UNIVERSITA' BOCCONI

DOTTORATO IN BUSINESS ADMINISTRATION AND MANAGEMENT

CICLO XIX

ANNA CANATO

MAT. 935403

EXPLORING THE INTERACTIONS BETWEEN ORGANIZATIONAL IDENTITY AND ROUTINES

Comitato tesi: Prof. Davide RAVASI (Università Bocconi),
Prof. Stefano BRUSONI (Università Bocconi),
Prof. Kevin CORLEY (Arizona State University)

INDEX

GENERAL INTRODUCTION **4**

ROUTINE CHANGE AND THREATS TO ORGANIZATIONAL IDENTITY **9**

SUBSTANTIAL AND SYMBOLIC SOURCES OF ORGANIZATIONAL MISFITS…. **63**

WE ARE WHAT WE DO (AND HOW WE DO IT): ORGANIZATIONAL IDENTITY AND TECHNOLOGY **97**

HOW DO I KNOW WHO YOU ARE? A COMPARATIVE ANALYSIS OF METHODS IN ORGANIZATIONAL IDENTITY RESEARCH **138**

FINAL ACKNOWLEDGEMENTS **172**

GENERAL INTRODUCTION

My doctoral research has focused on the micro-level processes underpinning phases of strategic renewal. It investigates processes of organizational transformation and examines the relationship between organizational routines and individuals' sense making. My research aims at showing 1) how both substantial routines and symbolical understandings are interrelated, and 2) challenges and opportunities that these configurations of meanings bring along during periods of strategic change.

This research contributes to strategic change literature by highlighting the role of routines as sources of understandings during organizational transformation. On the other hand, it can contributes to management practice by showing how the success of change programs and corporate entrepreneurship processes are not grounded only on persuasions strategies to build people acceptance, but it is also based on the overall coherence of change initiatives with organizational core principles.

Motivation

My interest for this topic stems from both theoretical and pragmatic considerations. Theoretically, there is a gap between the accepted idea that large and established organizations face great dangers when confronted by new business models, and the ability of extant research to provide guidelines to firms facing such challenges. Pragmatically, as a former management consultant professional, I witnessed the difficulties of organizational change, and how these difficulties were related not only to lack of individuals' acceptance, but also to difficulties during the transformation of actual operative procedures.

Contribution

In my doctoral project I have examined organizational and cultural change in a large multinational, following the arrival of a new CEO and the company-wide implementation of Six-Sigma principles. I started my field research in 2005 and carried out data collection until summer 2006 both in the Italian subsidiary and in the US headquarters. The three areas of research that I outline here are related to the four papers that compose my dissertation.

The role of routines and technology in organizational identity

Extant literature recognizes that organizational identity may sustain inertia during change in organizational routines, and that there is interconnection between identity understandings and work practices, yet there are very few empirical accounts of processes of routines evolution in large companies, and of how they affect people's understanding of change. In the paper titled "*Routine change and threats to organizational identity*" I present the case of a large multinational organization where the massive implementation of Six Sigma methodologies was perceived by many as an alteration in fundamental and distinctive features of the organization. Based on an in depth inductive analysis both in a European subsidiary and in the US headquarters, I describe the process of routine transformation and elaborate on members' reactions based on company perceived identity. Findings show that routines change can trigger organizational identity threats, when it touches upon processes that are closely linked to organizational elements perceived as central and distinctive. Identity evolution is thus grounded on routines change, witnessing the strong interconnection between material practices and symbolical elements. Finding also show that members' reactions to perceived threats are more nuanced that simple "accept or reject" rules. This suggests that organizational identity evolution occurs through a process that balances between the resilience of extant conceptions and the revision and integration of elements that prove their validity when added to the extant routine repertoire.

In another paper "*Technology as a cue for* making *sense of organizational identity*", coauthored with one of my supervisors, Davide Ravasi, we investigate the role of technology as a potential cue for the construction of members' collective sense of what an organization is and stands for. Sociology and management theory have investigated how technological attributes, including physical artifacts that lie behind the production and delivery of products and services, and the scientific and social knowledge embedded in these activities, help explain organizational structuring. Building on past theory and evidence from published studies as well as from our own research, we develop a framework for understanding the conditions under which technology features are likely to become organizational identity referents – i.e. being incorporated by members in self-referencing thought and discourse – and the consequences of this fact on organizational decisions and actions. This paper is under revision for a special issue of *Research in the Sociology of Organizations*.

Sources of internal fit during organizational transformation

In the theory paper "*Substantial and symbolic sources of organizational misfits*", I build on the recent literature on configuration that envisioned organizational dynamics as a process of evolution of constitutive elements. I investigate two sources of misfit that may occur during the introduction of a new element into an organizational configuration (i.e. a patching process): lack of symbolic fit and lack of substantial fit. The integration of a new organizational element entails a twofold test of fit with existing organizational elements. Lack of fit can be a consequence of lack of inter-functionality with extant processes, but also to the lack of cultural coherence with extant organizational conceptualizations. In the paper I ground this distinction on the evidence proposed by the literature on routine change and organizational identity. The combination between these two perspectives highlights different patterns of fit/misfit that may occur during a patching process: a

misfit in substantial elements (routines and resources); a misfit in symbolical elements (organizational understandings and values); and fit or misfit that involves both dimensions. Based on examples, I discuss how these sources of misfit give raise to four different patching processes: adoption, reinterpretation, reconfiguration and resistance. This paper contributes to the literature on strategic fit as it outlines the relevance of symbolic elements during change process, an issue these studies did not explicitly address so far. It also builds categories to discuss different patterns of change following organizational misfits.

A previous version of this paper was included in 2007 Academy of Management Proceedings for of the OMT division. The former title was ”Institutionalizing change in organizations: Structures, routines and symbols”

Qualitative research in management

The paper “*How do I know who you are? A comparative analysis of methods in organizational identity research”*, coauthored with Davide Ravasi, addresses a methodological issue, namely the peculiarities of doing research about organizational identity (and related cognitive constructs) in large organizations. We consider existing empirical studies and discuss the difficulties in finding established and reliable methodological guidelines for doing qualitative research in large organizations. We inductively review methods adopted by OI studies published in top-level journals, with the purpose of deriving insights about the current status of the research practice and stimulating discussion about its possible evolution. A first version of the paper was presented at AOM, in the MOC division. The paper targets Organizational Research Method.

Future research

In my future research, I plan to extend my work on change strategies in large organizations, and the link between of substantial and symbolic dimensions. In particular I want to deepen my understanding of organizational characteristics that can may help organizations undergo phases of transformation, enhancing corporate entrepreneurship capabilities. Based on my background, I tend to maintain an interest for the analysis of organizations that have a strategic focus on innovation.

Consistently with my research interests, I intend to rely on interpretative approaches and qualitative methodologies, building on in depth case studies, with the explicit intent to examine intra-organizational change from an in-depth and fine-grained perspective. Also, I plan to complement these methodologies with additional research techniques (surveys, comparison of patterns of change), with the intent of developing tools to compare different organizations.

Anna **CANATO**

Institute of Strategy and SDA School of Management, Bocconi University

Viale Isonzo, 23, 20135, Milano, Italy. Tel. +39.02.58362656, fax. +39.02.58362530

anna.canato@unibocconi.it

ROUTINE CHANGE AND THREATS TO ORGANIZATIONAL IDENTITY

ABSTRACT

Recent research has highlighted the interrelations between organizational identity and work practices, and observed how identity-related issues may cause resistance to changes to organizational routines. However, empirical accounts of the process by which routines evolve in large companies, and of how their change is affected by people's understanding of organizational identity, are still few and the phenomenon is still underexplored. This paper investigates the case of a large multinational organization in which widespread implementation of Six Sigma methodologies was perceived by many as undermining the fundamental and distinctive features of the organization. Based on an in-depth inductive analysis of a European subsidiary, complemented by further interviews in the US headquarters, I analyze the routines transformation process and elaborate on members' reactions. Findings show that changes in routines that affect features that members perceive as central and distinctive to their organization may be perceived as a threat to the organizational identity. Members' reactions to perceived threats, however, were more nuanced than simple "accept or reject" responses. Evidence from the study suggests that routine evolution occurs through the emergence of a balance between resilient established elements and the revision and integration of new ones, the validity of which is justified when they are added to the repertoire. An analysis of the findings leads to a more general framework that links changes in cognitive structures to changes in material practices.

1. INTRODUCTION

Many contributions have acknowledged the salience of organizational identity (Albert and Whetten, 1985) during periods of corporate transformation (e.g. Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Corley & Gioia, 2004). Scholarly works have concentrated, in particular, on the relevance of organizational identity as a cognitive frame for sense making during strategic change (Gioia & Thomas, 1996; Ravasi & Schultz, 2006). Research in this field has shown how organizational members tend to assess change initiatives in the light of existing conceptions of organizational identity, and to resist the implementation of new organizational elements (structures, practices, values) that appear incoherent with established understandings of the organization (Reger et al., 1994; Nag, Corley & Gioia, 2007).

Collectively, these studies point at the link between dominant conceptualizations of the organizations and members' reactions to proposed changes. Less is known, however, about how the material underpinnings of organizational identity affect and are affected by the process. While recent research has started to investigate the interrelations between the transformation of business practices and organizational identity (Nag et al., 2007), more evidence seems to be needed concerning how practical implications of organizational changes raise identity-related issues in organization, and how this fact affect people's reaction to changes in organizational processes.

In this paper, I present findings from an inductive study in a large and diversified Fortune 500 multinational corporation (NOV), whose members faced major discontinuity when, for the first time in its over-100 year history, the board of directors selected a CEO that did not come from the

organizational ranks. As soon as John Smith (a fictitional name) was hired, he announced that he would be implementing Six Sigma methodology throughout the organization, in an explicit attempt to "change its DNA" (*Business Publication, 2007*). In at least one of its major European subsidiaries, where I gathered most of the primary data for this study, managers generally perceived this to be a deliberate attempt to change essential and distinctive features of the organization.

In this paper, I conceptualize organizational change as the alteration of the set of organizational routines that underpin its operations, and I analyze this change attempt, focusing on one main research issue: how organizational members' identity beliefs and understandings (i.e. their beliefs about what is central, enduring and distinctive about their organization) affect their response to organizational changes manifested in the introduction of Six Sigma routines.

My findings elaborate on the idea that organizational identity and organizational practices are interrelated (Nag et al., 2007), and by looking at change attempts with a more fine grained approach – i.e. looking more in depth to the perceived meanings of actual practices – they offer structured evidence and theory about how this occurs. Linking the insights gained through the observation of changes to routines – an issue by itself currently understudied – with the categories derived from the literature on organizational identity change, the findings provide the basis for a more general framework for the analysis of change as a phenomenon where change of routines is accompanied by answer to identity questions. This, in turn, translate into enhancing our theoretical understanding of the processes of business transformation and implications that might help managers to address these radical change attempts through a recognition of the tight coupling between the company's values and the acceptance of new practices.

The paper is organized as follows. Section 2 reviews some of the literature in order to contextualize the present analysis and findings. I review the contributions focusing on change of organizational routines (section 2.1) and organizational identity change (section 2.2). Section 3 describe describes the methodology and the data gathering and data analysis process. Section 4 presents the case of Six Sigma implementation at NOV, and provides a brief history of the organization, its core features, the unfolding of the change initiatives and the particularities of the European subsidiary I studied. Section 5 presents the findings from the study and Section 6 concludes by highlighting implications for academic research and management practice.

2. ORGANIZATIONAL IDENTITY DYNAMICS AND CHANGE OF ROUTINES[1]

2.1. Organizational identity

In management studies, the interest in organizational identity has gained momentum since the mid 1990s. Organizational identity can be understood as an emotionally laden and relatively stable self-description or characterization of an organization (Ashforth & Mael, 1996, Lerpold et. al, 2007), embedded in members' beliefs and understandings and partly manifested in formal self-referential claims (Ravasi & Schultz, 2006). Such self-conceptions tend to change only rarely, and never easily (Whetten & Mackey, 2002). Research on organizational identities elaborates on how features that are perceived and claimed by members as central, distinctive and enduring to their organization (identity referents) are used to craft a self-referencing narrative that helps members and leaders to construct and maintain a collective sense of self (Whetten & Mackey, 2002; Whetten, 2006), and investigates how the arising conceptualizations influence decision and action in organizations.

Empirically, organizational identity related dimensions have been used to investigate various topics including strategic decision making (Dutton & Dukerich, 1991; Gioia & Thomas, 1996), reaction to environmental change (Elsbach & Kramer, 1996; Ravasi & Schultz, 2006), social dynamics in cultural and non-profit institutions (Golden-Biddle & Rao, 1997; Glynn, 2000, Voss,

[1] As will be described in more detail in section 3, I chose to conduct this study using an interpretative approach and grounded-theory-building methodology. This literature review, therefore, should not be considered as the stock of a priori knowledge that the field study aims to test, but rather as literature themes, which, during and after data gathering and analysis, helped to contextualize the findings and to position their theoretical relevance

Cable & Voss, 2007), organizational commitment and cooperative behaviors (Bartel, 2001; Dukerich, Golden & Shortell, 2002; Foreman & Whetten, 2002).

Most scholars so far seem to agree that questions related to identity– who are we as an organization? - become explicit and particularly relevant in periods of significant, non-ordinary, organizational change. In these moments of profound instability, both organizational members and top management tend to try to make sense of and interpret change opportunities against their previously held perceptions of the central attributes of the organization, rather than reducing dilemmas about the organization's future to strategies and costs versus benefits assessments. For example, both Albert and Whetten (1985) and Gioia and Thomas (1996) show that the decisions that university staff had to face when presented with the introduction of new initiatives more oriented to profit and utilitarian objectives, were perceived in this academic environment as identity related issues. By providing a sense of coherence, continuity and uniqueness, organizational identity provides a court of last resort during moments of profound organizational change (Albert & Whetten, 1985). The existence of an organizational-identity bedrock is important in the face of so-called identity threats, that is, when events – such as a strong discontinuities in the market or in the organization - challenge existing organizational identity conceptions, triggering organizational members' coping strategies in order to deal with the threat. Recent studies have shown that explicit identity attributions, made clear through organizational leaders' claims, artifacts and other cultural objects, seem to be important during periods of change as they provide individuals with historic cues that help them to make sense of and interpret the ongoing change (Ravasi & Schultz, 2006). In certain case, the a strong identity may thus become a case for structural inertia, imposing high barriers to organizational transformation (Leonard-Barton, 1992; Tripsas & Gavetti, 2000) and

eventually providing a “restore point” in case the change needs to be reversed (Nag et al., 2007).

Research on organizational identity and change, however, does not seem to have provided conclusive evidence about to what extent and how organizations can *really* modify their central and distinctive identity conceptions, and accommodate changes that at first seem to challenge or undermine previously held beliefs. In the one hand, Albert and Whetten (1985) propose that enduringness amid other changes is indeed a constitutive attribute of identity features. Other authors (e.g. Dutton & Dukerich, 1991; Gioia et al., 2000) contend that organizations do evolve, sometime dramatically, and propose that both types of identity conceptions may need to vary, in order to accommodate major change. Adaptation in organizational identity dimensions might be functional to preserve over time the very same meanings that organizational members care as central and distinctive (Gioia et al., 2000; Hatch & Schultz, 2002) and, through this, ensuring the survival and the success of the organization. Ravasi and Schultz (2006) describe a case where the misalignment between construed external image and perceived internal image was the motor of identity change. Other triggers of evolutions in identity referents are the types of profound change that modify the very existence of the organizations, such as corporate spin-off initiatives (Corley, 2004; Corley & Gioia 2004).

Despite credible arguments have been advanced about the likelihood that proposed changes that are not coherent with members’ identity beliefs are likely to encounter strong resistance (e.g. Reger et al. 1994), therefore, there is evidence that organizations *do* engage in attempts to alter or modify some of their practices, even if changes seem to challenge the identity of the organization. What is less clear, however, is how new features and practices that are potentially incoherent with established identity claims and beliefs are really embedded in the organization. The simple

dichotomy “adoption” (possibly after some resistance) vs. “rejection” (as implied in most contributions on the subject) might oversimplify a more nuanced process.

The limited number of empirical contributions that have looked explicitly at organizational identity dimensions during times of change have shed light on a number of important phenomena. Corley (2004) has shown that hierarchy and professional status affect the perceived organizational identity and the perceived pattern of change. Corley and Gioia (2004) have highlighted the notion of identity ambiguity and show how non-ordinary moment of change can raise significant questions concerning organizational identity dimensions. Ravasi and Schutlz (2006) focused on the role of cultural values as inspiring principles during time of organizational transformation. Yet, as recognized by Nag et al. (2007) the majority of these studies focused on the cognitive dimensions of identity, leaving aside the possible connections between identity understandings and the modification of ongoing practices. They argue that more explicit attention to the evolution of practice and its relevance for and impact on organizational identity, might open up avenues for a better understanding of the processes behind organizational change.

In this paper I build on this research path by deliberately investigating the following research question: how do members’ beliefs and understandings about the identity of the organization affect the deliberate implementation of changes in organizational practices? In doing this, I am accepting the statement of Nag et al. (2007) that practice and organizational identity are related. Yet by looking at the process of change in NOV I am highlighting how change in actual practices does follow different steps, and how organizational members adopt organizational identity instances to make sense of the acceptance or disbandment of new organizational routines.

In this paper I analyze how identity beliefs and understandings affect the dynamics of organizational routines. I adopt an interpretative and constructionist perspective to this study, mainly examining organizational members' perceptions of organizational identity and their interconnection with ongoing change in processes. This is grounded on the fact that routine change is something that directly affects the organizational members, as they need to assess new routines against their existing perception and beliefs about the dimensions of the organizational identity. In this respect, the interpretative paradigm recognizes the subjective reality of social practices, and is especially interested in understanding the viewpoints of social actors, in trying to elicit subjects' meanings and understanding (Gioia & Corley, 2004). Identity claims (i.e. publicly declared conceptions of organizational identity) are used here mainly to complement and establish the history of the change process in NOV.

2.2. Organizational change as the alteration of organizational routines

Evolutionary economists and organizational theorists define routines as organizational scripts, i.e. recurring, learned and practiced modes of organisational response (Nelson & Winter, 1982; Feldman, 2000; Jacobides, 2007) "which involve multiple actors who are linked by relationships of communication and authority" (Cohen & Bacdayan, 1994). In other words, routines are normal and learned behaviors that individuals adopt to perform normal operations. Routines have a fundamental tacit dimension, demonstrated by the fact that people do not always act or reflect consciously when performing learned and habitual tasks. Nelson and Winter (1982) provide the most famous example of routinized behaviour when they describe driving a car as a form of routine: something that is tangible (we do drive cars, and it is not just a cognitive act), but it is very difficult to teach or

describe only verbally. This is to say that in the performance of routine tasks, people “know more than they are aware of”.

In organizations, there are numbers of routines – i.e. established processes - for the conduct of business operations. There are routines related to hiring new people, to evaluating them, to promoting them to new roles, and so on. At the organizational level, routines are mostly tacit, as it would be extremely complex, if not impossible to store all the knowledge necessary to perform a task, in a blueprint. No matter how detailed the descriptions of operations and processes, there is usually “something” that is not transferable without socialization and experience.

Routines exhibit an explicit organizational dimension, as they survive organizational actors and remain in place through the process of employees leaving and being replaced by others. Routines, together with related artifacts (e.g. databases, blueprints, project files, etc.), store and maintain organizational experience in a way that is separated from the person(s) acting in specific episodes (Cohen & Bacdayan, 1994). In this sense, the learned harmonization of activities (which can be highly codified or entirely tacit) acts as a memory device for organizational members.

Organizational routines are not disconnected one from the other; they are integrated through their responsiveness to certain overarching principles. Feldman (2000) refers to a symbolic central repertoire of basic systems for routines and rules, which ultimately define the culture of the organization and inspire its actions. According to this view routines are a grammar that, in a given moment, embeds the central and defining rules of the organization. Routines may change, but they always respect this basic consistency. This explains why it is possible, at least in principle, to identify hierarchies of routines, for example, distinguishing between strategic routines and operative

routines, the first being the core of organizational action, and the second the ancillary support activities (Egidi, 1996; Eliasson, 1996; Jacobides, 2007).

Routines are relatively stable, but can change in response to performance drops or may be updated due to the continuous internal dynamics within an organization (Feldman, 2000). Although there are not many extensive empirical accounts on routine changes, there are contributions that show how routines are disrupted as a result of exogenous interventions (e.g. new technologies, specific new directions), and how, following these discontinuities, routines continue to evolve, refining organizational learning (e.g. Barley, 1986).

Feldman (2000) pointed out that there is also an internal dynamic of routines that promote continuous change within an environment, independent of exogenous jolts, due to the outcome of continuous learning processes by people repeatedly accomplishing specific tasks. Nevertheless, the specific process of routines change is a relatively understudied area, despite continuous calls for more structured analysis of the way in which agents and routines interact over periods of change.

3. RESEARCH DESIGN AND METHODOLOGY

As the research question deals with processes of change and embraces an interpretative perspective of the organizational identity question, I have chosen qualitative research methods, which are particularly well suited to analysis of individuals' understanding, and sense making during organizational transformations (Miles and Huberman, 1994; Denzin & Lincoln, 1994; Locke, 2001). In studies that tackle identity and cultural dimensions researchers need to achieve a close understanding of organizational identity conceptions and organizational practices, and build relations of trust with organizational members. This is possible only with long exposure to the research object, and justifies my choice of in-depth analysis of the unfolding of change in a single large organization.

As a research method I rely on grounded theory building, which exploits the possibility to observe and elaborate on social interactions and meanings as elicited by organizational members, through participant observation and semi-structured interviews. While adhering to Glaser and Strauss's (1967) seminal conceptual framework, and studies by Strauss and Corbin (1990) and Miles and Huberman (1994), in the present field study I rely heavily on more recent contributions on the subject, which re-elaborate Glaser and Strauss's framework, reconcile some of the theoretical misconceptions, and focus on establishing empirical methodologies for examining grounded theory (Locke, 2001; Charmaz, 2006).

I use grounded theory building within an interpretative research design. This proved particularly suitable to examine a complex environment, and to capture the emergence of new understandings

(Locke 2001). My use of grounded theory is less directed to a recognition of the regularities among different settings (which is common to a focused positivistic approach), and increasingly targets the structured observation of understandings and behaviors from the participants' points of view, and learning from participants' worlds their interpretations of self and the dynamic properties of their interactions (Locke, 2001). The data quality, in this sense, does not rely on regularities among interpretations, but on the authenticity, plausibility and criticality of the research process and findings (Golden-Biddle & Locke, 1993) and on the internal consistency of research accounts (Miles and Huberman, 1994). As I analyze evolution in a large complex organization, and within a set of constructs that relate closely to the perceptions and the sense making of organizational members, I chose to employ grounded theory building as a structured methodology that emphasizes the closeness to the research settings and the rigorous comparison of theoretical premises with real practice and understandings (Locke, 2001)

3.1. Research setting: Six Sigma implementation at NOV[2]

NOV is one of the few US based multinational corporations that is more than 100 years old. In its early days the company experienced a decade of strong difficulty, but then established itself in industry and manufacturing and since that time has experienced continuous growth, expanding its offering into several markets. Listed on the New York Stock Exchange (NYSE) since the 1940s, NOV is appreciated by US investors for the solid promise of growth which, according to its managers the company has never failed to fulfill: "our people have a long and outstanding record of

[2] This section is based on public information on NOV (corporate biographies, newsletters, website, press releases, etc.) as well as some industry publications on the company. Sources have been cited in order to maintain the anonymity of the company, but they are available from the author.

innovation and a consistently high level of commercial and financial success" (former CEO of NOV, Dec. 2000). NOV was one of the first US corporations to start international operations, and even in the 1940s had subsidiaries and factories located in Europe and South America. Currently, the company has subsidiaries in almost every country of the world, and more that 60% of its revenues are generated by operations external to the US.

NOV is often referred to as a conglomerate, as it operates in a wide range of industries and markets. It holds a leadership position in many of its more than 40 business units, most of them focused on industrial markets. At the same time, NOV is also well known for a number of products in its consumer line. In each of its business units, both in industrial and retail markets, NOV has traditionally pursued a differentiation strategy, demonstrated by the following quote: "In NOV, we are just not interested in being a bulk commodity supplier of any type of materials that end up being a pure price game". NOV's market strategy illustrates this striving to be "by far the first in the class". For example, many managers recognize that some of NOV's offerings are "too good": the company could have made more profits if it had supplied inferior quality products to the market, e.g., tools that customers would need to replace more often. Not that earnings and profits have ever been a serious problem for NOV shareholders in the past hundred years, and especially between the 1950s and the 1980s. Confident in being the first in its target markets thanks to a technological gap that was hard to cover, the company was able to put a price premium on its offering, and meet its earnings and growth expectations. The company has been able to distribute a dividend every year since its first profitable year (in the 1910s) and tends to consider double-digit growth rates in sales and revenue as normal.

For many decades NOV has consistently spent twice as much as the average US company on

R&D, and significantly more than its competitors. Several examples of market opportunities that have emerged as a result of NOV's technological discoveries are celebrated in the corporate biographies.

There is a further aspect that should be noted is NOV's business model, in light of the profound change that occurred in 2000. NOV is a highly differentiated company. In every market, it wants to achieve leadership position based on the technological characteristics of its products. All NOV's products are high quality, with technological characteristics that are difficult to imitate (carefully protected by patents) and carrying a higher price tag than possible competing products. NOV targets niche markets where it can build a profitable leadership position without having to compete too widely. On the other hand, NOV tends to exit these same markets before distinctive technological features become commodities without the initial exceptionally high margins. NOV needs these high margins to cover its research costs and to allow to its people that level of freedom and – admittedly – controlled inefficiency that management considers necessary for the emergence of radical, innovative ideas and to guarantee to customers the quality and the attention that has made NOV the preferred supplier.

This model, which is unique especially in terms of the variety of markets it serves, remained valid for some 90 years, as demonstrated by the company's continuous double-digit growth. In the 1990s some problems began to emerge and in 1995, for the first time in its history, NOV failed to meet its goals, reporting an 8% rather than the predicted 10% growth in earnings per share (Business Press, 1996). In 1996, the company spun off a big part of its operations, and closed one historic and previously very profitable line of business. In 1998, growth rates were again below predictions. As explained above, a decline in growth rates could be very critical for NOV

operations. At the same time, there was the feeling that the company was beginning to lose the innovative appeal of previous decades. With the dynamism brought by information and communication technology (ICT) markets, some analysts began to question whether NOV could continue to be a real player in the XXI century. These events prompted the hiring of a new CEO from outside the company, something that had never happened at NOV.

3.1.1 The change of CEO and the Six Sigma implementation

At the beginning of 2001 Mr. Smith was appointed CEO of NOV. Smith was an experienced executive, with an outstanding CV. The announcement of his appointment caused NOV's share price to rise significantly. On of his first actions was to announce an immediate and companywide implementation of the Six Sigma approach to process and business improvement. He had initially spoken very frankly, via NOV's internal TV system, to all employees – which was itself an innovation – the message being that this new initiative would "transform NOV's DNA". At the same time, he announced several other business initiatives addressing sourcing, idea generation and cost control, but, as he himself said publicly on various occasions, Six Sigma was the most important, and was the strategic initiative that would support these others.

His words were quickly followed by action and, within weeks, he had summoned all NOV's executives from around the world at the headquarters for a three-day seminar on the new initiatives, at which he himself made some of the presentations. This was also quite new for the decentralized management of NOV. He drove events to ensure that both "black belt" and "green belt" training started before that summer (2001). Black belts were purposely chosen from the best young talents

across the company – those identified by their peers as the “best”. The typical black belt had around 10 years’ experience (data vary slightly across countries) and was considered executive career-track material. This group was enrolled in a two-year training programme, during which they received tuition in centralized training sessions at NOV’s headquarters. When not involved in this training, they were responsible for building the ranks of the “Six Sigma structure”, a newly created staff division whose leader responded directly to the CEO. As Six Sigma division representatives, black belts worked with their “home” groups, giving advice about the use of Six Sigma and checking the quality of business processes. After two years as black belts, members of this group of young talent were appointed to more senior positions, sometimes involving a jump of two–levels on NOV’s promotion scale: someone described it as “a career elevator”.

The entire workforce was involved in the Six Sigma projects. Six Sigma™ (6s) is a process methodology that structures management problems (not only manufacturing) as quantitative problems. By looking at management variables as *Ys* and *Xs*, it aims at identify solutions to problems and monitoring their implementation. It mandates the use of specific graphs and tables and documents to identify solutions. All regular employees above job group seven (roughly people with about two years’ experience) had to complete a course on Six Sigma methodology (green belt training). This training was delivered locally, but it was mandatory for local trainers to use the corporate material that had been developed centrally. After their period of training, green belts were expected to complete 0.5 Six Sigma projects per year, a goal set by the CEO himself, which became part of these employees annual appraisal. By the end of 2004, all salaried employees (around 80,000 people) were Six Sigma trained. Six Sigma implementation did not discriminate between different business unit divisions. Sales, marketing, manufacturing and R&D staff was all involved,

as the final objective was to streamline all company processes, to save money and resources.

The main Six Sigma tools implemented at NOV were DMAIC (Define, Measure, Analyze, Improve, Control) - a systematic, standardized methodology for process improvement, and DFSS (Design for Six Sigma) - a tool explicitly defined to manage the R&D pipeline. DFSS was introduced in NOV in 2002.

The implementation of Six Sigma was a huge success in term of savings amounting to $400 million/year. NOV's share price on the NYSE almost doubled between 2001 and 2004. Internal documents show that by the 1st quarter of 2004, more than 11,000 projects had been completed and another 12,000 were under way. People recalled that these numbers exceeded even the CEO's expectations and were above the objectives for savings on capital expenditure.

The introduction of Six Sigma methodologies was not trivial for NOV. Initially, analysts, reporters and NOV's employees were skeptical about the possibility that the programme could be implemented within NOV's established patterns. There was also a real fear that such a rational and focused initiative would harm NOV's attitude to innovation. The local press in the US was particularly dubious, writing that Six Sigma could be the ruin of a 100-year-old tradition of innovation. Concern about the match between NOV's tradition, Six Sigma and new leadership requirements was tangible in the subsidiary. "There is a new NOV coming, and we have no idea what it will look like", was typical of the first comments made to me by local experienced NOV managers.

In 2005, shortly after my first conversations with NOV people in the European subsidiary, this path-breaking CEO left after being hired by another very visible, and larger US corporation. Before

that, the title had stopped its significant increase. Among the analysts, there was a feeling that all the performance gains in NOV were due to efficiency savings, there having been little evidence of significant improvements in NOV's ability to grow, the core problem since the 1990s. NOV's management was faced with the problem of the departure of their Six Sigma champion, and whether to continue and how to integrate Six Sigma philosophy into NOV's everyday operations once there was no longer anyone driving the imperative.

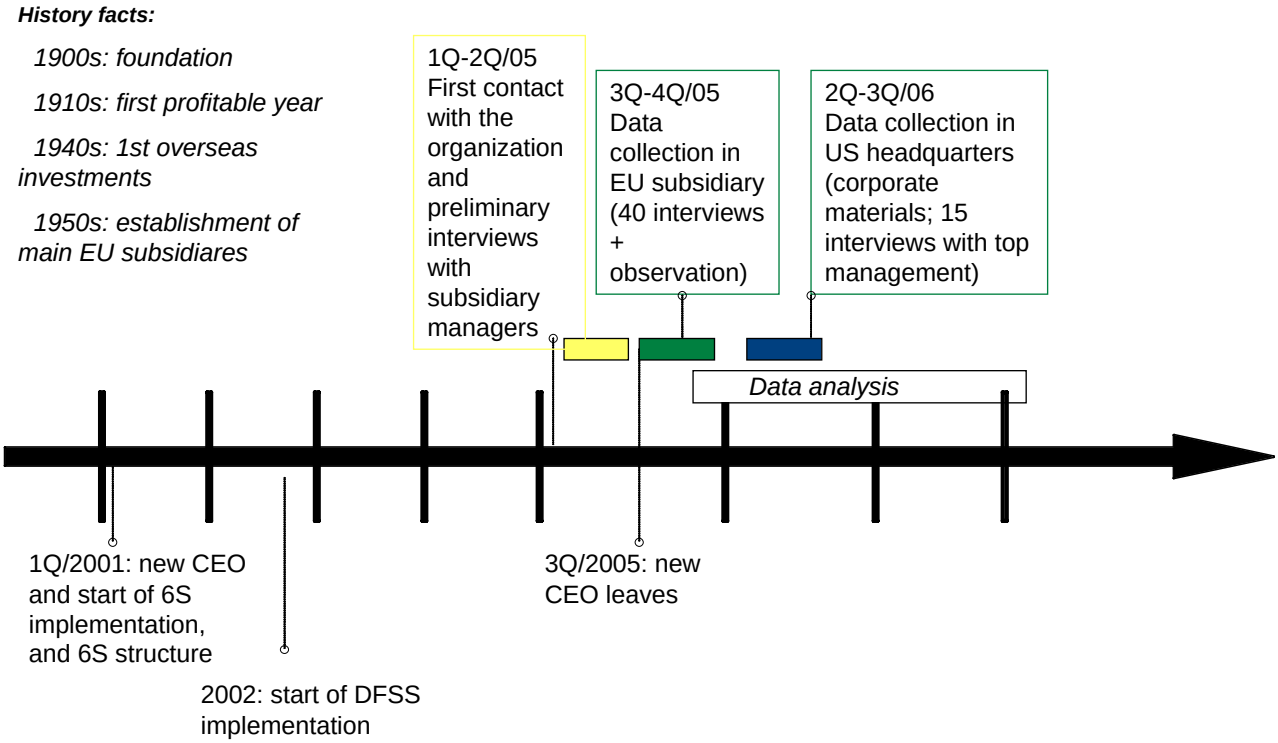
3.2. Access to the organization and data collection

Given the magnitude of the organization, it was impossible for me to conduct a full study on a global scale. Therefore, I focused my analysis on a European subsidiary that had a long history as a fully developed company unit, and it was recognized by the top management as one of the more important local companies. This allowed me to pursue a more fine-grained analysis that the one I could have been able to do on a larger scale. This subsidiary was established in the early 1960s, following NOV's acquisition of a leading national company that had significant R&D and manufacturing facilities, and world class R&D expertise in its particular industry. On the basis of these assets, the subsidiary came to be recognized as one of the most important of NOV's local companies. NOV established a centre of competence for one of its core technology platforms, and local scientists and management talked directly to and collaborated with peers in the US.

The first contact was in November 2004 and was facilitated by existing connections between my university and the company. Starting from March 2005 I was "assigned" to a manager in the corporate marketing and communication unit, who managed my access to internal resources and

introduced me to other members of the organization. In June 2005 I was assigned desk space in the corporate marketing and communication unit, given access to the company's intranet and the possibility to contact organizational members using the internal phone system. Picture 1 shows the various phases of data collection.

Figure 1. Data collection at NOV



3.2.1 First phase – Preliminary interviews with local NOV executives and data gathering

As a first step I worked with NOV people to gather internal and public documents on the organization, its past and current structure, its history and the unfolding of recent changes. The material collected includes annual reports (both local and corporate editions), press releases and internal presentations of new initiatives and company achievements. Two corporate biographies and two local "subsidiary biographies" were the main sources of historical data, complemented by published books that were entirely or partly focused on the organization. The data on the historical evolution of the company and the European subsidiary were validated in July 2005 through seven interviews, lasting from 60-90 minutes, with country business leaders (staff and business directors of the subsidiary). I also spoke to the local Six Sigma representative in order to get a better

understanding of Six Sigma and the Design for Six Sigma (DFSS) processes. All interviews were tape recorded and transcribed, with the sole exception of one (the Six Sigma specialist) because of the sensitivity of the business information he was sharing. In this case, I took detailed notes of our conversation.

3.2.2. Second phase – Interviews and participant observation at the local subsidiary

After the first round of interviews, which were directed towards data collection, the second phase of the study (from September to December 2005) focused on the organizational identity and its evolution within the company. During this phase, I was still availing myself full time, of NOV's facilities, on four or five days of the week. In many ways I was like a NOV employee, sharing open office space with corporate marketing employees and using all the company facilities, from the corporate shuttle, to the cafeteria. In this second period my status can be considered that of non-participant observer. Organizational members were indeed informed about my status as an organization and strategy researcher. For the purposes of data collection I always contacted informants using my personal university mail and during interviews I made clear my status of a researcher granted temporary access to the organization.

During those four months, I interviewed 40 NOV members, sampling from business and staff managers, to country business leaders. Most of my informants had an average tenure of 15 years within the company, with a minimum of 9 and a maximum of 30 years. All the interviews lasted longer than an hour. I also interviewed three people with much shorter tenure (two to three years) and I had informal conversations with various junior members of the marketing staff. During these

interviews, I exploited an open-ended semi-structured protocol that firstly elicited informants' perceptions about the company's evolution and then investigated the recent organizational and structural changes, and their impacts on informants' activities and understandings of NOV's evolution. The semi-structured design was meant to accommodate the evolution of the interviews, and allowed for successive refinements and the inclusion of additional questions prompted by previous interviews. In order to triangulate information about specific units, I relied on a number of interviews with members of the same department, while the interviews with people from different units were used to triangulate my findings and elicit company level characteristics.

The sample of informants was agreed with my main contact in the organization (the manager from the corporate marketing and communication division) and followed two basic rules. First, informants were to be at manager level or higher within the organization, in order to ensure that their experience and knowledge about the company was considerable. Second, we chose informants from among the seven business units and five staff functions within the organization. Although this was not intended to be a statistical stratified sample, covering different units in the organization was meant to ensure that I was exposed to different points of view from within the organization, constituting a theoretical sampling exercise. In addition, the well-established habit of job rotation within the organization (including between staff and business units) made it so that, in most cases, my informants had worked in more than one unit of the organization. All the interviews were tape-recorded. Three interviews were carried out with people I had interviewed in July 2005, as their organizational relevance made the information they provided particularly suited to discussing and enriching previous findings.

In the same period I had occasions to observe various instances of organizational life, including

business units' periodic internal presentations (two), formal presentations to outsiders (e.g. a presentation to university students, which I was allowed to tape record) and a couple of external events (e.g. presentations of a new product). On these occasions and during my time within the organization I had opportunities for informal conversations with various organizational members and former employees. Although in this second period my status was very close to that of an ethnographer, I was not involved in ethnographic observation; this had not been agreed with the organization and they did not expect me to exploit my "belonging" to NOV in my research data. On the other hand, this intense exposure to NOV's way of working enriched my understanding of the organizational identity and practice, and allowed me to get closer to the various employees' points of view. This proved particularly interesting when I undertook a similar period of observation at the company headquarters.

3.2.3. Third phase – Interviews and observation at NOV's headquarters

The third phase of the study took place between March and September 2006, when observation moved to NOV's US corporate offices. Although the focus of my study was at the subsidiary level, additional data gathering at headquarters helped me gain a stronger understanding of the process of change and, above all of the desired plan for change as it was designed at the "centre" of the organization. In this phase of the study, I was able to contact informants that were at a much higher level in the organizational structure, and more central to the change process. For example, I met all the senior members (on more than one occasion) of the quality control group that was in charge of the design of the Six Sigma training and methodologies, and who were directly responsible to the CEO, as well as the person currently in charge of the overall group. I interviewed 16 people: four

Vice Presidents, five directors, four senior scientists and three senior managers. Most of the interviews – 60 to 90 minutes- were taped, but not all, depending on informants' preferences. All the people I met at the corporate headquarters had considerable tenure with NOV (more than 20 years, and two of them close to 40 years) and managerial experience relevant to various parts of the organization (e.g. three of them had been country managers in Europe at various points in NOV's history; two had previous experience as plant managers and business unit directors respectively; one was in the first wave of Six Sigma black belt, one had been involved in a spin off business in 1990 and had returned to NOV later; one had started as a manufacturing worker and had progressed to director level). My objective was not to get a representative sample of NOV's population at the headquarter, an impossible task given the size of the organization, but to talk to people who could give me a clearer understanding of the design of the Six Sigma implementation, and a flavor of the perceptions of the manufacturing and R&D organizations in relation to the change process. This was important because these two units play a major role in NOV. The information from the US employees helped to refine initial interpretation of findings as based on European interviews, adding important additional elements and clarifying the context of the change events.

From June to September 2006 I had continuous access to the organization. During those four months I had a desk in the corporate marketing organization and I was able to engage in a period of non-participant observation. I was able to exploit the corporate facilities, observe some in-house company presentation and have informal exchanges with many members of the organization. Again, this added to my overall understanding of the environment, while not constituting an ethnographic research design.

Further to that, I was able to gather more historical data at the local library, for example, articles

from local newspapers, additional and older corporate biographies, and copies of the corporate magazine, which NOV had donated to the library, which dated back to 1975 through to 2000.

3.3 Data analysis

The data analysis followed the procedures usually employed in grounded theory. I transcribed all interviews and notes on company events. In most cases, this required further contact with the informants to double check interview transcripts and, sometime, to clarify certain issues. Table 1 resumes the sources of data used for the study.

My data consisted of a large number of sources, besides the interview transcripts. I had collected corporate biographies, press releases, internal company newspapers, Internet and intranet printouts. I had also acquired a substantial number of papers and books that referred to or described NOV's experience. The company history up to 1995 and historical features of NOV's, were assessed mainly from public data, which were found to be detailed and were extraordinarily consistent from one source to another. In particular, there had been a corporate biography produced in 2001, which the US corporate communications Vice President presented me with, describing it as "the compendium of everything NOV is". I was able to use this as baseline against which to measure the data from the interviews transcripts in order to show the connections people made in relation to these concepts, and to prove how alive they remained in the memories and experience of members of the organization.

All interview transcripts were coded using qualitative analysis software (Atlas.ti). This allowed a process of data reduction (Miles & Huberman, 1994), coding and code comparisons (Miles &

Huberman, 1994; Strauss & Corbin, 1998). Throughout this phase, I was still using other material to triangulate my findings. In particular I was trying to identify pattern of similarities and differences, comparing findings from the second and the third phases of the study. Insights from this process are described in the following section.

The existing literature played a role throughout the research, from the selection of the initial research focus to the development of the research account. When I had initially approached the organization I was not explicitly planning to study the cultural or cognitive dimensions, being more interested at the time in new business development practices. However, the topic of organizational identity – what the company had become, in their words - was suggested by my earliest conversations with organization members, when they described how the local organization was, during that very period, undergoing profound change, which was questioning the role and the identity of the subsidiary. This prompted investigation of the literature on organizational identity. The collection of additional findings has led to consideration of other constructs, such as the process of practice change and its relationship with the evolution of meanings, a literature that I reviewed in the previous section.

Table 1. Data sources for the study

To document established company identity features	***To document the process of change since 6S implementation***	***To elaborate on actual OI understandings***	***To strengthen my understanding and establish trust with informants***
• Company biographies (last published in 2001) • House organs (e.g. US company magazine, terminated in 2001) • Previous academic studies on NOV (articles and books) • One book about the spin off of the 1990s • Participation to few public presentations	• Conversations with organizational informants, including components of the team that planned 6S implementation • Company intranet and internet website • Headquarter local magazine between 2001 and 2006 • Press release and industry publication	• Conversations with organizational informants; around 80 interviews, with managers and directors, all of them with more than 10-year tenure with the organization. most of them taped.15 of these in the US company headquarters.	• Extended non participant observation at both subsidiary and corporate locations

4. FINDINGS

4.1. Elements of organizational identity at NOV

NOV is a multination and is often listed as a conglomerate; however, public sources – i.e. both business press and previous academic publications - as well as its organizational members recognize that there are many fundamental threads running through its six divisions and more than 40 business units in 60 countries[3]. A basilar one is a common and established sense of belongingness. During my interviews, I frequently heard sentiments similar that that expressed by one of executives from other senior and experienced managers with international profiles:

> I am always amazed to see how strong our common belonging is. Anytime I travel abroad China, Brazil, wherever for the first time, and I meet NOV people in other parts of the world, I can feel right away the connection. It does not appear anywhere in the balance sheet as an asset, but I believe this is a very powerful strength of ours. (Communication VP, US)

NOV's people recognize that most of NOV principles have been built up over its long history. NOV does not have an influential founder, but there was a CEO who reigned for almost 20 years after WWII, and is considered to be NOV's "holy father". Sayings and statements of his are constantly quoted in corporate biographies and press releases, and I could see that even in 2006 his principles were still very much part of people' sense making of the company, either because they were carrying his "card of principles" in their pocket or because they were quoting his sentences during interviews.

The long average tenure (around 30 years) in all company functions and divisions contributes to

[3] In the period addressed in this case study (2000-2006), the company has changed repeatedly the allocation of its business divisions, moving from 5, to 7, to 6, not to mention the number of its business units. We refer to 6 division and 40 business units for sake of simplicity.

the cohesion in NOV. Staff turnover at NOV is very low, based on the company's deliberate choice to promote people from within the company. NOV encourage its employees to build careers and move across its various divisions, which provides employees with plenty of stimuli, while continuing employment within the same firm. It is a company boast that in 100 years the company has never looked to the job market to hire a CEO, and has very seldom used this means to hire anyone for a senior position.

Of course, it is not possible to try to lay down all identity referent of such a complex and large companies as NOV is. However, there are a number of features that recurred consistently in my data base, and that were relevant to understand company reaction to the Six Sigma implementation. Table 2 shows the emergent data structure about NOV's identity features.

Table 2. Emergent data structure of identity features at NOV

Selected quotations	First order themes	Second order themes (Identity features)
• Innovation is company DNA (Business director, UE) • Everybody recognize we are the innovation company, at least till some years ago (Business director, US) • Nov is innovation. That's it. (UE marketing manager) • This company has something unique. The sense for innovativeness, of being responsible for innovation, of being entrepreneurial and take infinitive for innovation. That's what we are (Retired director, UE)	• Innovation as ultimate mission • Personal responsibility for innovation	• Innovative company
• The way we put the scientist on a pedestal, how all the organization regarded them, that was visible. Scientists were the ones that lead the company (Communication director, US) • To this date, NOV draws its identity from its research might. (Businee Press, 2004) • Rivals have long marveled at how the company R&D staff would spend, sometimes years, building a storehouse of technology before seriously thinking about product development. (Business Press, 1994) • Nov is THE technology driven company. We invest for 10 years to discover the technology of the century that then lasts 30 years and is the core to build hundreds of products. That is our way of being and our strength (UE business manager)	• Respect for scientists • Radical innovations	• Science company

• I think diversification is an asset of ours. A not-diversified NOV would not be NOV at all. (Business Manager, UE). • As NOV started diversification so many years ago, it has grown gradually. It's a genetic trait, I believe, because it is something we have born with. We have technology platform, and we apply them in different markets. Different markets are based on the same technology platform, even if very seldom customers or analysts understand that. (Business director, UE) • There is a saying that our entrance road is paved with consultants that tried to work with us. I think we are a very complex company and is difficult to get along with us, to understand what we want and look for. It is difficult for an outsider to work with us. We are more an insular company; we have strong internal personal networks and it is difficult to get into it, to understand how we work and what we expect. (Communication director, US) • Then you see, we are complex and huge, how much can people from outside understand about our complexity (EU staff director) • We are not really comparable to anybody, sometime even press and market analysis do not know how to classify us. In a sense, you can benchmark part of NOV, but you can't benchmark it all. And we can always question the benchmark. That might cause us not to be good at benchmarking (Quality director) • • The illusion we are always market leaders is not a communication problem, is not that management trains us to think that way. The reason is that we are a peculiar company, we have so many businesses that we can't really figure out what our exact position is in all these markets. Only who is close to the specific market knows the precise figure. Even for the director of a staff function is very complex to understand (UE staff director) • Diversity was core at NOV. It was normal to have different programs among different communities, and they were not replicated, or they were but with different names. Before 2000 each division would have managed six sigma independently. And each of them would have call	• Diversified • Difficult to understand from the outside • Hard to compare to other companies	• Complex and insular company

it differently. We love to develop things internally, to own them. (quality director).		
• In a way, it was like being in a small company, no matter the big dimension we had. There was a strong sense of loyalty toward the company, very very low turnover. (Communication director, US) • We have always been a family, that's it. (UE staff manager) • Ethics and attention to people is what define us (UE business manager) • We have a very peculiar way to manage consensus here. That's really ours. We have always been used to manage everything with everyone's consensus. And not only within our local company. It was enough that one raised her hand, and everything would get stopped. This would make decision making very time consuming, but also very shared. Things have changes a lot now. (UE business director) • . We are nice people, we do look always for a win win situation, even in a competitive environment. This is something that it is truly inside our people. As a company we are upfront and fair to our partners. It happened more than once that a customer or a supplier chose to work with us even if our deal was not the least expensive or the most convenient. He came to us and said he felt that he liked and trusted us better. (R&D VP, US) • In 2000 we closed a product line because there was a chance out of I do not remember how much that in some very specific conditions our product could have a minimal impact on certain environments. I am very pleased as citizen, but if I wear the stockholder hat I see we are a bunch of fools. We overdo those things. And I do appreciate it. Ethic before anything. You can lose money here, ok, but if you do anything against ethics you are out overnight, Zero tolerance on that. (EU finance director).	• Cohesion and loyalty • Business conduct is never aggressive	• Fair and egalitarian company

An innovative company

"For this company, research and new product development are mantras", concluded an industry analyst in 2000. The focus on continuous technological innovation at NOV is supported by a strong emphasis on exploration and proactivity. "You do not build fences around your people. Fences create sheep" was one of the sayings of NOV's "holy father". As people in the subsidiary and in the headquarters pointed out, you are free to think, to use your own initiative (e.g. to come up with new ways to market a product, or ideas for a product upgrade), and to make proposals to your boss, or even start to implement new ideas. It was unusual to have an idea rejected and the company motto was generally, "better ask for forgiveness than for permission".

The freedom within the company to use initiative was supported by the strong collaborative atmosphere among employees, which is encouraged by management. The corporate biographies are full of quotes that testify to this positive environment where scientists can consult people in different laboratories to get information or help for a current of prospect project. "You could call anyone in the company and be sure to get help from anybody". One retired NOV director told me: "That was not a problem, because we knew and we were reminded that technology belonged only to the company, not to the people, and that when we helped building a new technology we were helping the growth of the company."

Our innovation is based on science

A fundamental trait at NOV is deliberate focus on technological innovation, which is not solely

concentrated on new product developments, but also includes more radical technological breakthroughs that may lead to the creation of entirely new markets:

> "Rivals have long marveled at how the company R&D staff would spend, sometimes years, building a storehouse of technology before seriously thinking about product development" (Business Press, 2004)

NOV has strong scientific roots and continually strives to be first in terms of technological superiority and quality. To fuel its scientific base, NOV hires large numbers of doctoral graduates, and scientists constitute a huge part of its workforce. It is also not unusual in NOV for scientists to progress to management and executive positions. Many move to business development and managerial responsibilities, but a great number build their entire career progression in the laboratory. 'This company is a paradise for scientists' was another motto that recurs in corporate publications.

We are a complex and insular company

Another defining characteristic of NOV- as recognized by its people – is its intrinsic complexity. NOV is organized among 5 divisions that try to order among more than 40 business units. Outside US, business and geographical control build up a matrix, so that every person responds both to a business manager and geographic managers. People at NOV recognize that that the dimension of NOV and the peculiar nature of some of its business units makes it very challenging to understand how the company works and what are its core technologies and products. In addition some of its business are based on very complex technologies, which require a very specific knowledge base. This complexity of structure and business contents– people recall- help

explaining why many analysts consider NOV a conglomerate, as it is easier to label it a conglomerate than to understand its technology connections. This has a consequence for the way NOV behave in its business operations, people recall, as it might be quite difficult for outsiders to understand the way NOV structures its process and carry out its business. It is very difficult that NOV works with consultant, as they do not feel that they can get a good take on the company. In addition, different business units had traditionally a relevant degree of freedom in pursuing their plans and objectives, and this had to the complexity of the entire company. The same was true for geographic regions, which had traditionally left a good degree of freedom in the management of their local markets.

As people recalls, the feeling of being big and complex and the feeling of not being easy to understand from the outside, had lead NOV people to a high degree of autoreferentiality and a feeling of being distant from the market dynamics. Market success reinforced this feeling, as managers would not find a company that was truly comparable to NOV ether for technological proficiency or for market differentiation. Decision making processes was then more easily based on the bases of NOV tradition and experience than on external benchmarking (which would not be reliable given company peculiarity).

A fair and egalitarian company

Almost all NOV employees claimed that ethics and attention to people was a core and distinctive feature of the company. “We are a fair company” – was said by various NOV’s managers. US people would link these fundamental characteristics to the geographical location of

the company, and claim that the NOV is definitely a nice and egalitarian organization, because this is the heritage that people from Midwest has. European people still feel this characteristic, above all when they compare the behavior of the company with other multinational.

Fairness is directed either towards employees, through generous benefits and attention to work-life balance, and a positive atmosphere. NOV people show a high level of attachment to the company, and a higher level of cohesion than what they can observe outside. Turnover is indeed a very low one. NOV's fairness is recognized also in business processes, when people say that ethics is the one thing that suppliers, customers and competitors would recognize about NOV.

4.2. Clash of routines at NOV

Looking back to the time that the new CEO was hired, there was some dread that he would try to introduce completely new ways of doing things. While there was an overall positive perception that the company was moving out its traditional self-referentiality, this was accompanied by the worry that it might destroy NOV's traditional assets. Quotes from the interviews illustrate both these perceptions: positive feelings towards some change, but suspicions because of the new and unknown. Fears within the company about a broader and more impactful change strengthened following the announcement of Six Sigma implementation, fears that were fuelled by reports in the local press.

The reasons were not hidden. NOV is a very innovative company, much of whose success was built on serendipitous inventions, while Six Sigma's main focus was to reduce errors and minimize

variance. These two philosophies clearly collided. The general fear was that Six Sigma – when implemented in R&D operations, which the new CEO, was willing to do - would completely remove the possibilities for scientists to stumble on new innovative solutions. Interestingly, the CEO dismissed these fears, stating that he valued NOV's tradition of innovation immensely, and that he would consider himself as having failed if his ideas affected NOV's innovative traits. Despite his initial pronouncement about transforming the company DNA, which most employees remembered, he later said publicly and on more than one occasion, that he was not "trying to change the engine. I am trying to put in a new chassis, a new clutch, a new trickle charge. But it is still going to be a car when I am done. It is not going to be a boat. (Industry publication, 2002*).* Employees remember his continuously praising NOV's "culture of innovation" and the "expertise of employees". He personally signed off on a corporate biography that celebrated NOV's spirit of innovation, and the traditional elements that helped build the model.

On the surface then, there was no threat to NOV's identity. Neither did the new CEO bring in a whole team of manager from outside. He hired two new people from outside the company – the Vice President of Finance and the director of the Six Sigma programme, who had actually begun his career in NOV. Otherwise the NOV management team was the same, although there were some resignations. He also did not radically change company portfolio. So, in light of there being no public declaration of intent to change NOV's value or principles, and no substantial management turnaround, what led NOV's people to talk about a "new NOV" and question the future identity of the company?

According to my evidence, the answer lies in the linkage between operating routines at NOV

and its organizational identity. Although the central NOV principles were not being challenged, the changes implied by the Six Sigma initiative affected some of the operating routines that NOV people connected closely with characteristics of NOV that were central and distinctive. Table 3 illustrates some of these routines.

Centralization versus self-initiative

Alignment among business units and geographical locations were among the key objectives of Six Sigma introduction, in addition to reductions in capital spending. The new CEO considered that the company was too loose and not sufficiently strongly directed from the centre; he felt that peripheral units sometimes did not have the same business imperatives as the corporate headquarters. He made better alignment and discipline one of his main objectives. He found it unacceptable there was no single method across the company for assessing opportunities and evaluating results. Each division and each location had its own standards and it was difficult to compare initiatives from different parts of the organization. The Six Sigma methodology was aimed at bringing a single common language to the company. The CEO and top management devised a series of templates to be used to present results, to ensure that each subunit and subsidiary adopted the same goal setting process, for targets that were explicitly linked to corporate business imperatives. These goals had to be reviewed and approved centrally before budgets were allocated.

"Say yes with data" versus experimentation

The mandate that all people in all NOV locations would use the very same Six Sigma

instruments was another clash with NOV's long and positive tradition of innovation. The Six Sigma implementation triggered degrees of reaction in people from all the organizational units. Six Sigma meant that management was dictating a single and correct way to do things, and a single and correct way to assess things. People saw this as a direct threat to their independence and freedom of thought – both personally and in terms of the company and the spirit of entrepreneurship that was traditional. Also, NOV had a solid manufacturing and quality tradition, and previous initiatives aimed at improving company processes (such as the TQM - total quality management initiative introduced in the 1980s) – were handled by the quality group cooperating with single divisions, in a highly decentralized way.

Despite the fact that most of my interviewees were not directly in charge of new technology or new product development, the perceived lack of freedom and entrepreneurship in business processes was something they felt did not fit with NOV's identity. Entrepreneurship was perceived as a "right" among NOV employees, whose loss would endanger the essence of NOV and that openly collide with one of the fundamental lessons of its famous CEO: You can't tell people exactly what they should do, or you will not benefit from their full creative potential.

From my observation in the company, this was felt even more strongly in the marketing and sales department than in the R&D functions. Although R&D also applied to R&D functions – "it was his business platform, he could not leave us out ", a Vice President recalled. It came over as a risk to employees - "what if a fearful attitude gets into the labs" perceived by local press as a threat. Scientists were questioning the necessity to stick to the Six Sigma projects metric, as it added a burden of non-scientific work on the R&D people. However, they admitted that Six Sigma DMAIC

routines were never applied to the ideas generation process, as they were just not applicable ("like using a hammer to paint a wall").

The practice of saying "yes with data" raised concerns, and especially in the subsidiary. My interviewees did not question the use of data per se, but saw this new routine as threatening the principle of the error tolerance behind many of NOV's products. "If I come up with a new idea, now, according to this new rule, people judge and scrutinize me instead of praising me for my initiative", was a concern voiced by many of my informants. Once again, it seemed that it was not the practice per se that people did not accept, but the way in which it clashed with other (more important) principles.

"Name the talents" versus egalitarian spirit and collaboration

In NOV, traditionally reward schemes were based almost exclusively on tenure; scientists did not receive monetary rewards for inventions or patents as management feared this might hinder collaboration among them. Individual achievements were mainly recognized by special company prizes, something that is appreciated by scientists along with the opportunity they have of using some of their working time and the corporate facilities, for personal projects.

The link Six Sigma routines and established identity was even more evident in two human-resource related procedural changes, which were the cause of huge concern to NOV people. The first was related to the establishment of the Six Sigma black belt structure and the fact that the most talented individuals were being identified to participate in this "club", which was quickly identified

as a leadership development centre. The second was related to the introduction in 2001 of a suggestion to management (which was never inscribed as a written rule) that during annual reviews people should be ranked based on their annual contribution and that this would have a financial impact in terms of the size of salary increase. Both practices, common in many large companies, might be sensible for a company with double digit growth targets and a desire to retain and motivate innovative people. However, within NOV it was seen as being profoundly inconsistent with the existing business model, as it clashed with the goal of collaboration among the workforce. When the talents and abilities of staff are ranked this turns them into competitors, and makes them consequently less willing to cooperate and exchange information. As all my informants emphasized, this was a serious problem for R&D and other parts of the organization; people perceived it as a backward step in terms of management of the company. Ultimately, it was one of the first rules to be abandoned when the CEO who had introduced the Six Sigma programme left the company.

Table 3. Clashes of routines at NOV

Routine before Six Sigma	**Routine after Six Sigma**	**Identity question**
• Distributed and autonomous decision making (decision by consensus)	• Direct and centralized leadership (goal tree)	• Are we still innovative if we limit self-initiative and pretend to control from the centre?
• No mandated alignment to procedural standards (tolerance for experimentation)	• Mandated based on six sigma metrics (say yes with data)	• Are we still innovative if we pretend to measure everything in advance? A "one fits all approach" goes against our innovativeness and diversity.
• Career progression based on tenure and egalitarian retribution	• Leadership development structure with performance rankings	• We are becoming less fair • We are affecting org climate and collaboration, and this harms innovativeness

4.3. Evolution of routines over time

A year and half later, when I had completed my field study, management of the Six Sigma structure was assigned to the quality function, and its directors began to hybridize Six Sigma concepts and lean production concepts, focusing on the company's manufacturing operations. "Now we must build up NOV's Six Sigma" – was the conclusion of one the leading members of the team that had designed the Six Sigma training in 2001. At the same time, most employees, in the headquarters and in the European subsidiary, acknowledged that in the most recent years NOV had changed more than it had done so in its entire history.

The reactions of NOV's people to these initiatives were twofold. On the one hand, the

introduction of a common language was viewed positively as it facilitated the interface with other parts of the company and simplified communication and exchange within the company. This new routine reinforced one of NOV's core elements, the advantage and importance of sharing knowledge within the organization, something that had always been central within the R&D community, but was more difficult to extend to the marketing units. With standardized templates and a common business language, people were able to understand each other better and this facilitated the replication of initiatives from one part of the company to others. On the other hand the rigidity that it introduced and the number and format of the documents required, raised doubts in people's minds. They saw in these changes a change in the management culture; they saw it as a backward step from that freedom to use their initiative and introduce ideas that had constantly been celebrated throughout NOV's history. Such negative feelings were especially strong in the European local company. The fact that local initiatives had to be approved by the European or Corporate Vice President, and should align with general company objects, was seen as a direct threat to the company culture that had been unique and valued up to that time. Although it was never publicly stated that local companies were less relevant in terms of innovation, with the opposite in fact being strenuously maintained on many occasions, local managers and directors were acknowledging that a historic turn around was occurring in the role and identity of the subsidiary, and they were being downgraded from innovators to mere executors. This was how people saw the requirement to align with corporate objects and comply with predefined templates. Although this way of working had been the norm in many companies, for several decades, in NOV it clashed with the company's way of operating of leaving people free, and free to choose their actions. Figure 2 tries to depict the different phases that Six sigma routines went through in NOV.

Figure 2. Phases of routine change at NOV

Desire/need for renewal (1998-2000)	Imposition of new routines (new CEO), 2001	Experience with new routines (2002-2005)	Release period (new CEO leaves at the end of 2005)	Revision and appropriation of new routines
•Dissatisfaction with current results •Feeling there is opportunity to grow at a faster pace Triggers: • Comparison with growth in other markets • Reputation weaker than the past (analysts, stock exchange)	•Establishment of a change platform (six sigma and six sigma structure) •Doubts, but also excitement for change (release of new energies) •No resistance because it's "honeymoon period" and because the change program is strongly directed from the top	• Evidence of amazing financial results (savings and good performance on the market) •Dissatisfaction with the "normative" attitude of change (it's a religion/a goal, not a tool) •Dissatisfaction as growth has not improved substantially •Evidence of positive experiences with new routines (e.g. the common language)	• Loss of the change proponent •People start to decide whether to keep or not new routines	•Some routines are disbanded, others are kept but modified •"We are going to do our six sigma"

5. DISCUSSION

This study shows how organizational identity dimensions proved important during non-ordinary organizational change. Although NOV's management was not aiming at an organizational identity change, findings show that organizational members were building on identity beliefs when they assessed and responded to routine changes. As the case of changes in HR practices illustrates well, a change in organizational routines was sufficient to trigger identity questions that made people questioning the entire process of change.

Findings from this study show that over different phases of routines changes (figure 2, above), organizational identity dimensions play different roles.

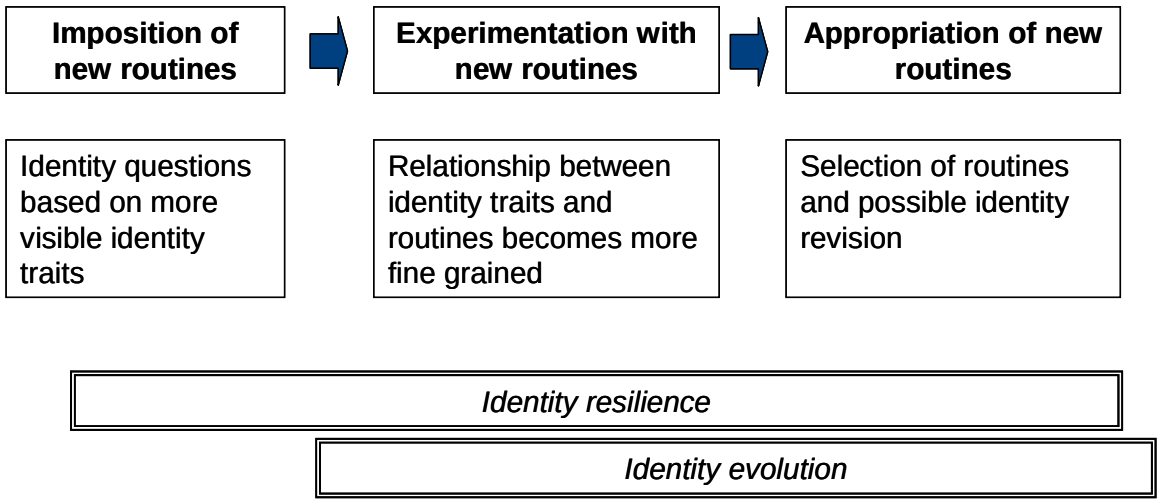
First, as soon as the change is announced, identity beliefs were used to question the overall change plan. During this phase, negative responses to change were based on a generic disbelief that the change program would fit organizational requirement. At this level, NOV experimented the clash between its more prominent identity trait –innovativeness, a central trait of its public image, too – and the more recognizable and evident six sigma logic –process control. In this phase, while change was implemented with no exitation because of the strong endorsement of Mr. Smith from the board of directors, there was the generic fear that six sigma could ruin the fabric of the organization. At the same time – at least in this organization – a moment of change was perceived as a release and renewal of energy that might also prove beneficial (above all from younger employees). In NOV, the CEO had the influence and the power to establish the new routines, despite organizational skepticism, as he was enjoying a "honeymoon period" (interview excerpt) and the organizational environment was one where people tended to give new ideas a chance. "We

were not fully convinced by Six Sigma, but we were willing to prove to him that NOV people are achievers and not scared to try different ways", one interviewee said.

A second stage starts when people begin experiencing new routines in their everyday practice. Here the clash among routines and identity beliefs becomes more fine-grained and precise. By implementing the new routines, organizational members experience which specific actions they consider as fundamental to their identity understanding, as they are the ones that find no reasons according to their current perception of company central features. In this second phase the relationship between organizational routines and identity traits becomes more grounded and complex, showing connection and relationship that were not detectable at the beginning of the process. During this phase, which was in fact the one I better observed at NOV, it became clear how the interrelation between routines and meanings was not a straightforward one-to-one relationship, but a configuration in which central identity traits sustain other traits, and routines translate into actual operations that constitute the operating fabric of an organization. For example, at NOV the choice not to publicly rank employees and to base their promotion on tenure was closely connected with the desire to maintain a positive and non-competitive climate, within an environment where knowledge exchange was a core element of the NOV business model. The choice to rank employees according to their performance was immediately perceived as a threat to their identity, even though the routines were not mandatory and not reinforced by other management communication. For instance, to my knowledge the new CEO did not convey the message that NOV people should become more aggressive or less collaborative, or play down the importance of collaboration in the company.

A third phase starts when the pressure on routine change is released, in NOV case when Mr. Smith left the company. Here the company started a process where it has to select compatible routines or improve potential beneficial ones. Here, my findings suggests that during this process it is possible that the evidence of benefits brought about by new routines triggers an evolution people's self-understanding and overcome organizational inertia. While this is not new to either change management scholars or cognitive psychologists, it may help organizational identity scholars to avoid an overemphasis on the cognitive perspective of organizational identity, in which strong identities are immune to change. After the CEO's departure, Six Sigma could have been put entirely aside, with all its elements rejected. However, based on the perceived benefits of the Six Sigma programme, some elements were seen as positive, and became part of the organizational fabric. The tangible benefits and personal achievements experienced through the programme seem to have contributed to integrating Six Sigma in NOV's established identity traits.

Figure 3. A model of organizational identity dynamics during routine change



6. CONCLUSIONS AND RESEARCH IMPLICATIONS

The case study presented in this paper contributes to the debate about patterns of organizational identity evolution during a time of organizational transformation (Corley, 2004; Corley & Gioia, 2004; Ravasi & Schultz, 2006; Nag et al., 2007). This study points to the importance of observing the evolution of company perceptions through their grounding in everyday practices and organizational routines. Routines are strong bedrock for organizational sense making, so that any change in them can raise questions about identity, especially if these changes affect deeply held practices, which organizational members link to core company features.

The evidence presented in this case can also inform management practice. In large business organizations, deliberate attempts to change organizational processes are linked to waves of initiatives that become fashionable and institutionalized in the business world (Abrahamson, 1991). For example, in the last two decades we have witnessed the success - at least in term of diffusion - of change initiatives that have imported manufacturing concepts into business processes, such as TQM, ISO9001, Six Sigma and Lean Methodology. People touched by these initiatives, like those influenced by the implementation of new technologies, see that changes do not address only business technicalities, but affect organizational life more broadly, including job definition, leadership style and cultural assumptions (Barley, 1986) and provoke changes to operative task mandates or imply a reconsideration or evolution in less tangible organizational dimensions. Sometime this causes people to reconsider meanings and values, which – according to corporate rhetoric or to individual understanding - lie at the base of everyday routines. From a managerial perspective, this suggests that the implementation of wide processes of routine change need to be

evaluated against established corporate values and self-definitions, and coordinated with communication and persuasion strategies that may require changes to management strategies and involvement of the workforce in the change programme.

My analysis describes a story of and a case for organizational identity resilience. Despite the strong leadership and the apparent antagonism between Six Sigma practice and NOV identity traits (a clash that was strongly identified at time by the local and industry press), in 2006 the organization seemed to be headed towards retaining most of the Six Sigma routines as business tools, while restoring and reaffirming the centrality of other identity traits, such as the predominance of science, its imponderable "magic" side (a description often used by the CEO currently in charge), fuelled by NOV people's dreams. From a theoretical point of view, this reinforces Brunninge's (2007) statement that the antagonism between environmental alignment and identity resilience does not leave any organization with no choice but to adapt or die. Identity resilience and evolution can be enacted in more complex ways. I believe that the scope and the cohesion of the organizational being studied plays a role in determining whether the organization can cope with challenges to its identity in a way that brings benefits – i.e. can integrate external elements into its culture – while resiliently preserving its central identity. In the case study described in this paper I was able to study some of the central traits of NOV, such as pride in the company culture –which was constantly renewed thank to storytelling, cohesion among staff and, interestingly, its identity not in terms of a central product in the market, but as an organism that was constantly evolving as a result of innovation. This might suggest, partly contrary to current received wisdom, that a solid identity, recognized and shared by organizational members, may be positive for change as it provides a common platform (shared vocabulary, shared meaning) around which

leaders can shape change initiatives and gather people's consensus. Therefore, recognition of a specific symbolic character may help organizations to frame change in a manner that is consistent with organizational history, and ultimately to embrace new initiatives.

There are many limitations to the analysis in this paper. Limited access to the company, especially in the US, did not allow me to conduct a full study of its various organizational parts. On the other hand, the magnitude of the organization was too large for one researcher to tackle. Legitimation of my role as a researcher, and my status as a foreigner, certainly played a role in the type of material I was allowed to access and the questions I could ask, despite the seeming openness of NOV people at all levels. It was not possible within the scope of this research to study NOV's complexities, including the variety of professional backgrounds, the geographical idiosyncrasies, the sense of belonging to specific functions. They could perhaps constitute the subject of future studies. However, it was never the objective to say the final word about the need for or success of the Six Sigma initiative in NOV, worldwide. I could not even speculate whether Six Sigma principles will remain part of NOV's DNA in the long term; like many people in NOV, I would say it is just too early to say.

REFERENCES

Abrahamson, E. 1991. Managerial fads and fashion: the diffusion and rejection of innovations. *Academy of Management Review*, 16: 586-612

Albert, S. & Whetten, D.A. 1985. Organizational identity. In L.L. Cummings & M.M. Staw (Eds.), *Research in Organizational Behavior*, 7: 263-295.

Ashforth, B.E. & Mael F. 1996. Organizational identity and strategy as a context for the individual. *Advances in Strategic Management***,** 13: 19-64.

Barley, S. R. 1986. Technology as an occasion for structuring: Evidence from observation of CT scanners and social order of radiology department. *Administrative Science Quarterly* 31:78-108.

Bartel, C. A. 2001. Social comparisons in boundary-spanning work: Effects of community outreach on members' organizational identity and identification. *Administrative Science Quarterly*, 46: 379-413.

Brown, T. J., Dacin, P. A., Pratt, M. G., & Whetten, D. A. 2006. Identity, intended image, construed image, and reputation: An interdisciplinary framework and suggested terminology. *Journal of the Academy of Marketing Science*, 34(2): 99-106.

Brunninge, O. 2007. Handelsbanke and Internet banking. In Lerpold, L., Ravasi, D., Van Rekom, J., & Soenen, G. 2007. *Organizational identity in practice*. Routledge.

Charmaz, K. 2006. *Constructing grounded theory: a practical guide through qualitative analysis*. Sage: London.

Cohen, M.D., & Bacdayan, P. 1994. Organizational routines are stored as procedural memory: evidence from a laboratory study. *Organization Science*, 5: 554-568.

Collins, J. & Porras, J.I. 1996. *Built to last.* New York: Harper Business.

Corley, K. G. 2004. Defined by our strategy or our culture? Hierarchical differences in perceptions of organizational identity and change. *Human Relations*, 57: 1145-1177.

Corley, K. G. & Gioia, D.A. 2004. Identity ambiguity and change in the wake of a corporate spin-off. *Administrative Science Quarterly*, 49: 173-208

Corley, K. G., Harquail, C. V., Pratt, M. G., Glynn, M. A., Fiol, C. M., & Hatch, M. J. 2006. Guiding organizational identity through aged adolescence. *Journal of Management Inquiry*, 15: 85-99.

Creswell, J. W. 1998. Qualitative inquiry and research design. Sage: London.

Dukerich, J.E., Golden, B., & Shortell S. M. 2002. Beauty is in the eye of the beholder: The impact of organizational identification, identity and image on the cooperative behaviors of

physicians. *Administrative Science Quarterly,* 47: 507-533.

Dutton, J., & Dukerich J. E. 1991. Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal,* 34: 517-554.

Egidi, Massimo (1996), 'Routines, Hierarchies of Problems, Procedural Behaviour: Some Evidence from Experiments' Pp. 303-333 in *The rational foundations of economic behaviour,* edited by K. Arrow, E. Colombatto, M. Perlman, and C. Schmidt.Macmillan: London.

Eliasson, G. 1996. *Firm Objectives, Controls and Organization: the Use of Information and the Transfer of Knowledge within the Firm.* Boston: Kluwer Academic Publishers.

Elsbach, K. D., & Kramer, R. M. 1996. Members' responses to organizational identity threats: encountering and countering the Business Week rankings. *Administrative Science Quarterly,* 41: 442-476

Feldman, M.S. 2000. Organizational routines as a source of continuous change. *Organization Science,* 11:611-629.

Foreman, P., & Whetten, D .A. 2002. Members' identification with multiple identity organizations. *Organization Science,* 13: 618-635

Glaser, B. & Strauss, A. 1967. *The discovery of grounded theory,* Chicago: Aldine

Gioia, D. A., & Thomas, J. B. 1996. Identity, image and issue interpretation: Sense making during strategic change in academia. *Administrative Science Quarterly,* 41: 370-403.

Gioia, D. A., Schultz, M., & Corley, K.G. 2000. Organizational identity, image and adaptive instability. *Academy of Management Review,* 25(1): 63-81.

Golden-Biddle, K. & Locke, K. 1993. Appealing work: An investigation of how ethnographic texts convince. *Organization Science,* 4: 595-616.

Golden-Biddle, K., & Rao, H. 1997. Breaches in the boardroom. Organizational identity and conflict of commitment in a nonprofit organization. *Organization Science,* 8: 593-611

Glynn, M.A. 2000. When cymbals become symbols: conflict over organizational identity within a symphony orchestra. *Organization Science,* 11: 285-298

Hatch, M. J. & Schultz, M. 2002. The dynamics of organizational identity. *Human Relations,* 55: 989-1018.

Jacobides, M.G. 2006. The inherent limits of organizational structure and the unfulfilled role of hierarchy: Lessons from a near-war. Working paper.

Leonard Barton, D. 1992. Core capabilities and core rigidities: a paradox in managing new product development. *Strategic Management Journal,* 13: 111-125.

Lerpold, L., Ravasi, D., Van Rekom, J., & Soenen, G. 2007. *Organizational identity in practice.*

Routledge.

Locke, K. 2001. *Grounded theory in management research*. Sage: London.

Miles M.B, & Huberman, M. 1993. *Qualitative data analysis: an expanded sourcebook*. Thousand Oaks, CA: Sage Publications.

Nag, R., Corley, K. G., & Gioia, D. A. 2007. The intersection of organizational identity, knowledge and practice, *Academy of Management Journal*, 50(4): 821-847.

Nelson R.R, & S.G. Winter, 1982. *An evolutionary theory of economic change*. Harvard University Press, Cambridge, MA.

Pande, P. & Holpp, L. 2002. What is six sigma? McGraw Hill.

Ravasi, D. & M. Schultz. 2006. Responding to organizational identity threats: Exploring the role of organizational culture. *Academy of Management Journal*

Romanelli, E., & M. L. Tushman, 1994. Organizational transformation as punctuated equilibrium: an empirical test. *Academy of Management Journal*, 37(5): 1141-1166.

Strauss, B. & Corbin, J. 1998. *Basics of qualitative research: Techniques and procedures for developing grounded theory***,** Thousand Oaks, Sage.

Tripsas, M., & Gavetti, G. 2000. Capabilities, cognition and inertia: evidence from digital imagining. *Strategic Management Journal*, 21: 1147-1161 **.**

Tushman, M. L., & Anderson, P. 1986. Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31: 439-455.

Tushman, M. L., & Romanelli, E. 1985. Organizational evolution: a metamorphosis model of convergence and reorientation, *Research in Organizational Behavior*, 7: 171-222.

Van Rekom, J., & Whetten, D. 2007. How organizational identity beliefs cohere: about essence, distinctiveness and continuity. Paper presented at 2007 Academy of Management, Philadelphia.

Voss, Z.G., Cable, D.M., & Voss, G. B. Organizational identity and firm performance: what happens when leaders disagree about who we are? *Organization Science*, 17: 741-755.

Whetten, D.A. 2006. Albert and Whetten Revisited: Strengthening the Concept of Organizational Identity. *Journal of Management*, 15:219-234

Whetten, D. A., & Mackey, A. 2002. A social actor conception of organizational identity and its implications for the study of organizational reputation, *Business & Society*, 41: 393-414.

SUBSTANTIAL AND SYMBOLIC SOURCES OF ORGANIZATIONAL MISFITS

ABSTRACT

An organization can be depicted as a configuration of elements that exhibit a positive level of internal fit in order to sustain alignment with the environment and organizational performance. Following this tradition, recent work has suggested it is possible to envision organizational dynamics as a process of evolution of the constitutive elements of a configuration. Such a process entails patching of new organizational elements, reinforcement of some elements, and abandonment of others (Siggelkow, 2002). During times of change, organizations strive to maintain internal fit by preserving a certain degree of coherence among elements.

In this paper I look in detail at the process of patching and, based on the literature on organizational identity theory, I introduce the notion of substantial fit and symbolic fit as prerequisites for internal fit. This distinction helps to make sense of the various source of misfit that new organizational elements may encounter. Lack of fit can be a consequence of a lack of inter-functionality with existing processes, but also a lack of cultural coherence with existing organizational identities.

In the final part of the paper I reflect on the challenges that different types of misfit bring to organizational change and the organizational processes they may trigger (adoption, reinterpretation, reconfiguration and resistance). This contributes to the literature on organizational change as it helps to explain the difficulties involved in organizational patching and it allows the identification of different processes of change - depending on the actual source of organizational misfit.

1. INTRODUCTION

The initial interest in internal sources of organizational misfit stemmed from early insights from a research project I was observing, studying the introduction of process control methodology into an established and successful industrial company. Industry observers and local journalists were arguing that such a methodology might not "fit" the organization, or – more seriously- might ruin its fabric and the sources of its competitive advantage. Those involved in the research, on the other hand, maintained that the organization had in place all the resources necessary to cope with this change. They stated that most of the workforce had an engineering or other scientific background, and would be perfectly able to manage the statistics and data requirements of manufacturing-like control routines. Information systems and technologies were already in place to support both data management and information exchange. And finally, the process control methodology was considered as mandatory to push the organization to higher productivity standards, something that financial analysts were demanding from the organization.

Linking this piece of reality with a configurational approach to strategy (Miller, 1996) – a piece of theory that observes the coherence of organizational elements- I realized I was observing a "patching" process (Siggelkow, 2002). Management was deliberately trying to "patch" a new element – the process control methodology - into an established organizational configuration – the company. The ultimate aim was to strengthen the fit with the external environment -*external fit*- and reinforce the firm's competitive advantage. At the same time, analysts were worried that this insertion might undermine the existing coherence among extant organizational elements – *internal fit* and destroy important organizational assets. Yet, recent studies that exploit a configurational perspective (Siggelkow, 2001, 2002) or investigated processes of strategic fit (Zajac, Kraatz &

Bresser, 2000), while progressing from former very static conceptions of configurations and fit (Miller & Friesen, 1984; Drazin & Van de Ven, 1985; Zajac, Kraatz, & Bresser, 2000), do not explicitly investigate evolutionary processes in configurations. In particular, Siggelkow (2002) explicitly names the process of patching among the paths of evolution of the configuration, but does not provide any insights on the unfolding of the process, or the conditions that allow a new element to be integrated into a web of established ones.

This paper is aimed at contributing to the configurational approach to strategy, by proposing a reflection on the conditions that lead to the fit of new elements in a patching process. In particular, I show how internal fit can be better specified by distinguishing between symbolic fit and substantial fit, exploiting the distinction of symbolic elements versus substantial elements as outlined by Pfeffer (1981). The need to integrate a new organizational element (patching process) entails a twofold test of fit with substantial and symbolic elements of the existing organizational configuration.

Specification of these two realms of organizational coherence, in turn, permits us to distinguish three different patterns of misfit that may occur during a patching process: misfit in substantial elements (routines and resources); misfit in symbolical elements (organizational understandings and values); and misfit involving both these dimensions. Based on examples, I argue that these sources of misfit give rise to two different patching processes: reinterpretation and reconfiguration..

The paper is organized as follows. In the next section I consider organizational configuration research, highlighting the relationship with organizational change. Section three elaborates on the distinction between substantial and symbolic dimensions of fit. In section four I outline a model of substantial and symbolic fit, and show how it improves our understanding of patching processes.

Section five discusses the patching process, and the role of human agency in it. Sections six concludes.

2. CONFIGURATIONAL THEORY AND ORGANIZATIONAL CHANGE

Configuration is a powerful metaphor for understanding the design and evolution of complex environments. Organizations can be envisaged as systems made up of elements that occur together and interact (configurations, or g*estalts)* with the objective of achieving internal fit (coherence and effectiveness in the interaction among constitutive elements) and external fit (coherence between the organizational configuration and the requirements of the outside environment) (Miller, 1981; Venkatraman & Camillus, 1984; Meyer, Tsui & Hinings, 1993; Miller, 1986, 1996; Siggelkow, 2002). Greater competitive advantage is achieved by organizations that are able to achieve better internal and external fit, and are responsive and effective in evolving their configurations in line with the environmental and internal dynamics (Drazin & Van de Ven, 1985; Siggelkow, 2002; Sinha & Van De Ven, 2005). In adopting this perspective, scholars either state explicitly or assume implicitly that a configuration's elements are not disembodied attributes that can be put alongside one another with no conscious design, but that all of them have functional interdependencies and common inspiration with overarching interpretive schemes (Miller, 1996; Greenwood & Hinings, 1996). Organizations able to orchestrate their elements around a single theme are bound to achieve and exploit greater competitive advantage (Miller & Friesen, 1984; Miller, 1996).

2.1. Origins of configurational research

Organizational theorists first adopted the idea of configuration as a way of making contingency theory more responsive to the complex reality of organizational life, and overcoming some of the

inherent limits posed by the paired analyses of process-structure dimensions (see Meyer et al., 1993 for an extensive account of this issue).

As a research topic, configurational design is strongly associated to the notion of fit and strategic alignment, central issues from the beginnings of the organizational and strategic literature (Venkatraman & Camillus, 1984). Fit is a notion that ultimately seeks to explain the degree of internal and external coherence that supports competitive advantage. Successful organizations are those that are able to achieve internal fit, a stable equilibrium over a large number of dimensions, developing a coherent patterning among organizational elements– *internal fit*. The main assumption related to organizational fit is that it is crucial to sustain and complement *external fit*, i.e. the alignment with the requirements of the external environment. This, in turn, is a precondition for competitive advantage.

Proponents of a configurational approach argued that organizations would be better understood if we could supplement the reductionist perspective of the contingent approach to fit, in which strategy-structure relationship were tested in pairs, with a holistic stance towards its various constitutive elements, i.e. a systemic approach to fit (Drazin & Van De Ven, 1985). Comprehensive analysis of the interaction among a number of variables would have improved the understanding and the representation of fit more than a focus only on single variations of isolated organizational variables- the 'one variable at a time' approach (Miller, 1981,1986). In this sense, configurationists conceive the relationship between strategy and structure not as the sum of bivariate contingent optimal choices, but as a problem of complex landscape optimization, that allows alternative optimal points as well as strategic equifinality. In a given environment, organizations can build competitive advantage following different patterns, namely different configurations of organizational variables.

The core ideas of configurational research were grounded in large collections of cross sectional data, which showed that it was possible to identify a finite number of patterns of relations among strategy and structure relations (taxonomies), and that more than one type of configuration coexisted in markets. Extensive data collection on structural and strategic variables provided evidence that organizational items tend to coalesce into a finite number of patterns (Miller, 1986) rather than being evenly distributed among all feasible combinations. In other words, there are variables that tend to co-occur, suggesting that organizational variables have a degree of interdependency that leads to a finite number of viable combinations and that, at a given point in time, organizations can choose from among a reduced number of archetypical configurations (equifinality).

An interesting issue arising from this consideration concerns the sources of interdependency among constitutive elements. Meyer et al. (1993) mention two types of forces that select viable configurations in an organizational environment at a given point in time. On the one hand, there are exogenous forces, such as environmental selection (through competition, the environment tends to reward certain types of configurations more than other), that mimic, normative and coercive institutional factors (actors will tend to emulate those configurations that achieve better external fit or that are mandated by powerful institutional actors). On the other hand, there are endogenous forces that are related to the willingness and aspirations of organizational leaders and the necessity to evolve functional needs.

2.2. Configurations and organizational change

Looking at organizational configuration from a dynamic perspective, successful organizations are those whose leaders most effectively manage the evolution of a complex web of interconnected

relations, in order to make it sustainable and long lasting. One of the goals of organizational theorists and strategists is to analyse the processes of transition and evolution of organizational configurations. Organizational dynamics is depicted not as a linear progress toward equilibrium, but as a process of dynamic interactions (Miller & Friesen, 1980; Greenwood & Hinings, 1993).

A configurational conception of organizations led to increasing attention on punctuated and frame-breaking change compared to incremental change (Meyer et al., 1993). While a contingency approach is closer to the idea of evolution as an incremental change towards equilibrium (which is contingent on some structural dimensions), a configurational approach conceives organizations as systems that need to accommodate or pursue evolution in both its individual elements as well as in its overall frame (architecture). The overarching frame of a configuration can accommodate some degree of variation and evolution of its constitutive elements without the need to modify or evolve its architecture. On the other hand, the more pervasive the evolution and variation of its elements, the more likely that the organization will need to move towards a new set of coherent elements, through a frame-braking change that entails major modification to some of its core aspects. From a longitudinal perspective, this is consistent with the notion of punctuated change (Tushman & Romanelli, 1994; Henderson & Clark, 1990), which pictures organizational dynamics as a succession of longer periods of incremental change (incremental variations of single configurational elements) punctuated by less frequent episodes of pervasive change (changes in the configurational architecture).

For example, Greenwood and Hinings (1993) use a configurational approach to make sense of radical versus incremental change and evolutionary versus revolutionary change in organizations. Coherent with the configurational perspective, they hypothesize that organizational fields (e.g. industries) admit a limited number of viable effective configurations and that is it possible to observe and understand the dynamics of change and legitimation by looking at the way in which

organizations shift from one type of configuration to another. Their level of analysis is the organization in relation to its outside environment, more than the intra-organizational patterns of change.

More recently, the configuration metaphor has been exploited from a more micro perspective. Siggelkow (2001, 2002) reframes the evolution of two organizations over a couple of decades as evolution and change in an underlying configuration of activities and processes. In contrast to previous studies, he explicitly looks at the dynamics of change *within* an organizational configuration, focusing on the developmental paths of a configuration of elements (how the change occurs) more than the reasons for its occurrence.

Siggelkow models configurational evolution, distinguishing four basic processes of change:

Thickening. A thickening process occurs when the introduction of new elements reinforces an existing core element. In other words, the introduction of a new element acts as a reinforcing instrument of precedents organizational variables, strengthening the extant logic of the configuration.

Patching: The patching process takes place when a new organizational element is created, introduced into the organization, and then reinforced and integrated through related changes in other existing elements. For example, in the Vanguard case described by Siggelkow (2001) the choice to offer high quality service is an element that becomes immediately central in the organization and stimulates coherent changes in all Vanguard's activities. A patching process is different from a thickening process, the aim of the latter being to reinforce an extant set of elements, while patching occurs when a completely new element is introduced and only later, in its integration phase, does it develop connections with other elements.

Coasting: Coasting occurs when an existing element in a configuration cannot be further elaborated. In this case the element continues to have a role in the overall system, but its relevance decreases compared to elements that can be further elaborated and reinforced. Over time, it is likely that coasted elements are dismissed because they have lost their importance in the overall ecosystem.

Trimming: Trimming is the process that occurs when a core elements is deleted from an organizational configuration, and so no longer plays an active role, and is replaced by competing elements. It differs from the coasting process, as the process of deletion is more direct and quicker.

This framework differentiates core elements and elaborating elements, suggesting that in an organizational configuration it is possible to disentangle core variables that lead and inspire additional sets of related more peripheral elements. Coreness is specified inductively by considering, through analysis of corporate histories, public documents and interviews with top management, those organizational elements that have high interdependency with other organizational items (connectedness) and that maintain major influence over future organizational developments (organizational blueprints). Although the literature does not include extensive empirical accounts of the four processes, this framework is beneficial as it suggests a new way to understand organizational architecture which in turn suggests a new vocabulary to envision organizational processes of evolution.

2.3. Configuration as a quality

The literature referred to so far does not focus on the drivers that might explain the consistency of configurations – i.e. why we observe configurations instead of even distributions of optimal level single variables. Meyer et al. (1993) point to the salience of two endogenous variables, which relate either to functional needs, i.e. the interconnectedness of organizational activities or the correspondence to an overarching interpretive scheme (Miller & Friesen, 1984), i.e. the willingness to adapt or replicate an organizational ideal type. Greenwood and Hinings (1993) investigate the role of an interpretative scheme as a driving force of cohesiveness, arguing that internal fit is primarily grounded in the attempt to match and realize a coherent ideal type, which may be inspired by historical factors (e.g. the founder's organizational blueprint) or an existing institutional template (model of organization dictated by the organizational environment).

Along this line of analysis, Miller (1996) theorizes a further understanding of configurations, as *qualities* that vary across organizations. In this tenet, a configuration is defined as "the degree to which an organization's elements are orchestrated and connected to a single theme" (Miller, 1996: 509). The more coherent an organization and the more connected to a single theme, the more likely that it will achieve competitive advantage. For example, assuming that the interpretive scheme of an organization is "being a cost leader", the organization will be more likely to achieve competitive advantage it is able to make all its activities and procedures coherent with this interpretive scheme.

2.4. Opportunities for the use of a configurational theory in the analysis of change

What are the implications of a configurational perspective in the analysis of processes of organizational change? A configurational theory as understood in this paper, suggests that the

effectiveness and possibility of organizational change – i.e. the possibility to evolve the architecture of an organizational configuration - does not rest solely on either the technical validity of the new idea or the mastery of a change management process, but on coherence with a general "orchestrating theme", which may reside in a managerial vision, an organizational talent or a special corporate culture, and which ultimately "guides" the internal fit of the organization. Substantial organizational elements (routines and artefacts) embody the set of beliefs and values that constitute the central interpretive scheme. The opportunity to look at configuration as an organizational quality (Miller, 1996) suggests the idea that behind the process of integration of a new organizational element there is a dialectic process involving the plasticity of the current orchestrating theme, and that organizations may differ in relation to the capability to integrate new institutions, depending on the characteristics of their orchestrating themes.

Notwithstanding the initial contribution by Siggelkow (2002), however, configurational approaches have not been employed for fine-grained analyses of organizational change. Recent contributions have moved a step forward in first reconsidering a perspective that, while quite popular in the 1980s, was put to one side mainly because of the degree of complexity in the empirical requirements of larger quantitative analyses (Drazin & Van de Ven, 1985). Second, they started to develop a terminology to describe the dynamics within configurations. At the same time, we know little about patterns of organizational change within an organizational configuration, and about the conditions that lie behind the notion of fit.

3. SUBSTANTIAL AND SYMBOLIC ELEMENTS IN ORGANIZATIONS

By equating organizational change with a process of patching or deletion in a web of inter-connected elements, it becomes possible to observe process of introduction of new elements in organizations – such as the introduction of the process control methodology previously mentioned - from a novel perspective. Instead of conceptualizing organizations as mere change-receptive or change-resistant fields, we can picture the integration of new elements in relation to the complex web of pre-existing ideas and practices. Following this tenet, we can expect an organization to more likely to integrate those new organizational elements (practice, procedures, management theories) that are more in tune with its interpretive scheme, while the challenges will be greater the more distant the new organizational element is from the dominant interpretive scheme.

A first step forward in this direction is to distinguish the *substantial* elements of an organizational configuration from its *symbolic* elements, following the terminology proposed by Pfeffer when analysing the core aspects of organizations (Pfeffer, 1981). The substantive dimension includes the actual way of organizing activities. Organizational assets are, in this realm, similar to routines and artifacts. Routines are the blueprints of how activities are organized and are a snapshot of the actual ways of working of an organization (Cohen & Bacdayan, 1994). Artifacts are the objects (documents, databases, blueprints) that support organizational routines, and often serve as memory and replication devices.

At the other end of the spectrum we have the symbolic dimension of organization. Here there are all the cultural understandings and public claims that are detectable at a point in time in a given social environment. These values and norms can be codified in statements (such as company's vision or mission) or can be tacitly spread throughout the organization. At the same time, they

might not be entirely accepted among organizational members, and it is possible that some areas of an organization accept a variation of the dominant cultural element better than do others.

Recognition of this differentiation suggests that the integration of a new organizational element entails a twofold test of fit with substantial (routines and artifacts) and symbolic (identity claims and understandings) dimensions of the existing organizational configuration:

- *Substantial fit* will ensure that the new organizational element is bound to achieve interdependence with the configuration of the extant structure and activities of the organization, so that there is coherence among the functional requirements of the various elements.

- *Symbolic fit* will ensure that there is a consonance between the cultural and behavioural assumptions that regulate organizational life and those implied by the new instance.

The positive integration of the new element will depend both on the degree of substantial and symbolic fit with the existing organizational configuration. In case there is a low level of fit in either the substantial or the symbolical dimension, organizational leaders will need to revise the new element and get to work with the objective of improving the degree of fit among the various elements. Table 1 presents the resulting framework.

TABLE 1. SYMBOLIC AND SUBSTANTIAL FIT

		Symbolic fit	
		High	Low
Substantial fit	High		
	Low		

3.1. The substantial side of organizational configurations

As can be seen by observers, organizations are a collection of substantial elements (Pfeffer, 1981), such as routines, activities, artifacts, etc., that regulate and guide organizational action. Scholars have defined routines as organizational scripts, i.e. recurring, learned and practised modes of organizational responses (Nelson & Winter, 1982; Feldman, 2000; Jacobides, 2007) "which involve multiple actors who are linked by relationships of communication and authority" (Cohen & Bacdayan, 1994). From the operational side, therefore, the processes of change require and evolution of the extant routines. A patching process would require the development, learning and institutionalization of new routines that accompany, substitute or refine established organizational responses.

Routines are relatively stable, yet they change following either performance drops or an update to routines due to continuous internal dynamics (Feldman, 2000). The existing literature shows how routines are disrupted because of exogenous interventions (e.g. new technologies, specific new directions) and how, following these discontinuities, routines continue to evolve, refining organizational learning (e.g. Barley, 1986). One of the central tenets of organizational theorists who have studied this issue is that routines may change, but they always respect consistency with rules'

repertoires (Feldman, 2000). It is possible, then, to hypothesize that interdependence would favor the integration of routines that are more similar to existing ones, and would make it more difficult to introduce new processes and organizational activities that collide with existent ones.

3.2 The symbolic side of organizational configurations

Scholars have often indicated that organizations also exhibit symbolic elements of cohesion. They assume the existence – explicitly communicated or implicitly held - of a central, relatively stable and distinctive set of principles that inspire organizational action. Organizations are endowed with symbolic understandings and meanings (Pfeffer, 1981) and provide individuals not only with coordination and learning, but also with identity feelings that derive from the very experience of participating in a social organization (Kogut & Zander, 1996). Organizational culture (Schein, 1984; Martin, 2002), organizational vision (Collin & Porras, 1996), organizational character (Selznick, 1957), central orchestrating theme (Miller & Friesen, 1984; Greenwood & Hinings, 1993) and organizational identity (Albert & Whetten, 1985; Whetten, 2006) are just some of the terms that management scholars have used to describe the symbolic and intangible dimensions that help firms maintain cohesion and momentum over times of change. The issue is also not new for institutional scholars. For example, Selznick (1957) theorized that a distinctive "organizational character" is achieved over time in an organization, thanks to the action and the inspiration of management. Meyer and Rowan (1977) underlined how strongly the symbolic dimension shapes the interaction between structure and action, as organizational members feel compelled to adhere to vivid cultural and symbolic preferences in the organization. Symbolic attributes, which reside both in organizational claims (the way organizational leaders present the organization) and members' understandings (the way organizational members frame the central characteristics of the

organizations) (Ravasi & Schultz, 2006), are thus constituting elements of organizational configurations, as they act as central and overarching connectors that facilitate internal fit.

The generality of these contributions in organizational theory suggests that cohesion with extant values is important for the maintenance of internal fit and become particularly relevant in periods of change, when the challenge is the adoption and integration of new structures and practices. For example, from the recent debate about organizational identity constructs (Gioia, Schultz & Corley, 2000; Corley & Gioia, 2004), we know that modification to symbolic dimensions is critical for change, for two reasons. In the first place, because whether strongly defined culture or organizational identity should favour or impede change is questionable. Second, because it is highly uncertain whether, and to what extent, organizations can modify their central and distinctive characteristics. Recent research shows that an explicit identity attribution, made clear through organizational leaders' claims, artifacts and other cultural objects, becomes even more important during periods of change as it provides individuals with historic cues that help them make sense of and interpret the ongoing change (Ravasi & Schultz, 2006). On the other hand, explicit identity attributes may be more difficult to modify, due to the solidification of interpretive frames (Whetten, 2006). The literature on cognitive inertia (e.g. Tripsas & Gavetti, 2000) reaches similar conclusions.

Therefore, the recognition of a specific symbolic character may help organizations frame change in a manner that is consistent with organizational history and., ultimately, embrace new initiatives. More broadly, organizations would be more receptive to the introduction of instances that are closer to their established symbolic attributes and may try to avoid or challenge the introduction of initiatives and practices that seem further from their traditional values.

4. RESPONSES TO SUBSTANTIAL AND SYMBOLIC FIT.

In order for the organization to achieve internal fit, and for a social environment to work properly, substantial and symbolic layers need to be integrated one with another. Above all, in times of stability, ordinary routines embed symbolic values, which they help preserve and replicate among organizational members. In order to carry out its objectives, an organization needs to show a consonance between its substantial elements (activities, procedures, structures, artifacts) and its symbolic elements (the values and symbolic understandings that organizational members attribute to those elements and to the organization in general). Both organizational leaders and organizational members continuously exploit these two levels to carry out their everyday activities and their strategic operations. So, for example, the way that HR departments conduct hiring interviews, the succession of colloquia, the criteria used to assess candidates' values are substantial elements (processes) that embody the leading cultural values of the company. The same applies to organizational artifacts. For example, the most important and recognizable products of a company may display characteristics that are reminiscent of organizational central characters.

Various scholars have suggested that routines have a connection with the symbolic layer of an organization. Routines are an observable device for DNA replication, as they permit the storage, conservation and transfer of organizational skills and knowledge (Baum & Sing, 1994; Feldman, 2000) based on the repetition and maintenance of specific way of doing things. Similarly, scholars interested in organizational identity have hypothesized that consistency in substantial organizational elements as substantial elements (policies, activities, strategies) is guaranteed by the common reference of a central set of values and symbolic propositions about the organization (Albert & Whetten, 1985).

On the other hand, the symbolic dimensions of an organization are present and visible to organizational members as they are revealed, more or less explicitly, by certain substantial elements. The pervasiveness and diffusion of symbolic elements in an organization allow newcomers to become integrated in a new organization, even when there is no formal time dedicated to "educating" them. The constant presence in a given environment leads the individual to, at least tacitly, understand the "way things are done around here".

Human ability to connect the two different layers is the motor that fuels the reciprocal and continuous connection between substantial and symbolic elements. The attribution to organizational elements of symbolic value cannot take place without active translation at the individual level, to link the symbolic and substantial dimensions over the course of their participation in organizational life.

Symbolic and substantial dimensions are two layers that sustain any organizational element. While it is useful to keep them separate for theoretical purposes – in order to analytically distinguish between actual practice and the value that organizational members and leaders attribute to it - in an organizational configuration we cannot talk about entirely substantial elements vs. entirely symbolic elements. So, for example, the HR policy that attributes equal salary increases to all organizational members without linking them to the individual annual evaluation has a substantial side (the policy itself) and a symbolic one, which is revealed when organizational members refer to this policy as an instrument that encourages active collaboration between colleagues, without introducing competition amongst colleagues. Depending on the level of substantial and symbolic fit of the new organizational element, the process of integration will face different challenges and unfold along different lines.

In the rest of this section I describe the organizational outcomes that follow the various quadrants of the matrix in table 1.

4.1. High substantial fit and high symbolic fit: Adoption.

Based on the framework laid down in the above, we would expect to observe a more rapid and smoother processes of integration when the new organizational element exhibits a high substantial fit – new routines show a high degree of interdependence and inter-functionality with extant ones – and high symbolic fit – the perception is of its driving values being coherent with those of the organization. When this occurs, we expect the patching process not to encounter major obstacles, as the new element integrates positively with the extant organizational elements. For example, the integration of corporate social responsibility accounting practices will be easier and quicker in an organization that has in place good reporting systems and capabilities (both systems and persons to carry out the task) and that has a tradition of attention to environmental and social issues. In this case, the new practice can quickly develop connections to extant practices (e.g. use of existing systems and instrument) and be accepted because of its coherence with the cultural values of the environment.

4.2. Symbolical misfit: Reinterpretation.

Another example is when a new practice has a high level of inter-functionality and interdependence with existing routines and organizational structures, (high substantial fit), but is perceived as being more distant from the current cultural and symbolic values held in the organization (low symbolic fit). In this case the process of integration and institutionalization does

not run as smoothly as in the previous case, as organizational members interpret the new instance as a threat to the dominant culture and to established values in the organization. For example, systems of corporate social responsibility reporting can be functionally integrated in an organization that has working reporting systems and experienced workers in this area. On the other hand, if the organization has a tradition of closure towards the external environment, for example, because there is poor information sharing within the company and with external shareholders, then the simple mandating of a new activity does not lead easily to its institutionalization. Organizational members might comply formally with functional and substantial requirements but, at the same time, may not fully embrace the initiative. This is often the case when new management, coming from the outside of the organization, implements a radical new initiative. A new leader might dictate new programmes and put in place all the substantial elements necessary to make them work. On the other hand, the introduction of new practices do not guarantee per se that the change is fully embraced by organizational members. Organizational members might adhere to new directions formally, but continue to consider the new procedures extraneous to the organizational culture. If this is the case, the new initiative might bring positive results, but is likely to be abandoned if when the management promoting it leaves the organization.

A poor level of symbolic fit, however, does not necessarily imply that the organizational element is bound not become integrated into the organization. The point is that, in order for this to happen, change proponents need to reframe and reinterpret the initiative in order to make it compatible with or more acceptable to organizational members. This could be achieved in two ways. First, change proponents could work on the meanings and cultural underpinnings of the new initiative, and try to establish linkages with the values currently in place. In the case referred to at the beginning of the paper, for example, the introduction of a process control practice into a company with strong pride in freedom for employees to use initiative to the point of allowing

improvisation, was also supported by an active strategy of re-narration of cultural values, when the management appealed to the characteristics of the employees that were conducive to accepting the new method (e.g. willingness to take responsibility in embracing new initiatives, trust in company leaders, willingness to outdo expectations, etc.) and downplayed the cultural instances that would make it more difficult to understand. Alternatively, successful integration of a low symbolic fit practice might entail a more pervasive reframing and re-narration of the cultural values of the organization. For example, when the six-sigma initiative is a central issue for top management, then the path toward integration might entail not only the reframing of the values of the new instance, but an attempt to reinterpret the entire organizational values and characteristics in order to make it better aligned with the new strategic direction. In this case, the company might move toward a process of identity change.

Also, we are now reflecting on a case where symbolic misfit is complemented by substantial fit, meaning that there are resources and skills that help the new routine be effective in a relative small amount of time. In this case the possibility to enforce the routine and possibly to see its beneficial effects may favour the process of acceptance by organizational members.

4.3. Substantial and symbolic misfit: Resistance.

The more difficult challenge in the integration of new organizational elements occurs when the new element exhibits a low level of substantial fit associated with a low level of symbolic fit. In this case, neither the current procedures and structures of the organization will be inclined to integrate the new elements, nor the cultural underpinnings will be compatible. This may be the case when highly codified and rigid accounting control and reporting principles are introduced into a small and entrepreneurial company. In this case, the organization might not have in place any competence or

structure that facilitates the integration of the new system (e.g. none of the current employees may have advanced experience with similar systems). At the same time, organizational members might perceive the new initiative as something that is very far removed from their current perception of the organization and its objectives. For example, employees in a company that has been run as a family or a kinship might see an increasing level of control and codification as an attempt to destroy organizational values, while also lacking the competences and systems to effectively implement the routines.

Why should an organization find itself in a position of having to integrate elements that are so distant and difficult to integrate with its current configuration? This might occur with the arrival of a completely new management team or the need to comply with requests that mandate procedural changes in the organization.

In this extreme case we would expect the process of integration to be more difficult. In order to achieve integration, management needs to work simultaneously on the two levels, by putting in place the skills and resources that sustain the effectiveness of the new initiative, and by making the change more understandable and desirable from a cultural point of view. Again, the effort on the cultural side is either to translate the new requests into language that makes sense and is acceptable to organizational members, or to promote a radical organizational change that question and evolves the central and distinctive elements of the organization. We suspect that low degree of fit from substantial and symbolic point of view tend to reinforce one another, so that the difficulty in overcoming the two obstacles can lead to active resistance from the organization to adoption of this change, or to the complete rejection of this change attempt.

4.4. Substantial misfit: Reconfiguration

The last case is when the new organizational element has a high level of symbolic fit, but a low level of substantial fit. In this case the new practice appears to have good potential for integration with the extant culture of the organization. Yet, it requires a reconfiguration of existing activities, because it needs competences and systems that are not currently present in the organization. We can expect something similar to this to occur when a system for social responsibility reporting needs to be implemented in a small, not-for-profit organization. Organizational members might seem at ease with the new idea, but the company might lack the skills and the systems needed to make the new system work effectively. Other cases might involve organizational change that requires the re-aggregation and disaggregration of activities according to a different logic. In this case, the change might appear attuned to organizational needs and be accepted by organizational members, but yet be more complex and time consuming than expected in entailing changes in and realignment of responsibilities and positions.

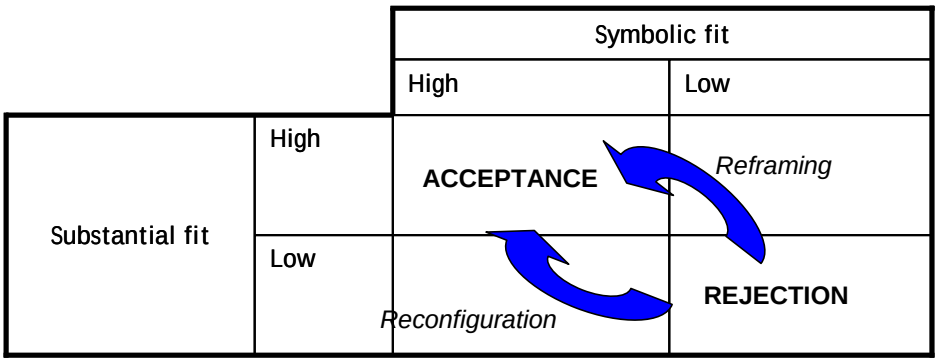
As in the other cases, we would expect that a lack of substantial fit does not imply, per se, failure of the change attempt. On the other hand, change initiatives that have a low degree of substantial fit should consider from the beginning a reworking and realignment with organizational processes. The risk is that an initiative that has a high level of symbolic fit, but a low level of substantial fit might run quite smoothly at the beginning, but that after some time the new project might be disbanded if it has not created an interdependence with a substantial substratum of the organization.

5. DISCUSSION: PROCESS OF PATCHING IN ORGANIZATIONAL CONFIGURATIONS

In the model outlined in the previous sections, I was considering an organization as a complex web – a configuration - of substantial and symbolic layers. In order for new organizational elements to become part of this subject, it is necessary to have or to develop over time, a certain degree of substantial and symbolic fit with extant elements. Coherent with Siggelkow (2002), and with both the literature on routines (Egidi, 1996; Jacobides, 2007) and the various streams that dealing with the symbolic elements of organizations (Albert & Whetten, 1985; Martin, 2002), the model assumes that in any configuration there are central elements that maintain cohesion and hold together other elements that lie at the periphery of the system.

The process of patching is thus a process where change proponents work in order to develop or strengthen the connections with existing organizational elements, both from a substantial and a symbolic point of view. In this sense, processes of change management are processes aimed at moving the situation towards the first quadrant, where both substantial and symbolic fit are high (Table 2). In the case of misfit of both substantial and symbolic elements, the challenge would be to take action in both directions, developing interdependence and cultural consonance with extant organizational elements. This may be very difficult to accomplish, so that the case of misfit might lead to failure of the patching process.

TABLE 2. DYNAMICS IN A MODEL OF SYMBOLIC AND SUBSTANTIAL FIT



How does the process of change unfold using a configuration perspective? In the framework depicted in the previous sections we can see a process of intra-organizational change that follows the adoption of a new organizational instance, as a movement from the outside of the organizational configuration towards its core. This movement is fuelled by the necessity over time to develop stable connections both substantially (i.e. developing a degree of interdependence with existing resources and skills) and symbolically (i.e. showing how the new practice can dialogue with organizational culture and identity).

In this sense, the view of organizational evolution proposed by this model shares some similarities with the translation process described by Czarniawska and Joerges (1996) and Zilber (2002, 2006). Translation is the active effort exerted by change proponents which is necessary to introduce new elements into an organization, and to link both their meaning and their operative details to existing meaning and practices. Somewhat differently from these contributions, we emphasize the dual level of translation that is necessary, that focused on symbolic understandings and that connected to the need to align with substantial organizational practices and structures. We want to convey the sense that "translation" is not an abstract metaphor related to the rhetoric and

persuasion strategies of change proponents, but is also grounded in the changes to routines and procedures within the organization.

6. CONCLUSIONS AND RESEARCH IMPLICATIONS

In this paper I have considered the configurational approach to organizations and identified the possibility to expand its reach by looking at the preconditions leading to internal organizational fit. Based on insights from the literature on organizational routines and organizational identity I distinguished between the notions of symbolic and substantial fit, highlighting the salience of inter-dependence of new organizational elements with extant stocks of skills and routines, as well as coherence with extant systems of meanings. This allows a configurational perspective to account for those cases where the integration of new elements encounters difficulties due to the processes of cognitive inertia or cultural clash. While the configurational approach has focused so far on the substantial side of organizational architectures, many important contributions in the field of organizational theory and strategy over time have underlined how symbolic dimensions can be extremely important for favouring or hampering change initiatives.

Integration of new organizational elements, thus, requires a positive degree of fit with both the symbolic and substantial elements of an organization. In the case of symbolic or substantial misfit we can expect that the process of institutionalization of the new instance will be aimed at building a better degree of fit, either by aligning the substantial elements of a configuration or by reinterpreting its consonance to the extant culture and values of the organization. This refined perspective broadens the reflection about intra-organizational institutional change, as it develops a more elaborated organizational design framework, which helps describe in more detail, the internal dynamics of social elements.

This model fills a gap in current organizational theory research, as it addresses in a more structured manner the topic of intra-organizational change. In this context, organizational research

tells us that groups and power coalitions are a part of the explanation, but that we can envision cases where the overall change dynamics cannot possibly be reduced to mere power conflict within the upper echelons. Integration of new organizational elements needs to overcome the challenge of achieving fit with extant routines and symbolic understanding, eventually leading to a reconfiguration of both the symbolic and the substantial elements that make up the landscape of a complex organization. In turn, these symbolic and substantial elements are reciprocally and hierarchically linked, so that the process of institutionalization in an organization can follow different paths, and be subject to different dynamics.

In particular, this model enables researchers to answer some questions related to organizational change that other frameworks leave in the background. For example, an explicit attention to symbolic fit might explain why organizations in low tech environments find it difficult to embrace change, even when there no technical impediments. The lack of symbolic fit between new proposed activities and the existing way of doing things can be seen as a major hurdle to an evolving organizational structure. Also, the configurational approach presents a frame and a terminology that allows scholars to examine and theorize change from the perspective of the "changing" firm, rather than the organizational field.

The model presented here lends itself to further development and specification. First, it would be interesting to investigate whether the unfolding of integration efforts does resemble a stage model process- such as hypothesized in the literature on institutional change, and how this differs in cases of different fit and misfit. An analysis of organizational settings with this end in mind could possibly improve our understanding of change and change models in organizations (Van De Ven & Poole, 1995).

I would argue that this paper fills a gap in the organizational theory literature, by providing a general model that favours the understanding and the description of intra-organizational change. For example, this conception has some consequences for the theories of organizational change, too. The effectiveness of institutional change does not rest solely on the technical validity of the new idea or mastery of the change management process, but on coherence with a general "orchestrating theme" (Greenwood & Hinings, 1993), which may reside in a managerial vision, an organizational talent or a special corporate culture, and that ultimately "glues" together existing organizational elements. Recognizing the existence and the interconnection of organizational elements (processes, activities and structures) may help researchers to come up with new ways to assess the integration of new organizational elements, instead of focusing only on the reactions of organizational actors, i.e. on the dimensions of change resistance vs. change acceptance dimensions.

Also the debate in the institutional literature could benefit from a more fine-grained specification of intra-organizational change. The institutional literature, for example, has mainly analysed institutional change as an exogenous variable. In this paper I suggest that intra-organizational institutional change is a topic that might benefit from a more elaborate understanding of the internal organizational landscape. I have shown how a perspective that distinguishes symbolic from substantial dimensions could help organizational studies develop new insights that might in turn inspire a better understanding and framing of the phenomena, in addition to further theoretical development and empirical research. For example, I assume the conceptualization of organizational landscape and of the process of institutionalization as a migration from the periphery to the centre of a configuration, could be a useful lens through which to study the process of new practice introduction or practice displacements (which is the opposite journey). It might be possible to discuss which organizational arrangements could help organizations better manage these

processes, and to identify the symbolic and substantial elements that stand out as main change enablers.

REFERENCES

Albert, S. & Whetten, D.A. 1985. Organizational identity. In L.L. Cummings & M.M. Staw (Eds.), *Research in Organizational Behavior*, 7: 263-295.

Barley, S. R. 1986. Technology as an occasion for structuring: Evidence from observation of CT scanners and social order of radiology department. *Administrative Science Quarterly* 31:78-108.

Baum , J.A.C & Singh, J,V. (eds), 1994. *Evolutionary dynamics of organizations*. New York: Oxford University Press.

Cohen, M.D., & Bacdayan, P. 1994. Organizational routines are stored as procedural memory: evidence from a laboratory study. *Organization Science*, 5: 554-568.

Collin J., & J. Porras. 1994. *Built to last.* New York: Harper Brothers.

Corley, K. G. & D. Gioia. 2004. Identity ambiguity and change in the wake of a corporate spin-off. *Administrative Science Quarterly,* 49: 173-208

Czarniawska, B. & B. Joerges. 1996. Travels of ideas. In Czarniawska, B. & Sevon, G. (eds) 1996. *Translating organizational change***.** De Gruyter, Berlin and New York. 13-48.

Dacin, M.T., J. Goodstein & R.W. Scott, 2002. Institutional theory and institutional change: introduction to the special research forum. *Academy of Management Journal* 45:45-57.

Drazin, R., & Van de Ven, A. 1985. Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, 30:514-539.

Egidi, Massimo (1996), 'Routines, Hierarchies of Problems, Procedural Behaviour: Some Evidence from Experiments' Pp. 303-333 in *The rational foundations of economic behaviour*, edited by K. Arrow, E. Colombatto, M. Perlman, and C. Schmidt. Macmillan: London.

Eliasson, G. 1996. *Firm Objectives, Controls and Organization: the Use of Information and the Transfer of Knowledge within the Firm.* Boston: Kluwer Academic Publishers

Feldman, M.S. 2000. Organizational routines as a source of continuous change. *Organization Science,* 11:611-629.

Fiss, P.C., & Zajac, E.J. 2006. The symbolic management of strategic change: sense giving via framing and decoupling. *Academy of Management Journal,* 49:1173-1193.

Gioia, D., Schultz, M., & Corley, K.G. 2000. Organizational identity, image and adaptive instability. *Academy of Management Review*, 25(1): 63-81.

Greenwood, R. and C.R. Hinings. 1993. Understanding strategic change: The contribution of archetypes. *Academy of Management Journal*, 35:1052-1081.

Greenwood, R., and C.R. Hinings. 1996. Understanding radical organizational change: bringing together the old and the new institutionalism. Academy of Management Review, 21: 1022-1054.

Henderson, R.M, & K.B. Clarck. 1990. Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms, *Administrative Science Quarterly*, 35:9-30.

Jacobides, M.G. 2007. The inherent limits of organizational structure and the unfulfilled role of hierarchy: Lessons from a near-war. *Organization Science*, 18:455-477.

Kogut, B. and U. Zander. 1996. What firms do? Coordination, identity and learning. *Organization Science* 7:502-518.

Martin, J.L. 2002. *Organizational culture: mapping the terrain.* Thousand Oaks, CA: Sage.

Meyer, J. W., and B. Rowan. 1977. Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology* 83:340-363.

Meyer, A. D., Tsui, A., & Hining, C. R. 1993. Configurational approached to organizational analysis. Academy of Management Journal, 36:1175-1195.

Miller, D. 1981 Toward a new contingency approach: the search for organizational gestalt. *Journal of Management Studies*, 18: 1-26

Miller, D. 1986. Configurations of strategy and structure: Towards a synthesis. *Strategic management Journal*, 7:233-249.

Miller, D. 1996. Configurations revisited. *Strategic Management Journal*, 17:505-512.

Miller, D., & P.H. Friesen.1984. *Organizations: a quantum view.* Prentice Hall, Englewood Cliffs, NJ.

Nelson R.R, & S.G. Winter, 1982. *An evolutionary theory of economic change*. Harvard University Press, Cambridge, MA.

Pfeffer, J. 1981. Management as symbolic action: the creation and maintenance of organizational paradigms. *Research in Organizational Behavior*, 3:1-52.

Ravasi, D. & M. Schultz. 2006. Responding to organizational identity threats: Exploring the role of organizational culture. *Academy of Management Journal*

Romanelli, E. , & M. L. Tushman, 1994. Organizational transformation as punctuated equilibrium: an empirical test. *Academy of Management Journal*, 37(5): 1141-1166.

Schein, E. H. 1992. *Organizational culture and leadership***.** San Francisco, CA: Josey-Bass.

Selznick, P. 1957. *Leadership in Administration***.** New York, Harper and Row.

Siggelkow, N. 2001. Change in the presence of fit: the rise, the fall ad the renaissance of Liz Claiborne. *Academy of Management Journal*, 44: 838-857.

Siggelkow, N. 2002. Evolution toward fit. *Administrative Science Quarterly*, 47: 125-159.

Sinha, K.K. & A.H. Van de Ven. 2005. Designing work within and between organizations. *Organization Science*, 16:389-408.

Tripsas, M., & Gavetti, G. 2000. Capabilities, cognition and inertia: evidence from digital imagining. Strategic Management Journal, 21: 1147-1161 **.**

Van de Ven, A. and S. Poole. 1995. Explaining development and change in organizations. *Academy of Management Review*. 20: 510-540.

Venkatraman, N. , & Camillus, J.C. 1984. Exploring the concept of "fit" in strategic management. *Academy of management Review*, 9:3:513-525.

Whetten, D.A. 2006. Albert and Whetten Revisited: Strengthening the Concept of Organizational Identity. *Journal of Management*, 15:219-234

Zajac, E.J., Kraatz, M. S., & Bresser, R.K-F. 2000. Modeling the dynamics of strategic fit: a normative approach to strategic change. *Strategic Management Journal*, 21: 429-453.

Zilber, T.B. 2002. Institutionalization as an interplay between actions, meanings and actors: The case of a rape crisis center in Israel. *Academy of Management Journal*, 45: 234-254.

Zilber, T.B. 2006. The work of the symbolic in institutional processes: Translation of retinal myths in Israeli high tech. *Academy of Management Journal*, 49: 281-303.

WE ARE WHAT WE DO (AND HOW WE DO IT): ORGANIZATIONAL IDENTITY AND TECHNOLOGY

Anna Canato, Davide Ravasi

ABSTRACT

Research in sociology and management has highlighted multiple interrelations between organizational technologies, technological artifacts and social cognition. In this paper we investigate how technological features of an organizations and/or its products may serve as a cue for the construction of members' collective sense of what the organization is and stands for – or, in other words, of the organizational identity. Building on past studies, as well as on our own research, we develop a framework for understanding the conditions under which technology features are likely to become incorporated by members in self-referencing thought and discourse, and the consequences of this fact on organizational decisions and actions. In doing so, our emerging framework may contribute to increase our more general understanding of how organizational features come to be perceived as part of the identity of the organization.

1. INTRODUCTION

Technology – broadly understood as tools, machines, and techniques for instrumental actions, as well as the beliefs and principles they embody (Woodward, 1965; Barley, 1990; Griffith, 1999) – is considered a central element for understanding organizations, as it affects both the way they are organized as well as the pattern of evolution of internal structures and processes (Woodward, 1965, Patel & Pavitt, 2000).

Past research on the influence of technology on organizational life has highlighted the interaction between technologies, technological features and the social structure of organizations (e.g. Barley, 1986: Orlikowski, 1992, D'Adderio, 2003), as well as the reciprocal influence between technology and managers' mental models (e.g. Garud & Rappa, 1994; Tripsas & Gavetti, 2000; Kaplan, Murray & Henderson, 2003). Collectively, these studies suggest that technology shapes how organizational members make sense of and organize their social reality. In this paper, we focus on a specific aspect of organizational sensemaking, that is how members develop and preserve a collective sense of what their organization is and stands for – or, in other words, of their organizational identity (Albert & Whetten, 1985; Brown, Dacin, Pratt & Whetten, 2006).

Past research has highlighted the influence of organizational identity on strategic processes (Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Ravasi & Schultz, 2006; Nag, Corley & Gioia, 2007) as well as internal social dynamics (Golden-Biddle & Rao, 1997; Glynn, 2000; Humphreys & Brown, 2002). Some studies have pointed at the role of leaders in shaping identity beliefs and understandings (Gioia & Thomas, 1996; Fiol, 2002). However, how certain specific features of the organization – values, practices, symbols or else – become part of what members perceive as their organization's identity is still unclear.

In this paper, building on past literature on organizational identity, as well as on our own research, we try to develop a framework for understanding i) under what circumstances technological features embedded in organizational products or processes are likely to be perceived as identity referents – that is as constitutive elements of the identity of the organization, and ii) how this fact influences organizational decisions and actions. In the next section we account for the main constructs and notions concerning organizational identity research and technology sensemaking. In section three, we propose some antecedents of technology as identity referent and we illustrate our arguments with reference to our own as well as published research. In the following section, we discuss the potential consequences of the inclusion of technological features among identity referents section. We conclude by discussing implications of our proposed interpretations for research on organizational technologies and organizational identities.

2. LITERATURE REVIEW

2.1 Organizational identity

Organizational identity was initially defined by Albert and Whetten (1985) as a set of features perceived by members to be central, enduring and distinctive of their organization. According to David Whetten, these features – or identity referents – contribute to craft a self-referencing narrative that help members construct a collective sense of self, and that satisfies organizational and individual needs for continuity, coherence and distinctiveness (Whetten & Mackey, 2002; Whetten, 2006). In this view, organizational identities are emotionally laden, stable and enduring self-descriptions or characterizations of an organization (Ashforth & Mael, 1996), underpinning deeply held beliefs, embodied in formal claims, that tend to change only rarely and never easily (Whetten & Mackey, 2002).

Empirical evidence of changing interpretations about the identity of organizations, however, has led other scholars to observe how members' beliefs about central and distinctive characters of their organization may indeed evolve in the face of internal and external stimuli (Dutton & Dukerich, 1991; Gioia & Thomas, 1996). In their view, organizational identities reside in shared interpretive schemes that members collectively construct in order to provide meaning to their experience (Gioia, 1998). These shared schemes may, or may not, correspond to the official narrative (Ashforth & Mael, 1996). Scholars embracing this perspective observe how substantial organizational changes tend to require alterations in the way members interpret what is central and distinctive about their organization. In other words, substantial changes require members to "make new sense"– i.e. to develop new interpretations – of what their organization is about (Fiol, 1991; Gioia & Chittipeddi, 1991).

Recent research suggests that these apparently conflicting perspectives may emphasize different aspects of the construction of organizational identities (Ravasi & Schultz, 2006). Together, they suggest how organizational identities arise from processes of sensemaking and sensegiving, through which members periodically re-construct shared understandings and revise formal claims of what the organization is and stands for.

2.2 Constructing organizational identities

Even if OI scholars may disagree on where organizational identities mainly reside – members' beliefs, claims, or even fleeting images – or on whether they are more or less prone to change, most researchers tend to agree on the idea that organizational identities are the product of social construction (Corley, Harquail, Pratt, Glynn, Fiol, & Hatch, 2006). How organizational identities are constructed – or, in other words, how a certain feature or a categorical descriptor of the organization comes to be perceived as a self-defining attribute – however, is still unclear.

According to David Whetten, making sense of an organization is a process based largely on inter-organizational comparison. In other words, developing an understanding of what an organization is and stands for requires members to define how and to what extent it is different from and/or similar to other comparable organizations (Whetten & Mackey, 2002). Past research has shown how, on the one hand, members may draw on existing social categories – i.e., broadly accepted labels that are used to encompass a certain type of organization – to position their organization within a social space. For organizations engaged in market competition, for instance, a particularly relevant subset of categories may be represented by clusters of competitors sharing similar strategies (firm scope, resource commitment, etc.) and a common "strategic group identity" (Peteraf & Shanley, 1997). In their respective industries, general categories such as "low cost carrier" (airline transportations), "bank-assurance" (financial services), or "vertical retailer"

(fashion apparel) are associated to a subset of strategic and structural choices that can be used, not only to identify the organization within its market space, but also as a template for organizing choices.

On the other hand, when members' attention shifts to issues of differentiation, they may be more likely to search for cues inside the organization. Past research has shown, for instance, how members' interpretations of what their organization is and stands for may draw on various sources of cues, such as collective practices (Pratt & Rafaeli, 1997), shared professional backgrounds (Glynn, 2000), organizational artifacts (Brunninge, 2007), or even refracted images (Dutton & Dukerich, 1991). In particular, past research has observed how organizational culture may serve as a powerful referent, helping organizational members substantiate their identity claims and express their perceived uniqueness in terms of collective values and their embodiment in practices, rituals, and artefacts (Albert & Whetten, 1985; Ravasi & Schultz, 2006). Both organizational identity and culture can be considered as collectively shared interpretive schemes (Fiol, Hatch & Golden-Biddle, 1998; Hatch & Schultz, 1997). Whereas culture tends to be mostly tacit and rooted in shared practices, organizational identity is more consciously self-reflexive (Pratt, 2003), helping members make sense of what they do in relation to their understanding of what their organization is (Fiol, 1991).

It is generally understood that, as members invoke the identity of their organization or ask questions about it in different circumstances, they are likely to produce different answers (Albert & Whetten, 1985), as different claims and beliefs may be more or less salient (Ashforth & Johnson, 2001) to the issue that members are called to address. While members of a given organization may share various identity referents – some based on social categories, others based on organizational features – only some of these referents may be perceived as relevant to a given issue. How a certain feature comes to be included – explicitly or implicitly – among the identity referents of an

organization, however, is much less understood.

In this paper, we focus on one potential referent – organizational technological features – and we develop a tentative framework for understanding how these attributes come to be perceived as part of the identity of an organization.

2.3 Technology and social cognition

Building on the seminal work of Joan Woodward (1965) on the relative appropriateness of different organizing principles for different production technologies, in the last few decade research has investigated the influence of technology on organizational structures and processes and vice versa (DeSanctis & Scott Poole, 1994; Barley, 1996; Orlikowski, 2000, 2007). Although over time organizational scholars have proposed various interpretations of the broad concept of technology (see Orlikowski 2000; 2007 for a review), there seems to be a convergence on the idea that technology needs to be understood both in its physical dimension – e.g. the structural features and properties of material artefacts such as machineries, products, or components of end products – and in its cognitive dimension – i.e. a set of goals and beliefs defining the appropriate way of accomplishing a task, designing and/or using an object, etc. (e.g. Dosi, 1982; Weick, 1990; Orlikowski, 1992, 2000, 2007; De Sanctis & Poole, 1994; Garud & Rappa, 1994; Kaplan & Tripsas, 2007).

Past research has emphasized how, on the one hand, structural and cognitive features of a technology are the result of social processes occurring at organizational or institutional level (e.g. Bijker, Hughes & Pinch, 1987; Garud & Rappa, 1994; Kaplan & Tripsas, 2007), while on the other they contribute to shape social interaction and the social order within which they are embedded (Barley, 1986; De Sanctis & Poole, 1994). Garud and Rappa's (1994) study of the evolution of Cochlear implants, for instance, shows how the development of a technology within a social

environment requires the interaction between the physical forms and functions of an artefacts with the beliefs that engineers and managers hold concerning the logic of usage of the technology, its main characteristics and its evaluation metrics. Eventually, then, the establishment of a given technology in the market does not derive only from the physical and functional properties of technology itself, but also from the institutionalized routines through which technological "improvements" are assessed. These routines rest on criteria that are by no means "objective", but reflect relatively shared beliefs and expectations of the actors involved. In doing so, commonly accepted beliefs and expectations come to influence the direction of technological trajectories, and become "externalized as artefacts (Garud & Rappa, 1994: 347)."

Within organizations, defining technology as composed by physical and cognitive features highlights the interaction between tangible features and the mental models of organizational members (Weick, 1990; Griffith, 1999). Recent research has shown how extant mental models influence, often unconsciously, how technological advancements are interpreted and responded to, suggesting the idea that technological evolution can hardly be disentangled from the beliefs held by influential individuals within an organization (Tripsas & Gavetti, 2000; Kaplan, Murray & Henderson, 2003). The case of Polaroid described by Tripsas and Gavetti (2000), for instance, shows how inferior choices about technology development may be caused by the unwillingness to abandon entrenched beliefs about the relative superiority of certain technologies and technological features that are at the core of previous successful products and strategies.

What these studies collectively suggest is that in addition to the requirements that organizational technologies pose on organizational structures and processes – as first evidenced by Joan Woodward – social schemata and social structures themselves tend to affect how technologies are developed and used in organizations.

2.4 Technology and sensemaking

Scholars that have studied technology adoption and usage have investigated the way in which individuals and groups adapt and interact with new artefacts and technologies in organizations (e.g. Barley, 1986, 1990; Leonard-Barton, 1988; Dean, Yoon & Susman, 1992; Orlikowski, 2007). Based on empirical findings, this stream of literature has progressively abandoned a deterministic view of technology, where machines and infrastructures have structures that dictate and shape individual and organizational responses, in favour of a more nuanced and interpretive perspective that stresses the relevance of the process of sense making and appropriation of new artefacts and their design logics (Weick, 1993; De Sanctis & Poole, 1994). Empirical findings show consistently how users actively shape and modify technology characteristics, exploiting the equivocality of technological artefacts and their adaptability to different social environments (Weick, 1990). These scholars have focused mainly on the interaction between designers, artefacts and users, and the processes of sense making and appropriation that derive from the translation and adaptation of designers' cognitive logics, as embedded in technology artefacts, to users' cognitive domain (Orlikowski, 1992; De Sanctis & Poole, 1994; Orlikowsky, et al. 1995; D'Adderio, 2003).

Other scholars have addressed a similar research question at a higher level of analysis, and investigated how technology dimension can affect sense making at organizational level, i.e. how technology characteristics can affect the pattern of evolution and learning of organizations. For example, Leonard Barton (1992) discussed how, thanks to the local nature of learning processes, extant technologies and competencies limit the possibilities of future developments and constrain innovation opportunities. According to Leonard-Barton, such rigidity is not only linked to the cost of developing organizational knowledge in more than one direction, but also to the specific beliefs and values that inspired the development of those competencies in first place. Later on, Tripsas and Gavetti (2000) extended this line of inquiry, by showing how entrenched managerial understandings

of core organizational technologies tend to halo opportunity interpretation and future strategic decisions, therefore contributing to strategic inertia. More recently, Kaplan, Murray and Henderson (2003) have provided large scale quantitative evidence of how mental models influence how a new technology is interpreted by senior managers, and therefore, how they respond to it and the courses of action that are adopted.

These two streams of research show the reciprocal influence of technology and sensemaking, both at individual and organizational level. However, while on the one hand, the influence of mental models on individual and organizational responses to new technologies has been investigated in the past, both conceptually (e.g. Griffith, 1999; Weick, 1995) and empirically (e.g. Tripsas & Gavetti, 2000; Kaplan, Murray & Henderson, 2003), less is known about how technological features of an organization – e.g. the tools, machines and techniques used in manufacturing and administrative activities, as well as the design principles and technological attributes of its final products (i.e. their materials, components, functions, etc.) – become cognitive anchors, acting either as a source of stimuli or inertia in the face of environmental change.

In the next section, we propose that one of the ways in which technological features may come to influence organizational members' cognitive processes is by becoming embedded in relatively shared beliefs and understandings about what the organization is and stands for – or in other words, by becoming *identity referents*.

3. TECHNOLOGY AS AN IDENTITY REFERENT

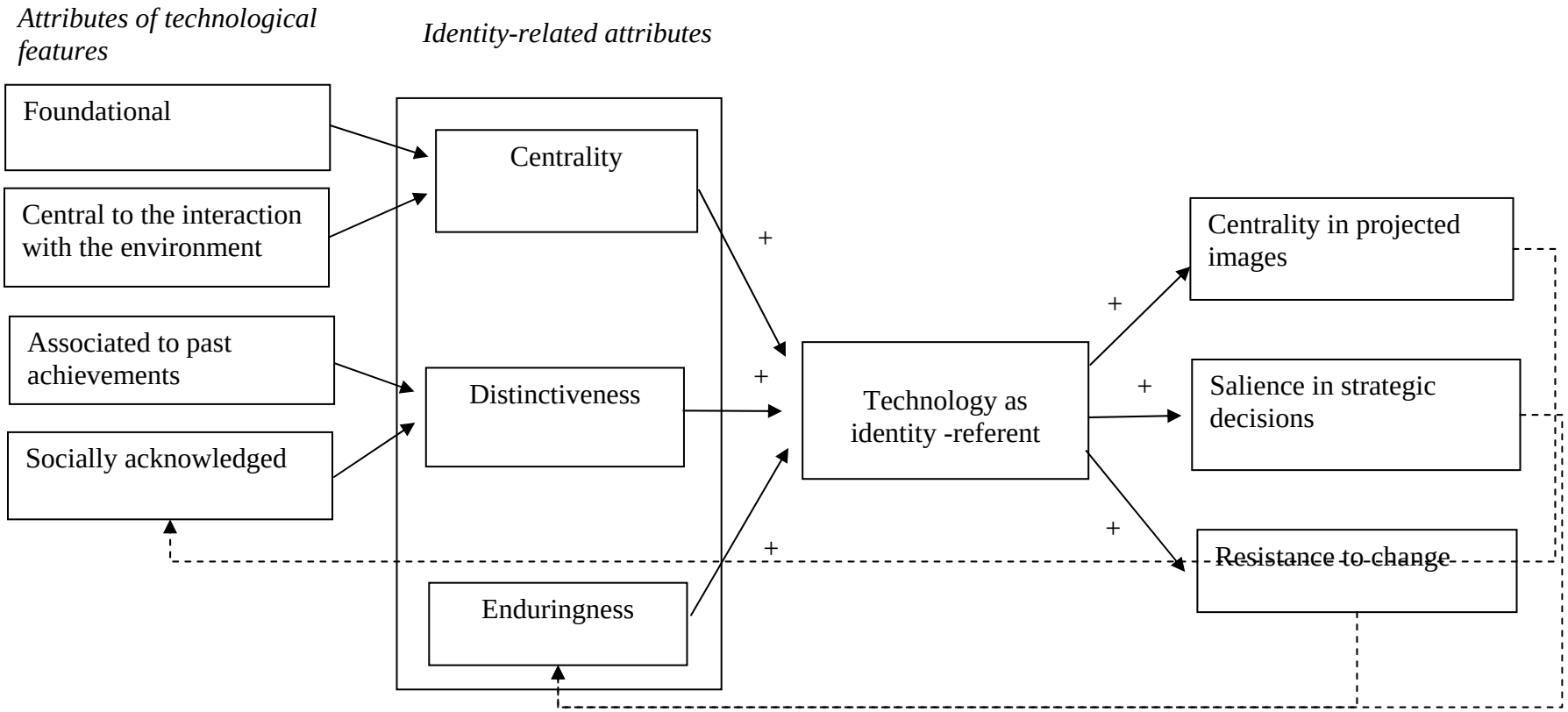
Despite the overall relevance of organizational technologies for organizational strategies, structures and processes, we would expect organizations to vary in the degree of significance they ascribe to technology attributes. As previous research has shown, while most organizations are periodically engaged in changes in their production systems, information systems, product technologies, etc., occasionally, some of them display a tendency to resist the alteration of some of their technological features (e.g. Leonard-Barton, 1992; Tripsas & Gavetti, 2000).

Anecdotal evidence from research on organizational identity suggests a connection between *organizational technologies* – e.g. the core technologies of an organization (Ravasi & Schultz, 2006; Fiol, 2002), the routines underlying how instrumental tasks are accomplished (Nag, Corely & Gioia, 2007), the technological features of organizational products (Ravasi & Schultz, 2007; Brunninge, 2007) – and *organizational identity*. In this respect, organizational responses to external pressures for the alteration of some of its technological features might be explained by the emotional and cognitive reaction to the alteration of features that are perceived as part of the identity of the organization (Reger, Gustafson, Demarie, & Mullane, 1994). How technological features become part of members' identity beliefs in the first place, however, is still poorly understood.

According to Davide Whetten (2006), not all organizational descriptions (or self-descriptions) qualify as *bona fide* identity claims – or, in other words, would be highly emotionally laden and influential on organizational actions (Lerpold, Ravasi, Soenen & van Rekom, 2007) – but only those that refer to attributes that are generally believed to be central, enduring and distinctive. In this paper, following Whetten (2006), we argue that the likelihood that a certain organizational feature becomes an identity referent depends on the extent to which the focal feature is perceived as central, distinctive and enduring.

In this section, we propose four potential factors increasing the likelihood that a given technological features comes to be perceived as central and distinctive – hence to be considered as an identity referent. Then, in the following section, we indicate some potential consequences of the inclusion of technological features among organizational identity referents, among which a resistance to technological changes, which may results in the increased enduringness of the feature (see Figure 1). In turn, as displayed by the feedback loop in the figure, we expect the long-lasting commitment to a given feature to further reinforce member's perception of it as a fundamental identity referent.

Figure 1. Organizational identity and technology



3.1 The centrality of technological features

As highlighted in the previous paragraph, centrality refers to the extent to which a certain feature is perceived by members as essential to the survival of the organization as it is; a feature without which the organization would no longer be, or would become something different from what has been so far (Albert & Whetten, 1985). In family-owned business firms, for example, the active participation of family members to the management and control of the organization is often reputed essential for the organization to be considered as "family business". The decision of family members to relegate themselves to the role of pure investors may be resisted (or, conversely, be advocated) because of the changes in managerial philosophy, human resource policies, and in the overall atmosphere, that would result from changing perceptions of what the organization is (and, therefore, how it should be managed) that would follow the loss of family members' involvement, in spite of the *de facto* preservation of the "family-owned" condition.

An organizational feature, then, is defined as central when it is considered by its members as one of the fundamental attributes of the organization itself, shaping and conditioning decisions about more peripheral structural features and processes. In organizations, some features (such as, for instance, the corporate form or the mission of the organization) provide a sense of direction, or, as David Whetten says, "constrain and give meaning (2006: 225)" to lower level choices (such as human resource policies or pricing decisions). They provide a sort of a template against which potential courses of actions are evaluated and judged as "appropriate" or "inappropriate". Whenever actions and decisions are perceived as violating these features, emotional responses may arise in the organization, as members are likely to resist, debate and challenge courses of action that contravene their for coherence and continuity (Dutton & Dukerich, 1991; Golden-Biddle & Rao, 1997; Ravasi & Schultz, 2006).

Organizations, however, unlike individuals, have few if any "objective" identity referents such as

gender, or ethnicity, that tend to naturally – and often implicitly – condition self-perception and influence other choices regarding personal lifestyle, professional career, or sentimental relationships. As social artefacts, organizations are by definition social constructions, subjected to continuous re-shaping and re-interpretation by internal and external actors, and there are few if any objective referents, such as industry or geographical location, that members cannot alter, should they really wish to do so (Whetten, 2003). Perceived or claimed constraints, therefore, should be looked for somewhere else. In particular, we argue that a given technology – or, more generally, a given feature – may come to be perceived as central to the organization to the extent that: i) it is historically associated with the foundation of the organization or other major turning points in the life of the organization, and ii) it underlies the pattern of activities and relationships which ensures the equilibrium of the organization in its environment.

Foundational features and centrality

As social constructions, organizations are not "naturally" born with certain traits: their features – such as their legal form, their geographical location or their activity – are the result of more or less conscious, more or less deliberate choices of their founders. Once taken, however, these fundamental choices are likely to be taken as "given" and shape the identity of the organization in the following years (Whetten, 2003). In the future, alterations of "foundational" features may encounter emotional or cognitive resistance as they imply a change in what may be considered as a "natural" characteristic of the organization (Reger et al., 1994). Eventually, the relative ease with which change occurs will depend also on the perceived distinctiveness (is the feature perceived as making the organization comparatively better than others?) and endurance (has the feature been around for a long time?) of the attribute (Whetten, 2006). We will return later on the interrelations between centrality, distinctiveness and enduringness.

If we accept this notion, a technology can be considered as "foundational" if it is somehow

connected to the foundation – or, sometimes, a re-foundation – of the organization. Several firms are founded in order to exploit a specific technological innovation embodied in a new product or production process. Their initial structures, strategies and patterns of activities may be constructed around this technology. To the extent that these technological features will be associated to corporate success, later on, corporate mythology may trace an explicit link between the founders – or other prominent members – and innovative technological features or innovations on which the fortunes of the organization were built. Eventually, this technology – or technological feature – would become embedded in organizational self-referencing narratives and in members' beliefs as a central feature of the organization, to be preserved, refined, developed even when economic or commercial concern would suggest otherwise.

Take the case of Piaggio, an Italian manufacturer of motorcycles, scooters and other light vehicles, currently one of the leading global competitors in the 2-wheel business. Before the Second World War, Piaggio was one of the largest national producers of airplanes, trains, trams, and other means of transportation. During the war, production focused on war supplies. After the war, Piaggio had to quickly convert its production into something commercially viable. In the late forties and early fifties, the rebirth of the company was linked to the development of what became the archetypal scooter, Vespa: a light motorcycle, whose frame – so the myth says – was obtained by legendary designer Corradino D'Ascanio from the steel plate of an airplane, bent in order to provide ample frontal protection for the legs and a comfortable footrest. Mr. D'Ascanio was an aeronautical engineer and he did not like motorcycles: the new product, therefore, incorporated a number of features, from the gear change on the hand-grip to the bodywork completely covering the working parts, aimed at increasing comfort and simplicity of operation.

The quick commercial success and the immense popularity around the world in the years to come made of Vespa a landmark for the entire organizations. In the late seventies and early the

eighties, the product seemed to gradually lose its appeal in the face of the multitude of smaller and cheaper scooters made available by the introduction of plastics – a technology mastered by Japanese manufacturers. The decline of Vespa seriously affected the financial conditions of the company. In the mid eighties, therefore, the company's efforts focused on the expansion of its range with new models based on the less expensive plastic technologies. However, although no really new Vespa models had been developed since the PX version in 1977 – with the exception of a failed attempt to revamp the concept, which was commercialized under the name of Cosa ("Thing"), reflecting what some observers describe as an "identity crisis" – the company refused to terminate the production of its flagship product, until eventually in the mid nineties designers and engineers decided to re-propose the old scooter in an entirely revamped version. As the chief engineer at Piaggio told us:

> If we had insisted on proposing Vespa as our core product, clients might have doubted that we were able to produce anything else. We absolutely had to demonstrate that we were able to make good plastic scooters. (…) Once we did that, we could re-propose Vespa as our reference product.

While the new model was vastly redesigned in order to include more modern technical solutions, some features were preserved even if they countered current trends in scooter designs. Among these was the metal body – by then, a unique feature that no other competing product sported anymore. As the head of the design centre remarked:

> Vespa has to be metallic: that's the bottom line. (…) Vespa has always had this rather maternal backside, very enveloping, and a somewhat slim, bony-looking front part rounded just right, but still made out of a single metal sheet with great industrial savvy.

According to a corporate historian, the decision, which substantially affected the industrial cost of the product, was profoundly linked with a collective sense of self which was re-captured in the design of the new product:

> [it] meant the revival of celebrated moulding factory, the nucleus around which production was centred until the eighties, when every two-wheeled Piaggio, from the PX to the mopeds, was in sheet metal. (…) There is said to be a certain amount of pride in those one the production line, who feel they are somehow involved in carrying on the special metal-working tradition (…) It's a question of collective identity, workmanship ability, professional updating and, at the same time, link with the past (Mazzanti & Sessa, 2003: 274-275).

As a Piaggio manager observed, touching Vespa "involves the very identity of the company".

Eventually, a strong sense of what was central to the company and its core products – even from a technological point of view – had ensured the preservation of a unique identity on the market, embodied in its Vespa scooters, which was central in the late nineties to the turnaround of the group.

Proposition 1. *The tighter the perceived connection between a technological feature and the foundation – or re-birth – of an organization, the higher the likelihood that it will come to be perceived as an identity referent.*

Organizational advantage and centrality

Although management scholars belonging to different schools of thought may differ in their focus of attention – the organization vs. the environment – they tend to agree, nevertheless, that the survival of organizations depends on the interaction between environmental conditions and the pattern of resources and activities that characterizes an organization. The type of resources that are possessed and used and the way activities are structured and carried out influence both the legitimacy of the organization in the eye of its constituents, and the quality of its output. Ultimately, then, the success (or survival) of an organization depends on whether and how organizational resources and activities confer a relative advantage (or disadvantage) in the competition for scarce resources (Porter, 1980; Barney, 1991).

Research in management has shown how, at any point in time, organizations are characterized by relatively coherent configurations of resources and activities (Miller & Friesen, 1984; Siggelkow, 2002). These patterns of resources and activities result partly from deliberate strategic choices and partly from the sedimentation of less conscious decentralized actions (Mintzberg, 1979), and they define the way in which an organization interacts with the external environment – or, in other words, its "strategy" (Porter, 1996). According to Michael Porter (1996), successful organizational

strategies rest on a few core concepts (such as cost minimization in the case of Southwest Airlines, or "design at low cost" for Ikea), which give sense, coherence and direction to the pattern of activities carried out by the organization. In this respect, it has been argued that organizational identity and strategy perform similar functions (Ashforth & Mael, 1996), and several studies have shown multiple interrelations between organizational strategies and identity beliefs (Collins & Porras, 1996; Gioia & Thomas, 1996; Corley & Gioia, 2004; Ravasi & Schultz, 2006).

If we accept this notion, then, it is not unreasonable to think that in organizations characterized by successful models of interaction with the environment – in organizations engaged in market-competition we might refer to them as their "business models" – members come to consider as central those features that drive more general choices shaping the pattern of resources and activities. On the one hand, as central to the business model, these features are likely to be acknowledged as essential for the survival of the organization; challenging these features may be perceived as endangering the equilibrium on which survival rests and the very future of the organization. On the other hand, altering these features are likely to imply a further round of changes in the rest of the organization – its structures, its commercial policies, its reward systems, etc. – which may as well result in a profound transformation of the organization as members know it and understand it.

The case of Benetton, an Italian producer of fashion apparel operating on a global scale, is illustrative of the link between the configuration of resources and activities underpinning organizational advantage and the perceived centrality of a technological feature. Between the 1980s and 1990s, Benetton became a global leader in the apparel industry, thanks to a well-honed business model, much celebrated in the management narrative and pedagogy (e.g. Stevenson, Martinez & Jarillo, 1989; Camuffo, Romano & Vinelli, 2001). Benetton's business model rested on a few innovative features – a network of independent franchisees providing frequent feedback about changing customers' preferences, a proprietary technology enabling to dye finished wool products,

a sophisticated automated warehouse reducing delivering time throughout the world, and colourful and provocative advertising campaigns supporting the slogan “United Colours of Benetton”.

The combination of these features allowed Benetton to establish a dominant brand in the mass segment of the fashion industry, leveraging on its capacity to respond quickly and effectively to shifting customers’ preferences. In the late 1990s and early 2000s, however, Benetton’s successful business model was seriously challenged by a new cohort of competitors, led by the Spanish group Inditex (better known for its Zara chain) and the Swedish retailer H&M, adopting a so-called “fast fashion” model, based on a tighter interaction between the retail outlets and the design centres at the headquarters, and on a more frequent, almost obsessive, renewal of the collections (Ferdow, Lewis & Machuca, 2004).

Benetton’s response was slow and, as one of its managers admitted later, conditioned by its technological heritage. While in the managerial folklore Benetton had been often described as a flexible, light organization, embedded in a network of subcontractors and franchisees, the reality was different. The company was highly integrated upstream: around 60% of its sales were produced in-house and the company even owned large sheep farms around the world. On the one hand, for a mass-market, global brand such as Benetton, vertical integration had ensured high efficiency of large scale productions and tight control on the quality and timing of the process. On the other hand, the presence of the large plants, constantly required managers in terms of saturating the productive capacity, covering the fixed cost of the workforce, etc. The industrial heritage of the organization, however, seemed to affect its responses to external changes in a more subtle way. As a manager put it:

> Of course sheep and workers are a constraint. But the real constraint is not material: it is a matter of identity. (…) Genetically, Benetton is a manufacturer: Zara and H&M have a history as retailers (…) The unanswered question now is: will Benetton become a retailer or not?

The difference was not purely semantic. The “manufacturing” identity and tradition, for instance, brought managers at Benetton to assess performance in terms of “sell-in” (items sold by the

company to the network of franchisees), rather than "sell-out" (items sold in the shop to the customer). Pricing was determined as a mark-up on industrial cost. Product development followed the logic of seasonal collections (to be presented to the franchisees), rather than the logic of the in-shop assortment (to be proposed the final clients). Production was spread over twelve months to smooth down production peaks, rather than quickly adjusting to market demands. While these practices had work well for several years, in a relatively stable and predictable environment, the arrival of fast fashion had changed the rule of the game. In the eye of its managers, effective response to the new challenge required substantial changes in the way sales were monitored, products were developed, production was planned, etc. In turn, these changes seemed to imply a more profound revision of the widespread conceptualization of the organization, which underpinned its business model.

As the case of Benetton illustrates, a successful model of interaction with the environment rests on an internally coherent set of activities and resources, embedded in a web of cultural practices and schemes, and underpinned by a relatively shared organizational identity. Changing model of interaction – changing "strategy" – therefore, often requires an alteration in the commonly – albeit tacitly – held beliefs about what the organization is (Gioia, Thomas, Clark & Chittipeddi, 1994; Ashforth & Mael, 1996). In this respect, organizational technologies that are central to these pattern of activities may come to influence the very way in which organizational members understand their organization, potentially limiting their capacity to envision alternative models that would disrupt the equilibrium that is associated to those technological features. In summary:

Proposition 2. *The higher the centrality of a technology for the model of interaction between an organization and the environment, the higher the likelihood that it will come to be perceived as an identity referent.*

3.2 The distinctiveness of technological features

In the previous section, we have proposed that features that are perceived as "foundational" and central to the business model of an organization are more likely to be perceived as central to the organization, hence, to become part of its identity. However, not all features that characterize the organization at its inception and/or define its current mode of interaction with the environment are equally likely to be considered as identity referent. Individual and organizational identities satisfy both needs for coherence and continuity, *and* self-esteem (Ashforth & Mael, 1996; Whetten & Mackey, 2002). Organizational identity referents, therefore, should be perceived as both central *and* distinctive (Albert & Whetten, 1985; Whetten, 2006).

According to Whetten (2006), organizational attributes may satisfy members' needs for self-esteem to the extent that they make the organization positively different – or *distinguished* – from competitors and other comparable organizations. It is not sufficient that a certain feature makes the organization *different* from but also *better than* others: such difference, in other words, should be perceived as increasing the social standing of the organization – hence of its members. In this respect, we argue that the likelihood that a technological feature comes to be perceived as an identity referent is related to i) the extent to which the focal technology is related to past organizational achievements, and ii) the extent to which the focal technology has earned the organization widespread social acknowledgement. It is not unusual for these factors to coincide, as superior technologies and product design may not only let the organization succeed in competition, but also earn the organization social recognition in the form of design awards, favourable press coverage, positive expert feedback, improved reputation, etc.

Past achievements and distinctiveness

Many organizations are, occasionally or systematically, engaged in some forms of inter-organizational contests, such as sport races for carmakers (Rao, 1994) or the annual competition for

status that takes place among fine restaurants (Rao, Monin & Durand, 2005) or wine makers (Benjamin & Podolny, 1999). Success in these contests is usually perceived externally – but also internally – as a sign of superior capabilities (Rao, 1994). Other organizations may be silently engaged in more subtle contests, as they compete for the introduction of technological innovation, the establishment of industry standards, the pre-emption of distribution channels, the geographical expansion, the attention of the media, etc. More generally, most business firms are involved in market competition, and tend to gauge their performance in relative terms by comparing their turnover, growth rates, financial ratios, and market share with their competitors.

Organizational features that make an organization particularly successful in these contests may have a profound impact on members' collective imagery and sense of self. Even in "unofficial" competitive contests, extraordinary success may be marked by specific events (the introduction of a radically innovative product, the disclosure of outstanding results, etc.) that underlie the primacy of the organization over its competitors. As pride and enthusiasm for the organizational accomplishment spread throughout the organization, merits are likely to be attributed to organizational features such as people, practices, products, technologies or else. Eventually, stories will diffuse and myths will arise, celebrating these features and shaping retrospective reconstruction of the causes of organizational success (Boje, 1995). In turn, as members engage in a more or less explicit attempt to make sense of what distinguishes their organization from competitors, these "memories" encased in the organizational narrative may provide them with commonly accepted reference points to define how and why the organization is not just different, but *superior* to other comparable ones (Ravasi & Schultz, 2007).

In the early seventies, for instance, managers at Bang & Olufsen, a Danish producer of high-quality and high-design audio video systems, engaged in a reflection on what made their company different from their competitors. The reflections were meant to reinforce commercial strategies

aimed at countering the rising threat of Japanese producers, to provide guidelines for communication efforts and to imbue with meaning the new slogan: “We think differently.” The obvious starting point for the company was the highly popular products that had reaped design awards in recent years. A review of the way successful products had been designed in the last ten years brought to the identification of seven fundamental principles of product design, which were presented to the rest of the organization as the Seven Corporate Identity Components (CICs).

During the sixties, attention to design and user experience had intensified under the leadership of product developer Jens Bang and chief designer Jacob Jensen. Panels of trained listeners and viewers were set up to test the fidelity of sound and image reproduction as perceived by human senses rather than by an artificial device. Design principles codified in the Seven CICs underpinned an approach to product design that, as one of our informants put it, unlike most of its competitors started from users and developed products around them rather than the other way around.

Simplicity and essentiality had characterized the philosophy of the company and the design of its products since the very beginning (Bang & Palshøy, 2000). Influence of the Bauhaus movement in art and design is evident in early material expressions of the company: from the first B&O logo, dated 1932 and readopted in 1994, to products like the bakelite Beolit 39 radio. Later, the Seven CICs elaborated on the concept, observing how simplicity should inspire concept development (Essentiality), the design of human–machine interfaces (Domesticity and Autovisuality), and even customer information (Credibility). Over the years, the search for simplicity inspired such milestones as the Beomaster 1900 audio system, where user interfaces were designed to facilitate access to music reproduction, and the one-thumb integrated remote control, the Beolink 1000, connected to all the video and audio sources in a house (Bang & Palshøy, 2000).

Although their popularity waxed and waned throughout the years, in the following three decades, the Seven CICs represented a fundamental reference point for organizational members. While later

on corporate mottos and espoused cultural values changed, reflecting the shifting focus of business strategies, the Seven CICs – an emblem of a golden age culminated in the exhibition of the company's products at the Museum of Modern Arts in New York in 1976 – were never forgotten and periodically reappeared in different forms in internal communication, training material, and corporate statements, to illustrate the unchanged principles which, in the eye of its members, have kept Bang & Olufsen viable in an increasingly competitive market (Ravasi & Schultz, 2007).

In summary:

Proposition 3. *The tighter the relationship between a certain technological feature and an organization's competitive achievements, the higher the likelihood that it will be considered as an identity referent.*

Social acknowledgement and distinctiveness

A considerable body of research indicates that members' beliefs about the identity of the organization tend to be influenced also by how the organization itself is portrayed by external actors, such as customers (Ravasi & Schultz, 2006), public opinion (Dutton & Dukerich, 1991), and the media (Elsbach & Kramer, 1997). Past research has shown how members' beliefs and understandings about their organization tend to mirror the feedback that they receive from external audiences (Dutton & Dukerich, 1991; Hatch & Schultz, 2002). As the seminal study by Dutton and Dukerich (1991) indicates, of all the potential identity referents of an organization, organizational leaders and members will emphasize those that seem to resonate with the impressions and expectations of the general public. If we accept this notion, then, it is not unreasonable to expect that technological features that seemed to receive a broad social acknowledgement – hence contributing to cast the organization in a favourable light in the eye of its external audiences – are more likely to be included among the identity referent of the organization.

At times, widespread social acknowledgement may be associated to triumph in the inter-organizational competitions mentioned above (Rao, 1994). Such is the case, for instance, of companies such as carmaker Alfa Romeo or motorcycle producer Ducati, whose members are proud to remind how few or no companies in their respective fields have won as many races as they have in their history. Similarly, at Bang & Olufsen, member's pride for the excellence of their design was reinforced by the numerous awards that their products were granted. Finally, it is not unreasonable to think that managers may be unwilling to abandon features that are celebrated in the management narrative as well as acknowledged in class discussions as central and unique to their success cases.

Organizations, however, may not gain social recognition only for their successes. Organizations, for instance, are constantly evaluated by the media and the public on the conformity of their actions to social values and expectations (Meyer & Rowan, 1977). While organizations may not be deliberately engaged in a competition for public goodwill, actions that are consistently perceived as respectful of social concerns may earn a company a positive social acknowledgement in the form or favourable media coverage or supportive consumer advocacy (Fombrun, Gardberg, & Barnett, 2000). Under certain circumstances, an organization may even acquire the status of "celebrity" (Rindova, Pollock & Hayward, 2006). Finally, but not less important, some organizations, their products or brands may acquire a particular significance within society, as they become more or less publicly associated with certain values, lifestyles, people or objects (Rindova & Ravasi, 2007). In these cases, as the organization and/or its product become embedded in the cultural world, external interpretations about what the company is and stands for may become rooted in the culture and eventually condition the evolution of members' beliefs.

Take for instance the case of Scania, a Swedish producer of trucks, buses and engines (Brunninge, 2007). In 2005, Scania was the last European manufacturer to discontinue the production of bonneted cab trucks – the once dominant design, where engine was placed under a

bonnet in front of the driver's cab. The viability of bonneted cab trucks compared to the alternative design – the cab-over-engine trucks – had initially been questioned in the 1960s, when, in the face of rising European length restrictions, the higher comfort of bonneted cab trucks was offset by the lower transport capacity, as cargo space was sacrificed for the front "nose" of the truck. Consequently, most manufacturers soon abandoned the design, as the decreasing sales volumes would not cover the development costs of new products. At Scania, however, the decision to discontinue the development and production of bonneted cab trucks came much later and not without an intense debate (Brunninge, 2007).

As Olof Brunninge's study shows, while other producers gradually abandoned bonneted cabs, Scania continued investing and developing new lines until eventually, in Europe, the name of Scania became strongly associated with bonneted cab trucks. Overtime, however, the market for bonneted cabs became smaller and smaller. Nevertheless, Scania kept producing bonneted cab trucks even when their share on the total turnover of the company became minimal and their profitability questionable. The first proposals to discontinue the production of bonneted cabs were met with "uproar", as members refused to even consider such a decision – despite the apparent profit-orientation of the company.

The bonneted cab was perceived as representing "the essence of Scania" (Brunninge, 2007: 27). In fact, in 2000 an internal manual, defining design principles for Scania trucks, used mostly stories and examples from old trucks from the 1960s and 1970s, most of which were bonneted cab. Externally, Scania managers found in the popular appeal of bonneted cab trucks arguments reinforcing their beliefs. In fact, among the general public, bonneted cab trucks were still popular, perhaps due to the anthropomorphic appearance that the bonnet conferred them. Indeed, a common story at Scania observed how children, when asked to draw a truck, they intuitively drew a bonneted cab: that was how a truck – a Scania truck – was supposed to look like.

Eventually, even Scania had to surrender to the shrinking sales volume of the once dominant design: while bonneted cabs – like steam engines – still enjoyed high popularity among the public, economic concerns among clients undermined their commercial viability. The Scania case, however, is illustrative of how the way in which technological features of an organization and/or its products become embedded in social and cultural understandings may co-evolve with internal interpretations and decisions: while, on the one hand, external interpretations are partly the result of organizational decisions (such as persisting in the production of bonneted cab trucks when all the other producers are not), one the other hand, they may eventually come to reinforce – or constrain – internal interpretations of what is central and distinctive of the organization.

Proposition 4. *The higher the extent to which a technological attribute is socially acknowledged, the higher the likelihood that is will come to be considered as an identity referent.*

4. THE CONSEQUENCES OF TECHNOLOGY AS AN IDENTITY REFERENT

In the previous section, we have argued how technological features that are associated to foundational moments in the life of an organization, central to its business model, related to past accomplishments, and widely acknowledged by external audiences are more likely to become part of members' beliefs about central and distinctive features of their organization – or, in other words, to become identity referent. In this section, building on past research on organizational identities, we explore how, by being embedded in shared identity beliefs, these technological features will affect and be affected by organizational processes. In particular, we argue that technological features that become identity referents will be more likely than other features to become salient in strategic decision making (Albert & Whetten, 1985; Dutton & Dukerich, 1991) and to be emphasized in projected images of the organization (Hatch & Schultz, 2002) – or, in other words, to be reflected in its identity claims – and they will be less likely to be discarded in the face of external or internal pressures (Ravasi & Schultz, 2007, Nag et al., 2007).

4.1 Identity referents and strategy making

Research on organizational identity has shown how organizational features that are perceived as central and distinctive to an organization tend to influence how strategic decisions unfold (see Lerpold et al., 2007 for a review). According to Whetten (2006), organizational identities are most likely to be invoked in novel, consequential strategic choices, expected to have a profound effect on the organization. Ravasi and Schultz (2006) have shown how changes in the competitive environment may be perceived as "identity threats" – and addressed as such – to the extent that they

challenge the viability of central, enduring and distinctive features of an organization. Under these circumstances, organizational leaders would try to maintain a consistency between the past and current identity of the organizations, and its future evolution. While not always conscious, this drive reflects a fundamental human need to maintain direction and cohesion in action. In this respect, Ashforth and Mael (1996) have trace explicit links between organizational identity and strategy, emphasizing how the former underpins the latter in providing guidance and meaning to individual action.

As new strategic issues arise, therefore, organizational members will look for responses that are perceived as coherent with the identity of the organization, and identity-referent technological features may inspire, orient, or even constrain the search for solutions. At Scania, for instance, as concerns for general safety in the case of collision arose throughout Europe and truck manufacturers were expected to find solutions, designers proposed a reinterpretation of the traditional bonneted cab, which used the front "nose" to buffer the impact of the crash and reduce damages to other vehicles (Brunninge, 2007).

This is not to say that, in presence of strongly held organizational identity referents, change will be impossible, but that strategic decisions would need to pass a test of coherence with the extant self-referential mental models of organizational members. In this respect, organizational identities that are based on stringent definitions and few, narrowly understood identity referents may restrain the capacity of organizational leaders to envision new identity-congruent patterns of activities in the face of changing external conditions. Conversely, the adaptability of an organization may be increased by the inclusion among identity referents of broader, process-based technical capabilities, rather than specific technological features. Despite the immense popularity and success of products such as Post It and the Scotch tape, for instance, 3M was always considered by its members an "innovation company", rather than an "adhesive company", allowing for continuous growth and

exploration of new technologies and businesses. In summary:

Proposition 5. *Identity-referent technological features of an organization will be more likely to become salient to strategic decision making and to shape its outcome.*

4.2 Identity referents and resistance to change

While organizations may be reluctant to dispose of identity referents, they may eventually do so under internal or external pressure. As the case of Scania shows, however, this occurs rarely and never easily. Research on organizational identities has provided robust evidence of the unwillingness of organizational members to drop features that are perceived as part of the identity of the organization (Humphreys & Brown, 2002; Ravasi & Schultz, 2006; Nag et al., 2007). The replacement of identity referents or the introduction of new features that are perceived as incoherent with the identity of the organization may threaten members' sense of self and continuity, therefore eliciting emotional resistance to the proposed changes (Whetten & Mackey, 2002). New features may also require an adaptation of current mental models, unleashing the opposition of confused members who are required to revise their understanding of what the organization is and what it stands for (Reger at al., 1994). Finally, organizational changes that touch identity-relevant features may be resisted as it may result in an alteration of established working practices and social relations that are underpinned by the identity of the organization (Nag et al. 2007).

For all these reasons, technological features that are internally perceived as central and distinctive characteristics for the organization, would display a natural tendency to resist change even against commercial, technical and economic considerations. Sometimes, as in the case of Scania, this status only delays an inevitable process of replacement in the face of compelling external changes. Other times, such as in the case of Piaggio and the steel frame of Vespa scooters, identity-related technologies survive contingent adverse conditions and are eventually preserved

through short-term, or short-sighted, pressures. As the case of Polaroid described by Gavetti and Tripsas (2000) seems to indicate, however, it is not uncommon that the stubborn refusal to challenge central, foundational, distinguishing technological features of the organization eventually results in undermining the very conditions of its survival in the face of radical environmental changes.

Proposition 6. *Identity-referent technological attributes of an organization will be less likely to be discarded in the face of external or internal pressures.*

4.3 Identity referents and projected images

While, in an attempt to increase the appeal of the organization to external audiences, it is not uncommon for organizational claims – as manifested in corporate communication, advertising campaigns, organizational leaders' public speeches, etc. – to depart from what can be reasonably supported by actual organizational features, such incoherence is hardly sustainable in the long run (Fombrun, 1996; Hatch & Schultz, 2002). Under normal circumstances, attempts to deliver a favourable image of the organization to its various audiences are likely to draw – more or less consciously – on members' beliefs about what is essential and distinguishing of their organization. By doing so, members genuinely manifest their beliefs and aspirations about the organization (Hatch & Schultz, 1997, 2002), try to avoid dangerous incongruence between what they claim and what they believe their organization really is and does (van Riel, 1994), and possibly search for consensus based on convergence of values with external audiences (Scott & Lane, 2000).

To the extent that certain features – including technological features – are perceived as central and distinguishing, therefore, they are likely to surface in organizational communication. Think, for instance, of the traditional emphasis of Benetton on colour (as summarized in the tagline "United Colours of Benetton", but also reflected in the image selected for advertising campaigns, etc.),

reflecting the organization's unique dyeing technology, or the emphasis of Toyota on quality, reflecting its massive efforts in developing superior manufacturing techniques. Sometimes, the connection may be the result of explicit and deliberate efforts. In the late 1990s, for instance, Bang & Olufsen launched an organization wide initiative aimed at ensuring that local communication and sales behaviour emphasized superior technological features – such as mechanical micro-movements and anodized aluminium surfaces – which were rooted in what were considered core technological capabilities, and had survived the severe restructuring of the early 1990s as central to the identity of the organization (Ravasi & Schultz, 2007). Other times, the relation between identity features and organizational communication may be more subtle and hard to decipher for external audience. Think, for instance, at the popular Volvo logo, which reproduces the outline of a modern three-point safety belt – a technology introduced by Volvo, reflecting its traditional concern for passengers' safety. As these cases also illustrate, the extent to which certain features are widely and positively acknowledged by external audiences reinforces the likelihood that they will be central to projected images. In summary:

Proposition 7. *Identity-referent technological features will be more likely to be emphasized in projected images of the organization.*

4.4 From centrality and distinctiveness to endurance

In the previous section, we have pointed at how past research on organizational identity has observed how identity-related features are likely to be preserved over time. In part this occurs because of a more or less explicit resistance of members to proposed organizational changes that question the set of referents over which their conceptualization of the organization is built. In part this occurs more subtly as, under normal circumstances, strategic decisions as well as organizational claims tend to reflect and build on current identity beliefs. In doing so, these decisions commit the

organization to the preservation and reinforcement of these features, as strategic decisions will be backed up by investments and organizational communication will create expectations that will have to be met. In this respect, while the a claim of endurance was initially proposed as a constitutive requirement for "true" identity features, these observations seem to indicate that endurance may as well be both an antecedent *and* a consequence of the inclusion of a feature in the identity of an organization.

The claim of endurance has been the subject of an intense debate, as some scholars challenged the notion that identity is comprised only of those features that are preserved over time, even when everything else changes (Corley et al., 2006). Advocates of a social construction perspective, such as Dennis Gioia and colleagues, have observed how organizational adaptation to a changing environment may require a periodic renegotiation of the fundamental understandings shared by its members (Gioia, Schultz & Corley, 2000). While formal claims may remain the same, then, the underlying meanings may evolve as do expectations and demands from the environment. Recently, in a contribution aimed at clarifying and strengthening the notion of organizational identity, David Whetten has addressed these concerns about the rigidity of a strict interpretation of the concept endurance by observing how even relatively "recent" feature may come to be perceived as identity referent insofar as they are associated to "irreversible commitments" – i.e. to decisions that clearly signal the intent of an organization to commit to a certain feature and to make it central to its policies and practices (Whetten, 2006).

In this paper, we build on this discussion – and on the analysis carried out in the previous sections – to suggest a partially different view. We propose to consider endurance not as an input, but as an outcome of the process that leads a certain organizational feature to be included among identity referents. In other words, we argue that a given feature is not considered an identity referent simply because it has been around for a long time, but that it will be retained over time even amid

other changes exactly because it is considered an identity referent – i.e. something that is central and distinguishing for the organization.

In the specific case of technological features, we argue that the willingness to preserve a given technological feature is a choice that organizational members have to face at different points in time, as changes inside and outside the organization come to question current ways of designing products, of producing them, etc. If we accept this notion, then, endurance can be conceived as a consequence of a more or less explicit understanding of a given technological feature as central and distinctive to an organization. In turn, because of the implications described in the previous section (i.e. emotional and cognitive resistance, salience to strategic decisions, and centrality in projected images) the inclusion of a certain technological feature among identity referents will result in the retention of certain technological features even when other opportunities for technological change may arise. This path will ultimately lead to the stabilization of technologies in organizations, as the identification of a specific set of technological knowledge as relevant cognitive dimensions of the organizations would make organizational leaders and members less willing to abandon established configurations and induce them to continue over the same technological trajectory.

Proposition 8. *The inclusion of a certain technological feature among identity referent will increase the likelihood that it will be retained over time even in the face of external or internal pressures for change.*

5. CONCLUSIONS

In this paper, we have investigated some antecedents and consequences of the inclusion of certain technological features of an organization among organizational identity referents – that is among those features that are likely to be part of collective self-conceptualizations of an organization. Based on the idea that identity referents are characterized by centrality, distinctiveness and enduringness, we have identified potential antecedents in the foundational nature of a technological feature, its centrality in the model of interaction between the organization and its environment, its association with past achievements, and its social acknowledgement. We have also identified three potential outcomes of the inclusion of technological attributes among identity referents, namely, the emphasis in projected image, the salience to strategic decisions, and the relative resistance to replacement. We have also argued how these consequences are likely to feed back on the endurance of the attribute and on its social recognition, with reinforcing effects on their identity-related status.

We believe that our emerging framework may contribute to both literature in the fields of technology and organizational identity. On the one hand, we expand studies of technology in organization by tracing a link between technological features and some of the cognitive structures, namely organizational identity beliefs and understanding, which drive individual as well as collective behaviour in organizations. More specifically, we observe how, under certain conditions, technological features may become embedded in relatively shared and emotionally laden members' conceptualizations of what the organization is and stands, which in turn will lead to consolidate the incorporation of the feature in organizational processes and products. In doing so, our paper expands our understanding of the cognitive processes that underpin the use, preservation and replacement of technology in organizations.

On the other hand, our paper attempts to extend current theorizing on organizational identity, by addressing explicitly the factors that influence the likelihood that a given organizational feature will become an identity referent and under which conditions this will happen. Furthermore, we have attempted to disentangle the interrelation between centrality, distinctiveness and endurance, by suggesting how the three attributes of identity referents may be tied by longitudinal, mutually constitutive relationships. We are aware that we have only begun to tackle the issue of how certain features – and not others – become embedded in members' beliefs and understandings about the identity of their organization. By no means we consider our potential antecedents as exhaustive of the possible range of factors that cause a certain feature to become an identity referent. The processes our model describes seem to occur spontaneously, as certain interpretations – and not others – emerge and consolidate among members. However, research shows that certain actors may have interests in shaping emerging interpretations and do engage in it (e.g. Gioa & Thomas, 1996; Humphreys & Brown, 2002). Indeed, future research, may be aimed at developing a more comprehensive understanding of how relatively "emergent" processes of identity construction, such as those we described in this paper, are affected by deliberate attempts at influencing shared beliefs – and how these two parallel dynamics influence identity constructions in organizations.

REFERENCES:

Albert, S. & Whetten, D.A. 1985. Organizational identity. In L.L. Cummings & M.M. Staw (Eds.), *Research in Organizational Behavior*, 7: 263-295.

Ashforth, B. E. & Johnson, S. A. 2001. Which hat to wear? The relative salience of multiple identities in organizational contexts. In Hogg, M. A. and Terry, D. J. (eds.) *Social identity processes in organizational contexts*, pp. 31-48.

Ashforth, B.E. & Mael F. 1996. Organizational identity and strategy as a context for the individual. *Advances in Strategic Management* 13: 19-64.

Bang, J. & J. Palshøy. 2000. Bang & Olufsen, Vision and legend. Denmark: The Danish Design Center.

Barley, S. 1986. Technology as an occasion for structuring. *Administrative Science Quarterly*, 31:78-108.

Barley, S. 1990. The alignment of technology and structure through roles and networks. *Administrative Science Quarterly*, 35: 61-103.

Barney, J.B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17:99-120.

Benjamin, B. A. , & Podolny, J. M. 1999. Status, quality and social order in the California wine industry. *Administrative Science Quarterly*, 44: 563-589.

Bijker, W.E, Hughes, T.P. & T.J. Pinch. 1987. *The social construction of technological systems: New directions in the sociology and history of technology*. Cambridge, Mass.: MIT Press.

Boje, D.M. 1995. Stories of the storytelling organization: A postmodern analysis of Disney as "Tamara-Land". *Academy of Management Journal*, 38: 997

Brown, T. J.; Dacin, P.A., Pratt, M. G., Whetten, D. A. 2006. Identity, intended image, construed image and reputation: an interdisciplinary framework and suggested terminology. *Journal of the Academy of Marketing Science*, 34: 99-106.

Brunninge, O. 2007a. Scania's bonneted trucks, in Lerpold. L., Ravasi, D., Soenen, G. & van Rekom, J. (eds.) *Organizational Identity in Practice*, London: Routledge.

Brunninge, O. 2007b. Handelsbanken and Internet Banking, in Lerpold. L., Ravasi, D., Soenen, G. & van Rekom, J. (eds.) *Organizational Identity in Practice*, London: Routledge.

Camuffo, A., Romano, P., Vinelli, A. 2001. Back to the future. Benetton transforms its global network, *MIT Sloan Management Review*, Fall: 46-52.

Collins, J. & Porras, J.I. 1996. *Built to last*. New York: Harper Business.

Corley, K. G. & Gioia, D. A. 2004. Identity ambiguity and change in the wake of a corporate spin-off, *Administrative Science Quarterly*, 49: 173-208.

Corley, K., Harquail, C.V., Pratt, M. Glynn, M.A., Fiol, M. & Hatch, M.J. 2006. Guiding organizational identity through aged adolescence. *Journal of Management Inquiry*.

D'Adderio, L. 2003. Configuring software, reconfiguring memories: the influence of integrated systems on the reproduction of knowledge and routines. *Industrial and Corporate Change*, 12: 321-350.

Dean, J. W., Yoon, S. J., & G. I. Susman. 1992. Advanced manufacturing technology and organizational structure: Empowerment or subordination? *Organization Science*, 3: 203-229.

De Sanctis, G., & M. Scott Poole. 1994. Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, 5(2):121-147.

Dosi, G. 1982. Technological paradigms and technological trajectories. *Research Policy*, 11: 147-162.

Dutton, J. & Dukerich, J. 1991. Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal*, 34: 517-554.

Elsbach, K. D., & Kramer, R. M. 1996. Members' responses to organizational identity threats: encountering and countering the Business Week rankings. *Administrative Science Quarterly*, 41: 442-476

Ferdows, Lewis e Machuca, 2004. Rapid-fire fulfilment. *Harvard Business Review*, Nov.-Dec.

Fiol, M. C. 1991. Managing culture as a competitive resource: An identity-based view of sustainable competitive advantage. J*ournal of Management*, 17: 191-211.

Fiol, M., Hatch, MJ. & Golden-Biddle, K. 1998. Relationships between culture and identity. In D. Whetten e Gofrey (Ed.), *Identity in organizations: Developing theory through conversations*. Thousand Oaks, CA: Sage

Fiol, M. C. 2002. Capitalizing on paradox: The role of language in transforming organizational identities. *Organization Science*, 13 (6): 653-666.

Fombrum C.J., Gardberg N.A., Barnett M.L. 2000. Opportunity platforms and safety nets, corporate citizenship and reputational risk. *Business and Society Review,* 105: 85-106.

Garud, R., & Rappa, M.A. 1994. A socio-cognitive model of technology evolution: the case of cochlear implants. *Organization Science*: 5(3): 344-362.

Gioia, D. A, Schultz, M. & Corley, K 2000. Organizational identity, image and adaptive instability. *Academy of Management Review*, 25: 63 – 82.

Gioia, D.A. & Chittipedi, K. 1991. Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal*, 12:433-448.

Gioia, D. A. & Thomas, J. B. 1996. Identity, image and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly*, 41: 370-403.

Gioia, D., Thomas, J. B., Clark, S. M. & Chittipeddi, K. 1994. Symbolism and strategic change in academia: The dynamics of sensemaking and influence. *Organization Science*, 5: 363-383.

Gioia, D.A. 1998. From individual to organizational identity. In D.A. Whetten & P.C. Godfrey (eds.), *Identity in organizations: Building theory through conversations*. London: Sage Publications

Glynn, M.A. 2000. When cymbals become symbols: Conflict over organizational identity within a symphony orchestra. *Organization Science*, 11: 285-299.

Golden-Biddle, K. & Rao, H. 1997. Breaches in the boardroom: Organizational identity and conflicts of commitment in a nonprofit organization. *Organization Science*, 8: 593-609

Griffith, T. L. 1999. Technology features as triggers for sensemaking. *Academy of Management Review*, 24: 472-488.

Hatch, M. J. & Schultz, M. 1997. Relations between Organizational Culture, Identity and Image. *European Journal of Marketing*, 31/5: 356-65.

Hatch, M. J. & Schultz, M. 2002. The dynamics of organizational identity. *Human Relations*, 55: 989-1018.

Humphreys, M. & Brown, A. D. 2002. Narratives of organizational identity and identification: A case study of hegemony and resistance. *Organization Studies*, 23(3): 421-447.

Kaplan S., & Tripsas, M. 2006. Thinking about technology: applying a cognitive lens to technical change Working Paper.

Kaplan S., Murray, F., & Henderson, R. 2003. Discontinuities and senior management: assessing the role of recognition in pharmaceutical firm response to biotechnology. *Industrial and Corporate Change*, 12: 203-233.

Leonard-Barton, D. 1988. Implementation as mutual adaptation of technology and organization. *Research Policy*, 17: 251-267.

Leonard-Barton, D. 1992. Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journa*l, 13: 111-126.

Lerpold, L., Ravasi, D., Van Rekom, J., & Soenen, G. 2007. *Organizational identity in practice.* Routledge.

Mazzanti, D. & O. Sessa. 2003. *Vespa. Italian Style for the world.* Giunti Editore, Firenze.

Meyer, J. , & Rowan, B. 1977. Institutionalized organizations: Formal structure as myth and ceremony." *American Journal of Sociology* 83:333-363.

Miller, D., & Friesen. P.H. 1984. *Organizations: a quantum view*. Prentice Hall, Englewood Cliffs, NJ.

Mintzberg, H. 1979. *The structuring of organizations.* Prentice Hall: Englewood Cliffs, NJ.

Nag, R., Corley, K. G., & Gioia, D. A. 2007. The intersection of organizational identity, knowledge and practice, *Academy of Management Journa*l, 50(4): 821-847.

Orlikowski, W. J. 1992. The duality of technology: Rethinking the concept of technology in organizations. *Organization Science*: 3(3):398-427.

Orlikowski, W. Yates, J. Okamura, K. & Fujimoto, M. 1995. Shaping electronic communication: the meta-structure of technology in the context of use. *Organization Science*: 6: 423-444.

Orlikowski, W. 2000. Using technology and constituting structures. A practice lens for studying technology in organizations. *Organization Science*, 11:404-428.

Orlikowski, W. 2007. Sociomaterial practices: Exploring technology at work. *Organization Studies*, 28: 1435: 1448.

Patel, P., & K. Pavitt. 2000. How technological competencies help define the core (not the boundaries) of the firm. In: Dosi, G., Nelson, R.R. and Winter S.G. (eds). *The nature and the dynamics of organizational capabilities*, Oxford University Press, Oxford: 313-333.

Peteraf, M. & Shanley, M. 1997. Getting to know you: A theory of strategic group identity. *Strategic Management Journal*, 18: 165-187.

Porter, M.E. 1980. *Competitive strategy.* Free Press, New York.

Porter, M.E. 1985. *Competitive advantage.* Free Press, New York.

Porter, M.E. 1996. What is strategy? . *Harvard Business Review*, Nov-Dec.

Pratt, M. G. & Rafaeli, A. 1997. Organizational dress as a symbol of multilayered social identities. *Academy of Management Journal*, 40:862-898.

Pratt, M.G. 2003. Disentangling collective identity. In J. Polzer, E. Mannix, & M. Neale (Eds.), *Identity issues in groups*: *Research in managing groups and teams*, 161-188. Stamford, CT: Elsevier Science Ltd.

Rao, H. 1994. The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the American automobile industry: 1895-1912, *Strategic Management Journal*, Vol. 15, pp. 29-44.

Rao, H., Monin P., Durand, R. 2005. Border crossing: Bricolage and erosion of categorical boundaries in French gastronomy. *American Sociological Review*: 70:968:991.

Ravasi, D., & M. Schultz. 2006. Responding to organizational identity threats: exploring the role of organizational culture. *Academy of Management Journal*, 49: 433-458.

Ravasi, D., & M. Schultz. 2007. Organizational culture and identity at Bang & Olufsen. In Lerpold, L., Ravasi, D., Van Rekom, J., & Soenen, G. 2007. *Organizational identity in practice.* Routledge, p. 103- 119.

Reger, R. K., Gustafson, L. T., DeMarie, S. M., Mullane, J. V. (1994) Reframing the organization: Why implementing total quality is easier said than done. *Academy of Management Review,* 19: 565-584.

Rindova, V., Pollock, T. and Hayward, M. 2006. Celebrity Firms: The Social Construction of Market Popularity. *Academy of Management Review* 31: 50–72

Scott S.G. & Lane V.R. 2000 A stakeholder approach to organizational identity. *Academy of Management Review* 25: 43-62.

Siggelkow, N. 2002. Evolution toward fit. *Administrative Science Quarterly*, 47: 125-159.

Stevenson, H. H., Martinez, J. I., Jarillo, J. C. 1989. Benetton S.p.A , Harvard Business School Publications.

Tripsas, M., & Gavetti, G. 2000. Capabilities, cognition, and inertia: Evidence from digital imagining. *Strategic Management Journal*, 21: 1147-1161.

Weick, K. 1990. "Technology as equivoque" in P. Goodman and L. Sproull (Eds.), *Technology and organizations*, San Francisco, CA: Jossey-Bass.

Weick, K. 1995. *Sense-making in organizations*. Thousand Oaks, CA: Sage.

Whetten, D. A. 2003. A social actor conception of organizational identity. Unpublished manuscript.

Whetten, D. A. & Mackey, A. 2002. A social actor conception of organizational identity and its implications for the study of organizational reputation. *Business and Society*, 41(4): 393-414.

Whetten, D. A. 2006. Albert and Whetten revisited. Strengthening the concept of organizational identity, *Journal of Management Inquiry*, 15 (3): 219-234.

Woodward, J. 1965. *Industrial organization*. New York: Oxford University Press.

HOW DO I KNOW WHO YOU ARE? A COMPARATIVE ANALYSIS OF METHODS IN ORGANIZATIONAL IDENTITY RESEARCH

Anna Canato, Davide Ravasi

ABSTRACT

The notion of organizational identity (OI) was initially introduced in management studies in 1985. In the following twenty years, however, very few articles that focused on organizational identity dynamics have been published in top tier journals. A vibrant debate about how to conceptualize organizational identities and related topics (multiple identities, identity change, identity, image and culture, etc.) does not seem to have corresponded to explicit reflections about specific methodological issues that underlie OI studies. Researchers that are willing to undertake a study of organizational identities are left alone to find out reasonable criteria to identify appropriate sources of data and methods of interpretation (Whetten, 2006). In this paper we inductively review methods adopted by OI studies published in top level journals, with the purpose of deriving insights about the current status of the research practice and stimulating discussion about its possible evolution.

1. INTRODUCTION

In management studies, organizational identity (OI) research seems to have gained momentum over the last decade. As the increasing number of conference papers witnesses, "central, distinctive and enduring" attributes of an organization, and the ways in which they are expressed by organizational leaders and interpreted by organizational members look like an appealing topic both to management theorists and behaviorists. OI and related dimensions have been used to investigate topics including strategic decisions (Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Nag, Corley & Gioia, 2007), reaction to environmental changes (Elsbach & Kramer, 1996; Ravasi & Schultz, 2006), social dynamics in cultural and non-profit institutions (Golden-Biddle & Rao, 1997; Glynn, 2000; Voss, Glen & Voss, 2006), organizational commitment and cooperative behaviors (Bartel, 2001; Dukerich, Golden & Shortell, 2002; Foreman & Whetten, 2002) and others.

Recently, some prominent scholars in the field have tried to systematize the theoretical foundations of OI research, acknowledging the existence of different, although interrelated, perspectives on what organizational identity is and the way it affects organizational life (Whetten, 2006; Corley, Harquail, Pratt, Glynn, Fiol, & Hatch, 2006; Brown, Dacin, Pratt, & Whetten, 2006; Lerpold, Ravasi, van Rekom & Soenen, 2007). This debate is central to laying down a more conscious understanding of currently employed perspectives, for example by recognizing the difference and the complementarity between a more interpretive or institutional take on organizational identity, and by systematizing the vocabulary that has been evolving over the years.

Such conceptual debate clearly distinguishes between different constructs such as *organizational identity* (a global property of an organization, embodied in collective claims and beliefs about central, distinctive and enduring attributes of the organization), *perceived organizational identity* (the single individual's understanding of organizational identity traits), and *identification* (again an individual level variable, investigated in organizational behavior studies, that measures the level of emotional and psychological attachment of the individual to the organization). Furthermore, in an attempt to further "unpack" the OI construct, some scholars (Ravasi & Schultz, 2006; Lerpold, Ravasi, van Rekom & Soenen, 2007) have started distinguishing between *organizational identity claims* (the fundamental traits of the organization as exposed in public documents and speeches), *organizational identity beliefs* (the understandings that organizational members have with respect of company fundamental attributions), and *organizational identity aspirations* (the way that organizational leaders and members portray the envisioned and desired future status of the organization).

However, despite the vitality of the debate about the core constructs, their interrelation and their relevance for organizational studies, the number of empirical studies published in top-tier journals still seems to be relatively small. Although the conceptual foundations of the topic were laid down in 1985 (Albert & Whetten, 1985), relatively few studies seem to have made explicit use of the notion since then. In fact, if we restrict our analysis only to papers that have specifically investigated dynamics of organizational identity, less than ten can be found.

Based on this evidence, as researchers interested in and engaged in research on OI related topics, we have started wondering whether there is any specific and recognized

reason behind the apparently "low productivity" of OI research. Is the notion of organizational identity too narrow and to justify a full scope academic study, worth to be published in top tier journals? Does the peculiarity of the construct – linked to major organizational discontinuities that trigger explicit emotional reactions - make it too difficult too find convincing data? Or is it more a legitimation problem among academic audience, where authors strive in convincing editors and reviewers about the relevance of the organizational identity construct?

On the other hands, obstacles may lie more on the methodological side that on the conceptual side, as organizational identity literature currently lacks an established methodology to address identity questions' in organizational settings. While theoretical foundations of the constructs and their interrelations have been amply debated (e.g. Whetten & Godfrey, 1998; Hatch & Schultz, 2000; Corley et al. 2006), there does not seem to have been a similar discussion (at least as reflected in scholarly articles) about the requisites that good and reliable analysis of OI needs to meet. This concern has been expressed before (van Rekom & van Riel, 2000; Ravasi & van Rekom, 2003) and partially addressed by David Whetten (2006), in a recent conceptual contribution. in his doctoral thesis, Brunninge (2005) manifests a similar feeling, saying that once in the field, a researcher, and above all a young one, is left alone wondering how the theoretical guidelines translate into actual investigation choices. The choice on how to operationalize and frame various aspects of the OI construct, seems to lack shared, explicit, and well understood canons, and to be entirely left to scholars' experience.

Despite being convinced by the validity of the notion and of its importance during phases of organizational transformation, additional questions raise to our minds when

thinking about the possible actual difficulties of a solid empirical account of organizational identity. Where can a researcher find reasonable evidence of "organizational identity"? Whose interpretation really counts? How stringent is the requisite of "sharedness" in moving from individual level evidence to an organizational construct? How can we distinguish between the expression of identity and the manipulation of impressions? How can we label a statement an "identity statement"? How can we distinguish evidence of organizational identity from related constructs (e.g. image, culture, brand, etc.)? Can we still talk of organizational identity even in the absence of explicit claims?

We are no so ambitious – or arrogant – to pretend to have a solution for all these issues. More humbly, in this paper we approach this task inductively, examining the methodology choices that OI scholars have taken so far in their empirical studies, as made visible by the published versions of their papers. We move from the assumption that highlighting the consistencies and the discrepancies among the existent successful pieces of scholarly practice would generate insights on how different aspects of OI related issues may be addressed empirically and highlight issue that have not been put under discussion so far. Also, we think that if the field would develop on more explicit reflections about the specific issues that scholars face when studying organizational identities, and about what they can do about them, this may stimulate more and more effective empirical research.

Beside the relatively small number of empirical papers published in top scholarly journals, our review shows a relative coherence in the way research has been carried out under different conceptual assumptions, and makes this explicit. Our analysis shows how

different approaches to the study of OI may be employed – both quantitative (survey-based, possibly using an extended-metaphor approach) and qualitative (narrative analysis, grounded theory building, and ethnography) – each of them facing different issues and providing different answers to the issues raised before, and each of them being more or less coherent with different conceptual assumptions and objects of research.

In addition to this, we have been surveying the authors that published organizational identity empirical studies, asking them about the major challenges that they faced during the review process, focusing on those related to the legitimacy of the organizational identity constructs and the appropriateness of methodological choices. From here, we highlight those issued there have surfaced more prominently among these discussions (justification of the organizational identity label, perspective adopted, distinctions from other related constructs) and consider these points with more depth.

Far from being conclusive, our review and analysis are meant to stimulate a more explicit and systematic reflection on "proper ways" of doing research on OI, eventually leading to relatively shared principles and recommendations to young as well as experienced scholars. The development of a field of study depends also on the convergence of scholars around a set of clear and widely accepted principles for doing "good research". In the social science, more than in the natural science, these principles are socially constructed and arise from debate within the scholarly community. In this respect, we believe that OI studies may benefit in many ways from explicit reflection about what defines "good research". First, it may keep methodological recommendations abreast with the evolution of the conceptualization of the phenomenon. Furthermore,

besides providing guidance on how research should be carried out, it may also provide an important reference point on how research products should be evaluated. Eventually, more clarity about methodological requirements is likely to facilitate access to the field, to favor the intensification of research efforts, and to ultimately improve our understanding of the topic.

In the next section, we briefly review empirical research on OI and highlight different stages in the evolution of the field. In the following section, we present and discuss the main research methods employed in published papers about OI, comparing their main themes, research settings, data collection and data analysis choices. In the concluding section, we discuss our findings highlighting the three more common issues that we gathered from authors' opinions and highlight open issues for research practice.

2. PAST RESEARCH ON ORGANIZATIONAL IDENTITY

When Albert and Whetten introduced the notion of OI into organizational studies, their interest was activated by a real experience they were living at their academic institution. A small cut in budget of a program had almost unreasonably escalated into a major emotional debate on the very same essence of the institution (Albert & Whetten, 1985). The authors recognized then that the notion of identity that had been use in social psychology to account for individual and groups sense of belonging and continuity could be plausibly and usefully translated into organizational terms, in order to explain the relevance of perceived central, enduring and distinctive features of organizations in various stages of organizational life.

As other scholars have observed (Whetten & Godfrey, 1998; Whetten, 2006) it took some time for the topic of OI to attract interest from organizational scholars. In fact, with the exception of Dutton and Dukerich's work on the New York Port Authority (Dutton & Dukerich, 1991), it took more than ten years for empirical studies investigating the influence of OI on organizational dynamics to appear on major journals (e.g. Gioia & Thomas, 1996; Golden-Biddle & Rao, 1997). In the following years, the topic attracted the interest of an increasing number of scholars, who engaged in a lively conceptual debate (Whetten & Godfrey, 1998), exploring different applications of the concept (e.g. Reger, Gustafsson, Demarie & Mullane, 1994; Dutton, Dukerich & Harquail, 1994), as well as its interrelation with other close notions such as organizational image and culture (Hatch & Schultz, 1997; Gioia, Schultz & Corley, 2000), culminating in a special issue of the *Academy of Management Review* (Albert, Ashforth & Dutton, 2000). In the

meantime, the number of empirical papers remained relatively small, as compared to the parallel theoretical development, until very recently.

In fact, as we reviewed published empirical work on OI (see Table 1), we had the impression that past studies could roughly be classified into three major "waves", possibly corresponding to different stages in the "academic life cycle" of the construct: an initial number of studies where the concept of OI was used to understand social dynamics observed in unrelated research projects (first wave) was followed by the increasing application of the construct to investigating antecedents of organization behavior (second wave). More recently, an increasing number of studies has started investigating OI dynamics in their own rights (third wave), based on research projects purposefully aimed at increasing our understanding of the phenomenon.

TABLE 1

A comparative analysis of organizational identity research

Paper	Main theme	Research setting	Data collection	Data analysis
Dutton & Dukerich, 1991	Influence of OI and construed image on framing and reaction to organizational issues.	Municipal transportation company	• Open ended interviews (25 employees) • Archival data (press releases, public speeches, company reports)	• Grounded theory building
Gioia & Thomas, 1996	Relevance of envisioned identity and image during strategic change	US academic institutions	• Open ended interviews (25 university management and faculty) • Questionnaire	• Grounded theory building • Extended metaphor analysis
Elsbach & Kramer, 1996	Reaction to reputational threats	8 US business schools.	• Semi-structured interviews (43 respondents) • Local press • Archival records on university reputation	• Grounded theory building • Triangulation with archival data
Golden-Biddle & Rao, 1997	Role conflict in a multiple identity organization	National non-profit medical organization	• Interviews • Observation	• Thick description
Pratt & Rafaeli, 1997	Organizational dress as symbolic elements of social identities	Rehab unit of a hospital, around 80 members	• Action research •	• Grounded theory building
Glynn, 2000	Relation between professional background and identity understandings	Atlanta Symphony Orchestra	• Semi-structured interviews (13 respondents) • Archival sources about the organization and the industry	• Interpretive analysis

Paper	Main theme	Research setting	Data collection	Data analysis
Pratt, 2000	How companies manage members identification	Distributors of a large consumer company (Amway)	• Ethnography (semi overt participant observation and archival data)	• Thick description
Bartel, 2001	Relationship between boundary spanning role of individuals, perceived OI and identification	Large food company (community outreach programs)	• Survey (including open ended questions) • 50 interviews	• Statistical analysis
Elsbach & Bhattacharya, 2001	Determinants of organizational dis-identification	National Rifle Association	• Focus groups with NRA members • Archival data	• Grounded theory building
LaBianca, Fairbank, Thomas, Gioia & Umphress, 2001	Antecedent of emulation decision facing strategic repositioning	Academic organizations	• Survey	• Statistical analysis
Dukerich, Golden & Shortell, 2002	Relationship between perceived organizational identity, construed external image, identification and cooperative behaviours	Physicians affiliated with 3 health care systems	• Survey with (some) longitudinal dimension	• Statistical analysis
Foreman & Whetten, 2002	Perceived identity congruence and identification in multiple-identity organizations	Members of various US rural cooperatives.	• Survey	• Statistical analysis • Extended metaphor analysis

Paper	Main theme	Research setting	Data collection	Data analysis
Humphreys & Brown, 2002	Relation between identity and identification process with organizational narratives	UK based higher education institution	• Participant observation (ethnography)	• Interpretive analysis
Humphreys & Brown, 2002	Nostalgia in collective identity narratives	Turkish based vocational education organization	• Interviews and observation	• Thick description
Corley, 2004	Identity understandings and hierarchical positions	Spin off from a global technology service provider	• Interviews (38 informants) • Internal documents, company information • Observation	• Grounded theory building
Corley & Gioia, 2004	Processes of organizational identity change	Spin off from a global technology service provider	• Interviews (38 informants) • Internal documents, company information • Observation	• Grounded theory building
Chreim, 2005	Persistence and change in organizational identity	Canadian bank	• Annual reports and business press	• Textual analysis
Ravasi & Schultz, 2006	Organizational reaction to identity threats	Manufacturer of audio-video systems (Bang & Olufsen)	• Semi-structured interviews • Identity seminars • Archival data	• Grounded theory building
Brown & Humphreys, 2006	Organizational identity in cohorts of workers	UK college of further education	• 75 Interviews • Observation	• Thick description
Voss, Cable & Voss, 2006	Divergence in OI perception and firm performance	Nonprofit professional theatres	• 133 surveys • Interviews	• Statistical analysis
Nag, Corley & Gioia, 2007	Organizational identity during strategic change	High tech R&D organization	• 34 interviews with company executives and directors	• Grounded theory building

1991-2000: OI as an unexpected explanation

During the 90's, most published research involving organizational identity was not initially aimed at investigating OI: in many cases, the concept seemed to turn out as the most plausible explanation in order to understand what scholars were observing. Much research on OI published in this period started with broader research questions in mind, such as exploring issue management (Dutton & Dukerich, 1991), strategic change (Gioia & Thomas, 1996) or responses to deteriorating images (Elsbach & Kramer, 1996). Just like Albert and Whetten ten years before, in these cases researchers employing inductive qualitative methodologies found themselves facing explanations for what they observed that touched individual or collective perceptions of what their informants' organization was or should be.

Although Dutton and Dukerich's (1991) study is now widely cited as central in understanding the interrelations between organizational identity and image, it started as an attempt to understand the way in which organizations choose and frame problems they attend to. As the authors collected data, they found out that construed organizational images (the way the company appeared to external stakeholder) and perceived organizational identity acted as filters on the way problems were considered and on the actual reactions. This insight led them to gather additional data, delve more deeply into the issue and gradually make the identity-image interrelation the focus of their reflections. Elsbach and Kramer (1996) observed similar dynamics, by studying how organizational members react to external threats to the reputation of their organization.

The emergence of OI as a useful explanatory concept in a research project initially aimed at understanding other phenomena seems to be shared by most published studies in

the second half of the 90's. As Gioia and Thomas (1996) investigated strategic changes in a large academic institution, they observed how the development of future courses of action was shaped also by future desired conceptualization of the organization. Although, understanding the role of the "desired future identity" of the organization was not initially the focus of their study, it turned out to be fundamental in understanding what they were observing. Similarly, Golden-Biddle and Rao (1997) carried out a qualitative study on decision making of management boards, and found out that the hybrid identity of the focal organization (a non profit organization) was essential to understand the emergence of role conflicts among board members, and the subsequent "repair" actions. The insightful piece of research by Pratt and Rafaeli (1997), highlighting connections between organizational artifacts and identities, was initially aimed at understanding conflict over work garment in a rehabilitation unit. Similarly, research on intra-organizational conflict carried out by Mary Ann Glynn (2000) at the Atlanta Symphony Orchestra produced evidence on the connection between OI and resource allocation, although OI was not part of the initial research question.

2000-2002: OI as an antecedent of organizational behavior

A second "wave" of empirical works including organizational identity goes from 2000 to 2002 and use the concept of OI – or rather, "perceived" organizational identity – as an antecedent of organizational behaviour. Unlike the research mentioned before, the level of analysis of all these studies is entirely at the individual level, and the relationship between contextual features and the degree of emotional and psychological attachment to the organizations. These studies, collectively show how an organizational identity

perceived as positive and coherent with personal values tends to favour a strong individual attachment to the organization (Dukerich, Golden & Shortell, 2002), while, conversely, cognitive distance that may occur either because of poor company reputation (Elsbach & Bhattacharya, 2001) or because of dualities in company identities (Foreman & Whetten, 2002) can lead to a process of dis-identification toward the organization. In addition, Pratt (2000) and Bartel (2001) suggest that individuals' dynamics of identification can be related to company managerial choices in terms of members' inclusions and exclusions (Pratt, 2000) and to the boundary spanning role of individuals (Bartel, 2001).

2002-2007: OI as an explicit research object

The third wave of empirical studies on OI refers to a number of recent works than, unlike works published during the nineties, are the result of research explicitly designed with a focus on OI. Most of these studies are based on single-case studies and examine the way in which organizational members make sense and explain ongoing changes in the identity of their organization (Humphreys & Brown, 2002; Corley 2004; Brown & Humphreys, 2006) or on how the evolution of OI identity occurs along with broader organizational and strategic changes (Corley & Gioia, 2004, Chreim, 2005, Ravasi & Schultz, 2006, Nag, Corley & Gioia, forthcoming). What seems to be common to these studies is the focus on a single organization, which is followed over the years (Chreim, 2005; Ravasi & Schultz, 2006), or in a specific organizational discontinuity. Such rich, longitudinal approach helps researchers inductively build theoretical arguments on the evidence they gather (but see Voss, Cable & Voss for different research design).

3. A REVIEW OF RESEARCH METHODS EMPLOYED IN OI STUDIES.

Table 1 provides a concise view on the research setting, data collection and data analysis strategies employed in OI studies. Looking at the table, we can see that there are five methods currently employed in OI research: two based on a quantitative assessment of the construct (see Table 2), and three based on qualitative research (see Table 3). In this section, we will review each method, highlighting its main applications, methodological requirements, and critical issues.

TABLE 2: Quantitative methods in OI research

	Survey	**Extended metaphor**
Examples	Van Rekom, 1997, 2002 Bartel, 2001 Dukerich, Golden, Shortell, 2002	Gioia, Thomas, 1996 Foreman, Whetten, 2002
Focal theme	Measurement of attributes of OI and/or correlation with organizational behavior	Identification and measurement of dual identities
Data source	Preliminary interview or focus group with representative sample Survey	Interview with key informants Focus group Survey
Focal identity-related constructs	Perceived organizational identity	Ideal-typical, categorical interpretations (e.g. family/business, business/church)
Critical issues	Capturing beliefs that are often below the threshold of awareness	Development of a valid and reliable measurement tool, reflecting the core traits of different categorical identities

TABLE 3

Qualitative methods in OI research

	Grounded Theory	**Ethnography**	**Narrative analysis**
Examples	Dutton, Dukerich, 1991 Glynn, 2000 Ravasi, Schultz, 2006	Pratt, 2000 Humphreys, Brown, 2002	Czarniawska, 1997 Chreim, 2005
Focal theme	Relationships between OI and other organizational constructs and processes	Social construction and negotiation of shared interpretations	Expression and enactment of OI through language
Data source	Interviews Archival data	Interviews Archival data Observation	Oral and written texts Archival data Organizational statements
Focal identity-related constructs	Identity beliefs and claims	Identity beliefs and claims	Identity claims
Critical issues	Distinguishing identity claims from aspirations and impression management Distinguishing identity from other related constructs	Building a convincing case for the researcher's interpretation	Distinguishing genuine identity claims from impression management and more general self-referential statements

Survey-based research

In OI research, papers who adopted a survey-based design typically aimed at capturing a quantitative assessment of the construct – or aspects of it – in order to test hypotheses relating organizational identity to identification, commitment, citizenship and other aspects of organizational behavior (e.g. Bartel, 2001; Dukerich et al., 2002). A very recent exception is Voss et al. (2006) who correlate the degree of sharedness of top managers' identity perceptions to measures of company success.

Bartel (2001) and Dukerich and colleagues (2002), use surveys in order to capture individual members' beliefs about central and enduring characteristics of the organizations, and to test if they are a significant antecedent of identification (Dukerich et al., 2002) and if they change after the an increased exposure to external stakeholders (Bartel, 2001). What these studies measure, therefore, is not OI as such – conceived as a global property of the organization – but the extent to which individual members perceive certain features to be part of the identity of the organization, or, in other words, the *perceived organizational identity*.

Researchers using structured surveys in OI research face a critical issue. In order to collect easily tractable data about individual perceptions, they have to submit to the attention of respondents a closed list of features, which reflects widespread internal beliefs about central, enduring and distinctive features. In order to do so, both studies mentioned above relied on a preliminary set of interviews with organizational members or, alternatively with some shared understanding of identity traints among a group of similar organizations (Voss et al. 2007). Based on these insights, they developed a set of company's typical characteristics, and asked respondents to evaluate the extent to which these items reflected the characteristics of their organization. Another critical issue, at this stage, concerns the capacity of the researcher to capture beliefs that are often below the threshold of awareness and are manifested mostly in time of crises (Albert & Whetten, 1985). In

this respect, the so-called “laddering technique” has been proposed as a useful tool to for capturing identity beliefs, using an increasingly profound probing into the relative importance of one’s actions to the organization (van Rekom, 1997).

While surveys have proved to be valid data collection tools as far as individual beliefs are concerned, more problematic is the shift from the individual to the organizational level of analysis. In other words, how can a researcher move from a number of individual beliefs to what is understood as a global property of the organization? How many respondents need to agree on a given feature, before it can be considered “relatively shared”? While in extreme cases (90% or 10%) the classification of a given feature as part of the identity of the organization or not may be hardly questionable, no heuristics or commonly accepted “rules of thumb” assist the researcher at this regard.

Another critical issue in survey studies is the capacity to balance the possibility to gather a large number of data with the necessity to maintain a close understanding of the organization, fundamental to develop a set of relevant items. So far this problem seems to have been faced by researchers either by focusing on one organization (e.g. Bartel, 2001) or one field where, as we will discuss in the next section, all organizations are likely to share some archetypal identity features (e.g. Foreman & Whetten, 2002).

Extended metaphor analysis

Extended metaphor analysis (EMA) may be classified as a specific subset of survey-based OI research. Albert and Whetten (1985) initially suggested EMA as a particularly fruitful way to research organizational identities, with the specific purpose of investigating what they referred to as *dual identities*. According to Albert and Whetten (1985), some types of organization are

characterized by an intrinsic duality in that their identity exhibits characteristics that might at time collide one with one another, as for example in the case of family businesses (familistic vs. utilitarian logic), or non profit organizations (voluntaristic vs. utilitarian logic). In the original formulation, EMA was proposed as "a technique of sensemaking", based on the explicit comparison of two metaphorical interpretations of the same type of organization. In their seminal paper, for instance, they apply this technique to explore the ways in which universities can be described as churches (where norms rule and sense of calling predominates) versus businesses (dominated by logics of efficiency and commerce). The application of EMA to the analysis of dual-identity organizations would help researchers capture the complexity and contradictions of such "hybrids".

Later studies built on Albert and Whetten's original insights and developed a practical, large scale, survey-based application of EMA, aimed at investigating OI-related issues in dual identity organizations such as business schools (Gioia & Thomas, 1996) and agricultural cooperatives (Foreman & Whetten, 2002). Essentially, in this quantitative application of EMA, researcher try to infer from members' responses the relative salience of traits and features that are typical of organizational ideal types representing the competing logics in the organization – or, in other words, of the relative salience of competing identities. The use of a large scale survey, then, allow researchers to assess whether members tend to conceive their organization, for instance, more "like a church" or more "like a business". In order to do so, the researchers need to gain a clear understanding of the dualities that might be present in a given organization.

The difference between EMA and a more general survey-based study is that the latter does not impose an interpretation of OI in terms of internally coherent categorical metaphors (e.g. "family", "church", "business"), but captures individual perceptions on a looser set of features that are interpreted as central, enduring and distinctive.

Grounded-theory building

Grounded-theory building seems to be the research method more frequently employed by OI scholars, and in particular by those interested in investigating the relationships between OI and other organizational level constructs (e.g. image, culture) and processes (e.g. change, decision making). Most of the studies we reviewed either apply directly the methodology introduced by Glaser and Strauss (1967) or they refer indirectly to that tradition, by relying on an iterative process of codification and theorization from interview and observation data. Among the papers we reviewed, however, there is a degree of variation concerning the extent to which researchers are explicit about their development of interpretive codes from their data. Some, such Corley and Gioia (2004) and Corley (2004) follow the principles of naturalistic inquiry (Lincoln and Guba, 1982), a similar methodology that, while belonging to same tradition, is less strict concerning theoretical premises of existing theories.

These studies, coherently with the grounded theory method's guidelines, usually rely on multiple sources, such as interviews, archival and internal data (e.g. Dutton & Dukerich, 1991; Elsbach & Kramer, 1996; Glynn, 2000) and, possibly, a certain degree of non-participant observation (e.g. Ravasi & Schultz, 2006). Such broad range of data sources allows researchers to capture different aspects of organizational identity, such as *identity claims* (e.g. Ravasi & Schultz, 2006), *beliefs* (e.g. Dutton & Dukerich, 1991; Elsbach & Kramer, 1996) and *aspirations* (e.g. Gioia & Thomas, 1996; Ravasi & Schultz, 2006).

What is consistent, among most of these studies is that they try to triangulate the evidence found in a given data source with additional elements, in order to try to ensure a robust grounding for the interpretation of findings. There is, however, difference also regarding the type of source of data employed by researchers and other technicalities such as the number and the position of people

interviewed, and the degree of contact with the organization. In fact, qualitative research methods are more craft-like, as the very understanding of qualitative research methodology requires responsiveness to the characteristics of the objects under study and the capability to adapt research gathering to these specificities. In terms of OI research, this requires to look for the secondary data that seems more promising in term of the ability to depict specific organizational characteristics.

Some issues, however, remain open. First, how can a researcher distinguish between a genuine expression of identity and a more or less conscious attempt to manipulate impressions? In organizations, impression management – that is the purposeful engagement in the manipulation of external perceptions in order to project a favorable image – occurs both at the corporate and at the individual level. A wide range of organizational communication acts – from public speeches of top managers and corporate advertising, to corporate slogans, logo and visual identity – are meant to cast the organization in a favorable light, in order to secure the contribution of various constituents. The veracity of some of these acts, however, may be questionable.

Furthermore, individuals may project their personal aspirations in their utterances, both in naturally occurring communication and during formal interviews. Clearly distinguishing genuine expressions of widely shared beliefs from personal aspirations, then, becomes crucial. Although some members' aspirations may eventually influence the beliefs of the rest of the organization – through power or charisma – as researchers collect and analyze data the distinction is important for a proper specification of the emerging model. In some published studies, researchers explicitly turned to the triangulation between various data sources in order to address these issues. It is our impression, however, that in absence of specific guidelines, much is still left to the craft and experience of the researcher.

Ethnography

Another qualitative method often used by OI scholars is ethnography (e.g. Pratt & Rafaeli, 1997; Pratt, 2000; Humphreys & Brown, 2002). As a research method, ethnography requires the extensive contact of the researcher with the organization under study (observation is carried out in addition to interviews and archival search), and data analysis emphasizes the explicit recognition of the perspective brought by researcher and its role during the ethnography, a convincing thick description of observed findings, and a critical dialogue that links findings with theoretical dimensions of analysis.

In the case of OI research, ethnography has been used, for instance, to investigate dynamics of identification (Pratt, 2000), and the consequences of an attempt to change the identity of the organization (Humphreys & Brown, 2002). Just like a grounded-theory approach, ethnography allows researchers to capture the interplay between *identity beliefs*, *claims* and *aspirations*, and other social constructs and dynamics, and appears to be consistent with an interpretive, constructionist view of OI. In some works (e.g. Pratt & Rafaeli, 1997), in fact, the distinction between grounded theory building and ethnography does not appear so clear, as researchers mention ethnographic data collection followed by methods of data analysis (coding, iteration between theory and data., etc.) that are more consistent with grounded-theory building.

Researchers engaged in ethnographic research face similar issues to those who follow a grounded approach; yet, their partly different way of collecting and analyzing data, allows – or requires – them to handle them differently. On the one hand, the long term engagement and the deep immersion of researchers in the observed social reality should increase their capacity to distinguish genuine expressions of identity from personal aspirations or impression management. On the other hand, the less structured way of analyzing data may weaken their capacity to convince

readers – and reviewers… – that their interpretations are grounded in their data and do not suffer from personal biases. In this respect, the combination between an ethnographic approach to data collection (deep involvement and observation) and a grounded-theory approach to data analysis (coding and iteration) may be a powerful way of addressing critical issues in OI research.

Narrative analysis

Finally, a limited number of studies – only one of which was included in our review (Chreim, 2005) – approach organizational identities from a narrative perspective. Studies based on narrative analysis try to understand and reconstruct OI on the basis of corporate discourse about what the organization is and is about. A narrative approach to OI analysis is grounded in the European tradition (e.g. Czarniawska, 1997) and emphasizes the role of *institutional claims* in affecting internal and external perceptions of the organization (Whetten and Mackey, 2002).

Legitimate sources for these analyses come from annual company's reports, messages to shareholders, public speeches of organizational leaders, corporate biographies, and, more generally, all those discourses where the organization – or any legitimate spokesperson of the organization – publicly presents itself. Chreim (2005) is the only study so far to present a take on OI evolution based entirely and only on the analysis of company's annual messages to shareholders.

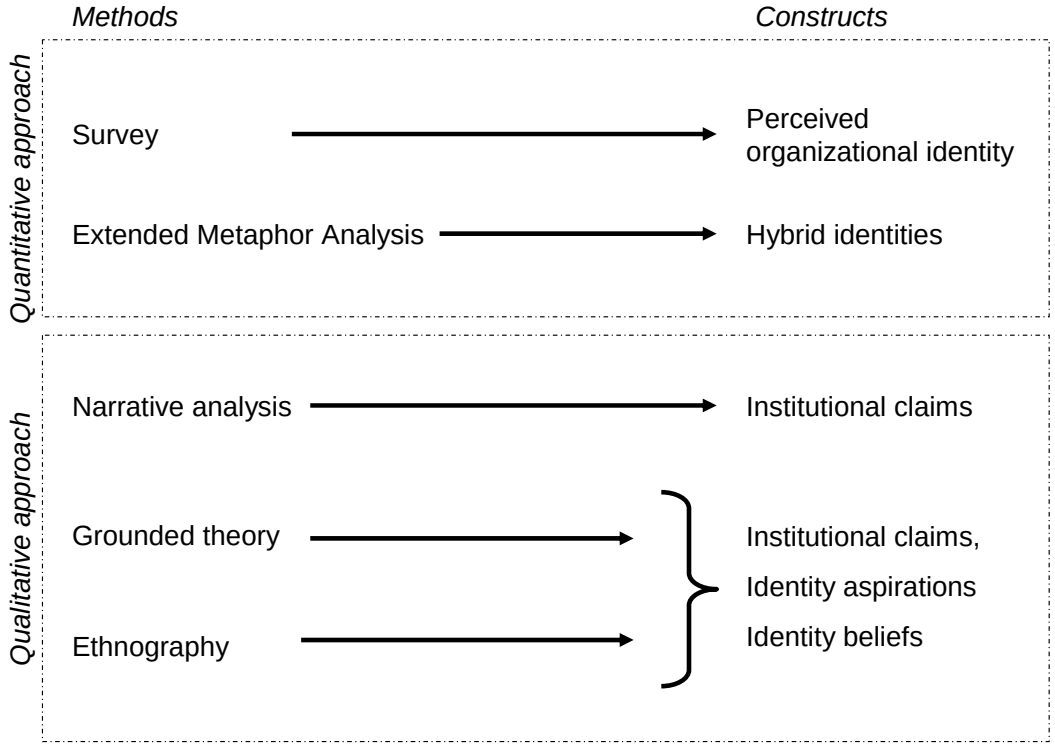
The application of technique of linguistic and discourse analysis seems to be a promising avenue to increase our understanding of how organizational identities are discursively enacted in language. However, a sole focus on externally oriented documents might heighten the previously discusses risk of accepting as genuine expression of identity what is really an unsupported attempt to project a favorable image. Annual reports and public speeches might be biased, to a certain extent, by the intervention of public relation and communication units. At the same time, those institutional

messages might represent only a partial perspective of the company, the one that is embodied by the very few people who have control at a given point.

More generally, as we engage in a narrative analysis of organizational texts we need to ask ourselves whether we can plausibly consider any self-referential statement of the organization as an "identity statement". If not – and probably not – how can we rigorously separate "the wheat from the chaff"? In this respect, David Whetten (2006) has recently proposed a detailed set of guidelines to distinguish "bona fide" identity claims from more general statements about the organization. These guidelines, however, seem to assume the existence of some objective "identity referents" that are indeed central, enduring and distinctive, and might be less appropriate for a more constructivist approach.

FIGURE 1

Relationship between research methods and constructs in organizational identity



4. DISCUSSION

Our review shows that, although increasing in recent years, the number of empirical papers investigating OI issues published since the introduction of the concept in 1985 is still relatively small, if compared to the number of theoretical contributions regarding OI constructs, and to the number of sessions and submissions to conferences in the past few years. It was particularly striking to our eyes that the first studies specifically designed to investigate the phenomenon do not seem to have appeared earlier than 17 years from the introduction of the notion of OI into organizational studies.

Indeed, such scarcity of empirical contributions may be due to a number of reasons. Empirical research on organizational identity – just like most longitudinal, field-based research – is lengthy and time consuming. Furthermore, detecting an appropriate source of data may be much harder than in other fields of study, where data are already available in large data bases that can easily be accessed and elaborated. OI issues are rarely discussed explicitly in organizations, and even when it happens, not much of it is visible from outside. Sometimes, a closer look at what seem to be dynamics involving OI issues shows that other constructs and processes are really at play (e.g. impression management, cultural changes, etc.). This means that, in order to detect a suitable setting, researchers may need to be familiar with the organization even before they become of aware of its potential. Which explains why so many OI studies developed as spin-offs from other projects (e.g. Dutton & Dukerich, 1991) or were carried out by insiders of the organization who could assess the relevance of identity issues in first stance (e.g. Gioia & Thomas, 1996; Humphreys & Brown, 2002).

In order to have a more informed perspective about these issues we have asked to the authors of the empirical papers we reviewed to share with us some considerations about the major challenges

that they faced during the academics review process of their papers, focusing on those issues that had to do with the methodology they had employed.

Three major points seemed to emerge from these responses.

First, an issue had to do with the face validity of the construct: how does the researcher know – and how can she convince reviewers… – that what she has observed is an evidence of organizational identity and not, for instance, of culture, image, brand or similar constructs? Can any categorical description of the organization to be classified as OI? Is any organizational value automatically classifiable as OI? On some rare occasions, scholars may be lucky: one of us was involved in a study where organizational members were explicitly addressing what they called the "identity" of the organization. Still one of the reviewers of the resulting manuscript was unsure that the fact that members called it identity meant that what was observed was *really* the identity of the organization! Yet, these fortunate cases are rare: in most circumstances, the debate over what the organization is and is about is less explicit. Under these circumstances, can we still plausibly claim that identity beliefs and understandings are at play, even in the absence of explicit claims? And if so, how can we credibly back up our assertions?

Based on the conversations and the feedback from other authors, we consider a wise approach is to rely to actual at data at the most, by searching qualitative findings (corporate documents, public speeches, interview transcripts) for all those explicit categorizations and labeling that convey a precise definition of the organizations (e.g. "we are a top ten university", and search for the explicit use of the world identity whenever possible (Ravasi & Schultz, 2006). In addition, it is useful to be extremely candid about the specific definition of identity that one is considering, being aware that a world so ample as identity might convey various and nuanced meanings to scholars that have different backgrounds (e.g. social psychologists, organizational behaviorists, critical study scholars). Related to this is the effort to establish the connection between data sources and

theoretical claims in a very transparent and clear manner, making clear to reviewer that theoretical claims are not derived solely from authors' speculations but are actually grounded in the data. This translates in carefully laying down the causal relationships between different theoretical constructs, using actual data as much as possible and complementing data diagrams and tables. These considerations are not novel to scholars that are trained in grounded theory and related qualitative approach. On the other hand, we sense they are the most important when considering a concept that is complex and apparently "abstract" as organizational identity.

Second, a point that has been highlighted by more than one author is the importance of clarifying the identity perspective that has been employed in the papers. For example, insights related to organizational identity as perceived by the top management team may require different methodological choices as compared to studies that focus on employees' understanding. Each perspective may be more appropriate to answer different research questions, or shed a different light on them. We believe that, given the topic under study and actual phenomena that the study wants to unravel, more than one of them might be legitimate, as long as the authors state clearly and consistently which perspective they are adhering to. In this respect, we sense that organizational identity scholars might benefit from the recent refinements of the organizational identity construct by consciously linking data sources and their methodologies to the identity perspective there are focusing on. For example, identity claims might be better studied through careful analysis of formal identity statements and leaders' public speeches.

Identity beliefs, as well as individual understandings of perceived organizational identity would better be unraveled through a study that focus on all organizational members, or in a wide and stratified sample of organizational population (see for example Corley, 2004). Similarly, identity aspirations would better be assessed by sampling among relevant subgroups in the organizations, as aspiration may different depending on the reference group. The case of hybrid identities is different,

as those are in general scholars' theoretically developed interpretations, which need to be backed up by data gathered through key informants (interviews, focus groups and do on).

The respondence of methodological choices to the precise definition of organizational identity is indeed important. Essentialist, who seek identity referents in formal and claimed organizational discourses, should search for tangible credible evidence of CED priorities in public speeches, interview with top level management and company documents (Whetten, 2007).

Differently from these, scholars who are closer to a social constructionist perspective should better investigate for manifestations of relatively shared beliefs among sub groups. Finally, if the focus is on narrative accounts, scholars would need to look on consistent and recognized stories about what the organizations is and stands for and critical if the focus on power distribution and negotiation of resources in social reality.

5. CONCLUSIONS

The existence of a temporal lag between conceptual debate and empirical efforts is not surprising in the social science. Yet, it has also been recently argued that the OI field seems to be characterized by “aged adolescence” (Corley et al. 2006) and the persistence of a lively theoretical debate, even in presence of a relatively little number of empirical study. We believe that a further development of the field may be aided by more explicit debate over the appropriate methods to explore different aspects of OI, and over the most appropriate ways of addressing methodological issues that are specific to the field.

It is also possible, however, that the lack of commonly accepted guidelines regarding “appropriate ways of doing research on OI” might have hampered the implementation of research efforts and the publication of research results. In this respect, published work seemed to have adhered mostly to more general “best practices” for qualitative or quantitative research (e.g. transparency of coding processes, triangulation, rich descriptions, etc.) cleverly combined and applied to the specific requirements of the study. We believe, however, that much can be learned from a systematic analysis of what has been published already, and possibly from the collection and systematization of individual experience of researchers.

Our review highlighted also some trends – and some potential gaps – in current research in OI. First of all, there seems to be an increasing focus on single organizations. Very few studies try to explicitly compare different organizations or to address OI issues at identity level. While single case studies are more likely to produce the insight and rich amount of data required to properly investigate OI issues, the robustness and generalizability of findings can be questioned. In this respect, the adoption of methodologies – such as comparative case studies (Eisenhardt, 1989) – that

try to balance insight and generalizabilty may prove beneficial to the field.

Second, most research focusing on OI seems to be still in a theory-building stage – which is consistent with a focus on single case studies. Yet, at this point the combined efforts of these studies seem to have produced a reasonable body of knowledge that we could start subjecting to theory testing efforts. The recent contribution of Kevin Corley (2004) observing how strategy and culture may have different relevance in affecting identity perceptions at different hierarchical level, for instance, seems to lend itself well to empirical scrutiny.

Finally, most studies seem to have been carried out in non-business setting. With very few exceptions (e.g. Corley & Gioia, 2005; Ravasi & Schultz, 2006, Nag, Corley & Gioia, 2007), most published studies focused on universities, non-profit, medical or cultural institutions. Does this mean that OI issues are in themselves less relevant to business organizations (an assertion which in itself might deserve empirical scrutiny)? Is it possible that OI issues encounter different dynamics in business and non-business settings? How do size, geographical dispersion or type of activities affect OI issues? In the future, increasing research on large industrial or multinational organizations may improve our capacity to address these and other issues.

REFERENCES

Albert, S., Ashforth, B., & Dutton, J. 2000 Organizational identity and identification: Charting new waters and building new bridges, *Academy of Management Review*, 25: 13-17

Albert S., & Whetten, D. A. 1985. Organizational identity. In L. L. Cummings & B. M. Staw (Eds.) *Research in organizational behavior*, 7: 263-295. Greenwhich, CT: JAI Press.

Bartel, C. A. 2001. Social comparisons in boundary-spanning work: Effects of community outreach on members' organizational identity and identification. *Administrative Science Quarterly*, 46: 379-413.

Brown, A.D., & Humphreys, M. 2002. Nostalgia and the narrativization of identity: A Turkish case, *British Journal of Management*, 13: 141-159.

Brown, A. D., & Humphreys, M. 2006. Organizational identity and place: A discursive exploration of hegemony and resistance, *Journal of Management Studies*, 43: 231-257.

Brown, T. J., Dacin, P. A., Pratt, M. G., & Whetten, D. A. 2006. Identity, intended image, construed image, and reputation: An interdisciplinary framework and suggested terminology. *Journal of the Academy of Marketing Science*, 34(2): 99-106.

Brunninge, O. 2005. *Organisational self-understanding and the strategy process. Strategy dynamics in Scania and Handelsbanken* (JIBS Dissertation series N0. 027) Jonkoping, Sweden: Jonkoping International Business School.

Chreim, S. 2005. The continuity-change duality in narrative texts of organizational identity. *Journal of Management Studies*, 42:567-593.

Corley, K. G. 2004. Defined by our strategy or our culture? Hierarchical differences in perceptions of organizational identity and change. *Human Relations*, 57: 1145-1177.

Corley, K. G., & Gioia, D. A. 2004. Identity ambiguity and change in the wake of a corporate spin off. *Administrative Science Quarterly*, 49: 173-208.

Corley, K. G., Harquail, C. V., Pratt, M. G., Glynn, M. A., Fiol, C. M., & Hatch, M. J. 2006. Guiding organizational identity through aged adolescence. *Journal of Management Inquiry*, 15: 85-99.

Czarniawska, B. (1997). Narratives of individual and organizational identities, *Communication Yearbook*, 17, 193-221.

Dukerich, J.E., Golden, B., & Shortell S. M. 2002. Beauty is in the eye of the beholder: The impact of organizational identification, identity and image on the cooperative behaviors of physicians. *Administrative Science Quarterly*, 47: 507-533.

Dutton, J., & Dukerich J. E. 1991. Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal*, 34: 517-554.

Dutton, J., Dukerich, J., & Harquail, C. 1994. Organizational images and member identification, *Administrative Science Quarterly*, 39, 239-263.

Eisenhardt, K. M. 1989. Building theories from case study research. Academy of Management Review, 14: 532-550.

Elsbach, K. D., & Kramer, R. M. 1996. Members' responses to organizational identity threats: encountering and countering the Business Week rankings. *Administrative Science Quarterly,* 41: 442-476

Elsbach, K. D., & Bhattacharya, C. B. 2001.Defining who you are by who you are not: Organizational disidentification and the National Rifle Association. *Organizational Science,* 12: 393-413.

Foreman, P., & Whetten, D .A. 2002. Members' identification with multiple identity organizations. *Organization Science*, 13: 618-635

Gioia, D. A, Schultz, M., & Corley, K. G. 2000. Organizational identity, image and adaptive instability. *Academy of Management Review,* 25: 63 – 82.

Gioia, D. A., & Thomas, J. B. 1996. Identity, image and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly,* 41: 370-403.

Glaser, B. G., & Strauss A.L. 1967. *The discovery of grounded theory*. New York: Aldine.

Glynn, M.A. 2000. When cymbals become symbols: conflict over organizational identity within a symphony orchestra. *Organization Science,* 11: 285-298.

Golden-Biddle, K., & Rao, H. 1997. Breaches in the boardroom. Organizational identity and conflict of commitment in a nonprofit organization. *Organization Science,* 8: 593-611

Hatch, M. J., & Schultz, M. 1997**.** Relations between organizational culture, identity and image. *European Journal of Marketing***,** 31: 356-65.

Hatch, M. J., Schultz, M. 2000 Scaling the tower of Babel: Relational differences between identity, image and culture in organizations'. Iin: M. Schultz, M. J. Hatch, M. Holten Larsen (Eds.) *The Expressive Organization: Identity, reputation and the corporate brand.* Oxford: Oxford University Press.

Humphreys, M., & Brown, A.D. 2002. Narratives of organizational identity and identification. A case study of hegemony and resistance. *Organization Studies,* 23: 412-447

Labianca, G., Fairbank, J. F., Thomas, J. B., Gioia, D. A., & Umphress, E.E. 2001. Emulation in academia: Balancing structure and identity. *Organization Science,* 12: 312-330

Lerpold, L., Ravasi, D., Van Rekom, J., & Soenen, G. 2007. *Organizational identity in practice*. Routledge.

Lincoln, Y., & Guba E. 1985. *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Nag, R., Corley, K. G., & Gioia, D. A. 2007. The intersection of organizational identity, knowledge and practice: Attempting strategic change via knowledge grafting. Academy of Management Journal, forthcoming.

Pratt, M. G. 2000. The good, the bad, and the ambivalent. Managing organizational identification among Amway distributors. *Administrative Science Quarterly***,** 45: 456-493.

Pratt, M. G., & Rafaeli, A. 1997. Organizational dress as a symbol of multilayered social identities. *Academy of Management Journal*, 40: 862:898

Ravasi, D., & van Rekom. J. 2003.Key issues in organizational identity and identification theory. *Corporate Reputation Review*, 6(2): 118-132.

Ravasi, D. & Schultz, M. 2006. Responding to organizational identity threats: Exploring the role of organizational culture. *Academy of Management Journal*, 49: 433:458.

Reger, R. K; Gustafson, L. T., Demarie, S.M., & Mullane, J.V. 1994. Reframing the organization: Why implementing total quality is easier said than done. *Academy of Management Review*, 19: 565:584.

van Rekom, J. 1997. Deriving an operational measure of corporate identity. *European Journal of Marketing*, 31:412-242.

van Rekom, J. 2002. Manifestations in behavior versus perceptions of identity: convergence or not? In G. Soenen, & B. Moingeon, (Eds.) *Corporate and organizational identities. Integrating strategy, marketing, communication and organizational perspectives*. London: Routledge.

van Rekom, J., & van Riel, C. B. M. 2000. Operational measures of organizational identity: a review of existing methods. *Corporate Reputation Review*, 3(4): 334-350.

van Rekom, J., & Whetten, D. 2007. How organizational identity beliefs cohere: about essence, distinctiveness and continuity. Paper presented at 2007 Academy of Management, Philadelphia.

Voss, Z.G., Cable, D.M., & Voss, G. B. Organizational identity and firm performance: what happens when leaders disagree about who we are? *Organization Science*, 17: 741-755.

Whetten, D. A. 2006. Albert and Whetten revisited: Strengthening the concept of organizational identity. *Journal of Management Inquiry*, 15: 219-234.

Whetten, D. A., & Godfrey, P. C. 1998. *Identity in organizations: Developing theory through conversations***.** Thousand Oaks, CA: Sage.

Whetten, D., & Mackey, A. 2002. A social actor conception of organizational identity and its implications for the study of organizational reputation, *Business & Society*, 41: 393-414.

Final acknowledgements

A fellowship extension from the Bocconi PhD School allowed me to extend my doctoral research into the fourth year.

Financial support from the European Commission (FP6) Project, NEST-2006-PATH-Cul, CID - Cultural and Innovation Dynamics – Explaining the uneven evolution of human knowledge, Contract n.: FP6 - 043345 is gratefully acknowledged, as well a research grants from Bocconi Institute of Strategy, to sustain my research after August 2007.

Support from all members of the organization under study has proved invaluable over the entire phases of my research.

Beside that, a doctoral project is a journey too long and complex to name all the people that would deserve a grateful thank you for their support, inspiration and encouragement in these years.