Exploring the conceptual expansion within the field of organizational behavior: Organizational climate and organizational culture.

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Abstract

Developments within social and exact sciences take place because scientists engage in scientific practices that allow them to further expand and refine the scientific concepts within their scientific disciplines. There is disagreement among scientists as to what the essential practices are that allow scientific concepts within a scientific discipline to expand and evolve. One group looks at conceptual expansion as something that is being constrained by rational practices. Another group however suggests that conceptual expansion proceeds along the lines of 'everything goes.' The goal of this paper is to test whether scientific concepts expand in a rational way within the field of organizational behavior. We will use organizational climate and culture as examples. The essence of this study consists of two core concepts: one within organizational climate and one within organizational culture. It appears that several conceptual variations are added around these core concepts. The variations are constrained by rational scientific practices. In other terms, there is evidence that the field of organizational behavior develops rationally.

1. Introduction

In every scientific discipline scholars come to ask what the researchers in their field have been doing, what the focus of research should be and/or where their research field is or should be heading to. These kind of questions are also being asked in the field of organizational behavior by scholars like Schneider (1985), Dunnette (1991) and O'Reilly (1991). From a theoretical point of view, these scholars question what and how scientific concepts--like emotions, organizational environment, performance etc.--could be used in order to answer the more fundamental question within their discipline: "i.e. how does the organizational context

come to affect the behavior and performance of the employees?" (Schneider, 1985; Mowday & Sutton, 1993).

The questions these scholars ask are not surprising because the evolution of every science is characterized by the introduction of new concepts or borrowed concepts from neighbouring fields, that expand over time through scientific practices (Thagard, 1993; Pickering, 1992; Reichers & Schneider, 1990). There is much discussion nowadays whether the expansion of scientific concepts is constrained by rational argumentation (e.g. Kitcher, 1993). As the field of organizational behavior has reached respectable levels (Dunnette, 1990), the question whether the expansion of scientific concepts used within organizational behavior proceeds rationally, or not, should be answered. The answer to this question provides the members of the field with insights and guidelines about their scientific practices within their discipline.

The goal of this paper is to explore whether the scientific expansion of concepts in organizational behavior, in this paper exemplified by organizational climate and organizational culture, advances according to a pattern that is constrained by rational argumentation. The question about the expansion of the scientific concepts organizational climate and organizational culture is tested by means of a content analysis of the definitions of the two concepts that have been proposed by different authors within the field of organizational behavior. This paper proceeds with a short introduction on how the two main schools on the evolution of science, rational expansion versus "everything goes", conceptualize the expansion of scientific concepts. Subsequently, the hypotheses are presented. Because *prin*cipal *c*omponents analysis via *a*lternating *l*east *s*quares (PRINCALS) is used as a statistical technique during the content analysis, its methodology is briefly explained. Next, the findings will be presented. The final section contains the discussion and conclusion concerning the scientific practices within the field of organizational behavior.

2. Philosophical perspectives on the expansion of scientific concepts

Many philosophers of science agree that the expansion of scientific concepts in a specific field or discipline is possible because scientists in that discipline work around scientific concepts-- also known as conceptual networks or models--that hold initial promise (e.g. force in physics or organizational climate in organizational behavior) (Kuhn, 1970; Reichers & Schneider, 1990). Over time, scientists come to challenge and refine these scientific concepts by means of applying these concepts and their operationalizations in new domains. This is called modeling by analogy (e.g. Hesse, 1966). Scientists frame specific situations with existing scientific concepts or models, which enable them to better understand the phenomena that are being studied. In the course of time scientists come to explore, revise and to expand the scientific concepts. They also discover the limitations and problems of these scientific concepts and their operationalizations. When a specific phenomenon has been studied several times, meta-studies are being applied in order to detect whether the applications are generalizable (e.g. Jackson & Schuler, 1985). In some cases scientists begin their own schools of thought (called conceptual variations) when they realize that the current scientific concepts do not fully cover the problems encountered during the modeling processes. The expansion of scientific concepts is also affected by other scientific practices which only recently have attracted the attention of many scholars. First, a scientific field becomes enriched by the invention of new scientific instruments (e.g. new scaling techniques, e.g. DeVellis, 1991), new sampling techniques (e.g. higher order sampling in climate and culture research, e.g. Dansereau & Alutto, 1990); and of course new statistical techniques (e.g. the usage of structural equation modelling, e.g. Bentler, 1992). These new techniques add to the refinement and differentiation of the scientific concepts as well as to insights in the domain of applications. Second, sociologists of science, e.g. Latour & Woolgar (1979) and Pickering, (1992), pointed out that, besides modeling and refining through new instrumentation, also economic self-interest plays a role: 1) There is the pressure from outside which places priorities on the topics of scientific research. Some see this pressure as a potential enemy for the way a science develops, others see it as an opportunity to sharpen the focus of the

scientific concepts (Campbell, 1990). 2) Scientists themselves also display economic self-interest while practising science. Their ability to convince and persuade other scientists to adopt conceptual variations--or dialects--is also a part of scientific practice and survival. It is exactly about this last argument that the main discussion in the philosophy of science is focussed on now: All specialists working on the evolution of a science agree that there is nothing in the scientific concept that prohibits its expansion because it is the creative ability of scientists that is responsible for this expansion. However, the disagreement emerges because a group of scholars, the rational group, suggests that the expansion of the scientific concept proceeds rationally. Another group, here called the "everything goes" group, suggests that scientific concepts expand because scientists expand and transform pieces of the concept out of self-interest and persuasion. Both points of view will be explained next.

The *rational expansion* group emphasizes that scientific concepts expand via the maintenance of a core concept or a core idea (Thagard, 1993 and Kitcher 1993). This group suggest that when a scientific concept, is successful initially, other scientists will come to refine and redefine these scientific concepts over time. This application of scientific concepts to the field occurs via rigid data analysis, conceptual fertilization from neighbouring fields as well as via scientific discussions among scientists. During this process, the basic idea of the scientific concept--i.e. the core--is tested for coherence and validity so that domain applications can be made (Kitcher, 1993; Thagard, 1993 and Solomon, 1992). When the findings substantiate the initial promises of the scientific concepts consensus about the content of the concepts and the domain of application emerges within the field. However, scholars like Kitcher (1993) do not ignore that scientists add individual conceptual variations--or conceptual dialects--to the core and even might seek economic self-interest during their scientific endeavours. In fact a combination of rational expansion, individual conceptual variations and economic self-interest is not looked upon as totally unproductive for the development of a science because these conceptual variations add to the strength of the scientific concept, and as a consequence to the field in general. These conceptual variations are compared to mutations in biology: it is through mutations that a species (concept) is able to survive. The conceptual variations allow

scientists to 1) partially redefine the concept to fit their own idiosyncratic experiences and world views; 2) while still making use of the core aspects of a concept; 3) and by doing so the core concept remains part of the consensual practice of the science. These conceptual variations around a core concept explain why different schools of thought emerge, which, despite local disagreements, allow common understanding and rational discussion. Because of emergent consensus scientists in the field can produce handbooks that allow them to teach others to become a scientist and to stimulate them to expand the frontiers of a scientific concept and to evaluate how other scientists expand the scientific concept.

The *'everything goes'* point of view reminds us of the work by Feyerabend (1975) and its defenders and that of the Bath group of the sociology of science, like Gooding (1982) and Collins (1985). To find evidence for their work, these scholars especially investigate how scientific work is done in laboratories and scientific situations (Latour & Woolgar, 1986). Especially this micro perspective has provided them with evidence that science does not evolve rationally, rather science is perceived as a set of different speech communities of people (or subcultures) who engage in scientific practices. These communities do not evolve around a general concept--or core concept--but these groups of scientists communicate by means of "inscriptions[1]" and "indexes" that refer to shared referents (Pickering, 1992). Outside this scientific community, the index-object relationship cannot be understood and thus only insiders of that school--members of the subculture--are able to understand how inscriptions refer to the phenomena via behaviors and practices. This group of scholars puts great emphasis on the economic self-interest of scientists and their peers: 1) the scientists look for practical applications of the scientific concept in specific domains; and 2) their ability to persuade others causes scientists to introduce their individual variations of a scientific concept into the scientific discipline. So, it seems likely that independent schools of thought emerge who develop their own esoteric "scientific" dialects. Thus, while handbooks are considered

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[1] Inscriptions differ from the conceptual networks, in that inscriptions are words used to denote practices that a specific group of people share, while conceptual frameworks are cognitive representations which can be formulated clearly and made explicit--and therefore understood by many people.

as a summary of conceptual thinking and a reflection of the evolution of the field for the rational expansion point of view, handbooks only represent a vague reflection of what scientists are doing for the everything goes group.

The question is thus whether the conceptual expansion within organizational behavior proceeds as a progressive elaboration of core concepts by rational arguments or whether it proceeds as an everything goes field. Empirical research may provide an answer to this question. Therefore, in order to test which proposition is most plausible, the first proposition of conceptual expansion which is constrained by rational argumentation will be tested within the field of organizational behavior. That is to say, it will be tested whether the scientific concepts "organizational climate" and "organizational culture" maintain one essential core that becomes elaborated and expanded by conceptual variations over time once they have been introduced in the field.

Different methodologies are possible to test whether creative expansion of the scientific concepts is part of a rational process. Some scholars use the case method i.e., through painstaking historical analysis the scientific concept and the social-intellectual environment within which scientific practices around a scientific concept occur is analyzed (e.g. Pickering, 1981; Holmes, 1974). Others do field analysis, that is scientists --who engage in scientific practices (e.g. laboratories)-- are being studied and their local scientific conceptual variations are being analyzed (Knorr-Cetina, 1981). Another group of scientists tries to understand conceptual expansion by looking at citations. They look at who cites who, thus tracking the main sources or authors of the scientific concept (Fuller, 1988). Others look at how the scientific concept is cognitively represented by the scientist. They try to understand how cognitive representations of the scientific concept evolve over time (Thagard, 1993).
In this paper the last method will be applied albeit in a somewhat different form. The definitions scientists use to express their basic scientific concepts are going to be content analysed. Then by means of principal component analysis relations among the categories (terms) that form the scientific concept are performed and interpreted. This method of

analysis has a high reliability and validity because it allows a careful investigation of overlaps and differences. The disadvantages of the method are: 1) weaknesses in sampling occur (e.g., what are representative articles?); 2) disagreement as to what the relevant categories within the definitions are that should be taken into consideration and 3) do the emergent relationships among the categories in the definitions represent meaningful conceptual variations that are cognitively represented by the scientists. The sampling problem, can be solved because valid criteria, such as those articles which are mentioned in the *Social Sciences Citation Index (SSCI)*, will be applied. The second problem can be solved by consulting experts within the field, academics for instance, who separate what is relevant and what is not. The third problem can be solved by referring to the experts in the field, i.e. authors who provide literature and conceptual overviews, and who distinguish patterns and themes within the field.

3. Propositions

3.1. The conceptual variations of organizational climate and culture

Experts in the field are better able to notice and distinguish the different conceptual variations that exist within a scientific discipline compared to outsiders. Therefore, in order to discuss different conceptual variations within the field, the authors of this paper have chosen two overview articles; the first is an overview about organizational climate by Moran & Volkwein (1992) and the second one is about organizational culture and is written by Sackmann (1991).

3.1.1. Organizational climate

Moran & Volkwein (1992) mention four conceptual variations or perspectives on "organizational climate." These conceptual variations can be summarized as follows:

I. Structural perspective: Climate is considered as an objective manifestation of the organizational structure. Climate is formed because members of an organization are exposed to common structural characteristics of an organization. As a result of this exposure, the members have similar perceptions with respect to the collection of organizational characteristics. These similar perceptions represent their own organizational climate (e.g. Guion, 1973).

II. Perceptual perspective: The basis for the formation of the organizational climate is within the individual. Individuals respond to situational variables in a manner that is psychologically meaningful to them. Climate is a psychologically processed description of organizational conditions. (e.g. Joyce & Slocum, 1982; Schneider & Reichers, 1983).

III. Interactive perspective: The basic idea is that the interaction of individuals in responding to the same organizational situation brings forth the shared agreement which is the basis of the organizational climate (e.g. Poole & McPhee, 1983).

IV. Cultural perspective: Organizational climate is created by a group of interacting individuals who share a common frame of reference, i.e., the organization's culture, as they come to terms with situational contingencies (e.g. Berger & Luckman, 1967).

3.1.2. Organizational culture

Sackmann (1991) stated that three conceptual variations or perspectives from the cultural anthropology are of interest to the literature concerning the concept organizational culture. These are the holistic, the variable and the cognitive perspective. According to Sackmann, the perspectives can be characterized as follows:

I. Holistic perspective: The holistic perspective draws on the work of anthropologists such as Kluckhohn (1951) and Kroeber and Parsons (1958). The organizational culture has a core that

consists of traditional, i.e. historically derived and selected ideas and their attached values. The perspective is holistic because it integrates cognitive and behavioral patterns of culture.

II. Variable perspective: In the variable perspective, the organizational culture is considered as a variable of the organization that can be controlled. The variable perspective focuses on expressions which take the form of behaviors and practices. These behaviours and practices are related to underlying meanings. Culture is defined as "the way we do things here". The variable perspective is mainly found in the symbolic anthropology and in behavioral sciences (e.g. Geertz, 1973; Reimann & Wiener, 1988).

III. Cognitive perspective: The cognitive perspective sees the organizational culture as a system of knowledge or learned standards which are used for perceiving and evaluating the organizational environment. These perceptions and evaluations enable an individual to behave in an acceptable manner with respect to other members of the group (Goodenough, 1971). In other words, here culture refers to what people have on their minds. The accumulated, collective knowledge provides standards for what to do and how to act. This perspective focuses on ideas, beliefs, values and norms (e.g. Desphandé & Webster, 1989).

3.2. Hypotheses

The four different perspectives in organizational climate and three different perspectives in organizational culture are here perceived as conceptual variations. If conceptual expansion proceeds rationally, the concepts have to have a core onto which individual variations or dialects are attached. Based upon these suggestions we propose three hypotheses:

Hypothesis 1: Principal component analysis of the categories within the definitions of organizational climate and organizational culture will show a common core concept and a set of clusters--which represents conceptual variations around the core concept.

Hypothesis 2: The clusters which emerge during the content analysis of the definitions of organizational climate will reflect the same conceptual variations or perspectives as suggested by Moran & Volkwein (1992).

Hypothesis 3: The clusters which emerge during the content analysis of the definitions of organizational culture will reflect the same conceptual variations or perspectives as suggested by Sackmann (1991).

Exploratory analysis: While cross section analyses may reveal patterns, a longitudinal analysis allows careful analysis about when and how changes in the scientific concept have emerged. Many researchers like Rousseau (1988), Reichers & Schneider (1990) and Moran & Volkwein (1992) have already suggested that the application of the scientific concept is driven by accommodations in order to fit the then current thoughts within the field of organizational behavior. It is therefore expected that some categories of the concept will change over time.

4. Research method

4.1. Content analysis and principal component analysis

By means of content analysis the hypotheses mentioned above have been tested. Content analysis is a research method for making replicable and valid conclusions with respect to the associations among terms that are present in texts--in our case the definitions of organizational climate and culture (Krippendorff, 1980). First of all, the meanings of the listed terms mentioned in the definitions are evaluated by external evaluators--experts--to assess whether the meanings are essential to the definitions of organizational climate and organizational culture. Once the terms have been identified they constitute the "categories" used in the content analysis. Secondly, using principal component analysis, associations are examined between the most important categories within the definitions of organizational climate and

organizational culture. The found associations among the categories point out what is common among all the categories and also which clusters of related categories can be found in the concepts organizational climate and organizational culture. If the clusters also reflect the conceptual variations or perspectives as suggested by experts (in our case Moran & Volkwein (1992) and Sackmann (1991)), they will be perceived as validated clusters.

4.2. Data gathering: searching definitions

The sampling method is a combination of snow ball sampling and a systematical citation index search. First, all the articles which are mentioned in three overview articles--Reichers & Schneider (1990), Moran & Volkwein (1992) and Sackmann (1991)--were searched and collected. Then a search took place in the *SSCI* for the period 1960-1993, the collected articles and books were checked for the presence of descriptions and definitions of the concepts organizational climate and culture. Thirty-two different definitions of organizational climate and fifty-four definitions of organizational culture were found. This collection of definitions constitutes the basis for this research. This type of sampling has benefits and limitations: the benefit is that the articles are recognized by experts in the field, the limitation is that some work of minor importance or less cited work is not presented in the study. The list of journals and the books we have consulted are shown in appendix 1.

4.3. Categories

A content analysis starts with the supposition that the number of terms that is used in can be summarized or classified into a much smaller number of categories because of similarities in meaning. This classification works as follows: first researchers have to suggest synonyms, which in turn are evaluated in in-depth interviews with experts in the field. Subsequently, the most important categories of words can be separated and summarized. Table 1 shows the most frequent categories of the concepts organizational climate and organizational culture. From table 1 it is also apparent that organizational culture contains more categories than organizational climate.

Place table 1 about here

4.4. Clusters of categories

Now that the most important categories have been indicated, tracing the conceptual core and the clusters--conceptual variations--is the next step. Various researchers (Iker & Harway, 1969; Namenwirth, 1969;1970; Namenwirth & Bibee, 1975) have used principal components analysis to identify relationships between the categories (the clusters) in certain texts. These clusters are difficult to detect when reading the text.

4.5. PRINCALS

An example of a principal components technique is PRINCALS. PRINCALS is an acronym for *princ*ipal *c*omponents analysis via *a*lternating *l*east *s*quares (see e.g. SPSS Categories Manual). Its aim is to reduce the number of dimensions in the original data, while explaining as much of the variance as possible (the variance is reflected by "eigenvalues"). The standard principal components analysis (PCA) presumes that all variables in the analysis are measured on the numerical level and that the associations between pairs of variables are linear.

PRINCALS is able to reduce variables to an ordinal level (present versus absent). It can be viewed as a PCA on the ordinal variables after dummy coding (i.e. the original ordinal variable is replaced by the "number of ordinal categories -1 dummy variables") with the restriction that the category quantifications must have the same order as the original categories (only a monotome transformation of the original variable is allowed). With PRINCALS it is therefore possible to summarize the links between categories in a multi-dimensional space. This space is very useful to reveal associations between the different categories (clusters).

4.6. PRINCALS justification

The PRINCALS analysis[2] in two dimensions yielded for organizational climate eigenvalues of .3221 and .1975 and for organizational culture of .1882 and .1478. In general, the eigenvalue for a dimension should be higher than 1/number of variables. In the analysis of organizational climate both dimensions have an eigenvalue higher than 0.125 (1/8 variables). In the analysis of organizational culture both dimensions have eigenvalues higher than 0.071 (1/14 variables).

In the PRINCALS analysis the default number of two dimensions was used first. We also checked whether three or more dimensions could be distinguished. However, the data did not substantiate more than two dimensions. The two dimensional solution revealed the most meaningful interpretations and in addition this solution was in accordance with the SPSS Categories manual guidelines-- which recommends to keep the number of dimensions sufficiently small, in order to make meaningful interpretations of the clusters possible (SPSS Categories, 1990). Component loadings were calculated for the categories in the analysis. The component loadings are equivalent to the Pearson-correlations between the quantified variables and the dimensions (see appendix 2 for information about the relations between

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[2] During the preselection in the PRINCALS analysis it was decided not to include the categorie s Organization and Practices in organizational climate and not to include the categories Assumptions, Members, and Social in the analysis of the concept organizational cultu re. The reason for this was that these categories were not significantly associated with any other category.

categories). The component loadings of the categories placed in a two-dimensional diagram provide an interpretation in terms of directions and variance. Categories that belong to the same cluster will have a similar loading on a dimension, while categories that do not belong to the same cluster will have loadings that are not similar.

5. Results PRINCALS analysis for organizational climate and culture

5.1. Determining core concept and clusters for organizational climate

Figure 1 graphically shows the component loadings for the two dimensions for the categories of organizational climate. On the first dimension--the horizontal axis--Shared (-.31) and Perceptions (-.58) have negative component loadings, while the remaining categories Behavior (.81), Influence (.75), Set (.61) Members (.45), Characteristics (.49) and Descriptions (.34) have positive component loadings. Because of the loadings of these categories, this dimensions is called the ***behavior versus perception*** dimension. On the second dimension--the vertical axis--the categories Shared (.74) and Descriptions (.53) have highly positive component loadings while Characteristics (-.55), Set (-.36) and Perceptions (-.41) have negative component loadings on this dimension. The categories Behavior (.09) , Influence (.10) and Members (.34) also have positive component loadings on this dimension, but to a lesser extent than Shared and Descriptions. Therefore, this dimension is called ***shared versus characteristics.*** This dimension distinguishes the categories Shared and Descriptions from Characteristics, Set and Perceptions. Once the dimensions have been determined, the core concepts and the different clusters will have to be identified. We will first focus on the invariant links which constitute the core concept. There is quite a substantial overlap among the categories as can be seen in the cross loadings that run across the two dimensions (as shown in the list of the variables under the graph). The main overlap is among Characteristics and Perceptions (in bold numbers). In a minor way there is overlap in

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Descriptions and Members, as well as in Set and Shared (also in bold numbers). These overlaps represent the core of the concept organizational climate. Thus while the PRINCALS analysis creates two dimensions, there is also substantial overlap among the categories across the dimensions: organizational climate therefore is a concept that refers to the set of *characteristics* which the members of the organization *perceive* and come to describe in a shared way. Next PRINCALS creates specific clusters which are visualized. Three clusters can be distinguished. Behavior and Influence (represented by (1)) form the first cluster. A second cluster is formed by Characteristics and Set--which are completely negatively correlated to Shared but positively with Perceptions. A third cluster is formed by Description and Members but these are positively related to Shared but not to Perceptions. In chapter 5.3.1. it will be checked if these clusters indeed correspond with the conceptual variations or perspectives as suggested by Moran & Volkwein (1992).

Place figure 1 about here.

5.2. Determining core concepts and clusters for organizational culture

Figure 2 shows the two dimensions and the loadings on these dimensions for the categories of organizational culture. On the first dimension--the horizontal axis the categories Beliefs (-.71) , Values (-.65) , Organization (-.68) and Norms (-.60) have highly negative component loadings, while Learned (.61) , Way (.35) and Patterns (.14) have positive component loadings. The remaining categories also have negative component loadings, but to a lesser extent than Beliefs, Values, Organization and Norms. Because of this combination of loadings this dimension is called *beliefs versus learned.* The second dimension--the vertical axis-- especially includes negative loadings for Patterns (-.65), Behavior (-.50), Learned (-.50), Way (-.45) and System (-.42). and positive loadings for Shared (.55), Set (.33) as well as Understanding (.22). Therefore this dimension is called *pattern versus shared.* Now the core concept and the clusters of categories will be discussed (as shown in the list of the variables under the graph).. First, it is apparent that also a substantial set of cross loadings among the

categories within the two dimensions (in bold numbers) can be detected: the most important cross loadings are among Learned and Way. To a minor extent cross loadings (also in bold numbers) occur among: Behaviors, Norms, Organization, Shared and System. Therefore, these cross loadings represent the core of the concept organizational culture. Organizational culture therefore is a system of shared norms and behaviors that are ***learned*** by the members of the organization and shape their ***way*** of doing. Subsequently the visualization of the PRINCALS analysis shows that four clusters can be distinguished. Beliefs, Norms, Organization and Values form the first cluster. The second cluster is formed by the categories Behavior, Practices, System and Meanings. Learned, Patterns and Way form a third cluster. A fourth cluster is formed by Set, Shared and Understandings. In paragraph 6.3.2. it will be checked if these clusters correspond to the conceptual variations or perspectives which Sackmann (1991) has suggested.

Place figure 2 about here

Conclusion about the first hypothesis: Based upon the analysis of the PRINCALS ***hypothesis 1*** is substantiated. That is, the analysis shows that there is a core concept in the concepts of organizational culture and climate. This core concept for organizational climate includes the categories Characteristics and Perceptions. This shows that organizational climate is essentially a concept which refers to how members perceive and come to describe their organization according to specific characteristics. The core concept of organizational culture reveals that something is learned and it shapes the way things are done. Therefore "organizational culture" can be considered as a reflection of the direction in which an organization is going. It also indicates the degree to which norms are shared.

5.3. Interpretation of clusters as conceptual variations

In order to find substantiation for hypothesis 2 and 3 the discovered clusters with the PRINCALS analyses have to be interpreted. This interpretation proceeds via the conceptual

variations or perspectives of organizational climate and organizational culture as suggested by experts (Moran & Volkwein, 1992 as well as Sackmann, 1991).

5.3.1. Interpretation of clusters of organizational climate

In the PRINCALS analysis three clusters of "organizational climate" were discovered, namely 1) Behavior and Influence; 2) Characteristics and Set and 3) Descriptions and Members. These three clusters are conceptual variations around the main core concept of organizational climate which reflects the perceived characteristics which organizational members perceive and which might affect their behavior. The themes these clusters represent are dealt with and interpreted here.

The first cluster reflects the interactive perspective as suggested by Moran & Volkwein (1992) i.e. individuals will share common behaviors during interaction with the same environmental characteristics of the organization. This cluster loads almost equally on Perceptions as well as on Shared. The following quotations are examples of the connections between the categories which refer to influences on behavior:

> "...quality...of an organization that is experienced by its **members, influences their behavior**..." (Tagiuri, 1969).

> "A molar concept that reflects the general atmosphere of a workplace, and is assumed to **influence** the motivation, satisfaction and **behavior** of the **individual's organization**..." (Dastmalchian, 1986).

The second cluster, Characteristics and Set, reflects the perceptual perspective. That is, climate is a reflection of the objective characteristics of the environment which individuals perceive. These characteristics are 'out there' and are noticed by the individuals.

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"A **set** of **attributes** specific to a particular organization that may be induced from the way that an organization deals with its members and its environment..." (Campbell et al., 1970).

The third cluster, Descriptions and Members, reflects the structural perspective. That is, all the members of an organization describe and represent the aspects of the organization. The difference between this structural perspective and the perceptual perspective is that in the structural approach all members describe their organization in a similar manner. This conceptual variation is expressed in the following definition:

"Psychologically meaningful molar descriptions that people can **agree** on and characterize a system's practices and procedures..." (Schneider, 1975).

Conclusion about hypothesis 2: The conceptual variations as suggested by Moran & Volkwein (1992) have been found for the most part in the clusters. While the core concept of organizational climate is about perceived characteristics of the organization, the three clusters reflect conceptual variations around this core concept. The first, the interactive perspective, suggests that the characteristics affect the way people interact. The second perspective, the perceptual approach, suggests that people will come to represent the objective characteristics while the third, the structural perspective, suggests that all individuals of the organization have a similar description of their organization. There's evidence that the core of the concept has systematical variations, so hypothesis 2 is substantiated.

5.3.2. Interpretation of the clusters in organizational culture

In the PRINCALS analysis four clusters of "organizational culture" were discovered, namely 1) Beliefs, Norms, Organization and Values, 2) Behavior, Practices, System and Meanings; 3) Learned, Patterns and Way, and 4) Set, Shared and Understandings. All these four clusters are conceptual variations around the core concept of organizational culture, that is, they

reflect the behaviors and norms learned by the members and shapes the way things are done in the organization. The conceptual variations which these clusters represent are dealt with and interpreted here.

The first cluster 'Beliefs, Norms, Organization and Values' reflects the cognitive perspective which Sackmann suggests. This perspective focuses on ideas, beliefs, values and norms. Culture thus refers to what people have stored in their minds. The accumulated, collective knowledge provides norms for what to do and how to act within an organization. The categories Beliefs, Norms, Organization and Values often appear in definitions together. This is illustrated by the following quotations:

> "The patterns of shared **values and beliefs** that help the individuals understand organizational functioning and thus provide them **norms** for behavior in the **organization**..." (Deshpandé & Webster, 1989).

> "...it involves shared philosophies, ideologies, **values, beliefs**, expectations, and **norms**." (Kilmann & Saxton, 1983).

The second cluster, Behavior, Practices, System and Meanings reflects the variable perspective as suggested by Sackmann (1991). The variable perspective focuses on expressions, which take the form of behaviors and practices which also influence underlying meanings and behavioral codes. It reflects 'the way we do things around here.' A good example of the four categories occurring together is the quotation of a definition by Gregory:

> "...**A system of meaning** that accompanies...**behaviors and practices**..." (Gregory, 1983).

The third cluster, Learned and Patterns, mostly reflects the holistic perspective. Organizational culture is formed around a base which consists of historically determined traditions, and selected ideas and values connected to these traditions. The traditions are passed on to and

acquired by new generations. A good example of these categories occurring together is formed by the following quotations:

"The total of socially **transmitted** behavior **patterns**..." (Kotter & Heskett, 1992).

"**...pattern of** human behavior...depends on man's capacity for **learning** and transmitting knowledge to succeeding generations. **The way** we do things around here..." (Deal & Kennedy, 1982).

Moreover, the fourth cluster shows positive relations between the categories Set, Understandings and Shared. An example of these categories occurring together is given by the following quotation:

"The **set of** important **understandings** (often unstated) that members of a community **share** in common." (Sathe, 1983).

This cluster is not represented by the work of Sackmann (1991). It rather represents a crossing of the variable and the cognitive perspective.

Conclusion about hypothesis 3: The different clusters found in the definitions of organizational culture reflect the conceptual variations or perspectives suggested by Sackman (1991). Although the match is not completely exact--one cluster had overlaps with two other clusters--there is much evidence that the core net of the concept has systematical variations indeed. Thus hypothesis 3 has been substantiated.

5.4. Longitudinal analysis of the expansion of concepts

A disadvantage of a cross sectional analysis is that it does not reveal if systematical changes over time during the conceptual expansion occur. A longitudinal analysis reveals how the

categories evolve over time. Therefore, the categories will be distributed along time specific periods.

5.4.1. Frequencies of the categories of organizational climate in different periods of time

In Table 2 the categories of the organizational climate have been classified for different periods of time. As far as the ordering in time is concerned, we opted for a classification in three equal periods starting with the first article of Forehand & Gilmer (1964). The same goes for organizational culture starting with the article of Pettigrew (1979).

In Table 2 the categories of organizational climate are ranked for different periods of time. We will only focus on the main categories that are part of the core concept. First, it is apparent that there is a relative stability in the frequency of category usage: organization, members and perceptions stay on top of the concept during all the periods. Thus it can be concluded that the concept organizational climate remains a concept referring to Members (always 2nd place) of the organization (always 1st place) and their Perceptions (4th place to 3rd place to 3rd place) concerning the organization. Characteristics (2nd place to 5th place to 8th place) became less crucial, instead Shared became more important over time (9th place to 4th place). We interpret these dynamics as: organizational climate is a concept which, in general, refers to the perceptual construction that members have about their organization. However, over time the meaning of organizational climate became a concept intended to capture how individuals perceive the organizational characteristics in a shared way. Remark however that although the Descriptions, Characteristics and Set were part of the core of the concept they are used less frequently over time.

Place table 2 about here

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5.4.2. Frequencies of the categories of organizational culture in different periods of time

Table 3 shows that there is less stability between the categories--Shared, Behavior, Organization, Norms, Way, System and Learned compared to the categories of the concept organizational climate. First, categories like Shared and Organization show most stability--as they remain most prominent in all the periods. All other categories show more dynamical movements. Most apparent is that Norms lowers from 4th place to 7th place to 10th place, while Learned is a category which rises in importance over time (11 th place to 11th place to 7 th place). Behavior moves from 3rd to 7th place to 4th place and shows much instability. Although Way has high cross loadings as revealed during PRINCALS analysis, it is not mentioned very frequently (8th place to 11 th place to 10 th place).

Place table 3 about here

Conclusion about the exploratory analysis: as far as the exploratory analysis is concerned it is possible to say that within the concepts of organizational climate and organizational culture there remains a stable core of categories that makes up a concept over time. However, some categories within the concept become more predominant over time.

6. Discussion

The goal of this paper was to investigate how concepts within the field of organizational behavior are expanding over time. Two possible theories about how scientific concepts expand were discussed: The first group proposed that the conceptual expansion within a scientific field is constrained by consensus generating scientific practices. The second group, the "everything goes" group, proposed that conceptual expansion occurs because the field consists of speech communities which loosely expand the field without maintaining a core concept. Especially the first stream of thought was investigated, and the question was asked whether within the field of organizational behavior there is a core concept around which

conceptual variations are formed. In order to investigate this question a content analysis was performed on how the concepts organizational climate and organizational culture were defined by different authors over time. PRINCALS analysis allowed a careful analysis as to whether there is one core concept and whether there are clusters which represent conceptual variations around the core concept.

Although many authors have already been defining the core concepts and the conceptual variations of organizational climate and culture (Hellriegel & Slocum, 1974; Hatch, 1993; Schein, 1990; Schneider & Reichers, 1990; Rousseau, 1988), no one has inferred them on the basis of statistical methods yet. The two core concepts that were discovered in this study using PRINCALS analysis were 1) organizational climate is a reflection of the way people perceive and come to describe the characteristics of their environment. 2) Organizational culture, reflects the way things are done in an organization. The data therefore substantiate the hypothesis that within organizational behavior the scientific concepts expand around a core concept. These core concepts have already been discovered by many other authors, albeit via conceptual thinking. Two noticeable examples are Rousseau (1988) and Schneider (1985). Rousseau (1988) suggests that "Essentially, climate is an individual description of the social setting or context of which a person is part....." (p. 140) and "A key element of culture is consensus or shared values and beliefs (p. 149). Schneider (1985) suggests that "Whereas climate researchers have been concerned with the dimensions or facets of policies and activities that characterize particular organizational phenomena (service, innovation), culture scholars want to understand a) the norms and value systems that give rise to policies and activities and b) the modes by which the norms and values are communicated and transmitted" (p. 596). In other terms, the core concepts found by means of PRINCALS show validity since other authors have discovered the existence of these core concepts as well.

The data also revealed that within or around the core concepts different conceptual variations emerged. The conceptual variations we found via PRINCALS analysis are also recognized by experts. The data about the different conceptual variations show that there is a trend to

creatively expand concepts in a rational manner within the field of organizational behavior. Based upon the analysis of organizational climate and organizational culture it can be said that the field of organizational behavior is a dynamical field since it tries to answer the question how the organization (context) is affecting the behaviors, attitudes and performance of employees in a variety of ways (Schneider, 1985). Once a concept has been found fertile, many researchers begin to elaborate and expand the concept (Reichers & Schneider, 1990). The fact that conceptual scientific expansion proceeds rationally might be due to at least two consensual scientific practices. First, there is the educational process by which Ph.D students are trained to conceptualize and measure the different ways of the organization. Their training contains theory as well as methodology. This load of knowledge allows them to expand current conceptual knowledge within the field. Second, the publication of the scientists' work proceeds via peer reviews and in this review process the author's work is accepted when it fulfills the norms of the field. From what can be seen in this study, the educational process and peer reviews do not cause "group think" (Janis, 1982), on the contrary, substantial conceptual variations are added to the core concepts within the field. In addition, these different variations are recognized by different authors, despite the fact that they might differ of opinion as to how the concepts should be used. There are other consensual scientific practices that are responsible for the emergence of the different conceptual variations, as we will see in the next paragraph.

1) *Discovery of research gaps*: One important reason why scientists come to create different dialects is that they discover the limitations and problems encountered in the theoretical concept. Organizational climate is a good example, because it is a concept that has much potential and many authors agree that "few studies--on organizational climate--have achieved a sophisticated level of research rigour" (Hellriegel & Slocum, 1974, p. 277; Glick, 1985). One of the points of the discussion is that although organizational climate reflects the way in which individuals come to perceive and describe the characteristics of the organization, the question is raised whether the organizational climate remains a perceptual perspective (psychological climate) or rather that it is something members should share (an interactive perspective or also called organizational climate)? (e.g. Glick, 1985; Hellriegel & Slocum,

1974; Reichers & Schneider, 1990). This discussion has attracted the attention of many scholars and has become one of the main issues in the field. Therefore, some scholars like to study organizational climate as a perceptual or psychological construct (James, 1982), while others see it as an interactive or organizational construct, and yet still others think of it as problem of level of analysis (Dansereau & Alutto, 1990). In all these cases, scholars suggest methodological techniques to capture the way organizational climate is intended. Glick (1985) for instance suggests that when the researcher intends to investigate organizational climate (from an interactive perspective), sampling, methods and the questionnaire design should be adapted accordingly.

2) *Knowledge from neighbouring fields:* The field of organizational behavior is a field which has emerged because many different disciplines relate to this field. For instance, organizational behavior is only one step away from psychology, anthropology and sociology (Robbins, 1993, p. 17-19). Schein (1990) for instance suggests that: "Serious students of organizational climate point out that each culture researcher develops explicit or implicit paradigms that bias not only the definitions of key concepts but the whole approach to study the phenomenon. One probable reason for this diversity of approaches is that culture, like role, lies at the intersection of several disciplines......" (p. 109).

Organizational climate originated from gestalt psychology. In fact it was Lewin (1936) who suggested that a person is a function of its environment (Schneider, 1985). From this theoretical perspective both the person and the environment had to be defined. But over time social psychology came to play a more important role. It especially affected the emergence of the interactive approach of climate that became shareware for the employees. A good example of the fact that the categories Set and Characteristics were being replaced by the category Shared is given in the following quotations:

"A **set of** measurable **properties** of the work climate environment, perceived directly or indirectly by the people who live and work in this environment..." (Litwin & Stringer, 1968) and

"A summary of molar perceptions that employees **share** about their work environment..." (Zohar, 1980).

Organizational culture on the other hand emerged from symbolic interactionism. Interactionism requires a social unit and shared experience (Rousseau, 1988; Hatch, 1993 and Schein, 1990). Despite these origins, the field has been flooded with new approaches such as learning theories (e.g. Schein, 1990) on how the environment could be better operationalized. Once established these approaches will lead to new conceptual variations.

3) *Fertilization within the field:* Organizational climate is a scientific concept with has a longer history than organizational culture. Some scholars suggest that culture has become more fashionable (Schneider, 1985). Others suggest that organizational culture captures richer and different dimensions of the organization (e.g. ways of interacting) and therefore both concepts (organizational climate and culture) should be related/merged with each other (Poole, 1988). Still others opt for two concepts that should remain separate topics of research although they are similar (Rousseau, 1988). However, because of the growing importance of organizational climate, the way organizational climate is defined is affected by the way in which organizational culture is defined (Moran & Volkwein, 1992).

Although the exact reasons as to why these different conceptual variations have emerged is beyond the topic of research, the results of this study show that the field of organizational behavior is full of opportunities, partly because of the different gaps in the research, the multiple perspectives that can be introduced to the field and of course the knowledge within the field of organizational behavior. So, a "research climate" is generated which attracts many researchers. This consensual scientific practice allows discussions around a core concept thus creating common understanding. This sphere of pluralism, and possible conceptual confusion has urged some scholars to suggest that their colleagues should state more explicitly in what ways they agree or disagree with respect to the the core concept. Rousseau (1988, p. 154) for instance points out: "Climate has been constructed by the researcher to mean some very

distinct things. It would facilitate our interpretation of each study employing the climate if researchers would specify which climate type they are studying....Unless the measure 'behaves' in a fashion consistent with the type of climate it purports to tap...climate research will bog down in an emphasis on method and a theoretical proliferation of climate types."

7. Conclusion

The aim of this paper was to analyze whether conceptual expansion within the field of organizational behavior proceeds rationally or like an everything goes construction. Content analysis was used to find out how organizational climate and and organizational culture have developed over time. The conceptual expansion appeared to be constrained rationally: around a core concept conceptual variations emerge. This constraining point indirectly reflects a pluralistic, yet rational research climate within the field of organizational behavior.

8. Appendices

APPENDIX 1. THE SOURCES FOR THE CONTENT ANALYSIS

We consulted the following list of journals for definitions of culture and climate.

Academy of Management Journal, Academy of Management Review, Accounting. Organizations and Society, Administrative Science Quarterly, American Journal of Sociology, American Sociological Review, Business Horizons, Fortune, Group & Organization Management, Human Relations, Journal of Applied Psychology, Journal of Management Studies, Journal of Marketing, Journal of Marketing Research, Journal of the Academy of Marketing Science, McKinsey Quarterly, Organization Behavior and Human Performance, Organizational Dynamics, Organizational Studies, Personnel Psychology, Proceedings of the Academy of Management, Psychological Bulletin, Research in Organizational Change and Development, Research in Sociology of Organizations, Sloan Management Review.

The books used for the content analysis of the definitions are mentioned below:

Beres, M.E. & J. D. Portwood (1979), "Explaining cultural differences in the perceived role of work: An international cross-cultural study," In G. N. England, A. Negandi & B. Wilpert (eds.), *Organizational functioning in a cross-cultural perspective*, Kent, Ohio: Kent State University Press.

Campbell, J.P. & E.E. Beaty (1971), *Organizational climate: Its measurement and relationship to workgroup performance*, Paper presented at the annual meeting of the American Psychological Association, Washington D.C. September.

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Goodenough, W.H. (1971), *Culture, language and society*, Reading, Mass.: Addison Wesley.

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Kilmann, R.H. & H.J. Saxton (1983), *Kilmann-Saxton culture gap survey*, Pittsburgh: Organizational Design Consultants.

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Schein, E.H. (1992), *Organizational culture and leadership: A dynamic view*, (2nd), San Francisco: Jossey- Bass.

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APPENDIX 2. RELATIONS BETWEEN CATEGORIES

Relations between categories are identified by means of associations. The phi-coefficient is taken as the standard. The phi-coefficient is used for the comparison of dichotomic variables, i.e. variables which have only two values, absent and present, on their scale, which renders a non-measurable characteristic or feature (Chedzoy, 1986)

APPENDIX 2A: Associations organizational climate

	Beh	Cha	Des	Inf	Mem	Org	Per
Behavior	*						
Characteristics	.247	*					
Descriptions	.178	.049	*				
Influence	.666	.248	.090	*			
Members	.291	-.030	.041	.301	*		
Organization	-.275	-.016	-.067	.162	-.124	*	
Perceptions	-.375	-.111	-.527	-.279	-.179	-.187	*
Practices	.036	.036	.149	-.201	-.092	-.149	-.038
Set	.312	.312	.035	.328	.324	.174	-.080
Shared	-.152	-.416	.119	-.014	.179	-.085	.108

	Pra	Set	Sha
Practices	*		
Set	-.078	*	
Shared	.038	-.346	*

Note:
Associations higher than .291 are significant at p ≤ .10.
Associations higher than .346 are significant at p ≤ .05.
Associations higher than .455 are significant at p ≤ .01.
(Model: Chi-square test, N=32 definitions)

APPENDIX 2B: Associations organizational culture

	Ass	Beh	Bel	Lea	Mea	Mem	Nor
Assumptions	*						
Behavior	-.138	*					
Beliefs	.122	.112	*				
Learned	-.026	.081	-.395	*			
Meanings	-.108	.124	.051	-.040	*		
Members	-.120	.000	-.003	.014	-.010	*	
Norms	-.046	.199	.303	-.265	.203	.128	*
Organization	-.065	.222	.455	-.186	.018	.106	.334
Patterns	-.026	.266	.004	.481	-.155	.039	.114
Practices	-.211	.104	-.043	.072	.323	.009	.054
Set	.144	.149	.218	-.181	.055	-.189	-.196
Shared	.089	-.169	.168	-.171	.084	.036	.037
Social	-.241	-.095	-.121	.213	-.189	.064	.087
System	-.049	.356	-.010	.043	.365	.011	.117
Understandings	-.058	.165	-.221	-.009	.130	.103	.213
Values	.082	.075	.469	-.317	.055	-.104	.366
Way	.200	-.041	-.116	.322	-.015	-.199	.025

	Org	Pat	Pra	Set	Sha	Soc	Sys
Organization	*						
Patterns	.161	*					
Practices	.193	-.119	*				
Set	.033	-.153	-.047	*			
Shared	.107	-.395	-.110	-.076	*		
Social	.173	.109	.070	-.213	.064	*	
System	.159	-.061	.279	-.120	.011	-.025	*
Understandings	.041	-.082	-.006	.419	.228	.100	.059
Values	.406	.102	.058	.000	-.104	-.149	.030
Way	-.147	.099	.091	-.166	-.294	-.083	.066

	Und	Val	Way
Understandings	*		
Values	-.099	*	
Way	-.239	-.111	*

Note:
Associations higher than .224 are significant at p ≤ .10.
Associations higher than .267 are significant at p ≤ .05.
Associations higher than .350 are significant at p ≤ .01.
(Model: Chi-square test, N=54 definitions)

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Tables and Figures used in the paper

TABLE 1

Category frequencies of organizational climate and organizational culture

Organizational climate (32 definitions)			Organizational culture (54 definitions)		
Rank	Category	Frequency	Rank	Category	Frequency
1	Organization	30	1	Members	40
2	Members	26	1	Shared	40
3	Perceptions	21	3	Values	30
4	Characteristics	15	4	Organization	28
5	Behavior	15	5	Behavior	27
6	Descriptions	12	6	Beliefs	23
7	Shared	11	7	Patterns	21
8	Set	10	8	Norms	17
9	Influence	9	9	Learned	16
10	Practices	8	10	Way	15
			10	Meanings	15
			12	System	12
			13	Assumptions	11
			14	Social	10
			15	Set	9
			16	Practices	8
			17	Understandings	7

FIGURE 1

Component Loadings of Organizational Climate

```
    +3)))))3)))))3)))))3)))))3)))))3
 .74 3      SHA                      3
     *                              *
     *                              *
D    *              DES             *
i    *                              *
m .34 3                MEM           3
e    *                              *
n    *                              *
s    *                       (1)    *
i    *           *                  *
o -.07 3                            3
n    *                              *
     *                              *
2    *                              *
     * PER                SET        *
 -.48 3                            3
     *                     CHA       *
    .3)))))3)))))3)))))3)))))3)))))-
     -.58  -.26   .06   .38   .70
```
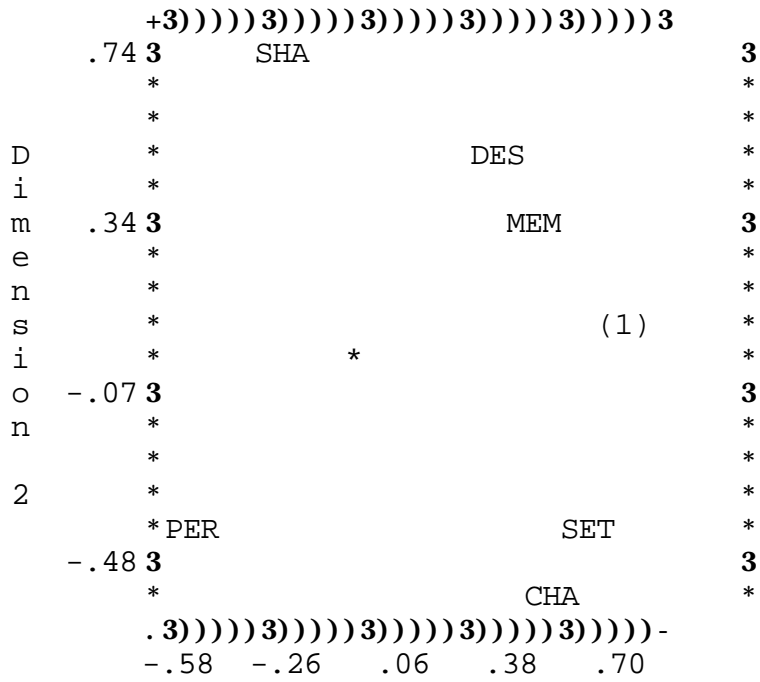
Dimension 1

VARIABLE	DIM 1	DIM 2
Behavior (1)	.805	.094
Characteristics	**.490**	**-.553**
Description	**.343**	**.530**
Influence (1)	.754	.106
Members	**.447**	**.335**
Perception	**-.577**	**-.407**
Set	**.610**	**-.361**
Shared	**-.311**	**.742**

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FIGURE 2
Component Loadings of Organizational Culture

```
     +3)))))3)))))3)))))3)))))3)))))3
 .55 3           SHA                   3
     *                                 *
     *                                 *
D    *           SET                   *
i    *           UND                   *
m .16 3                                3
e    *                                 *
n    *BEL               *              *
s    *                                 *
i    * VAL    MEA                      *
o -.22 3ORG                            3
n    *   NOR                           *
     *           PRA                   *
2    *           SYS        WAY        *
     *           BEH            LEA    *
 -.61 3                  PAT           3
     *                                 *
      .3)))))3)))))3)))))3)))))3)))))-
      -.71  -.40  -.10   .20    .51
```

Dimension 1

VARIABLE	DIM 1	DIM 2
Behavior	**-.297**	**-.497**
Beliefs	-.708	.037
Learned	**.607**	**-.495**
Meanings	-.299	-.172
Norms	**-.597**	**-.270**
Organization	**-.678**	**-.245**
Patterns	.135	-.645
Practices	-.165	-.355
Set	-.199	.325
Shared	**-.238**	**.550**
System	**-.243**	**-.423**
Understandings	-.168	.220
Values	-.647	-.182
Way	**.353**	**-.451**

TABLE 2
Category frequencies for organizational climate in different periods of time

1964-1973 (11 definitions)			1974-1983 (10 definitions)			1984-1993 (11 definitions)		
Rank	Category	Frq	Rank	Category	Frq	Rank	Category	Frq
1	Organization	10	1	Organization	9	1	Organization	11
2	*Members*	*8*	*1*	*Members*	*9*	*2*	*Members*	*9*
2	*Characteristics*	*8*	3	*Perceptions*	8	3	*Perceptions*	*6*
4	*Perceptions*	*7*	*4*	*Shared*	*5*	*4*	*Shared*	*5*
5	Behavior	6	5	Practices	4	5	Behavior	4
6	*Set*	*5*	*5*	*Characteristics*	*4*	5	Influence	4
7	*Descriptions*	*4*	5	*Descriptions*	*4*	5	*Descriptions*	*4*
7	Influence	4	*8*	*Set*	*3*	8	Practices	3
9	*Shared*	*1*	9	Behavior	2	*8*	*Characteristics*	*3*
10	Practices	1	10	Influence	1	*10*	*Set*	*2*

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TABLE 3

Category frequencies for organizational culture in different periods of time

1979-1983 (22 definitions)			1984-1988 (17 definitions)			1989-1993 (12 definitions)		
Rank	Category	Frq	Rank	Category	Frq	Rank	Category	Frq
1	Members	17	*1*	*Shared*	*13*	1	Members	9
1	*Shared*	*17*	2	Values	12	*1*	*Organization*	*9*
3	*Behavior*	*11*	3	Members	11	*1*	*Shared*	*9*
4	Beliefs	8	*4*	*Organization*	*10*	*4*	*Behavior*	*9*
4	*Organization*	*8*	4	Beliefs	10	4	Values	8
4	*Norms*	*8*	6	Meanings	7	4	*Pattern*	
4	Values	8	*7*	*Norms*	*6*	7		
8	Meanings	6	*7*	*Behavior*	*6*	7	beliefs	*5*
8	*Pattern*	6	7	*Pattern*	*6*	*7*	*System*	*5*
8	*Way*	*6*	10	Assumptions	5	*9*	*Learned*	*4*
11	*System*	*5*	*11*	*Learned*	*4*	10	Assumptions	3
11	*Learned*	*5*	11	Social	4	10	Social	3
13	Set	4	*11*	*Way*	*4*	*10*	*Way*	*3*
13	Understandings	4	14	Practices	3	*10*	*Norms*	*3*
15	Assumptions	3	14	Set	3	14	Meaning	2
15	Social	3	*14*	*System*	*1*	14	Practices	2
17	Practices	2	14	Understandings	1	12	Set	2
						17	Understanding	2

Appendix 1. The sources for the content analysis

The following is the list of journals consulted for definitions of culture and climate.

Academy of Management Journal, Academy of Management Review, Accounting. Organizations and Society, Administrative Science Quarterly, American Journal of sociology, American Sociological Review, Business Horizons, Fortune, Group& Organization Management, Human Relations, Journal of Applied Psychology, Journal of Management Studies, Journal of Marketing, Journal of Marketing Research, Journal of the Academy of Marketing Science, McKinsey Quarterly, Organization Behavior and Human Performance, Organizational dynamics, Organizational Studies, Personnel Psychology, Proceedings of the Academy of Management, Psychological Bulletin, Research in Organizational Change and Development, Research in Sociology of Organizations, Sloan Management Review.

The books used for the content analysis of the definitions are mentioned hereunder:

Beres, M.E. & J. D. Portwood (1979), "Explaining cultural differences in the perceived role of work: An international cross-cultural study," In G. N. England, A. Negandi & B. Wilpert (eds.), *Organizational functioning in a cross-cultural perspective*, Kent, Ohio: Kent State University press.

Campbell, J.P. & E.E. Beaty (1971), *Organizational climate: Its measurement and relationship to workgroup performance*, Paper presented at the annual meeting of the American Psychological Association, Washington D.C. September.

Campbell, J.P. , M.D. Dunette, E.E. Lawler & K.E. Weick (1970), *Managerial behavior, performance, and effectiveness,* New York: McGraw-Hill.

Davis, S.M. (1984), *Managing corporate culture*, Cambridge, Masss.: Ballinger.

Deal, T. E. & J.D. Kennedy (1982), *Corporate cultures: The rites and rituals of corporate life*, Mass: Addision-Wesley.

Denison, D.R. (1990), *Corporate culture and organizational effectiveness*, New York: Wiley.

Geertz, C. (1973), *The interpretation of cultures*, New York: Basic Books

Goodenough, W.H. (1971), *Culture, language and society*, Reading, Mass.: Addison Wesley.

Hofstede, G. (1980), *Culture's consequences: International differences in work-related values*, London: Sage.

Jacques, E. (1951), *The changing culture of a factory,* London: Travistock Institute.

Joyce, W.F. & J.W. Slocum (1979), *Climates in organizations*," In S. Kerr (ed.) Organizational behavior, Columbus Ohio: Grid.

Kilman, R.H. & H.J. Saxton (1983), *Killmann-Saxton culture gap survey*, Pitssburgh: Organizational Design Consultants.

Kilmann, R.H., M.J. Saxton & R. Serpa (1985) "Introduction: Five key issues in understanding and changing culture," In Killman, R.H. (Ed.), *Gaining control of the corporate culture*, SanFrancisco: Jossey-Bass.

Kluckholm, C. (1951), *The study of culture*, In Lerner, D. & H.D. Laswell (eds.), *The policy sciences*, California: Stanford University Press.

Kotter, J.P. & J.L. Heskett (1992), *Corporate culture and performance*, New York: Free Press.

Litwin, G.H. & R.A. Stringer (1968), *Motivation and organizational climate*, Boston Division of Research, Graduate School of Business Administration, Harvard Universoity.

Mitvis, P & A. Sales (1990), "Feeling the elephant: Culture consequences of a corporate acquisition and buy-back," In Schneider, B. (Ed.), *Organizational Climate and Culture,* San Francisco: Jossey-Bass.

Poole, M.S. (1985), "Communication and organizational climates: review, critique, and a new perspective," In R.D. McPhee & P.T. Tompkins (Eds.), *Organizationalal communication: Traditional themes and new directions,* Beverly Hills: Sage.

Schein, E.H. (1992), *Organizational culture and leadership: A dynamic view*, (2nd), San Francisco: Jossey- Bass.

Schneider, B. & J. Rentsch (1988), "Managing climates and cultures: A futures perspective,"In J. Hage (Ed.) *Futures of Organizations*, Lexington, Mass.: Heath.

Sells, J.B. (1968), "The Nature of organizational climate," In R. Tagiuri & G.H. Litwin (Eds.), *Organizational climate: Explorations of a concept*, Boston: Division of Research, Graduate School of Business Administration, Harvard University.

Siehk, C. J. Martin (1984), "The role of symbolic management: How can managers effectively transmit organizational culture?," In J.G. Hunt (Ed.), *Leaders and managers: International perspectives on managerial behavior and leadership*. New York: Pergamon.

Smircich, L. (1985), "Is the concept of culture a paradigm for understanding organizations and ourselves?," In Frost, P.J. (Ed.), *Organizational culture*, Beverly Hills: Sage.

Tagiuri, R. (1969), "The concept of organizational climate," In R. Tagiuri & G.H. Litwin (Eds.) *Organizational climate: Explorations of a concept*, Boston: Division of Research, Graduate School of Business Administration, Harvard University.

Thompson, K.R. & F. Luthans (1990), "Organizational culture: A behavioral perspective," In B. Schneider (Eds.), *Organizational climate and culture*, San Francisco: Jossey-Bass.

Tichy, N.M. (1983), *Managing strategic change: technical, political, and cultural dynamics*, New York: Wiley.

Trice, H.M. & Beyer, J.M. (1993), *The cultures of work organization*, Englewood Cliffs: Prentice Hall.

Walter, G.A. (1985), "Culture collision in mergers and acquisitions," In P.J. Frost (Ed.) *Organizational Culture,* Beverly Hills: Sage.

This paper did not wanted to ask the question what is now cult or climate per se. I only asked how things could be. Still most people seem to wan to say this is culture or add gaps to it..

Despite the fact that therea work
concepts. the fact that the

This consensus building occurs because the field of organizations behavior consists in scientific practices which can be balabedl rational. The following practices seem to me crucial: 1) be at isare aior ri
iectseslves and First, within the field of organization behavior there are several tendecies to see things in difference twya, however thse differnces all turn around strong basic concepts. In fact, experts are able to detec these diffeenc and describe them nicely.

2. One might gues why these consesnus practices exit. There are siveral reasons: first, there is the education process which stimulates the different. As there is a field peopl eget their Ph>d. And so theywill come to work on establised concept. Second, there arehandbooks as well as overview which direct people to do a certain research 3) there is the review process which might constrain but alsoallow people to tell whattheydo. 4) also a way of dealing with how to measure

3. It would of course be interesting to look further, using citaton analysis whocites who and who builds upon who. In addition, it might be that certain shol;ars have bee educated atsome schools or some countries which come to have an effect on how differences exit withint 3e field.

4. Interesting is that there are differ opitjons, it isnot eh case that ther eonly one or toschooInculture even four different dialcets wer xintgisged.

The question is iff there is ten anevolution: the idea is that sciences evolve and come to make differntitations. We feel that there is a trend although a bit low, agains whichthing stake place.

There is an evoltion, but perhaps more important differntiation. Our option is that there is cnseis but also more differentiation.

This adds to the question, can there be soehting like hatdo you measre. Take Glick who sugestwhat is culture. This is indeed the case.

From this finding the authors of this study conclude that the evolution of organizational behavior indeed is constrained by rational criteria, rather then by everything goes criteria. This constrained process reflects in fact how a science indeed functions. Within organizational behaviors academics come to review the work of their peers. This review process has two main things: first one must be educated and trained in order to be acceptable; second, some people will constrain themselves in order to be acceptable and third, due to the review process only those papers come to be accepted. Still, the research fins here that there are many variations within the core theme showing that scientists are able to individually express themselves. How this occurs is not certain. It might be that some journal only accept certain groups. We do not know.

In any case, we found it interesting that the core concepts that have emerged from the content analysis indeed reflect the thoughts of the researchers. Definitions in other terms are mini theories and thus reflect the cognitions of the researchers. The researchers that have outlined these themes indeed show they can distinguish patterns that exist in the field. Still, the patterns they distinguish are to some extent also biassed, however this is inherently in the field.

Apparent is also that the organizational field is highly influenced by neighbouring fields such as psychology ad anthropology. This is reflects in the themes around organizational culture. This might indicate that the field proceeds to its richness.

In addition, a field only emerges when there is consensus. That is, meta studies are doing to study how this can be done.

Some people say it is a language game. Still, studies on climate and culture have added some go insights in how people work and function a within an organization. This trying to find the righttome is crucial. So we haveehere a game, yet it is more than agame. Although there is a substantial body on literature on climate and culture, the question which is asked here and the way in which the question is researched differs from earlier work. Many researchers have earlier tried to provide complete overview of the defentions in order to capture what the concepts are likely to represent, what they measure or how they should measured. From this approach there has been a lot of consensus: In fact, the results of this paper are quite similar. Climate is about something while culture is about the way things are doing, the direction in other terms. This study differs, in thatit tried to use data analysis sec. Doing the analysis it tried to show that one main theme emergeed. And this theme occured via data nalaysis.

However, the topic is not here the concept itself. Many people for us have discused This. The issue is how the field proceds.

1.

Culture

is there then a need for all and apply the concept onto specific domains and by doing so they tend to redefine the concept into specific ways. It is therefore that themes around concepts emerge within the field. As is suggested by Kitcher, this variation around a concept might add to the richness of the field. This study substantiates this, as the field of organizations behavior is a pluralistic field in which there discussion within agreement.

Although

 trend might be explained by the fact that the concept organizational climate first was in tune with perceptual psychology (set and Characteristics --which embody the structural movement) but became

 addition, it might be the case that the researchers on organizational culture are more infiltrated by different fields like anthropology, psychology and organizational behavior.

Many authors agree that these two core concepts are a reflection from the field from which climate and culture emerged... This invasion came clear during the longtitudinal analysis. During the climate research especially social psychology came to predoninate the field, while in culture especially learning theory came to invade the field. These accents, so was suggested in the beginning of the paper suggest that groups of scientist have a need to redfine the concept in specific directions in order to solve specific problems. There are few observations , first the field seem to go in a direction that the dilaects are recoignizedby many authors. In fact the ideas from Moran and Volkwein also show up in the work of Rouasseu (1988). But this brings us to the problem if the concept develope and het better or if there concepts remain as themes. This point of development has been suggested by Moran and Volkwein (1992) and to soms extent by Schneider and Reichers (1990). These last authors suggest that the concepts organizational climate and organizational culture have a predictable development that can be characterized by three definable stages: introduction and elaboration, evaluation and augmentation, and, consolidation and accommodation. While this study discovers some dynamics, it also shows that within the concepts there are themes. These thems, although not proven are introduced to convcer

specific needs an situations. It seems, that this is exactly what this paper want to point to. It is likley that the themes exist over time and will always be changing. This point fits the work of Rousseau who suggest if people within climate want to do research be sure to suggest what you measure.

There is recently mentioning that culture has come to replace climate or will replace culture, other saythey should complement each other (Moran ad Volkwein, 1992). Indeed the citations study shows that climate is still being used quite freqiuently.

Rousseu (1988) right points out that climate is being stillstudied although in different erms and that it has still much promise. She cites work in marketing channels. Although it is beyond the score of this paper, the study shows that indeed climate and culture are two different concept. The field should take notive for it. We agree with Rousseau that people should stipulate better whatthey men by what kind of climate. The field has a need that scientist adhere to a specific kind of field. This also comes with other sciences. Take psychology. Once psychology is estbalished there are spefic fields, and behavioris although out of dated is still alive. By recognizing he groups and renweing the concept field could thrive.

 Where the psy

This paper tried to show that the field of organizational behavior proceeds any other science: there are constraints and within this constrains there is a lot of creativity. This kind of research might therefor provide us with the idea that there should be one measure of climate and culture, or is it so that there ar emany ways in whichthe basic themes are measured. From the literatue on climate there seem to be the following points of view:

some say the concept climate and culture have different usages and there is no consensus (e.g. Glick, 1985; Hellriegel and Slocum, 1974). There is another group that sees the research unfolding as consisting in many different ways (Rousseau, 1988; Schein, 1990). Still others point out that climate has had its time and it is time to look at how climate and culture should merge and conncet. The latter point of view is beynd the scope of thispaper. But the data of this research seem to opt for the point of viet of Wchein. Schein It sems that whatthe datsasuggest is that there are many possibilkities and people should point out how theydo abouttthis. Others like Glick seems to sugets and they are rightthat there should be some consensus as the field has notprovided this are essentially two points It seems that when students are thought the field they should learn to make this more clear how and why thei is measured. This would bring the field further. Recently there has been some issue as to whether what is climate and what culture (Glick, 1985; Rousseau, 1990). This study shows that studetns should learn to take a stance and take posiotion. It reminds us of the field of psychology. The field of psychology, more than the field of organizational behavior occurs in schools and dsiclpines: ney psychology, behaioism, cognition, consciousness. Within these displines people are trained. Although not trced, it might be the case that the several schools of though emerge specifically withing journals which allow this to happen. It shows that different methodlogfies shouldbe persued and so allow people. It speaks not so much for the culture but for differnt schools.

There is recently also discussion as to whether the two concepts are something different or whther theyshould be the same or interelated. From what the researc says, it seems they should exist. Although some peopl ebarely want to say that they do climate studies.

ere is not a real That is, it does not explain why these trend and dialects amerge. There is recently much needs to accomdatee the theories to sitations. This for many reaons:

1. Although thesmes emerged, it would be interesting to take a closerlook at what theories the different authors presneting the thems arebased upon. Althoiugh only speculated here it could be a good topic.

2. Also methodolgical problems are soureso
1. Theory: here the theory says that there will be some kind of new thing,.

2. Methodological:

3. Practical: although culture and climate are being applied, it does not