberation. They experience these descriptions as simple, direct perceptions of what actually happens. Most of the multiple descriptions people could give stay beneath the surface of conscious experience, lying in wait for the moment or circumstance in which they might come forward to serve as the appropriate description (Vallacher and Wegner, 1985, p. 35).

The moment or circumstance under which the question 'what do you do' is answered may influence the answer given. Different information is incorporated into the representation of an action in different contexts (Barsalou, 1989, p. 78). The employees' personal circumstances are not likely to be highly similar across the different departments and jobs in an organization. Therefore, it is best to have the respondent himself explain the context of his daily work in the organization. The first question, which serves to evoke the context in the employee's own words should be: '**What is your job at this company?**'. This is a question which the interviewee can normally answer easily, without potential embarrassment. It allows both the interviewer and the interviewee to relax and to get to know each other - all the more important because later the laddering interview will become more difficult. The job description in itself does not necessarily deliver interesting data. Often the respondent will say what is expected of him rather than describing his own intentional actions.

The interviewer then narrows down the subject to what the respondent does himself. Here, the interviewer makes sure that he and the respondent are really communicating. There is a general trend among respondents of understanding action in terms of higher, i.e. more goal-oriented levels (Vallacher and Wegner, 1985, p. 25). Often repeated behaviour becomes routine and verbal representations of the more basic acts tend to fade away from the actor's consciousness (Schneider and Shiffrin, 1977). The trend toward higher levels of understanding guides a person to understand action at the most comprehensive, i.e. highest available level. The skilled telegrapher, for instance, does not have to think 'I am moving my finger' each of the countless times this action is incorporated into 'sending a message' (Vallacher and Wegner, 1985). Only if an action cannot be maintained in terms of its preferred definition, will there be a tendency for a more concrete definition to become dominant. In such a situation the details which have remained implicit become explicit. If, for instance, Vallacher and Wegner's (1985) telegrapher suddenly does not manage to push the button down any longer, he will first try to find out what is obstructing the downward movement of his finger.

This means that, at first glance, answers may be vague and general. A not uncommon first answer, for instance, may sound like: 'Well, I manage the work flow of daily operations in my department'. To most readers, as well as to most interviewers, this sentence will not really make clear what the respondent is actually doing. In some way, the interviewer has to trigger the respondent to explain more concretely what he is doing. It is important to break down behaviour into components that can be communicated. The respondent should explain the behaviour to the researcher in such a way, that the researcher is able to repeat the respondent's behaviour. Only then does behaviour become communicable. Helpful questions are: '**What do you do in concrete terms?**' or 'How should I picture that?'. If the respondent really does not get down to talking in terms of concrete actions, a way out is: 'Let us say, yesterday at 10.00 a.m., what were you doing at that very moment?'. Especially when interviewing respondents at higher management level, this last question can be very fruitful.

Reaching this level of concreteness serves the purpose of making sure that no behaviour is included which only exists in the form of espoused values. Only behaviour which is brought into practice will be identified. For purposes of communication, descriptions have to become so concrete that the target groups with which the organization wants to communicate can understand the words in the way the organization uses them. The more the researcher is a layman compared to company employees, the less easily he will tend to be satisfied by jargon explanations, and the more the communicability of corporate behaviour can be ensured. It is not necessary to go under that level of action that is generally considered basic: once we know that we have to walk, it is not necessary to know which leg muscles we have to move in order to walk (unless this knowledge is relevant for a particular target group).

This way, respondents normally bring up a number of concrete actions which can all be used to start the actual 'laddering' task. Now the direction of the interview is 'turned around' moving from the concrete to the abstract. The 'turnaround question' identifies the reason for performing particular concrete behaviour: '**Why do you do it that way?**'. The answer given by the respondent provides the starting point for the actual 'laddering' procedure.

4.2.2 Breaking through into the self-evident

Now one of the employee's concrete actions has been identified. Here the laddering technique can be used to explore the links between this concrete action and the central goals and values which may play a role in the organization. The characteristic question of the laddering technique is the question for the relevance of the goal the respondent has just mentioned: **'Why is that important to you?'**. At each answer, the question is repeated until the respondent is unable to give any further answers.

As the descriptions move away from the respondents' most current description of their actions, they may experience difficulty in verbalizing them. Higher-level concepts and relations may mainly be known to organization members intuitively. They use these background expectancies as a scheme of interpretation. People are responsive to this background, while at a same time they are at a loss to explain specifically of what these expectancies consist. When asked about them, they may have little or nothing to say (Garfinkel, 1967, p. 36-37). The difficult area of the self-evident (i.e. self-evident in the view of the organization members) is exactly the area where Weber (1985) expects to find the 'generative grammar' behind the heterogeneous behaviour of organization members. In a sense, the interviewer applying the laddering technique has entered in a discourse with the organization, during which employees motivate their behaviour rationally. This discourse reveals the common-sense knowledge of their day-to-day life (cf. Weber, 1985, p. 209). The continuously repeated 'why is that important to you' question represents a 'stubborn requirement for explanation of meaning, which forces the interviewee to put the self-evident into words (cf. Garfinkel, 1967). In fact, it is the instrument with which the self-evident is made visible.

The interviewer has the precarious task of continuing to motivate the respondent to tell his story, pushing him 'up the ladder' further into the self-evident, while remaining totally neutral himself. An important way of motivating the respondent to carry on talking is by showing great interest in the respondents' story. The more the respondent himself takes the initiative to move up the ladder, the better. Therefore, he should only ask the 'why is that important' question when the respondent has finished his story. He can communicate his interest even better by phrasing the 'why is that important' questions as closely as possible to the way the respondent words it. Then the respondent is given the impression that the interviewer is really listening. In general, respondents only need very short time until they know the direction of subsequent questions. That provides opportunities for yet more open ways of steering conversation such as asking, with an intonation pattern conveying highest interest, just at the moment the respondent seems to have finished: 'Yes...?' or just by remaining silent. When this happens, respondents often feel urged to further elaborate on what they just related. When the respondent really seems unable to give a further answer, this problem can be dealt with by asking what will happen if the 'top' level action is not performed. The subconscious reason is then discovered by the respondent imagining the negative consequence resulting from the absence of the given action. Reynolds and Gutman (1988, p. 15) call this procedure 'negative laddering'. The interviewer should not give up his probing too soon. The basic orientations for action may mainly, or only, be available in the form of intuitive background knowledge (Weber, 1985, p. 242). The reconstruction process based on arguments can only reach back as far as the 'threshold' of available background knowledge.

This may help explain the slight degree of annoyance on the part of the respondent at this stage of the interview. Their intuitive background knowledge tells them, that further legitimation ('Begründung') is not needed. There it breaks off, since for the organization's members the action has now been sufficiently legitimated ('begründet'). Weber (1985, p. 242) goes as far as classifying these 'Begründungsabbrüche' as being the most interesting phenomenon, because they represent the basic consensus in the organization.

- What is your job at this company?
- What do you do in concrete terms?
- Why do you do it that way?
- Why is that important to you?

Overview **4.1** The four basic questions in an interview for corporate identity measurement

The results, however, must still represent concepts in which the respondent believes. The respondent's more creative, strategic thought processes should not be activated (Grunert and Grunert, 1995). It is quite usual for respondents to have difficulties finding answers, especially at higher levels of abstraction. A criterion for the validity of the answers is, that the respondent should have the feeling of gaining deeper insight into his own decisions. The interviewer should stop probing for more higher-level concepts if the respondent has difficulty finding the answer, without the respondent having this feeling of becoming aware of his implicit 'facts of life'. If the answer to the probe is virtually equal to the two previous answers, or when he needs to think a long time before coming up with an answer, the interviewee might have reached the 'top of his ladder' (cf. Pieters, Wedel and Steenkamp, 1992). If that happens, the interviewer should take another concrete action mentioned by the respondent earlier in the interview and start the laddering procedure all over again.

Summarizing, first the interviewer has to zoom in on the respondents' concrete behaviour, and then ask for the meaning of this concrete behaviour by posing the question: 'Why is that important to you'? This unveils the area of intentional action which in daily life is self-evident to the respondents, but which may very well typify the organization. Actually, only four basic questions are allowed (overview 4.1). During the interviews, the main point is to engage respondents in meaningful talk about their everyday world in the organization in terms that derive from their lived experience (Holstein and Gubrium, 1995). Openness to the organization is required throughout the interviewing procedure, in order to remain sensitive to organization-specific items. The laddering technique has in particular the potential to elicit 'deep' knowledge (Hoffmann et al., 1995). It allows the researcher to move through the respondents' associative network of intentional action. At each identified action it penetrates further into the respondent's world of thought. The repeated question 'Why is that important to you'? provides the 'stubborn requirement for explanation of meaning' needed to make the self-evident problematic (cf. Garfinkel, 1967), so that it can be put into words.

The technique itself is completely open to the content of the respondent's concepts. It enables the researcher to uncover characteristics which may be specific to the research population and of which the researcher himself has never thought. Actually, the question 'why is that important to you?' triggers the respondent to provide the structure which makes up the structure of organizational action. The laddering technique has the potential to uncover very organization-specific elements, structured in a very organization-specific way.

4.2.3 Coding the data

The interviews are recorded on tape and afterwards typed out word for word. This system has the advantage of allowing the researchers to concentrate on their interviewing task. After the interview, the text of the transcript allows them to have a more thorough and complete look at what the respondent actually said, and to discover the full richness of all the concepts and all the means-end relations the respondents have laid between these concepts. Relations and concepts which have escaped the interviewer's attention can be retrieved by reading the text. The availability of the interview transcripts allows for intersubjective control of the research results. All relations and concepts identified can always be checked against the original text.

4.2.3.1 Open coding: identifying concepts and relations

In the phase of open coding, the goal is to squeeze an unwieldy body of discourse into manageable chunks (Potter and Wetherell, 1987, p. 167), which can be used later to reconstruct the data. The transcribed interview texts are scrutinized line by line by coders in order to inventory the respondents' descriptions of their own intentional actions and the means-end relations between them.

4.2.3.1.1 Coding of concepts

The concepts the coder is looking for are the verb phrases in the text which describe what the organization does. These are the ingredients needed to build up informative identity statements (cf. 3.1.2. or Williams, 1989, p. 14). In the end, these are based upon the actions of individuals (Weick, 1979, p. 34). The people who can describe their actions most reliably and validly are the individuals performing them. Therefore, in the interview texts, we look for descriptions of the interviewees' own intentional actions which they performed within the context of their jobs. These actions must be intentional, because they must be attributable to them. This rules out the likelihood of the measurement including external circumstances or events that happen to the interviewee. Descriptions of actions cannot be adopted as concepts without regarding their further context. For instance, the statement 'I obtained the books' does not describe an intentional action if the books were given to the interviewee as a surprise. However, if the interviewee first explained that he had been looking for them for three weeks and that he finally managed to get them, the same statement is definitely a relevant concept. The specification coders get before starting their job is: 'Relevant concepts are all statements describing the interviewees' own intentional actions performed in the context of their jobs'. A more detailed specification would imply the introduction of the

researcher's notion of what an organization's identity might be, and would hinder an open-minded assessment. Coders have to define categories of synonyms themselves. Each time a relevant concept is found, it is recorded with a reference to the interviewee who mentioned it and the number of the line in the interview transcript on which it occurs. Overview 4.2 lists the steps in coding.

Synonyms are descriptions of the interviewee's own intentional action which are exchangeable between the contexts in which they occur while keeping the same meaning. Each time a new concept is found, the coder checks whether it does not have a synonym already identified. If it does, its literal wording and reference to line number and interviewee are added to the description of the first concept, if not, a new concept is added to the list. Repeatedly, the coder will have to consult the original text in order to check the context of the potential synonyms. The process is cyclical in nature. Interpretations emerging from analysis are repeatedly compared with the original textual data. At the end of this analysis, it is practical to assign a 'concept label' to each set of synonyms, reflecting shortly its content, and a number (for easy retrieval by computer). The 'label' should be the description of the concept, given by one of the respondents, which best fits the whole corpus of descriptions given by interviewees. If the coders themselves were to think up descriptions this would lead to a departure from the data and would introduce elements into the analysis which the respondents had not meant to impart.

4.2.3.1.2 Coding of relations

After the concepts have been identified, the means-end relations between them are inventoried. The coder has to go through the texts again, and identify all means-end relations mentioned. The same way as for the concepts, at each relation found the line number and the code of the interviewee who mentioned the relation is recorded. This way, other people can always check the correctness of the relation afterwards, and the respondents who identified the relation can be counted. Only relations which have been identified by the respondents themselves should be adopted, not relations which researchers think flow forth from the respondent's logic: that would imply introducing the researchers' cognitive structure into the data.

Steps in open coding of concepts

- Identify all statements where the employee describes his own intentional action in the context of his job

- Include reference to the exact location where the statement appears in the interview texts

- Check for synonyms already listed

  If a synonym already exists, add the new description and a reference to the new location in the text to the existing synonym

  If not:

- Assign a label to the concept

- Assign a concept number and add the concept to the list

Steps in open coding of relationships

- Identify all means-end relationships between the concepts, as they have been mentioned directly by respondents

- List the exact location of the mentioned relationship in the interview texts

- Check whether the relationship has already been mentioned before

  If the relationship already exists, add the new description and the reference to the new location in the text to the existing relationship

  If not: add the relationship to the list

Overview **4.2** Steps in the open coding of the interview transcripts

The output of the open coding procedure are two lists (overview 4.2). In one list, all descriptions of intentional actions can be found, given by the employees performing these actions. They are categorized by action, with the exact location in the interview texts where the description can be found. The second list shows all the means-end relations between the concepts in the first list, as they have been mentioned by the respondents. The respondents who mentioned the concepts and relations can be identified in the lists. This makes it easy to count how many different respondents mentioned each of the identified concepts and relations. Moreover, this leaves room for the segmentation of respondents at a later date.

4.2.4 Finding the structure in the data

Once the texts of the interviews have been broken down into two tables, one of concepts and one of relations, the recombination algorithm is straightforward. First, for each concept and for each relation, the number of interviewees mentioning it is counted. The list of relations can be read as an inventory of directed connections between the concepts inventoried. The means-end relations build up a directed network. Once the relations have been established, little ambiguity remains about the positions of the concepts in the network. Such a network can be used for different analyses, in particular the calculation of an index of centrality. These calculations, in general, require a matrix representation of the network data. This matrix will be discussed; followed by algorithms for deriving graphical representations of the data.

4.2.4.1 Counting the concepts and the relations

For each concept and each relation the respondents who mentioned it are counted. This will allow further refinement of the research results and gives an indication of the degree to which identified concepts and relations may be common across the organization. Multiple mentions of a concept or relation within the same interview are not necessarily independent from each other. They may represent one subject on which the respondent is reflecting or insisting. Therefore, the number counted is the number of different respondents mentioning a concept or relation, not the sheer number of addresses in the texts where the concepts can be found. If respondents do not exchange too much information about what they said in the interviews, and if the interviewers refrained from bringing in subjects during the interviews, there is little likelihood that multiple mentions across different interviews are a research artifact. Then, the number of respondents mentioning a concept or relation may be a useful cue to the degree to which that action or relation is widespread in the organization. In general, concepts which are mentioned only once are not adopted into the data for further analysis, because there is no cue as to whether they can be attributed to the organization instead of only to the individual who mentioned them.

4.2.4.2 The implication matrix

The next step is putting the data into an implication grid (Hinkle, 1965) or implication matrix (Reynolds and Gutman, 1988). This is a matrix which displays the number of times each concept leads to another concept. It is a square matrix with a size reflecting the number of concepts. The row concepts represent the means, the column concepts the ends (Reynolds and Gutman, 1988, p. 20). Appendix 4.1 shows the implication matrices of the examples mentioned in this dissertation. The implication matrix already contains all the data needed for further analysis. Visualization, however, can be insightful; for this purpose, a 'hierarchical value map' will be drawn (see Figure 4.2).

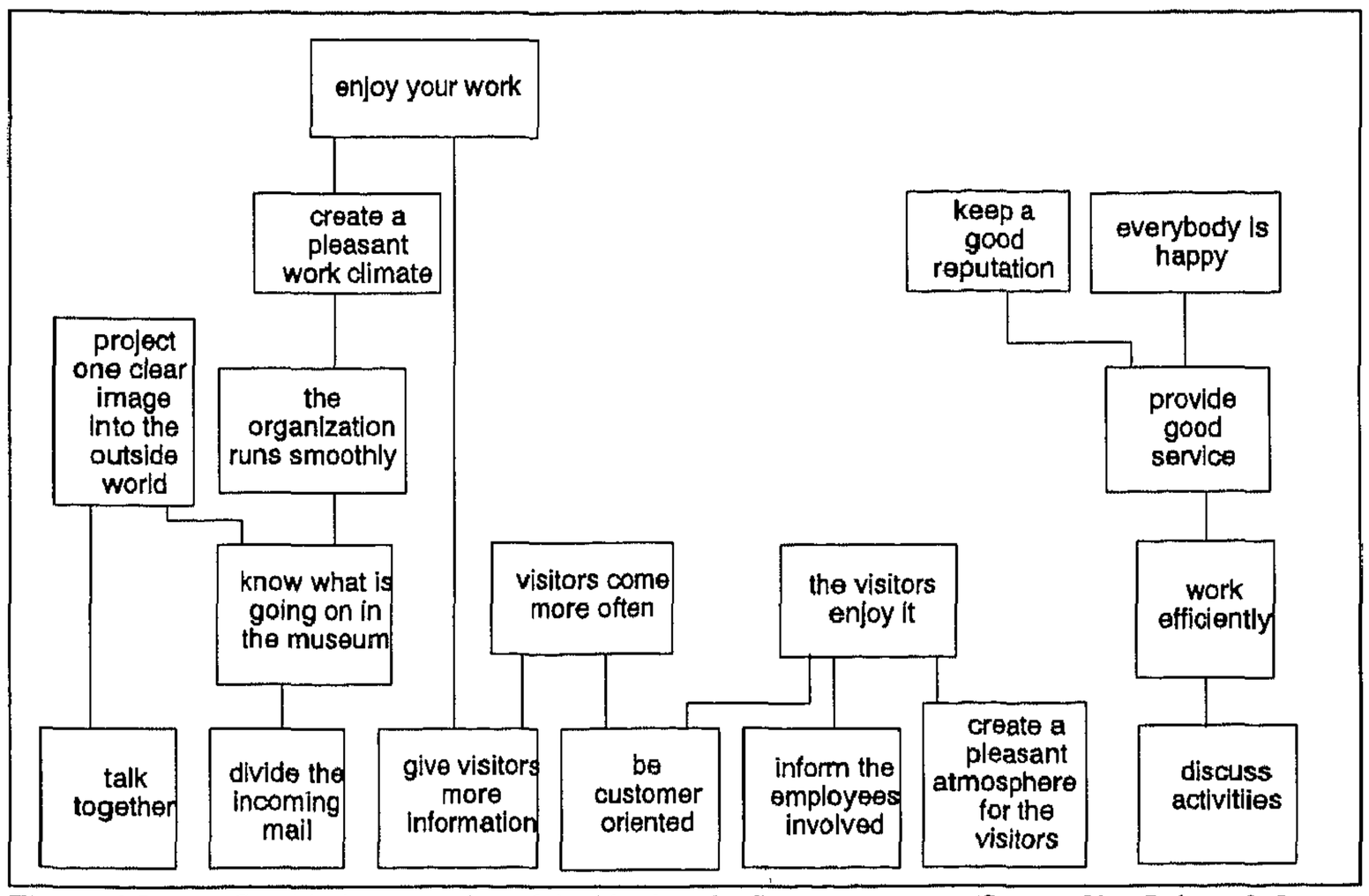

Figure 4.2 Graphical presentation of the identity of a fine arts museum (Source: Van Rekom & Jansen-Verbeke, 1995)

4.2.4.3 Developing a graphical representation of the data

The most direct way of drawing a graphical presentation of the organization members' intentional actions is building it up directly from the structure provided by the respondents in their interview texts. Most straightforward is to build up the map from the bottom, in the way Goldman (1970) drew his act diagrams (Figure 3.2). Figure 4.2 is an example of this type of diagram. The lowest-level concepts are those which are only means to other concepts and do not serve as an end to any other concept. These are the empirical equivalents of Goldman's (1970) basic acts. Their consequences are on the first level of abstraction, the consequences of these again one level higher, and so on. Following this procedure, the level at which each concept ends in the map corresponds to the longest of the longest paths from the concept in question to any of the zero-level concepts to which it is connected. This level is ordinal in character: it is only determined with respect to concepts within the same chain (Goldman, 1970, p. 60). For instance, in Figure 4.2 the level of 'providing good service' is indeterminate with respect to the level of 'visitors come more often', because in no way can they be said to be in the same chain.

Maps like Figure 4.2 are similar to Reynolds and Gutman's (1988) 'Hierarchical Value Maps'. Reynolds and Gutman, however, propose an extra content-analysis step before constructing it. They first classify all responses into three basic categories: concrete attributes, consequences and values. Conversely, for measuring corporate identity, one could think of a similar sequence of actions, goals and values. This categorization globally determines the level at which a concept will be designed in the Hierarchical Value Map. Then the relations between the concepts are established and the map is drawn.

The method presented here and the method proposed by Reynolds and Gutman (1988) represent two different ways of drawing a population's means-end structure. An advantage of the method as shown in Figure 4.2 is that it stays close to the interview data. Reynolds and Gutman's (1988) classification of concepts into attributes, consequences and values may be comfortable to many researchers accustomed to seeing values as something different from more concrete attributes or actions. However, it adds an extra step of content analysis into the research, decreasing further the intercoder reliability. The logic in the respondents' data may be a closer representation of the respondents' world of thought than the researchers' interpretation of the respondents' concepts. For the determination of levels this step is not necessary, and the conceptual distinction between actions and values is, at least, debatable (Vallacher 'and Wegner, 1985). The method presented here relies most directly on the relations mentioned by the respondents, and less upon the researcher's interpretations. Therefore, this way of drawing means-end structures is used in the examples in this dissertation.

Figure 4.3 shows a hierarchical value map resulting from six interviews at a boat excursion company organizing sightseeing cruises through the canals in Amsterdam. The concepts were mentioned by at least two respondents. The relations were included into the figure if at least one respondent mentioned them. The method is sensitive to circularities in the data: as soon as a loop exists in the means-end relations between the concepts, the level of all higher concepts corresponds to infinity. A way of solving this dilemma is first identifying all the concepts involved in the loop. These concepts then form a highly interconnected subset of the figure, where an arrow shows that there is circular movement. Once the concepts involved in the loop have been identified, they can be treated as one 'closed block', and the exact level of the higher level goals and values flowing forth from the block can be established. The most concrete activities are found at the bottom of Figure 4.3. The higher goals which people are aiming to achieve by means of the more concrete activities appear at the top. One of the concepts on the bottom line is, for instance, 'the guide serves the orange juice'. Serving the orange juice is important in order to (following the line upward) 'blend with the people'. 'Blending with the people', in turn, is important in order to have 'personal contact'. 'Personal contact' is important in order to provide 'service', which is a way to 'be a good host'. Following the line further upward, we find as a higher goal of 'being a good host' that the 'people are satisfied'. That is important, because then 'clients come back', which results into a higher 'turnover'. This serves the purpose of 'continuity'. 'Continuity' serves the 'self-esteem' of people working in this organization. Some of the concepts are very job-specific. Serving the orange juice, for instance, is something only the guides in the organization do on one special evening cruise, the 'old Amsterdam by Candlelight'-cruise. 'Mooring gently' is something only done by captains, neither by guides nor by managers. People in different jobs in the organization work simultaneously on the realization of concepts at higher levels of the Hierarchical Value Map. For instance, several employees provide 'service'. How 'service' is worked out in different cases can be seen following the lines in Figure 4.3 from that box downward. Very central in the figure is also the box 'be a good host', mentioned by all six respondents. The more central a concept is in the Hierarchical Value Map, the more it appears to represent an element common to the whole organization (the 'communality criterion') and the better it can be used to summarize the more detailed, job-specific activities.

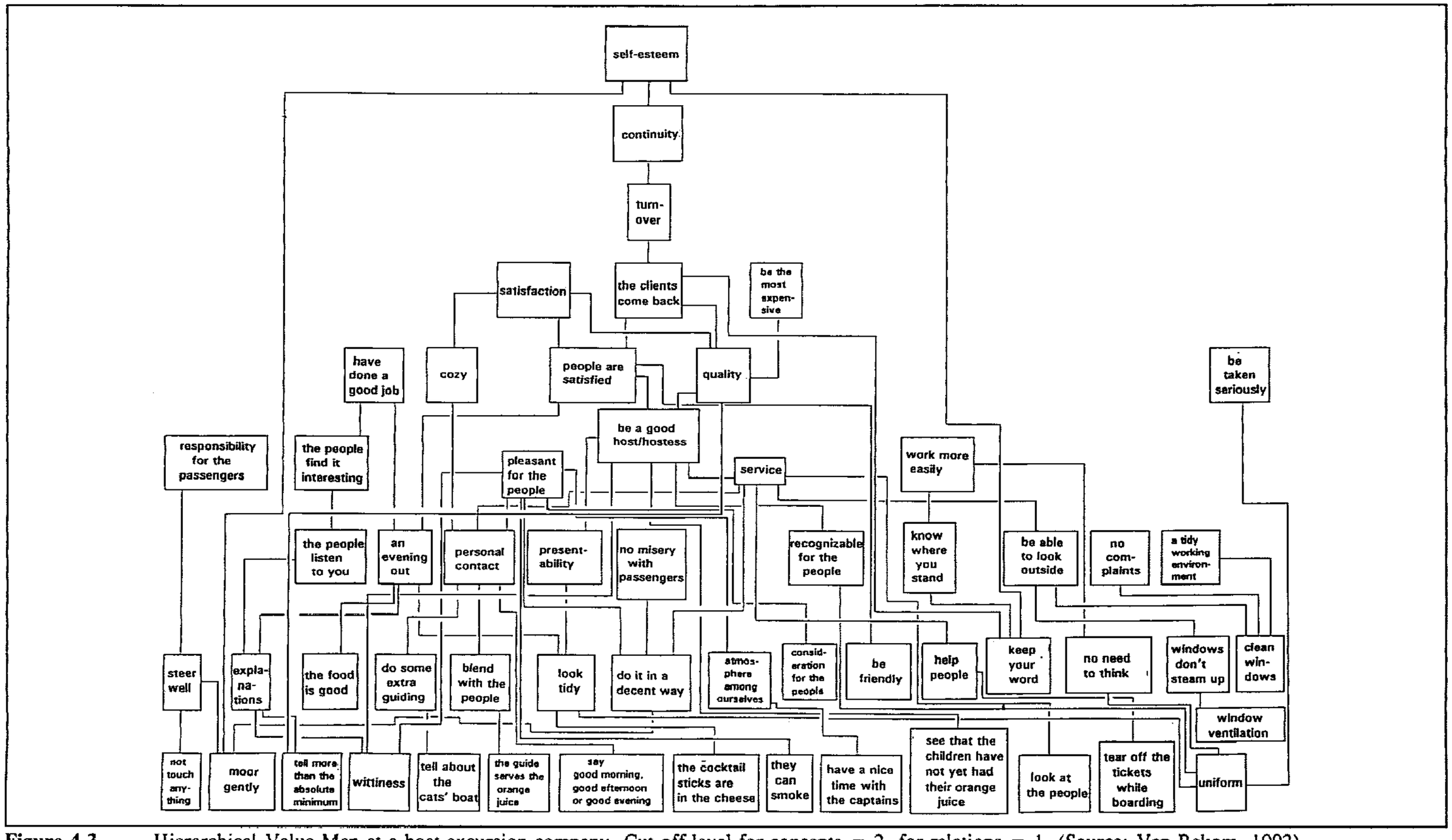

Figure 4.3 Hierarchical Value Map at a boat excursion company. Cut-off level for concepts = 2, for relations = 1. (Source: Van Rekom, 1992).

The higher in the figure, the more general the concepts tend to be, exceeding the borders of what can be specific to the organization: Turnover, continuity and self-esteem cannot be said to be entirely specific to only the organization investigated here. The lower the level on the Hierarchical Value Map, the more the concepts become organization-specific, if not job-specific. Somewhere between the top and the bottom, there must be a position where the concepts transcend the individual jobs, but are still organization-specific. Centrality in the structure seems a better indication to organization-specificity than the level. But apart from this general notion, this Hierarchical Value Map does not offer any 'hard' cues as to whether a concept is totally organization-specific and does not occur in the outside world.

Figure 4.3 is not easy to read, though. The reader who tries to follow the descriptions given above may have the feeling of being in a labyrinth in a childrens' puzzle book. Looking for the organization's central concepts looks similar to following the assignment: 'Find the path to the middle'. The number of concepts and relations can be large. Figure 4.3 shows such a 65 concepts and 83 means-end relations between them. One solution is to define content-analysis categories in such a way that they encompass a broader variety of concepts. In other words, concepts which are synonyms in a broad interpretation are assigned to the same category. Then, however, synonyms may no longer be exchangeable for each other in each other's context, and the analysis loses out in terms of accuracy. This increases the influence of the researchers' interpretation and possibly detracts from the reliability of the research procedure. This can be avoided by using the counts of numbers of respondents mentioning a concept or relation as a cut-off mechanism. In the more cluttered Hierarchical Value Map of Figure 4.3, every concept was mentioned by at least 2 of the in total six respondents and every relation needed to be mentioned only once. Figure 4.2, in contrast, had become much more concise because concepts only were adopted when they were mentioned by at least three different respondents and relations by at least two out of the eight respondents.

Hierarchical Value Maps are reconstructions made out of the chunks of data into which the interview texts have been broken down during the phase of open coding. At first sight, 'raw' graphical representations tend to offer an overload of information. From the abundance of data, those elements have to be selected which satisfy the definition of corporate identity developed in the previous chapter: the elements which are central in the means-end pattern of organization members' actions. These same elements must of course be suitable for communication purposes, and, at the very least, must be attributable to the organization; they have to be the same across occasions, specific to the organization and continuous over time. In short: how can we tell from these data what the corporate identity of the organization is? In the next stage, the data are analyzed in order to find the essential elements in an organization's identity.

4.2.5 Finding the core elements of an organization's identity

Authors assume that the means-end structure shows a certain convergence at the level of the ends. Ends are few, means are many (Vinson, Scott and Lamont, 1977, Gutman, 1982). The resulting network structure allows the researcher to identify elements which are central in that structure, and which may satisfy the definition of corporate identity developed in chapter three. These make up the organization's generative grammar. The laddering technique is able to reveal them because it provides the degree of provocation needed in order to break through to what is self-evident in the organization. Their are two ways of finding these core elements: heightening the cut-off level for concepts and relations (section 4.2.5.1) and calculating network centrality of concepts. The most central concepts then are the core elements of an organization's identity (section 4.2.5.2). Both methods can also be used in combination.

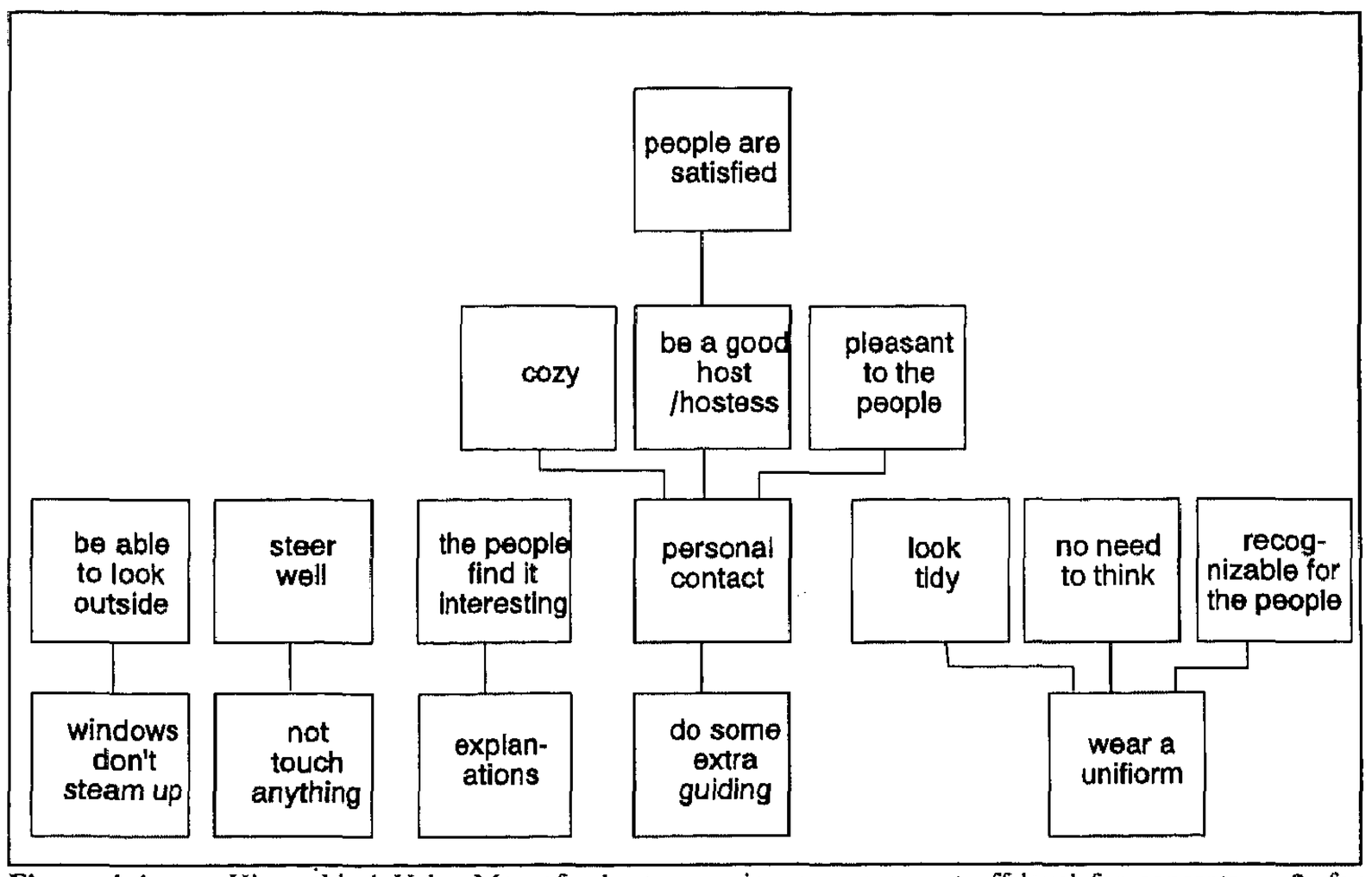

Figure 4.4 Hierarchical Value Map of a boat excursion company, cut-off level for concepts = 2, for relations = 2

4.2.5.1 Making more concise Hierarchical Value Maps

In the hierarchical value map of Figure 4.3 concepts had to be mentioned by at least two people and relations by at least one person, i.e., the 'cut-off level' (Pieters, Baumgartner and Stad, 1994) for concepts was two, and the 'cut-off level' for relations was one. This cut-off level ensures that concepts are shared by at least two employees. The same constraint could also be introduced for relations. The structure of Figure 4.3 then is simplified to the much more concise Figure 4.4. It falls apart into separate sub-trees, each of which represents a separate story. Some stories are clearly recognizable as belonging to groups within the organization: windows not steaming up so that people can look outside is a typical captain's worry, as well as 'not touching anything' in order to 'steer well'.

'Explanations' so that 'people find it interesting' is a typical guides' affair, the same way as the whole story emerging from the use of a uniform (right in Figure 4.4): 'look tidy', 'no need to think (how to dress) and being 'recognizable for the people. One line of thought is more elaborate: 'doing some extra guiding' in order to have 'personal contact', so that the atmosphere is 'cosy', pleasant to the people' and so that employees are good hosts and hostesses. This last concept serves the end goal that 'people are satisfied'. This longer chain represents concepts spread across all jobs. Only the most concrete concept, 'doing some extra guiding', was specific to the job of captains. The other concepts were shared across all jobs. Guides and managers realized or fostered 'personal contact' in other ways, which can be found in the more detailed Figure 4.3.

Further condensation was achieved by raising the cut-off level for concepts to three: i.e. each concept had to be mentioned by at least three respondents in order to be adopted in Figure 4.5. This way, every concept has been mentioned by people from more than one job. In this small sample, a cut-off level of three already represents half of the respondents. No means-end relation was mentioned by more than two respondents.

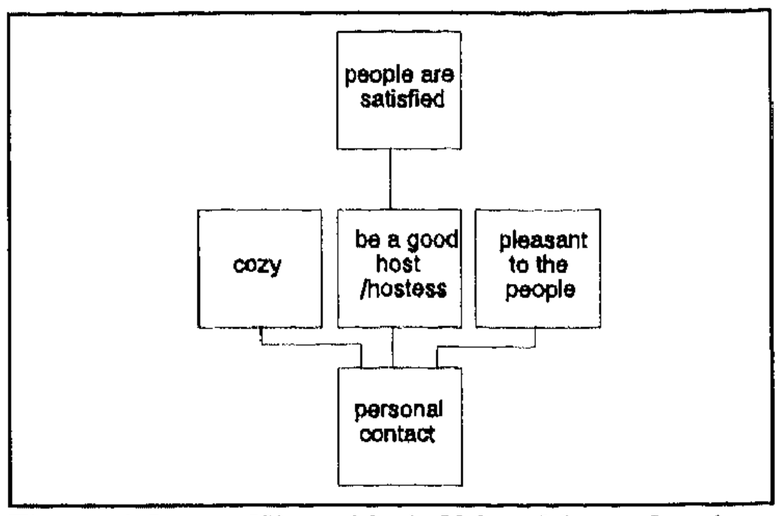

Figure 4.5 Hierarchical Value Map of a boat excursion company, cut-off level for relations = 2 and cut-off level for concepts = 3

In a larger study, 25 employees of an automation consulting company have been interviewed. Figure 4.6 shows the results. All concepts in the figure have been mentioned by at least six different respondents. First the full table of concepts was made. For those concepts which were mentioned beyond a certain frequency threshold, in this case at least six respondents mentioning them, the list of relations in which these concepts were involved was drawn up. This saves the time needed to identify all the relations identified between concepts which later might not survive screening by heightening the cut-off levels, and which would then be discarded anyway. All relations between the surviving concepts have been mentioned at least once. The figure itself contains such an overwhelming amount of information that it is not likely to be clear to all readers - at least much less than the previous maps. Again, Figure 4.6 could be condensed by raising the cut-off levels for concepts and relations until a reasonably clear hierarchical value map emerges. Figure 4.7 shows what the hierarchical value map looks like after the cut-off level for relations has been raised to 3.

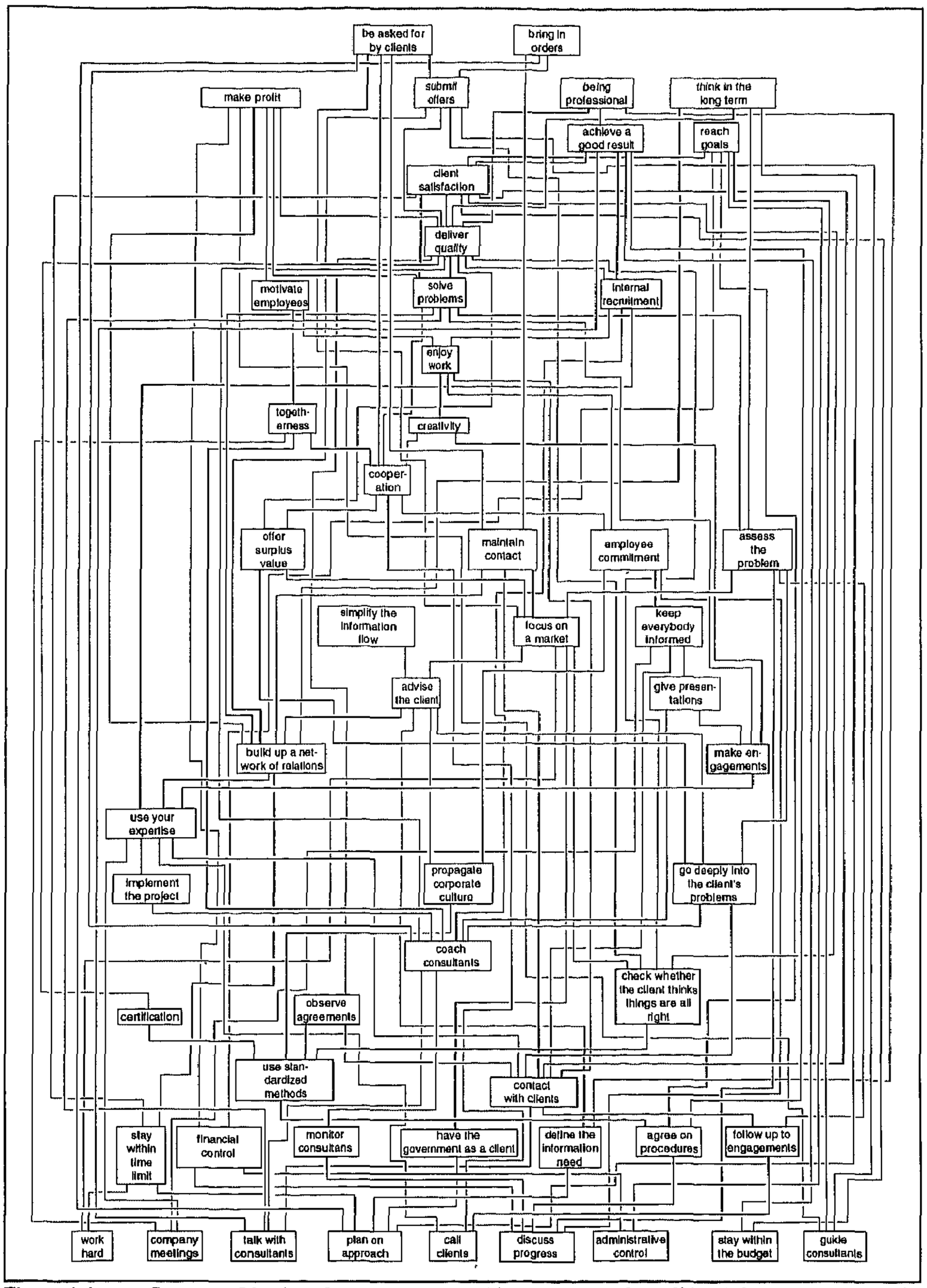

Figure 4.6 Corporate Identity of a computer consulting company. Cut-off level for concepts = 6, for relations = 1.

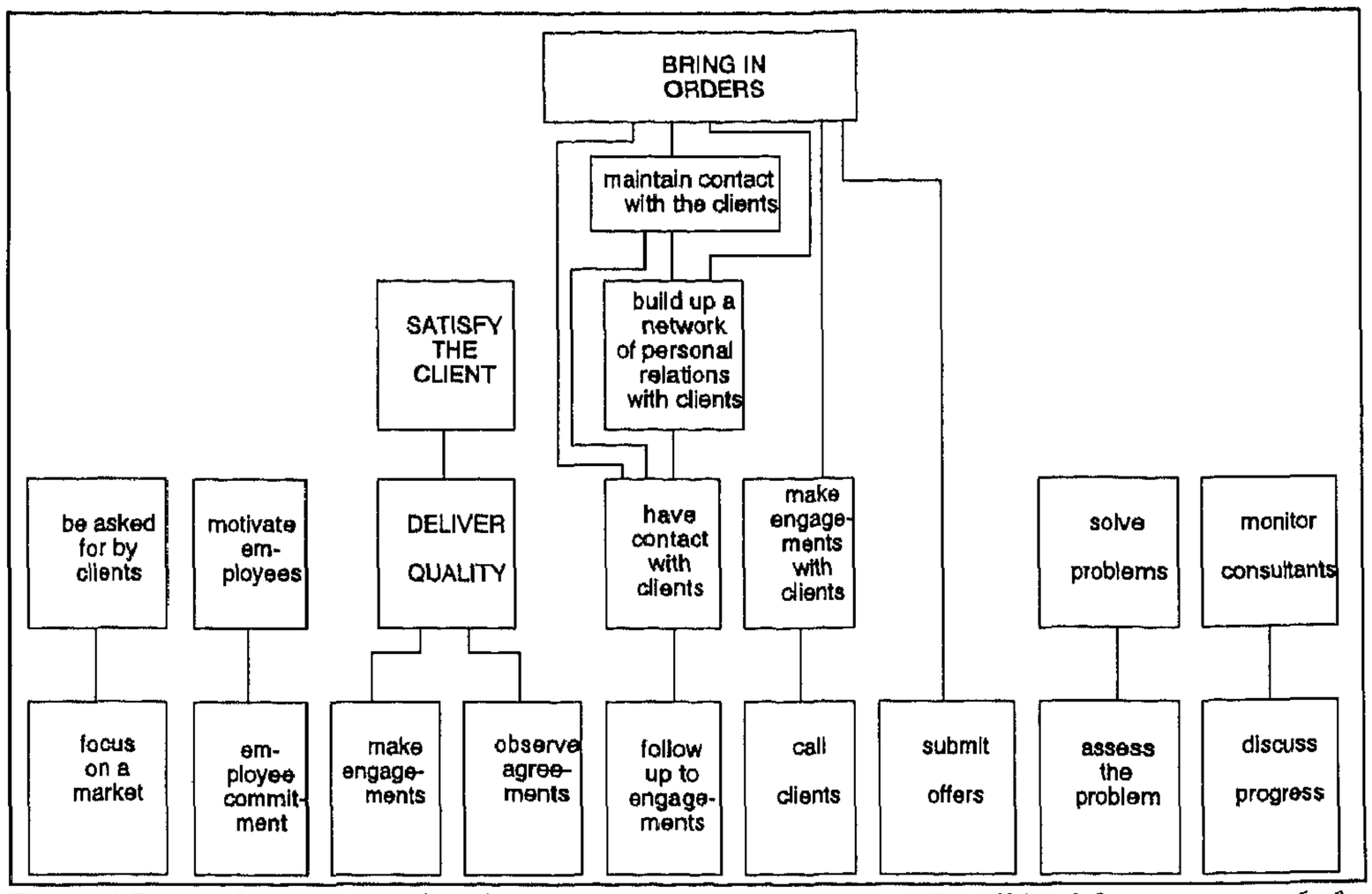

Figure 4.7 Corporate Identity of a computer consulting company. Cut-off level for concepts = 6, for relations = 3

4.2.5.2 Finding the most central elements in an organization's identity

So far, 'centrality' has been approached in the optical sense: the centrality of a concept between other concepts in the hierarchical value map, as it catches the eye. However, especially if the network becomes large and complicated, an optical approach may be insufficient, and more exact methods may be desirable. After all, measuring an organization's identity implies looking for those elements central in the means-end structure of organization members' actions (overview 3.5).

The whole of means-end relations can be seen as a directed network (Pieters, Steenkamp and Wedel, 1992) with the concepts as nodes. Literature on network analysis or graph theory offers more thorough measures of centrality. The research results of Hinkle (1965) point to a correspondence between centrality in the network of means-end relations and centrality in the metaphorical sense, as used by Vinson, Scott and Lamont (1977) and Albert and Whetten (1985). If that correspondence holds in empirical research, 'centrality' in the network of means-end relations must correlate with the degree to which respondents consider concepts important. In this sense, the most central concepts may be the ones making up the 'generative grammar' of an organization's identity.

The simplest and perhaps the most intuitively obvious conception is the count of the number of other concepts with which it is in direct contact (Freeman, 1979). Pieters, Baumgartner and Stad (1994) normalized Freeman's degree centrality by dividing the count of concepts to which this concept is directly related by the total number of means-end relations identified.

Stated more mathematically: the centrality of concept *i* is the ratio of the aggregate relations involving concept *i* over all relations in the network (Knoke and Kuklinski,1982, p. 52).

(4.1)

A hard rule as to how many concepts may build up this generative grammar does not exist. If we may believe Weber (1985) there must be only a few, but how few is 'few'? In analogy to factor analysis, a scree test may be done. This is a plot, with the concepts on the horizontal and their centralities on the vertical axis. The concepts are ranked from left to right in order of descending centrality. The figure then shows which concepts are most central. Both scree-plots (Figure 4.8 and Figure 4.9) show the same hyperbolic pattern: from a very thin top there is a steep downward movement which soon flattens out. The flattening out is gradual, but after ten concepts a point of inflection seems to be reached. One could say, that the concepts to the left of this inflection point contribute considerably more to an organization's identity than the concepts to the right of it. But this remains an intuitive rule of thumb, similar to the way scree plots are used in factor analysis to determine the 'right' number of factors (Kim and Mueller, 1994).

The most central concepts tend to survive when hierarchical value maps are made more concise when the cut-off levels for concepts and for relations are raised. For instance, in Figure 4.8 the five most central concepts are 'being a good host', 'personal contact', 'pleasant to the people', 'service' and 'quality'. In the most concise hierarchical value map of Figure 4.5, three concepts overlap with the most central concepts: 'be a good host', 'personal contact' and 'pleasant to the people'. Two differ: 'cosy' and 'people are satisfied'. (See Appendix 4.2 for the exact centralities and for the scree plots of all cut-off levels). The method presented here is perhaps the simplest and most straightforward way of calculating centrality. In section 4.3.3, more sophisticated measures will be dealt with.

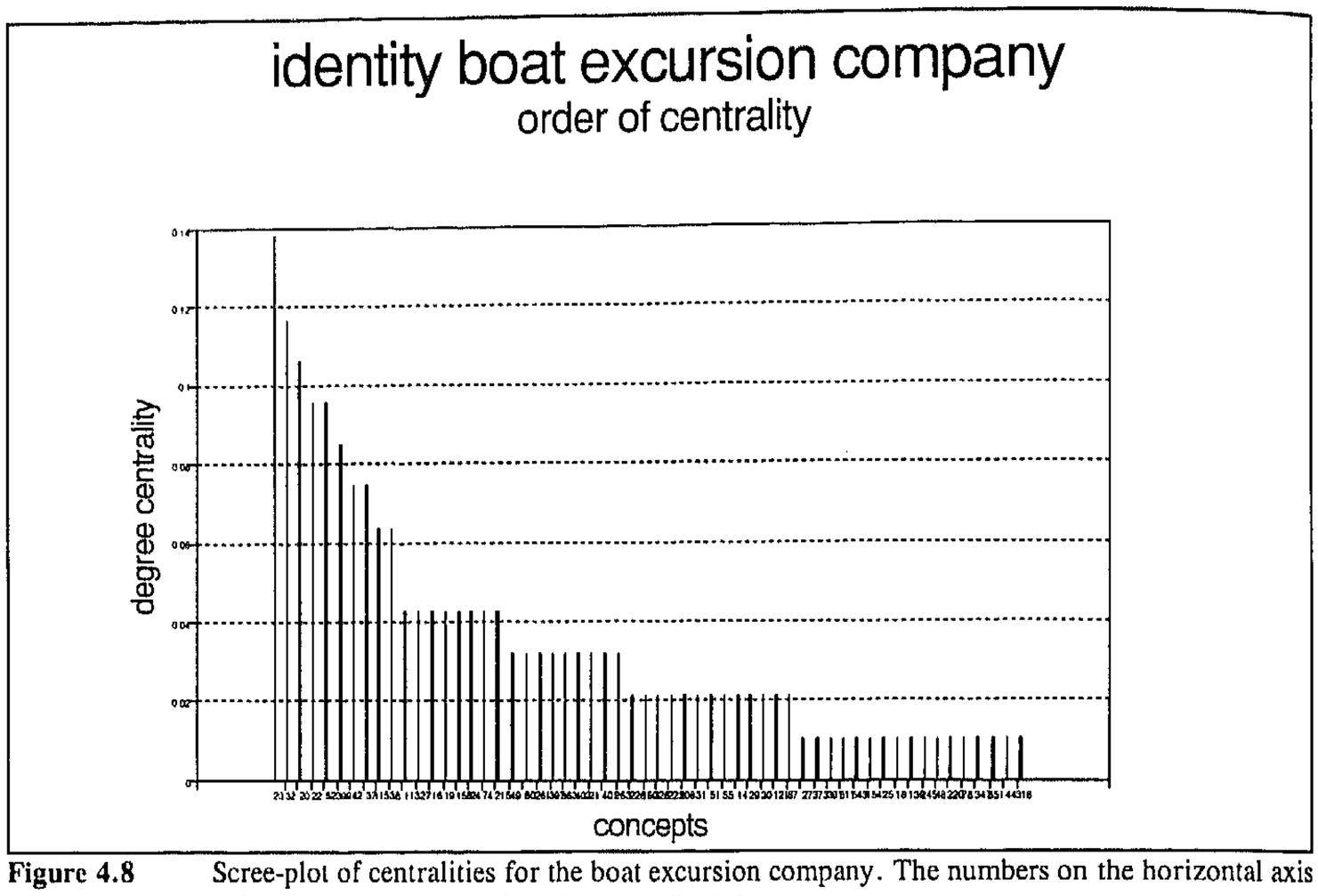

Figure 4.8 Scree-plot of centralities for the boat excursion company. The numbers on the horizontal axis refer to the concept numbers in appendix 4.2.

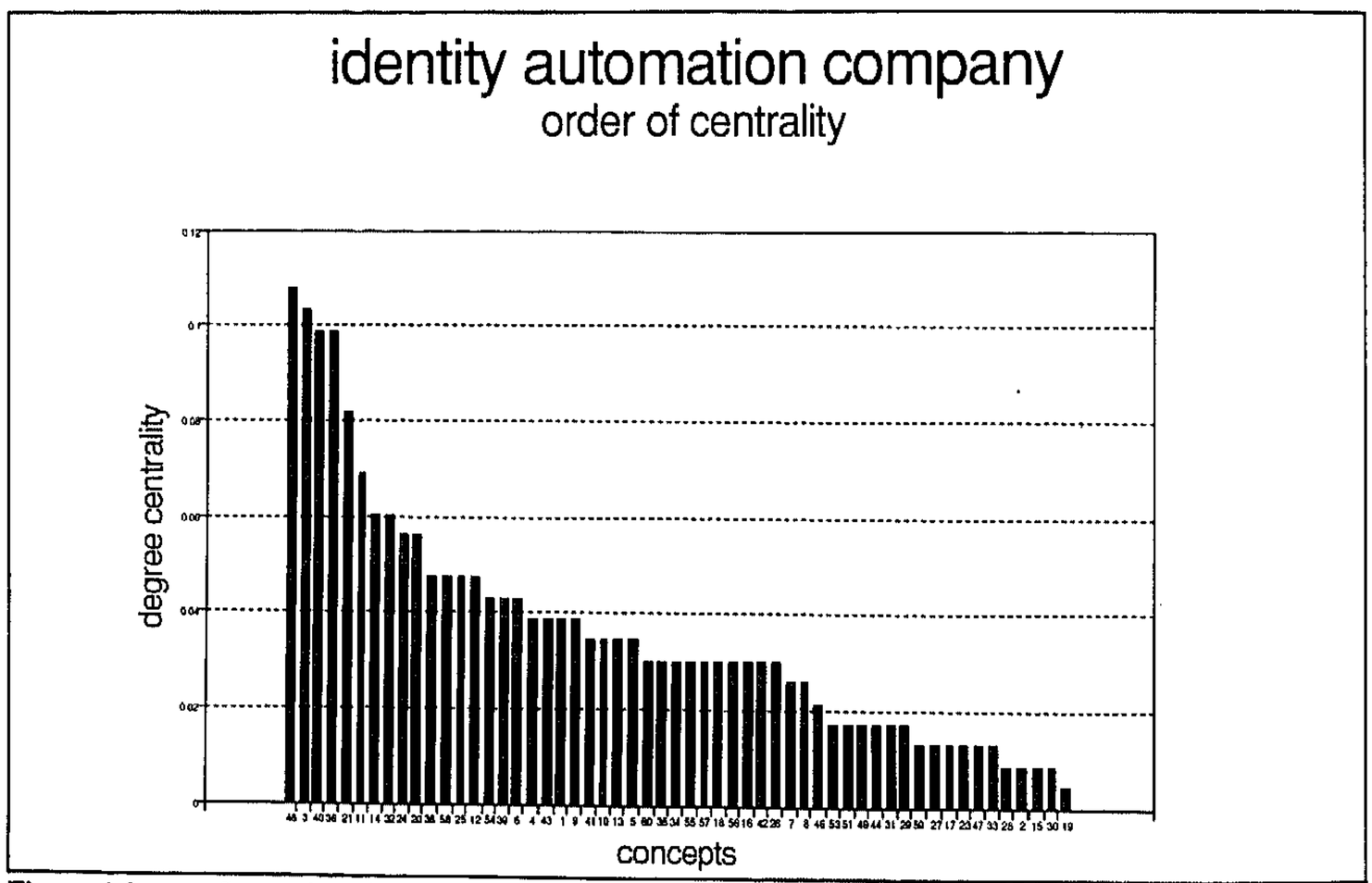

Figure 4.9 Scree-plot of centralities for the boat excursion company. The numbers on the horizontal axis refer to the numbers of the concepts in appendix 4.2.

4.3 Specific issues concerning the measurement procedure

The procedure for conducting means-end analysis on organizational action has been described. A number of issues which are critical to the measurement success have been skipped. Firstly, the choice of respondents is critical. Mostly there is not enough time and the budget is too low to interview all employees. Because of the differences between functional areas within the same organization, a fair degree of heterogeneity can be expected. Secondly, the reliability of the coding procedures involved is a critical issue (Krippendorff, 1980). Reliability involves intercoder reliability when coding the interview texts as well as split-sample reliability of the whole measurement procedure. Thirdly, the measurement of centrality used so far has concentrated on the simplest measure existing, degree centrality, whereas in literature on social network analysis, centrality in network structures is a theme studied extensively. Authors in this area (Wasserman and Faust, 1992, Borgatti, Freeman and White, 1992) offer a number of more sophisticated centrality measures which may be well worth considering. And, in the end, we would like to have an idea of what measure of centrality, calculated at what cut-off level for concepts and for relations, offers the elements which best fit the definition of corporate identity developed in this dissertation (see overview 3.5).

4.3.1 Taking the interview sample in the organization

Because of the labour intensity of the laddering technique, interviewing all employees will seldom be feasible and the qualitative research will take on more of an exploratory character. A sample of respondents must be selected from the organization's employees. In this dissertation, we assume that the identity of a whole organization should be measured, not the identity of a just one department, like the sales department.

- **The distribution of respondents throughout the organization**

In order to have an idea of what plays a role in the organization as a whole, it is useful to have the sample taken from all levels and all departments within the organization, representative for the total organization. Random samples may be appropriate if they are large enough, and if no indications exist about the source of possible heterogeneity among respondents. Because of the labour-intensiveness of the laddering technique, large samples will not, on the whole, be practical. A more viable way is to take people from as broad a domain of knowledge as possible. The division of labour in an organization can be taken as an approximation for the division of knowledge. Generally the organization scheme offers readily available indications as to where more detailed information may be found. Therefore, this scheme can be used to draw a sample of respondents which represents the maximum of diversity, both in terms of departments as well as hierarchical levels in the organization. Another reason for having the interviews spread out maximally across the organization is that respondents are then less likely to discuss their interview experiences with one another. If this should occur, there is no guarantee that elements emerging in different interviews represent elements common across the organization, which are stable across occasions, rather than representing a research artifact resulting from holding a series of interviews among a closely interconnected group.

- **The number of respondents**

The second question is, how many respondents to interview. In essence, laddering is an explorative technique for identifying the respondents' needs. Griffin and Hauser (1993) addressed the question of how large an appropriate sample should be when identifying consumer needs. They interviewed 30 potential customers of portable food-carrying and storing devices (coolers, picnic baskets, and such like). The interviews were transcribed and a core list of a total of 230 different needs was derived from the interviews. To calculate how many needs could have been expected from interviewing fewer customers, they considered all possible sequences of the 30 customers and determined the average percent of non-redundant needs obtained from n customers for N = 1 to 30. They randomly sampled 70,000 sequences. The results showed that interviewing 20 customers identified over 90 % of the needs provided by 30 customers. To generalize to more than 30 respondents Griffin and Hauser developed a model, defining for a given customer need i the probability p_i that respondent c voices the need i at least once during the interview.

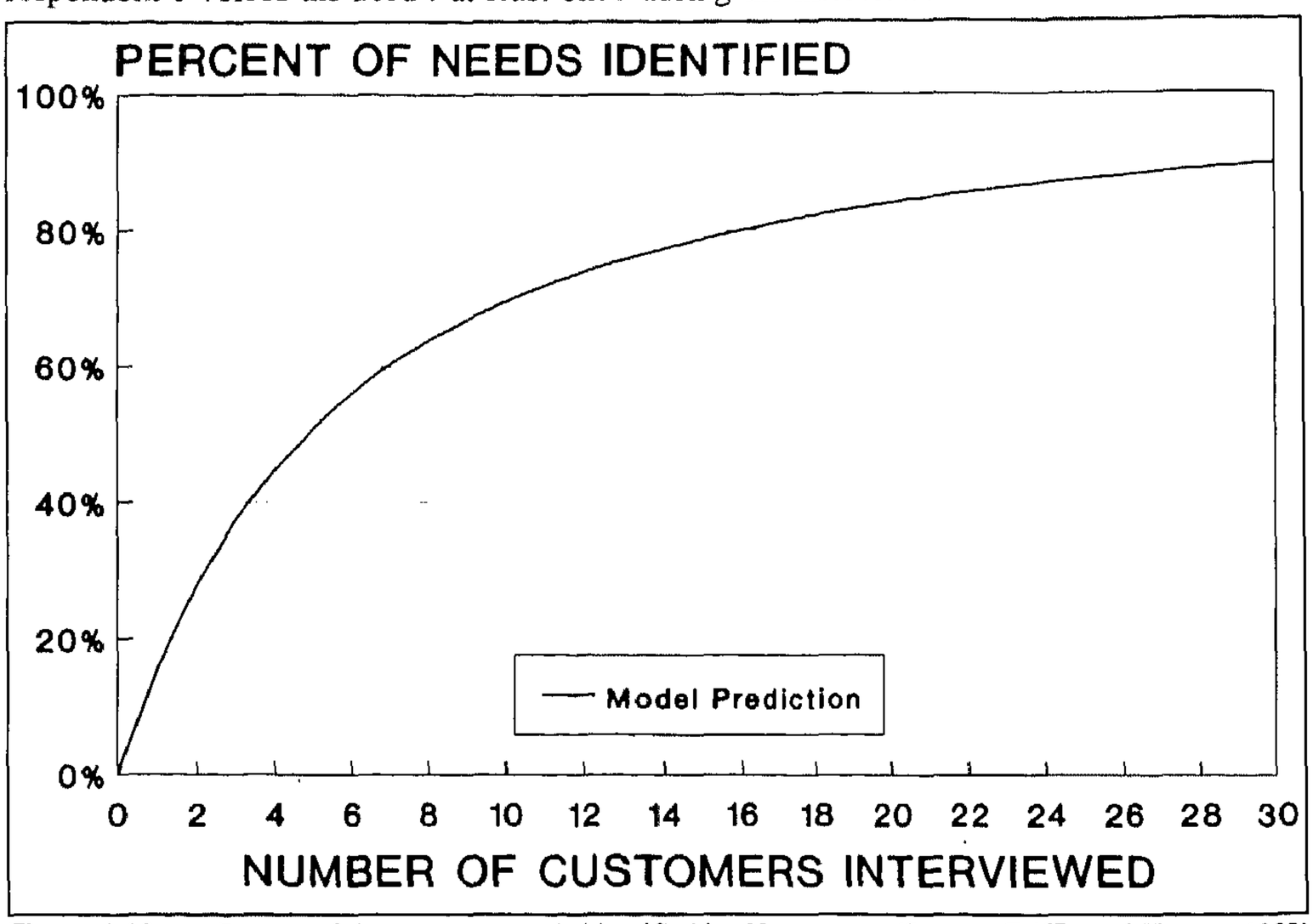

Figure 4.10 Percent of the customer needs identified by N customers (Source: Griffin and Hauser, 1993)

For 30 respondents, they observed whether or not respondent c voiced need i. For the sake of simplicity, they assumed that respondents were equivalent in their ability to articulate needs, i.e., for each respondent the probability to voice need i was assumed to be equal. Then, for each need i, they considered their respondents as 30 successive random draws from the same binomial distribution. They assumed that the probabilities p_i were described by a beta distribution across customer needs. This assumption, combined with the binomial processes, gives a beta-binomial distribution of the number of times that needs are voiced in the 30 interviews. Figure 4.10 shows how the percentage of needs identified is a function of

the number of respondents interviewed. It allows the researcher to estimate the number of needs that were given zero times out of 30 tries. The model estimates that Griffin and Hauser's 30 respondents gave 89,8 % of all the needs. Olson and Reynolds (1983, p. 84) found that after 50 interviews, only a few more new concepts were revealed, even if the sample size was increased to 250 subjects. This fits in well with Griffin and Hauser's plot (Figure 4.10).

Griffin and Hauser (1993, p. 9) assume that respondents are more or less equivalent in their ability to articulate needs. In corporate identity research, this assumption is valid for concepts which are common across the organization, but not for function-specific concepts. However, the more common concepts are the most likely candidates for constituting the organization's generative grammar (see section 3.3.3), and communality of concepts across the organization is required to satisfy the criteria of attribution to the organization (see overview 3.4). Griffin and Hauser's function can be used to estimate the number of interviews desired, provided we do not need data on the function-specific concepts and their relationships to establish an organization's most central concepts.

A rough look at the plot of Figure 4.10 gives an idea of what sample size may be required. It shows what percentage of concepts can be revealed by what sample size. A sample of 6 respondents would already reveal about 55 % of all needs, 8 respondents 65 %, and a sample of only 10 respondents would reveal 70 % of all needs. Of course such small sample sizes only apply when a relatively homogeneous population may be expected. For instance, in a diversified company, such small numbers may apply to business units, but not at the corporate level. Griffin and Hauser's results support the idea that small samples are quite adequate for allowing an in-depth exploration (Marshall, 1994, p. 96). They illustrate how small samples can be adequate for capturing needs or motives in a population, but there is no reason to assume that the beta-binomial distribution they estimated for their sample equally applies to the samples of employees in organization research.

In general, laddering interviews are of an exploratory nature. Their labour intensiveness is an obstacle in producing a statistically representative picture of the whole organization. Therefore, the respondents should be chosen in such a way, that the maximum diversity of jobs is included. Within this constraint, a small number of interviews may already cover a fairly large percentage of all concepts relevant to a population. This implies that a relatively small laddering study can identify most of the intentional actions which may satisfy the criteria of suitability for corporate communication, and that a survey based on these results can be used to control the representativity of these results for the organization as a whole.

4.3.2 Intercoder Reliability

The more exact the instructions to the coders are, the higher the reliability of the coding results (Krippendorff, 1980). If coders have a list describing exactly the categories to which sentences, words or phrases have to be assigned, a fair intercoder reliability can be achieved. However, if coders have to locate relevant information within a larger context, like the coding task required in this research, where they have to identify a respondent's intentional actions in an interview text, intercoder reliability is not expected to be high (Montgomery and Crittenden, 1977). Identifying a respondent's intentional actions in an interview text is an instance of locating relevant information in a larger context. Therefore, a high intercoder reliability is not expected. Moreover, lines in the interview transcripts were taken as the units of measurement. This is less time-consuming than identifying all verb-phrases in the interview transcript, but occasionally a line has to be split into two components (like line 7 in overview 4.3).

Although investigating and improving intercoder reliability is beyond the scope of this dissertation, a test was done in order to check how serious the issue of intercoder reliability might be. Several measures of intercoder reliability exist (see Popping, 1988, for an overview). One of the simplest measures is Kassarjian's (1977) coefficient of reliability. This measure is the ratio of coding agreements to the total number of coding decisions. When both coders agreed upon the absence of a concept, this was recorded as agreement on the 'void' concept 'n'. In overview 4.3 the coders agree five times, whereas they each of them makes nine judgments. The formula would be

$$Agreement = 2 * \frac{agreements}{judgements\ of\ coder1 + judgements\ of\ coder2} \qquad (4.2)$$

```
1   "Well, ..... imagine a vacuum cleaner salesman, who
2   knocks on doors..... We simply go to the client and
3   ask him what his problem is. Well,..... then the
4   client tells us, we hope, a whole story about what his
5   problem is,..... and then we tell him that we can
6   solve that problem, or not, and in what way. And that
7   results in submitting offers. And, hopefully, an order,
8   ..... to realize what we proposed."
```

line	Coder 1	Coder 2	agree ment
1	n	n	1
2	n	simply go to the client	0
3	n	ask: "what is your problem?"	0
4	n	the client tells his story	0
5	tel them that we can solve the problem	tell them that we can solve the problem	1
6	tell them in what way we can solve the problem	n	0
7	submit offers	submit offers	1
7b	bring in orders	bring in orders	1
8	realize what we proposed	realize what we proposed	1

Overview **4.3** Example of interview text and codings of two different coders

This implies that the coefficient of agreement is 2 * 5 /(9+9)= 0.56. Kassarjian (1977) considered a coefficient of agreement of 0.8, a minimum for considering the data reliable, so in this case the results should be handled with care.

This method offers a good cue as to whether agreement exists, but does not distinguish between agreement by chance and 'true agreement'. A generally accepted measure of intercoder reliability which accounts for agreement by chance is Cohen's kappa (Cohen, 1960). It corrects the observed agreement between two coders for the agreement which would occur if both raters were assigning their codings randomly. The observed frequency with which each rater uses a category is the proxy for the likelihood that this rater would assign a concept randomly to that category. Cohen assumes that the coders work independently from each other. The probability of chance agreement for a category is obtained by multiplying the observed proportions of both coders with each other. For instance, coder 1 found four out of nine times no concept on a line, whereas coder 2 only twice. Assuming that both coders assign their concepts randomly to the units of measurement, the chance of them agreeing by chance is the product of these observed frequencies. Overview 4.4 shows the calculation of agreement merely by chance for the coders shown in overview 4.3.

Cohen's kappa is calculated as follows:

$$\kappa = \frac{p_{observed} - p_{expected}}{1 - p_{expected}} \qquad (4.3)$$

For the example shown this implies that

$$\kappa = \frac{10/18 - 14/81}{1 - 14/81} = 0.46 \qquad (4.4)$$

To get an impression of how low intercoder reliability may be, an interview has been coded as an exam assignment by two students. The resulting coefficient of agreement was 0.69. Kassarjian (1977) thought that a researcher could be quite satisfied with a coefficient of reliability of 0.85 or higher, whereas he thinks studies with a coefficient of 0.80 or lower should be regarded with care. Cohen's κ was also calculated. The resulting kappa was 0.40. Interrater reliability of individual interviews does not seem to be very high. Therefore, it may be advisable to use a second, validatory phase after the laddering interviews, and not rely on the laddering interviews alone. Chapter 5 will explain how such a second phase can take shape. If budget and time permits, coding by multiple coders would be more likely to produce a higher κ, and an adoption criterion of, for instance, agreement by three out of four raters would produce more reliable results (cf. Popping, 1988, p. 34).

concept	frequency Coder 1	frequency Coder 2	expected agreement
n	4/9	2/9	8/81
simply go to the client	0	1/9	0
ask: "what is your problem?"	0	1/9	0
the client tells his story	0	1/9	0
tel them that we can solve the problem	1/9	1/9	1/81
tell them in what way we can solve the problem	1/9	0	0
submit offers	1/9	1/9	1/81
bring in orders	2/9	2/9	4/81
Total expected agreement (sum of right column)			14/81

Overview 4.4 Calculation of agreement expected by chance

Direct or Shortest Routes only	Indirect Routes Included
Degree Centrality (Freeman, 1979) Closeness Centrality (Freeman, 1979, Sabidussi, 1966) Betweenness Centrality (Freeman, 1979)	Eigenvalue Centrality (Bonacich, 1972) Bonacich Power Centrality (Bonacich, 1987) Information Centrality (Stephenson & Zelen, 1989) Flow Betweenness Centrality (Freeman, Borgatti and White, 1991)

Overview **4.5** Types of centrality discussed

4.3.3 Alternative measures of centrality

So far our analysis has been limited to one kind of centrality, which has been calculated after the cut-off levels for concepts and relationships have been fixed. In social network analysis, several ways of calculating centrality are in use. A concept's centrality is a core element in the definition of corporate identity developed in chapter 3 (overview 3.5). For the purposes of this dissertation we would need the centrality measure that might best reflect 'centrality' to an organization, as Albert and Whetten (1985) use the term. This is the measure of centrality in the literal sense that corresponds best to centrality in the figurative sense. Seven main calculation techniques seem to be used most frequently (Borgatti, Everett and White, 1992, Wasserman and Faust, 1994, see overview 4.5): Freeman's (1979) degree centrality, Sabidussi's (1966) closeness-centrality, Freeman's (1979) betweenness centrality, Bonacich's eigenvalue and power centrality (Bonacich, 1987), Stephenson and Zelen's (1989) information centrality, and flow betweenness centrality (Freeman, Borgatti and White, 1991).

All have a slightly different interpretation of what is central. For illustration purposes, centralities have been calculated for the concise hierarchical value map of the boat excursion company (Figure 4.5, Table 4.1). These centralities, and their advantages and disadvantages in determining an organization's corporate identity, will be dealt with in this section. In general, measures of centrality have been designed for relations which are symmetric. Freeman's degree centrality and Sabidussi's closeness centrality can be calculated taking the direction of relations into account, but then these measures only account for either the indegrees (the 'incoming relations) or the outdegrees (the 'outgoing' relations), and not the total of relationships. In particular the 'betweenness centralities' are based on the idea of some flow through the network. What can be assumed to flow through such a network is 'meaning'. The use of the word 'meaning', which can flow through relationships may require some clarification. Means-end relationships are semantic relationships (Spradley, 1979). In essence, a concepts' means-end relationships represent its meanings. The way they are dealt with in the laddering interviews is as transporters of 'importance'; the relationships are identified as answers to the question 'why is that important to you?'. Means-end relationships can therefore be conceptualized as channels through which a respondent's involvement with actions flows.

Table 4.1 Different measures of centrality calculated for the boat company: cut-off relations = 2, concepts = 3 (Figure 4.5)

concept	degree centrality	closeness centrality	betweenness centrality	eigenvalue centrality	Bonacich Power centrality (β = 0.20)	Inform-ation centrality	flow betweenness centrality
pleasant to the people	2	50.00	0	0.354	10.08	1.25	0
be a good host	4	66.67	3	0.500	15.33	1.67	6
personal contact	6	80.00	5	0.653	20.19	2.00	10
people are satisfied	2	44.44	0	0.271	8.13	1.11	0
cosy	2	50.00	0	0.271	10.08	1.25	0

Implication matrix underlying the centralities and Figure 4.5, before symmetrization)

concept	pleasant to the people	be a good host	personal contact	people are satisfied	cosy
pleasant to the people	0	0	0	0	0
be a good host	0	0	0	2	0
personal contact	2	2	0	0	2
people are satisfied	0	0	0	0	0
cosy	0	0	0	0	0

In the end, if there is a link between what people say they do in laddering interviews and what they do in reality, these means-end relations must also connect concepts which correspond in the degree to which people are working on them. For example, in Figure 4.11 'working fast' is important in order to have 'clients come back'. But, in order to have clients really come back, additionally, the respondent may realize that it is important to 'be customer friendly' and, consequently, behave accordingly. In this way meaning can flow in two directions through means-end relations. From a more socially-oriented perspective, the answer to the question 'why is that important to you' can be interpreted as a legitimation. In this sense means-end relations are transporters of legitimacy. Summarizing, the flow through the network of means-end relations identified can be interpreted as a flow of involvement with action, and, from a more sociological perspective, as a flow of legitimacy.

Measures of centrality using direct and shortest paths only

Freeman's 'degree centrality', which was dealt with in the previous section, only takes into account the direct links of concepts. This is possible, and valid, under the implicit or explicit assumption that influence of concepts does not reach beyond the means-end relations identified, i.e, this measure does not deal with transitivity. As an illustration: in Figure 4.11 'work fast' leads to 'clients come back' and 'clients come back' leads to 'keep your income'. If there is *no transitivity* assumed, then nothing can be said about the relation between 'work fast' and 'keep your income'.

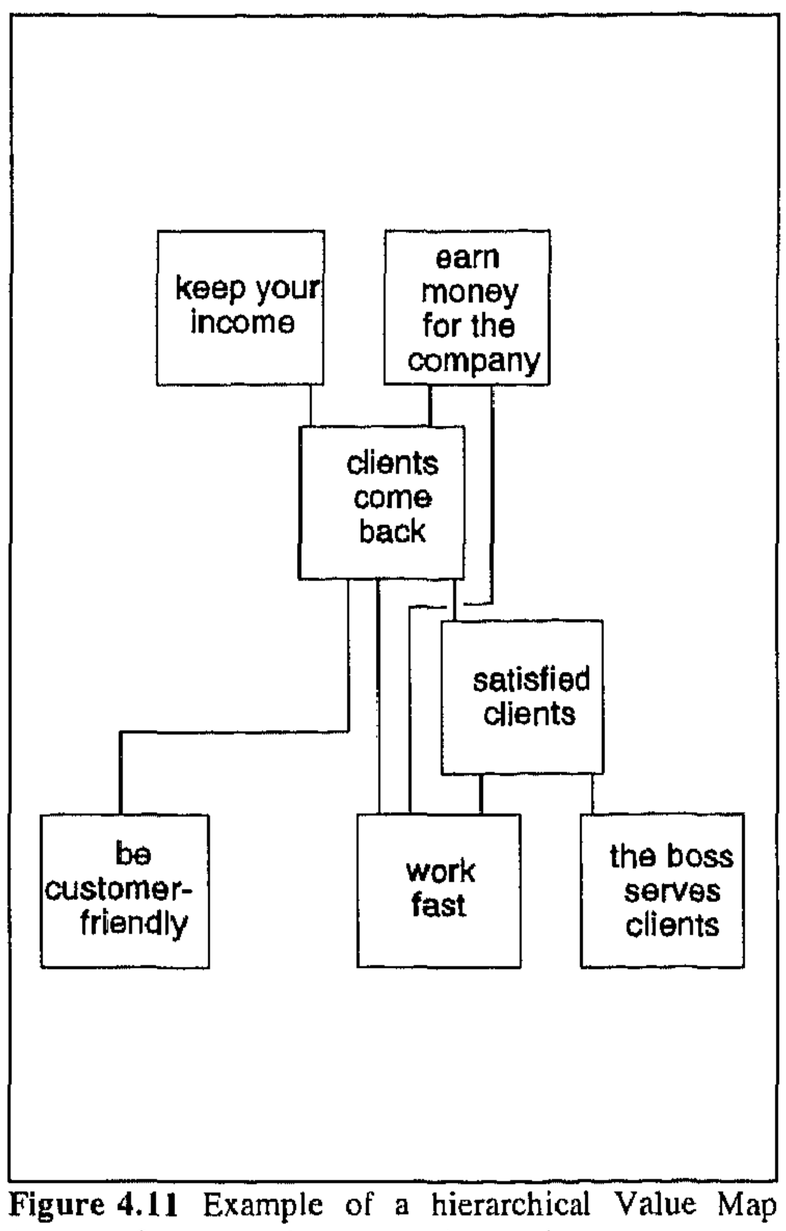

Figure 4.11 Example of a hierarchical Value Map (excerpt from a study at a tourist service company)

Other kinds of centrality do account for some degree of transitivity. Wasserman and Faust's second kind of centrality is Sabidussi's (1966) closeness centrality. It reflects how close a node is to the other nodes in the network. Let $d(n_i,n_j)$ be the number of lines in the shortest path linking nodes i and j, and N the total number of nodes. For instance, in Figure 4.11 the distance between 'work fast' and 'keep your income' is 2: it encompasses both the line between 'work fast' and 'clients come back' and the line between 'clients come back' and 'keep your income'. The total distance that i is from all other nodes is the sum of all these distances to all other nodes. Thus, Sabidussi's index of closeness is:

$$C_c(n_i)=[\sum_{j=1}^{N} d(n_i,n_j)]^{-1} \qquad (4.5)$$

The index is the reciprocal of the sum of the distances to all other nodes. UCINET IV (Borgatti et al., 1992) divides the closeness measures by the maximum closeness possible in that network and represents the results as a percentage (Table 4.1). The closeness centrality can be calculated working on the assumption that only the shortest paths between nodes matter, and that the relations in the network are transitive. If paths other than only the shortest paths influence the total network of relations, like in Figure 4.11, the validity of this kind of centrality may not be warranted.

Table 4.2 Implication matrices underlying the example HVM (Figure 4.11)

concepts	work fast	be customer-friendly	the boss serves clients	satisfied clients	clients come back	earn money for the company	keep your income
work fast	0	0	0	1	1	1	0
be customer-friendly	0	0	0	0	1	0	0
the boss serves clients	0	0	0	1	0	0	0
satisfied clients	0	0	0	0	1	0	0
clients come back	0	0	0	0	0	1	1
earn money for the company	0	0	0	0	0	0	0
keep your income	0	0	0	0	0	0	0

Implication matrix of tourist service distribution company, directed relations

concepts	work fast	be customer-friendly	the boss serves clients	satisfied clients	clients come back	earn money for the company	keep your income
work fast	0	0	0	1	1	1	0
be customer-friendly	0	0	0	0	1	0	0
the boss serves clients	0	0	0	1	0	0	0
satisfied clients	1	0	1	0	1	0	0
clients come back	1	1	0	1	0	1	1
earn money for the company	1	0	0	0	1	0	0
keep your income	0	0	0	0	1	0	0

Implication matrix of boat excursion company, symmetrized

The third kind of centrality discussed is Freeman's (1979) betweenness-centrality. Here, a node is central if it lies on the shortest path between other nodes. Freeman assumes that all relations have equal weight, and that communications travel along the shortest path. When there is more than one shortest path, Freeman assumes that these paths are equally likely to be used. Freeman estimates this probability as follows: Let g_{jk} be the number of shortest paths linking two nodes, for instance 'work fast' and 'earn money for the company' in Figure 4.11. If all paths are equally likely to be used, the chance that any of them is used is $1/g_{jk}$. Let i be a third node, involved in the communication between j and k. Let $g_{jk}(n_i)$ be the number of shortest paths that contain node i. Freeman then estimates the probability that the communication will pass by i as $g_{jk}(n_i)/g_{jk}$. The betweenness index for n_i is simply the sum of these probabilities over all pairs of nodes not including the ith node.

In Figure 4.11 there is a direct link between 'work fast' and 'earn money for the company'. If this link were replaced by a link between 'satisfied clients' and 'earn money for the company', two alternative shortest paths would exist: either via 'satisfied clients' or via 'clients come back', i.e. g_{jk} would be 2. Then $g_{jk}(n_i)$, the number of shortest paths that contain the node 'clients come back', would be 1. Freeman estimates the probability that the communication will pass by 'clients come back' as $g(n_i)/g_{jk} = 1/2$. The betweenness centrality for 'clients come back' is the sum of these probabilities over all pairs of nodes not including the node 'clients come back'.

Accounting for indirect paths

The centralities discussed so far are relatively simple: Freeman's degree centrality only accounts for direct relations, and does not take into account the relations of those relations. The other two types of centrality only take into account the shortest path in the network between two nodes, and ignore the possibility that paths with nodes with a high degree centrality are more likely to be used than other paths, i.e., nodes with a high degree centrality may attract the flow in a network. Still, highly connected goals are more likely accessed than goals with few connections (Austin and Vancouver, 1996). If organizations do have a 'generative grammar', as argued in chapter 3, then the concepts making up that 'generative grammar' are likely to work in this way. The focus on the shortest paths may not be realistic. If human cognitive structure functions according to a pattern of spreading activation (Anderson, 1983), it is quite possible that associations will take a more circuitous path. It may make sense to consider all paths between nodes, with weights depending on their lengths, when calculating the betweenness counts (Wasserman and Faust, 1994).

Bonacich (1972) made an early step in overcoming these problems. He defined a node's centrality as a function of the centralities of the nodes with which it is connected. Each node's centrality consists of its summed connections to others, weighted by those others' centralities. The vector of centralities then is the eigenvector associated with the largest eigenvalue of the adjacency matrix. If **R** is the matrix of relationships between concepts, the centrality of node i is given by the following formula:

$$\lambda e_i = \sum_j R_{ij} e_j \qquad (4.6)$$

or in matrix notation:

$$\lambda e = R * e \qquad (4.7)$$

Here e is an eigenvector, and λ its associated eigenvalue. Usually the largest eigenvalue is the preferred one because it reduces the possibility of negative centralities, for which no ready interpretation is known. In fact, this measure of centrality looks very much like the eigenvectors derived in principal components analysis (Dunteman, 1989). It measures what Bolland (1988) calls the 'continuing flow' of a node's messages through the network, extending thus the logic of both degree and closeness centrality. A disadvantage of this measure is that meaningful centralities cannot be calculated if the adjacency matrix contains concepts with identical relations: in that case the rank of the matrix is lower than the number of concepts and negative centralities are likely to result.

Later Bonacich (1987) proposed an extended measure:

$$c_i(\alpha,\beta)=\sum_j (\alpha+\beta c_j)R_{ij} \qquad \textbf{(4.8)}$$

or in matrix notation:

$$c(\alpha,\beta)=\alpha(I-\beta R)^{-1}Rl \qquad \textbf{(4.9)}$$

where I is the identity matrix and l is a column vector with ones. The parameter α only affects the length of the vector $c(\alpha,\beta)$. β represents the probability that a signal will be transmitted further from one node to the following. The total number of direct and indirect paths is weighted inversely to its length. The analyst can choose β freely, provided it is not larger than the reciprocal of the largest eigenvalue of the matrix (I/λ). This can imply a restriction on the use of this measure of centrality: in the matrix underlying Figure 4.11, shown in Table 4.2, the largest eigenvalue is 2.841, so β cannot be much larger than 0.33. If there are reasons to assume that the probability of a signal being sent further is larger, this measure of centrality cannot be used. Bonacich's measures take into account the centralities of nodes on the different paths, and allow paths to cross each other at nodes.

Stephenson and Zelen (1989) developed an index of information centrality which reflects the total amount of meaning a node provides for, and receives from, the whole network in which it is embedded. They use the word information in its statistical sense, as the information from a single observation from a normal or Gaussian distribution. It is the reciprocal of the variance of the observation. They conceptualize 'variance' as the noise which occurs if information passes along a path in a network. The reciprocal of this variance constitutes the core of their procedure. If, for instance, meaning is transferred from 'be customer-friendly' to 'keep your income' in Figure 4.11, this path may be interpreted as the transmission of two independent signals: one signal from 'be customer-friendly' to 'clients come back' and one signal from 'clients come back' to 'keep your income'. Since the variance of a sum of two independent signals is additive, the variance of the whole path is obtained by summing the variance of these two steps. There are several paths going from 'work fast' to 'earn money for the company'. Stephenson and Zelen compose a combined path which is a weighted function of the individual steps. The alternative paths are weighted so as to maximize the information of the combined path. This boils down to weighing each path proportional to its information, i.e., inversely proportional to its length.

The information in the total flow from 'work fast' to 'earn money for the company' is given by the sum of the information of the component paths available. This is $1 + 1/2 + 1/3 = 1.83$ (see Table 4.3). The interpretation of this number is that the combined path has 0.83 more information than the direct connection alone. The measure Stephenson and Zelen propose is calculated as follows: First determine the information of node i with all other nodes in the network. The information centrality of this node is now defined as the harmonic average of the information associated with the path from this node to all other nodes. Mathematically:

(4.10)

Stephenson and Zelen correct for the information contained in lines two or more paths between two nodes may have in common. Their index measures how much information is contained in the paths that originate (and end at) a specific node.

Table 4.3 Calculation of the total information flowing from 'work fast' to 'earn money for the company' in Figure 4.11.

starting node	second node	third node	fourth node	Steps	variance	weight
work fast	earn money for the company			1	1	1.00
work fast	clients come back	earn money for the company		2	2	1/2
work fast	satisfied clients	clients come back	earn money for the company	3	3	1/3
Information of the combined path (I_{ij} in equation (4.10))						1.83

Later, Freeman, Borgatti and White (1991) relaxed the restriction of Freeman's (1979) betweenness centrality to shortest paths only. They developed the 'Flow Betweenness Centrality'. A flow from 'source' node j to 'sink' node k is constrained by two conditions. Firstly, the flow out of source j must be equal to the flow into sink k. Secondly, the flow into any intermediary node i must be equal to the flow out of that same node. A set of all relations between j and k that can be removed in such a way as to make k unreachable from j is called a 'cut-set'. For instance, in Figure 4.11 one cut-set between 'work fast' and 'earn money for the company' consists of three lines; between 'work fast' and 'clients come back', between 'work fast' and 'satisfied clients', and the direct line between 'work fast' and 'earn money for the company'. This cut-set has a capacity of 3: the capacity of the individual paths is simply added. The smallest cut-set capacity consists of the lines between 'work fast' and 'earn money for the company' and between 'clients come back' and 'earn money for the company'; it has a capacity of only 2. The smallest capacity of any of these cut-sets equals the maximum flow between these two nodes j and k, m_{jk}. The 'flow betweenness' of node i is the degree that the maximum flow of information between two nodes in a network depends on node i. In this example, the flow betweenness of 'clients come back' between 'work fast' and 'earn money for the company' is 1/2: half of the flow through the minimum cut-set goes through it. The flow betweenness centrality of node i is calculated as the sum of the flow betweennesses between all pairs of other concepts. In formula:

(4.11)

Table 4.4 Centralities calculated for the automation company (cut-off level concepts = 6, cut-off level relations = 1, Figure 4.6)

top 10	degree-centrality		closeness centrality		betweenness centrality		eigenvector centrality		bonacich power centrality (ß = 0.05)		information centrality		flow-betweenness centrality	
1	bring in orders	25	have contact with clients	52.48	reach your goal	184.02	bring in orders	0.451	bring in orders	94.54	have contact with clients	3.46	deliver quality	559
2	deliver quality	25	reach your goal	52.48	deliver quality	158.3	build up a network of relationships	0.447	build up a network of relationships	89.26	bring in orders	3.46	coach consultants	454
3	have contact with clients	24	deliver quality	52.48	coach consultants	115.9	have contact with clients	0.424	have contact with clients	89.02	deliver quality	3.42	focus on a market	441
4	build up a network of relationships	22	bring in orders	51.96	have contact with clients	115.46	maintain contact with clients	0.363	maintain contact with clients	67.96	build up a network of relationships	3.38	reach your goal	398
5	solve problems	16	solve problems	50.48	advise clients	114.61	follow up to engagements	0.175	deliver quality	62.35	solve problems	3.23	employee commitment	375
6	coach consultants	15	build up a network of relationships	49.07	bring in orders	91.69	deliver quality	0.174	solve problems	43.84	reach your goal	3.14	have contact with clients	299
7	reach your goal	14	coach consultants	48.18	cooperation	90.75	Use your expertise	0.164	observe agreements	40.4	coach consultants	3.11	bring in orders	264
8	maintain contact with clients	14	use your expertise	47.75	build up a network of relationships	85.52	submit offers	0.15	Use your expertise	39.02	maintain contact with clients	3.05	solve problems	242
9	focus on a market	13	client satisfaction	47.32	focus on a market	84.18	solve problems	0.145	follow up to engagements	36.35	use your expertise	3	build up a network of relationships	241
10	use your expertise	12	cooperation	47.32	Use your expertise	72.74	observe agreements	0.143	client satisfaction	33.7	client satisfaction	2.96	plan an approach	237

Table 4.5 Spearman Rank Correlations between the measures of centrality for the automation company data. Cut-off level concepts = 6, cut-off level relations = 1 (Figure 4.6).

centralities	degree	close-ness	between-ness	eigenvalue	Bonacich power	inform-ation	flow betweenness	number of respondents mentioning the concept	level of abstraction
degree									
closeness	0.85								
betweenness	0.84	0.89							
eigenvalue	0.87	0.76	0.65						
bonacich power	0.94	0.83	0.73	0.96					
information	0.99	0.88	0.84	0.88	0.95				
flow betweenness	0.83	0.73	0.91	0.57	0.67	0.80			
number of respondents mentioning the concept	0.66	0.65	0.64	0.55	0.60	0.66	0.63		
level of abstraction	0.32[1]	0.38[1]	0.32[2]	0.29[2]	0.27[3]	0.32[1]	0.28[2]	0.13[3]	

correlations without footnote were significant at the 1 ‰ level

[1] significant at 1 % level

[2] significant at 5 % level

[3] not significant

number of concepts = 54

for Bonacich Power centrality: ß = 0.05

Centralities discussed

All measures of centrality are correlated, and all correlate significantly with the frequency with which concepts are mentioned (Table 4.5). The significant correlation between centrality and frequency of mentioning confirms the hypothesis that centrality includes to some extent the degree to which a concept is common among the organization's employees (cf. section 4.2). The centralities calculated for the boat excursion company show lower, but still significant, correlations (see Appendix 4.3). The question to be addressed now is, which of the centrality measures is most suitable to find the elements which satisfy the definition of corporate identity given in the previous chapter (overview 3.5).

According to Faust and Wasserman (1994), degree centrality has the appealing feature, that variation in centrality is largest with this measure, so that scree plots with this centrality are of intuitive help in determining the number of concepts which may make up a generative grammar (Figure 4.8, Figure 4.9). The plots in Appendix 4.4 show that such scree plots can be made for all kinds of centrality. Only 'closeness centrality' and 'information centrality' show another pattern.

Both betweenness measures of centrality have one feature that distinguishes them from other measures. All elements which are only connected to one other element are assigned zero centrality and thus treated as if they would have no influence. Conceptually, betweenness measures of centrality imply that no action, goal or value would have any meaning in its own right. They seem a cognitive map operationalization of the purest form of Weber's (1972) 'zweckrationality'. If a concept is an element of an organization's 'generative grammar', its 'generative' nature may be better reflected if it is treated as a source providing meaning to other concepts, rather than if it is treated as a channel of meaning generated by other concepts which are not part of this 'generative grammar'. As a consequence, betweenness measures do not seem to be the most appropriate measures, because they assume that only pure 'zweckrationality' is valid in organizations; no concept has any value in its own right.

Closeness measures applying only to the shortest existing path between two concepts are not very plausible either. If transitivity of relations is assumed, there is no reason why the calculation of centrality should be based on only the shortest paths. Bonacich's (1972, 1987) measures do not suffer from this drawback, but their calculation is sensitive to the particularities of the matrix. If the symmetrized implication matrix contains two or more identical rows, negative centralities may be produced. The Bonacich (1987) power measure only produces interpretable results if ß is chosen smaller than the reciprocal of the largest eigenvalue, $1/\lambda$ (Bonacich 1987), which means that it can only be calculated if the chance of transitive connections is within the range between 0 and the reciprocal of that eigenvalue.

This leaves Freeman's (1979) degree centrality and Stephenson and Zelen's (1989) information centrality as the more viable options to identify the concepts which are central in the organization's means-end structure of action. One question to be asked in applying Stephenson and Zelen's information centrality is, whether it is justified to correct for overlapping paths among the most central concepts. If an organization's memory converges toward certain paths, as Weick (1979) suggests, the uncorrected weight of overlapping paths may well reflect what actually happens in organizations.

At first glance, even degree centrality and information centrality do not make a large difference: the top five most central concepts in Table 4.4 are the same, albeit in a different order. The Spearman rank correlation between the two measures in Table 4.5 is 0.99, nearly 1. For information centrality one reservation has to be made at higher cut-off levels. For the boat excursion company, those figures are somewhat lower. If parts of the structure become isolated from the remainder, the isolated constructs obtain very high information centralities, because their signals are not subject to the variance of the longer paths which exist for the concepts in the larger structure. So as the cut-off level is raised, a concept's information centrality has to be used with caution as soon as the structure falls apart. For instance, in Figure 4.4 'steer well' and 'wear a uniform' get extremely high information centralities, not because they are so well connected to what happens further in the organization, but exactly because they are so poorly connected.

Under the assumption of no transitivity in means-end relations beyond the relations directly identified in the data, degree centrality may best reflect centrality in the network of (concepts of) actions of organization members. Under the assumption of transitivity the information centrality may be the most appropriate measure. If Goldman's assumption is right, that the by-relations linking different actions are transitive, information centrality, calculated at lower

cut-off levels may be the appropriate measure of centrality for identifying the 'generative grammar' of an organization.

The impact of cut-off levels upon the calculation of centrality

After having shown how Hierarchical Value Maps can be simplified, and how centrality can be calculated, the question must be addressed: at which cut-off level of relations and concepts centrality should be calculated. Heightening cut-off levels and calculating centralities seem to be alternative ways of obtaining the core of the organization's intentional actions. The method of heightening the cut-off levels does more justice to the criterion of 'sameness across occasions' (cf. overview 3.3); it assumes that the higher number of respondents reflects a higher degree of communality among employees, which therefore will behave in the same way in their respective circumstances. 'Centrality', on the other hand, does not reflect purely the number of mentions, but rather the total richness of meanings encapsulated in a concept.

The means-end structure of an organization includes its structure of delegation of action (cf. March and Simon, 1958). Actions performed by one individual can influence the structure of meanings of a whole organization. Any signal of any individual employee may in the end have its impact on the total corporate identity. This implies that, theoretically, the measure of centrality could be based on all means-end relations identified, even if they have been mentioned by only one single employee. On the other hand, if we want to be able to attribute an action to the organization, that action has to be common across circumstances and occasions, and therefore enjoy some minimum degree of communality in an organization. As a consequence, heightening the cut-off level ensures that all concepts taken into account are slightly better attributable to the organization. Taking a cut-off level higher than one as the basis for calculating centrality assures that there is agreement on the meaning of an action (in means-end terms) at the level of at least more than one participant. The tables in appendix 4.2 show that especially concepts which are high in centrality if no cut-off level is specified but which seem very general and not so organization-specific rapidly disappear if the cut-off level is raised. This applies to both the boat excursion company and the automation company. Examples include 'quality' (concept number 52) in the boat excursion company and 'reach your goal' (concept number 14) in the automation company'. Furthermore, the analysis suggests that the calculation of centralities leads to very group-specific results, especially at higher cut-off levels (See Appendix 4.2). As such, selecting the concepts with the highest centrality may be an effective way of filtering out actions, goals or values, which characterize that specific group. This procedure seems to satisfy Albert and Whetten's criterion of 'distinctiveness', while attribution to one individual employee has been foreclosed by applying a higher cut-off level. These two findings suggest, that higher cut-off levels are a better way to meet Albert and Whetten's criterion of 'distinctiveness'.

In practice budgetary reasons are likely to limit the number of organization members which can be incorporated into the sample to a minimal fraction of organizational employees. These employees are interviewed and these interviews are coded. These three steps easily lead to biases due to the influence of individual interviewers, the influence of individual coders and, even more severely, it overemphasizes idiosyncrasies of individuals in that small sample. If the research involved the whole census of employees, there would be no undue emphasis on individual ideas, but in a case where the number of interviews is limited, heightening the cut-off level may reduce the sample bias.

For the boat trip company (where 6 of the 70 employees were interviewed) and the automation consulting company (where 25 of the 900 employees were interviewed) the degree and information centralities resulting from different cut-off levels for concepts and relations are given in the tables in appendix II. In general, the most central concepts at the lower cut-off levels are concepts surviving at the higher cut-off rates, like 'being a good host' and 'personal contact' for the boat company, and 'bring in orders' and 'deliver quality' for the automation company. The group of concepts which may make up the organization's generative grammar stays more or less the same, within a slight margin of variation.

Summarizing: as long as the structure is coherent, which will usually be the case at lower cut-off levels, and if means-end relations are to a certain degree transitive, information centrality seems a fairly plausible measure of concept centrality. Otherwise, degree centrality may be a more appealing alternative, especially if the cut-off levels for concepts and relations are raised. Whenever the research sample is small in comparison to the research population, degree centralities should be calculated based on somewhat higher cut-off levels. How much higher, however, is a question still to be answered.

Application to the investigated organizations

The concepts which have been found as the most central concepts in the network of means-end relations now can be considered as the most efficient descriptors of an organization's identity. The arguments presented suggest that the boat excursion company is best described calculating the concepts' degree centrality based on a higher cut-off level for relations. Then 'personal contact' turns out to be the most central element in the excursion company's identity, followed by 'being a good host'(Table 4.1). More information about the organization can be given including 'cosiness', 'pleasant to the people' and 'people are satisfied' into the description. Except for cosiness, all these concepts appear again in the top 5 if information centrality is calculated at the lowest cut-off level (1 for relations and 1 for concepts).

The identity of the automation company can be described in the same way. Table 4.4 shows, that if we want to concentrate on the top-five most central concepts, information centrality and degree centrality do not make a real difference. We can now describe the automation company as an organization very keen on bringing in orders, on delivering quality, striving for contact with clients and building up a network of relations, and an organization which attaches high importance to solving problems. All these concepts survived when the cut-off level for relations was raised to 3 (see Figure 4.7). Here all these concepts figure at a level at least slightly higher than the bottom level. At a lower cut-off level, the same concepts of 'bringing in orders', 'delivering quality' and 'solving problems' can be found in the top of Figure 4.6, whereas 'contact with clients' is in the lower part and 'building up a network of relationships' is somewhere in the middle. Table 4.5 shows that there is a weak, though significant relationship between the centrality of a concept and the level at which it appears in the hierarchical value map.

4.4 Questions about measurement refinement and validation for chapter 5

In this chapter, we have developed a method to measure the identity of an organization. The method is a first empirical operationalization of the concept of means-end relations in organizations, and of the concept of 'corporate identity'. It is based on a sample of what the organization's employees are doing in their daily work. The network of means-end relations between people's actions, goals and values has been developed, and the most central goals in that network have been used to summarize an organization's identity.

These central goals may very well satisfy Albert and Whetten's (1985) criteria of 'centrality to the organization', 'distinctiveness from other organizations' and 'continuity over time'. We have found a way of identifying actions, goals, and values which are central to the organization. As argued in chapter 3, such central concepts may to some extent be specific to the organization, and continuous over time. They have the potential to function like a generative grammar for the organization members' actions. The concepts need not, individually, be organization-specific, but as a constellation, they may distinguish the organization from its surroundings. The procedure described isolates those elements which occupy a central position in the pattern of means-end relations of organization members' intentional behaviour, and therefore satisfy the definition of corporate identity developed in chapter 3 (overview 3.5). However, so far this is a hypothesis which must still be tested. The task to be addressed in the next chapter is to provide such a validation. This is an issue to be developed in the next chapter. The outcome of the procedure described in this chapter has to be tested against some other measures of 'centrality' in an organization.

The measure of centrality could be chosen more appropriately if more were known about the degree to which the assumptions underlying different calculation procedures are justified. The assumption, that means-end relations are basically semantic relations, implicit in the work of Goldman (1970), Vallacher and Wegner (1985), and of Reynolds and Gutman (1984, 1988) has never been tested. Furthermore, although meaning may flow in two ways even through directed means-end relations, symmetrization of the implication matrix is even more warranted if the direction of means-end relations should turn out to be reversible.

If the directionality of means-end relations has been investigated, and different outcomes could be checked against some other measures of 'centrality' in the figurative sense, a proper measure of centrality may be selected. Then a well-founded choice may be made as to which measure of centrality, chosen at which cut-off level for relations, is most suitable for summarizing an organization's corporate identity. This task will also be addressed in chapter 5.

CHAPTER 5 RELIABILITY AND VALIDITY OF THE MEASUREMENT RESULTS

In chapter 4, a measurement instrument was designed to measure an organization's identity. This instrument will now be tested to establish the degree to which it is reliable and to which it measures what it is supposed to measure. At the automation company (Figure 4.6, Figure 4.7) further data for the assessment of the measurement instrument's validity and reliability have been obtained in two consecutive surveys. This chapter will discuss these surveys and their relation to the laddering results presented in chapter 4. Based on the analyses of reliability and validity, the preferable way of measuring an organization's identity will be determined. The previous chapter has proposed both degree and information centrality for determining the most central actions, goals and values, but left the choice between them open. After the analysis presented in this chapter we shall be able to make such a choice.

5.1 Reliability and validity of the measurement results

Chapter 4 has shown how the identity of a whole organization can be derived from a relatively small number of qualitative interviews. In the automation company, only 25 of the 900 employees were interviewed. During those interviews, just a limited portion of all the activities they perform in their job was discussed. Small samples may be adequate for qualitative research (Griffin and Hauser, 1993), but reliability becomes a prominent issue if generalizations for a larger population have to be made. One may ask whether the outcome of the research would not have been totally different if 25 other employees had been interviewed, or if the laddering interviews had started with different employee activities. The low number of interviews required is an appealing feature of this technique, provided the results of the interviews alone are sufficiently reliable and valid.

Reliability refers to the degree to which a measure yields consistent results (Peter, 1979). The relations used for the calculation of a concept's centrality may represent only a minimal fraction of the relations existing in a population, whereas degree and information centrality are sensitive to small changes in the network used for calculation (Wasserman and Faust, 1994). The issues of reliability will be dealt with in section 5.2. Split-sample reliability for the laddering interviews will be calculated, and the laddering results will be compared with the results of a survey held shortly after the laddering research.

The reliability of a measurement instrument is not yet a guarantee that it indeed measures what it is supposed to measure. Evidence of the validity of a measure is provided by the extent to which it correlates highly with other measures designed to measure the same thing. Churchill (1979) argues that any trait should be measurable by at least two different methods. Based on Albert and Whetten's (1985) criteria for defining corporate identity, and on the theoretical arguments presented in Chapter 3 and 4, alternative measurement items will be developed in section 5.3. The measurement method's convergent validity with these items will be established.

In chapter 4 a definitive choice could not yet be made between degree centrality and information centrality. Both kinds of centrality, each calculated on both the laddering results and the results of the first survey, will be compared with the alternative measurement items. The centrality which best satisfies the criteria of reliability and validity will be selected. Then recommendations will be made as to the best way to measure an organization's identity.

The analyses in this chapter have been made possible by the automation company presented in Figure 4.6 and Figure 4.7. Two successive surveys were held among their employees. These allowed for the assessment of the validity and reliability of the measurement method, and ultimately its refinement. Employees were asked to rate concepts and relations on several scales in these two surveys. The first survey was held shortly after the laddering interviews, the second nine months later. Overview 5.1 shows the data collection phases at this organization.

Data collection	Date	Items asked for regarding actions, goals and values	Relationship questions
Laddering interviews	May 1992	Open questions	the open laddering question: "why is that important to you?"
First survey	June 1992	Importance	full matrix of 24 highest level concepts from Figure 4.6; means-end relations in binary format (see exhibit 5.2)
Second survey	April 1993	Importance Self-evidence Degree of working on an action goal, or value	seven-point scales for relations: means-end relations instrumental relationships similarity relationships identity relationships

Overview **5.1** Data collection phases at the automation company

5.2 Assessing the reliability of centrality measures

This section deals with the reliability of means-end data and of centrality measures based on these data. A network of means-end relations has been assessed twice, the first time using the laddering results and the second time using the results from the first survey (overview 5.1). First, the split-sample reliability of the outcome of the laddering interviews is calculated. Then the design of the first survey is explained. The match between the laddering results and the survey results is discussed, and the split-sample reliability for the survey results is calculated. This gives an indication of how corporate identity may be measured most reliably.

5.2.1 Split-sample reliability for the laddering results

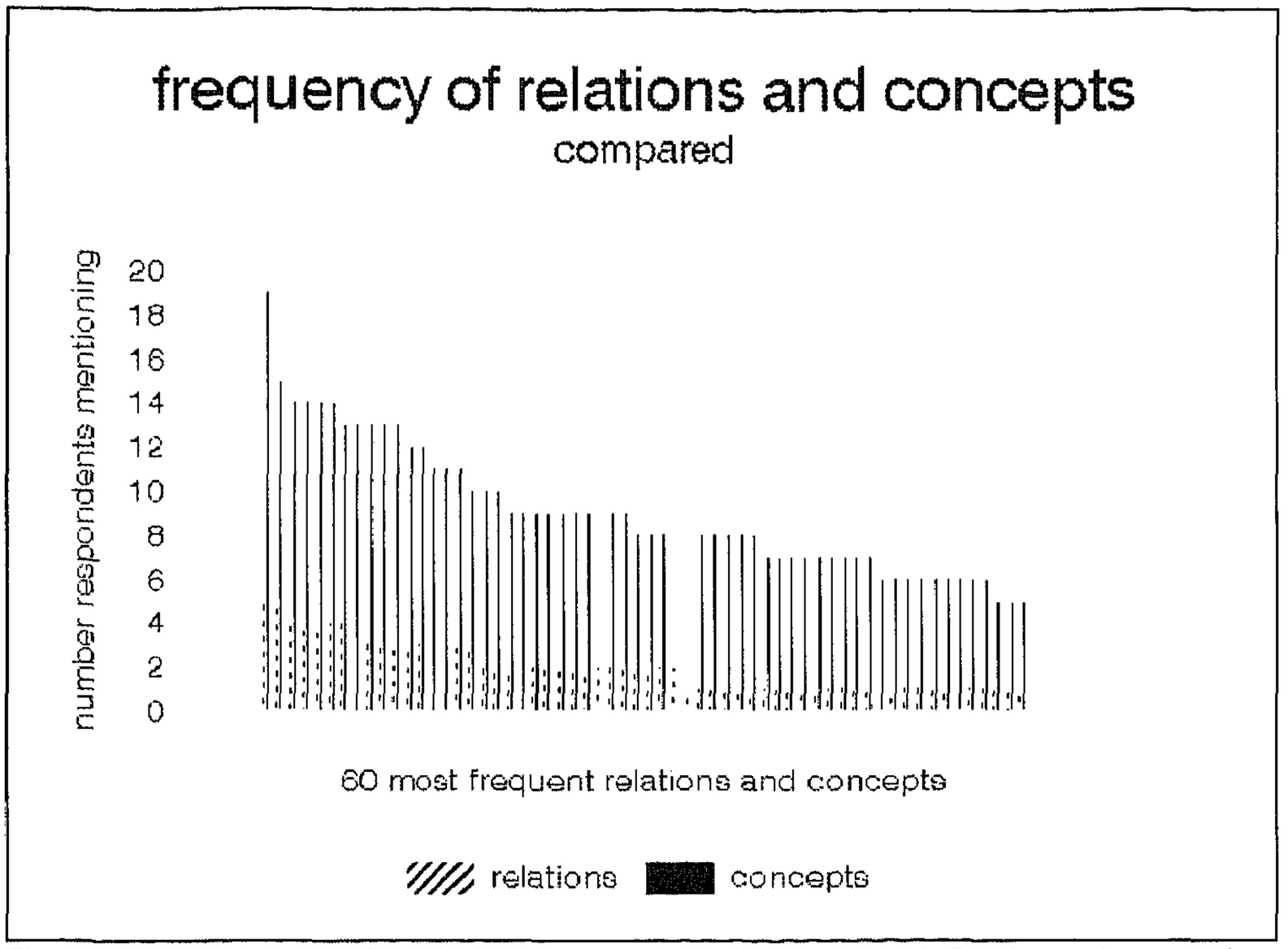

Figure 5.1 Frequency of mentioning of concepts and relations compared. Relations and concepts have been ranked in descending order of number of respondents mentioning them

The frequencies with which relations are mentioned are much lower than the frequencies with which concepts are mentioned (Figure 5.1). On average, concepts were mentioned by 9.1 respondents, relations only by 1.4 respondent. The effect of small laddering samples may be a lower split-sample agreement on relations than on concepts.

The sample of interviewees was randomly split into two parts, one consisting of thirteen, the other of twelve respondents. For each part, the number of respondents was counted who mentioned each of the concepts that survived the cut-off level of six in the basic research. For each part of the sample, it was checked whether a concept appeared with a number of respondents corresponding to minimally half of the cut-off level for the total sample. At different cut-off levels the agreement between the two parts was assessed upon whether the concept existed. Table 5.1 shows the coefficients of agreement between the two halves of the sample. If a concept was present in both half samples, it was considered one agreement and at the same time as two judgments. If a concept was only present in one half sample, this was counted as one judgement, but not as an agreement. The coefficient of agreement is the number of agreements divided by the total number of judgements, calculated using equation (4.2). The split-sample agreement is 0.82 at a cut-off level of 6 (Table 5.1), which can be considered fair (Kassarjian, 1977).

Table 5.1 Coefficients of agreement for concepts at different cut-off levels

cut-off level for the whole sample	minimum per half sample	coefficient of agreement
6	3	0.82
8	4	0.72
10	5	0.79
12	6	0.62
14	7	0.67

This agreement shows a downward tendency if the cut-off level is raised. The split-sample reliability for relations (Table 5.2) is lower than for concepts (Table 5.1). Concepts seem fairly well spread across both halves, better than the relations between them.

The implication matrices for both halves of the samples were drawn up for each cut-off level. Freeman's (1979) degree centrality and Stephenson and Zelen's (1989) information centrality were computed with the UCINET IV program (Borgatti et al., 1992). At a cut-off level of 1, degree and information centrality for both half samples correlate significantly (at 1 % level). This correlation weakens considerably when the cut-off level is raised (Table 5.3). At the highest cut-off level, it goes as far as becoming negative. This can mean two things: either split-sample reliability of centralities at higher cut-off levels is extremely low, or concepts whose centrality has been calculated at higher cut-off levels highlight what is distinguishing for the specific group. This latter impression may also arise after brief inspection of the die-out rate of central concepts in the table in appendix 4.2. At the boat excursion company, for instance, both the generally accepted value of 'quality' and the somewhat more specific concept of 'personal contact' have a degree centrality of 16 at cut-off level 1 for both concepts and relations. Once the cut-off level for both concepts and relations is raised to two, 'quality' totally disappears whereas 'personal contact' survives. There is an inherent tension between Albert and Whetten's criterion of 'claimed distinctiveness' and split-sample reliability. If a group is split, a measure satisfying the criterion of 'claimed distinctiveness' will tend to highlight what is specific for that particular part of the group. A measure highlighting characteristics which are distinguishing for each subgroup is likely to produce low split-sample reliability.

Table 5.2 Coefficients of agreement for relationships at different cut-off levels

Overall Cut-off level	minimum per half sample	Coefficient of agreement
2	1	0.55
4	2	0.43

The numbers in the table represent coefficients of agreement, calculated with equation (4.2)

Table 5.3 Agreement of ranked centralities, calculated from two different sub-samples (split-half reliability)

cut-off levels	measure of agreement	degree centrality	information centrality
cut-off level relations = 1, minimum 1 per half sample	top-five agreement	0.4	0.2[1]
	top-ten agreement	0.5[1]	0.4
	rank correlation	0.44[3]	0.41[2]
cut-off level relations = 2, minimum 1 per half sample	top-five agreement	0.6[1]	0.2[1]
	top-ten agreement	0.4[1]	0.5[1]
	rank correlation	0.29	0.25
cut-off level relations = 3, minimum 1 per half sample	top-five agreement	0.4[1]	0.0[1]
	top-ten agreement	0.5[1]	0.4[1]
	rank correlation	0.21	0.11
cut-off level relations = 3, minimum 2 per half sample	top-five agreement	0.6	0.4
	top-ten agreement	0.5[1]	0.5[1]
	rank correlation	-0.25	0.16
cut-off level relations = 4, minimum 2 per half sample	top-five agreement	0.6[1]	0.8
	top-ten agreement	0.7[4]	0.7[4]
	rank correlation	-0.23	-0.10

[1] In either or both half samples, more than one concept not included in the top five or top ten of most central concepts had the same centrality value as the fifth or tenth concept. This introduces a chance element into the determination of the "top five and top ten concepts" and, therefore, into the coefficient of agreement.
[2] Correlation significant at 1 % level
[3] Correlation significant at 1 ‰ level
[4] One half sample had only 8 concepts left, the other half only 7. They agreed on six of these concepts.

Discussion

The laddering technique seems to identify actions, goals and values more reliably than the relations between them. Apparently actions, goals and values are relatively common, but are attributed different meanings. The higher agreement upon the existence of concepts in comparison to relations replicates findings in earlier research. Sirsi, Ward and Reingen (1996) observed this phenomenon both in their community of macrobiotics and among animal rights activists. The findings fit in well with Weick's (1995) observation, that it is ambiguity which maintains a perception of consensus in an organization. Disagreement focuses on connections between the concepts. As long as people are not pressed to articulate their individual understandings of these connections, they act together as if there were consensus (Weick, 1995, p. 120).

In this analysis, the sample has been split randomly. This is feasible, if communality of concepts is a sufficient cue to those concepts' contribution to an organization's identity. However, as discussed in chapter 3, the division of labour plays an important role in the creation of the means-end pattern of an organization's actions. In section 4.2 it was argued, that in sampling, the division of labour should be used as the cue to accessing an organization's identity. The low split-sample reliability of the procedure may also be interpreted as an extra warning, that random samples which do not regard the division of labour in an organization are not the appropriate way to measure that organization's identity.

The split-sample reliability of the laddering results is acceptable for concepts, but not for relations. The higher split-sample reliability of concepts (Table 5.1) can be explained at least in part by the relative scarcity of relations compared to concepts. It is conceivable, though, that this is to some extent due to the method of interviewing. The strengths of the laddering technique are its openness and its potential to break through into the self-evident. These strengths are the consequence of the focus of the technique on efficiently searching for always higher-level concepts. Instead of asking for all implications of one concept, it rushes through the respondent's cognitive structure, continuously asking for the consequences of the next concept. Therefore, the implication matrix obtained through laddering interviews may be much more sparse in terms of means-end relations than the structure used in daily corporate life - without missing too many relevant concepts. Apparently, the laddering method performs reasonably well in identifying concepts reliably, but much less so in reliably identifying the relations between these concepts. In the end, the laddering technique may be more effective in taking a representative sample of the concepts playing a role in an organization than in taking a representative sample of the relations between these concepts. This problem may be overcome if means-end relations are established in a more systematic way.

Literature on how to build complete implication matrices is scarce. Research in a related field was carried out by Sirsi, Ward and Reingen (1996). They investigated causal reasoning behind people's food choices. They made an attempt to build a complete matrix of relations between beliefs about food consumption. What they called 'causal reasoning' is readily interpretable as the means-end structure in which food choices were embedded. First, they identified beliefs belonging to two subcultures of vegetarians. Then, respondents were asked to arrange belief statements on a large board, in such a way that they reflected the reasoning behind their behaviour toward food products. The board displayed stickers arranged in columns. It also contained arrow stickers. Respondents were asked to choose a sticker that characterized their behaviour towards each food product and then select the belief statements explaining that behaviour. Next, they arranged the stickers to reflect their perception of how statements were caused by others. After completing their map, respondents considered whether it truly represented their views. If it did not, they were asked to rearrange the stickers.

A disadvantage of this kind of data collection is that it is fairly labour intensive. The causal reasoning task constituted a substantial part of an interview which lasted between 4 to 5 hours. Obtaining data on all possible relations between concepts for a representative part of the automation company's employees would demand much researcher and respondent time. A less time-consuming alternative is to present the potential means-end relations between concepts in a questionnaire. Then respondents can mark whether they agree with a relation

or not. Such a questionnaire can be used to replicate the results of the laddering interviews. It is not an exact replication though. The spontaneity of the laddering answers disappears. The question now becomes, whether respondents recognize a goal as the goal of an action. This will be easier if the suggested action fulfils this role naturally, but even for very odd-looking means-end relations, respondents may think up scenarios where the suggested relations seem acceptable. Therefore, the answers on the survey questions may rather reflect what is possible, and centrality may rather reflect what is allowable action, instead of what is 'spontaneously' generated action. However, from the viewpoint of scholars of organizational grammar this might be an advantage over the plain laddering results. In organizational grammar approaches in general the allowable is more important than the observed. Grammars do not determine particular patterns or actions. Rather, they generate the set of possibilities (Pentland, 1995). The survey results are likely to contain many more - allowable - relations than the laddering results, which represent just a few recent realizations from the entire scala of what is allowable. Survey results, therefore, are likely to be more stable.

5.2.2 Designing a quantitative means-end survey

As a follow-up study to the laddering interviews, such a survey was carried out at the automation company. A questionnaire was designed to capture the complete pattern of relations between concepts from the laddering interviews. Ideally, the complete set of all 54 concepts in Figure 4.6 should be included. That allows for a complete comparison with the measurement results in Chapter 4. That questionnaire, however, would have to propose all possible relations between those 54 concepts, i.e. 54 x 53 = 2862 relations. It would become quite lengthy for the respondents. Shorter questionnaires were produced in two steps: firstly, the number of concepts was reduced and secondly, the questionnaire was split into three versions. Each version contained one third of the remaining questions on means-end relations.

Higher-level concepts in a hierarchical value map are considered more general in scope and apply to a wider variety of contexts (Pieters, Steenkamp and Wedel, 1992). In order to enable all respondents to answer the questionnaire in a meaningful way, the survey focused on the higher-level concepts. The highest-level concepts alone, however, are so general that they may apply to many companies. The exact concepts to be included were decided upon in a meeting with the organization's management team. Figure 4.6 was presented to them on an overhead projector with the whole figure covered except for the very highest level. The covering sheet of paper was gradually moved downwards, showing more and more levels of the hierarchical value map. Managers were instructed to stop the covering sheet of paper from moving further downward as soon as they considered the whole range of concepts visible sufficient to uniquely identify their organization. This was the case as soon as also 'simplify the information flow', 'focus on a market' and 'keep everybody informed' were uncovered. Counting from the top of Figure 4.6, 24 concepts were visible, including these last three. This way, the number of concepts included in the survey was limited to those which were general enough to apply to most, or all, jobs in the organization, while the company as such was still recognizable, at least in the eyes of its management team.

Going through all 24 x 23 = 552 possible relations between these 24 concepts might still be a rather time-consuming and boring task. Therefore, the questions were divided across three different versions of the questionnaire. Each respondent was confronted with eight actions, goals or values. They were asked whether they agreed or disagreed with the existence of a means-end relation between each of these eight concepts as a means and each of the 23 other concepts as an end. Overview 5.2 shows an example of how the questionnaire suggested possible ends. With the three versions of the questionnaire, the complete matrix of 24 x 23 means-end relations could be drawn up.

Motivating people in your job with XXX company is important in order to:

	CORRECT	INCORRECT
- reach good results	0	0
- enjoy your work	0	0
- solve problems	0	0
- satisfy the customer	0	0

Overview **5.2** Format of the relationship questions in the first survey

Additionally respondents were asked to rate on a seven-point scale the importance of the concepts in Figure 4.6. This served two purposes: to validate the centralities of the concepts, which will be discussed in section 5.3, and to establish whether the three versions of the questionnaire were comparable. Then the different means-end relations which had been rated by respondents could be combined into one matrix. The questionnaire started with the importance scores, because filling out the importance scores was assumed to be easier than rating all means-end relations. On the last page respondents were asked whether they had participated in the laddering interviews. This allowed the researcher to establish whether the results from the laddering interviews also applied to the employees who had not participated in the qualitative phase.

For the mailing of the questionnaire, an alphabetical list of employees' home addresses was used. Every fourth employee in this list was sent a questionnaire. A covering letter from the organization's CEO stressed the importance of the survey to the organization. Of the 248 questionnaires mailed to the employees' home addresses, 146 were returned, a response rate of 59 %. Among them there were 19 of the 25 respondents from the laddering interviews. 124 employees had not been interviewed previously and 3 had not answered this question.

5.2.3 Comparison of the results from the first survey with the laddering results

In chapter 3, 'corporate identity' has been defined as 'those elements in the means-end pattern of organization members' intentional behaviour which occupy a central position in this pattern' (overview 3.5). The most interesting concepts are those which are most central in that means-end pattern. After the laddering interviews and the first survey, two different networks of means-end relations were identified. If the laddering network is a representative sample of the network of allowable means-end relations, then both bases for calculating concept centrality will be equivalent. The main question in this step of the research is: are the ranked concept centralities based on the laddering interviews a good reflection of the ranked concept centralities derived from the results of the first survey.

The answers to the relation questions in the first survey are binary variables, whose averages reflect the proportion of respondents agreeing with the proposed means-end relation. The averages from the three versions of the questionnaire were combined into one implication matrix for all 24 concepts. This way, a complete matrix was obtained for the calculation of the concepts' centralities (see Appendix 5.4). In order to check whether this was permissible, the three versions of the questionnaire were controlled on the comparability of the items which they had in common, the importance scores. In each version, all 54 items appearing in Figure 4.6 had been rated. In order to look for possible differences, the 54 items in version I had to be compared with the same 54 items in both version II and III, and the same 54 items in version II with those in version III. This brought the total of inter-item comparisons to 54 x 3 = 162. Mann-Whitney tests were performed in order to find significant differences between the three versions. A difference was found significant at 5 % level in only three out of 162 times. No difference was significant at 1 % level. Therefore the three versions of the questionnaire were considered comparable.

The first survey included respondents who had participated in the qualitative research. This may have influenced the results. These show a small effect from the overlapping sample of the laddering interviews and the survey. The previously interviewed respondents provided slightly higher rank order correlations of concept centralities than the respondents not previously interviewed (Table 5.7), but still not significant at 5 %. The rank order correlation between centralities based on interviewed and not previously interviewed respondents was 0.90, significant at 1 ‰ level. Apparently, both groups are largely comparable. However, respondents who had been interviewed previously may have filled out the questionnaire whilst still vaguely remembering the laddering interview. In order to control for this factor, top-10 agreement and rank-order correlations have been established for the respondents not previously interviewed (Table 5.7). The comparison between the laddering and the survey results will concentrate on the survey respondents who have not been interviewed before.

Comparison of means-end relations in the laddering interviews and in the first survey

The rank order correlation between the number of respondents who mentioned the relations in the laddering interviews and the proportion of agreement on the means-end relations in the survey was 0.24. Although it is a modest correlation, it is significant at 1 ‰ level. The correlation was calculated on the 23 x 24 = 552 relations included in the first survey. Of these 552 relations, 46 have been mentioned by at least one respondent in the laddering

interviews. A high correlation was not expected because of the enormous amount of cells containing zero mentionings from the qualitative research included into the analysis. The next step consisted of assessing whether the relations which had been mentioned in the laddering interviews are agreed upon more frequently than the relations which had not been mentioned. For relations mentioned in the laddering interviews, 71 % of the survey respondents believed the suggested means-end relation was right. For the relations suggested in the questionnaire, but not mentioned in the laddering interviews, 49 % of the respondents believed the relation was right (Table 5.6). The statistical significance of this difference was assessed with a Mann-Whitney U-test. The 46 relations which had been mentioned in the laddering interviews were compared with those 506 not mentioned. The difference turned out to be significant at 1 ‰ level, both for respondents who had been included into the laddering sample as well as for those respondents who had not been previously interviewed. Apparently, relations mentioned in the laddering interviews are agreed upon more frequently than relations not mentioned there. Although the pattern of means-end relations derived from the laddering interviews may perhaps not be complete, this test shows that they do help the researcher to get an idea of the means-end relations that matter.

Table 5.4 Comparison of information centrality derived form the laddering interviews and from the first survey

survey respondents			laddering results			laddering results concepts included in survey only		
N°	Concept	Information centrality	N°	Concept	Information centrality	N°	Concept	Information centrality
1	be professional	13.84	1	have contact with clients	3.46	1	solve problems	2.28
2	achieve a good result	13.75	2	bring in orders	3.46	2	deliver quality	2.19
3	deliver quality	13.56	3	deliver quality	3.42	3	employee cooperation	2.05
4	reach your goal	13.37	4	build up a network of relationships*	3.38	4	enjoy your work	1.98
5	enjoy your work	13.32	5	solve problems	3.23	5	satisfy the client	1.89
6	motivate people	13.28	6	reach your goal	3.14	6	bring in orders	1.88
7	satisfy the client	13.04	7	coach consultants*	3.11	7	creativity	1.87
8	employee commitment	12.88	8	maintain contact with clients	3.05	8	assess the problem	1.83
9	deliver added value	12.76	9	use your expertise*	3	9	reach your goal	1.82
10	have contact with clients	12.66	10	satisfy the client	2.96	10	focus on a market	1.80
mean = 12.00 std dev = 1.46 n = 24			mean = 2.37 std dev = 0.65 n = 54 * item was not included into quantitative survey			mean = 1.64 std dev = 0.35 n = 24		

Table 5.5 Comparison of degree centrality derived from the laddering interviews and from the first survey

survey respondents			laddering results			Laddering results (concepts included into survey only)		
N°	Concept	Degree centrality	N°	Concept	Degree centrality	N°	Concept	Degree centrality
1	be professional	30.92	1	bring in orders	25	1	solve problems	12
2	achieve a good result	30.44	2	deliver quality	25	2	deliver quality	10
3	deliver quality	29.45	3	have contact with clients	24	3	bring in orders	9
4	reach your goal	28.53	4	build up a network of relationships*	22	4	employee cooperation	7
5	enjoy your work	28.36	5	solve problems	16	5	employee commitment	7
6	motivate people	28.15	6	coach consultants*	15	6	enjoy your work	7
7	satisfy the client	26.99	7	reach your goal	14	7	focus on a market	7
8	employee commitment	26.26	8	maintain contact with clients	14	8	creativity	6
9	deliver added value	25.65	9	focus on a market	13	9	satisfy the client	6
10	have contact with clients	25.25	10	use your expertise*	12	10	motivate people	6
mean = 12.00 std dev = 1.46 n = 24			mean = 8.26 std dev = 5.77 n= 54 * item was not included into quantitative survey			mean = 5.17 std dev = 2.79 n = 24		

Table 5.6 Relationship between means-end relations mentioned in the laddering interviews and respondent agreement with suggested means-end relations in the first survey

proportion of agreement with relations mentioned in laddering interviews	0.71
proportion of agreement with relations not mentioned in laddering interviews	0.49

N = 552

Comparison of concept centralities in the laddering interviews and in the survey

Concept centralities were calculated from the implication matrix of Appendix 5.4. Table 5.4 and Table 5.5 show the top-ten centralities for the qualitative sample, the qualitative sample including only concepts which have also been included in the survey, and the quantitative sample.

The coefficient of agreement between the survey respondents and the results from the laddering interviews, calculated according to formula (4.2), was 0.4 for information centrality and 0.5 for degree centrality. At first sight one might think that the agreement would be lower than warranted because the survey included fewer concepts. This was not the case. The coefficient of agreement was exactly the same if centralities were only calculated on the qualitative data for the concepts which had been included in the survey afterwards: again 0.4 for information centrality and 0.5 for degree centrality. In spite of the small sample and the sensitivity of centrality to small variations in the network, still 4 out of the 10 most central concepts appeared once again to be most central. Performance at the top level seems better than for the ranking of all concepts as a total (Table 5.7). The rank order correlation between the laddering and the survey measures was not high. Degree centrality derived from the survey results only correlated 0.17 with the same measure based on the laddering results, and information centrality only 0.16. In contrast to what was hypothesized in chapter 4, raising the cut-off level for the laddering responses did not lead to an improvement.

The laddering interviews seem to have been sufficient to identify 40 % of the actions, goals and values most central to the organization (in information centrality, Table 5.7). If the centrality measures are only applied to the concepts which were included in the survey, top-ten agreement becomes slightly higher, 0.5, and even 0.6 if degree centrality is used as a measure of centrality. However, the low rank order correlations in Table 5.7 suggest that both measurements are not equivalent to each other, or that both measures are not equally reliable. So far, split-sample reliability has been calculated for the laddering results, but not yet for the survey results. This will be done next.

Table 5.7 Agreement between centralities calculated on the laddering results and the quantitative survey

Comparison including all 54 concepts of Figure 4.6 in the calculation of the qualitative data:

survey sample	not previously interviewed respondents only (n = 124)		previously interviewed respondents only (n = 19)	
Type of centrality	rank order correlation	coefficient of agreement	rank order correlation	coefficient of agreement
degree	0.17	0.3	0.26	0.3
information	0.16	0.4	0.27	0.4

Comparison including only the 24 concepts in the laddering data which have also been included into the survey:

survey sample	not previously interviewed respondents only (n = 124)		previously interviewed respondents only (n = 19)	
Type of centrality	rank order correlation	coefficient of agreement	rank order correlation	coefficient of agreement
degree	0.11	0.5	0.25	0.6
information	0.13	0.4	0.27	0.5

The coefficient of agreement has been calculated according to the formula (4.2) and regards the top-ten agreement

Interviewed and not-interviewed respondents do not add up to 146 due to three missing values on the question as to whether the respondent had been interviewed before

Split-sample reliability of the survey results

When the questionnaires were returned they were assigned a respondent number in order of arrival. When splitting the questionnaires, one sample contained all the odd numbers and the other all the even numbers. This way possible systematic differences between respondents who return the questionnaire early and those who return it late could be ruled out. Mann-Whitney U-tests were performed on the means-end relations which respondents had to rate. The null hypothesis was that there was no significant difference between ratings for each means-end relation for the odd- and the even numbered respondents. Of all 24 x 23 = 552 relations, only 22 differed significantly (at 5 % level) between the split populations. For nearly 96 % of all relations there was no significant difference. Therefore, the null-hypothesis of no difference between both samples could be accepted. This is a fair improvement in comparison to the qualitative sample (Table 5.2).

Implication matrices were drawn up for both half samples and centralities calculated. Rank order correlations between the centralities of the concepts in both half samples were computed, as well as the coefficient of agreement for the top-5 and top-10 concepts. Both degree centrality and information centrality had rank order correlations of 0.96, significant at 1 ‰ level. Top-five agreement between both half samples, calculated with formula (4.2), was 0.6. Top-ten agreement was 0.9, both for degree and for information centrality. In short, the quantitative procedure seems to produce a good split-sample reliability. The survey results show the greater stability which can be expected from a means-end structure reflecting an organization's generative grammar.

Conclusion

The laddering interviews seem to have consisted of a sample sufficient to identify the principal actions, goals and values involved in the organization's identity; at least, the split-half reliability for the concepts is fair (Table 5.1). The convergence between laddering and survey results is present in the most central concepts. The top-10 agreement between both measures is 0.4 for information centrality and 0.5 for degree centrality. For the ranking of the 24 concepts involved in both studies, however, convergence is rather low. The quantitative survey produced a high split-sample reliability, both for relations and for concept centralities. This higher split-sample reliability supports the idea that the structure which is recognized by respondents is a better reflection of the organization's generative grammar. If this is so, the quantitative measures should also converge better with items to which theory expects them to be correlated. This question will be addressed in the next section.

5.3 Validity of the measurement methods

Even if a measurement instrument is perfectly reliable and produces consistent results, this does not imply that it really measures what it pretends to measure. The results may just be an artifact of the instrument itself (Churchill, 1979), which leads to the question of a method's validity. What has been measured should reflect the conceptualization of corporate identity, as it was developed in chapter 3. Albert and Whetten's (1985) three criteria definition of corporate identity (Overview 1.1) provides a guideline for choosing validation criteria.

Their first criterion is the criterion of **central character**. An instrument for measuring corporate identity should reveal the features that make up the essence of the organization. These features should represent something 'important and essential'. The idea of 'importance' arises also from the means-end analyses. In the laddering interviews the crucial question is 'why is that important to you?'. The same question was asked in the first survey, although it was phrased differently. Elements with a high centrality in the means-end structure are likely to be important for several purposes and to lend importance to many actions or lower level goals which serve their realization. Both Albert and Whetten's reasoning and the logic of means-end analysis suggest that highly central concepts are likely to be considered highly important by the organization's employees.

Weber (1985) argues that the elements which form the core of an organization's identity constitute the background expectancies of employees. These constitute the common-sense knowledge of daily organizational life. The area of the organization's 'generative grammar' consists of these actions, goals and values which are highly self-evident to the organization's employees. The measurement instrument developed here is supposed to put the self-evident into words (cf. section 4.2.2). High centrality in the means-end structure should correspond to a high degree of self-evidence in the eyes of the organization's employees. This yields a second item with which a concept's centrality can be compared: the degree to which it is self-evident in the employees' eyes.

The discussion about how statements of identity can make sense, which can be traced right back to Plato, was resolved by Russell by using verb-phrases (Williams, 1989). Therefore, in chapter 3 corporate identity had been preliminarily defined as 'the whole of verb-phrases which apply to an organization' (Overview 3.2). The operationalization further focused on intentional actions. A typical feature of intentional actions is that the performer knows what he is doing (Anscombe, 1957). The more an action belongs to an organization's identity, the more organization members should recognize they are working on its realization. This provides a third criterion to check whether the measures of centrality do measure what they are supposed to measure: the degree to which employees report that they are working on the realization of actions, goals and values.

This way, the theoretical arguments presented in chapter 3 and 4 yield three items on which the concept centralities stemming from the laddering research and the survey should converge (Overview 5.3). These should reflect the centrality of concepts in the figurative sense. If Albert and Whetten's 'central character' is indeed one construct then they may be combined into one measure of validity. This will be tested when analysing the data.

- Importance of an action, goal or value
- Self-evidence of an action, goal or value
- Degree to which employees report they are working on an action, goal or value

Overview 5.3 *Items for validation of the centrality of actions, goals and values*

Albert and Whetten's second criterion is that of **'claimed distinctiveness'**. The instrument has the potential to satisfy this criterion because of the openness of the laddering interviews. Degree centrality calculated at higher cut-off levels from the laddering interviews shows a low split-half reliability (Table 5.3). This does not necessarily imply insufficient reliability, but might rather reflect a tendency of this way of calculating centrality to highlight the group-specific elements. In other words, centrality calculated at higher cut-off levels for relations might satisfy very well the criterion of 'claimed distinctiveness'. So far, however, there are no data available to test this hypothesis. From the data of the automation company alone it is not possible to tell which central characteristics are missing elsewhere. That would require the construction of a database of applications to several organizations. This is a challenge reaching beyond the time span and scope of this study, but worthwhile taking up in future.

As pointed out in section 4.2.4.3, somewhere between the top and the bottom of the means-end structure there must be a position where concepts transcend the individual jobs but are still organization-specific. These concepts are general across the whole organization, without necessarily being general beyond the organizational borders. These are the best candidates for organization-specificity: these concepts apply to the whole organization. If they are not found equally in other organizations they will be distinctive exactly at the level of focal organization. So, if more central concepts can distinguish an organization as a whole, they will apply more generally within that organization.

Albert and Whetten's third criterion, of '**temporal continuity**' requires repeated measurement over time. In chapter 3 it was argued that centrality in the means-end structure may be a good indicator for temporal continuity. The literature has so far related stability over time primarily to the level in the hierarchical value map. Hinkle (1965) predicted that concepts which were high in a means-end hierarchy would be more central in the means-end structure. He found his hypothesis confirmed. Table 4.5 shows the same result for the automation company. Hinkle found that higher level concepts had a significantly higher resistance to change than other concepts. In the literature on the laddering technique, higher level concepts are often referred to as 'values', lower level concepts as 'attributes'(Gutman, 1982). Aurifeille (1997) argues that while attributes may change with fashion and technology, values are enduring states of being which warrant longer lasting strategies. The relationship between centrality in the means-end structure and the stability over time will be further examined.

To some degree, means-end relations can be seen as providers of meaning (Casagrande and Hale, 1967, Spradley, 1979). Concepts high in centrality can actually be considered to be embedded into a rich pattern of associations, which are readily evoked by the concept. Minsky (1986) argues that people construct default contexts from their experience. After having worked for a while in an organization employees are likely to have collected a rich default context regarding those activities they frequently perform in their work. The availability of context seems to greatly reduce the perceived abstractness of words. This effect was discovered by Schwanenflugel, Akin and Luh (1992). They performed experiments where respondents were confronted with words varying in their degree of concreteness. They measured the time interval between hearing the word and the respondent's recognition of that word. They found that abstract words needed significantly more time than concrete words. This effect disappeared when abstract words were given a context. If the default context is embodied by the means-end structure, more central concepts in the means-end structure should be perceived as more concrete than organizational concepts less related to other concepts.

Method

The validation items were collected in two surveys. In the first survey, described in section 5.2, along with the quantitative data on means-end relations, importance scores have been collected. For all 54 concepts appearing in Figure 4.6 employees were asked to rate the concept's importance on a seven-point scale, from 1 = very important to 7 = completely unimportant. Nine months later the second survey was mailed to the employees. The main purpose of this second survey was to investigate the nature of means-end relations and to compare them with similarity relations, instrumental relations and identity relations ('is the

same as'). The results of that analysis will be reported in chapter 6. Additionally, the validation items of overview 5.3 were asked for 23 of the 24 concepts whose complete means-end pattern had been collected in the first survey[1]. The second survey had importance scores similar to the previous survey, the difference being that the scales had been reversed. It was felt that it might be more logical to make '7' the positive pole of the scale, whereas in the first survey, this had been '1'. The second questionnaire was split into a total of 8 versions. The order of the items was varied systematically among the versions. In order to check whether the most central concepts were most general within the organization, the question was added as to whether respondents thought concepts specific to their own job at the automation company, or whether they were more general in nature. They had to rate a semantic differential scale, where '1' corresponded to 'very specific' and '7' to 'very general'. Furthermore, the questionnaire was designed to investigate whether Schwanenflugel's (1992) concreteness effects could be replicated. Such a replication would confirm the hypothesis that the pattern of means-end relations may provide for a rich default context for the concepts. Therefore, the survey included another semantic differential scale on abstractness, where '1' represented the concrete extreme and '7' the abstract extreme.

The five different kinds of scales were not all included in the questions put to the same respondents. That would have produced too lengthy questionnaires. Three pages, with 23 ratings on each page were thought to be the maximum. Therefore the five kinds of scales were divided across 8 versions. In general, each version started with two pages with items on concept properties and ended with property items because these were assumed to be easier to fill out than the relation questions. The pages with the scales for importance, self-evidence, working intensity, generality and abstractness were varied systematically and alternated with pages containing the questions about the relations. This way halo-effects between the validation items were avoided (Table 6.5). At the start of each page the respondent was reminded of the context of his job at the automation company. 410 questionnaires were mailed to the employees' home addresses. 143 were returned, a response rate of 35 %.[2]

Results

Both quantitative surveys were checked on comparability. Over a period of nine months values and goals in the organization might have changed. The common element in both surveys was the importance scores for 23 concepts. The Pearson product moment correlation between the average importance scores in both surveys is - 0.98. The minus-sign appears because the scales in the second survey have been reversed. If you take from the second study only respondents who did not participate in the first survey, the correlation is -0.97. For respondents who participated in both surveys the correlation was -0.94. All correlations were significant at the 1 ‰ level. Therefore the results of both surveys are considered comparable.

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[1] The 24th item, "be asked for by the client", was omited by mistake when producing the questionnaire. This was only discovered when the questionnaire had already been mailed.

[2]Of these 143 respondents, 106 had not been involved in previous research. 27 had only filled out the 1992 survey. 6 had participated both in the first survey and in the laddering interviews. 4 respondents had not filled out the question as to whether they had participated in the first survey or in the laddering interviews.

Exploring the validation items

Table 5.8 Correlations among the validation items

	Concreteness	Generality	Importance	Self-Evidence	Working intensity
Concreteness					
Generality	0.49*				
Importance	0.69**	0.72**			
Self-evidence	0.68**	0.72**	0.96**		
Working intensity	0.55*	0.77**	0.91**	0.94**	

* significant at 1 % level
** significant at 1 ‰ level

Table 5.8 shows how all five items are heavily correlated. The most coherent cluster seems to be formed by the three criteria supposed to reflect the 'central character' of an organization: 'importance', 'self-evidence' and 'working intensity'. 'Generality' correlates highly and significantly with them. The ratings on the concreteness-abstractness scale were rather on the concrete side. Therefore, the scales were reversed and labelled 'concreteness'. The high correlation of concreteness with the other validation items indicates, that the more general, important and self-evident a concept was, and the more intensively employees worked on them, the more concrete the concept appeared.

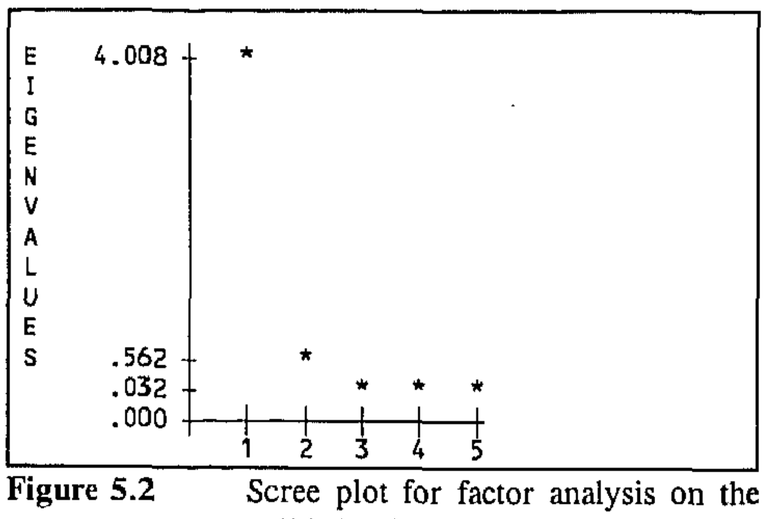

Figure 5.2 Scree plot for factor analysis on the validation items

With factor analysis, three factors were extracted. The first factor, explaining 80 % of variance, loaded heavily on 'importance', 'self-evidence' and 'working-intensity'. The second factor loaded mainly on 'concreteness'. The third factor is readily interpretable as 'generality'. Potentially, two more factors could be extracted but they explain respectively only 1.3 and 0.6 % of variance.

Table 5.9 Loadings of rotated factor matrix

	FACTOR 1	FACTOR 2	FACTOR 3
Concreteness	.31627	.92936	.18365
Generality	.41590	.20695	.88515
Importance	.83317	.40298	.32903
Self-evidence	.85618	.37572	.32277
Working intensity	.86298	.20520	.41843

The three items reflecting Albert and Whetten's criterion of central character will be dealt with first. Next, concept centralities will be compared with the respondents' ratings of concept concreteness and generality.

- **The criterion of 'central character'**

The coherence between the validation items from overview 5.3 was investigated. In order to avoid recall effects from respondents who filled out the first survey, the calculations for the criterion of central character for the second survey (Table 5.10) have been based on those respondents who have not filled out the first survey.The Cronbach alpha for these three items was 0.98. Therefore the three items could be added to form one single indicator of validity, as has been done in Table 5.10.

Table 5.10 Spearman rank correlations between concept centralities and validation items

research source	Validation item	Importance	Importance	self-evidence	degree of working intensity	validation measures added
	Centrality measure	first survey	second survey	second survey	second survey	second survey
laddering	degree centrality	0.47*** (54 concepts)	0.27	0.27	0.21	0.26
	information centrality	0.48*** (54 concepts)	0.26	0.23	0.20	0.24
first survey	degree centrality	0.85*** (24 concepts)	0.80***	0.70***	0.71***	0.74***
	information centrality	0.84*** (24 concepts)	0.84***	0.84***	0.82***	0.85***

* significant at 5 %
** significant at 1 %
*** significant at 1 ‰

unless indicated otherwise, correlations are based on measures for 23 concepts (N = 23)

Average scores on importance, self-evidence and the degree to which employees reported to be working on actions, goals and values were correlated with both degree and information centrality in the network of means-end relations, derived from the laddering interviews and from the quantitative survey. Table 5.10 shows the results. The left column in Table 5.10 shows a rank order correlation of 0.47 between degree centrality and importance scores in the first survey, significant at 1 ‰ level. If only the 23 higher-level concepts were included, as with the second survey, that correlation would have dropped to 0.19 and have lost its statistical significance. The limitation of the survey results to the top level concepts seems to have implied the loss of variety. As a consequence, the correlations may be lower than they would have been if the complete set of concepts stemming from the laddering interviews had been included. In contrast to what has been hypothesized in section 4.3.3, degree centralities calculated at higher cut-off levels did not show higher correlations with the validation items (appendix 5.3). The lowest cut-off level for relations from the laddering results still seems to perform best. Table 5.10 shows that in particular information centrality, calculated on the survey data, correlates highly with the validation items. This appears to be a valid measure of an organization's identity.

- **The criterion of 'claimed distinctiveness'**

As explained above, the data available allow us to establish the concepts which are most general and less function-specific within the organization, but not whether concepts central in this organization are equally central in other organizations.

Table 5.11 Rank order correlations between generality and centrality

Data collection	Centrality measure	Generality
Laddering Interviews	Degree centrality	-0.03
	Information centrality	-0.07
First survey	Degree centrality	0.63***
	Information centrality	0.53**

** significant at 1 % level
*** significant at 1 ‰ level
N = 23

The centrality of concepts was correlated to the degree to which respondents thought them function-specific ('1' on a semantic differential scale) or 'general' ('7' on the same scale). Table 5.11 shows the results. A concept's generality correlated 0.63 with a concept's degree centrality, significant at 1 ‰ level, and 0.53 with a concept's information centrality, significant at 1 % level (Table 5.11). Here a large contrast with the laddering results appears: in the laddering results, the correlation with generality is virtually non-existent (see upper right-hand cells in Table 5.11. A possible interpretation of this result is, that, during laddering interviews, respondents are hardly concerned about the general legitimacy of their answers, and reproduce the goals that motivated them in the specific contexts evoked in the laddering interviews. This may explain the low correlations in Table 5.11, and the higher correlations with centrality calculated from the laddering interviews in Table 5.10.

However, in the first survey, the most central concepts turn out to be indeed most general and to apply across the widest variety of jobs. It should be emphasized, that this measure is a further indication of a concept's potential to satisfy the criterion of 'claimed distinctiveness'. Only data about other organizations can help establish whether the most central concepts are really distinctive. This remains a hypothesis for further research.

- **The criterion of 'temporal continuity'**

The time lapse between the two surveys was nine months, long enough to allow for some changes in the organization's values. The items common to both studies were the importance scales. Their correlation between both studies was high and significant. Hinkle's (1965) findings feed the hypothesis that, if there are any changes, that these are more inclined to occur with concepts which are not central. If this is the case, this is a further indication that a concept's centrality in the network of means-end relations reflects its stability over time. Then the centrality of a concept satisfies both Albert and Whetten's (1985) criteria of 'central character' and of 'temporal continuity'.

The procedure for testing that hypothesis was as follows. First, the importance scores from the first survey were reversed by subtracting them from '8'. This way, the positive pole for the importance scores from both the first and the second survey was the same. Then, the difference between the score in the first survey and the score in the second survey was computed. The main aim of the analysis was to assess the stability of scores. Therefore, the interesting phenomenon is the magnitude of a possible change rather than its direction. The absolute value of this difference was correlated with the concepts' centralities, calculated both on the laddering results and the results of the first survey. The largest changes in importance ratings may be expected at the least central concepts.

Table 5.12 Rank order correlations between a concept's centrality and change in importance scores over time

Data collection	Centrality measure	Total sample	Employees not involved in the first survey (56 respondents)	Employees involved in the first survey (21 respondents)
Laddering interviews	degree centrality	-0.24	-0.24	-0.47*
	information centrality	-0.21	-0.20	-0.44*
First survey	degree centrality	-0.51**	-0.54**	-0.32
	information centrality	-0.64***	-0.61**	-0.27

* significant at 5 % level
** significant at 1 % level
*** significant at 1 ‰ level

Correlations have been calculated for the 23 concepts included in both surveys

Table 5.12 shows that both degree and information centrality are indeed negatively correlated to the absolute value of the change in average importance scores. The picture is clearest for the total sample. Both degree and information centrality calculated on the survey results have a significant negative correlation with the change in importance scores. The more central a concept, the less the observed change. Information centrality has the strongest negative correlation. The centralities based on the laddering results also show negative correlations, although the latter are not significant. The negative correlations persist if the sample is split into one part consisting of respondents who participated in the first survey and one part consisting of respondents who did not participate in the first survey. The strong negative correlations of the quantitatively derived centralities, appearing for the total of respondents, seem mainly due to the respondents who had not participated in the first survey. Also the respondents who had participated in the first survey show negative correlations, but these just fail to reach the significance level of 10 %. The latter group shows significant correlations with the centralities calculated from the laddering results. This outcome was not expected after the weak correlation of the latter centralities with the importance scores for the second survey in Table 5.10, but is in line with the significant correlation of these centralities with

the importance scores from the first survey (left column in Table 5.10). For the organization as a whole, the hypothesis that higher centrality coincides with less change on importance scores can be confirmed. Collectively, the organization members appear to remain more consistent in the importance they attach to their most central concepts than the subgroups among them. This effect may hinge upon the power of information centrality to reveal the central character of the whole organization (Table 5.10), which may compensate for the fluctuations in subgroups, as shown in the right column of Table 5.12. For the organization as a whole, the concepts with the highest information centrality may indeed make up the enduring stable core of the organization's identity (cf. Weber, 1985, p. 148). Information centrality seems also best to reflect Albert and Whetten's third criterion of temporal continuity.

Centrality in the means-end structure as an indicator how well-defined a concept is

If means-end relations do indeed provide a concept with meaning (Howard, 1977) then concepts with more relations must indeed be embedded in a richer pattern of associations. Such a pattern provides concepts with a rich default context which may make them appear more concrete. Therefore, as argued above, more central concepts should be considered more concrete. This should apply in particular to 'degree centrality', which is interpretable as a straightforward count of the number of associations with a concept. A concept's concreteness turned out to correlate 0.56 with a concept's degree centrality and 0.54 with its information centrality, based on the quantitative survey (Table 5.13). These correlations were significant at 1 % level.

Table 5.13 Rank order correlations between concreteness and centrality

Data collection	Centrality measure	Concreteness
Laddering Interviews	Degree centrality	0.41*
	Information centrality	0.38*
First survey	Degree centrality	0.56**
	Information centrality	0.54**

* significant at 5 % level
** significant at 1 % level
N = 23

('1' is 'very concrete', '7' is 'very abstract')

Discussion

The results of the validation analysis are encouraging. Inclusion of all 54 concepts of Figure 4.6 into the calculation shows that also the qualitatively calculated centralities correlate significantly with importance scores (Table 5.10). The convergence of information and degree centrality calculated on the base of the survey results is much stronger still. Table 5.10 shows correlations of 0.80 and higher between the quantitatively derived information centrality and all validation items intended to measure a concept's 'central character'. Table 5.12 makes it clear that the quantitatively derived information centrality does converge with a concept's stability over time. Similarly, the quantitatively derived centralities correlate strongly and significantly with a concept's generality (Table 5.11), and its perceived concreteness (Table 5.13).

This convergence also exists for the centralities calculated from the laddering results, but these latter correlations are weaker and not statistically significant. For 'generality' they are close to zero (Table 5.11). The laddering results may already produce a usable outcome, but the quantitatively derived measures seem to form the most valid basis from which definitive conclusions may be drawn.

The choice of the appropriate measure of centrality

In general, the quantitatively derived measures of centrality show stronger rank order correlations than centralities calculated with the laddering data (Table 5.10). This can be explained, at least in part, by the relative incompleteness of relations derived from the laddering interviews, in comparison to the relations established in the first survey. Both information and degree centrality correlate significantly with the validation items. Regarding the importance scores, there is not much difference between information centrality and degree centrality, but information centrality correlates higher with self-evidence and with the degree to which employees report to be working on activities, goals and values. Apparently, degree centrality focuses on what is explicitly acknowledged to be important, and seems to reflect the role of concepts in direct argumentation. Information centrality includes more completely what people are actually working on. It gives a better idea of what is self-evident in an organization and seems to reflect closer what is happening beyond what is voiced. Also, when continuity of values over time is at stake, information centrality derived from the survey data correlates strongest and most significantly with stability over time (Table 5.12). Although there is no sufficient reason to dismiss degree centrality, Table 5.10 and Table 5.12 suggest that the most appropriate measure of centrality is information centrality calculated on the survey data.

5.4 Conclusion: the recommended procedure for measuring corporate identity

In this chapter, the reliability and validity of laddering results have been assessed. The laddering results have been compared with the outcome of two successive surveys. The first survey replicated the means-end analysis asking for all possible relations between the 24 highest-level concepts and asked for the ratings of all items in Figure 4.6 on their importance. The second survey included questions on the importance, the self-evidence and the degree to which employees reported to be working on these actions, goals and values.

1. Hold laddering interviews among an organization's employees in order to reveal the relevant goals, actions and values which may characterize an organization.

2. Hold a survey among the organization's employees in order to establish the complete means-end structure among these goals, actions and values.

3. Establish the most central concepts by calculating the information centrality of these actions, goals and values. The actions, goals or values with the highest information centrality describe the identity of the organization best.

Overview **5.4** Recommended procedure for measuring an organization's identity

First, split-sample reliability has been calculated for the laddering results and the means-end analysis of the first survey. The laddering results showed a good split-sample reliability with regard to the concepts, but only modest reliability with regard to agreement on means-end relations and concept centralities. The split-sample reliability of the survey results was excellent. Relations of one half sample corresponded well to those of the other half. Rank order correlation between both half samples was 0.96, both for information and degree centrality. Top-10 agreement on which concepts were most central was 0.9. These results suggest that laddering is a useful technique for identifying concepts. In order to obtain a good reliability of the means-end relations between the concepts and for calculating concept centralities, the laddering interviews should be followed up by a survey suggesting all possible means-end relations between the relevant concepts.

The analysis of the convergence between the validation items and the concept centralities points in the same direction. Although convergence between laddering data and importance scores is not negligible (Table 5.10), the correlation between the quantitatively derived centrality measures and the validation items is much stronger and more significant. Of both quantitatively derived centralities, information centrality has the strongest and most significant rank order correlations with the measures representing Albert and Whetten's criteria of central character (Table 5.10) and of temporal continuity on organizational level (Table 5.12).

Summarizing, it is recommendable to measure an organization's identity in three steps (overview 5.4). First, laddering interviews should be held among a well-chosen sample of an organization's employees. The actions, goals and values identified in these interviews should then serve as the input to a questionnaire collecting the complete pattern of means-end relations between them. Then information centrality should be calculated on this complete pattern of relations.

Corporate identity consists of those elements in the means-end pattern of organization members' intentional behaviour, which occupy the most central position in this pattern.

Centrality should be interpreted as an element's information centrality. The pattern of relationships should be established in such a way that it can be assumed to be complete.

Overview **5.5** Closer specification of the operationalization of Corporate Identity of overview 3.5

The steps listed in overview 5.4 can be read as a closer specification to the operationalization of corporate identity given in overview 3.5. Corporate identity consists of those elements in the means-end pattern of organization members' intentional behaviour, which occupy the most central position in this pattern. Centrality should be interpreted as an element's information centrality, and the pattern of relations should be established in such a way, that it can be assumed to be complete (overview 5.5).

Questions for further research

Even though so far this procedure has been tested for only one organization, the reliability and validity of the procedure seem satisfactory. A question still to be answered is, whether the results of the procedure are just a pleasant match of the calculated information centrality and the scores on importance, self-evidence and reported working intensity, or whether the procedure matches the thought process in the heads of the employees.

The implication matrix of directed means-end relations has been symmetrized, both with the results of the first survey, and earlier with the laddering results (cf. section 4.3.3 and 4.4). This facilitates the use of calculation algorithms offered in software packages like UCINET IV (Borgatti et al., 1992). It makes computations less cumbersome and more accessible to a broad range of researchers.

Matrix symmetrization will have more face validity if meaning can really pass both ways through identified means-end relations. Symmetrization of means-end relations is possible under either of two assumptions:

1) Means-end relations are directed relations, but they allow meaning to pass both ways through the same relations.

At the start of section 4.3.3 an example was given of how meaning can flow both ways through directed means-end relations. It is conceivable that in an organization 'working fast' is a goal in itself, e.g. urged upon by supervisors. But during daily operations employees might discover that if they work fast clients are more satisfied

and more likely to come back (*cf.* Figure 4.11). Then 'working fast' becomes important in order to have 'clients come back'. Employees may realize that 'being customer-friendly' is equally important to reach this same result, and start to behave accordingly.

This example refers to the process by which actions, goals and values can become important. Once importance has been established, the means-end relations between them might have the character of mere associations, not more directional than similarity relations. This brings us to the second hypothesis, under which means-end relations may be treated as symmetrical.

2) Means-end relations are basically non-directional relations. The direction of means-end relations is a result of the incompleteness of the laddering results: during the interview process the question for the reversed relation has been omitted.

If means-end relations are not hierarchical, then another explanation may be given for the generally accepted notion that goal structures are hierarchical (Austin and Vancouver, 1996).

The slightly superior performance of information centrality over degree centrality suggests that means-end relations are to some degree transitive. The essential difference between degree centrality and information centrality is, that information centrality also takes a concept's indirect relations into account. Information centrality converges more strongly with the validity measures, and, equally, it converges slightly higher with stability over time (Table 5.12). Therefore, some degree of transitivity of means-end relations should be taken into account. Transitivity means that if for instance, somebody perceives a means-end relation between 'work fast' and 'satisfy the client' and he also perceives a means-end relation between 'satisfy the client' and 'the client comes back', that he then also perceives a direct means-end relation between 'work fast' and 'the client comes back' (cf. Figure 4.11). It is not obvious that this is automatically the case. If it is, this would make it possible to extrapolate means-end data to relations about which no information has been obtained. For instance, if data were available about the relation between 'work fast' and 'satisfy the client' and the relation between 'satisfy the client' and 'the client comes back', then the data about the third relation, from 'work fast' to 'the client comes back', could be inferred from the data about the other two relations. Then it would not be necessary to tire respondents any further with lengthy questionnaires containing all possible relations among a set of concepts. The question of the transitivity of means-end relations will be an interesting challenge for further research.

CHAPTER 6 THE NATURE OF MEANS-END RELATIONS

This chapter will investigate the direction of means-end relations and their character. First, the reversibility of means-end relations is investigated. Means-end relations do not seem more symmetric or asymmetric than similarity relations. Secondly, for a subset of the concepts, means-end relations are compared with instrumental relations, similarity relations and identity relations ('is the same as'). The perceived hierarchy in goal structures or laddering results may be the result of the relative frequency with which actions, goals and values pop up in the most frequently occurring contexts. This is already reflected in the concept of 'centrality' investigated in the previous chapters. The findings confirm the idea that the most central concepts represent the 'core game' of the organization.

6.1 The direction of means-end relations

In this dissertation, means-end relations between human actions have been the basis of the assessment of an organization's identity. So far, these relations have been observed empirically and been taken as a given. However, if Spradley (1979) is correct when he argues that means-end relations are semantic relations, they may be subject to the same kind of tension Tversky (1977) found with similarity relations: the latter type of relations show a tendency to be symmetric and asymmetric to a certain degree at the same time. These findings were replicated by Gleitman, Gleitman, Miller and Ostrin (1996) for 20 other kinds of semantic relations. In contrast with similarity relations, means-end relations are often assumed to be symmetric. Still, if they are semantic relationships, their direction may also be reversible. Literature has never addressed this question. This will be done in this section.

A first discussion of the nature of means-end relations has already been given in section 3.2.2.2. There means-end relations were identified as 'by'-relations between two alternative descriptions of action, where both descriptions reflect intentional action by the same agent. Means-end relations can be considered a particular type of semantic relationship: they indicate an association between two intentional actions.

What this measurement instrument of corporate identity is trying to do, is to reach beyond specific contexts and to find elements satisfying the criterion of 'sameness across situations and interaction partners' (overview 3.3). One assumption about 'by' relations was that they were asymmetric (Goldman, 1970, cf. section 3.2.2.2). What might happen is that whenever an abstraction is made from specific contexts, the association still holds, but loses its specific direction to some extent. It allows people to think of situations where the same relation applies in the opposite direction (cf. Gleitman et al., 1996).

If means-end relations are reversible to some degree, means-end structures will not be strictly hierarchical. The word 'hierarchical' in the term 'hierarchical value map' (Reynolds and Gutman, 1984) would then be slightly out of place. The direction of the means-end relations may apply for concepts which only appear in very specific contexts, but may be much less so for the 'higher-level' concepts, which are supposed to apply to broader domains of life.

The idea that means-end relations might be reversible was strengthened during analysis. When analyzing the laddering interviews, coders sometimes had less difficulty in identifying

the existence of a means-end relation than in identifying its direction. In the first survey several relations upon which respondents agreed were also agreed upon in the opposite direction. For instance, 94 % of the respondents agreed upon the suggestion, that 'delivering quality' was important in order to 'be professional'. Conversely, 100 % of the respondents agreed with the suggestion, that 'being professional' was important in order to 'deliver quality' (cf. appendix 5.4).

Although particularly in the marketing area several studies on means-end analysis have been published since Reynolds' and Gutman's (1984, 1988) work, none seems to have questioned the nature and direction of these relations. First the data of the first survey will be analyzed on their direction. Then the second survey will be described, which investigates the semantic character of means-end relations.

6.1.2 The tendency of means-end relations toward symmetry

In this section the tendency of means-end relations toward symmetry will be investigated. If means-end relations are not symmetrical, their tendency toward symmetry should not be significantly larger than zero. If they are not antisymmetrical either, this tendency should be about zero. The hypothesis of an average or median tendency of zero will be tested using three different kinds of analysis: Pearson correlation coefficients, a mutuality parameter developed by Katz and Powell (1955), ρ_{KP}, and a loglinear estimate of the tendency of mutuality from Holland and Leinhardt's (1981) *p1* model. Then in those situations where respondents thought means-end relations were asymmetric, it will be investigated whether this asymmetry also holds at group level. A McNemar test (McNemar, 1947) will be applied to investigate whether the general direction of the relation then still differs significantly from zero.

A first check was the computation of the correlation between the scores of means-end relations and their inverses in the matrix in appendix 5.4. That matrix shows the proportions of respondents agreeing with the existence of a suggested means-end relation. The matrix contains 23 x 24 = 552 relations. Between each pair of concepts there exist two relations, one in either of the two directions. This way, for 552/2 = 276 pairs of concepts the correlation between the agreement in the one direction and the agreement in the other direction was computed.

If means-end relations in general have a clear direction, the number of symmetrical relationships must be low. If, however, means-end relations in essence are symmetric, they must show a clear tendency toward mutuality. Mutuality is the term used in social network analysis for 'symmetry'. Then the number of symmetric relations should be higher than can be explained purely by chance (Holland and Leinhardt, 1981). If means-end relations tend to be symmetric, a positive correlation can be expected. If they tend to by asymmetric, that correlation should be negative: if respondents agree that a relation exists in one direction, it should not exist in the other direction. A correlation not significantly different from zero indicates that means-end relations are neutral regarding their symmetry.

The correlation turned out to be 0.28, significant at 1 ‰ level. Apparently, at the group level, there is a moderate but significant positive correlation between means-end relations and their inverse. This outcome could flow forth from the ease with which people may reverse the direction of a means-end relation, but it may also be explained by the different perspectives existing in a not completely homogeneous group: whereas one subgroup thinks of one direction of the means-end relation, another subgroup may think the means-end relation may run in the opposite direction. In such cases, the tendency toward symmetry arises from disagreement among subgroups. In order to control for this possibility, analysis at the level of individual respondents is required.

Table 6.1 Example: Implication matrix of respondent 1 from version 1 of the first survey

Concept	N°	08	12	18	25	33	43	46	55
Motivate people	08		1	0	1	1	1	1	1
satisfy the client	12	0		0	0	1	0	1	0
internal recruitment	18	0	0		0	0	0	0	0
keep each other informed	25	1	1	0		0	0	0	1
make a profit	33	1	1	0	0		0	1	0
employee cooperation	43	0	0	0	0	0		1	0
be professional	46	1	1	0	0	1	0		1
establish the problem	55	0	0	0	0	1	0	1	

Interpretation of the cell entries:

1 = agree with the existence of this means-end relationship between the row concept as a means and the column concept as an end

0 = disagree with the existence of this means-end relationship between the row concept as a means and the column concept as an end

Because the questionnaire for the first survey had been split into three versions, complete individual matrices for all 24 x 24 concepts were not available. Each respondent was confronted with eight actions, goals or values (see page 122). They were asked whether they agreed or disagreed with the existence of a means-end relationship between each of these eight concepts as a means and each of the 23 other concepts as an end. These 23 other concepts included the 7 concepts heading the other pages of each respondent's questionnaire. Thus for each respondent a complete submatrix containing all relations between the eight concepts heading the pages in his or her own questionnaire could be constructed. The further analyses in this chapter will be based on these individual submatrices, containing 8 x 7 = 56 possible means-end relationships. Table 6.1 shows an example of such a submatrix at the individual level.

Correlations at the individual level

The correlations between the agreement in both directions of the same relations were calculated for 146 respondents in total. The correlations did not differ significantly according to the version of the questionnaire. Individual correlations varied from -0.35 to 0.91, with an average of 0.19. The standard deviation was 0.25. A significant relationship between employees' tendency toward (a)symmetry and their position in the organization could not be found. A t-test was performed to check whether the average was significantly larger than zero. The t-value was 9.18. With 145 degrees of freedom, the hypothesis that the correlation might be equal or smaller than zero had to be rejected. Also at the individual level, the average correlation is modest and significantly larger than zero.

Wasserman and Faust (1994) mention two other tests of mutuality, which can be applied to the data. These are Katz and Powel's (1955) ρ_{KP} and Holland and Leinhardt's (1981) interaction parameter ρ. Those tests take as their point of departure the four states a relation between two concepts can take (Figure 6.1).

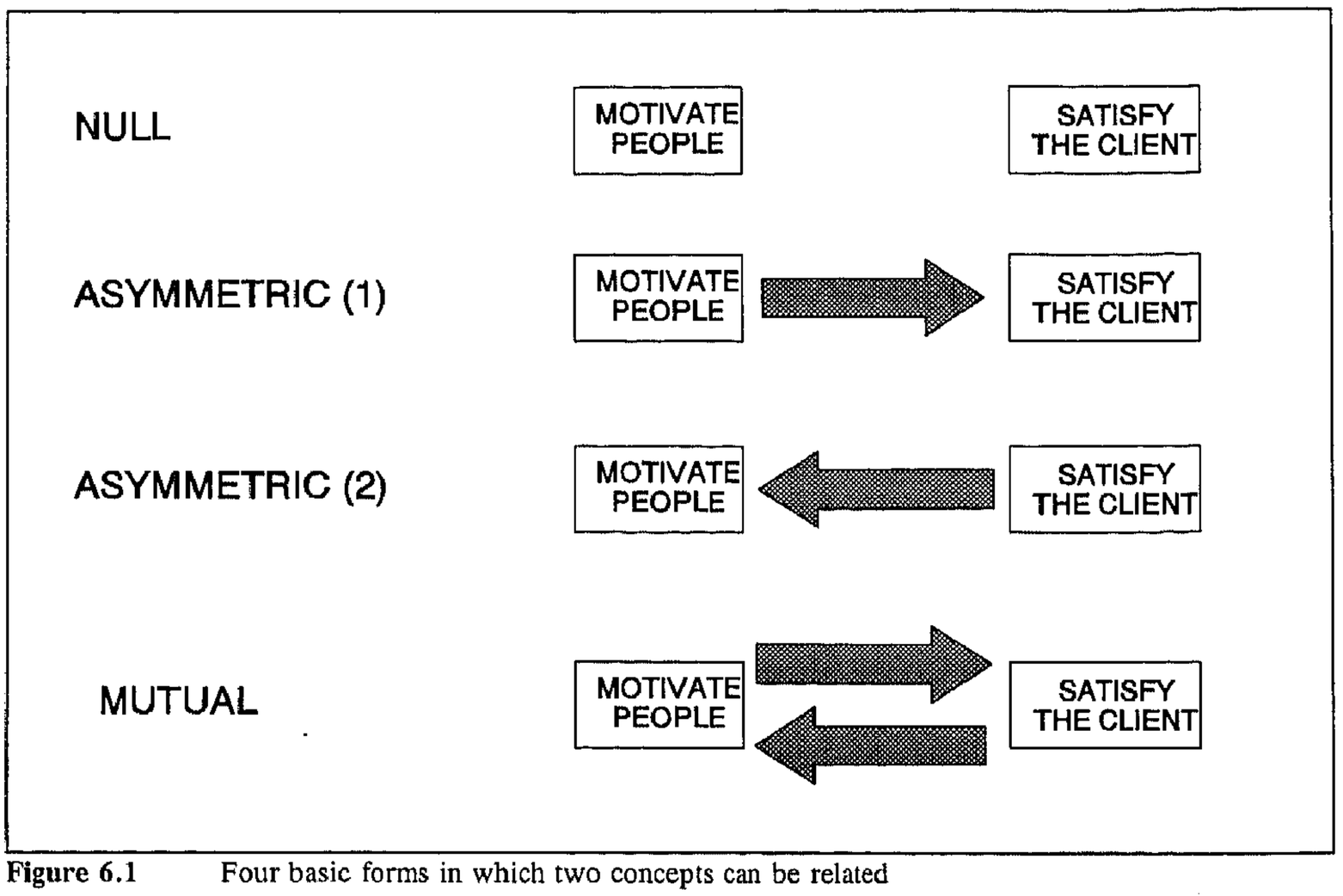

Figure 6.1 Four basic forms in which two concepts can be related

To start with, there may be no means-end relation at all between two concepts. This case is presented in Figure 6.1 as the 'null' relation (cf. Wasserman and Faust, 1994). It is also possible that one concept is important to reach the other concept, but not vice versa. Figure 6.1 shows the two cases of an asymmetric relationship between 'motivating people' and 'satisfying the client'. In the first case, 'motivating people' is important in order to 'satisfy the client', but not vice versa. In the second case, 'satisfying the client' is important in order to 'motivate people', but the other way round. Finally, the relation can be mutual: 'motivating the client' is important in order to 'satisfy the client', and 'satisfying the client' is important in order to 'motivate people'. All four types of relationships can be recognized

in Table 6.1. For each relation, two cells exist: the row cells represent the concept emitting the relation, the columns the concepts receiving the relation. The relation between concepts 12 and 18, for instance, is a null relation: there is a zero in cell (12,18) and a zero in cell (18,12). The relation between concepts 8 and 12 is an asymmetric relation from concept 8 to concept 12: there is a '1' in cell (8,12) and a zero in cell (12,8). The relation between concepts 12 and 25 is an asymmetric relation from concept 25 to concept 12: there is a '0' in cell (12,25) and a '1' in cell (25,12). Finally, the relation between concept 25 and 8 is a mutual relation: in both cells referring to both directions of that relation, a '1' is found.

The first method dealt with by Wasserman and Faust (1994) is Katz and Powel's (1955) coefficient of mutuality, ρ_{KP}. This coefficient is based upon the total numbers of mutual, asymmetric and null relations in the whole network. These three numbers together are often called the 'dyad census'. Katz and Powel's basic assumption is that the relations are uniformly distributed, given the number of mutual, asymmetric and null relations observed. Based on this assumption, they derived a measure for the degree to which relations are more or less mutual other than merely by chance. They designed the measure in such a way that if ρ_{KP} is zero, this means the absence of tendency toward mutuality. If it is 1 this implies maximum mutuality. The measure ranges from $-\infty$ to 1. If ρ_{KP} is smaller than zero, this means that the dataset is anti-symmetric. This happens for instance when a respondent consciously avoids agreeing with means-end relations in two different directions, or if the existence of a means-end relation in one direction prohibits the existence of a means-end relation in the other direction. The formula for estimating this tendency is as follows:

In this formula, N is the number of concepts, M the number of mutual relations, L is the sum of the outdegrees of the concepts, and L_2 is the sum of the squares of their outdegrees. This formula was applied to the individual matrices. ρ_{KP} ranged from -0.32 to 0.91, with an average of 0.19 and a standard deviation of 0.25. The latter two statistics were identical to those for the correlations of individual matrices, mentioned above. A t-test ($t = 5,43$, $Df = 145$, $p < 0.001$) showed that this average for the population was significantly larger than zero. In a χ^2 test, the hypothesis that 0 might be the median of the population had to be rejected at 1 ‰ level.

The second method dealt with by Wasserman and Faust (1994) is Holland and Leinhardt's (1981) *p1* model. This is a loglinear model which can estimate a relation's tendency toward mutuality. Their method first establishes which of each of the four states of a dyad in Figure 6.1 applies to each combination of pairs of concepts in an implication matrix as in Table 6.1. Holland and Leinhardt's (1981) model estimates the tendency of a kind of relationship to take either of the four states of a relationship shown in Figure 6.1.

The model consists of four statements (overview 6.1). Each of the four statements represents the probability that one of the four states in Figure 6.1 is realized. These statements contain the following parameters:

α_i: A parameter for the *expansiveness* of each concept i based upon its observed outdegrees i.e. the number of times it serves as a means to another concept

$ß_i$: A parameter for the *attractiveness* of each concept i based upon its observed indegrees, i.e. the number of times it serves as a goal

ρ: A parameter for the tendency of relations to be *mutual*

The probability of a null dyad:

$$\log P \text{ (null)} = \lambda_{ij}$$

The probability of a asymmetric relation from concept i to concept j:

$$\log P \text{ (asymmetric from } i \text{ to } j) = \lambda_{ij} + \theta + \alpha_i + ß_j$$

The probability of an asymmetric relation from concept j to concept i:

$$\log P \text{ (asymmetric from } j \text{ to } i) = \lambda_{ij} + \theta + \alpha_j + ß_i$$

The probability of a mutual relation between concept i and j:

$$\log P \text{ (mutual relation)} = \lambda_{ij} + \theta + \alpha_j + \alpha_i + ß_i + ß_j + \rho$$

Overview 6.1 The p1 model (Holland and Leinhardt, 1981)

Overview 6.1 shows the complete model. Holland and Leinhardt (1981) call this model '*p1*', because 'it is the first or simplest family of distributions on digraphs that might be considered for social network data. It expresses the two elementary social tendencies of reciprocation and differential attraction'. It assumes that relations between different pairs of concepts are statistically independent. Empirical evidence pointing to the realism of this assumption has been provided by Ter Hofstede, Audenaert, Steenkamp and Wedel (1998).

The λ_{ij} parameters are mathematical necessities included in the model to insure that all four probabilities add up to one for each dyad. These parameters appear in all four statements, regardless of the state of the dyad. The θ parameter is interpreted as an overall choice effect, reflecting the overall volume of choices sent and received. If one tie is present in the dyad, one θ appears, when the tie is reciprocated, two θ's appear. α and ß are concept level parameters. α_i represents a concept's tendency to serve as a means to other goals, while $ß_j$ represents its tendency to serve as a goal to other concepts.

ρ is the mutuality parameter. Mathematically, it is the interaction parameter between the relation from i to j (X_{ij}) and the relation from j to i (X_{ji}). It represents the log of the increase in the odds that the relation from i to j is 1 due to the fact that the relation from j to i is 1 (Holland and Leinhardt, 1981). Mathematically:

$$\exp(\rho) = \frac{\frac{P(X_{ij}=1 \mid X_{ij}=1)}{P(X_{ij}=0 \mid X_{ij}=1)}}{\frac{P(X_{ij}=1 \mid X_{ij}=0)}{P(X_{ij}=0 \mid X_{ij}=0)}}$$

When relations tend to be mutual, this parameter will be positive and large, and when they tend not to be mutual, it will be negative. If a matrix is completely symmetric, ρ will be ∞, if it is completely asymmetric, ρ will be - ∞. If the relation is neutral regarding mutuality, ρ will be zero. ρ does not depend upon specific concepts: it has no i or j subscripts.
Constraints are necessary to estimate the parameters in this model. Holland and Leinhardt constrained $\Sigma\ \alpha_i$ and $\Sigma\ ß_i$ to sum to 0. If n is the number of concepts, there are (n - 1) degrees of freedom to choose α and (n - 1) degrees of freedom to choose ß. Lastly, the reciprocity parameter ρ requires one degree of freedom (Wasserman and Faust, 1994).

The mutuality parameters ρ for the individual respondents have been calculated using UCINET IV (Borgatti et al., 1992). They varied from -8.0 to 21.5, with an average of 1.91 and a standard deviation of 4.25. In Mann-Whitney tests the three versions of the questionnaire were not significantly different from each other, so the data could be pooled. A Kolmogorov-Smirnov test (Smirnov, 1948) showed that the ρ's did not conform to the normal distribution. Therefore, again, a χ^2 test was used to test the hypothesis that the median could be zero. This hypothesis had to be rejected at 1 ‰ significance level.

Means-end relations, Instrumental relations, and their reverse, a glimpse at the results of the second survey

So far, three measures of mutuality have been calculated on the same dataset. All three measures show a median mutuality which is significantly larger than zero. This is also the case for the average correlations at group and individual level. However, means-end relations had only been measured binarily. Respondents could only mark the presence or absence of a means-end relation between two concepts, and not its strength. A seven-point scale may be a more fine-grained approach to measuring a relation's direction. In this subsection, the correlation will be calculated between different directions of the relations rated in the second survey. Here, respondents were asked to rate the strength of among others means-end relations ('is important in order to..') and their converses, the instrumental relations ('is done by') on seven point scales, reaching from '1', completely wrong, to '7', completely right. Overview 6.2 shows an example. For four concepts, 'reaching a good result', 'solving problems', 'being professional' and 'delivering quality', both means-end relations and instrumental relations were asked both ways. The questions regarding the relationships in the second survey will be treated in more detail in section 6.2.

Rank order correlations were computed between the average scores on the relations, which had been rated on seven-point scales. In total, there are 1*2*3*4/1*2*1*2 = 6 possibilities, in which two out of four concepts can be combined (Table 6.2). For each combination of concepts, the relation can have two directions. This brings the total of cases to 2 x 6 = 12 involving all possible relations between in total 4 concepts. Table 6.3 shows the results. The correlations are between averages - this explains the relatively high numbers. Another limitation in the interpretation of these results is that only the relations between four concepts could be used, whereas in the first survey larger sets of relations could be analysed.

Table 6.2 Combination of pairs between four focal concepts

	achieve a good result	solve problems	be profes-sional	deliver quality
achieve a good result				
solve problems	*			
be profes-sional	*	*		
deliver quality	*	*	*	

Means-end relations seem correlated most strongly to instrumental relations in the same direction (Table 6.3). All relations are correlated significantly to each other. Apparently, the respondent ratings in the second survey, on seven-point scales, reproduced the significant tendency toward mutuality observed in the first survey.

Table 6.3 Spearman rank correlations for the strength of the relationship between two concepts (A and B)

Correlation	A to B	B to A	A by B
A to B			
B to A	0.52*		
A by B	0.66**	0.55*	
B by A	0.55*	0.66**	0.68*

N of cases: 12 1-tailed Significance: * - .05 ** - .01 *** = -.001

A to B Average score on the item 'A is important in order to reach B' in the 1993 research
B to A Average score on the item 'B is important in order to reach A' in the 1993 research
A by B Average score on the item 'A is realized by means of B'
B by A Average score on the item 'B is realized by means of A'

Summarizing, the means-end relations both in the first and second survey show a tendency toward mutuality. If between two concepts a means-end relation exists in one direction, these concepts also tend to have a means-end relation in the opposite direction. That tendency is too large to be neglected.

6.1.3 The direction of asymmetric relationships

In the previous section, the reciprocity of means-end relations was investigated. The analyses showed a significant amount of mutuality in means-end relations. This does not necessarily imply that they do not have a direction. On average, respondents had 8.9 null relations, 8.7 mutual relations and 10.4 asymmetric relations (see appendix 6.1). In this section the cases where relations are not mutual will be dealt with. The question will be addressed as to what degree the asymmetric dyads point significantly into one direction, instead of cancelling on another out on group level.

The means-end relations can be viewed as binary variables which are asked twice to the same respondent. The second time the means and the end have been reversed. There are four ways respondents can react: they can mark a relation as non-existent twice (like 8 respondents did in Table 6.4), they can mark a relation as existent twice (like 19 respondents did in the cell to the bottom left in Table 6.4), and they can mark a relation as existent in one direction and not in the other, for either of the two possible directions of the relation (the upper left and lower right cells in Table 6.4). The interesting thing now is to test whether the number of respondents which recognizes a relation in one direction (the 19 respondents in the lower right cell in Table 6.4) is significantly different from the number of respondents recognizing the same relation only in the other direction (the 1 respondent in the top left cell in Table 6.4). The hypothesis will be tested to see whether the numbers in the shaded cells of Table 6.4 differ significantly from each other.

Table 6.4 McNemar test: an example of a contingency table

	satisfying the client is important in order to motivate people		
Motivating the people is important in order to satisfy the client		1	0
	0	1	8
	1	19	19

McNemar (1947) designed a test for binary variables where the two proportions are not independent. Since both directions of the relation were rated by the same respondent within the same questionnaire, the McNemar test is appropriate here. McNemar's χ^2 statistic only takes into account the asymmetric relations and disregards mutual or null relations. If means-end relations have no clear direction, the proportions in the upper left and lower right cells in Table 6.4 should be equal, except for random sampling fluctuations. The null-hypothesis of no substantial difference between these two cells implies that the difference between the top left cell and the bottom right cell must be zero unless sampling errors have been made.

For each version of the questionnaire, there were 8 x 7 / 2 = 28 combinations of concepts, where both directions of the same relation had been proposed to the same respondents. There were three versions, which brings the total of tests to be performed to 3 x 28 = 84. From all 84 pairs of concepts, the null hypothesis of no significant direction had to be rejected at 5 % level in 55 cases. Only in 29 cases could it be accepted (see appendix 6.1). The hypothesis that there is no direction in the means-end relations has to be rejected at the 5 % level. Apparently the direction of means-end relations is not negligible.

6.1.4 Means-end relations: mutual and asymmetric at the same time

So far an unambiguous answer cannot be given to the question of whether means-end relations are symmetrical or not. They show a significant tendency toward mutuality, while at the same time, for respondents treating the relation as asymmetric, they show a significant direction. It may be that means-end relations are subject to two forces, the first creating a perception of symmetry, and the second force creating a perception of direction. The question of the nature of means-end relations will be investigated further comparing them with other semantic relations.

6.2 Comparison of means-end relations with other semantic relations

6.2.1 Semantic alternatives to means-end relations

In this chapter a concept's 'semantic relations' are its associations with other concepts which provide it with meaning. Spradley (1979) included means-end relations in an overview of semantic relations. He based his work on earlier research by Casagrande and Hale (1967) who had inventoried the types of relations used to define words in the Papago language in southern Arizona. What something means to people depends on how they have connected it to all the other things they know (Minsky, 1986). Some authors call the structure of associations the definition of a concept. Howard (1977), for instance, writes: 'The total meaning of a brand is called its semantic structure'. Casagrande and Hale (1967) define a definition as 'a statement of semantic relationship between a concept being defined and one or more other concepts ...'.

Actions, goals and values might be defined in terms of their means-end relations. These are only one of the several kinds of relations listed by Spradley (1979). However, Minsky (1981) argues that definitions should include several kinds of specifications, the particulars of which can normally be assumed by default assignments. Minsky (1981) proposes explicitly representing pointers to the most serious problems and questions commonly associated with the concept being defined. Means-end relations are just one example of such pointers. The question is whether means-end relations sufficiently cover all associations between intentional actions to allow exclusive reliance on them. Then the use of the most central concepts for characterizing an organization's identity can go further than just mentioning the most frequently envisaged consequences of action: they will provide an efficient summary of what the organization can mean to stakeholders.

Empirical literature shows some evidence of a relatively stronger influence from goal-directed types of semantic relations. Barsalou (1989) discusses an experiment where some subjects were asked to produce average characteristics of a category's instances, and other subjects to produce ideal characteristics. He equated ideal characteristics with goal-derived categories. Stability was measured by computing the 'common element correlation', i.e. the number of properties common to two measurements divided by the geometric mean of the total properties in each. He found that goal-derived categories were slightly more stable across respondents than the common taxonomic categories (0.22 versus 0.18). Even for each individual respondent, this effect was found when the same experiment was performed twice: goal-derived categories showed a common element correlation of 0.45, common taxonomic categories a correlation of 0.41. Moss, Ostrin, Tyler and Marslen-Wilson (1995) performed priming experiments. They confronted respondents with word pairs, where these words were either associated or not, and where they had either or not a functional or script relation or not. An example of a functional relation is 'hammer-nail'; the function of a hammer is to knock nails. Moss et al. defined script relations as relations between on the one hand events and places and on the other hand scripts evoked by those places (e.g. restaurant - wine). They measured latency time between the hearing of a word and the respondent's pressing of a yes/no button. They found the shortest latency times when there existed an 'instrument-relation' or 'functional relation' between the words given to the respondent. Apparently, such functional relations reduce response latency times. They seem to favour the ease of association more than other types of semantic relations. So far, research in this stream has focused nearly exclusively on nouns, and hardly at all on relations between verbs and verb phrases, such as the means-end relation. The second survey was designed in order to make such a comparison.

This survey then can compare means-end relations with other semantic relations. The primary alternative at hand is the 'by' relation. This is a relation with applies to verbs and verb phrases. It has two conceptual differences with means-end relations: firstly, it seems to run in the opposite direction. If 'cleaning the windows is important to allow the people to look outside (in Figure 4.3), then you 'allow the people to look outside by cleaning the windows'. Secondly, 'by' relations need not link only actions which are necessarily intentional. In Goldman's (1970) example, chess player John frightens away a fly by moving his hand, without ever intending to do so (Figure 3.3). So means-end relations may represent a particular class of reversed by-relations. However, if the direction of a means-end relation is not as fixed as sometimes assumed - which was found in the previous section - and if the existence of an association is stronger than the direction of an association, then even a positive correlation between by-relations and means-end relations might be expected.

Goldman's critique of Anscombe's (1957) identity thesis points to a second semantic relation, with which means-end relations can be compared. That is the 'identity relation': '.. is the same as ...'. Anscombe (1957) gives the example of a man who moves his arm, operates a pump, replenishes the water supply and poisons the inhabitants. In her view, moving the arm up and down with his fingers round the pump handle is, under these circumstances, operating the pump, under these circumstances, replenishing the house water-supply; and, under these circumstances, poisoning the household (Anscombe, 1957, p. 45-46). Goldman calls this the 'identity thesis': the relation between the man's moving his hand, operating the pump, replenishing the water supply and poisoning the household is that of identity. Goldman applies Leibniz' criterion of indiscernibility of identicals to each of the descriptions

mentioned. If two acts are identical, they must have all properties in common. Operating the pump has the consequence of replenishing the water supply, but 'moving his hand' does not have the property of replenishing the water supply. Since one of these acts has a property which the other lacks, Goldman (1970) argues that they cannot be one and the same act. Implicit in this critique of Goldman is a different conceptualization of the 'identity relation': Goldman takes the 'by-relations' as features, and the identity-relation as a meta-relation concerning these features: two actions are identical if they have all by-relations in common.

Actually, Tversky's (1977) conceptualization of similarity relations is very similar to Goldman's (1970) conceptualization of identity relations. According to Tversky, similarity between two concepts is a function of the features that are common to both concepts and the features that one of them has but the other lacks. Similarity increases with the addition of common features or deletion of features that belong to one concept but not to the other. Tversky (1977) argues that similarity relations serve as an organizing principle by which people form concepts, classify them and make generalizations. 'Similarity' has been the semantic relation most extensively researched in marketing and psychology. It has led to a variety of research methods, such as Multidimensional Scaling, cluster analysis and additive tree methods (Tverksy and Hutchinson, 1986).

There are at least two ways in which means-end relations might cohere with identity and similarity relations: Firstly, they might be different wordings for the same kind of semantic association between different descriptions of the same intentional action, Secondly, similarity and identity relations between two concepts may express the matching of the means-end relations (and of instrumental relations) with which these two concepts are linked to all other concepts. In that case, the more means-end relations two concepts have to common goals or common means, the more they will be perceived similar or the same.

One may question how far away means-end relations are from similarity relations ('is similar to') and identity relations ('is the same as'). In the next section means-end relations will be compared with instrumental relations, similarity relations and identity relations. For this purpose, a second survey had been held among the employees of the automation company shown in Figure 4.6. Firstly, the design of that survey will be explained. Secondly, the relations will be compared to each other and, in particular, the asymmetry of means-end relations will be compared to the asymmetry of similarity relations.

6.2.2 Designing the second survey

Data about the alternative relations between concepts were gathered in a second survey, mentioned in section 5.3. That survey contained two kinds of questions: questions concerning respondent ratings on concept properties, and questions concerning the relations between these concepts. The concept properties rated by the respondents were 'importance', 'self-evidence', 'working-intensity', 'generality' and 'abstractness'. These have been dealt with already in section 5.3.

The number of relations asked for in the second survey had to be restricted further in comparison to the first survey because for each pair of concepts, all four kinds of relations had to be asked. Four main versions were created to avoid over lengthy questionnaires. Each version presented all four different relations. Relations were not asked for all 24 concepts involved in the first survey. Four focal concepts were chosen which were deemed sufficiently general to be recognized by all respondents, and which may still differ in their meaning to them: 'deliver quality', 'be professional', 'reach a good result' and 'solve problems'. Each of the four kinds of relations was proposed between these four concepts and with 16 other concepts[1]. Overview 6.2 shows an example of a page with relationship questions for the means-end relations between the concept of 'delivering quality' and the other concepts. The other three main concepts, which headed the pages in the different versions of the questionnaire have been printed bold in this overview. At the end of the questionnaire respondents were asked to fill out firstly which questions were easiest, which most pleasant and which clearest, and which secondly were most annoying, which most difficult and which most confusing.

The versions of the questionnaire were designed in such a way that each of the four focal concepts' relations to all other 19 concepts were asked in all four variations: as means-end relations ('is important in order to'), as instrumental relations ('is realized by'), as similarity relations ('resembles ...') and as identity relations ('is the same as'). Table 6.5 gives an overview of the contents of all the versions of the questionnaire. The survey was designed to achieve a maximal rotation of the relations and of the four main concepts across the different versions of the questionnaire. Each focal concept and each relation appeared only once in each of the four main versions. Each combination of focal concept and relation appeared exactly once in the survey. They were rotated in such a way that each relation and each main concept appeared at a different place in the questionnaire, exactly once as first, as second, as third and as fourth. Table 6.6 shows how each rank order number for page sequence in the questionnaire, and how each version number appears exactly once in each row and column of that overview matrix.

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[1] All concepts were adopted from the questionnaire of the first survey, where the complete pattern of relationships between those concepts had been asked for. In order to keep the length of the questionnaire within certain limits, 4 concepts were omitted: 'be asked for by the client', 'employee commitment', 'reach your goal' and 'focus on a market'.

Table 6.5 Questions and response per version in the second survey

VERSION 1.1	VERSION 1.2	VERSION 2.1	VERSION 2.2	VERSION 3.1	VERSION 3.2	VERSION 4.1	VERSION 4.2
How important do you think ..... ?	How intensively are you working on .... ?	How important do you think .... ?	How intensively are you working on ..... ?	How important do you think ..... ?	How intensively are you working on ..... ?	How abstract do you think ..... ?	How important do you think ..... ?
How abstract do you think ..... ?	How abstract do you think ..... ?	How abstract do you think .... ?	How abstract do you think .... ?	How general do you think .... ?	How general do you think .... ?	You solve problems by	You solve problems by .....
Being professional is important in order to	Being professional is important in order to	Reaching a good result is similar to	Reaching a good result is similar to	Delivering quality is the same as	Delivering quality is the same as	Delivering quality is similar to	Delivering quality is similar to .....
Reaching a good result is the same as	Reaching a good results is the same as	You are professional by	You are professional by	Solving problems is important in order to	Solving problems is important in order to	How general do you think ..... ?	How intensively are you working on .....?
You deliver quality by	You deliver quality by	Solving problems is the same as	Solving problems is the same as	Being professional is similar to	Being professional is similar to	Reaching a good result is important in order to	Reaching a good results is important in order to ....
Solving problems is similar to	Solving problems is similar to	Delivering quality is important in order to	Delivering quality is important in order to	You reach a good result by	You reach a good result by	Being professional is the same as	Being professional is the same as .....
How general do you think .... ?	How general do you think .... ?	How self-evident do you think .... ?	How self-evident do you think .... ?	How self-evident do you think ..... ?	How self-evident do you think ..... ?	How self-evident do you think ..... ?	How self-evident do you think ..... ?
Response: N = 20	Response: N = 16	Response: N = 19	Response: N = 21	Response: N = 22	Response: N = 19	Response: N = 8	Response: N = 18

In my job at XXX company, **DELIVERING QUALITY IS** important in order to:

1 = completely wrong, 2 = wrong, 3 = slightly wrong, 4 = not wrong, not right,
5 = slightly right, 6 = right, 7 = completely right

	COMPLETELY INCORRECT						COMPLETELY CORRECT
- motivate people	1	2	3	4	5	6	7
- **achieve a good result**	1	2	3	4	5	6	7
- enjoy your work	1	2	3	4	5	6	7
- **solve problems**	1	2	3	4	5	6	7
- satisfy the client	1	2	3	4	5	6	7
- recruit employees for a project internally	1	2	3	4	5	6	7
- simplify the information flow	1	2	3	4	5	6	7
- focus on a specific market	1	2	3	4	5	6	7
- be involved with your job	1	2	3	4	5	6	7
- stay in touch with your clients	1	2	3	4	5	6	7
- make a profit	1	2	3	4	5	6	7
- bring in orders	1	2	3	4	5	6	7
- be creative	1	2	3	4	5	6	7
- submit offers	1	2	3	4	5	6	7
- create togetherness	1	2	3	4	5	6	7
- **be professional**	1	2	3	4	5	6	7
- think in the long term	1	2	3	4	5	6	7
- deliver added value	1	2	3	4	5	6	7
- establish the problem	1	2	3	4	5	6	7

Overview **6.2** *Example of a page of the questionnaire of the second survey (bold concepts headed other questionnaire pages)*

In contrast with the pages asking for concept properties, the order of the different items on the page was kept constant across all four versions. The comparison of the relations with each other was the main purpose of the questionnaire. If there had already been any order effect, the relations can best be compared to each other if that order effect is the same for all relations.

Table 6.6 Rotation of relations, concepts and their order of appearance over the four versions of the questionnaire of the second survey

Concept heading the page (A-concept) -> kind of relation	achieve a good result	solve problems	be professional	deliver quality
means-end	version 4 *(3)*	version 3 *(2)*	version 1 *(1)*	version 2 *(4)*
instrumental	version 3 *(4)*	version 4 *(1)*	version 2 *(2)*	version 1 *(3)*
similarity	version 2 *(1)*	version 1 *(4)*	version 3 *(3)*	version 4 *(2)*
identity	version 1 *(2)*	version 2 *(3)*	version 4 *(4)*	version 3 *(1)*

The numbers in italics refer to the order of the respective page in the corresponding version of the questionnaire

Each version contained four pages with relationship questions, one page per relation. Additionally, each page was headed by another of the four main items. Thus, each version proposes one of the four kinds of relationships between the concept heading the page (which will be referred to as '*A*' in subsequent analyses) and in total 19 other concepts. The latter concepts will be referred to as '*B*' in subsequent analyses. This way, for each kind of relationship, in total 4 x 19 = 76 cases have been gathered.

The sequence of main concepts and relations in the questionnaire was balanced: for each succession of two main items and each succession of two relationships; another version contained a succession of the same items in the opposite order. If version 1, for instance, contained a page with means-end relations followed by a page with identity relations, then another version (version 2) contained a page were identity relations were followed by means-end relations. Similarly, if version 3 contained a page headed by 'delivering quality', followed by a page headed by 'solving problems', then, for instance, in version 4 the page headed by 'solving problems' was followed by a page headed by 'delivering quality'.

What can be investigated at this stage is the relation between means-end relations on the one hand and on the other the different kinds of semantic relations included into the second survey: instrumental relations, similarity relations, and identity relations.

6.2.3 Means-end relations, instrumental relations, identity relations and similarity relations

For all 19 concepts included into the second survey, means-end relations could be compared with instrumental relations, identity relations and similarity relations in the same direction: i.e. the relation 'delivering quality is important in order to bring in orders' could be compared to the relations 'delivering quality is done by bringing in orders', 'delivering quality is similar to bringing in orders' and to 'delivering quality is the same as bringing in orders'. Average scores were computed for all relations included in the survey. Table 6.7 shows the rank order correlations between these averages.

Table 6.7 Spearman rank correlations for all measures of relationships between constructs

Relations:	A to B	A by B	A sim B	A is B	feature matching (Euclidian distances)*
A to B	-				
A by B	0.77	-			
A sim B	0.82	0.90	-		
A is B	0.85	0.89	0.94	-	
feature matching (Euclidian distances)*	-0.83	-0.77	-0.79	-0.80	-

A to B:	A is important in order to realize B	Means-end relation
A by B:	you realize A by doing B	Instrumental relation
A sim B:	A is similar to B	Similarity relation
A is B:	A is the same as B	Identity relation

* 'feature matching' refers to Tversky's (1977) conceptualization of similarity and Goldman's (1970) implicit conceptualization of identity relations. In network terms, it implies structural equivalence (Burt, 1976) in the network of means-end relations from the first survey.

All correlations are significant at 1 ‰ level. N = 76.

The rank order correlation between AtoB and AbyB in Table 6.7 is 0.77, whereas in Table 6.3 this correlation is 0.66. This higher correlation may be explained by the much larger variation in the target ('B') concept. The 'A' concepts in both analyses are the same four concepts. All relations in Table 6.7 correlate significantly with each other. Means-end relations correlate highest with identity relations and also very highly with similarity relations. Intuitively, instrumental relations should be the reverse of means-end relations. However, the significant rank correlation with instrumental relations of 0.77 points to a possible dominance of the *existence* of a (means-end) relation over the *direction* of a (means-end) relation.

As a next step, the conceptualization of similarity and identity relations as meta-relations of means-end relations was worked out into a variable called 'feature matching'(Table 6.7). Since Tversky's conceptualization of similarity requires a matching of the complete set of features of concepts, the most complete implication matrix was taken: the group level implication matrix which was the result of the first survey. The numbers in that first matrix represented the proportion of respondents agreeing with the existence of that relation.

Matching of all features requires matching of all means-end relations where the investigated concepts serve as goals, and of all means-end relations where the investigated concepts serve as means. This implies, that both the columns and the rows corresponding to these concepts have to be taken into account. The match can be established in several ways: the Euclidian distance between the rows and columns corresponding to the two concepts can be computed, their correlations can be calculated or the exact number of matches can be counted. At group level, however, this last algorithm is suffers too much from minimal variations. Correlations may seem appealing, but they rather reflect similarity in the pattern of agreements than agreement per se: if both concepts have the same pattern of agreements, but for one concept the ratings remain predominantly in 'disagreement' with the existence of a relationship, and for the other concept they remain on the 'agreement' side, correlations will still be very high. The Euclidian distance does not suffer from this drawback, and therefore it was chosen. In order to calculate the distance, the differences between the row and column cells corresponding to each pair of concepts were computed, squared and divided by the total number of cells in involved in the comparison. This method of calculating interconcept distance is similar to the method used in metric Multidimensional Scaling: Let x_{ik} be the value of the relation from concept i to another concept k. The Euclidian distance between concepts i and j is the difference between the relations of either of these two concepts with all other concepts k:

$$d_{ij}=\sqrt{\sum_{k=1}^{n}[(x_{ik}-x_{jk})^2+(x_{ki}-x_{kj})^2)]}$$

for $i \neq k$ *and* $j \neq k$ (Wasserman and Faust, 1994). In terms of network analysis, this interconcept distance is usually referred to as 'structural equivalence' (Burt, 1976). Distances were computed using UCINET IV (Borgatti et al., 1992).

Table 6.7 shows that all four direct measures of relation correlate strongly and significantly with the 'feature matching' measure, with little difference among the four types of relation. The negative sign appears because Euclidian in distances, the smaller the distance, the larger the similarity. The rank order correlation of -0.79 between similarity and the feature matching measure supports the idea that means-end relations can be seen as defining features of similarity. Means-end relations themselves showed a correlation of -0.83 with the feature matching measure (Table 6.7). They seem to correspond even marginally better to Tversky's definition of 'similarity relations' than the similarity relations themselves. In the end, the difference between the kinds of relation does not seem substantial. All four kinds of semantic relations might be different phrasings of one underlying principle of association. The means-end relation is just one form in which this underlying association can appear - but it does not seem to be much more than just a basic semantic relation.

Comparing the (as)symmetry of similarity relations with the (as)symmetry of means-end relations

The tendency toward symmetry which has been observed in means-end relations is reminiscent of the intuitive symmetry sometimes ascribed to similarity relations (cf. Tversky, 1977) and identity relations (cf. Goldman, 1970). If means-end relations are indeed so close to similarity relations, the ambivalence of means-end relations (having a significant direction and a significant tendency toward mutuality at the same time) may be the same phenomenon observed more often in the literature concerning similarity relations (Tversky, 1977; Gleitman et al., 1996). This section will address the question of whether means-end relations and similarity relations are comparable in their behaviour as semantic relations.

Tversky (1977) noted, that although similarity relations were intuitively felt to be symmetric, in empirical research they turned out to be surprisingly asymmetric. Tversky (1977) had asked respondents to rate the degree to which two concepts were similar, and had asked the same question to two different groups of people, reversing the order of the concepts. It turned out that the order of presenting the subjects made a systematic difference in the degree to which they were judged similar, e.g., when respondents were asked to express the degree to which North Korea was similar to Red China they answered differently than if they were asked to express to what degree Red China was similar to North Korea. The rating of similarity was higher when the more prominent country appeared second, as in 'North Korea is similar to Red China' than when it appeared first, as in 'Red China is similar to North Korea'.

With means-end relations something analogous to similarity relations is happening: although they are intuitively felt to be asymmetric, or as others put it, 'hierarchical' (cf. Reynolds and Gutman, 1988), empirically they have turned out to be surprisingly symmetric. The question to be answered now is, whether the 'symmetric' similarity relations really show a type of behaviour which is different from the 'asymmetric' means-end relations. In other words: is the degree of asymmetry of means-end relations comparable to the asymmetry of similarity relations?

The second survey offered empirical data to address this question. The same concepts could be used, which have been used in section 6.1.2 to assess the significance of the direction of means-end relations. $1*2*3*4/(1*2*1*2) = 6$ combinations of concepts were available, where the asymmetry in scores could be computed (Table 6.2). Because relations and their opposite were never included within the same version of the questionnaire, the absolute differences between average scores could be computed only at group level. Therefore, the following computations are based on the six group averages. This may result in higher correlations than would have resulted from individual measures. The average asymmetry was calculated as follows:

$$asymmetry_{means\text{-}ends} = |avg(AB) - avg(BA)|$$

$$asymmetry_{similarity} = |avg(AB) - avg(BA)|$$

The rank order correlation between the degree of asymmetry of means-end relations and similarity relations was fairly high: 0.6, and just failed to be significant at 10 % level (N = 6). A t-test revealed no significant difference between on the one hand the average asymmetry of means-end relations and on the other hand the average asymmetry of similarity relations ($p = 0.644$). A t-test could be run, because a Kolmogorov-Smirnov (Smirnov, 1948) test of normality gave no reason to assume that the distribution of either the average asymmetry of means-end relations or the average asymmetry of similarity relations would differ significantly from the normal distribution ($p = 0.71$ resp. $p = 0.992$).

Summarizing, the data do not show a substantial difference in degree of (a)symmetry between means-end relations and similarity relations. Means-ends relations indeed seem to be somewhat equivalent to similarity relations. Whereas with similarity relations it seems obvious, intuitively, that they are symmetric, they turn out to be surprisingly asymmetric. Intuitively, means-end relations appear to be asymmetric, but upon closer investigation they turn out to be surprisingly symmetric. In the end, the degree of asymmetry of both kind of relations may not differ fundamentally.

If the semantic relations are indeed manifestations of one underlying association principle, and if they indeed have a tendency toward mutuality, as was found in section 6.1, then the direction which is intuitively so apparent in means-end relations must be provided by something other than the relation itself. The next section will address this question, exploring the data collected in the first and second survey.

6.2.4 Exploring the relation between relation strength and respondent ratings of means- and end concepts

Table 6.8 Spearman rank correlations for measures of relations and concept properties

Relations:	A to B	A by B	A sim B	A is B	importance of B	self-evidence of B	working intensity on B	importance of A	self-evidence of A
A to B	-								
A by B	0.77**	-							
A sim B	0.82**	0.90**	-						
A is B	0.85**	0.85**	0.94**	-					
importance of B	0.85**	0.82**	0.80**	0.81**	-				
self-evidence of B	0.82**	0.87**	0.86**	0.85**	0.94**	-			
working intensity on B	0.79**	0.84**	0.80**	0.79**	0.96**	0.95**	-		
importance of A	0.19	0.11	0.15	0.12	-0.02	-0.02	-0.02	-	
self-evidence of A	0.22	0.08	0.20	0.18	-0.02	-0.02	-0.02	0.80**	-
working intensity on A	0.21	0.18	0.15	0.15	-0.02	-0.02	-0.02	0.80**	0.40**

A to B:	A is important in order to realize B	Means-end relation
A by B:	*you realize A by doing B*	*Instrumental relation*
A sim B:	A is similar to B	Similarity relation
A is B:	A is the same as B	Identity relation

** correlations are significant at 1 ‰ level. N = 76.

This section will investigate what pattern may underlie the direction and strength of means-end relations and the respondents' ratings of concept properties. After a brief inspection of the correlation matrix of the relationship data with the respondent ratings on concept properties (Table 6.8), exploratory factor analysis will be applied to both the data of the first and the second survey.

The convergence between the four different kinds of semantic relations is high. The possible dominance of the existence of a relation over its direction suggests that its direction may depend upon other factors. The first explanation at hand is the very laddering question: 'Why is that important to you?' lying at the basis of the data collection. The analyses in chapter 5 showed that importance closely coheres with the degree to which employees think goals and values are self-evident and the degree to which they report that they are working on these actions, goals and values. Table 6.8 shows that indeed importance scores of the 'B' concept of a relation do indeed correlate highly with its strength, as do self-evidence and working intensity of the 'B' concept. Scores on the 'A'-concepts seem practically independent from relation strength.

Exploratory factor analysis was applied on the respondents' average scores on all four kinds of relationships and their average scores for the importance, self-evidence and their working intensity on the concepts involved. The scree plot shown in Figure 6.2 shows a twist after the second factor. The rotated factor solution (Table 6.9) shows two factors. The first factor, explaining 62 % of variance, covers simultaneously all the four relations and the degree to which the respondents think the 'B' concept important, self-evident, and the degree to which they report they are working on those items. The second factor, explaining 29 % of the variance, is virtually completely linked to the importance, self-evidence and working intensity of the 'A'-concept (Table 6.9).

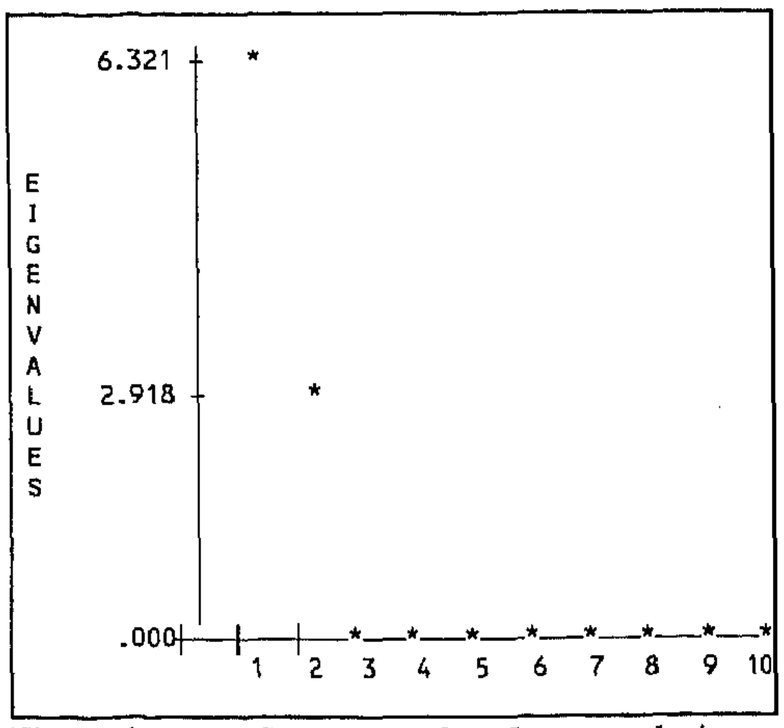


Figure 6.2 Scree plot for factor analysis on relation strength and validation items in the second survey

This analysis suggests, that the strength of a semantic relation coheres primarily with the importance, self-evidence and intensity of working on the 'B' concept.

Table 6.9 Factor solution for second survey

FACTOR	I	II
Importance B	.96101	-.08284
Self-evidence B	.97399	-.07664
Working-intensity B	.95051	-.08390
Importance A	.03910	.95610
Self-evidence A	.07152	.98723
Working intensity A	.06971	.98795
Strength Means-end relation	.89499	.24062
Strength Instrumental relation	.94540	.07816
Strength Similarity relation	.93128	.19924
Strength Identity relation	.92616	.20981

The same factor analysis was performed on the data of the first survey. There all concepts had performed equally often as ends and as means in means-end relations.

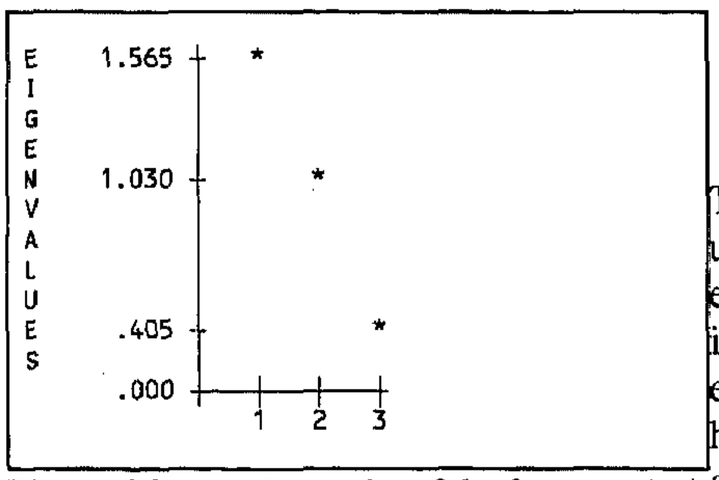


Figure 6.3 Scree plot of the factor analysis for the first survey

Three items have been gathered which can be used here for analysis: the existence of a means-end relation as a binary variable, and the importance ratings of both the means- and the ends concept. The input for the factor analysis has been the average agreement with the suggested means-end relations and the average scores given on the importance of both the end and the means concept. Basically, the same structure appears as in Table 6.9. One factor, explaining 52 % of the variance, loads heavily on both the degree to which respondents agree with the existence of a means-end relationship and with the importance of the 'B' concept. The other factor, explaining 34 % of the variance, loads heavily on the 'A'-concept (Table 6.10).

Table 6.10 Factor solution to the results of the first survey

FACTOR	I	II
Means-end relation from A to B	.85586	.26673
Importance A	.03505	.98173
Importance B	.89562	-.15713

Basically, the two factor analyses show the same structure in the results of both the first and the second survey. There is one main factor, explaining simultaneously the strength or existence of the means-end relationship and the importance of the goal concept, and a second, weaker, factor, which coheres with the importance of the means-concept.

By now, an idea may be formed about the two forces identified at the end of section 6.2 to which means-end relations may be subject. The low distinction between different directions of the same relation (Table 6.3) and between intuitively opposite forms of relation between the same concepts as instrumental and means-end relations (Table 6.7) suggest that the force striving for symmetry might be the pure semantic relation between two concepts which might not have a real direction in itself. The high convergence between the strength of a relationship and in particular the importance of the 'B' concept (Table 6.9, Table 6.10) suggest that the force striving for a direction might be the respondents' involvement in the 'B' concept of the relation. This idea will be further developed in the next section.

6.3 The figure-ground dichotomy as explanation for the behaviour of means-end relations

Gleitman et al. (1996) looked for a linguistic explanation for Tversky's (1977) finding that respondents' rating of similarity was higher when the more prominent concept appeared second in a phrase, as in 'North Korea is similar to Red China', than when it appeared first, as in 'Red China is similar to North Korea'. Gleitman et al. argue that in such a phrase, whichever entity occurs in the non-subject position becomes the prototype. The non-subject position corresponds to the position of the 'A'-concept in the first and second survey (e.g. Table 6.8). They consider the stronger similarity rating for the phrase 'North Korea is similar to Red China' over 'Red China is similar to North Korea' as a judgment of which similarity comparison would refer to a more common state of affairs in the world.

In such comparisons, there is a distinction of two roles, which Talmy (1978) characterizes as 'Figure' and as 'Ground'. Talmy defines 'Figure' as a moving or conceptually movable point whose path or site is conceived as a variable, the particular value of which is the focus of attention, and he defines 'Ground' as: 'A reference point, having a stationary setting within a reference frame, with respect to which the figure's path or site receives characterization'. The ground serves as the reference point to characterize the figure's location. In such comparisons, the ground is in the more stable role, as a reference point. The other concept is taken to have a variability whose particular value is at stake. After a whole series of experiments, Gleitman et al. argue that similarity relations and many other semantic relations are in themselves symmetrical, but that the figure-ground distinction among the concepts involved makes them asymmetric. Something similar might have happened in the data of the second survey: the factor explaining 62 % of variance is directly linked to the importance of the goal concept of a means-end relation (Table 6.9).

Conceptually, means-end relations are interpretable as a direct coupling of figures to their ground. The laddering question 'why is that important to you?' is a direct search for the 'ground' behind a goal or action as 'figure'. The findings of Gleitman et al. may the more easily be applied to means-end relations if the behaviour of means-end relations is not too different from the behaviour of similarity relations. The ground is the reference point which legitimates the figure and which provides the figure with meaning. At the organizational level, the concepts most central in the network of means-end relations might provide the most stable ground. They form the most central goals steering the organization members' actions. They apply in most goal contexts, and are served by most employees' actions. As shown in Table 5.12, they also tend to be most stable over time. If the figure-ground distinction is indeed the primary determinant of a relation's direction, then the degree to which a relation is asymmetric should depend upon the degree to which one concept is more apt to fulfil the role of 'ground' than the other, i.e., at group level, there should be a correlation between the direction of a relation and the centralities of the 'means' and the 'end' concept. The combination of significant symmetry and asymmetry observed in section 6.1 and 6.2 may be explained with Talmy's (1978) figure-ground distinction, in combination with the interpretation of means-end relations as basically symmetrical semantic relations. The degree to which either of the two concepts is well established as a ground may be the primary determinant of the direction of the relation. This degree may depend upon that concept's centrality in the network of means-end relations of the organization members' actions, goals and values. This hypothesis will be investigated further in the next section.

6.3.1 The application of the figure-ground distinction to means-end relations

Whether a concept appears in the subject or object position of a question determines, whether respondents will interpret it as the figure or the ground. The questions for the relationships between the concepts can equally be interpreted as questions suggesting different grounds to the figures which are in the subject position in the question. Seen from this perspective, a respondent will give the suggested relationship a stronger rating if he recognizes the proposed ground as the appropriate ground associated with the particular figure (Gleitman et al., 1996). In retrospective, this helps interpret the results of the exploratory factor analyses (Table 6.9 and Table 6.10). For four different figures, the questionnaire proposes all concepts in the ground role. If the respondent recognizes the proposed ground role as appropriate, he appears to rate the relations as more correct than if he does not recognize the ground role, i.e., if in his own experience a concept has acquired the status of 'ground', average ratings on the relationships will be high, and otherwise they will be lower. This may explain the high correlation between relationship strength and the scores on importance, self-evidence and working-intensity.

Centrality in the means-end structure as a primary determinant of the direction of a means-end relation

If the figure-ground distinction influences the direction of means-end relations, the means-end relation from the 'figure' concept to the 'ground' concept should be stronger than the means-end relation from the 'ground' concept to the 'figure' concept. Furthermore, if centrality in the network of means-end relations is indeed a good cue as to whether a concept is likely to assume the role of 'ground', then the concept which assumes the role of the ground should have the largest centrality, and the concept which is rather the 'figure' should have the smallest centrality. This implies that difference in strength between the means-end relations from concept *i* to concept *j* and the means-end relation from concept *j* to concept *i* should correlate with the difference between the centrality of concept *j* and of concept *i*.

In the same way as in the last analysis, six data points from the second survey were available for analysis: the 6 combinations of relations between concepts (Table 6.2). Rank order correlations were calculated between the difference of strength of means-end relations in both directions and the difference in centrality of the 'B'- concepts of both relations. The rank order correlation was 0.54, ($p = 0.13$), both for degree and information centrality. The stronger means-end relation is directed to the concept with the larger centrality. A limitation of this analysis is, that only six relations were available for calculations. The same analysis was done on the data from the first survey. In the first survey, the cue to the strength of a relation in one direction over the other was the number of respondents agreeing with the relation in one direction and not in the other. For instance, for the relation between 'motivating people' and 'satisfying the client', these are the numbers in the shaded cells in Table 6.4. The rank order correlation was calculated between the difference between the number of respondents agreeing with a relation in the direction of concepts *i* only and the number of respondents agreeing with a relation in the direction of concept *j* only, and on the other hand the difference in centrality between concept *j* and *i*. This rank order correlation was 0.46 for degree centrality and 0.44 for information centrality. Both correlations were significant at 1 ‰ level. The direction of means-end relations at organizational level does indeed tend to be towards the most central concept.

Further evidence for the role of most central concepts as 'ground' in a means-end network

If a concept fulfils the role of 'ground', it should have higher ratings on the 'generality' dimension than if it fulfils more the role of a 'figure'. For 'grounds' have a much broader area of application - otherwise they would not be the ground in that specific relation. In the second survey two further measures have been gathered which might shed light on the role of more central concepts like grounds. Respondents had to rate on a seven-point semantic differential scale whether they thought each of the 23 concepts included in the survey more specific to their own job or more generally applicable. Similarly, they had to rate the degree to which they thought concepts more concrete or abstract on a seven-point scale. For the 'concrete-abstract' dimension, a higher score on 'concreteness' may be expected (cf. section 5.3). If means-end relations are the semantic relations which define concepts (cf. Casagrande and Hale, 1967; Spradley, 1979), concepts high in centrality are concepts rich in meaning. Then, in the respondent's perception, they should be well defined, and therefore fairly concrete. This implies, that the more central a concept is, the more concrete it should be in the eyes of the people using it in their daily life. A concept's concreteness turned out to correlate 0.56 with a concept's degree centrality and 0.54 with its information centrality, based on the quantitative survey (Table 5.13). These correlations were significant at 1 % level. A concept's generality correlated 0.63 with a concept's degree centrality, significant at 1 ‰ level, and 0.53 with a concept's information centrality, significant at 1 % level (Table 5.11). These results support the hypothesis, that centrality in the means-end structure provides concepts with a certain 'ground' status. A concept's centrality in its network of semantic relations appears to be readily interpretable as an operational measure of its 'ground status'.

6.3.2 Implications for means-end analysis

In section 3.3, the concept of 'generative grammar' was borrowed from linguistics as an analogy of what might happen in organizations. After the analyses in the subsequent three chapters, the linguistic aspect of means-end analysis may have become more evident.

The findings in this chapter can be well explained by conceptualizing means-end relations as basically undirected semantic associations between verbs of intentional action and applying Talmy's (1978) figure-ground dichotomy to the verbs involved in these semantic associations. The significant tendency toward mutuality, which was found in section 6.1, can be explained by the basically undirected nature of these associations. This ground-status is approached empirically by the number of relations they have to all other actions. The significant direction of means-end relations, found in section 6.1.3, can be explained by the difference in ground-status of the actions involved. This notion was supported by the significant correlation of 0.44 between number of respondents agreeing with a relation between two concepts and the difference in degree centrality between those concepts, found in section 6.3.1. This implies that the hierarchy in means-end relations is mainly a hierarchy in ground-status. The perception of a hierarchy arises as soon as the most accessible actions do not correspond to the most central actions and if the network structure among those actions is used to find them. The laddering interviews do that by asking continuously for a concept's implication. A similar effect can be found in social network sampling. Spreen and Zwaagstra (1994)

sampled cocaine users in the Rotterdam area. They asked some users to mention other users they knew personally. Even though the relation 'know personally' is basically a symmetrical relation, a hierarchy emerged. This hierarchy is partly the effect of different centralities, partly of the research procedure.

First consider the effect of centrality. People more central in the network have a higher probability of being mentioned by someone else simply because they have more relations in that network. If Peter knows three people, and Peter is asked to mention one of them, the probability of Peter mentioning Jimmy randomly is 0.33. If Peter mentions Jimmy, and Jimmy knows ten other people and is asked to mention only one, the probability of Jimmy mentioning Peter is 0.1. So there is a greater probability of Peter mentioning Jimmy than the other way around. Following this line of reasoning, Tversky's (1977) asymmetry between 'Red China is similar to North Korea' and 'North Korea is similar to Red China' can also be explained. Respondents may know more countries to which Red China has bears resemblance than countries to which North Korea might bear some resemblance. In this sense the relation seems asymmetric, even if in the relations 'know each other personally' and 'is similar to' are symmetric. This explains why a convergence in hierarchy level and centrality can be expected (as was found in Table 4.5). This phenomenon may also explain the differential accessibility of further symmetric semantic relations as described by Collins and Loftus (1975).

If the hierarchy of means-end relations and their direction is mainly due to differences in centrality of concepts, while the relations themselves are basically symmetrical, the symmetrization of the implication matrix which was carried out when calculating degree and information centrality to some degree matches the semantic processes in the heads of the employees. Still it would be interesting in future to develop calculation algorithms able to deal with directed relationships to see whether the results are really different. The high correlations between the validation items and centrality measures (Table 5.10) suggest that the improvement in performance of the centrality measures may only be moderate.

The second explanation of the hierarchical character of many means-end structures can be found by looking at the method of research. Consider again the network research carried out among people who know each other. If Peter mentions Jimmy, and we ask Jimmy to mention other people in the network, while he knows we have been sent to him by Peter, Jimmy will be likely to mention one of the nine other people he knows, and not Peter. This way, hierarchical chains arise as a research artifact. Similarly, the laddering question 'why is that important to you' asks for something new, something not mentioned earlier in the chain. If that chain of relations is continued, the perception of a larger hierarchy arises. This hierarchy as such is too much a research artifact to fixate on. A concept's centrality is the more interesting phenomenon.

6.4 Implications for the measurement of corporate identity

The investigation of the language in which organization employees describe their everyday activities seems to be a powerful tool for unveiling an organization's identity. In the end, 'corporate identity' turns out to be a concept closely related to the language used in the organization. In fact, it is defined by the employees' language, albeit in a subconscious fashion. Concepts which are central in the network of means-end relations seem to fulfil a role which Talmy (1978) calls 'ground', in comparison to which the less central concepts are the 'figures'. The ground is the stable background in reference to which the figures are determined. Central concepts seem to be anchored firmly in their network of means-end relations. 'Anchored' can be interpreted nearly literally: its means-end relations with other concepts are its anchor cables which provide it with stability.

Centrality implies having multiple means and ends. Concepts which assume the role of the common 'ground' in an organization are the concepts which appear across different contexts. The method of identity measurement presented in this dissertation has made explicit the goals in those different contexts, and the means involved in reaching these goals. Information becomes context-independent after it has been incorporated into a concept on numerous occasions (Barsalou, 1989). The appearance across different contexts of the more central actions, goals and values implies the sameness across situations and interaction patterns required for attribution to the organization (cf. overview 3.3). They are also the most stable over time (Table 5.12). Means-end relations have been the focal relation of this dissertation. The high convergence of means-end relations and other kinds of relationships (Table 6.7) suggests that relations other than means-end relations may do the job equally well. This would be an interesting question to investigate in a quantitative survey. But in qualitative interviews, questions like 'what is similar to that' or 'could you give a synonym for that' have definitely less power to break through into the self-evident than the stubborn requirement for legitimation embodied in the question 'why is that important to you' (cf. Garfinkel, 1967). Such provocation is needed to break through into the area of the self-evident, and to grasp an organization's 'generative grammar' (cf. Weber, 1985).

The research process shows an analogy with learning a language. In the absence of a readily available textbook learning a language starts with observable phenomena (cf. Quine, 1980). Visual and/or tactile cues are associated with verbal utterances. Repetitive confrontation with such combinations creates a sense that the sounds uttered at the appearance of a certain visual or tactile cue stand for that cue. Later, on the basis of the words associated with the observable phenomena, other words are learned. In retrospect, the laddering interviews proceed exactly the same way. First the interviewer has to make sure that the interviewees describe their activities so concretely, that they could imitate them (cf. section 4.2.1). Only then can the constantly repeated question 'why is that important to you' be posed (see overview 4.1).

Of course the longer the time span available for investigating an organization's identity, the less such a provocative technique is needed, although then the self-evident may remain implicit forever. In essence, the idea of 'ground' is simple: it forms the background expectancies which guide people's behaviour (cf. Weber, 1985). They have become 'ground' during socialization appearing time and again in different goal contexts and as goals to different actions in the same organization. This appearance in different goal contexts, and as

a goal to different means is embodied in the notion of 'centrality'. The learning of the organization's language may be learning by explanation, but it may be learning by repetitive confrontation repetition across different contexts as well. Especially very self-evident goals and values may have been learned after enduring confrontation.

The use of means-end analysis may be a faster medium than participation in the organization to reach the same or similar results. The use of laddering interviews seems to be a relatively fast and efficient way of uncovering what may be the core of an organization's identity, its 'generative grammar', with only a limited number of interviews. The deficiencies of the small sample and the incomplete pattern of relationships can easily be repaired with the use of a quantitative follow-up survey, as explained in chapter 5. In the end, means-end analysis seems a powerful tool to uncover the core of an organization's identity. The next chapter will discuss its applications in organization science.

CHAPTER 7 EVALUATION AND CONCLUSIONS

In this chapter, the measurement method developed and validated in this dissertation is reviewed. Section 7.1 will discuss its nature. In particular it is compared to the related concept of 'corporate culture'. Section 7.2 explains how the measurement results can be applied to corporate communication. They serve as a basis for both external communication and design. The measurement can also help diagnose problems in the existing corporate identity, and a plan of action can be based on the measurement results. Section 7.3 addresses the situation of multiple coexisting identities, as they appear in diversified organizations and in separate organizations before they merge. Section 7.4 concludes the dissertation with the addition of some final remarks.

7.1 Reflection on the conceptualization of corporate identity

7.1.1 Nature of the concept and measurement instrument developed

In this dissertation a conceptualization and a measurement method have been developed for establishing the corporate identity of an organization. Corporate identity has been defined as 'the whole of an organization's actions, as far as these actions satisfy the criteria of sameness across situations and interaction partners, continuity over time and specificity to the organization' (overview 3.4). Operationally this implies that an organization's corporate identity consists of those elements in the means-end pattern of organization members' intentional behaviour which occupy a central position in this pattern (overview 3.5). The method of measuring an organization's identity consists of three steps. First, laddering interviews are held among an organization's employees to reveal the goals, actions and values which play a role in the way they perform their jobs. Next, these goals, actions and values form the input to a survey, in which the complete means-end structure between them is established. As a third step, the centrality of each of the concepts in the structure is calculated (cf. overview 5.4). The actions, goals and values which have the highest information centrality in the network derived from the survey results best describe the corporate identity of the organization. In contrast to earlier attempts to uncover the core of the organization's identity (cf. the discussion in chapter 2), this measurement approach is highly formalized, without sacrificing the openness of the more qualitative methods. The steps towards the measurement results are intersubjectively retraceable and controllable. There is no need to rely heavily upon the gut-feelings and intuitions of one or a few consultants. The instrument provides a relatively fast and efficient way to uncover the organization's generative grammar: the core of actions, goals and values which influence the whole of what organization members do (cf. Weber, 1985). This core is defined in the terms which the employees use themselves. The central concepts provide the stable background, to which the more concrete, observable behaviour is related.

The measurement method well satisfies the criteria formulated by Albert and Whetten (1985). It detects the elements of central character in an organization's identity (Table 5.10). The instrument also meets Albert and Whetten's criterion of temporal continuity because the more central elements also tend to be more continuous over time (Table 5.12). The openness of the laddering interviews ensures that the measurement procedure is sensitive to elements which might be unique to the organization. The instrument shares this openness with some of the qualitative methods listed in Table 2.2: Balmer's (1995) affinity audit, Bernstein's

(1986) Cobweb method and Weber's (1985) method of understanding reconstruction. The strength of this instrument in comparison to other open methods is, that this instrument offers a cue to the degree to which each element can be distinctive for the organization as a whole. The most central elements also turn out to apply more generally to the entire organization (Table 5.11). Therefore, the potential of the instrument to capture distinctive characteristics is high, but it is not yet possible to establish with the measurement of one organization alone whether the elements found are unique to the organization investigated. To establish this, a comparison with other organizations would be needed. In the long term an interesting option would be to construct a database with the results of measured organizations, so that they can be compared to one another.

The identity of an organization at a certain moment in time is the result of past processes. Organizational identity emerges from the ongoing interaction between organization members, including managers at all levels (Hatch and Schultz, 1997, p. 358). Some elements may have come about via top management initiative, others via initiatives on the shop floor. The measurement instrument developed in this dissertation does not distinguish between formal and informal elements. It is able to capture both top down as well as bottom-up influences. For instance, Figure 4.3 shows both the concept of 'being a good host', introduced two years earlier by management, and the concept of 'doing some extra guiding', which was done by the captains steering the boat, on their own initiative. Managers of the organization only knew that this happened when they saw the research results in Figure 4.3. The means-end structure of intentional action represents the organization's identity at a certain moment. This is a typical feature of goal structures: they are static snapshots of goal systems (Austin and Vancouver, 1996). The means-ends structure is like the photograph of a moving organism. It gives cues as to what elements are more stable in the ongoing interaction between organization members and what elements are more prone to change. Chapter five highlighted how the centrality of a concept serves as a cue to its resistance to change (Table 5.12). The central elements in the network of means-end chains are actions, goals, and values, attributable to the organization. An important strength of the measurement instrument is that it retains the whole structure of meaning attached to the central goals. It conserves the whole network of means-end relations from which these most central elements have been derived. The network remains accessible for in-depth analysis of more specific problems. Thus the measurement instrument developed in chapter four has the potential to summarize an organization's identity in a few to-the-point values, while at the same time maintaining the ability to retrace what these mean in terms of concretely observable behaviour. This makes the measurement a powerful tool based on which an organization's identity can be communicated and, if necessary, based on which the organization's identity can be adapted to improve the organization's image and position in its environment.

The instrument combines conciseness with depth of analysis. Chapter 5 and 6 have underpinned the validity of those most central elements as apt descriptions. Focusing on the most central goals allows for very concise summaries. The selection of the most central elements is a way of summarizing measurement results which are already relatively concise in themselves. Simon (1994) explains how goals determine what features of the environment become salient and how deactivating a goal causes those features to recede into the background. This makes a measurement instrument focusing on goals much more concise than other ways of investigating with organizational culture. Section 7.1.2 will deal with the difference between the concepts of organizational culture and organizational identity.

Corporate identity as operationalized in this dissertation deals with intentional human actions. These actions have been defined in terms of their means-end relations to other actions. No explicit attention is paid to factors other than intentional actions and the relations between them. In this sense, the concept of corporate identity developed here is narrower than many conceptualizations of corporate culture. The relation between corporate identity and corporate culture has already been discussed in section 2.3.2 before the development of the conceptualization and measurement instrument. With these in hand, a sharper difference between corporate identity and culture can be identified. In this section, first the relation between intentional actions and their context will be discussed, and next, the difference between the concepts of corporate identity and corporate culture. Finally, this section will discuss an important strength of the measurement model presented here: its combination of conciseness and depth.

7.1.2 The focus on intentional action as the distinguishing feature of the concept of corporate identity

The measurement method focuses on intentional action. It does not take into account what is not attributable to organizational actors. This does not imply that assumptions about external circumstances do not play a role. Many goals in people's means-end structure are not continuously active. However, a goal that is considered important attracts attention to objects and events relevant to that goal (Simon, 1994). Goals lying in wait below the level of consciousness are activated when either their self-evident fulfilment is threatened or when the context offers an excellent opportunity to reach them. An example of the former situation is the line from 'window ventilation' via 'windows do not steam up' to 'be able to look outside' in Figure 4.3. There are two circumstances under which this chain is relevant: either when it is raining outside, or when inside the boat a warm buffet is being served. In the case of the latter, the windows close to the buffet steam up heavily. When these circumstances do not arise, there is no need to prevent the windows from steaming up, because the otherwise self-evident goal of 'to be able to look outside' is not threatened. The more frequently certain circumstances occur, the more the goals and values which they trigger are likely to appear in the means-end structure of organization members' actions. The same can be said regarding the circumstances under which means-end relations are valid. For instance, in the same example in Figure 4.3 the relationship between window ventilation and preventing the windows from steaming up can be hampered by the combination of a warm buffet and heavy rainfall outside. Under such circumstances the means-end relation between switching on the window ventilation and preventing the windows from steaming up is no longer valid: despite of the window ventilation, it is no longer possible to get the windows clear. But, apparently, such circumstances occur so seldom that employees believe in the relation between 'window ventilation' and 'the windows do not steam up'. The most frequently occurring circumstances have become the default context in which the employees' cognitive structure is valid (Barsalou, 1989). The measurement designed here does not address such circumstances explicitly. Only what employees in the organization itself do is relevant. Herein the conceptualization of corporate identity developed in this dissertation differs from many approaches to corporate culture, which explicitly include background expectancies. This is also an advantage of the approach presented here: its relative conciseness.

Comparison with broad definitions of culture

Section 2.3.2 has reviewed definitions of corporate culture. A first cue to the difference between corporate identity and corporate culture was offered by Kilmann, Saxton and Serpa (1985, p. 5). They defined culture as 'the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes and norms that knit a community together'. They distinguished three cultural levels: Just below the surface of experience there is the level of behaviourial norms. These are the unwritten rules of the game. At a somewhat deeper level lie the hidden assumptions - the beliefs behind all decisions and actions. These assumptions pertain to the nature of the environment. At its deepest level, Kilmann et al. consider culture as the collective manifestation of human nature - the collection of human dynamics, wants, motives and desires that make a group of people unique. Their second level of assumptions about the environment is precisely what has been left implicit in the method of measurement. The same difference can also be recognized with other definitions like e.g. of Schein's (1985) definition of culture as 'a pattern of basic assumptions-invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and integration - that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems', and the broad definition of culture by Reitter, Chevalier, Laroche, Mendoza, and Pulicani (1991, p. 21) as 'the perceptions of internal and external reality of the organization which every group member has to know in order to be part of the group and be accepted, together with the behaviour flowing forth from it'. In these broad definitions of corporate culture, corporate identity as conceptualized in this dissertation is always part of culture, with the difference that identity focuses on the actions included in it (Figure 7.1). In Geertz' (1973, p. 5) definition of culture as 'the webs of significance people have spun', identity can be thought of as consisting of the means-end fibres in this web. Similarly, Hatch and Schultz (1997, p. 358) view organizational identity as grounded in local meanings and organizational symbols and thus embedded in organizational culture, which they see as the internal symbolic context for the development and maintenance of corporate identity. 'It forms the context within which identity is established, maintained and changed...' (p. 363).

Comparison with narrow conceptualizations of culture

The relation between identity and culture is different if corporate culture is taken in its narrow definition, as 'the symbolic products of the organization' (Moingeon and Ramanantsoa, 1997). This 'narrow' definition of culture restricts the domain of cultural analysis somewhat, leaving the 'deeper' organizational characteristics to the domain of 'identity'. Moingeon and Ramanantsoa (1997, p. 385) pay special attention to symbolic products in culture, such as rites, myths and taboos. In their view, some of the features rites are linked to are time, space and clothing. Myths refer to the history of the organization, its founder, and for instance a 'heroic era'. Taboos are censored subjects that people in the organization do not talk about. Moingeon and Ramanantsoa take these symbolic products to constitute the visible part of an organization's identity: its culture. Moingeon and Ramanantsoa stress the potential of the concept of identity for in-depth investigation: 'Identity is a conceptual advance over corporate culture because it permits researchers to explain more in-depth the dynamics of organizations'. A focus on intentional action does not appear explicitly. Therefore, their conceptualization of identity may coincide largely with the anglo-saxon 'broad' conceptualization of culture (Figure 7.1).

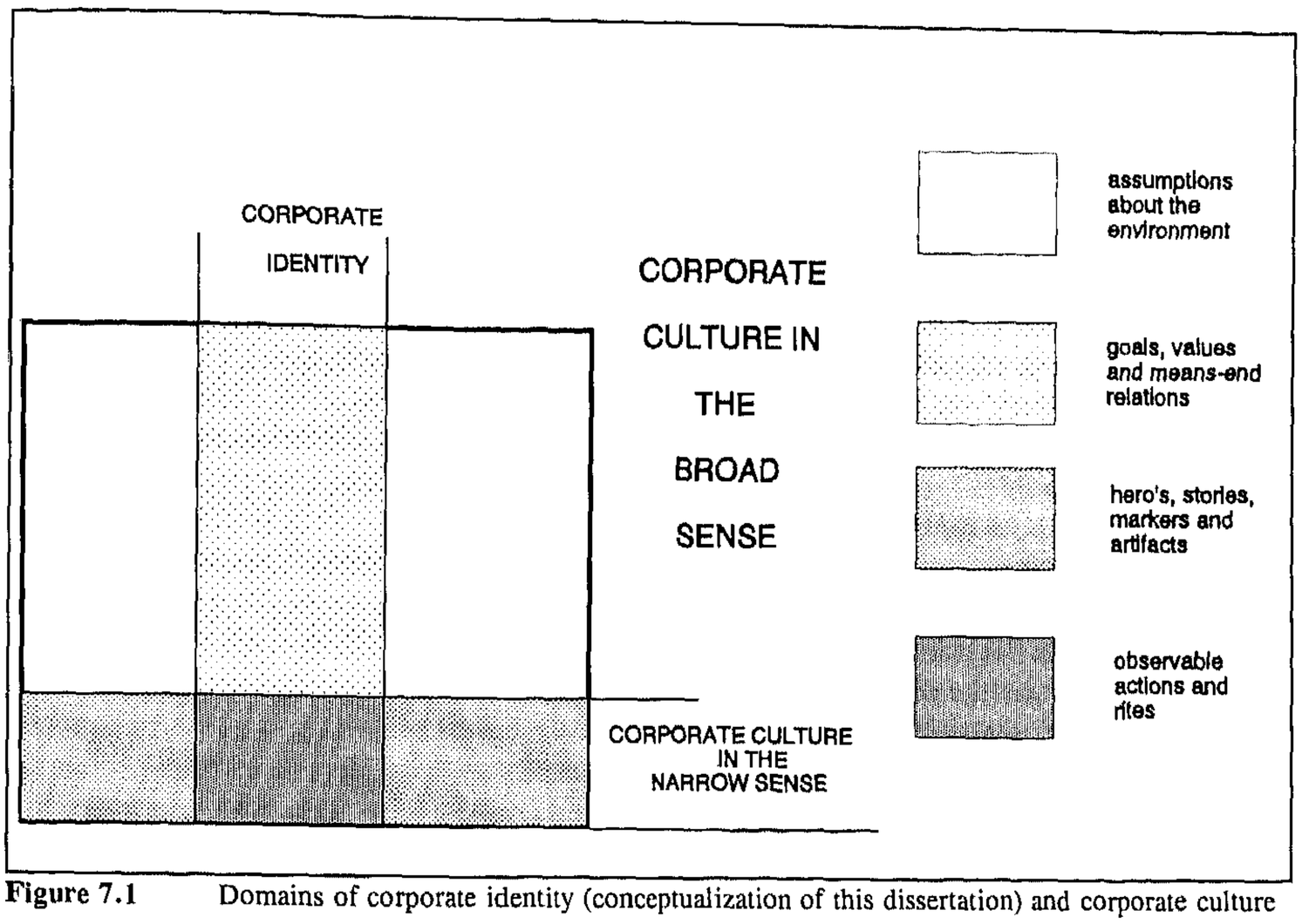


Figure 7.1 Domains of corporate identity (conceptualization of this dissertation) and corporate culture

Depth and parsimony: the power of the instrument

The methodology offered in this dissertation combines the strength of in-depth investigation with a built-in tendency toward conciseness, or parsimony. The power to investigate an organization in-depth is achieved by the laddering technique's power to break through into the self-evident. The deeper meaning of the heterogenous observable actions is made visible. This deeper meaning corresponds to the deep structure of a language, which determines what is possible in that language (cf. Pentland, 1995). In this sense, the instrument breaks through into the organization's 'generative grammar' (Weber, 1985). The conciseness is achieved by concentrating upon the most central of the employees' intentional actions. People are primarily lead by their own goals which normally take precedence over all else. Priming or activating a goal makes certain features of the environment more salient or accessible (Simon, 1994). Conversely, deactivating a goal causes those features to recede into the background (Austin and Vancouver, 1996, p. 344). As a consequence, assumptions about the environment, and particularly those assumptions that trigger goals, or enable means-end relations, are centred around goals. This view of goal systems suggests that an organization's culture may depend for its coherence upon the structure of intentional action, as embodied in the organization's identity. An organization's identity appears to be the skeleton around which the rich associations of an organization's culture are draped. The built-in summarizing algorithm of the method focuses on the most central actions in this skeleton. This allows the meaning of an organization to be presented so concisely that it is easy to grasp for a very broad variety of stakeholders. As such, it meets Olins (1995, p. 52) requirement of a concise outline of the organization, getting to the heart of the matter. The measurement instrument developed in this dissertation is a powerful and effective tool for investigating the social and psychological sides of organizations.

7.2 Use of the instrument in corporate communication

The measurement instrument indicates the central values which can serve as good common starting points for corporate communication. Well chosen starting points can serve to enhance the pride of the own organization and by consequence enhance employee performance (Van Riel, 1995). The measurement instrument achieves its parsimony without losing the data on the meaning of the most central concepts. The connections of the most central goals to the other actions, goals and values remain available for detailed exploration. This network of means-end relations allows the researcher to tackle much more specific problems without loosing track of their relation to the identity of the whole organization. The network of means-end relations can help detect problems of employee motivation or behaviour that may cause an unfavourable image in the eyes of one or more stakeholder groups. For instance, Figure 4.6 shows how the concept of 'bringing in orders' occupies a very prominent position in the identity of the automation company. However, among the clients' criteria for selecting an automation company an important aspect is that companies are 'commercially not to eager' (figure in appendix 7.1). The same structure includes the motives which inspire or legitimate such behaviour - and therefore gives cues as to how such behaviour may be changed. This section will show how, while the measurement instrument provides very parsimonious end results, nevertheless it allows researchers and consultants to address specific problems. Section 7.2.1 will focus on the application of the measurement instrument to communicating an organization's identity in general, leaving the interaction with internal and external stakeholders to respectively section 7.2.2 and 7.2.3.

7.2.1.1 The choice of appropriate common starting points for corporate communication

The parsimony achieved by the measurement instrument makes it a powerful tool for deriving the core values which best characterize an organization as a whole. The summarizing power of the most central elements in an organization's identity allows an organization to express its essence very concisely. It exactly reveals those central values which permeate the employees' behaviour and which are so self-evident to them (Table 5.10).

The research procedure explained in chapter 4 makes sure that these central values can directly be translated into what happens concretely and observably on the work floor. Following the lines in the hierarchical value maps downward from the most central values reveals concrete instances of how these are realized in daily behaviour. For instance, Figure 4.3 shows how the most central concept at the boat excursion company is 'being a good host'. Being a good host is realized by 'providing good service', which is realized among other things by 'personal contact'. 'Personal contact', in turn, is realized by 'blending with the people'. And 'blending with the people' is realized by going through the boat 'serving orange juice'. Paths to the most concrete actions can also be much shorter: 'being a good host' is realized also by 'seeing that the children have had their orange juice' (Figure 4.3). Each path in the means-end structure, starting from a central value, provides an opportunity to illustrate and thereby communicate that value. This is another advantage of a larger number of laddering interviews: it provides more opportunities to reliably illustrate how central values are realized in the organization.

If the communication effort is based on the organization's central values and on those paths, the message will be recognized also by those people actually doing the job. Table 5.10 shows that, the more central a value is in the organization's means-end network the more employees at the automation company agree that they are working on it. Thus, basing corporate communication efforts on the measurement instrument here helps to ensure an acceptable fit between an organization's communication efforts and its actual corporate identity. The constraints imposed by the existing corporate identity on what can be communicated are not violated, and employees are less likely to dissociate themselves from the corporate communication of an organization. The risk of badly handling an identity internally is reduced (cf. Van Riel, 1995, Olins, 1995, Keller, 1990) and the basis is laid for potentially successful 'corporate communication.

Kennedy (1977) stresses the importance of the role employees can fulfil 'selling' the organization to outsiders. The common starting points for corporate communication, derived with the research presented in this dissertation, may easily be spread in the self-enhancing talk that occurs anyway on the shop floor. Alvesson (1994) illustrates how people in an advertising agency used different discourses to convince themselves and their clients of their uniqueness and competence. However, the relation between what is said and the people's traits, beliefs and orientations is not necessarily clear (Alvesson, 1994), particularly because the latter are often so self-evident (Weber, 1985, cf. Table 5.10). It is not obvious that employees are always conscious of which actions, goals and values are most central to what they do. Espoused values often lack organization-specificity (cf. Barth, 1979, Martin et al., 1983), or they may be espoused without being clear how they are practically implemented. The research instrument developed here comes up with central values which are derived from concrete down-to-earth behaviour. If central actions, goals, and values are seen as legitimate by the environment, they may provide excellent resources to convince themselves, customers and other people that they have something specific to offer in terms of expertise, skills and talents and that they have superior abilities when it comes to deciding what is good for the stakeholders (cf. Alvesson, 1994).

Feeding back the measurement results of an organization's objective identity into an organization is not without consequences for its intersubjective identity. Objective identity includes the characteristics which serve to define the 'corporate we'. In itself, the organization's core values elicited in the laddering interviews are likely to set a standard for what is considered good. The laddering question 'why is that important to you' is in essence a call to rationalize just mentioned behaviour. The tendency to rationalize behaviour by members to conform to a notion of good is an important mechanism by which a positive self-image is maintained (Kogut and Zander, 1996). Feeding back the outcomes of the research with the instrument presented here can help management to take advantage of the communicative power of the organization's own employees. If employees like to talk anyhow about the way they are superior, from a corporate communication viewpoint it would be most effective if these points of superiority coincide with the common starting points for corporate communication (Van Riel, 1995).

The end effect will be a harmonization of what an organization says it does and what it can be perceived to be doing. Corporate communication efforts are likely to be much more convincing if this harmony between what an organization says it does and what it can be perceived to be doing exists. This is an important advantage when implementing a corporate

communication policy. People use all their senses in making up their image of an organization (Tanneberger, 1987). The central actions, goals and values identified by the measurement instrument outline a message which applies concretely to the organization and which is recognized as realistic by those who work for and deal with it (cf. Olins, 1995). Stakeholders can observe the concrete employee behaviour displayed. Now they can relate the observed behaviour to the organization's most central values. This may enhance their comprehension and evaluation of the organization. Their image of the organization may be favourably influenced if they understand how this helps to realize these core values. Provided the organization's core values are acceptable to the wider environment, the only prerequisite is that the stakeholders learn that essential part of the organization's language that helps them understand how the observed behaviour stands for the organization's core values.

This enables management to steer the associations stakeholders have with an organization. It becomes is possible to provide the organization with explicit meaning, and to tune the organization's communication and symbolism to that meaning. Logo's and house-style can be employed to convey to stakeholders the organization's core values, along with ways in which these are implemented. Corporate design is a useful vehicle for expressing the central values of the organization. Logo's, ideally, should be semantic pointers to those core values. Details of the house style can be employed to convey associations around the core values. The more concise hierarchical value maps display the organization's core values with their association patterns. In fact, Figure 4.4, Figure 4.5 and Figure 4.7, can be readily used as schematic briefings for the design of a corporate logo and house style. These figures show the basic values which can be symbolized by design. How central actions, goals and values can be expressed depends upon the semiotic rules of interpretation valid in the relevant environment. For instance, in a business community where dark blue suits are taken as a symbol of professionalism and quality, this quality can be symbolized by dressing employees in dark blue suits. The circle as a symbol for Lucent Technologies (the new name for AT&T) was chosen because in many cultures it stands for universality, knowledge and perfection (Kavanaugh, 1997). The semiotics of interpretation, however, fall beyond the scope of this dissertation.

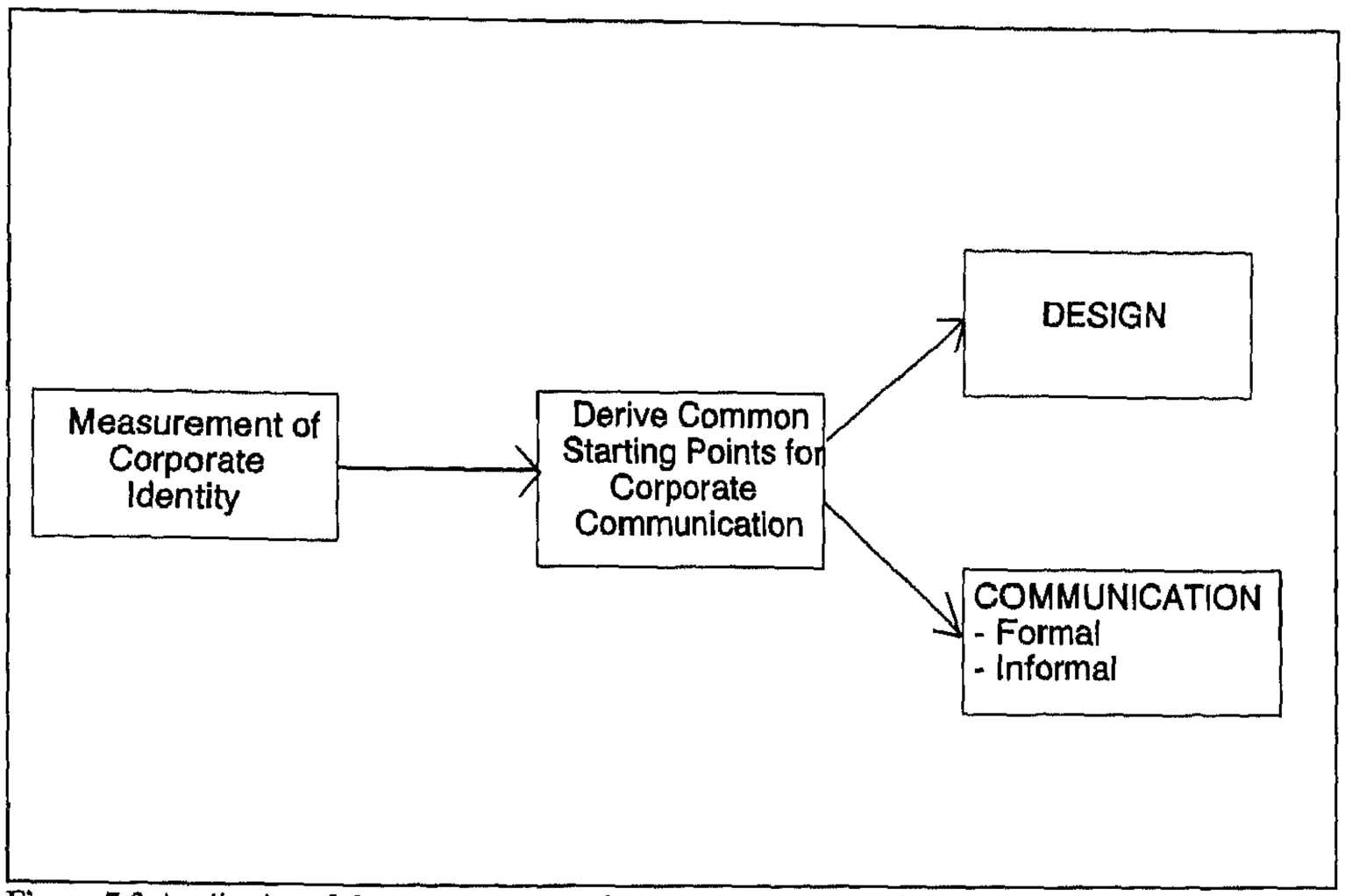


Figure 7.2 Application of the measurement results to corporate communication and design

Figure 7.2 summarizes the direct application of the research results to corporate communication and design. The measurement instrument developed in this dissertation provides the common starting points for corporate communication which are recognizable for both internal and external stakeholders. This enables an organization to effectively organize its communication around the core values which play a central role in an organization, and effectively provide the organization's symbolism with appropriate meaning. This meaning can then be expressed in an organization's communication, both formally, by the communication department, and informally, via employee communication on the shop floor, and in its design.

7.2.1.2 Taking advantage of the motivational power of identity

Feelings of identity and belonging are among the most profound manifestations of the human condition (Olins, 1996). Organizations are a suitable target for employees to identify with, and perhaps even society's replacement for the older clan- and tribal structures (cf. Durkheim 1973; Weber, 1972; Kogut and Zander, 1996). 'Identity' interpreted as 'feelings of identity and belonging' is a different concept than the conceptualization of 'corporate identity' worked out into a measurement instrument. It refers to Weigert's (1986) concept of 'intersubjective identity' and it deals with the self-image of a group rather than with its 'objective identity' (objective in Weigert's sense). An organization's objective identity can provide the building blocks for its intersubjective identity. These are the characteristics which make it possible for employees to identify with the organization (cf. section 3.1.3).

Section 7.2.2.1 explained how the recognizability of the organization's statements of what it is about can favourably influence its image. If employees perceive their organization to have a favourable image, their identification with the organization is increased (Dutton, Dukerich and Harquail, 1994, Ashforth and Mael, 1989; March and Simon, 1958). Employees are more likely to stick to a group with a better image, instead of seeking to join a higher-status group (Ellemers, 1991). Once an organization is perceived to have a certain status, employees are more willing to act as communicators in its defense. Elsbach and Kramer (1996) investigated the effect of disappointing rankings on what had previously been considered the top-20 business schools in a survey published by 'Business Week'. As a reaction, members appeared to parry the negative evaluations with two main strategies: firstly, by affirming positive aspects of their school's identity that the rankings had neglected, and, secondly, by making sense of and explaining why their school had achieved a disappointing ranking. This process even appeared when the organization's ranking was relatively favourable, but did not recognize what they themselves thought central dimensions of their organizations (p. 468). The research of Elsbach and Kramer shows how once an organization has achieved a favourable image employees act as its defenders. If employees perceive their organization as having a favourable image, and if their perception of what the organization is about corresponds with what they do, they may be more prone to fulfil their role of 'salesmen' of the organization (Kennedy, 1977) in word and deed.

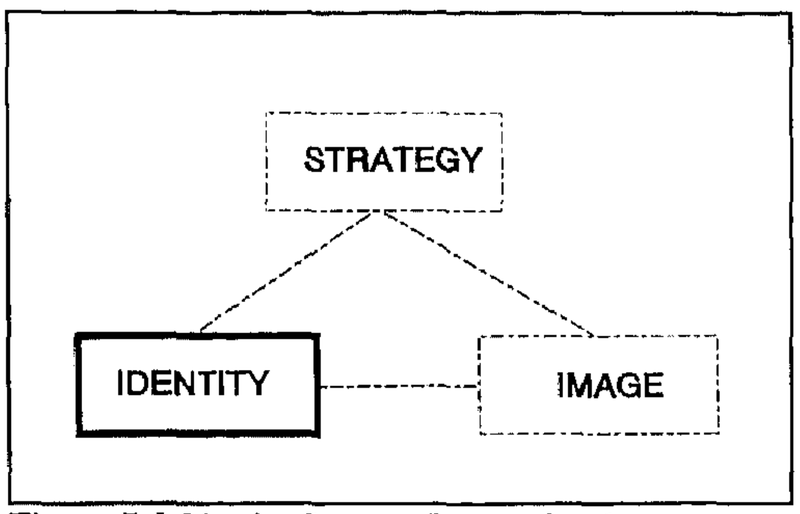


Figure 7.3 Identity-Strategy-Image triangle

In short, the choice of appropriate common starting points for corporate communication (Van Riel, 1995) can help design a suitable visual logo and house style. Using the outcome of corporate identity measurement, a harmony between what an organization does and what it says it does can be achieved and maintained. The organization can take advantage of the favourable effects which literature attributes to the implementation of well-chosen common starting points on the potential to let employees 'sell' the organization.

However, the use of the instrument described so far assumes that the actual, existing identity as measured, the 'ist-identity', corresponds to the strategically desirable identity, the 'soll-identity'. In the identity - strategy - image triangle (Figure 1.1), it concentrated on the observed identity (Figure 7.3). If the observed identity of the organization is not equal to the desired identity, adaptation of the identity is necessary before common starting points for corporate communication can be derived from it (Figure 7.4).

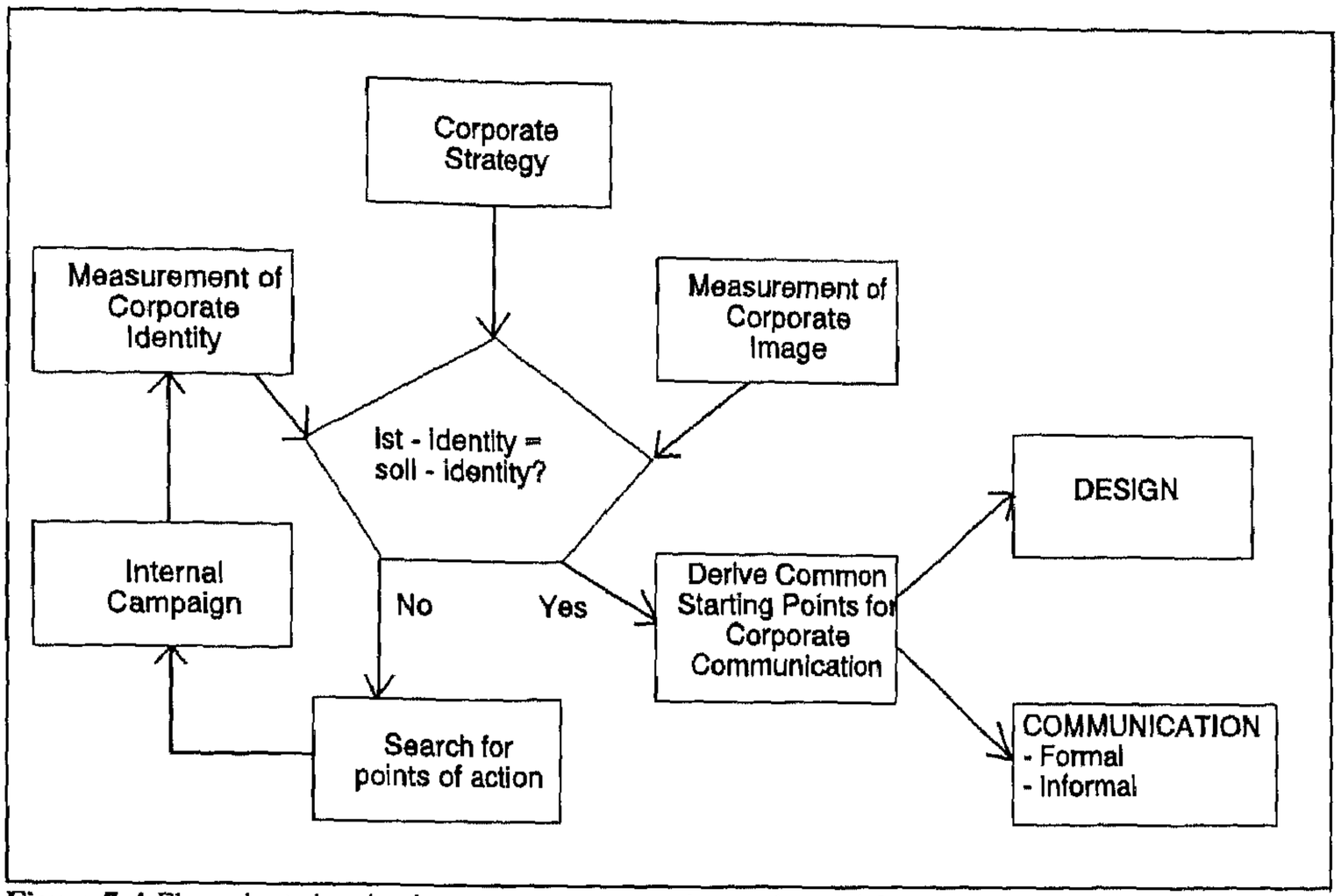


Figure 7.4 Flow chart showing how measurement results can be used for corporate communication

7.2.2 The use of the instrument in making a diagnosis of behaviour and motivation.

The research instrument developed in this dissertation achieves its parsimony while keeping in storage the data on the whole means-end structure of organization members' actions. This is an important advantage when applying the measurement instrument in practice. So far, two assumptions have remained implicit: The first assumption is that the identity as uncovered by the measurement instrument corresponds to the identity an organization's managers deem desirable from a strategic point of view. In Birkigt and Stadler's (1988) terms: under this assumption the 'ist-identity' does not really differ from the 'soll-identity'. The second assumption is, that stakeholders deem the core values of the organization acceptable and relevant. The flexibility of the measurement instrument also allows those situations where these two assumptions have not been met to be addressed. It allows the researcher to travel freely through this network in order to tackle specific problems. The identification of certain goals - or the absence of certain goals - as 'problematic' does not flow forth from the measurement itself. The identification of problems flows forth from the fit between the organization's actual identity and the corporate identity as desired by management. In this sense Figure 7.4 is a much more complete extension of Figure 7.2. Once a goal has been identified as problematic, the means-end structure allows the researcher to retrace its impact on the identity of the organization. Its centrality is a cue to its total impact and also to its resistance to change (Table 5.12).

From a strategic point of view, the absence of certain goals or values may be equally important as their presence. If, for instance, employees in an organization lack the incentive to provide a certain degree of quality, the organization may have serious problems in

maintaining its market share and its profitability. The outcome of a diagnosis may also be that the strategically desired goals and values do exist in an organization, but that the means-end relations between them are missing, obscuring a strategically desirable trade-off between them. For instance, in Figure 4.6, 'bringing in orders' has a higher centrality than 'making profit', and, 'making profit' is never mentioned as a goal served by 'bringing in orders'. When the management team of the automation company was confronted with this result they immediately decided to correct this in their management training programme.

The measurement instrument can readily point out what behaviours are apt to change. Which policy of changing undesirable behaviour is most effective depends upon the specific behaviour, the circumstances in which it arises and its relations to the organization's identity. This may require further research on the specific issue. Then the measurement instrument serves in the first stage of a two-stage procedure. It helps to identify goals or actions which, from a normative point of view, may be problematic. In a second stage, the goal or behaviour identified can be investigated in further detail focusing on the - perceived - circumstances surrounding the problematic issue.

Essentially two methods of intervention are open to change strategically 'undesirable' goals and actions: either change the circumstances that make the particular goal or action salient, or challenge the means-end relations with which that goal or action is embedded in the total means-end structure of organization members' actions. The 'problematic' goal can arise as a consequence of the circumstances employees find themselves in. For example, in an organization just being reorganized a value such as 'not being dismissed' can reach a high prominence. To give another example: the goal of 'be able to look outside' in Figure 4.3 becomes salient only if it is raining outside or if there is a warm buffet on board. If these circumstances do not occur any longer that value may loose its salience (cf. Simon, 1994). Also the validity of existing means-end relations can be questioned: employees can be made conscious of the possibility that a specific action may not really contribute as much to achieving a certain goal as they thought it did. Management can trigger or enforce such processes, which also normally occur spontaneously on the shop floor. For instance, employees in the boat excursion company thought that allowing people to smoke ('they can smoke' on the bottom line of Figure 4.3) was pleasant for the clients. After a series of complaints from non-smokers, the idea arose that allowing people to smoke contributed negatively instead of positively to pleasantness. Employees started to discourage smoking (e.g. by 'forgeting' to put ashtrays on the tables in order to prevent difficulties from nonsmokers, cf. 'no awkwardness with passengers' in Figure 4.3) and eventually, management introduced a non-smoking policy.

The means-end structure itself offers cues as to how it might be changed. Existing goals can be used to motivate employees to adopt new behaviour, particularly if new behaviour can be shown to be an effective means to realize the more central goals present in an organization. Another way is making employees conscious of the unintended consequences of what they are doing, and making it clear to them to what degree those consequences contribute positively or negatively to the more central goals identified in the organization (cf. Vallacher and Wegner, 1985). If a particular goal has a high centrality and if it seems difficult to change, the means-end structure around that goal or action can be explored to search for associated goals or actions which are easier to change. The problematic value, goal or action can then be tackled later on. Vallacher and Wegner (1985) explain how subjects can be made

aware of unintended consequences of an action, which, if desired by the subject, can become the new predominant goals of that action. Pointing to undesirable unintended consequences can cause an action to disappear. This can occur via internal communication, but concrete experiences on the shop floor are at least as effective. Referring to the example just given, 'they can smoke' is a peripheral concept in Figure 4.3. It is connected to only one other concept, has a low centrality, and is therefore easy to change. Even though Table 5.12 shows that more central actions, goals and values are more resistant to change, this does not imply that central concepts are impossible to handle. The most central concept in Figure 4.3, 'be a good host', is a good example of how even the very core of an organization's identity is amenable to intervention. A couple of years before the identity of the boat excursion company was measured, the idea of 'being a good host' was not really an issue in the organization.

Figure 7.5 Photograph from the folder of the boat excursion company, expressing its quality as a good host

Specifically, guides were striving to work as a good professionals, providing detailed information on what could be seen from the boats. Until one day a manager joined in on a dinner cruise through the Amsterdam canals. While eating, he was swamped with information on historical and architectonic details. He left the boat with a pounding headache. He decided that this was not the way he wanted to provide service, and decided to introduce the value of 'being a good host' throughout his organization. All employees had to participate in an in-company training programme where they were taught that 'being a good host' was the core of dealing with tourists. The training programme stressed why it was important to be a good host - in order to achieve quality, and to give people a feeling of satisfaction - and how they could be a good host - in particular by providing good service and being presentable. The results of the research held two years later, in Figure 4.3, show that management has succeeded in introducing 'being a good host' as a core value in employee behaviour. It has become the essence of the organization, and it can now be communicated to the outside world in words and images (Figure 7.5).

This example illustrates how management can influence an organization's identity. In the small organization of Figure 4.6, the problem was identified by a manager evaluating the organization's own product. In larger organizations, such 'management by walking around' is not always feasible, and a systematic diagnosis instrument like the one presented here may be needed all the more. Moreover, it is often not always clear whether management actually knows what their clients exactly want without further research.

The example shows a case where observed identity was compared to what management thought strategically desirable. In the identity-strategy-image triangle, it concentrated on identity and strategy (Figure 7.6). If the interaction between the organization and a stakeholder or stakeholder group is at issue, it may be useful to diagnose the problem by simultaneously investigating both the organization and the stakeholder group in a comparable way.

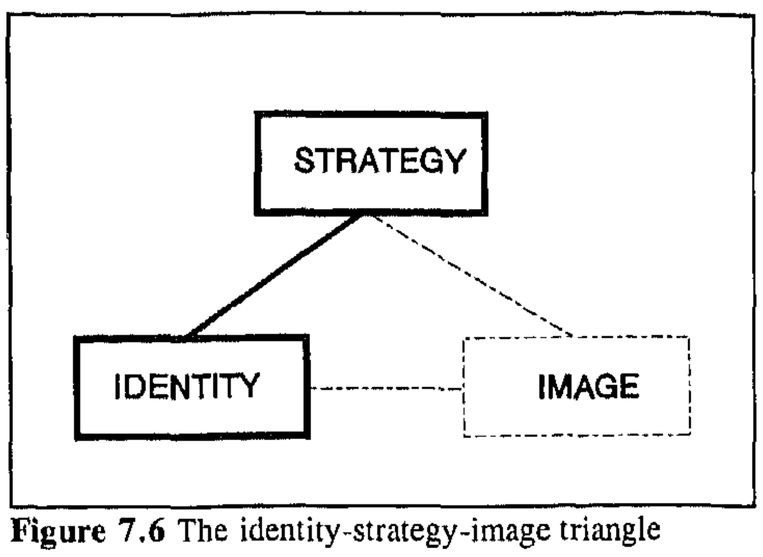


Figure 7.6 The identity-strategy-image triangle

7.2.3 Problem diagnosis in the interaction with stakeholders

So far, applications to inside-out approaches have been discussed. In section 7.2.2.1 the communication of an organization's identity was discussed, regardless of what stakeholders think acceptable or relevant. In section 7.3.1 the change of behaviour in an organization and its existing identity was discussed, where the desire to include or exclude certain actions, goals or values in that identity was taken as an external given. Often, however, the feeling may arise that there is a problem although the problem is cannot easily be identified.

Often, problems with its image are an important reason why intervention in an organization's identity becomes desirable (Van Riel, 1995) . The instrument is capable of diagnosing persistent image problems and can help address the full identity-strategy-image triangle (Figure 7.7). The measurement instrument can be used along with measurement of corporate image in a comparable way (Figure 7.4). Then it is possible to make explicit the otherwise self-evident actions, goals, and values the organization and the stakeholder bring into the interaction. Organization members quite likely to attach different meanings to their own actions than the stakeholders they are dealing with. The measurement technique is able to make visible such differences in meaning. Therefore it offers an excellent way of establishing which aspects of an organization's identity have to be changed, or which aspects should be stressed in communication in order to concretely improve an organization's image in the eyes of a stakeholder group. In essence, two kinds of image problems are possible. Firstly, the organization and the stakeholder may think that they have the same actions, goals or values in mind, but in general these form part of different means-end structures; they may not necessarily realize that goals or values they think they have in common mean something different to each of them. Secondly, the stakeholders may have goals in mind which the organization is not working on. If that is the case, the stakeholder's goal does not appear in the vocabulary of the organization. Then, the positioning of the

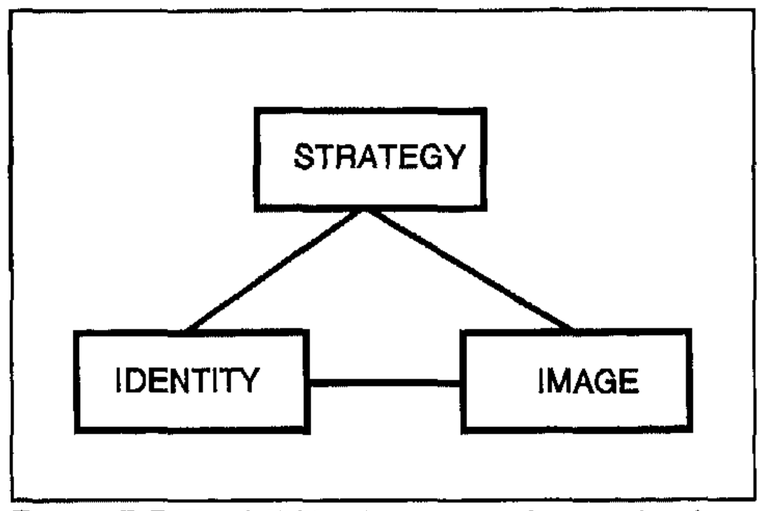


Figure 7.7 The full identity-strategy-image triangle

organization toward the stakeholder can be considerably improved if a connection is laid between what the stakeholder wants and what the organization does.

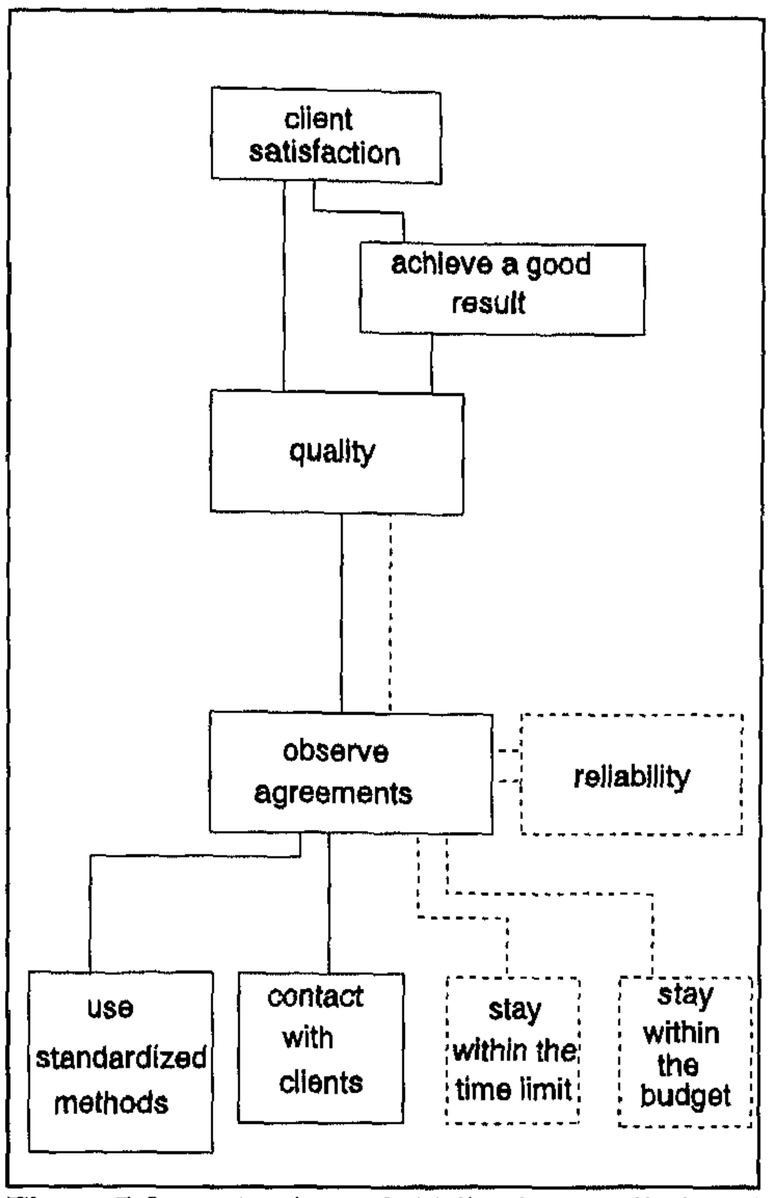


Figure 7.8 Meaning of 'delivering quality' and 'observing agreements' to organization employees (solid lines) and clients (dotted lines)

Appendix 7.1 reports the results of the image research, held simultaneously with the corporate identity research, at the automation company described in chapter 4. For the most important concept, 'observing agreements', the organization scored in the middle range (Table 7.9 in appendix 7.1), in spite of the high importance employees attached to it (Table 7.8 in appendix 7.1). Closer examination and comparison of the meaning employees and clients attached to 'observing agreements' showed a different orientation on each side, which may have caused some friction in the cooperation. Although both employees and clients thought 'observing agreements' important in order to deliver quality, employees thought they 'observed agreements' by using standard methods and staying in contact with the clients, whereas for clients 'observing agreements' simply meant 'staying within the time limit' and 'staying within the budget' (Figure 7.8). Both concepts existed in the vocabulary of the organization (down in Figure 4.6), but less prominently and not directly related to 'observing agreements'.

This example illustrates how simultaneous analysis of an organization's identity and stakeholders' criteria for choosing an organization can highlight language differences which hinder an organization in achieving its strategic goals. Complete agreement is not essential for smooth cooperation: the principal condition is that the means-end relations the organization brings into the exchange are not incompatible with the means-end relations the clients bring into the interaction (Bacharach, Bamberger and Sonnenstuhl, 1996). Based on the results shown in Figure 7.8, the organization can take action in order to improve its moderate rating on 'observing agreements'. Management can now decide to adapt its identity internally, for instance by communicating internally the importance of 'staying within the time limit' and 'staying within the budget' as a way to 'observe agreements' with the clients, or to try to convince clients that what the organization does is the best way for them to achieve their goals. The latter, for instance, could be done by explaining how the use of standardized methods is a good way to keep up with agreements. However, in this case, the high prominence clients give to 'listening carefully' and 'thinking along with the client' (Table 7.8, in appendix 7.1) casts doubts on the viability of the latter option because these client values do not seem really compatible with the use of standardized methods.

Table 7.8 in appendix 7.1 highlights the second kind of problem an organization may encounter in its interaction with a stakeholder, and whose existence may go unnoticed without this kind of means-end analysis. It emerged that the clients greatly appreciated some elements which seemed to be nonexistent in the organization's vocabulary: 'be clear in what you plan to do', 'listen to the client' and 'think along with the client' (Table 7.8). These three elements were closely related to each other (Figure in Appendix 7.1), but seemed to be lacking in the identity of the organization (Figure 4.6). The measurement methodology presented here is able to uncover such phenomena. Elements from the organization's structure can be employed to explain to the clients how their goals can be realized by laying new means-end connections between elements of the clients' means-end structure and the organization's means-end structure. Figure 7.9, for instance, represents a potential positioning strategy derived from the research results where the organization's identity is brought into line with the clients' expectations and which can be communicated to them. It has been drawn taking the concepts of from the figure in appendix 7.1: 'be clear in what you plan to do', 'listen to the client',' think along with the client'; and their direct pay-offs. These pay-offs are important, because they show the client values which are served indirectly if the organization meets explicitly the three mentioned client values, and to which the organization can refer to in its communication (cf. Reynolds and Craddock, 1988). The means-end structure of the client population is taken as the basis. The elements of the organizational identity which seem easiest to connect to the clients' structure have been introduced. The dotted lines in Figure 7.9 refer to the clients' means-end structure, the solid lines to the elements of the existing corporate identity which have been added to the clients' structure. The creativity of the communication solution lies in the choice of the elements of the existing corporate identity which may best serve to meet the clients' values and in connecting them up to the client values. A guideline for that choice is, the more central the elements chosen in the measured corporate identity, the easier implementation of the chosen positioning strategy. The clients' structure is actually the same for the organization and its competitors. It is a useful basis for positioning, but a positioning strategy based on the clients' wishes alone is relatively easy to copy. A positioning strategy which includes ways in which the organization is particularly able to fulfil the clients' wishes is much more difficult to imitate (cf. Laundy and Rogers, 1995). The realization of a client-oriented positioning strategy can be a rather long-term strategic operation, which may imply a long-term commitment to a specific market segment. In order to be successful in the long run, the organization's employees will have to be motivated to live up to the clients' expectations. Clients' values can be introduced into the organization the same way as the boat excursion company introduced the concept of 'being a good host' into its identity.

In fact, one can discern a continuum with at the one extreme the mere external positioning of an organization, where the organization communicates how well it is able to fulfil the stakeholders' wishes and at the other extreme a thorough integration between external communication and employee behaviour. If the strategically desirable positioning requires considerable adaptation of the organization, it may be advisable to first design a desired corporate identity may, along with a path by which the organization's identity can change from its actual identity toward its desired identity. The further the actual 'ist-'identity is away from the desired 'soll-'identity, required for this positioning strategy, the more difficult this strategy will be to realize. Conversely, the closer the actual 'ist-'identity is to the desired identity, the less internal adaptations have to be made and the easier the positioning strategy will be to implement.

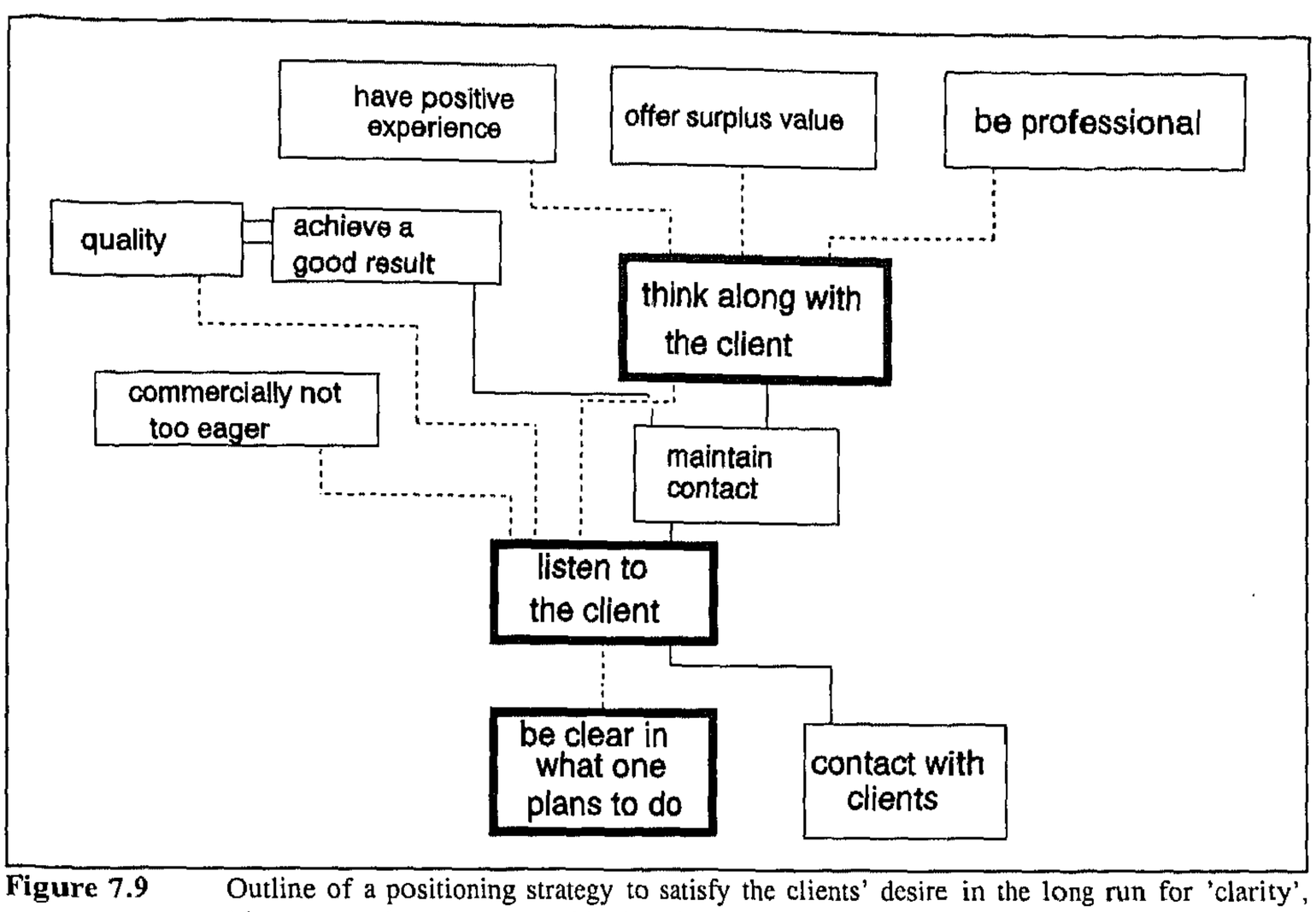


Figure 7.9 Outline of a positioning strategy to satisfy the clients' desire in the long run for 'clarity', 'listening to the client' and 'thinking along with the client'.

If the identity of the organization has to be adapted, the measurement results form a useful basis to set out the path toward a strategically desired corporate identity for the longer term, gradually changing behaviour, goals, and values. The decisions which elements to tackle first, and in which order and how these behaviours must be changed, can be based upon their position in the total means-end structure. Based upon their relative centrality, their relations to the other goals, actions and values and their sensitivity to changing circumstances, a gradual trajectory of change can be set out. This way, ultimately, a finer tuning to the needs of the stakeholders may be realized, favouring the image and the position of the organization in the long term.

In short, the research method offers the potential to diagnose the problems in the identity (and culture) of an organization and its alignment with stakeholder expectations. It can be a valuable help in planning the gradual realization of such a change and in making it a success.

7.3 Accommodating for multiple identities

7.3.1 Applying the measurement instrument directly

So far organizations have been dealt with as one single unit with one identity. The conceptualization and measurement instrument described so far has been applied to one organization, which has been taken as one single unit. In literature, however, organizations are often seen as consisting of multiple, partly coherent identities (cf. Albert and Whetten, 1985, Olins, 1989, Van Riel, 1995). Those identities can be taken as multiple value orientations among the same people. They may also correspond to different groups or business units within the organization. This section will explain, how the described method can be applied separately to the groups or business units assumed to be different in order to find out what communalities and differences result, and how the method can be applied in case of mergers. The instrument can be extended to segment the population on their means-end structure. Section 7.3.2 will explain how the instrument developed here can be adapted for such purposes. This adaptation, however, stretches beyond the scope of the research presented here. Its refinement and validation is proposed as a target for further investigation.

Albert and Whetten (1985) distinguish two forms of multiplicity, one form in which the organization as a whole represents multiple identities, which they call the 'holographic form', and one form in which internal units overview different identities. They call this second form the 'ideographic' or 'specialized form'. The first form of multiplicity does not have methodological consequences. The presence of multiple identities within the same unit corresponds to the simultaneous presence of more than one central action, goal or value in the means-end structure. These central elements may or may not be connected to each other. This phenomenon can also be observed with the automation company (Figure 4.6). In the large hierarchical value map, where a low cut-off level for relationships is applied, 'bringing in orders' and 'delivering quality' are connected, but in Figure 4.7 they appear as two separate values. The more such central values seem to be conflicting, the more people may be inclined to speak of multiple identities.

Here a slightly different use of the concept of 'identity' emerges. So far, the organization has been taken as the given unit whose 'identity' had to be measured. If the assumption of one organization with one identity as a given is relaxed, the conceptualization of identity as shown in overview 3.5 still holds, but what appears is a figure-ground reversal (cf. Talmy, 1978). Now the central elements in an empirically established network of means-end relations become the a priori given, and they are taken to constitute an identity or, if there are multiple central elements, to constitute multiple identities. The primacy is no longer with an a priori given unit, but with intentional action (cf. White, 1992, p. 3).

The second form of multiple identities, what Albert and Whetten (1985) call the 'ideographic or specialized form' has more implications, both from a communication and from a methodological point of view. Several authors in the communication area have dealt with this issue. Olins (1989) proposed his three kinds of identity: monolithic identity, if one single identity can be discerned for the whole organization; branded identity, if business units have clearly different identities; and endorsed identity, if both the organization as a whole and the particular business unit are simultaneously identifiable (cf. section 2.2.2). The degree to which an endorsed identity should be maintained depends upon the degree to which

management wants to express what the organization as a whole stands for in comparison to what the business unit stands for.

If different subgroups or departments in the organization are assumed to have different identities, two forms of measurement are possible. Methodologically speaking, the simplest method is to set the borders of the different groups a priori, measuring each segments identity with the method developed in this dissertation and establishing ex post communalities and distinctions. If the business units for which such decisions have to be made are taken as a given, the measurement procedure most at hand is to establish both the corporate identity for the organization as a whole and the corporate identity of the business units for which these corporate communication decisions have to be made.

The situation where a whole identity has to be established for a conglomerate organization is, in principle, not very different from the situation of a group of organizations planning to merge. Equally, the identities of the organizations planning to merge can be measured, and the differences, communalities and potential conflicts between the organizations involved can be established. Following the same line as for a conglomerate organization, the identity for a non-existent company can be established before the merger which will make it come into being. The component organizations can be investigated, and the resulting identity for the total of organizations can be established. The difference with the conglomerate organization is, that company yet to be formed likely to have had more limited mutual interactions in its past history. The theoretical potential of the instrument to forecast identities of yet to be formed organizations offers an interesting area for further research.

The measurement instrument developed in this dissertation can help the organization in decisions about the degree of parent visibility and content guiding (Van Riel, 1995), both for divisional organizations and conglomerates for which a communications strategy has to be designed (cf. Figure 2.3). In future research the instrument may be applied for forecasting the effects of mergers between organizations. An interesting research option is its validation for measuring organizations not yet formed which will only arise after the merger of its already measurable component organizations.

7.3.2 Further extensions to the concept and instrument

If the segments in the organization whose separate identity has to be established are not known in advance, further adaptations to measurement have to be made. In such cases it will be necessary to establish which segments can be discerned and what their identities are. Here also, the method developed in this dissertation can be used. The aim of this section is to offer a glimpse of an interesting avenue for further research, where this methodology can be further extended to new applications. In principle, the identification of relatively homogeneous segments requires the collection of complete implication matrices per respondent, and the segmentation of respondents according to the similarity of their means-end structures. Segmentation on complete implication matrices has the advantage that similarities in complete patterns of thinking can be taken into account, and that the trap of apparent consensus based on unarticulated meanings (Weick, 1995) can be avoided. A bottleneck in applying such an approach is the difficulty experienced in obtaining complete implication matrices from respondents. If this problem can be overcome, distances between the individuals' matrices can be computed, and segments can be identified using established methods, like cluster analysis, multidimensional scaling or the additive tree method (Sattath and Tversky, 1977). Then, for each segment an implication matrix can be drawn up. The identity per segment can be worked out using the procedure outlined in chapters 4 and 5.

So far the measurement instrument for corporate identity has been applied to one organization. However, there is no reason to stop a measurement effort at the borders of an organization - the more since organizational borders are the subject of an enduring discussion (cf. van den Bosch, 1989). Peteraf and Shanley (1997) extended Albert and Whetten's (1985) concept of organizational identity to groups of organizations. A still further extension of the application of the conceptualization of identity and the measurement instrument developed here is to networks of cooperating organizations. The same procedure which serves to distinguish separate identities within a given organization can then also be used to establish to which degree an organization has an independently recognizable identity in the means-end pattern of a larger group of interacting organizations. For the time being this remains an intriguing challenge for further research. Overview 7.1 lists five main avenues for further research touched on in this dissertation.

1. Investigate the transitivity of means-end relations (section 5.4)
2. Comparison of the results of measured organizations with each other to find structural properties of organization specific elements (section 7.1.1)
3. Validation of the potential of the instrument to forecast the identity of not yet existing organizations (e.g. in the case of mergers) (section 7.3.1)
4. Segmentation of populations on the basis of their means-end pattern (section 7.3.2)
5. Establishing separate identities in the network of means-end relations of interacting organizations (section 7.3.2)

Overview 7.1 Avenues for further research

7.4 Final remarks

This dissertation has developed a conceptualization of corporate identity which makes this apparently so vague and broad concept empirically measurable and manageable. An overview of the literature on corporate identity has been given which covers the diverse disciplines dealing with the subject, and the different approaches have been positioned in relation to each other. The measurement instrument developed from the conceptualization in chapter 3 is the first systematic and intersubjectively controllable way of capturing the organization's identity, starting from what actually happens on the shop floor. It extracts the meaning that reflects best what its employees do. This makes it an efficient and effective guideline in attributing meaning to corporate identity strategy, design and communication. The measurement outcome produced with this research method enables an organization to communicate its identity to stakeholder groups more effectively and efficiently. Furthermore, it also gives cues as to how an organization's identity, and specific behaviour within that identity, can be adapted to accommodate the desires of one or more stakeholder groups.

The measurement instrument has been validated in chapters 5 and 6. For this purpose, means-end analysis had to be refined and further developed. The summarizing power of centrality measures from social network analysis, particularly information centrality, has been investigated and underpinned. The assumption that centrality in the means-end network of intentional action also represents centrality in meaning has been investigated further with an in-depth exploration of the semantic character of means-end relations. Means-end relations turn out not to differ very much from other semantic relations. Their direction seems primarily determined by the difference in centrality of the concepts involved.

Both conceptually and methodologically new grounds have been developed. The conceptual contribution of this dissertation to the social sciences, and in particular the fields of marketing, organization science and strategic management lies in the operationalization of the concept of corporate identity and the development of a measurement instrument able to capture the identity of the organization as a whole and able to investigate more specific problems. The contribution this dissertation makes to research methodology lies in its refinement and validation of means-end analysis and its exploration of the semantic nature of means-end structures.

The measurement method combines its depth of analysis with two strengths which make it usable for a broad area of applications: the conciseness of its results and its flexibility. Its focus on what is central to an organization makes it a very concise way of characterizing an organization. It makes the measurement instrument a valuable help in deciding which themes to express in design and communication. The network of means-end relations allows researchers to make a thorough diagnosis of an organization, or its interaction with stakeholders, and point out the problem area distinctly. This makes the instrument useful for addressing in a systematic way many of the problems in marketing, strategic management and organization science.

REFERENCES

Aaker, D.A. and J.G. Meyers (1982). Advertising Management. New York: Prentice Hall.

Abratt, R. (1989). A new approach to the corporate image management process. Journal of Marketing Management. (1), 63-76.

Agresti, Alan (1990). Categorical Data Analysis. Chichester, New York: John Wiley and Sons.

Albert, Stuart and David A. Whetten (1985). Organizational Identity. In: L.L. Cummings and B.M. Staw (eds.): Research in Organizational Behaviour. Vol 7, 263-295.

Allport, Floyd H. (1962). A Structuronomic Conception of Behavior. Individual and Collective. Journal of Personal and Social Psychology. Vol. 64, N° 1, 3-30.

Alvesson, M. (1994). Talking in Organizations: Managing Identity and Impressions in an Advertising Agency. Organization Studies, 15/4, 535-563.

Alvesson, Mats and Per Olof Berg (1992). Organizational Culture and Organizational Symbolism: An Overview. Berlin, New York: Walter de Gruyter.

Anderson (1983). The Architecture of Cognition. Cambridge (MA): Harvard University Press.

Anscombe, G.E.M. (1957). Intention. Oxford: Basil Blackwell.

Asch, Solomon E. (1952). Social Psychology. Englewood Cliffs: Prentice Hall.

Ashforth, B.E. and F. Mael (1989). Social Identity Theory and the Organization. Academy of Management Review, Vol. 14, N° 1, 20-39.

Atamer, T. and R. Calori (1993). Diagnostic et Décisions Stratégiques. Paris: Dunod.

Aurifeille, Jacques-Marie (1997). A bio-mimetic methodology for clusterwise regression, application to the meaning-based segmentation of consumers' leasure activities. In: D. Arnott, S. Bridgewater, P. Doyle, J. Freeman, T. Melewar, V. Shaw, L. Simkin, P. Stern, R. Wensley and V. Wong (eds.): Proceedings of the 26th EMAC Conference, 20-23rd May 1997. Warwick: the University of Warwick, 88-107.

Austin, James T. and Jeffrey B. Vancouver (1996). Goal Constructs in Psychology: Structure, Process and Content. Psychological Bulletin, Vol. 120, N° 3, 338-375.

Bacharach, Samuel B., Peter Bamberger and William J. Sonnenstuhl (1996). The organizational transformation process: the micropolitics of dissonance reduction and the alignment of logics of action. Administrative Science Quarterly, Vol. 41, 477-506.

Balmer, J.M.T. and A. Wilkinson (1991). Building Societies: Change, Strategy and Corporate Identity. Journal of General Management. Vol. 17, Nº 2, Winter 1991, 20-33.

Balmer, J.M.T. (1993), 'Corporate Identity: Toward an Understanding', Proceedings of the Marketing Education Group Conference, Loughborough University.

Balmer (1995). Corporate Identity: The Power and the Paradox. Design Management Journal, Winter 1995, 39-44.

Barnouw, Victor (1963). Culture and Personality. Homewood, Ill.: Dorsey Press.

Barsalou, Lawrence W. (1989). Intraconcept similarity and its implications for interconcept similarity. In: Stella Vosniadou and Andrew Orthony (eds.): Similarity and analogical reasoning, 76-121. Cambridge: Cambridge University Press.

Barth, Fredrik (1970). Pathan Identity and its Maintenance. In: F. Barth (ed.): Ethnic Groups and Boundaries, The social organization of culture differences, 117-134. George Allen and Unwin, London.

Berg, Per-Olof and Pasquale Gagliardi (1985). Corporate Images: A symbolic perspective of the organization-environment interface. Paper presented at the conference on 'Corporate Images', SCOS, Antibes, June 26-29, 1985.

Bernstein, D. (1986). Company Image and Reality, a critique of Corporate Communications. Cassell Ltd., London.

Bernstein, David (1995). Corporate Tone of Voice. Design Management Journal, winter 1995, 17-21.

Birkigt, K. and M.M. Stadler (1988). Corporate Identity als unternehmerische Aufgabe. In: Birkigt, K. , M.M. Stadler and R. Funck (eds): Corporate Identity, Grundlagen, Funktionen, Fallbeispiele, 4e Auflage, 19-63. Landsberg/Lech: Verlag Moderne Industrie.

Blauw, E. (1994). Het Corporate Image. 4th edition, first published 1986. Baarn: De Viergang.

Bonacich, Philip (1987). Power and Centrality: A Family of Measures. American Journal of Sociology, Vol. 92 (5), 1170-1182.

Borgatti, Steven P., Martin G. Everett and Linton C. Freeman (1992). UCINET IV, version 1.4. Columbia (S.C.): Analytic Technologies.

Bougon, Michel, Karl E. Weick and Din Binkhorst (1977). Cognition in Organizations: An Analysis of the Utrecht Jazz Orchestra. Administrative Science Quarterly, Vol. 22, December 1977, 606-639.

Bourdieu (1989). Distinction. A Social Critique of the Judgment of Taste. London: Routledge (originally appeared in 1979).

Brewer, Marilynn B. (1991). The Social Self: On Being the Same and Different at the Same Time. Personality and Social Psychology Bulletin, 17, 475-482.

Burt, R. (1976). Positions in networks. Social Forces, 55. 93-122.

Campbell, Colin (1996). The Myth of Social Action. Cambridge: Cambridge University Press.

Carter, D.E. (1982). Designing Corporate Identity Programs for Small Corporations. New York: Art Direction Company.

Casagrande, J.B. and K.L. Hale (1967). Semantic relationships in Papago folk-definitions. In: D. Hymes and W.E. Bittle (eds.): Studies in Southwestern Ethnolinguistics, 165-193. Den Haag: Mouton.

Chomsky, Noam (1965). Aspects of the theory of syntax. Cambridge (Mass.): M.I.T. Press.

Chomsky, N. (1968). Language and mind. New York: Harcourt, Brace and World.

Chomsky, Noam (1980). Rules and Representations. Oxford: Basil Blackwell.

Churchill, G.A. Jr. (1979). A paradigm for developing better measures of marketing constructs. Journal of Marketing Research, Vol. 16, 64-73.

Clegg, S.R. (1993). Narrative, Power and Social Theory. In: D.K. Numby (ed.): Narrative and Social Control: Critical Perspectives. Newbury Park: Sage.

Cock, G. de, e.a. (1984). Organisatieklimaat en -cultuur: Theorie en praktische toepassing van de Organisatie klimaat index voor profit organisaties (Okipo) en de verkorte vorm (Vokipo). Leuven, Amersfoort: ACCO.

Cohen, Jacob (1960). A Coefficient of Agreement for Nominal Scales. Educational and Psychological Measurement, Vol XX, Nº 1, 37-46.

Collins, Allan M. and Elisabeth F. Loftus (1975). A Spreading-Activation Theory of Semantic Processing. Psychological Review, Vol. 82, Nº 6, 407-428.

Collins, James C. and Jerry L. Porras (1996). Building your company's vision. Harvard Business Review, September-October 1996, 65-77.

Corporate Communication Centre (1991). Applying the Mannheimer-CI test in a Dutch company. Internal report.

Corporate Communication Centre (1992). Identiteit-Imago Studie Automation company. Rotterdam: Corporate Communication Centre, Faculteit Bedrijfskunde. 27 October 1992.

Crabtree, B.F. and W.L. Miller (1992). A template approach to text analysis developing and using codebooks. In: B.F. Crabtree and W.L. Miller (eds.): Doing Qualitative Research. Newbury Park: Sage (quoted via King, 1994).

Day, Adrian (1994). Lecture held on the symposium 'Corporate Identity, towards the millennium'. Friday 17 June 1994. University of Strathclyde, Glasgow.

Dowling, G.R. (1986). Managing Your Corporate Images. Industrial Marketing Management, 15, 109-115.

Downs, C.W., M.D. Hazen (1977). A factor analytic study of communication satisfaction. Journal of Business Communication, Vol. 14, N° 3, 63-73.

Drazin, Robert, and Lloyd Sandelands (1992). Autogenesis: A Perspective on the Process of Organizing. Organization Science, Vol 3, N° 2, May 1992, 230-249.

Dunteman, George H. (1989). Principal Components Analysis. Series: Quantitative applications in the social sciences, 69. Newbury Park: Sage.

Durkheim, Émile (1973). Les Règles de la Méthode Sociologique. Paris: Presses Universitaires de France.

Durkheim, Émile (1973 [1893]). De la division du travail social. 9e édition. Paris: Presses Universitaires de France.

Dutton, Jane E., Janet M. Dukerich and Celia V. Harquail (1994). Organizational Images and Member Identification. Administrative Science Quarterly, 39, 239-263.

Ellemers, Naomi (1991). Identity Management Strategies, The influence of social-structural variables on strategies of individual mobility and social change, Proefschrift, Rijksuniversiteit Groningen, 5 September 1991.

Elsbach, Kimberly D. and Roderick M. Kramer (1996). Members' Responses to Organizational Identity Treats: Encountering and Countering the Business Week Rankings. Adminstrative Science Quarterly, Vol. 41, 332-476.

Erikson, Erik H. (1968). Identity, Youth and Crisis. London: Faber and Faber.

Fauconnier G. (1988). Het Imago als Placebo: niet ernstig, maar het werkt. Kongresboek Ondernemen, deel III.

Fiol, Marlene (1991). Managing Culture as a competitive Resource: An identity-based view of sustainable competitive advantage. Journal of Management, 17, 191-206.

Fisher, Robert J. (1993). Social desirability bias and the validity of indirect questioning. Journal of Consumer Research. Vol. 20, September 1993, 303-314.

Fiske, Alan Page (1992). The four elementary forms of sociality: Framework for a unified theory of social relations. Psychological Review, Vol. 99, N°. 4, 689-723.

Floor, J.M.G. and W.F. van Raaij (1989). Marketingcommunicatie-strategie. Leiden: Stenfert Kroese.

Freeman, Linton C. (1979). Centrality in Social Networks. Conceptual Clarification. Social Networks, I, 1978/1979, 215-239.

Freeman, L.C., S.P. Borgatti and D.R. White (1991). Centrality in Valued Graphs: A measure of betweenness based on network flow. Social Networks, 13, 141-154.

Gagliardi, P. (1986). La costruzione dell'identità organizzativa. Sviluppo e Organizzazione, N° 96, Luglio-Agosto 1986.

Gagliardi, P. (ed.), 1990. Artifacts as Pathways and Remains of Organizational Life. In: P. Gagliardi (ed.): Symbols and Artifacts, Views of the Corporate Landscape. New York: Aldine de Gruyter, 3-38.

Garfinkel, Harold (1967). Studies in Ethnomethodology. Englewood Cliffs: Prentice Hall.

Giddens, Anthony (1979). Central Problems in Social Theory. Action, Structure and Contradiction in Social Analysis. London: MacMillan Press.

Gleitman, Lila R., Henry Gleitman, Carol Miller and Ruth Ostrin (1996). Similar, and similar concepts. Cognition, Vol. 58, 321-376.

Goldhaber, G. (1986). Organizational Communication. Dubeque: Wm C. Brown Publishers.

Goldman, Alvin I. (1970). A Theory of Human Action. Englewood Cliffs: Prentice Hall.

Grabherr, Monika (1991). Die Abgrenzung der Corporate Identity von der Unternehmungskultur - mit besonderer Berücksichigiung der CI in Dienstleistungsunternehmen. Diplomarbeit, Sozial- und Wirtschaftswissenschaftliche Fakultät der Leopold-Franzens-Universität Innsbruck.

Greenbaum, H.H., P. Clampitt, S. Willihnganz (1988). Organizational Communication, an Examination of four Instruments. Management Communication Quarterly, Vol. 2, N° 2 (November).

Griffin, Abbie and John R. Hauser (1993). The Voice of the Customer. Marketing Science. Vol. 12, N° 1, Winter 1993, 1-27.

Grunert, Klaus G. and Suzanne C. Grunert (1995). Measuring Subjective Meaning Structures by the Laddering Method: Theoretical Considerations and Methodological Problems. International Journal of Research in Marketing. Vol. 12, 209-225.

Guilford, J.P. (1959). Personality. New York: McGraw Hill.

Gutman, Jonathan (1982). A Means-End Chain Model Based on Consumer Categorization Processes. Journal of Marketing. Vol. 46, Nº 2, 60-72.

Habermas, J. (1981). Theorie des kommunikative Handelns. Band 1: Handlungsrationalität und gesellschaftliche Rationalisierung. Band 2: Zur Kritik der funktionalistischen Vernunft. Frankfurt am Main: Suhrkamp Verlag.

Halbwachs, M. (1950, 1968). La Mémoire Collective. 2e Edition. Paris: Presses Universitaires de France.

Hamilton, David L. and Stephen J. Sherman (1996). Perceiving persons and groups. Psychological Review, Vol. 103, Nº 2, 336-355.

Hatch, Mary Jo, and Majken Schultz (1997). Relations between organizational culture, identity and image. European Journal of Marketing, Vol. 31, Nº 5/6, 356-365.

Henrion, Ludlow and Schmidt,(1991). Corporate Identity in a Multicultural Marketplace. A summary of a study carried out in 1991 by MORI for Henrion Ludlow and Schmidt. London: Henrion, Ludlow and Schmidt.

Hershberger, W.A. (1987). Some Overt Behaviours are neither Elicited or Emitted. American Psychologist, (June 1987), 605-606.

Hinkle, Dennis N., (1965). The Change of Personal Constructs from the Viewpoint of a theory of Construct implications. Ph.D. Thesis, Ohio State University.

Hoffman, Robert R., Nigel R. Shadbolt, A. Mike Burton and Gary Klein (1995). Eliciting Knowledge from Experts: A Methodological Analysis. Organizational Behaviour and Human Decision Processes. Vol. 62, Nº 2, May 1995, 129-158.

Hofstede, Geert, (1980). Culture's Consequences: International Differences in work-related Values. Beverly Hills; London: Sage.

Holland, Paul W. and Samuel Leinhardt (1981). An Exponential Family of Probability Distributions for Directed Graphs. Journal of the American Statistical Association, Vol. 76, Nº 373, March 1981, 33-50.

Holstein, James A. and Jaber F. Gubrium (1995). The Active Interview. Qualitative Research Methods Series, 37. Thousand Oaks: Sage.

Howard, J.A. (1977). Consumer Behaviour: Application and Theory. New York: McGraw Hill Book Company.

Hume, David (1961). A treatise of Human Nature. Garden City (N.Y.): Dolphin Books.

Hutchins, Edwin (1990). The technology of team navigation. In: Galegher, Jolene, Robert E. Kraut and Carmen Egido (eds.): Intellectual Teamwork. Hillsdale, N.J.: Erlbaum.

nd, Nicholas (1990). The Corporate Image. Strategies for effective identity programmes. ondon: Kogan Page.

ackson, P. (1987). Corporate Communication for managers. London: Pitman.

ohnson, Michael D. (1989). On the Nature of Product Attributes and Attribute Relationships. In: T.K. Skrull (ed.): Advances in Consumer Research, Vol 16, 598-604.

Johnson-Laird, P.N. (1983). Mental Models. Cambridge: Cambridge University Press.

Kafka, Franz (1960). Die Verwandlung. In: Das Urteil, Das Geheimnis unserer Existenz in dichterischer Deutung, 23-105. Hamburg, Frankfurt am Main: Fischer Bücherei. (urspr. 1935)

Kammerer, J. (1988). Beitrag der Produktpolitik zur Corporate Identity. München: GBI-Verlag.

Kassarjian, Harold H. (1977). Content Analysis in Consumer Research. Journal of Consumer Research. Vol. 4, June 1977, 8-18.

Katz, L. and J.H. Powell (1955). Measurement of the tendency toward reciprocation of choice. Sociometry, Vol. 18, 659-665.

Kavanaugh, Patrice (1997). Creating the identity for a $ 20 Billion Start-up. Design Management Journal, Winter 1997, 20-25.

Keller, I. (1987). Corporate Identity, Elemente und Wirkung. Inauguraldissertation, Universität Mannheim.

Keller, I. (1990). Das CI-Dilemma, Abschied von falschen Illusionen. Wiesbaden: Gabler Verlag.

Kelley, H.H. (1967). Attribution Theory in Social Psychology. Nebraska Symposium on Motivation, 15, 192-238.

Kelly, G.A. (1955) The Psychology of Personal Constructs. New York: W.W. Norton and Co.

Kennedy, S.H. (1977). Nurturing Corporate Images: Total Communication or Ego Trip? European Journal of Marketing, 11 (1), 120 - 164.

Kilmann, Ralph H. (1985). Five Steps for Closing Culture Gaps. In: Kilmann, Ralph H., Mary J. Saxton, Roy Serpa and Associates (eds.): Gaining Control of the Corporate Culture. San Francisco, London: Jossey-Bass Publishers.

Kilmann, Ralph H., Mary J. Saxton and Roy Serpa (1985). Five Key Issues in Understanding and Changing Culture. In: Kilmann, Ralph H., Mary J. Saxton, Roy Serpa and Associates (eds.): Gaining Control of the Corporate Culture. San Francisco, London: Jossey-Bass Publishers.

Kim, Jae-On and Charles W. Mueller (1994). Factor Analysis: Statistical Methods and Practical Issues. In: Michael S. Lewis-Beck (ed.): Factor Analysis and Related Techniques (International Handbooks of Quantitative Applications in the Social Sciences), 75-156. London: Sage.

King, Nigel (1994). The Qualitative Research Interview. In: Catherine Cassell and Gillian Symon: Qualitative methods in organizational research, a practical guide, 14-36. London: Sage.

Knoke, David E. and James H. Kuklinski (1982). Network Analysis. Beverly Hills: Sage Publications.

Kogut, Bruce and Udo Zander (1996). What Firms Do? Coordination, Identity, and Learning. Organization Science, Vol. 7, N° 5, September-October 1996, 502-518.

Komatsu, Lloyd K. (1992). Recent Views of Conceptual Structure. Psychological Bulletin, Vol. 112, N° 3, 500-526.

Körner, Martin (1990). Corporate Identity und Unternehmenskultur: ganzheitliche Strategie der Unternehmensführung. Deutscher Sparkassenverlag, Stuttgart.

Kotler, G. G. Armstrong (1989). Principles of Marketing. Prentice Hall, New York.

Krippendorff, Klaus (1980). Content Analysis. An Introduction to its Methodology. The Sage COMMTEXT Series, Vol. 5. Beverly Hills, London: Sage Publications.

Kroeber, A.L. and C. Kluckhohn (1952). Culture: A Critical Review of Concepts and Definitions. Cambridge, Mass.: Harvard University Press.

Larçon, J.P. and R. Reitter (1979). Structures de Pouvoir et Identité de l'Entreprise. Paris: Éditions Nathan.

Laundy, Peter and Susan Thornton Rogers (1995). Don't Image your Position, Express your Character. Design Management Journal, Winter 1995, 9-16.

de Levita, David Joël (1967). The Concept of Identity. Mouton and Co, Den Haag.

Lief, Todd (1996). Common Ground, Common Cause and Common Sense. Design Management Journal, Summer 1995, 55-61.

Linton, Ralph (1945). The Cultural Background of Personality. New York: Appleton Century Crofts.

Lipe, Marlys G. (1991). Counterfactual reasoning as a framework for Attribution Theories. Psychological Bulletin, Vol. 109, N° 3, 456-471.

Locke, John (1991). An Essay concerning Human Understanding. Abridged and edited by John W. Yolton. London: J.M. Dent and Sons. Rutland (Vmt.): Charles E. Tuttle Co.

Lux, Peter G.C. (1988). Zur Durchführung von Corporate Identity Programmen. In: Birkigt, K. , M.M. Stadler and R. Funck (1988). Corporate Identity, Grundlagen, Funktionen, Fallbeispiele. Verlag Moderne Industrie, Landsberg/Lech, 4e Auflage.

Lyles, M.A. and C.R. Schwenk (1992). Top Management, Strategy, and Organizational Knowledge Structures. Journal of Management Studies, 29, 155-174,

Lyotard, Jean-François. (1979). La Condition Postmoderne. Minuit, Paris.

March, J.G. and H.A. Simon (1958). Organizations. New York: John Wiley and Sons.

Margulies, Walter (1970). Custom Control of Corporate Identity. Business Horizons. February 1970, 31-36.

Markus, H. and R.B. Zajonc. (1985). The cognitive perspective in social psychology. In G. Lindzey and E. Aronson (red.): The Handbook of Social Psychology, Vol. 1, 137-230. New York: Random House.

Marshall, Harriette (1994). Discourse Analysis in an Occupational Context. In: Catherine Cassell and Gillian Symon: Qualitative methods in organizational research, a practical guide, 91-106. London: Sage.

Martin, Joanne, Martha S. Feldman, Mary Jo Hatch and Sim B. Sitkin (1983). The Uniqueness Paradox in Organizational Stories. Administrative Science Quarterly, Vol. 28, 438-453.

Mazeland, Harrie and Paul ten Have (1996). Essential tensions in (semi-) open research interviews. In: Ilja Maso and Fred Wester (eds.): The deliberate dialogue: qualitative perspectives on the interview, 87-113.

McArthur, L.A. (1972). The how and what of why: Some determinants and consequences of causal attribution. Journal of Personality and Social Psychology, 22, 171-193.

McNemar, Quinn (1947). Note on the sampling error of the difference between correlated proportions or percentages. Psychometrika, Vol. 12, N° 2, June 1947, 153-157.

Medin, Douglas, and Andrew Orthony (1985). Psychological Essentialism. In: Vosniadou, S. and A. Orthony (eds.): Similarity and Analogical Reasoning, 179-195. Cambridge: Cambridge University Press.

Mele, Alfred R. (1992). Recent work on intentional action. American Philosophical Quarterly. Vol. 29, N° 3, July 1992, 199-217.

Mergers and Acquisitions (1996). Corporate Identity. In: Mergers and Acquisitions: the Journal of Corporate Venture, Vol. 30, N° 5, 30-31.

Merkle, W. (1992). Corporate Identity für Handelsbetriebe. Göttingen: Göttinger Handelswissenschaftliche Schriften, Band 21.

Miles R.E. and C.C. Snow (1978). Organizational Strategy, Structure and Process. New York, McGraw Hill.

Mills, C. Wright (1940). Situated Actions and Vocabularies of Motive. American Sociological Review. Vol. 5, 904-913.

Milgram, S. (1963). Behavioral study of obedience. Journal of Abnormal and Social Psychology, Vol. 67, 371-378.

Minsky, M. (1981). A Framework for Representing Knowledge. In: John Haugeland (ed.): Mind Design. Cambridge (MA): MIT-Press.

Minsky, M. (1986). The society of mind. New York: Simon and Schuster.

Mittmann, Josef (1991). Identitätsorientierte Unternehmensführung. Der Identitätswandel von Unternehmen als Steuerungsproblem für die Unternehmensführung. Bern, Stuttgart: Haupt.

Moingeon, Bertrand and Bernard Ramanantsoa (1997). Understanding corporate identity: the French school of thought. European Journal of Marketing, Vol. 31, N° 5/6, 383-395.

Montgomery and Crittenden (1977). Improving Coding Reliability for Open-Ended Questions. Public Opinion Quarterly, 41, 235-243.

Morgan, Gareth (1986). Images of Organization. Beverly Hills: Sage.

MORI, (1993). Meaning of Corporate Identity in Several European Countries. Study commissioned by Ludlow, Henrion and Schmidt; London.

Moss, Helen E., Ruth K. Ostrin, Lorraine K. Tyler and William D. Marslen-Wilson (1995). Accessing different types of lexical semantic information: Evidence from priming. Journal of Experimental Psychology: Learning, Memory and Cognition. Vol. 21, N° 4, 863-883.

Napoles, V. (1988). Corporate Identity Design. Van Nostrand Reinhold Company, New York.

Nijssen, E.J. (1992). De Strategie van Bedrijven, Modificatie en Empirische Toetsing van de strategie typologie van Miles and Snow. Utrecht: Lemma.

Noonan, Harold W. (1989). Personal Identity, Routledge, London/New York.

Olins, Wally, (1984). The Wolff Olins Guide to Corporate Identity. London: Wolff Olins.

Olins, Wally (1989). Corporate Identity: Making Business Strategy Visible through Design. London: Thames and Hudson.

Olins, Wally (1990). Corporate Identity: Bedrijfsstrategie in beeld. Veen Uitgevers, Utrecht.

Olins, Wally (1991). Corporate Identity; wat is dat?. In: C.B.M. van Riel en W.H. Nijhof (eds.): Handboek Corporate Communication. Houten: Boon, Stafleu and van Loghum, afl. 4, 4.5-3 - 4.5-33, 16th July 1991.

Olins, Wally (1995). The New Guide to Identity. Aldershot: Gower Publishing Limited.

Olins, Wally (1996). The energy of identity. Marketing: journal of sales management. April 1996, 18-20.

Olson, Jerry C. and Thomas. J. Reynolds (1983). Understanding Consumers' Cognitive Structures: Implications for Advertising Strategy. In: L. Percy and A.G. Woodside (Eds.): Advertising and Consumer Psychology. 77-90. Lexington (MA): Lexington Books.

Parsons, Talcott (1949). The structure of social action. New York: The Free Press of Glencoe. (Original Edition: 1937).

Pazzani, Michael J. (1991). Influence of Prior Knowledge on Concept Acquisition: Experimental and Computational Results. Journal of Experimental Psychology: Learning, Memory and Cognition. Vol. 17, Nº 3., 416-432.

Pentland, Brian (1995). Grammatical Models of Organizational Processes. Organization Science. Vol. 6, Nº 5, September-October 1995, 541-556.

Peter, J. Paul (1979). Reliability: A review of psychometric basics and recent marketing practices. Journal of Marketing Research, Vol 16, February 1979, 6-17.

Peteraf, Margaret and Mark Shanley (1997). Getting to know you: a theory of strategic group identity. Strategic Management Journal, Vol 18, 165-186.

Pieters, R.G.M, J.B.E.M. Steenkamp and M. Wedel (1992). Issues in Means-end Chain Theory. Research Memorandum Nº 462. Groningen: Institute of Economic Research, Faculty of Economics, University of Groningen.

Pieters, Rik, (1993). A control view on the behaviour of consumers: Turning the triangle. In: W. Fred van Raaij and Gary Bamossy (eds.): European Advances in Consumer Research, Vol. 1, 507-512.

Pieters, Rik, Hans Baumgartner and Huub Stad (1994). Diagnosing means-end structures: The perception of wordprocessing software and the adaptive-innovative personality of managers. In: Josée Bloemer, Jos Lemmink and Hans Kasper: Proceedings 23^{d} Annual Conference of the European Marketing Academy, 18 t/m 20 Mei 1994 in Maastricht, 749-762.

Pieters, Rik, Hans Baumgartner and Doug Allen (1995). A Means-end Chain Approach to Consumer Goal Structures. International Journal of Research in Marketing. Vol. 12, 227-244.

Pizam, A. (1991). Managing Cross-Cultural Hospitality Enterprises. Working Paper, University of Central Florida, Orlando.

Popping, Roelof (1988). Overeenstemmingsmaten voor Nominale Data. Proefschrift, Faculteit der Sociale Wetenschappen. Groningen: Rijksuniversiteit Groningen.

Potter, Jonathan and Margaret Wetherell (1987). Discourse and Social Psychology: beyond Attitudes and Behaviour. London: Sage.

Porter, M.E. (1980). Competitive Strategy, Techniques for Analyzing Industries and Competitors, New York: The Free Press.

Prahalad, C.K. and G. Hamel (1990). The core competence of the corporation. Harvard Business Review, Vol. 68, N° 3, May/June, 799-91.

Quin, J.B., H. Mintzberg and R.M. James (1988). The Strategy Process; concepts and cases. London: Prentice Hall.

Quine, W.V. (1990). Pursuit of Truth. Cambridge, Massachussetts: Harvard University Press.

Ramanantsoa, Bernard, & Catherine Thiery-Basle (1989). Histoire et Identité de l'Entreprise. Revue Française de Gestion, Janvier-Février 1989, 107-111.

Ramanantsoa, Bernard and Bertrand Moingeon (1991). A necessary taking into account of the 'sameness' and of the conflict in the definition of Corporate Culture and Identity. Les Cahiers de Recherche, CR 414/1991. Jouy-en-Josas: HEC.

Redding, W.C. (1972). Communication within the organization: an interpretive review of theory and research. New York: Industrial Communication Council.

Reitter, R., F. Chevalier, H. Laroche, C. Mendoza, P. Pulicani (1991). Cultures d'Entreprise. Vuibert, Paris.

Reynolds, Thomas J. and Alyce Byrd Craddock (1988). The application of the meccas model to the development and asessment of advertising strategy, a case study. Journal of Advertising Research, April/May 1988, 43-54.

Reynolds, Th.J. and J. Gutman (1984). Advertising is Image Management. Journal of Advertising Research. February/March 1984, 27-36.

Reynolds, Th.J. and J. Gutman (1988). Laddering Theory, method, analysis and Interpretation. Journal of Advertising Research. February/March 1988, 11-31.

Robberts, K.H., C.A. O'Reilly (1973). Some problems in measuring organizational communication. Paper prepared for US office of Naval research. US Department of Commerce.

Robbins, R.H. (1973). Identity, Culture and Behavior. In: John J. Honigmann (ed.). Handbook of Social and Cultural Anthropology, 1199-1222. Chicago: Rand McNally College Publishing Company.

Rockeach, M.J. (1973). The Nature of Human Values. New York: The Free Press.

Rosen, B. (1970) The corporate search for visual identity: a study of fifteen outstanding design programs. New York: Van Nostrand Reinhold Co.

Rugg, G, P. McGeorge and N. Shadbolt (1990). On the use of laddered grids in knowledge elicitation. Artificial Intelligence Group, Technical Report, Feb. 1. University of Nottingham.

Russell, Bertrand (1956). Logic and Knowledge. Essays edited by R.C. March. London, New York: George Allen and Unwin.

Sabidussi, G. (1966). The Centrality Index of a Graph. Psychometrika, 31, 581-603.

Sandelands and Stablein (1987). The concept of organization mind. In: Samuel Bacharach and Nancy DiTomaso (eds.): Research in the Sociology of Organizations. Vol 5, 135-161. Greenwich, CT: JAI Press.

Schein (1985). Organizational Culture and Leadership, A Dynamic View. San Francisco, Washington: Jossey-Bass.

Schneider, Susan C. and Reinhard Angelmar (1993). Cognition in Organizational Analysis: Who's Minding the Store?. Organization Studies, 14/3: 347-374.

Schneider, Walter and Richard M. Shiffrin (1977). Controlled and automatic human information processing: I. Detection, search and attention. Psychological Review, Vol. 84, N° 1, January 1977, 1-66.

Schnurr, Paula P, Stanly D. Rosenberg, Thomas E. Oxman and Gary J. Tucker (1986). A Methodological Note on Content Analysis: Estimates of Reliability. Journal of Personality Assessment, Vol. 50 (4). 601-609.

Schütze, F. (1977). Die Technik des narrativen Interviews in Interaktionsfeldstudien - dargestellt an einem Projekt zu Erforschung von kommunalen Machtstrukturen. Bielefeld, 1977. Cited via Weber, 1985.

Schwanenflugel, Paula, Caroly Akin and Wei-Ming Luh (1992). Context availability and the recall of abstract and concrete words. Memory and Cognition, Vol. 20, 96-104.

Selame, E. and J. Selame (1975). Developing a Corporate Identity; How to Stand Out in the Crowd. New York: Wiley.

Selznick, Philip (1957). Leadership in Administration, a Sociological Approach. Evanston (IL): Row, Peterson and Company.

Simon, Herbert A. (1955). Administrative Behavior. A study of Decision-Making Processes in Administrative Organization. New York: The Free Press.

Simon, Herbert A. (1994). The bottleneck of attention: connecting though with motivation. In: W. Spaulding (ed.): Integrative views of motivation, cognition, and emotion (), Nebraska Symposium on Motivation, Vol. 41, 1-21. Lincoln: University of Nebraska Press.

Sirsi, Ajay K., James C. Ward and Peter H. Reingen (1996). Microcultural Analysis of Variation in Sharing of Causal Reasoning about Behavior. Journal of Consumer Research. Vol. 22, March 1996, 345-372.

Smirnov, N.V. (1948). Table for estimating the goodness of fit of empirical distributions. Annals of Mathematical Statistics, Vol. 19, 279-281.

Spradley, James P. (1979). The Ethnographic Interview. New York: Holt, Rinehart and Winston.

Spreen, Marinus and Ronald Zwaagstra (1994). Personal network sampling, outdegree analysis and multilevel analysis: introducing the network concept in studies of hidden populations. International Sociology. Vol. 9, Nº 4, December 1994, 475-491.

Starbuck, W.H. (1976). Organizations and their environments. In: M.D. Dunnette (ed.): Handbook of industrial and organizational psychology. Chicago: Rand, 1069-1123.

Stephenson, Karen and Marvin Zelen (1989). Rethinking Centrality: Methods and Examples. Social Networks, 11, 1-37.

Strauss, Anselm and Juliet Corbin (1991). Basics of Qualitative Research. Grounded Theory Procedures and Techniques. Newbury Park: Sage Publications.

Tafertshofer, A. (1982) Corporate Identity. Magische Formel als Unternehmensideologie. Die Unternehmung, 36 Jg, Heft 1, pg. 11ff.

Tajfel, H. and J.C. Turner (1985). The social identity theory of intergroup behavior. In: S. Worchel and W.G. Austin (eds.): Psychology of Intergroup relations (2nd ed., 7-24). Chicago: Nelson-Hall.

Talmy, L. (1978). Figure and ground in complex sentences. In: Joseph H. Greenberg, Charles A. Ferguson and Edith A. Moravcsik (eds.): Universals of Human Language, Vol. 4, Syntax. Stanford: Stanford University Press, 625-649.

Tanneberger, Anke (1987). Corporate Identity, Studie zur theoretischen Fundierung und Präzisierung der Begriffe Unternehmenspersönlichkeit und Unternehmensidentität. Dissertation Universität Fribourg, Schweiz.

ter Hofstede, Frenkel, Anke Audenaert, Jan-Benedict E.M. Steenkamp and Michel Wedel (1998). An Investigation into the Association Pattern Technique as a Quantitative Approach to Measuring Means-end Chains. International Journal of Research in Marketing, in press.

Thomas and Klein (1989). Communicatiebegrippen voor Dagelijks Gebruik. Den Haag: Thomas & Klein.

Tversky, Amos (1977). Features of Similarity. Psychological Review. Vol 84, N° 4, July 1977, 327-352.

Tversky and Hutchinson (1986). Nearest neighbour analysis in psychological spaces. Psychological Review. Vol. 93, N° 1, 3-22.

Vallacher, Robin R. and Daniel M. Wegner (1985). A Theory of Action Identification. Hillsdale, N.J: Lawrence Erlbaum.

van den Bosch, F.A.J. (1989). Over de grenzen van organisaties [on the borders of organizations]. Inaugural address, Erasmus Universiteit Rotterdam, Faculteit Bedrijfskunde. Delft: Eburon.

van Doorn, J.A.A. en C.J. Lammers (1979). Moderne Sociologie, een systematische inleiding. Aula-boeken 29. Antwerpen/Utrecht: het Spectrum.

van Raaij, W.F. (1986). Causal Attributions in Economic Behavior. In: Alan J. and Heather W. MacFadyen (eds.): Economic Psychology: Intersections in Theory and Application. Amsterdam: Elsevier Science Publishers (North Holland).

van Rekom, J., C.B.M. van Riel and B. Wierenga (1991). Corporate Identity, van vaag Concept naar hard Feitenmateriaal. Rotterdam: Corporate Communication Centre.

van Rekom, J. (1992). Corporate Identity; Ontwikkeling van Concept en Meetinstrument. In: C.B.M. van Riel en W.H. Nijhof (eds.): Handboek Corporate Communication, 1.3/1-1.3/36. Houten: Boon Stafleu Van Loghum.

J. van Rekom and M. Jansen-Verbeke (1995). Museumbezoekers Doorgelicht.. Research Paper 1995 nr. 2. Centrum voor Toerisme Management, Faculteit Bedrijfskunde, Erasmus

van Rekom, J. en C.B.M. van Riel (1993). Corporate Communication van Geïntegreerde Communicatie naar Integrerende Communicatie, Bedrijfskunde, 1993, N° 2, 157-171.

van Riel, C.B.M. (1990). Corporate Communication: State of the Art. In: C.B.M. van Riel en W.H. Nijhof (eds.): Handboek Corporate Communication. van Loghum Slaterus.

van Riel, C.B.M. (1992). Identiteit en Imago, een inleiding in de corporate communication. Schoonhoven: Academic Service.

van Riel, C.B.M. (1994). Balanceren tussen variëteit en uniformiteit in het corporate communication beleid. Inaugurele rede, 21 april 1994. Houten/Zaventem: Bohn Stafleu Van Loghum.

van Riel, C.B.M., A.Th. Smidts and A.Th. Pruyn (1994). ROIT: Rotterdamse Organisatie Identificatie Test, Working paper presented on the congress 'New developments on the area of Internal Communication'. Rotterdam: Corporate Communication Centre.

van Riel, C.B.M. (1995). Principles of Corporate Communication. Englewood Cliffs: Prentice Hall.

van Riel, C.B.M. (1995b). Corporate Communication in Financiële Conglomeraten. Holland Management Review. Nr. 42, Voorjaar 1995, 60-68.

Verhallen, T.M.M. (1988). Psychologisch Marktonderzoek. Inaugural Adress, 7 October 1988. Tilburg: Katholieke Universiteit Brabant.

Vinson, Donald E., Jerome E. Scott and Lawrence M. Lamont (1977). The Role of Personal Values in Marketing and Consumer Behaviour. Journal of Marketing, Vol. 41, April 1977, 44-50.

Von Wright, Georg Henrik (1971). Explanation and Understanding. Ithaca, N.Y.: Cornell University Press.

Walsh, James P. (1995). Managerial and Organizational Cognition: Notes from a Trip Down Memory Lane. Organization Science. Vol. 6, N° 3, May-June 1955, 280-321.

Wasserman, Stanley and Katherine Faust (1994). Social Network Analysis, Methods and Applications. Cambridge: Cambridge University Press.

Wattenmaker, W.D., G.I. Dewey, T.D. Murphy and D.L. Medin (1986). Linear Separability and Concept Learning: Context, relational properties, and concept naturalness. Cognitive Psychology. Vol 18, 158-194.

Weber, Johannes (1985). Unternehmensidentität und Unternehmenspolitische Rahmenplanung. Planungs- und Organisationswissenschaftliche Schriften. Herrsching: Prof.Dr. W. Kirsch.

Weber, Max (1972). Wirtschaft und Gesellschaft. Grundriss der verstehenden Soziologie. Fünfte, revidierte auflage, besorgt von Johannes Winckelmann. Studienausgabe. Tübingen: J.C.B. Mohr. (original edition: 1922).

Weber, Max (1973). Gesammelte Aufsätze zur Wissenschaftslehre. Vierte, erneut durchgesehene Auflage, herausgegeben von Johannes Winckelmann. Tübingen: J.C.B. Mohr. (original edition: 1922).

Webster's Dictionary, the new Lexicon of the English language (1990). Deluxe encyclopedic edition. New York: Lexicon Publications Inc.

Wegner, Daniel M., Toni Giuliano and Paula Hertel (1985). Cognitive Interdependence in close relationships. In: William J. Ickes (ed.): Compatible and Incompatible Relationships. 253-276. New York: Springer Verlag.

Weick, Karl E. (1979). The social psychology of organizing. 2nd edition. New York: Random House.

Weick, Karl E. and Karlene H. Roberts (1993). Collective Mind in Organizations: Heedful Interrelating on Flight Decks. Administrative Science Quarterly, Vol. 38, 357-381.

Weick, Karl E. (1995). Sensemaking in Organizations. Thousand Oaks: Sage.

Weigert, Andrew J. (1986). The social production of Identity: Metatheoretical Foundations. The Sociological Quarterly, Volume 27, N° 2, 165-183.

White, Harrison C. (1992). Identity and Control; A Structural Theory of Social Action. Princeton (N.J.): Princeton University Press.

Wierenga, B. and W.F. van Raaij (1987). Consumentengedrag; Theorie, Analyse en Toepassingen. Leiden: Stenfert Kroese.

Williams, C.J.F. (1989). What is Identity?. Oxford: Clarendon Press.

Wittgenstein, L. (1918). Tractatus Logico-Philosophicus. In: Werkausgabe, Band 1, Suhrkamp Taschenbuch Wissenschaft. Frankfurt/Main: Suhrkamp Verlag.

Wittgenstein, L. (1953). Philosophische Untersuchungen. In: Werkausgabe, Band 1, Suhrkamp Taschbuch Wissenschaft. Frankfurt/Main: Suhrkamp Verlag.

Young, Shirley and Barbara Feigin (1975). Using the Benefit Chain for Improved Strategy formulation. Journal of Marketing, 1975, 72-74.

APPENDICES TO CHAPTER 4

Appendix 4.1 Implication matrices from the laddering interviews

Appendix 4.1.1 Implication matrix of boat excursion company

BASIC MATRIX, cut-off level relationships = 1, concepts = 2 (underlying Figure 4.3)
digits of row labels correspond to concept numbers in Appendix 4.2
column labels correspond to concept first two digits of numbers in Appendix 4.2
Unsymmetrized, raw matrix
labels are preceded by row/column numbers
Row labels are abbreviated English labels. Full english concept labels can be found in Appendix 4.2

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
		1	1	1	4	1	6	1	8	1	9	2	0	2	1	2	2	3	2	4	2	5	2	7	2	9	3	0	3	2	3	4	3	5	3	7	3	8	3	9	4	0	4	1	4	3	4	4	4	5	4	6	4	8	4	9	5	0	5	4
1	11STEERW	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14NOTTOU	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	16MOORGE	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	18RESPON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	19DOITIN	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	20PLEASA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	21SELF-E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	22SERVIC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	23BEAGOO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	24CLEANW	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	25TIDYWO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	27NOCOMP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	29TEAROF	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	30SAYGOO	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	31HELPPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	32PERSON	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	37LOOKTI	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	38LOOKOU	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	42PEOPLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	44NOMISE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	48BEFRIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	49WINDOW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	51WINDOW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	52QUALIT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	55ATHMOS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	74EXTRAG	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	78LOOKAT	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	80WITTIN	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	87TURNOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	115CLIEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	121WORKM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	139EXPLA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	154THEFO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	158ANEVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	160CONTI	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	208PRESE	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	215MOREE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	220BETHE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	223THECO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	226THEGU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	245SEETH	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	261KNOWW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	263KEEPY	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	318PEOPL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	327PEOPL	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	328HAVED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	347BETAK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	351HAVEA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	363COSY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
50	373BLEND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	391THEYC	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	397SATIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	399WEARA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	2	0	0	0	0
54	401NONEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	402RECOG	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	511TELLA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	543CONSI	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 4.1.2 Implication matrix of the automation company

BASIC MATRIX, cut-off level relationships = 1, concepts = 6 (underlying Figure 4.6)
first two digits of row labels correspond to concept numbers in Appendix 4.2
column labels correspond to concept numbers in Appendix 4.2

Unsymmetrized, raw matrix
labels are preceded by row/column numbers

Row labels are abbreviated Dutch labels. Full english concept labels can be found in Appendix 4.2

		1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
		0102030405060708091011121314151617181920212324252627282930313233343536383940414243444748495153545556575859 60
1	01ADVISE	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	02HARDWE	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3	03CONTAC	0 0 0 0 0 0 0 0 0 1 0 1 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 4 0 0 0 3 2 0 4 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
4	04AFSPRA	0 0 3 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0
5	05VOORTG	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0
6	06PROCED	0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 1 0 0 0 0 0 0 4 0 0 0 0 0 0 0 0 0
7	07COMPAN	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 2 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
8	08MENSEN	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
9	09GOODRE	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
10	10PLEZIE	0 0 0 0 0 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
11	11PROBLE	0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
12	12KLANTT	0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
13	13PLANVA	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 2 0 0 0 0 0 1 1 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
14	14DOELBE	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
15	15ADMINI	0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
16	16BINNEN	0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
17	17BINNEN	0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
18	18INTERN	0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
19	19INFOVE	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
20	20ERVARI	0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0
21	21CONSUL	1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 2 0 0 0 0 0 2 0 0 0 0 1 0 0 0 0 0
22	23RIJKSO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
23	24FOCUSS	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 3
24	25BETROK	0 0 0 0 0 0 0 3 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
25	26ELKAAR	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
26	27PRESEN	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
27	28CONSUL	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
28	29FINANC	0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
29	30TRAJEC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
30	31INFOBE	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
31	32VOELIN	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0
32	33GECERT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
33	34WINSTM	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
34	35VASTEM	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 2 0 0 1 0 0 1 0 0 0 0
35	36OPDRAC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
36	38AFSPRA	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
37	39CREATI	0 0 0 0 0 0 0 0 0 2 2 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
38	40RELATI	1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 0 1 0 5 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0
39	41OFFERT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0
40	42PROSPE	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 3 0
41	43SAMENW	0 0 1 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0
42	44SAAMHO	0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	47PROFES	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
44	48KWALIT	0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 1 0 0 0 1 0 1 0 0 0 0 0 0 0
45	49OPLANG	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
46	51TOEGEV	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0
47	53CMGCUL	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
48	54AFSPRA	0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 3 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
49	55VERDIE	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 2 0 0
50	56NAGAAN	0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
51	57METCON	0 0 1 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
52	58PROBLE	0 0 0 0 0 0 0 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
53	59STURIN	0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
54	60GEVRAA	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Appendix 4.2 Centralities for boat excursion and automation company

Die-out rate of concepts when the cut-off level for relationships is raised

Appendix 4.2.1.1 Degree centralities boat excursion company

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
11	steer well	12	4	1	
12	estimate the risks	1			
13	apply rules of priority	1			
14	not touch anything	4	2	1	
15	avoid accidents	2			
16	moor gently	7	4		
17	acknowledgement by experts	4			
18	responsibility for the passengers	5	1		
19	do it in a decent way	7	4		
20	pleasant to the people	13	10	1	1
21	self-esteem	4	3		
22	service	15	9		
23	be a good host	23	13	2	2
24	clean windows	6	4		
25	tidy working environment	1	1		
27	no complaints	1	1		
28	be given a compliment	1			
29	tear off the tickets	3	2		
30	say good morning, good afternoon or good evening	2	2		
31	help people	4	2		
32	personal contact	16	11	4	3
34	welcome people	2			
35	not eat while steering	1			
37	look tidy	15	7	1	
38	be able to look outside	6	6	1	

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
41	not nag at people	1			
42	people are satisfied	21	7	1	1
44	no misery with the passengers	2	1		
46	not drink	1			
48	be friendly	3	1		
49	windows do not steam up	3	3	1	
51	window ventilation	2	2		
52	quality	16	9		
53	no leaks	1			
55	atmosphere between the crew	6	2		
57	be a team	4			
58	talk to each other	1			
59	take each other seriously	1			
63	no annoyance	1			
64	whistling tone	2			
67	the material is O.K.	1			
73	become worn out	3			
74	extra guiding	8	4	1	
76	not give the wrong information	2			
78	look at the people	4	1		
79	only tell things about which you are sure	1			
80	wittiness	7	3		
82	not push through	3			
83	no broken legs	1			
87	turnover	5	2		

Nº	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
109	deal with people	5			
110	be flexible	1			
113	a reliable company	1			
114	make a good impression on the client	10			
115	clients come back	9	6		
116	be a good company	1			
118	give the impression of being sensitive to the client	2			
120	adapt if the client asks for it	3			
121	work more easily	7	2		
127	have had phone contact	1			
128	have the folder at home	1			
129	work fast	3			
130	ask to return the confirmation	1			
131	they have a legal obligation	1			
136	not meddle with catering employees	1			
139	explanations	2	1		
140	call back guides	3			
142	no discussion about getting things done	1			
146	know Amsterdam	2			
149	support nagging tourists	1			
151	professionalism	1			
154	the food was good	1	1		
158	an evening out	6	4		
159	be given more work to do	1			
160	continuity	3	2		
200	overview total process	3			
201	overview daily process	5			
202	supervise employees	2			
203	overview long term	2			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 *relations:* 1	concepts: 2 *relations:* 1 (Figure 4.3)	concepts: 2 *relations:* 2 (Figure 4.4)	concepts: 3 *relations:* 2 (Figure 4.5)
204	assign people	1			
206	arrange courses	1			
208	presentability	2	2		
212	know your languages	4			
214	watch yourself	3			
215	more explanations than the absolute minimum	5	4	1	
217	insight into what the company thinks	1			
220	be the most expensive	2	1		
222	the wine is in the coolers	2			
223	the cocktail sticks are in the cheese	3	2		
225	the guide walks through the boat	2			
226	the guide serves the orange juice	2	2		
227	guide pays attention to the people	2			
228	textile tablecloth	1			
229	stainless steel plates	1			
230	cheese	1			
231	peanuts	1			
232	ambience	7			
235	perform control	2			
236	standard product	2			
238	see Amsterdam pass by	1			
105	more customers	2			
243	not do it the easy way when preparing the boat	1			
244	notice the bottle of wine is empty	1			
245	see that children have not yet had their orange juice	1	1		
246	company growth	3			
247	more employment	1			
249	estimate what the client wants	3			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
250	deal with the client	1			
251	the client realizes the cost	1			
255	client has not been given the wrong ideas	1			
256	be straight	2			
259	fit in with the team	1			
261	know where you stand	5	3		
263	keep your word	4	3		
300	guiding	4			
303	tell them about Amsterdam	1			
304	tell them about history	1			
305	tell people what they want to hear	6			
309	avoid difficult stories	1			
310	they remain silent	1			
311	find out whether they are Dutch	1			
312	tell them a little bit more	1			
314	avoid standard jokes	1			
316	tell them something funny	2			
317	tell them about the other side of Amsterdam	1			
318	people listen to you	6	1		
319	not be too dominant	1			
327	people find it interesting	12	4	1	
328	have done a good job	2	2		
329	tell them you will not talk too much through the microphone	2			
331	sound out the situation	2			
333	things run smoothly	3			
334	ask whether everything is O.K.	1			
338	not give a random answer	1			
341	not look bored	4			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
342	also talk to other people	3			
343	not stick at one table	1			
344	people laugh	1			
345	amuse people	3			
346	avoid silly jokes	1			
347	be taken seriously	3	1		
350	enjoy it yourself	6			
351	have a nice time with the captains	2	1		
353	not be sad	1			
355	make something nice out of it	2			
358	read the books	1			
360	tell them something new	1			
362	not faultless	1			
363	cosy	4	3	1	1
365	company reputation	1			
369	well taken care off	1			
370	be asked for	1			
373	blend with the people	1	1		
375	ask whether they still have any questions	1			
378	ask the people	1			
379	do your best	2			
380	do not use dirty words	1			
381	tell them 'I will ask the captain'	1			
391	they can smoke	1	1		
392	not smoke yourself	3			
396	avoid problems	1			
397	satisfaction	2	3		
399	wear a uniform	10	8	3	
401	no need to think	3	3	1	

Nº	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
402	recognizable for the people	3	3	1	
403	keep your distance	1			
404	not use too much make-up	1			
405	a normal ponytail	1			
406	not spoil your clothes	1			
407	not wipe your hair from your eyes	1			
408	not look like a cow	1			
410	not be overdressed	1			
409	not wear clothes other than the company's clothes	1			
411	wear spider-web stockings	1			
413	not buy panties every week	2			
414	not spend too much money	1			
415	a little bit of lipstick	1			
416	smell nice	1			
422	take away bottles of water	1			
423	not give nuts	1			
503	deviate from the standard itinerary	2			
511	tell them about the cats' boat	1	1		
512	tell them about the new post office	1			
513	answer questions	3			
514	tell them about traditional sailing	1			
515	keep things more lively for yourself	2			
516	watch what is happening in town	1			
519	hear where people are from	2			
520	make pictures	2			
522	separate tasks	1			
523	not criticize quickly	2			
524	everything happens after talk	1			
526	keep boat clean	2			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
529	people keep the boat clean	1			
530	not mess with tape	1			
531	concentrate on steering	1			
532	steer calmly	4			
533	prove yourself	1			
536	show something	1			
539	not catch up with a wrong planning	1			
540	be well moored	2			
541	tell them to mind the height of the ship	1			
543	consideration for the people	4	1		
544	nice itinerary	3			
545	nice shipyards	2			
546	see nice parts of town	1			
552	give an idea of how Amsterdam was before	1			
553	have a chat	1			
554	take turns	1			
555	say something about it	1			
556	helpfulness	4			
557	fellowship	3			
558	do what the cashier says	2			
560	more people	1			
561	wait longer	1			
563	have people not wait too long	3			
564	fill boats as quickly as possible	2			
566	give catering opportunity to sell	1			
567	cater out quickly	1			
568	avoid social control	2			
569	leave boat clean	2			
574	no internal competition	2			

Nº	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 *relations*: 1	concepts: 2 *relations*: 1 (Figure 4.3)	concepts: 2 *relations*: 2 (Figure 4.4)	concepts: 3 *relations*: 2 (Figure 4.5)
575	not create status differences	1			
576	pass across the IJ (= harbour area)	1			
604	prepare the boat	1			
606	know what languages people speak	2			
610	talk about the locks	3			
611	tell them when the locks were built	1			
612	tell them what the locks are used for	1			
613	show them the narrowest house	1			
615	start well in advance	2			
616	anticipate what's coming	1			
617	show them the wooden lock doors	1			
618	be concrete	3			
620	feel better	1			
621	give people a concrete representation of what they already know	2			
622	show them new things	2			
626	look whether there is enough cheese	1			
627	ask whether they like it	1			
630	not rattle off your story	1			
640	show the Golden Bend	1			
641	show how rich the people were	1			
642	use your languages	1			
643	learn more	1			
645	people do not get annoyed	1			
646	diplomacy	1			

Appendix 4.2.1.2 **Information centralities boat excursion company**

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
11	steer well	0.72	0.44	1.29	
12	estimate the risks	0.42			
13	apply rules of priority	0.42			
14	not touch anything	0.62	0.36	1.29	
15	avoid accidents	0.52			
16	moor gently	0.77	0.73		
17	acknowledgement by experts	0.67			
18	responsibility for the passengers	0.57	0.31		
19	do it in a decent way	0.78	0.75		
20	pleasant to the people	0.86	0.88	0.71	1.25
21	self-esteem	0.69	0.65		
22	service	0.88	0.91		
23	be a good host	0.89	0.95	0.92	1.67
24	clean windows	0.60	0.64		
25	tidy working environment	0.38	0.39		
27	no complaints	0.38	0.39		
28	be given a compliment	0.38			
29	tear off the tickets	0.65	0.61		
30	say good morning, good afternoon or good evening	0.63	0.67		
31	help people	0.71	0.61		
32	personal contact	0.86	0.91	1.34	2.00
34	welcome people	0.63			
35	not eat while steering	0.46			
37	look tidy	0.84	0.87	0.82	
38	be able to look outside	0.68	0.73	1.29	
41	not nag at people	0.47			
42	people are satisfied	0.87	0.85	0.57	1.11
44	no misery with the passengers	0.54	0.44		

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
46	not drink	0.36			
48	be friendly	0.64	0.47		
49	windows do not steam up	0.53	0.57	1.29	
51	window ventilation	0.48	0.52		
52	quality	0.86	0.91		
53	no leaks	0.46			
55	atmosphere between the crew	0.57	0.48		
57	be a team	0.45			
58	talk to each other	0.31			
59	take each other seriously	0.31			
63	no annoyance	0.29			
64	whistling tone	0.40			
67	the material is O.K.	0.27			
73	become worn out	0.69			
74	extra guiding	0.73	0.73	0.71	
76	not give the wrong information	0.80			
78	look at the people	0.71	0.49		
79	only tell things about which you are sure	0.63			
80	wittiness	0.74	0.74		
82	not push through	0.37			
83	no broken legs	0.27			
87	turnover	0.62	0.57		
88	take a cold boat	0.38			
103	deal with the people at the counter	0.30			
104	schedule boat trips	0.46			
107	give certain trips to certain captains	0.62			
109	deal with people	0.73			
110	be flexible	0.42			
113	a reliable company	0.44			

Nº	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
114	make a good impression on the client	0.77			
115	clients come back	0.83	0.85		
116	be a good company	0.44			
118	make the impression of being sensitive to the client	0.56			
120	adapt if the client asks for it	0.63			
121	work more easily	0.70	0.53		
127	have had phone contact	0.30			
128	have the folder at home	0.30			
129	work fast	0.42			
130	ask to return the confirmation	0.78			
131	they have a legal obligation	0.78			
136	not meddle with catering employees	0.36			
139	explanations	0.58	0.34		
140	call back guides	0.64			
142	no discussion about getting things done	0.41			
146	know Amsterdam	0.61			
149	support nagging tourists	0.44			
151	professionalism	0.38			
154	the food was good	0.42	0.34		
158	an evening out	0.72	0.51		
159	be given more work to do	0.38			
160	continuity	0.61	0.53		
200	overview total process	0.40			
201	overview daily process	0.42			
202	supervise employees	0.42			
203	overview long term	0.29			
204	assign people	0.30			
206	arrange courses	0.22			
208	presentability	0.62	0.66		

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
212	know your languages	0.73			
214	watch yourself	0.52			
215	more explanations than the absolute minimum	0.76	0.76	1.29	
217	insight into what the company thinks	0.34			
220	be the most expensive	0.47	0.48		
222	the wine is in the coolers	0.54			
223	the cocktail sticks are in the cheese	0.65	0.66		
225	the guide walks through the boat	0.62			
226	the guide serves the orange juice	0.62	0.66		
227	guide pays attention to the people	0.63			
228	textile tablecloth	0.38			
229	stainless steel plates	0.38			
230	cheese	0.38			
231	peanuts	0.38			
232	ambience	0.61			
235	perform control	0.51			
236	standard product	0.60			
238	see Amsterdam pass by	0.38			
105	more customers	0.56			
243	not do it the easy way when preparing the boat	0.46			
244	notice the bottle of wine is empty	0.47			
245	see that children have not yet had their orange juice	0.47	0.50		
246	company growth	0.59			
247	more employment	0.37			
249	estimate what the client wants	0.82			
250	deal with the client	0.58			
251	the client realizes the cost	0.58			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
255	client has not been given the wrong ideas	0.58			
256	be straight	0.41			
259	fit in with the team	0.29			
261	know where you stand	0.69	0.64		
263	keep your word	0.69	0.69		
300	guiding	0.55			
303	tell them about Amsterdam	0.36			
304	tell them about history	0.36			
305	tell people want they want to hear	0.62			
309	avoid difficult stories	0.39			
310	they remain silent	0.39			
311	find out whether they are dutch	0.78			
312	tell a little bit more	0.78			
314	avoid standard jokes	0.43			
316	tell something funny	0.61			
317	tell about the other side of Amsterdam	0.43			
318	people listen to you	0.63	0.26		
319	not be too dominant	0.39			
327	people find it interesting	0.82	0.74	1.29	
328	have done a good job	0.56	0.34		
329	tell them you will not talk too much through the microphone	0.58			
331	sound out the situation	0.49			
333	things run smoothly	0.60			
334	ask whether everything is O.K.	0.47			
338	not give a random answer	0.63			
341	not look bored	0.68			
342	also talk to other people	0.82			
343	not stick at one table	0.58			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
344	people laugh	0.38			
345	amuse people	0.60			
346	avoid silly jokes	0.35			
347	be taken seriously	0.54	0.44		
350	enjoy it yourself	0.73			
351	have a nice time with the captains	0.54	0.33		
353	not be sad	0.47			
355	make something nice out of it	0.53			
358	read the books	0.78			
360	tell them something new	0.78			
362	not faultless	0.43			
363	cosy	0.67	0.72	0.71	1.25
365	company reputation	0.47			
369	well taken care off	0.32			
370	be asked for	0.42			
373	blend with the people	0.47	0.47		
375	ask whether they still have any questions	0.47			
378	ask the people	0.47			
379	do your best	0.59			
380	do not use dirty words	0.47			
381	tell them 'I will ask the captain'	0.47			
391	they can smoke	0.46	0.48		
392	not smoke yourself	0.41			
396	avoid problems	0.29			
397	satisfaction	0.69	0.73		
399	wear a uniform	0.76	0.78	1.40	
401	no need to think	0.63	0.61	0.82	
402	recognizable for the people	0.66	0.70	0.82	
403	keep your distance	0.43			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
404	not use too much make-up	0.46			
405	a normal ponytail	0.46			
406	not spoil your clothes	0.43			
407	not wipe your hair from your eyes	0.78			
408	not look like a cow	0.78			
410	not be overdressed	0.78			
409	not wear clothes other than the company's clothes	0.78			
411	wear spider-web stockings	0.63			
413	not buy panties every week	0.80			
414	not spend too much money	0.63			
415	a little bit of lipstick	0.46			
416	smell nice	0.46			
422	take away bottles of water	0.58			
423	not give nuts	0.58			
503	deviate from the standard itinerary	0.55			
511	tell them about the cats' boat	0.42	0.43		
512	tell them about the new post office	0.42			
513	answer questions	0.66			
514	tell them about traditional sailing	0.42			
515	keep things more lively for yourself	0.43			
516	watch what is happening in town	0.30			
519	hear where people are from	0.60			
520	make pictures	0.54			
522	separate tasks	0.27			
523	not criticize quickly	0.37			
524	everything happens after talk	0.36			
526	keep boat clean	0.38			
529	people keep the boat clean	0.27			
530	not mess with tape	0.78			

Nº	CONCEPT (*Boat excursion company*)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
531	concentrate on steering	0.78			
532	steer calmly	0.66			
533	prove yourself	0.42			
536	show something	0.42			
539	not catch up with a wrong planning	0.40			
540	be well moored	0.54			
541	tell them to mind the height of the ship	0.47			
543	consideration for the people	0.59	0.48		
544	nice itinerary	0.76			
545	nice shipyards	0.66			
546	see nice parts of town	0.52			
552	give an idea of how Amsterdam was before	0.47			
553	have a chat	0.40			
554	take turns	0.24			
555	say something about it	0.28			
556	helpfulness	0.38			
557	fellowship	0.32			
558	do what the cashier says	0.52			
560	more people	0.78			
561	wait longer	0.78			
563	have people not wait too long	0.55			
564	fill boats as quickly as possible	0.51			
566	give catering opportunity to sell	0.36			
567	cater out quickly	0.36			
568	avoid social control	0.42			
569	leave boat clean	0.42			
574	no internal competition	0.31			
575	not create status differences	0.24			
576	pass across the IJ (= harbour area)	0.52			

N°	CONCEPT (Boat excursion company)	cut-off levels for concepts and relationships			
		concepts: 1 relations: 1	concepts: 2 relations: 1 (Figure 4.3)	concepts: 2 relations: 2 (Figure 4.4)	concepts: 3 relations: 2 (Figure 4.5)
604	prepare the boat	0.46			
606	know what languages people speak	0.56			
610	tell them about the locks	0.45			
611	tell them when the locks were built	0.31			
612	tell them what the locks are used for	0.31			
613	show them the narrowest house	0.45			
615	start well in advance	0.39			
616	anticipate what's coming	0.28			
617	show them the wooden lock doors	0.58			
618	be concrete	0.82			
620	feel better	0.45			
621	give people a concrete representation of what they already know	0.57			
622	show them new things	0.57			
626	look to see whether there is enough cheese	0.47			
627	ask whether they like it	0.47			
630	not rattle off your story	0.44			
640	show the Golden Bent	0.58			
641	show how rich the people were	0.58			
642	use your languages	0.78			
643	learn more	0.78			
645	people do not get annoyed	0.33			
646	diplomacy	0.49			

Appendix 4.2.2.1 Freeman's degree centrality measures

AUTOMATION COMPANY

N°	concept (Automation company)	cut-off level for relationships				
		1 (Figure 4.6)	2	3 (Figure 4.7)	4	5
01	advise clients	9	2			
02	work hard	2				
03	have contact with clients	24	16	14	8	
04	follow up engagements	9	3	3		
05	discuss progress	7				
06	agree on procedures	10	4	4	4	
07	company meetings	6	2			
08	motivate people	5	3	3		
09	achieve a good result	9				
10	enjoy work	8	2			
11	solve problems	16	6	4	4	
12	satisfied clients	11	3	3		
13	plan an approach	8	2			
14	reach your goal	14				
15	administrative control	2				
16	stay within the time limit	7	2			
17	stay within the budget	3				
18	internal recruitment	7	4			
19	simplify the information flow	1				
20	use your expertise	12	4			
21	monitor consultants	15	11	3		
23	have the government as a client	3	2			
24	focus on a market	13	5	3		
25	employee commitment	11	7	3		
26	keep everybody informed	5	4			
27	give presentations	3				
28	guide consultants	2				
29	financial control	4				

N°	concept (Automation company)	cut-off level for relationships				
		1 (Figure 4.6)	2	3 (Figure 4.7)	4	5
30	implement the project	2				
31	define the information need	4	2			
32	maintain contact with the client	14	11	11	8	
33	be (ISO-) certified	3				
34	make a profit	6				
35	use standardised methods	7	2			
36	bring in orders	25	17	17	5	5
38	observe agreements	11	7	5	5	5
39	creativity	9	6			
40	build up a network of relationships	22	13	13	13	5
41	submit offers	8	3	3		
42	call clients	7	3	3		
43	cooperation	9				
44	togetherness	3				
47	being professional	3				
48	deliver quality	25	16	12	9	5
49	think in the long term	4				
51	offer surplus value	4				
53	propagate corporate culture	3				
54	make engagements	10	6	6		
55	go deeply into the client's problems	7	2			
56	check whether the client thinks things are all right	7				
57	talk with consultants	11	3	3		
58	assess the problem	6	6	4	4	
59	coach consultants	3				
60	be asked for by the client	3	3	3		

Appendix 4.2.2.2 Information centralities automation company

CENTRALITIES CALCULATED AT DIFFERENT CUT-OFF LEVELS

N°	concept (Automation company)	cut-off level for relationships				
		1 (Figure 4.6)	2	3 (Figure 4.7)	4	5
01	advise clients	2.62	2			
02	work hard	1.62				
03	have contact with clients	3.46	1.45	4.11	5.80	
04	follow up engagements	2.77	1.04	2.03		
05	discuss progress	2.49				
06	agree on procedures	2.77	1.04	3.11	4.54	
07	company meetings	2.21	1.30			
08	motivate people	1.91	1.46	4.34		
09	achieve a good result	2.74				
10	enjoy work	2.63	0.71			
11	solve problems	3.23	0.76	4.77	6.69	
12	satisfied clients	2.96	1.02	2.76		
13	plan an approach	2.57	1.78			
14	reach your goal	3.14				
15	administrative control	1.21				
16	stay within the time limit	2.46	1.78			
17	stay within the budget	1.68				
18	internal recruitment	2.52	1.23			
19	simplify the information flow	0.74				
20	use your expertise	3.00	1.22			
21	monitor consultants	3.11	1.48	4.34		
23	have the government as a client	1.58	1.44			
24	focus on a market	2.90	1.89	4.34		
25	employee commitment	2.59	1.93	4.34		
26	keep everybody informed	2.04	1.30			
27	give presentations	1.65				
28	guide consultants	1.28				
29	financial control	1.82				

N°	concept (Automation company)	cut-off level for relationships				
		1 (Figure 4.6)	2	3 (Figure 4.7)	4	5
30	implement the project	1.31				
31	define the information need	1.82	1.78			
32	maintain contact with the client	3.05	1.34	3.84	5.80	
33	be (ISO-) certified	1.62				
34	make a profit	2.37				
35	use standardised methods	2.42	0.88			
36	bring in orders	3.46	1.44	4.81	4.33	10
38	observe agreements	2.88	1.42	3.38	4.91	10
39	creativity	2.75	1.06			
40	build up a network of relationships	3.38	1.36	4.07	7.65	10
41	submit offers	2.64	1.00	2.18		
42	call clients	2.44	0.79	1.60		
43	cooperation	2.78				
44	togetherness	1.55				
47	being professional	1.64				
48	deliver quality	3.42	1.47	5.10	7.30	10
49	think in the long term	2.01				
51	offer surplus value	2.00				
53	propagate corporate culture	1.66				
54	make engagements	2.75	1.03	2.67		
55	go deeply into the client's problems	2.53	0.51			
56	check whether the client thinks things are all right	2.57				
57	talk with consultants	2.51	1.02	4.34		
58	assess the problem	2.89	0.66	4.77	6.69	
59	coach consultants	1.66				
60	be asked for by the client	2.29	1.56	4.34		

Appendix 4.3 Correlations for all measures of centrality for the boat excursion company

variable	ranked variable		kind of centrality	cut-off level concepts	relationships
DEGREE	RDEGREE	RANK of DEGREE	degree centrality		
CLOSENES	RCLOSENE	RANK of CLOSENES	closeness centrality		
BETWEENN	RBETWEEN	RANK of BETWEENN	betweenness centrality		
EIGENVAL	REIGENVA	RANK of EIGENVAL	eigenvalue centrality		
FLOW_BET	RFLOW_BE	RANK of FLOW_BET	flow betweenness centrality		
INFORMAT	RINFORMA	RANK of INFORMAT	information centrality		
BOPO005	RBOPO005	RANK of BOPO005	bonacich power centrality, ß = 0.05		
BOPO101	RBOPO010	RANK of BOPO010	bonacich power centrality, ß = 0.10		

Rank order correlations, cut-off level concepts = 1, cut-off level relationships = 1

Correlations:	RDEGREE	RCLOSENESS	RBETWEE	REIGENVALUE	RINFOR	RFLOW_BETW.	RBOPO010	RBOPO005
RDEGREE	1.0000	.5713**	.9408**	.5417**	.5529**	.9664**	.7530**	.8980**
RCLOSENE	.5713**	1.0000	.5534**	.9739**	.3190**	.5334**	.9314**	.8192**
RBETWEEN	.9408**	.5534**	1.0000	.5032**	.4819**	.9563**	.6960**	.8344**
REIGENVA	.5417**	.9739**	.5032**	1.0000	.3420**	.4951**	.9326**	.8016**
RINFORMA	.5529**	.3190**	.4819**	.3420**	1.0000	.4493**	.4223**	.4584**
RFLOW_BE	.9664**	.5334**	.9563**	.4951**	.4493**	1.0000	.6992**	.8506**
RBOPO010	.7530**	.9314**	.6960**	.9326**	.4223**	.6992**	1.0000	.9542**
RBOPO005	.8980**	.8192**	.8344**	.8016**	.4584**	.8506**	.9542**	1.0000

N of cases: 250 1-tailed Signif: * - .01 ** - .001

Rank order correlations, cut-off level concepts = 2, cut-off level relationships = 1

Correlations:	RDEGREE	RCLOSENE	RBETWEEN	REIGENVA	RFLOW_BE	RINFORMA:	RBOPO005
RDEGREE	1.0000	.7365**	.9129**	.6977**	.9274**	.8654**	.9732**
RCLOSENE	.7365**	1.0000	.6939**	.8947**	.6439**	.9062**	.8271**
RBETWEEN	.9129**	.6939**	1.0000	.5953**	.9431**	.7688**	.8680**
REIGENVA	.6977**	.8947**	.5953**	1.0000	.5445**	.8952**	.8248**
RFLOW_BE	.9274**	.6439**	.9431**	.5445**	1.0000	.7594**	.8660**
RINFORMA	.8654**	.9062**	.7688**	.8952**	.7594**	1.0000	.9312**
RBOPO005	.9732**	.8271**	.8680**	.8248**	.8660**	.9312**	1.0000

N of cases: 57 1-tailed Signif: * - .01 ** - .001

Rank order correlations, cut-off level concepts = 2, cut-off level relationships = 2

Correlations:	RDEGREE	RCLOSENE	RBETWEEN	REIGENVA	RFLOW_BE	RINFORMA:	RBOPO005
RDEGREE	1.0000	.5572	.9937**	.4430	.9937**	.5126	.7043*
RCLOSENE	.5572	1.0000	.5795*	.8957**	.5795*	-.3846	.9246**
RBETWEEN	.9937**	.5795*	1.0000	.4902	1.0000**	.4770	.6999*
REIGENVA	.4430	.8957**	.4902	1.0000	.4902	-.3558	.7064*
RFLOW_BE	.9937**	.5795*	1.0000**	.4902	1.0000	.4770	.6999*
RINFORMA	.5126	-.3846	.4770	-.3558	.4770	1.0000	-.1429
RBOPO005	.7043*	.9246**	.6999*	.7064*	.6999*	-.1429	1.0000

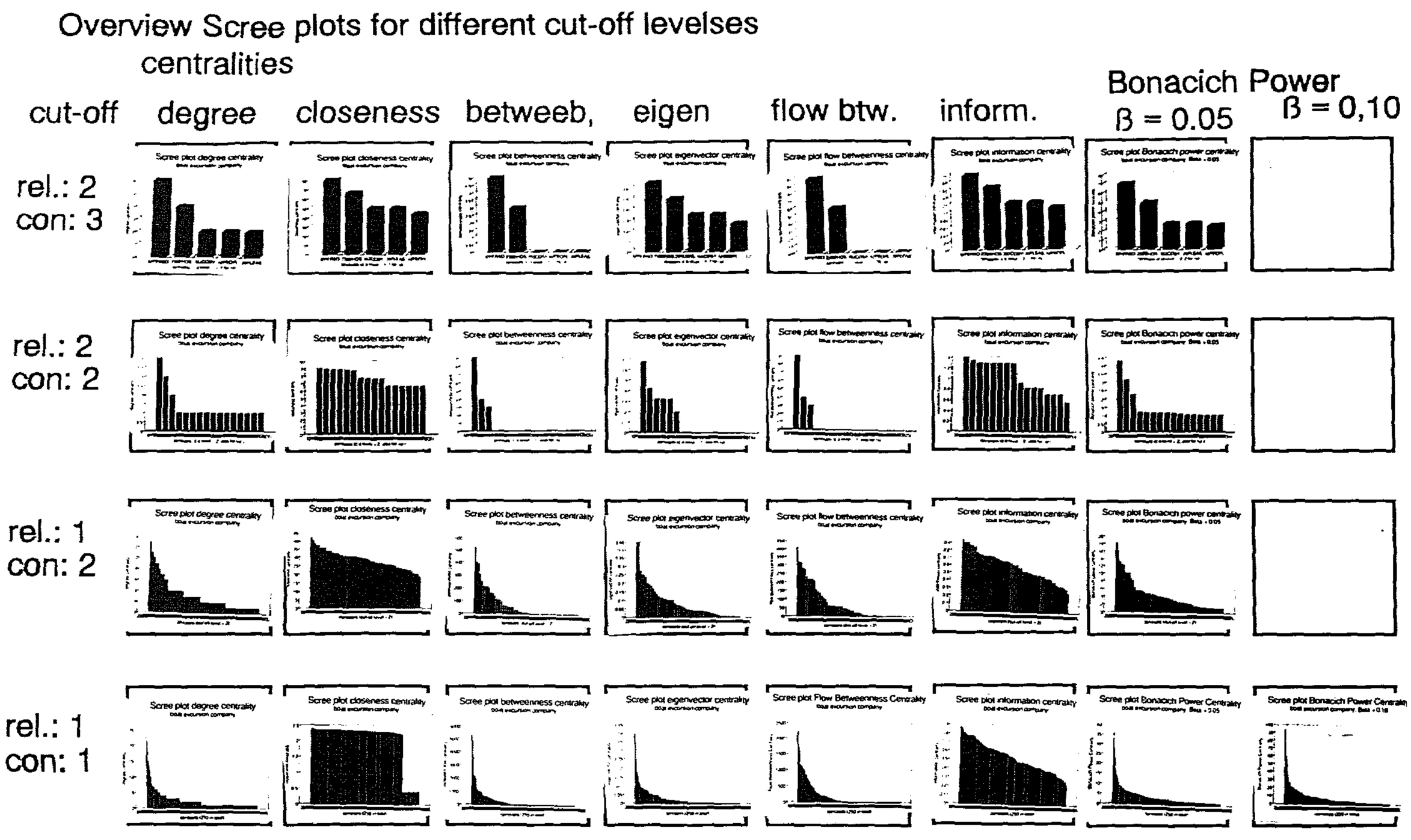
N of cases: 16 1-tailed Signif: * - .01 ** - .001

Rank order correlations, cut-off level concepts = 3, relationships = 2

Correlations:	RDEGREE	RCLOSENE	RBETWEEN	REIGENVA	RFLOW_BE	RINFORMA:	RBOPO005
RDEGREE	1.0000	-.9177	1.0000**	.9177	1.0000**	.9177	.9177
RCLOSENE	-.9177	1.0000	-.9177	-1.0000**	-.9177	-1.0000**	-1.0000**
RBETWEEN	1.0000**	-.9177	1.0000	.9177	1.0000**	.9177	.9177
REIGENVA	.9177	-1.0000**	.9177	1.0000	.9177	1.0000**	1.0000**
RFLOW_BE	1.0000**	-.9177	1.0000**	.9177	1.0000	.9177	.9177
RINFORMA	.9177	-1.0000**	.9177	1.0000**	.9177	1.0000	1.0000**
RBOP005	.9177	-1.0000**	.9177	1.0000**	.9177	1.0000**	1.0000

N of cases: 5 1-tailed Signif: * - .01 ** - .001

Appendix 4.4 Scree plots for all measures of centrality for the boat excursion company



APPENDICES TO CHAPTER 5

Appendix 5.1 Questionnaire used for the first survey

Erasmus Corporate Identity Meter

Onderzoek naar de Identiteit van CMG

Vragenlijst

1992
Corporate Communication Centre
Erasmus Universiteit Rotterdam

Versie 1

Geachte Heer/Mevrouw

Het Corporate Communication Centre aan de Erasmus Universiteit Rotterdam is bezig met een onderzoek naar de identiteit van CMG en het imago van CMG bij de Rijksoverheid. In het kader daarvan zenden wij U bijgevoegde vragenlijst toe. Deze heeft betrekking op de manier, waarop U Uw werk bij CMG doet, en wat voor aspecten daarbij voor U van belang zijn. Wij verzoeken U deze enquête volledig in te vullen.

De vragenlijst bestaat uit twee delen: In het eerste gedeelte wordt U gevraagd, hoe belangrijk U bepaalde activiteiten en doelstellingen vindt voor de uitvoering van Uw werkzaamheden in Uw functie binnen CMG.

In het tweede gedeelte vragen wij U voor een aantal van deze doelen en activiteiten aan te geven, of een activiteit of doel belangrijk is om bepaalde doelen te bereiken.

Denkt U niet te lang na bij elke vraag; er zijn geen goede of fouten antwoorden. De ervaring leert dat het eerst gegeven antwoord meestal het beste is.

Uw ingevulde vragenlijst wordt strikt vertrouwelijk behandeld. Uw individuele gegevens blijven binnen de Erasmus Universiteit en komen niet ter beschikking van CMG.

We willen U nadrukkelijk verzoeken de vragenlijst voor 15 September a.s. aan ons te retourneren in de bijgesloten portvrije antwoordenveloppe. De uitkomst van dit onderzoek is namelijk van groot belang voor CMG en ook voor het wetenschappelijk onderzoek van het Corporate Communication Centre aan de Erasmus-Universiteit.

DEEL 1

Wilt U s.v.p. aangeven in welke mate U bij het uitoefenen van Uw functie bij CMG de realisatie vanonderstaande aspecten belangrijk vindt.

U kunt het antwoord geven door in de onderstaande lijst het getal, dat van toepassing is te omcirkelen. Wellicht ten overvloede benadrukken wij, dat het gaat om het belang van de rol die deze aspecten in Uw werkzaamheden binnen Uw werksituatie bij CMG.

Voorbeeld:

Een kapitein van een rederij, bijvoorbeeld Nedlloyd, die een soortgelijke vragenlijst moet invullen, komt op de vragenlijst de volgende aspecten tegen:

1 = zeer belangrijk, 2 = belangrijk, 3 = enigszins belangrijk, 4 = niet belangrijk, niet onbelangrijk, 5 = enigszins onbelangrijk, 6 = onbelangrijk ,7 = totaal onbelangrijk

a)	Op tijd zijn	1	2	3	4	5	6	7
b)	De ramen zemen	1	2	3	4	5	6	7
c)	Hard varen	1	2	3	4	5	6	7

Op tijd zijn vindt hij heel erg belangrijk, want daar hangt bij zijn werk alles van af. Hier zal hij '1' omcirkelen. De ramen zemen vindt hij onbelangrijk; daar omcirkelt hij '6'. Hard varen is op zich niet belangrijk, maar soms is het wel eens nodig. Vandaar dat hij toch '3' omcirkelt.

1 = zeer belangrijk, 2 = belangrijk, 3 = enigszins belangrijk, 4 = niet belangrijk, niet onbelangrijk, 5 = enigszins onbelangrijk, 6 = onbelangrijk , 7 = totaal onbelangrijk

		Belangrijk						Onbelangrijk
1)	De klant adviseren	1	2	3	4	5	6	7
2)	Hard werken	1	2	3	4	5	6	7
3)	Contact houden met de klant	1	2	3	4	5	6	7
4)	Regelmatig bij de klanten langs gaan	1	2	3	4	5	6	7
5)	Voortgangsbesprekingen houden	1	2	3	4	5	6	7
6)	Procedures afspreken	1	2	3	4	5	6	7
7)	Regelmatig met zijn allen bij elkaar komen op company meetings	1	2	3	4	5	6	7
8)	Mensen motiveren	1	2	3	4	5	6	7
9)	Tot een goed resultaat komen	1	2	3	4	5	6	7
10)	Plezier hebben in het werk	1	2	3	4	5	6	7
11)	Problemen oplossen	1	2	3	4	5	6	7
12)	De klant tevreden stellen	1	2	3	4	5	6	7
13)	Plan van aanpak opstellen	1	2	3	4	5	6	7
14)	Je doel bereiken	1	2	3	4	5	6	7
15)	De administratie goed in de gaten houden	1	2	3	4	5	6	7
16)	Binnen de tijd blijven	1	2	3	4	5	6	7
17)	Binnen het budget blijven	1	2	3	4	5	6	7
18)	Intern de mensen werven voor een project	1	2	3	4	5	6	7
19)	Vereenvoudigen van de informatievoorziening	1	2	3	4	5	6	7

1 = zeer belangrijk, 2 = belangrijk, 3 = enigszins belangrijk, 4 = niet belangrijk, niet onbelangrijk, 5 = enigszins onbelangrijk, 6 = onbelangrijk , 7 = totaal onbelangrijk

		Belangrijk						Onbelangrijk
20)	Je kennis en ervaring in je werk gebruiken	1	2	3	4	5	6	7
21)	Mensen begeleiden	1	2	3	4	5	6	7
22)	Werken voor de Rijksoverheid	1	2	3	4	5	6	7
23)	Je op een specifieke markt focussen	1	2	3	4	5	6	7
24)	Betrokken zijn bij je werk	1	2	3	4	5	6	7
25)	Elkaar op de hoogte houden van alles wat er gebeurt	1	2	3	4	5	6	7
26)	Presentaties geven	1	2	3	4	5	6	7
27)	Nagaan of consultants hun werk goed doen	1	2	3	4	5	6	7
28)	Beheersen van de financiële aspecten	1	2	3	4	5	6	7
29)	Een systeem implementeren	1	2	3	4	5	6	7
30)	De informatiebehoefte van een klant definiëren	1	2	3	4	5	6	7
31)	Voeling houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
32)	Het certificeren van CMG door KEMA	1	2	3	4	5	6	7
33)	Winst maken	1	2	3	4	5	6	7
34)	Vaste methoden en technieken gebruiken	1	2	3	4	5	6	7
35)	Opdrachten binnenhalen	1	2	3	4	5	6	7
38)	Je afspraken nakomen	1	2	3	4	5	6	7
39)	Creativiteit	1	2	3	4	5	6	7
40)	Een netwerk opbouwen van persoonlijke relaties	1	2	3	4	5	6	7
41)	Offertes uitbrengen	1	2	3	4	5	6	7
42)	Potentiële klanten opbellen	1	2	3	4	5	6	7

1 = zeer belangrijk, 2 = belangrijk, 3 = enigszins belangrijk, 4 = niet belangrijk, niet onbelangrijk, 5 = enigszins onbelangrijk, 6 = onbelangrijk , 7 = totaal onbelangrijk

	Belangrijk						Onbelangrijk
43) Samenwerken met andere CMG-ers	1	2	3	4	5	6	7
44) Saamhorigheid	1	2	3	4	5	6	7
45) Bijblijven in het vak	1	2	3	4	5	6	7
46) Professioneel bezig zijn	1	2	3	4	5	6	7
47) Kwaliteit leveren	1	2	3	4	5	6	7
48) Op langere termijn denken	1	2	3	4	5	6	7
49) Toegevoegde waarde leveren	1	2	3	4	5	6	7
50) De CMG-cultuur uitdragen	1	2	3	4	5	6	7
51) Proberen een afspraak te krijgen	1	2	3	4	5	6	7
52) Je verdiepen in de problematiek van de klant	1	2	3	4	5	6	7
53) Nagaan of de klant vindt dat het goed gaat	1	2	3	4	5	6	7
54) Regelmatig met consultants praten	1	2	3	4	5	6	7
55) Vaststellen waar het probleem zit	1	2	3	4	5	6	7
56) Sturing geven aan werknemers van CMG	1	2	3	4	5	6	7
57) Gevraagd worden door de klant	1	2	3	4	5	6	7

Deel 2

In dit gedeelte van de vragenlijst passeren een aantal mogelijke aspecten van uw werk de revue. Wij suggereren voor elk aspect een aantal mogelijke doelen, waar deze aspecten belangrijk voor zouden kunnen zijn. Kunt U bij elk gesuggereerd verband aankruisen, of U het gesuggereerde verband juist of onjuist vindt?

Mocht U een aantal gevallen niet relevant of niet van toepassing vinden, kruist U dan s.v.p. 'onjuist' aan.

Ter illustratie weer een voorbeeld bij een Nedlloyd:

- Hard varen is belangrijk om:

	Juist	Onjuist
1) op tijd te zijn	0	0
2) rustig aan te doen	0	0
3) je ramen te zemen	0	0

Een schipper, die dit invult, kan hard varen belangrijk vinden om op tijd in een haven te kunnen aankomen. Hij zal dan bij onderdeel 1) 'juist' aankruisen. De suggestie, dat hard varen belangrijk is om rustig aan te doen klopt niet. Bij onderdeel 2 kruist hij dan 'onjuist' aan.

Hard varen heeft helemaal niets met ramen zemen te maken. Ook dan geldt, dat de bewering, dat hard varen belangrijk is om je ramen te zemen niet juist zijn, en zal hij dus 'onjuist' aankruisen.

Wellicht ten overvloede benadrukken wij, dat het iedere keer gaat om Uw werksituatie bij CMG.

MENSEN MOTIVEREN is in je werk bij CMG belangrijk om:

	JUIST	**ONJUIST**
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

DE KLANT TEVREDEN STELLEN is in je werk bij CMG belangrijk om:

	JUIST	**ONJUIST**
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

INTERN DE MENSEN WERVEN VOOR EEN PROJECT is in je werk bij CMG belangrijk om:

	JUIST	**ONJUIST**
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

ELKAAR OP DE HOOGTE HOUDEN VAN WAT ER GEBEURT is in je werk bij CMG belangrijk om:

	JUIST	ONJUIST
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

WINST MAKEN is in je werk bij CMG belangrijk om:

	JUIST	**ONJUIST**
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

MET ANDERE CMG-ERS SAMENWERKEN is in je werk bij CMG belangrijk om:

	JUIST	ONJUIST
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

PROFESSIONEEL BEZIG ZIJN is in je werk bij CMG belangrijk om:

	JUIST	ONJUIST
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- vast te stellen waar het probleem zit	0	0
- gevraagd te worden door de klant	0	0

VASTSTELLEN WAAR HET PROBLEEM ZIT is in je werk bij CMG belangrijk om:

	JUIST	ONJUIST
- mensen te motiveren	0	0
- tot een goed resultaat te komen	0	0
- er plezier in te hebben	0	0
- problemen op te lossen	0	0
- de klant tevreden te stellen	0	0
- je doel te bereiken	0	0
- intern de mensen te werven voor een project	0	0
- de informatievoorziening te vereenvoudigen	0	0
- je op een specifieke markt te focussen	0	0
- betrokken te zijn bij je werk	0	0
- elkaar op de hoogte te houden van wat er gebeurt	0	0
- voeling te houden met wat er leeft bij de klanten	0	0
- winst te maken	0	0
- opdrachten binnen te halen	0	0
- creatief te kunnen zijn	0	0
- offertes uit te brengen	0	0
- met ander CMG-ers samen te werken	0	0
- saamhorigheid te kweken	0	0
- professioneel bezig te zijn	0	0
- kwaliteit te leveren	0	0
- op langere termijn te denken	0	0
- toegevoegde waarde te leveren	0	0
- gevraagd te worden door de klant	0	0

Algemeen gedeelte:

Naam[1]:
.....

Functie:
.....

Vestiging:
.....

Heeft U de laatste 2 jaar voor de Rijksoverheid gewerkt?

Ja/Nee[2]

Zo ja, hoeveel % van de werktijd heeft U de laatste twee jaar besteed aan opdrachten van de Rijksoverheid?

..... %

Bent U tijdens het vooronderzoek naar de Identiteit van CMG door één van onze onderzoekers geïnterviewd?

Ja/Nee[2]

[1]Het opgeven van Uw naam is niet noodzakelijk. Degenen, die aan het vooronderzoek hebben deelgenomen verzoeken we echter, dit wel te doen. Dit om naderhand eventuele verschillen in uitkomst tussen de kwalitatieve interviews vooraf en deze vragenlijst na te kunnen trekken.

[2]S.v.p. doorhalen wat niet van toepassing is.

Appendix 5.2

Questionnaire used for the second survey

Erasmus Corporate Identity Test

Vervolgonderzoek naar de Identiteit van CMG

Vragenlijst **1993**

Erasmus Universiteit Rotterdam

Versie 1.1

Deze vragenlijst bestaat uit zeven gedeeltes. Op elke bladzijde worden uit het voorafgaande onderzoek voortkomende bezigheden en doelen vanuit een andere invalshoek benaderd.

De opbouw is alsvolgt:

blz. 1: Wat vindt U belangrijk in Uw werk?

blz. 2: Vragen over hoe abstract of concreet U deze aspecten vindt.

blz. 3: Voor welke doelen van Uw werk is 'professioneel bezig zijn' belangrijk?

blz. 4: Welke andere aspecten komen overeen met 'tot een goed resultaat komen'?

blz. 5: Hoe krijgt U het doel 'kwaliteit leveren' voor elkaar?

blz. 6: Op welke andere aspecten lijkt 'problemen oplossen'?

blz. 7: Hoe specifiek of algemeen zijn al deze begrippen?

Op de laatste bladzijde volgen wat algemene vragen, en vragen over hoe U het invullen van de onderdelen ervaren heeft.

Denkt U bij het geven van de antwoorden s.v.p. niet te lang na. Het gaat in deze enquête niet om goede of foute antwoorden, maar om Uw eigen, persoonlijke mening. De ervaring heeft ons geleerd dat de eerste reactie dan meestal de juiste is.

Tot slot een klein voorbeeld:

Een kapitein van een rederij, bijvoorbeeld Nedlloyd, die een soortgelijke vragenlijst moet invullen, komt op de vragenlijst de volgende aspecten tegen:

1 = totaal onbelangrijk, 2 = onbelangrijk, 3 = enigszins onbelangrijk,
4 = niet belangrijk, niet onbelangrijk, 5 = enigszins belangrijk, 6 = belangrijk,
7 = zeer belangrijk

a)	Op tijd zijn	1	2	3	4	5	6	7
b)	De ramen zemen	1	2	3	4	5	6	7
c)	Hard varen	1	2	3	4	5	6	7

Op tijd zijn vindt hij heel erg belangrijk, want daar hangt bij zijn werk alles van af. Hier zal hij '7' omcirkelen. De ramen zemen vindt hij onbelangrijk; daar omcirkelt hij '2'. Hard varen is op zich niet belangrijk, maar soms is het wel eens nodig. Vandaar dat hij toch '5' omcirkelt.

Kunt U bij de vragen hieronder aangeven hoe belangrijk elk van deze aspecten is **bij het uitvoeren van uw werk bij CMG**?

1 = totaal onbelangrijk, 2 = onbelangrijk, 3 = enigszins onbelangrijk, 4 = niet belangrijk, niet onbelangrijk, 5 = enigszins belangrijk, 6 = belangrijk, 7 = zeer belangrijk

	TOTAAL ONBELANGRIJK						**ZEER BELANGRIJK**
- mensen motiveren	1	2	3	4	5	6	7
- tot een goed resultaat komen	1	2	3	4	5	6	7
- plezier in je werk hebben	1	2	3	4	5	6	7
- problemen oplossen	1	2	3	4	5	6	7
- de klant tevreden stellen	1	2	3	4	5	6	7
- je doel bereiken	1	2	3	4	5	6	7
- intern de mensen werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt focussen	1	2	3	4	5	6	7
- betrokken zijn bij je werk	1	2	3	4	5	6	7
- elkaar op de hoogte houden van wat er gebeurt	1	2	3	4	5	6	7
- voeling houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst maken	1	2	3	4	5	6	7
- opdrachten binnenhalen	1	2	3	4	5	6	7
- creatief zijn	1	2	3	4	5	6	7
- offertes uitbrengen	1	2	3	4	5	6	7
- met andere CMG-ers samenwerken	1	2	3	4	5	6	7
- saamhorigheid kweken	1	2	3	4	5	6	7
- professioneel bezig zijn	1	2	3	4	5	6	7
- kwaliteit leveren	1	2	3	4	5	6	7
- op langere termijn denken	1	2	3	4	5	6	7
- toegevoegde waarde leveren	1	2	3	4	5	6	7
- vaststellen waar het probleem zit	1	2	3	4	5	6	7

Sommige van de in deze vragenlijst voorkomende begrippen zijn bij het uitvoeren van Uw werk bij CMG veel concreter en tastbaarder, terwijl andere veel abstracter zijn. Kunt U hieronder aangeven, hoe concreet of abstract U de hier gebruikte begrippen vindt?

1 = heel concreet, 2 = concreet, 3 = enigszins concreet, 4 = niet concreet en ook niet abstract, 5 = enigszins abstract, 6 = abstract, 7 = heel abstract

	HEEL CONCREET						HEEL ABSTRACT
- mensen motiveren	1	2	3	4	5	6	7
- tot een goed resultaat komen	1	2	3	4	5	6	7
- plezier in je werk hebben	1	2	3	4	5	6	7
- problemen oplossen	1	2	3	4	5	6	7
- de klant tevreden stellen	1	2	3	4	5	6	7
- je doel bereiken	1	2	3	4	5	6	7
- intern de mensen werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt focussen	1	2	3	4	5	6	7
- betrokken zijn bij je werk	1	2	3	4	5	6	7
- elkaar op de hoogte houden van wat er gebeurt	1	2	3	4	5	6	7
- voeling houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst maken	1	2	3	4	5	6	7
- opdrachten binnenhalen	1	2	3	4	5	6	7
- creatief zijn	1	2	3	4	5	6	7
- offertes uitbrengen	1	2	3	4	5	6	7
- met andere CMG-ers samenwerken	1	2	3	4	5	6	7
- saamhorigheid kweken	1	2	3	4	5	6	7
- professioneel bezig zijn	1	2	3	4	5	6	7
- kwaliteit leveren	1	2	3	4	5	6	7
- op langere termijn denken	1	2	3	4	5	6	7
- toegevoegde waarde leveren	1	2	3	4	5	6	7
- vaststellen waar het probleem zit	1	2	3	4	5	6	7

PROFESSIONEEL BEZIG ZIJN is op mijn werk bij CMG **belangrijk om**:

1 = totaal onjuist, 2 = onjuist, 3 = enigszins onjuist, 4 = niet juist, niet onjuist,
5 = enigszins juist, 6 = juist, 7 = volkomen juist

	TOTAAL ONJUIST						**VOLKOMEN JUIST**
- mensen te motiveren	1	2	3	4	5	6	7
- tot een goed resultaat te komen	1	2	3	4	5	6	7
- plezier in je werk te hebben	1	2	3	4	5	6	7
- problemen op te lossen	1	2	3	4	5	6	7
- de klant tevreden te stellen	1	2	3	4	5	6	7
- intern de mensen te werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening te vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt te focussen	1	2	3	4	5	6	7
- betrokken te zijn bij je werk	1	2	3	4	5	6	7
- voeling te houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst te maken	1	2	3	4	5	6	7
- opdrachten binnen te halen	1	2	3	4	5	6	7
- creatief te kunnen zijn	1	2	3	4	5	6	7
- offertes uit te brengen	1	2	3	4	5	6	7
- saamhorigheid te kweken	1	2	3	4	5	6	7
- kwaliteit te leveren	1	2	3	4	5	6	7
- op langere termijn te denken	1	2	3	4	5	6	7
- toegevoegde waarde te leveren	1	2	3	4	5	6	7
- vast te stellen waar het probleem zit	1	2	3	4	5	6	7

TOT EEN GOED RESULTAAT KOMEN is op mijn werk bij CMG **hetzelfde als**:

1 = totaal onjuist, 2 = onjuist, 3 = enigszins onjuist, 4 = niet juist, niet onjuist,
5 = enigszins juist, 6 = juist, 7 = volkomen juist

	TOTAAL ONJUIST						VOLKOMEN JUIST
- mensen motiveren	1	2	3	4	5	6	7
- plezier in je werk hebben	1	2	3	4	5	6	7
- problemen oplossen	1	2	3	4	5	6	7
- de klant tevreden stellen	1	2	3	4	5	6	7
- intern de mensen werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt focussen	1	2	3	4	5	6	7
- betrokken zijn bij je werk	1	2	3	4	5	6	7
- voeling houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst maken	1	2	3	4	5	6	7
- opdrachten binnenhalen	1	2	3	4	5	6	7
- creatief zijn	1	2	3	4	5	6	7
- offertes uit brengen	1	2	3	4	5	6	7
- saamhorigheid kweken	1	2	3	4	5	6	7
- professioneel bezig zijn	1	2	3	4	5	6	7
- kwaliteit leveren	1	2	3	4	5	6	7
- op langere termijn denken	1	2	3	4	5	6	7
- toegevoegde waarde leveren	1	2	3	4	5	6	7
- vaststellen waar het probleem zit	1	2	3	4	5	6	7

KWALITEIT LEVEREN doe ik op mijn werk bij CMG **door**:

1 = totaal onjuist, 2 = onjuist, 3 = enigszins onjuist, 4 = niet juist, niet onjuist, 5 = enigszins juist, 6 = juist, 7 = volkomen juist

	TOTAAL ONJUIST						**VOLKOMEN JUIST**
- mensen te motiveren	1	2	3	4	5	6	7
- tot een goed resultaat te komen	1	2	3	4	5	6	7
- plezier in je werk te hebben	1	2	3	4	5	6	7
- problemen op te lossen	1	2	3	4	5	6	7
- de klant tevreden te stellen	1	2	3	4	5	6	7
- intern de mensen te werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening te vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt te focussen	1	2	3	4	5	6	7
- betrokken te zijn bij je werk	1	2	3	4	5	6	7
- voeling te houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst te maken	1	2	3	4	5	6	7
- opdrachten binnen te halen	1	2	3	4	5	6	7
- creatief te zijn	1	2	3	4	5	6	7
- offertes uit te brengen	1	2	3	4	5	6	7
- saamhorigheid te kweken	1	2	3	4	5	6	7
- professioneel bezig te zijn	1	2	3	4	5	6	7
- op langere termijn te denken	1	2	3	4	5	6	7
- toegevoegde waarde te leveren	1	2	3	4	5	6	7
- vast te stellen waar het probleem zit	1	2	3	4	5	6	7

PROBLEMEN OPLOSSEN lijkt op mijn werk bij CMG **op**:

1 = totaal onjuist, 2 = onjuist, 3 = enigszins onjuist, 4 = niet juist, niet onjuist,
5 = enigszins juist, 6 = juist, 7 = volkomen juist

	TOTAAL ONJUIST						VOLKOMEN JUIST
- mensen motiveren	1	2	3	4	5	6	7
- tot een goed resultaat komen	1	2	3	4	5	6	7
- plezier in je werk hebben	1	2	3	4	5	6	7
- de klant tevreden stellen	1	2	3	4	5	6	7
- intern de mensen werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt focussen	1	2	3	4	5	6	7
- betrokken zijn bij je werk	1	2	3	4	5	6	7
- voeling houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst maken	1	2	3	4	5	6	7
- opdrachten binnen halen	1	2	3	4	5	6	7
- creatief zijn	1	2	3	4	5	6	7
- offertes uit brengen	1	2	3	4	5	6	7
- saamhorigheid kweken	1	2	3	4	5	6	7
- professioneel bezig zijn	1	2	3	4	5	6	7
- kwaliteit leveren	1	2	3	4	5	6	7
- op langere termijn denken	1	2	3	4	5	6	7
- toegevoegde waarde leveren	1	2	3	4	5	6	7
- vaststellen waar het probleem zit	1	2	3	4	5	6	7

Sommige van de begrippen in deze vragenlijst zijn bij het uitvoeren van Uw werk bij CMG nogal functiegebonden, d.w.z. specifiek voor bepaalde werkzaamheden, terwijl andere juist veel algemener van aard zijn en min of meer overal gelden. Kunt U hieronder aangeven, hoe specifiek of algemeen U de hier gebruikte begrippen vindt?

1 = heel specifiek, 2 = specifiek, 3 = enigszins specifiek, 4 = niet specifiek en ook niet algemeen, 5 = enigszins algemeen, 6 = algemeen, 7 = heel algemeen

	HEEL SPECIFIEK						HEEL ALGEMEEN
- mensen motiveren	1	2	3	4	5	6	7
- tot een goed resultaat komen	1	2	3	4	5	6	7
- plezier in je werk hebben	1	2	3	4	5	6	7
- problemen oplossen	1	2	3	4	5	6	7
- de klant tevreden stellen	1	2	3	4	5	6	7
- je doel bereiken	1	2	3	4	5	6	7
- intern de mensen werven voor een project	1	2	3	4	5	6	7
- de informatievoorziening vereenvoudigen	1	2	3	4	5	6	7
- je op een specifieke markt focussen	1	2	3	4	5	6	7
- betrokken zijn bij je werk	1	2	3	4	5	6	7
- elkaar op de hoogte houden van wat er gebeurt	1	2	3	4	5	6	7
- voeling houden met wat er leeft bij de klanten	1	2	3	4	5	6	7
- winst maken	1	2	3	4	5	6	7
- opdrachten binnenhalen	1	2	3	4	5	6	7
- creatief zijn	1	2	3	4	5	6	7
- offertes uitbrengen	1	2	3	4	5	6	7
- met andere CMG-ers samenwerken	1	2	3	4	5	6	7
- saamhorigheid kweken	1	2	3	4	5	6	7
- professioneel bezig zijn	1	2	3	4	5	6	7
- kwaliteit leveren	1	2	3	4	5	6	7
- op langere termijn denken	1	2	3	4	5	6	7
- toegevoegde waarde leveren	1	2	3	4	5	6	7
- vaststellen waar het probleem zit	1	2	3	4	5	6	7

ALGEMEEN GEDEELTE:

Functie:

.....

Vestiging:

.....

Heeft U aan het schriftelijke identiteitsonderzoek deelgenomen dat in de zomer en herfst van 1992 is gehouden? Ja/Nee[3]

Bent U tijdens het vooronderzoek naar de Identiteit van CMG persoonlijk door één van onze onderzoekers geïnterviewd? Ja/Nee[1]

Tot slot nog een paar vragen over hoe U deze vragen ervaren heeft:

- Welke bladzij was het meest plezierig om in te vullen? .....
- Welke bladzij vond U het meest vervelend om in te vullen? .....
- Welke het makkelijkst? .....
- Welke het moeilijkst? .....
- Welke was het duidelijkst? .....
- En welke was het meest verwarrend? .....

Hartelijk dank voor Uw medewerking.

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[3]S.v.p. doorhalen wat niet van toepassing is.

Appendix 5.3

Correlations of centrality at higher cut-off levels with importance scores (automation company)

From variable	New variable	Label	
IMPO29	RIMPO29	RANK of IMPO29	Importance scores first survey
IMPO93	RIMPO93	RANK of IMPO93	Importance scores second survey
VSS93	RVSS93	RANK of VSS93	Self-evidenc
WERK93	RWERK93	RANK of WERK93	Intensity of working on it
BOPOCENK	RBOPOCEN	RANK of BOPOCENK	Degree centrality, cut-off level = 1
CECO2K	RCECO2K	RANK of CECO2K	Degree centrality, cut-off level = 2
CECO3K	RCECO3K	RANK of CECO3K	Degree centrality, cut-off level = 3
CECO4K	RCECO4K	RANK of CECO4K	Degree centrality, cut-off level = 4
INFOCENK	RINFOCEN	RANK of INFOCENK	Information centrality, cut-off level = 1
INFCO2	RINFCO2	RANK of INFCO2	Information centrality, cut-off level = 2
INFCO3	RINFCO3	RANK of INFCO3	Information centrality, cut-off level = 3
INFCO4	RINFCO4	RANK of INFCO4	Information centrality, cut-off level = 4

Degree centrality at different cut-off levels

Cut-off level = 1

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RBOPOCEN
RIMPO29	1.0000	.9250**	.8396**	.8753**	.1908
RIMPO93	.9250**	1.0000	.9296**	.9582**	.2632
RVSS93	.8396**	.9296**	1.0000	.9409**	.2476
RWERK93	.8753**	.9582**	.9409**	1.0000	.2070
RBOPOCEN	.1908	.2632	.2476	.2070	1.0000

N of cases: 23 1-tailed Signif: * - .01 ** - .001

Cut-off level = 2

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RCECO2K
RIMPO29	1.0000	.9391**	.8407**	.9063**	.0717
RIMPO93	.9391**	1.0000	.9031**	.9725**	.0327
RVSS93	.8407**	.9031**	1.0000	.9385**	.2672
RWERK93	.9063**	.9725**	.9385**	1.0000	.0651
RCECO2K	.0717	.0327	.2672	.0651	1.0000

N of cases: 14 1-tailed Signif: * - .01 ** - .001

Cut-off level = 3

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RCECO3K
RIMPO29	1.0000	.9303**	.8859**	.8855**	.2606
RIMPO93	.9303**	1.0000	.9805**	.9750**	.1568
RVSS93	.8859**	.9805**	1.0000	.9872**	.1541
RWERK93	.8855**	.9750**	.9872**	1.0000	.0739
RCECO3K	.2606	.1568	.1541	.0739	1.0000

N of cases: 10 1-tailed Signif: * - .01 ** - .001

Cut-off level = 4:

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RCECO4K
RIMPO29	1.0000	.8974	.8340	.8654	.7757
RIMPO93	.8974	1.0000	.9700*	.9778*	.4743
RVSS93	.8340	.9700*	1.0000	.9971**	.4151
RWERK93	.8654	.9778*	.9971**	1.0000	.4770
RCECO4K	.7757	.4743	.4151	.4770	1.0000

N of cases: 5 1-tailed Signif: * - .01 ** - .001

Information centrality at different cut-off levels

Cut-off level = 1

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RINFOCEN
RIMPO29	1.0000	.9250**	.8396**	.8753**	.1904
RIMPO93	.9250**	1.0000	.9296**	.9582**	.2534
RVSS93	.8396**	.9296**	1.0000	.9409**	.2183
RWERK93	.8753**	.9582**	.9409**	1.0000	.1940
RINFOCEN	.1904	.2534	.2183	.1940	1.0000

N of cases: 23 1-tailed Signif: * - .01 ** - .001

Cut-off level = 2

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RINFC02
RIMPO29	1.0000	.9391**	.8407**	.9063**	-.3495
RIMPO93	.9391**	1.0000	.9031**	.9725**	-.2183
RVSS93	.8407**	.9031**	1.0000	.9385**	-.1822
RWERK93	.9063**	.9725**	.9385**	1.0000	-.1747
RINFC02	-.3495	-.2183	-.1822	-.1747	1.0000

N of cases: 14 1-tailed Signif: * - .01 ** - .001

Cut-off level = 3

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RINFC03
RIMPO29	1.0000	.9303**	.8859**	.8855**	.1985
RIMPO93	.9303**	1.0000	.9805**	.9750**	.1699
RVSS93	.8859**	.9805**	1.0000	.9872**	.1722
RWERK93	.8855**	.9750**	.9872**	1.0000	.1673
RINFC03	.1985	.1699	.1722	.1673	1.0000

N of cases: 10 1-tailed Signif: * - .01 ** - .001

Cut-off level = 4

Correlations:	RIMPO29	RIMPO93	RVSS93	RWERK93	RINFC04
RIMPO29	1.0000	.8974	.8340	.8654	.6650
RIMPO93	.8974	1.0000	.9700*	.9778*	.8952
RVSS93	.8340	.9700*	1.0000	.9971**	.9049
RWERK93	.8654	.9778*	.9971**	1.0000	.8793
RINFC04	.6650	.8952	.9049	.8793	1.0000

N of cases: 5 1-tailed Signif: * - .01 ** - .001

Appendix 5.4 **Quantitatively derived implication matrix**

Averages of the 1992 survey for the relationship questions

N°		8	9	10	11	12	14	18	19	23	24	25	31	33	35	39	41	43	44	46	47	48	49	55	57
8	Motivate people	.	.98	.89	.81	.81	.96	.45	.15	.11	.83	.64	.49	.72	.68	.66	.38	.55	.96	.87	.91	.51	.81	.38	.40
9	Achieve a good result	.83	.	.89	.58	.98	.81	.15	.36	.13	.64	.28	.42	.87	.81	.32	.26	.28	.57	.70	.75	.43	.64	.34	.62
10	Enjoy your work	.98	.89	.	.63	.61	.83	.35	.26	.24	1.00	.50	.57	.50	.61	.93	.20	.61	.85	.72	.80	.35	.67	.33	.67
11	Solve problems	.55	1.00	.58	.	.94	.91	.06	.26	.04	.40	.15	.25	.47	.57	.47	.21	.13	.45	.51	.72	.21	.58	.47	.53
12	Satisfy the client	.43	.87	.74	.43	.	.89	.13	.19	.17	.57	.26	.64	.74	.77	.26	.40	.13	.32	.72	.72	.57	.74	.38	.87
14	Reach your goal	.48	.93	.78	.70	.87	.	.09	.22	.17	.67	.15	.30	.85	.83	.35	.30	.24	.4	.74	.80	.43	.70	.35	.65
18	Internal recruitment	.43	.45	.19	.28	.30	.57	.	.11	.04	.23	.40	.21	.43	.36	.15	.23	.60	.66	.45	.57	.21	.43	.15	.13
19	Simplify information flow	.32	.68	.28	.53	.60	.32	.06	.	.02	.11	.19	.23	.28	.32	.28	.19	.11	.13	.58	.68	.42	.53	.26	.25
23	Work for the government	.15	.70	.17	.46	.65	.46	.11	.30	.	.39	.22	.76	.65	.76	.22	.43	.11	.26	.63	.65	.67	.72	.61	.78
24	Employee commitment	.89	.94	.94	.66	.72	.91	.30	.21	.09	.	.43	.68	.55	.66	.72	.36	.28	.66	.77	.89	.49	.77	.55	.51
25	Keep each other informed	.91	.85	.79	.85	.55	.70	.40	.28	.13	.87	.	.79	.43	.68	.47	.45	.62	.96	.79	.87	.62	.83	.57	.26
31	Stay in touch with clients	.46	.91	.41	.89	1.00	.76	.09	.43	.52	.54	.52	.	.65	.96	.46	.78	.11	.17	.87	.89	.83	.91	.91	.91
33	Make profit	.81	.55	.72	.09	.17	.57	.11	.04	.11	.53	.09	.06	.	.43	.28	.30	.09	.47	.45	.47	.68	.38	.06	.26
35	Bring in orders	.72	.51	.64	.09	.17	.68	.25	.04	.25	.47	.15	.40	.96	.	.32	.42	.28	.43	.49	.40	.55	.43	.17	.40
39	Creativity	.61	.87	.83	.98	.74	.78	.26	.52	.09	.54	.09	.17	.65	.87	.	.67	.20	.28	.61	.70	.63	.89	.59	.63
41	Submit offers	.34	.49	.32	.19	.42	.72	.04	.02	.25	.26	.11	.47	.75	.98	.25	.	.23	.21	.47	.38	.47	.28	.23	.64
43	Cooperation	.40	.74	.62	.66	.45	.60	.38	.28	.23	.55	.85	.53	.53	.53	.40	.40	.	.83	.62	.79	.36	.70	.47	.17
44	Togetherness	.89	.87	.85	.72	.48	.80	.54	.11	.11	.80	.89	.35	.52	.46	.43	.26	.87	.	.52	.65	.30	.63	.37	.26
46	Be professional	.68	1.00	.81	.89	.98	.96	.19	.38	.21	.66	.51	.70	.87	.89	.51	.62	.32	.43	.	1.00	.79	.94	.60	.79
47	Deliver quality	.81	.98	.75	.57	1.00	.94	.26	.30	.09	.60	.09	.25	.85	.92	.34	.42	.25	.38	.94	.	.57	.87	.25	.83
48	Think in the long term	.59	.78	.37	.46	.65	.74	.07	.41	.67	.50	.17	.54	.80	.89	.24	.50	.09	.26	.93	.87	.	.85	.41	.67
49	Deliver value added	.49	.79	.70	.34	.92	.68	.11	.17	.15	.42	.09	.23	.68	.85	.36	.43	.15	.23	.75	.79	.53	.	.17	.81
55	Establish the problem	.43	.94	.51	1.00	.85	.91	.13	.53	.11	.38	.17	.43	.49	.62	.47	.57	.15	.23	.77	.83	.43	.74	.	.60
57	Be asked for by the client	.46	.33	.65	.28	.48	.48	.11	.07	.24	.54	.07	.61	.61	.87	.15	.70	.04	.11	.28	.35	.37	.41	.39	.

The column numbers correspond to the row numbers.

Appendix 5.5 **Top-ten centralities derived from the first survey and the laddering interviews**

Total of survey respondents			survey respondents not previously interviewed			previously interviewed survey respondents			laddering results			laddering results concepts included in survey only		
N°	Concept	Information centrality	N°	Concept	Information centrality	N°	Concept	Information centrality	N°	Concept	Information centrality	N°	Concept	Information centrality
1	achieve a good result	8.79	1	be professional	13.84	1	achieve a good result	14.62	1	have contact with clients	3.46	1	solve problems	2.28
2	deliver *quality*	8.71	2	achieve a good *result*	13.75	2	deliver quality	14.5	2	bring in orders	3.46	2	deliver quality	2.19
3	be *professional*	8.61	3	deliver quality	13.56	3	reach your goal	14.49	3	deliver quality	3.42	3	employee *cooperation*	2.05
4	reach your goal	8.52	4	reach your goal	13.37	4	be professional	14.46	4	build up a network of relationships*	3.38	4	enjoy your work	1.98
5	deliver value added	8.38	5	enjoy your work	13.32	5	deliver value added	14.15	5	solve problems	3.23	5	satisfy the client	1.89
6	satisfy the client	8.37	6	motivate people	13.28	6	bring in orders	13.99	6	reach your goal	3.14	6	bring in orders	1.88
7	bring in orders	8.34	7	satisfy the client	13.04	7	enjoy your work	13.94	7	coach consultants*	3.11	7	creativity	1.87
8	have contact with clients	8.25	8	employee commitment	12.88	8	motivate people	13.9	8	maintain contact with clients	3.05	8	assess the problem	1.83
9	motivate people	8.09	9	deliver value added	12.76	9	employee commitment	13.62	9	use your expertise*	3	9	reach your goal	1.82
10	solve problems	8.06	10	have contact with clients	12.66	10	satisfy the client	13.54	10	satisfy the client	2.96	10	focus on a market	1.80
mean = 7.74 std dev = 0.82 n = 24			mean = 12.00 std dev = 1.46 n = 24			mean = 12.69 std dev = 1.72 n = 24			mean = 2.37 std dev = 0.65 n = 54 * item was not included into quantitative survey			mean = 1.64 std dev = 0.35		

Total of survey respondents			survey respondents not previously interviewed			previously interviewed survey respondents			laddering results			Laddering results (concepts included into survey only)		
N°	Concept	Degree centrality	N°	Concept	Degree centrality	N°	Concept	Degree centrality	N°	Concept	Degree centrality	N°	Concept	Degree centrality
1	achieve a good result	19.07	1	be professional	30.92	1	achieve a good result	32.83	1	bring in orders	25	1	solve problems	12
2	deliver quality	18.63	2	achieve a good result	30.44	2	deliver quality	32.22	2	deliver quality	25	2	deliver quality	10
3	be professional	18.16	3	deliver quality	29.45	3	reach your goal	32.13	3	have contact with clients	24	3	bring in orders	9
4	reach your goal	17.72	4	reach your goal	28.53	4	be professional	30.49	4	build up a network of relationships*	22	4	employee cooperation	7
5	deliver value added	17.08	5	enjoy your work	28.36	5	deliver value added	30.42	5	solve problems	16	5	employee commitment	7
6	satisfy the client	17.05	6	motivate people	28.15	6	enjoy your work	29.65	6	coach consultants*	15	6	enjoy your work	7
7	bring in orders	16.92	7	satisfy the client	26.99	7	bring in orders	29.65	7	reach your goal	14	7	focus on a market	7
8	have contact with clients	16.54	8	employee commitment	26.26	8	motivate people	29.34	8	maintain contact with clients	14	8	creativity	6
9	motivate people	15.90	9	deliver value added	25.65	9	employee commitment	27.96	9	focus on a market	13	9	satisfy the client	6
10	solve problems	15.75	10	have contact with clients	25.25	10	satisfy the client	27.52	10	use your expertise*	12	10	motivate people	6
mean = 14.79 std dev = 2.83 n = 24			mean = 12.00 std dev = 1.46 n = 24			mean = 12.69 std dev = 1.72 n = 24			mean = 8.26 std dev = 5.77 n= 54 * item was not included into quantitative survey			mean = 5.17 std dev = 2.79 n = 24		

Appendix 5.6 **Division of relationship questions across the versions of the questionnaire for the first survey**

The numbers in this matrix show the version of the questionnaire, where both directions of the relation between two concepts have been proposed to the same respondent

N°		8	9	10	11	12	14	18	19	23	24	25	31	33	35	39	41	43	44	46	47	48	49	55	57
8	Motivate people	.	.	.	.	1	.	1	.	.	.	1		1	.	.	.	1	.	1	.	.	.	1	.
9	Achieve a good result	.	.	.	2	.	.	.	2	.	2	.	.	.	2	.	2	.	.	.	2	.	2	.	.
10	Enjoy your work	.	.	.	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3
11	Solve problems	.	2	.	.	.	.	.	2	.	2	.	.	.	2	.	2	.	.	.	2	.	2	.	.
12	Satisfy the client	1	.	.	.	.	.	1	.	.	.	1	.	1	.	.	.	1	.	1	.	.	.	1	.
14	Reach your goal	.	.	3	.	.	.	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3
18	Internal recruitment	1	.	.	.	1	.	.	.	.	.	1	.	1	.	.	.	1	.	1	.	.	.	1	.
19	Simplify information flow	.	2	.	2	.	.	.	.	.	2	.	.	.	2	.	2	.	.	.	2	.	2	.	.
23	Work for the government	.	.	3	.	.	3	.	.	.	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3
24	Employee commitment	.	2	.	2	.	.	.	2	.	.	.	.	.	2	.	2	.	.	.	2	.	2	.	.
25	Keep each other informed	1	.	.	.	1	.	1	.	.	.	.		1	.	.	.	1	.	1	.	.	.	1	.
31	Stay in touch with clients	.	.	3	.	.	3	.	.	3	.	.	.	.	.	3	.	.	3	.	.	3	.	.	3
33	Make profit	1	.	.	.	1	.	1	.	.	.	1		.	.	.	.	1	.	1	.	.	.	1	.
35	Bring in orders	.	2	.	2	.	.	.	2	.	2	.	.	.	.	.	2	.	.	.	2	.	2	.	.
39	Creativity	.	.	3	.	.	3	.	.	3	.	.	3	.	.	.	.	.	3	.	.	3	.	.	3
41	Submit offers	.	2	.	2	.	.	.	2	.	2	.	.	.	2	.	.	.	.	.	2	.	2	.	.
43	Cooperation	1	.	.	.	1	.	1	.	.	.	1		1	.	.	.	.	.	1	.	.	.	1	.
44	Togetherness	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	.	.	.	3	.	.	3
46	Be professional	1	.	.	.	1	.	1	.	.	.	1		1	.	.	.	1	.	.	.	.	.	1	.
47	Deliver quality	.	2	.	2	.	.	.	2	.	2	.	.	.	2	.	2	.	.	.	.	.	2	.	.
48	Think in the long term	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	.	.	.	3
49	Deliver value added	.	2	.	2	.	.	.	2	.	2	.	.	.	2	.	2	.	.	.	2	.	.	.	.
55	Establish the problem	1	.	.	.	1	.	1	.	.	.	1		1	.	.	.	1	.	1	.	.	.	.	.
57	Be asked for by the client	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	3	.	.	.

The column numbers correspond to the row numbers.

APPENDICES TO CHAPTER 6

Appendix 6.1 Asymmetry of means-end relations, sorted in descending order of asymmetry

A-concept (A)		B-concept (D)		Mutuals	Nulls	A->D	D->A	Significance (McNemar test)	N	absolute difference [(A->D) - (D->A)] / N
12	satisfy the client	33	make profit	7	11	28	1	0.0000	47	0.574468
35	bring in orders	41	submit orders	22	1	0	30	0.0000	53	0.566038
8	motivate people	55	establish the problem	17	2	1	27	0.0000	47	0.553191
23	coach consultants	57	be asked for by the client	10	9	26	1	0.0000	46	0.543478
35	bring in orders	47	deliver quality	21	4	0	28	0.0000	53	0.528302
39	be creative	57	be asked for by the client	5	15	24	2	0.0000	46	0.478261
11	solve problems	35	bring in orders	4	22	26	1	0.0000	53	0.471698
12	satisfy the client	55	establish the problem	18	7	0	22	0.0000	47	0.468085
14	reach your goal	31	keep in touch with the client	11	8	3	24	0.0001	46	0.456522
33	make profit	43	employee cooperation	3	21	1	22	0.0000	47	0.446809
14	reach your goal	39	be creative	13	7	3	23	0.0002	46	0.434783
33	make profit	55	establish the problem	3	24	0	20	0.0000	47	0.425532
33	make profit	46	be professional	19	4	2	22	0.0000	47	0.425532
35	bring in orders	49	deliver value added	22	7	1	23	0.0000	53	0.415094
9	achieve a good result	11	solve problems	31	0	0	22	0.0000	53	0.415094
25	keep each other informed	55	establish the problem	6	18	21	2	0.0001	47	0.404255
39	be creative	48	think in the long term	10	16	19	1	0.0000	46	0.391304
8	motivate people	12	satisfy the client	19	8	19	1	0.0000	47	0.382979
19	simplify the information flow	47	deliver quality	16	17	20	0	0.0000	53	0.377358

A-concept (A)		B-concept (D)		Mutuals	Nulls	A->D	D->A	Significance (McNemar test)	N	absolute difference [(A->D) - (D->A)] / N
19	simplify the information flow	49	deliver value added	7	23	21	2	0.0001	53	0.358491
24	employee commitment	49	deliver value added	20	10	21	2	0.0001	53	0.358491
14	reach your goal	44	togetherness	20	8	1	17	0.0001	46	0.347826
25	keep each other informed	33	make profit	3	26	17	1	0.0001	47	0.340426
9	achieve a good result	19	simplify the information flow	14	12	5	22	0.0021	53	0.320755
43	employee cooperation	55	establish the problem	4	22	18	3	0.0015	47	0.319149
12	satisfy the client	43	employee cooperation	3	23	3	18	0.0015	47	0.319149
18	internal recruitment	33	make profit	4	26	16	1	0.0003	47	0.319149
48	think in the long term	57	be asked for by the client	14	12	17	3	0.0026	46	0.304348
31	stay in touch with the client	57	establish the problem	26	2	16	2	0.0013	46	0.304348
14	reach your goal	48	think in the long term	15	7	5	19	0.0066	46	0.304348
9	achieve a good result	35	bring in orders	23	6	20	4	0.0015	53	0.301887
9	achieve a good result	24	employee commitment	33	2	1	17	0.0001	53	0.301887
43	employee cooperation	46	be professional	11	14	18	4	0.0043	47	0.297872
12	satisfy the client	25	keep each other informed	9	18	3	17	0.0026	47	0.297872
19	simplify the information flow	35	bring in orders	1	35	16	1	0.0003	53	0.283019
24	employee commitment	47	deliver quality	31	5	16	1	0.0003	53	0.283019
31	keep in touch with the client	39	be creative	6	23	15	2	0.0023	46	0.282609
31	keep in touch with the client	48	think in the long term	25	8	13	0	0.0002	46	0.282609
14	reach your goal	23	focus on a market	7	24	1	14	0.0010	46	0.282609

A-concept (A)		B-concept (D)		Mutuals	Nulls	A->D	D->A	Significance (McNemar test)	N	absolute difference [(A->D) - (D->A)] / N
8	motivate people	25	employee commitment	28	2	2	15	0.0023	47	0.276596
25	employee commitment	46	be professional	20	6	17	4	0.0072	47	0.276596
11	solve problems	19	simplify the information flow	12	23	2	16	0.0013	53	0.264151
11	solve problems	24	employee commitment	16	13	5	19	0.0066	53	0.264151
12	satisfy the client	46	be professional	33	0	1	13	0.0018	47	0.255319
18	internal recruitment	46	be professional	7	24	14	2	0.0042	47	0.255319
11	solve problems	49	deliver value added	14	18	17	4	0.0072	53	0.245283
23	focus on a market	31	keep in touch with the client	20	7	15	4	0.0192	46	0.23913
25	keep each other informed	43	employee cooperation	27	5	2	13	0.0074	47	0.234043
9	reach a good result	41	submit offers	9	22	5	17	0.0169	53	0.226415
9	reach a good result	47	deliver quality	39	0	1	13	0.0018	53	0.226415
18	internal recruitment	43	employee cooperation	16	17	12	2	0.0129	47	0.212766
8	motivate people	46	be professional	30	4	11	2	0.0225	47	0.191489
24	employee commitment	35	bring in orders	20	13	15	5	0.0414	53	0.188679
31	keep in touch with the client	44	togetherness	6	28	2	10	0.0386	46	0.173913
14	reach your goal	57	be asked for by the client	17	11	13	5	0.0693	46	0.173913
12	satisfy the client	18	internal recruitment	3	30	11	3	0.0574	47	0.170213
46	be professional	55	establish the problem	22	5	6	14	0.1153	47	0.170213
19	simplify the information flow	41	submit offers	1	43	9	0	0.0039	53	0.169811
23	focus on a market	44	togetherness	3	32	9	2	0.0654	46	0.152174

A-concept (A)		B-concept (D)		Mutuals	Nulls	A->D	D->A	Significance (McNemar test)	N	absolute difference [(A->D) - (D->A)] / N
44	togetherness	57	be asked for by the client	2	31	10	3	0.0923	46	0.152174
10	enjoy your work	31	keep in touch with the client	13	14	13	6	0.1671	46	0.152174
39	be creative	44	togetherness	9	22	4	11	0.1185	46	0.152174
11	solve problems	47	deliver quality	25	10	13	5	0.0963	53	0.150943
9	achieve a good result	49	deliver value added	29	6	5	13	0.0963	53	0.150943
8	motivate people	43	employee cooperation	14	16	12	5	0.1435	47	0.148936
41	submit offers	47	deliver quality	11	31	9	2	0.0654	53	0.132075
41	submit offers	49	deliver value added	6	36	9	2	0.0654	53	0.132075
23	focus on a market	39	be creative	2	34	8	2	0.1094	46	0.130435
10	enjoy your work	39	be creative	36	1	7	2	0.1797	46	0.108696
24	employee commitment	41	submit offers	9	29	10	5	0.3018	53	0.09434
19	simplify the information flow	24	employee commitment	2	38	4	9	0.2668	53	0.09434
8	motivate people	33	make profit	31	6	3	7	0.3438	47	0.085106
47	deliver quality	49	deliver value added	38	3	8	4	0.3877	53	0.075472
10	enjoy your work	23	focus on a market	3	30	8	5	0.5811	46	0.065217
44	togetherness	48	think in the long term	7	27	7	5	0.7744	46	0.043478
10	enjoy your work	14	reach your goal	32	4	6	4	0.7539	46	0.043478
10	enjoy your work	57	be asked for by the client	22	7	8	9	1.0000	46	0.021739
10	enjoy your work	48	think in the long term	8	21	8	9	1.0000	46	0.021739
8	motivate people	18	internal recruitment	14	20	7	6	1.0000	47	0.021277
18	internal recruitment	55	establish the problem	3	37	4	3	1.0000	47	0.021277

A-concept (A)		B-concept (D)		Mutuals	Nulls	A->D	D->A	Significance (McNemar test)	N	absolute difference [(A->D) - (D->A)] / N
11	solve problems	41	submit offers	5	37	6	5	1.0000	53	0.018868
10	enjoy your work	44	togetherness	35	3	4	4	1.0000	46	0
18	internal recruitment	25	keep each other informed	12	21	7	7	1.0000	47	0
23	focus on a market	48	think in the long term	23	7	8	8	1.0000	46	0

Appendix 6.2 Comparison of different measures of symmetry

1. Tests of Normality

- - - - - Kolmogorov - Smirnov Goodness of Fit Test

RHO

Test Distribution - Normal Mean: 1.911088
Standard Deviation: 4.253211

Cases: 146
Most Extreme Differences

Absolute	Positive	Negative	K-S Z	2-tailed P
.13442	.13442	-.09304	1.624	.010

RHOKP

Test Distribution - Normal Mean: .1908
Standard Deviation: .2476

Cases: 146
Most Extreme Differences

Absolute	Positive	Negative	K-S Z	2-tailed P
.05888	.05888	-.05332	.711	.692

CORRELATIES

Test Distribution - Normal Mean: .187327
Standard Deviation: .254802

Cases: 146
Most Extreme Differences

Absolute	Positive	Negative	K-S Z	2-tailed P
.07280	.05176	-.07280	.880	.421

Concluding: Only the distribution of ρ in Holland en Leinhardt's P1 deviates significantly from the normal distribution

Correlations RHOKP CORRELAT RHO.

Correlation:

	RHOKP	CORRELAT	RHO
RHOKP	1.0000	.9917**	.5372**
CORRELAT	.9917**	1.0000	.5258**
RHO	.5372**	.5258**	1.0000

N of cases: 146 1-tailed Signif: * - .01 ** - .001

Rank order correlations RRHOKP RCORRELA RRHO.

Correlations:

	RHOKP	CORRELATIES	RHO
RRHOKP	1.0000	.9897**	.6117**
RCORRELATIES	.9897**	1.0000	.6055**
RRHO	.6117**	.6055**	1.0000

N of cases: 146 1-tailed Signif: * - .01 ** - .001

Appendix 6.2 (continued)

```
T-TEST /PAIRS RHOKP CORRELAT.
Paired samples t-test:  RHOKP
                        CORRELATIES

Variable      Number                    Standard    Standard
              of Cases      Mean        Deviation     Error

RHOKP            146        .1908         .248        .020
CORRELATIES      146        .1873         .255        .021

(Difference)  Standard    Standard  |      2-Tail    |   t      Degrees of   2-Tail
     Mean     Deviation     Error    |  Corr.  Prob.  |  Value     Freedom    Prob.

     .0034       .033        .003   |   .992   .000  |  1.26       145       .210


NPAR TESTS /WILCOXON RHOKP CORRELATIES

     RHOKP
with CORRELATIES

      Mean Rank     Cases

          70.86        98   - Ranks (CORRELAT Lt RHOKP)
          78.90        48   + Ranks (CORRELAT Gt RHOKP)
                        0     Ties  (CORRELAT Eq RHOKP)
                       ---
                       146    Total

         Z =   -3.0838            2-tailed P =  .0020


NPAR TESTS /WILCOXON RHOKP RHO.

     RHOKP
with RHO (P1-model)

      Mean Rank     Cases

          61.05        44   - Ranks (RHO Lt RHOKP)
          78.87       102   + Ranks (RHO Gt RHOKP)
                        0     Ties  (RHO Eq RHOKP)
                       ---
                       146    Total

         Z =   -5.2347            2-tailed P =  .0000


NPAR TESTS /WILCOXON RHO CORRELAT.

     RHO
with CORRELAT

      Mean Rank     Cases

          78.19       103   - Ranks (CORRELAT Lt RHO)
          62.26        43   + Ranks (CORRELAT Gt RHO)
                        0     Ties  (CORRELAT Eq RHO)
                       ---
                       146    Total

         Z =   -5.2523            2-tailed P =  .0000
```

CONCLUSION: **Although all three measures of symmetry converge, in particular correlations and ρ^{KP}, these measures are not identical**

APPENDIX TO CHAPTER 7

Appendix 7.1 **Summary of the image research held for the automation company**

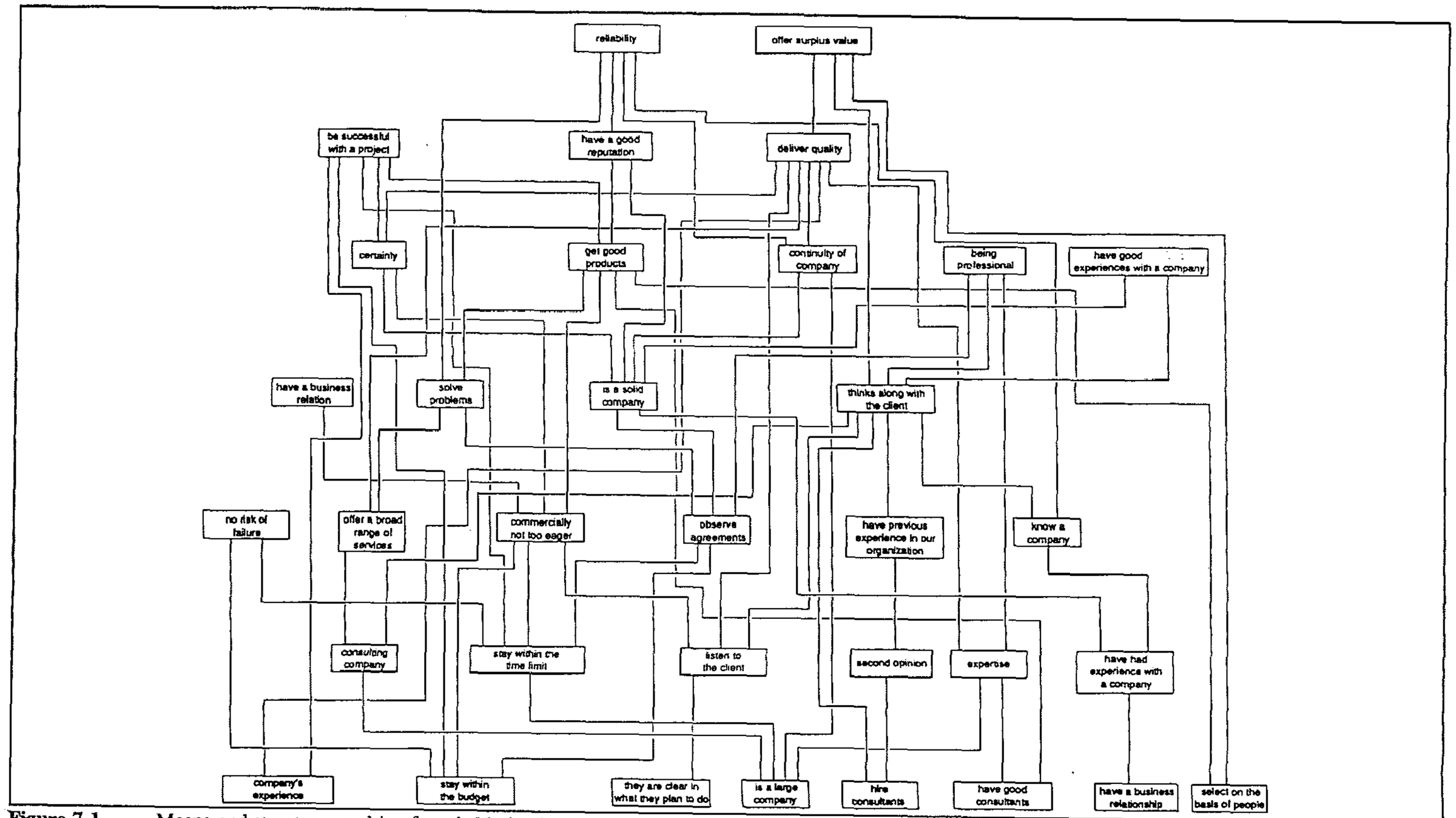

Figure 7.1 Means-end structure resulting from laddering interviews at the clients of the automation company (20 respondents, cut-off level concepts = 5, cut-off level relationships = 1)

Table 7.8 Importance ratings by organization employees and by clients compared (adapted from: Corporate Communication Centre, 1992)

Rank	Clients		Organization	
1	Observe agreements	1.28	Observe agreements	1.26
2	Be an expert	1.35	Deliver Quality	1.31
3	Deliver a good product	1.37	Come to a good result	1.34
4	Be clear in what you are going to do	1.41	Satisfy the client	1.39
5	Reliability	1.43	Enjoy your work	1.60
6	Professionalism	1.43	Professionalism	1.64
7	Deliver quality	1.53	Advise the client	1.67
8	Listen well	1.59	Employee involvement	1.71
9	Have good employees	1.59	Reach your goal	1.71
10	Think along with the client	1.72	motivate people	1.79

1 = very important, 7 = completely unimportant

The technique developed in this dissertation to measure an organization's identity makes use of the laddering technique which already has been in use in marketing for a long time in order to establish product images (Gutman, 1982; Reynolds and Gutman, 1988). Simultaneously with the research of the identity of the automation company, explained in chapter 4, corporate image was investigated among an important stakeholder group, decision makers at Dutch ministries (Corporate Communication Centre, 1992). Attributes were generated applying the Kelly Grid method (Kelly, 1955). The names of the automation company and 19 competitors were printed on a set with 20 cards. The cards were presented to a total of 20 decision makers in several combinations of three out of the twenty organizations. Each time, the decision makers were asked which of the three automation companies was different from the other two, and which of the two groups thus formed they preferred. Then the reason for their preference was asked. From that answer, the typical laddering question 'why is that important to you?' (Reynolds and Gutman, 1984) was launched. The interviews were completed and processed in exactly the same way as the identity research results presented in chapter 4, and followed up with a quantitative survey which was set up in the same way as the first survey presented in chapter 5. The survey included the same types of relationship questions as shown in exhibit 5.2, and questions asking respondents to rate actions, goals, and values according to their importance on a seven-point semantic differential scale. Table 7.8 lists the ten items considered most important by the organization's employees and the ten items considered most important by the clients. Furthermore, the questionnaire gathered the decision makers' ratings on these items for the automation company and its six most prominent competitors. Table 7.9 shows the ratings of the automation company and its most prominent competitors on 'delivering quality' and 'observing agreements'.

Table 7.9 Scores of the automation company and its main competitors on some customer values (Adapted from: Corporate Communication Centre, 1992)

Item	Competitor A	Competitor B	Competitor C	Competitor D	Automation Company	Competitor E	Competitor F	Competitor G
Observes agreements	2.26	3.00	2.41	2.94	2.42	3.04	3.44	2.31
Delivers Quality	2.08	3.07	2.57	2.78	2.39	3.02	3.47	2.57

scale: 1 = completely agree, 7 = completely disagree

Samenvatting (Summary in Dutch)

Dit proefschrift heeft zich ten doel gesteld, een methode te ontwikkelen voor een korte en bondige weergave van een organisatie, die herkenbaar is voor degenen die de organisatie hebben leren kennen. Er bestaat tot nu toe veel verwarring over wat het begrip 'corporate identity' precies inhoudt. De interpretaties variëren in reikwijdte van het logo van de organisatie, via de huisstijl, tot aan het totaal van de organisatiecultuur. Het enige gemeenschappelijke element in al die benaderingen lijkt te zijn, dat 'Corporate Identity' iets inhoudt, dat de organisatie als geheel symboliseert. Hoewel het theoretisch mogelijk is, elk willekeurig symbool aan elke willekeurige organisatie toe te kennen, is het zinvol om de connotaties van dat symbool te laten overeenstemmen met de centrale waarden, die in een organisatie leven. Dit is de kern van waar dit proefschrift zich mee bezighoudt: het empirisch vastleggen waar een organisatie voor staat. Op de volgende twee hoofdvragen wordt een antwoord gezocht:

1. Hoe kan een conceptualisatie van Corporate Identity worden ontwikkeld die geschikt is voor corporate communication?

2. Uitgaande van die conceptualisatie, hoe kan de identiteit van een organisatie concreet gemeten worden?

Albert en Whetten (1985) ontwikkelden een drietal criteria, aan de hand waarvan de diverse identiteitsopvattingen getoetst zullen worden:

1. Het criterium van 'centraal karakter': een conceptualisatie van 'corporate identity' moet die eigenschappen omvatten, die gezien kunnen worden als de 'essentie' van een organisatie.

2. Het criterium van 'onderscheidend vermogen': een conceptualisatie van 'corporate identity' moet eigenschappen omvatten, die een organisatie kunnen onderscheiden van andere organisaties.

3. Het criterium van continuïteit in de tijd: een conceptualisatie van 'corporate identity' moet eigenschappen omvatten, die constant blijven in de tijd.

Hoofdstuk 2 behandelt de bestaande literatuur op het gebied van 'Corporate Identity'. De veelheid van definities, en derhalve de begripsverwarring op dit terrein, is groot. Er vallen drie hoofdstromingen te onderscheiden: ten eerste de strategisch georiënteerde literatuur, die 'Corporate Identity' ziet als een door het management vastgestelde strategie. Vaak is in die strategie de gewenste identiteit vastgelegd, d.w.z. de manier waarop het management wenst dat de organisatie naar buiten treedt. Een tweede hoofdstroom vat 'corporate identity' op als de huidige, bestaande identiteit van een organisatie. In deze opvatting is het verschil tussen de identiteit en de cultuur van een onderneming minimaal. De derde hoofdstroom ziet 'identiteit' als datgene, waar werknemers zich graag bij aansluiten. In deze derde stroming staat in wezen niet 'identiteit' zelf, maar 'identificatie' als begrip centraal. Tot slot worden de bestaande meetmethodes van 'corporate identity' besproken. Slechts enkele methodes blijken bij benadering te beantwoorden aan de criteria van Albert en Whetten: geen enkele methode lijkt de openheid voor het organisatie-specifieke te kunnen combineren met een

systematische manier van vastleggen, of het gevondene werkelijk centraal staat in de organisatie als geheel en stabiel is in de tijd.

Daarom wordt in hoofdstuk 3, uitgaande van het basisbegrip 'identiteit', een nieuwe conceptualisatie van 'corporate identity' ontwikkeld. Weigert (1986) onderscheidt drie fundamenteel andere benaderingen van 'identiteit': (1) identiteit als het bewustzijn van een persoon die ervaringen opdoet, (2) identiteit als het geheel van eigenschappen, (3) identiteit als sociale categorisatie. De tweede opvatting, identiteit als geheel van eigenschappen, lijkt het meest geschikt voor corporate communication. De meest zinvolle eigenschappen om de ontwikkeling van het concept op te baseren lijken de intentionele handelingen van organisatieleden: dit zijn de gebeurtenissen die het meest plausibel aan hen toe te schrijven zijn. Het intentionele karakter van die handelingen is ook een aanwijzing voor de stabiliteit van die handelingen in de tijd - dit in tegenstelling tot eventuele door buitenstaanders waargenomen onbedoelde effecten. Zodoende wordt corporate identity geconceptualiseerd als "het geheel van de handelingen van een organisatie, voor zover die voldoen aan de criteria van gelijkheid over situaties en interactiepartners, consistentie in de tijd en specificiteit voor de organisatie" (3.4). Die handelingen staan niet op zichzelf, maar dienen vaak als middel om andere doelen te bereiken, en zijn zelf veelal doel geweest van weer andere handelingen. Met andere woorden, de handelingen zijn ingebed in een netwerk van doel-middelrelaties. De handelingen die in deze structuur het meest centraal staan geven de identiteit van een organisatie het meest treffend weer. Operationeel valt corporate identity daarom te definiëren als: "die elementen in de doel-middelstructuur van het intentionele handelen van organisatieleden die een centrale positie in deze structuur innemen" (3.5).

In hoofdstuk 4 wordt deze operationalisatie concreet uitgewerkt in een interview- en analysemethode. In een organisatie wordt een steekproef genomen, die maximaal de heterogeniteit binnen de organisatie weerspiegelt. De respondenten geven de maximale variëteit aan functies binnen de organisatie weer, die binnen de grootte van de steekproef haalbaar is. De interviews vinden plaats volgens de laddering-techniek. Organisatieleden wordt gevraagd wat zij precies doen, en zodra zij dat concreet hebben verteld, wordt hen gevraagd, waarom zij dat op die manier doen. Op elk gegeven antwoord wordt de vraag herhaald: "Waarom is dat belangrijk voor U?". Op die manier wordt een heel netwerk van doel-middelrelaties vastgelegd, die in de organisatie een rol spelen. Van dit netwerk wordt een matrix opgesteld, die als basis dient voor het vinden van de meest centrale elementen hierin. Twee methoden lijken hier bijzonder geschikt voor: de rechtstreekse telling van alle directe relaties die een handeling heeft ("degree centrality"), en een berekeningswijze, die ook met alle indirecte relaties rekening houdt, gewogen voor het aantal tussenschakels ("information centrality").

Hoofdstuk 5 houdt zich bezig met de validatie van de gevonden resultaten. Voor één van de onderzochte organisaties zijn na de eerste identiteitsmeting, zoals die in hoofdstuk 4 beschreven is, twee vervolgenquêtes opgesteld. De eerste enquête heeft voor 24 van de meest prominente handelingen, doelen en waarden het complete patroon van doel-middelrelaties gemeten, door elke combinatie van twee handelingen, doelen of waarden als potentiële doel-middelrelatie voor te leggen. Tevens is de respondenten gevraagd hoe belangrijk zij de betreffende handelingen vonden. In de tweede vervolgenquête, negen maanden later, is de respondenten ook gevraagd hoe vanzelfsprekend die handelingen waren, en in hoeverre ze vonden dat ze er zelf mee bezig waren. Beide in hoofdstuk 4 toegepaste centraliteitsmaten

bleken goed met name deze validatiemaatstaven overeen te komen, en ook te voldoen aan eisen van betrouwbaarheid, mits ze waren berekend op basis van de enquêteresultaten. De aan te bevelen onderzoeksprocedure bestaat dan ook uit een voorfase, waarin kwalitatieve interviews worden afgenomen, zoals in hoofdstuk 4 beschreven, en een vervolgfase, waarin het volledige relatiepatroon tussen de meest prominente handelingen wordt onderzocht. De centraliteitsmaat die rekening houdt met indirecte relaties, "information centrality", levert daarbij de beste resultaten op.

De beide vervolgenquêtes leverden aanwijzingen op, dat doel-middelrelaties lang niet altijd gekenmerkt worden door een eenduidige richting. Hoofdstuk 6 richt zich op de analyse van de richting van doel-middel relaties. Zowel de hypothese dat doel-middelrelaties geen richting hadden als de hypothese dat ze ongericht waren moesten worden verworpen. Uit de tweede vervolgenquête bleek ook, dat doel-middelrelaties (.. is belangrijk je om te ...) in sterkte zwaar correleerden met gelijkenisrelaties (... lijkt op ....), relaties waarin doel en middel omgekeerd waren (... doe je door ...), en relaties waarin doel en middel aan elkaar gelijk werden gesteld (... is hetzelfde als ....). Doel-middelrelaties lijken niet significant asymetrischer te zijn dan bijvoorbeeld gelijkenisrelaties. Uit nadere analyses bleek, dat de richting van doel-middelrelaties grotendeels te verklaren viel uit het verschil in centraliteit van twee concepten: de relatie lijkt te lopen van het minder naar het meer centrale concept. Dit komt overeen met onderzoek op het gebied van de linguïstiek: semantische relaties in hun algemeenheid lijken daar te lopen van minder vaak voorkomende objecten of verschijnselen ("figuur") naar vaker voorkomende, veelal stabielere objecten of verschijnselen ("ondergrond"). Deze resultaten onderstrepen de rol van de centrale handelingen in de doel-middelstructuur als de stabielere basis en ondergrond voor het meer variabele waarneembare gedrag van organisatieleden.

Hoofdstuk 7 geeft allereerst een terugblik op het nu ontwikkelde meetinstrument. De meetresultaten zijn een momentopname van een organisatie, die steeds in ontwikkeling is. Het concept 'identiteit' is te beschouwen als onderdeel van het concept 'cultuur', met dien verstande, dat 'identiteit' alleen op de intentionele handelingen in de cultuur betrekking heeft. Deze zijn te beschouwen als het skelet van de cultuur van een organisatie. Daarna komen toepassingen voor de communicatie aan bod. Allereerst laat hoofdstuk 7 dan zien, hoe uit de meetresultaten gemeenschappelijke vertrekpunten voor de corporate communication kunnen worden afgeleid, die aan de basis liggen van formele en informele communicatie en die de kern vormen van de boodschap, zoals die door het design van logo's en huisstijl uitgedragen kunnen worden. Paragraaf 7.2 laat ook zien, hoe de meetresultaten als leidraad gebruikt kunnen worden om een bestaande identiteit om te vormen naar een door de organisatieleiding wenselijk geachte identiteit. Speciale aandacht wordt daarbij besteed aan het adequaat inspelen op de wensen van doelgroepen. Paragraaf 7.3 geeft aan, hoe het meetinstrument kan worden toegepast voor het meten van meerdere gelijktijdig binnen een organisatie voorkomende identiteiten, en hoe de meetmethode voor segmentatie van groepen in meer coherente (sub-)identiteiten mogelijk is.

Curriculum Vitae

Johan van Rekom (1963) werd geboren in Rijswijk (Z.H.). In 1981 behaalde hij het gymnasium-ß diploma aan het Stedelijk Gymnasium te Leiden. In 1982 behaalde hij het propadeusdiploma werktuigbouwkunde aan te Technische Universiteit Twente te Enschedé. In datzelfde jaar begon hij zijn studie Economie aan de Vrije Universiteit te Amsterdam, in de afstudeerrichting Marketing. Na zijn afstuderen in 1988 werkte hij twee jaar als zelfstandig touroperator. In 1990 trad hij in dienst van de Erasmus Universiteit Rotterdam als Assistent in Opleiding (AIO). Sinds 1993 is hij aan de vakgroep Marketing Management bij de faculteit Bedrijfskunde aan de Erasmus Universiteit Rotterdam verbonden als Universitair Docent.

Johan van Rekom (1963) was born in Rijswijk, near The Hague. In 1981 he obtained the Gymnasium-ß certificate at the Municipal Gymnasium in Leiden. In 1982 he obtained the propadeutic certificate in Engineering at the Technical University of Twente, in Enschedé. In the same year, he started his study of Economics at the Free University of Amsterdam, where he chose the specialization of Marketing. After graduating in 1988, he worked as an independent tour operator. In 1990 he joined the Rotterdam School of Business as a PhD student. Since 1993 he has worked as assistant professor at the department of Marketing Management at the Rotterdam School of Business.

STELLINGEN

- Organizationeel leren bestaat uit het opnemen van nieuwe doel-middel relaties in de cognitieve structuur van organisaties. Organizationeel afleren bestaat uit het ontkrachten van tot nu toe erkende doel-middelrelaties.

- Een belangrijke vorm van macht is het vermogen de eigen doel-middel relaties tot hun recht te laten komen in de cognitieve structuur van de hele groep of organisatie.

- Veel corporate design doet weinig anders dan buiten de organisatie opgedane inspiratie naar buiten toe reflecteren.

- De drang naar een positieve reputatie leidt organisaties ertoe, in hun communicatie juist die doelstellingen te benadrukken waarin ze het minst van hun omgeving verschillen.

- Het traditionele onderzoekterrein van marktonderzoek bestaat uit taalspelen.

- De opkomst en ondergang van één gemeenschappelijke indogermaanse taal 4000 jaar geleden, de opkomst en ondergang van de Grieks-Romeinse cultuur 2000 jaar geleden en de opkomst van de McDonaldscultuur vandaag de dag geeft aan, dat globalisatie niet een primair lineair, maar eerder een cyclisch proces is.

- De ontwikkeling van de Westerse sociale wetenschappen heeft ernstig te lijden gehad onder het feit dat ze uitgedacht en vastgelegd zijn in Indogermaanse talen. Het werkwoord "zijn" vervult in die talen een verraderlijke rol: het suggereert exactheid die het zelf niet waar maakt.

- De taalkundige competentie van een spreker is altijd onderhandelbaar.

- Het wezenlijke voordeel dat een expert heeft boven een leek is dat hij veel meer weet over wat er fout kan gaan.

- De Tweede Praagse Defenestratie (1618) heeft nooit plaats gevonden.

- De wildgroei aan toeristenbelastingen in de Nederlandse gemeenten op dit moment is zeer vergelijkbaar met de wildgroei aan roofridderburchten in het Rijndal rond het jaar 1300.

- Het succesvolle reisbureau van de toekomst zal meer op een uitgeverij dan op een reisbureau lijken.