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Professional Service Firms, Knowledge-based Competition, and the Heterachical Organization

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Discussion Paper # 5

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Professional service firms, knowledge-based competition, and the heterarchical organization form

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January 5th, 2012

Abstract

The rise of knowledge-based competition, notably in professional service industries, has caused a crisis of the modern organization. Professional service organizations (e.g., advertising agencies, software development firms, consulting or R&D firms) operate in competitive environments driven by an imperative of flexibility and learning. Yet traditional organizational forms from collegial partnerships to managerial hierarchies limit the firm's ability for continuous innovation and strategic adaptation. We suggest that an alternative organizational form, heterarchy, may be useful to better understand and organize firms, networks, or communities as non-hierarchical and self-organizing systems. Heterarchy will be generally defined as a system of governance of mutual constraints and influences. Contrary to the prevailing literature on heterarchies, we reinterpret the concept as a negotiated social system embedded in the theories of democracy and pluralist systems. We also make explicit and challenge the latent assumptions of the heterarchic model. The larger purpose of this discussion is to identify contingencies or conditions under which the heterarchic organizational model is applicable.

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Keywords: Professional services, innovation, heterarchy, network, transprofessionalization.

Introduction

Professional service organizations, such as advertising agencies, software development firms, accounting organizations, and consulting or R&D firms, operate in competitive environments driven by an imperative of flexibility and rapid learning (Empson, 2001; Starbuck, 1992). Superior competitive positions in knowledge-based industries derive from greater agility and more valuable knowledge creation for problem-solving relative to that of competitors (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). The organizational implications of knowledge-based competition are clearly illustrated in the commercial software business where the Internet gave rise to open source communities such as Linux or the Apache Foundation. In such organizations, the plurality of distributed intelligence is managed by principles of decentralization of authority and self-organization (Parhankangas, Ing, Hawk, Dane, & Kosits, 2005). Similarly, the advertising industry has been described as having *project ecology,* in which temporary organizational architectures of learning are negotiated between different actors within and outside the firm (Grabher, 2001, 2002, 2004).

The key idea of project ecology is that a firm is not a coherent entity organized around clearly defined communication and authority structures. Rather, project ecologies provide arenas 'in which incongruent physical and organizational layers are "stapled" for a limited period of time – just to be reconfigured anew in the context of subsequent projects' (Grabher, 2002: 259). Other examples from technical consultancy (Miles & Snow, 1995), management consultancy (Alvesson, 1995), international accounting (Brown, Cooper, Greenwood, & Hinings, 1996; Reihlen, Albers, & Kewitz, 2009), virtual customer environments (Nambisan & Baron, 2010), medical trauma centers (Faraj & Xiao, 2006), and financial services (Sydow, 2004; Sydow & Windeler, 1998) show that an increasing amount of knowledge work is organized in ways that supplant typical Weberian categories of hierarchy and firm-centered approaches to organizational design.

It is clear, then, that the growth of knowledge-based competition, most notably in professional service industries, has challenged traditional organizational forms and contributed to the emergence of very different models of organization. Previous research on structuring professional organizations has described these alternative forms of organization with very different labels (see also chapter 10 and chapter 15) Depending on the task environment, Mintzberg (1979) distinguishes a professional bureaucracy dealing with familiar but complex issues from the adhocracy designed to lead professionals into the uncharted waters of project-based learning. Greenwood and his colleagues differentiate between the professional partner-

ship (Greenwood, Hinings, & Brown, 1990) and the Managed Professional Business (MPB) archetype (Cooper, Hinings, Greenwood, & Brown, 1996; Hinings, Greenwood, & Cooper, 1999). Based on a review of the existing literature, Harlacher and Reihlen (2010) identify four ideal models of organization and governance of PSFs. They distinguish a founder-dominated form centered around central leadership, a collegial form founded on the idea of professional autonomy and self-governance, a managerial form based on hierarchical control and formalization, and an entrepreneurial form that maximizes individual autonomy and sacrifices firm-wide consistency to exploit the benefits of market opportunities.

Innovative PSFs have been associated with network images of organization which have been described as self-designing (Hedberg, Nystrom, & Starbuck, 1976), self-organizing (Foerster, 1984), democratic (Ackhoff, 1994), learning (Argyris & Schön, 1978), intelligent (Quinn, 1992), and knowledge creating (Nonaka & Takeuchi, 1995). Despite differences in labels and emphasis, these all share a common pattern of concern for designing responsive (professional) organizations: How can we unlock the mystery of organizational self-renewal and develop an alternative to hierarchical governance suiting the needs of knowledge work in various industries (Clarke & Stewart, 2000)? As Daft and Lewin (1993: i) conclude: 'The new paradigms may have as their premise the need for flexible, learning organizations that continuously change and solve problems through interconnected coordinated self-organizing processes.'

Against this background, a newer theoretical framework to understand and organize firms, networks, or communities as non-hierarchical and self-organizing systems has been introduced with the heterarchy model of organization. Generally speaking, a heterarchy can be defined as a system of governance of mutual constraints and influences (e.g., Hedlund, 1986, 1993; Ogilvy, 1977). In contrast to a hierarchy with an unambiguous systemic order, heterarchies have multidimensional governing structures (e.g., Birkinshaw & Morrison, 1995; Clark, 1985; Foerster, 1984; Hedlund, 1986, 1993; Hejl, 1992; Ogilvy, 1977; Perrow, 1982; Sölvel & Zander, 1995; Stark, 1999). Transnational PSFs, for instance, develop highly differentiated structures along multiple axes such as regions, service lines, industries and create multiple mechanisms for integrating them. Greenwood et al. (2010) describe this new organizational form as a 'multiplex' organization. These new and highly complex types of organization that emerged in the professional service context challenge organizational researchers' and practitioners' understanding of how to design management systems and meets the strongly articulated need for contemporary theories of the 'new' organization (Daft & Lewin, 1993;

Ilinitch, D'Aveni, & Lewin, 1996). The heterarchy concept, as we argue, makes a distinctive contribution in understanding and designing the modern professional organization.

Yet, as Hedlund (1986: 32) noted, the heterarchy concept, which originates in the research on nervous system networks (McCulloch, 1945), is not yet developed into a theory of organization and is in need of further development and precision. Therefore, this chapter seeks to make a dual contribution to an organizational theory of heterarchy. First, the concept of heterarchy has to be translated into specific organizational (e.g., social structural) dimensions. Contrary to the prevailing literature on heterarchies which is fairly abstract and non-organization specific, we reinterpret the concept as a negotiated system embedded in the theories of democracy and pluralist systems. Second, we explore and discuss the conditions or contingencies that make a heterarchical mode of coordination valuable within the professional service context.

In the first part of this chapter, we describe the emerging transition from the 'old' profession-based competition towards the 'new' knowledge-based, trans-professional competition and outline challenges for established organizational models. Then, we present a new conceptualization of a heterarchy that connects the idea of a non-hierarchical order with well-established research streams in social science. The heterarchy concept as a governing regime is further analyzed based on its cooperation and competition dimension. We then outline and discuss conditions under which heterarchy might prevail and be beneficial for the organization.

Setting the stage: The rise of knowledge-based competition

History set the stage for the changing nature of professional service industries. In describing 'the rise of professionalism,' Larson (1977) analyzed the conditions of the modern knowledge-based industries that have organized into professions. For her, professionalization is characterized 'as the process by which producers of special services sought to constitute and control a market for their expertise. […] Professionalization is thus an attempt to translate one order of scarce resource – special knowledge and skills – into another – social and economic rewards' (p. xvi-xvii). Professions as the occupational groups in which specialized expertise is institutionalized are characterized by a connection between professional autonomy and occupational control as the main production method, on the one hand, and exclusive jurisdiction over a specific body of knowledge and permitted external and internal labor market shelters against potential competitors, on the other hand (Freidson, 1984, 2001). Just like the

organization of industrial systems, predictability and stability became definitive pillars of a general mind-set guiding government policies and business practices in modern society (Best, 1990; Galbraith, 1967; Roobeek, 1987). In modern knowledge-based industries, as Larson (1977) points out, professions have established market control to secure minimum common denominators for all kinds of professionals obeying their community standards and to bring demand and supply of professional services within control of the profession.

The competitive environment in which today's PSFs operate is no longer parallel with Larson's seminal analysis. Indeed, PSFs today must be highly responsive and adaptive to rapidly changing, often global, market conditions. Such pressures apply not only to emerging professions such as management consultancy, advertising, or IT-consultancy, but are increasingly extending to traditional business-oriented professions such as law or auditing. Economic policies and business practices that had the virtue of enhancing stability and predictability under conditions of the modern industrial state turn out, in our time, to have the vice of being unadaptable and therefore cannot meet the fresh demands of novel situations (Toulmin, 1990). Not surprisingly, researchers observe a 'professional disintegration' (Hanlon & Shapland, 1997) or go as far as to predict a 'post-occupational' society (Casey, 1995). In particular, with the *rise of neo-liberalism* as an economic and political ideology, many countries have deregulated their professional service industries in the name of competition and efficiency (Leicht & Lyman, 2006). One influential view today is that regulatory measures such as occupational licensing regulation has been introduced by professions to erect entry barriers in order to create a monopoly situation to limit competition and raise prices. In deregulated markets, the traditional professional practices of a built-in power imbalance between clients and professionals comes under attack and is replaced by new patterns of social exchange. Although economists may have hoped that such deregulation results in a 'free' market structure, experience from the emerging 'unregulated' professions such as management consultancy suggests otherwise to us. Rather, in these industries economic relations of exchange are socially embedded in cultural and political ties between clients and consultants (see chapter 16). Primarily, deregulation creates institutional uncertainty since minimal institutional standards such as qualifying credentials do not exist or are significantly reduced (Glückler & Armbrüster, 2003). In dealing with these uncertainties, consultancy firms and clients have actively developed institutional ties; the former, for instance, through outplacing loyal consultants into client organizations, the latter by recruiting highly skilled advisors with their absorptive capacity in the consulting field. Accordingly, clients have become increasingly skilled and informed which in turn have raised expectations concerning the service performance (Sturdy, Werr, &

Buono, 2009). In a recent study, Van den Bosch et al. (2005) found evidence that the exploitative practices of consulting firms, offering fairly standardized services, are the most vulnerable from the increasing skill level of clients as their added value from the client perspective is diminishing.

The emerging pattern which is slowly unfolding is the appearance of a new competition which is different from the traditional professional model structured into clearly confined boxes of exclusive jurisdiction (see Figure 6.1). The new competition also calls into question various stabilizing institutions, such as the autonomy of the professionals in advisory relations, the mono-disciplinary framing of advisory problems, the effectiveness of professional associations as watchdogs of professional practices, and market shelters ensuring free professional judgment. The new competition undermines the whole of this structure and leads to a new *knowledge-based competition paradigm*. The transition towards a new knowledge creating regime has been widely described as 'the post modern research system' (Rip & Van der Meulen, 1996) or as the transition from 'Mode 1' to 'Mode 2' knowledge production (Gibbons, 1994). As Nowotny et al. (2001: vii) stress: 'The new mode operates within a context of application in that problems are not set within a disciplinary framework. It is transdisciplinary rather than mono- or multidisciplinary. It is carried out in non-hierarchical, heterogeneously organized forms which are essentially transient.' The new competition is composed of flexible enterprises pursuing a strategy of continuous change in products and processes within an economic and social framework, which encourages and promotes permanent restructuring (Best, 1990; Porter, 1990). In this kind of competitive environment, knowledge becomes the real driving force behind, and leading parameter of, both corporate and general economic growth (Drucker, 1993; Nowotny, Scott, & Gibbons, 2001; Stehr, 1994). The progress, vitality and ongoing renewal of such a knowledge arena rests on a constructive conflict between various perspectives, experiences and social groupings – a conflict which should be fought out on rational terrain to seek the best possible problem solutions. This dialectical development of a knowledge arena resting on a constructive conflict of rival opinions is a life-preserving element; were it to be suppressed, in theory, the knowledge society would quickly die (Rescher, 1985). This is why the political vision of the emerging knowledge production regime is not geared to unity and stability, the guiding principles of modern management, but demands a pluralistic coordination model in order to support necessary innovation not only at business and occupational level, but in society as a whole.

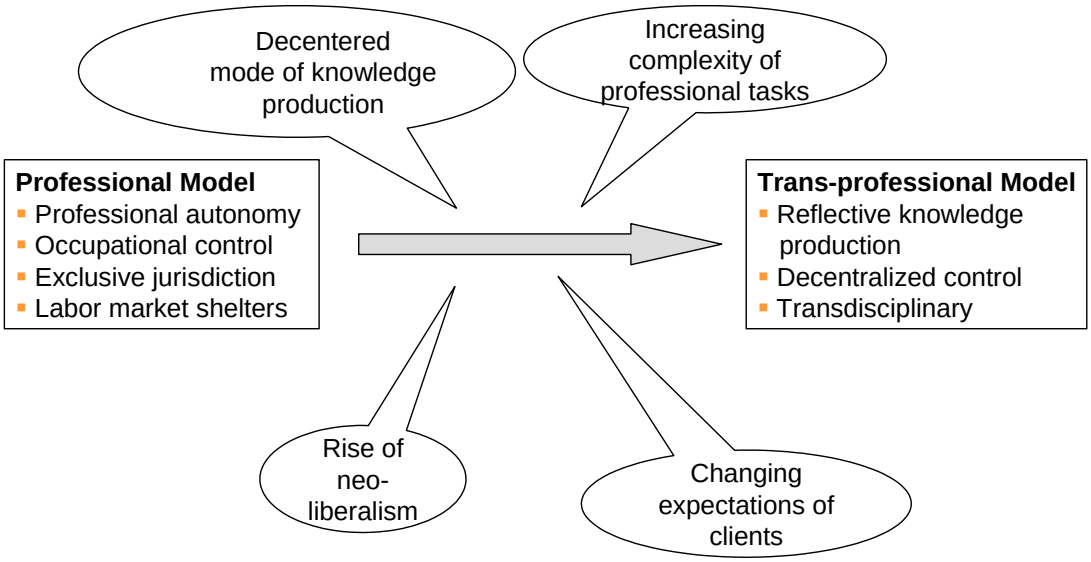

Figure 1: The Changing Knowledge Production Regime.

One reason for the emergence of the new knowledge production regime is that knowledge is increasingly created in various worksites, often outside typical professional service organizations such as clients, research labs, and firms from other professions. With the development of information and communication technologies these worksites can interact without being part of a single department or organization. Individuals and organizations are the intellectual resources for the new knowledge production processes, which are not confined to professional and organizational boundaries. As a result knowledge production is becoming socially distributed, in which communication and decision-making takes place across departmental, occupational or, more generally, institutional boundaries (Gibbons, 2000). A prime example for this type of knowledge production is the open source software development, where regionally distributed programmers coordinate software development activities through computer-mediated means. Nambisan and colleagues describe this organizing form, particularly in technology environments, as virtual customer environments or, more recently, global innovation ecosystems (Nambisan, 2005; Zahra & Nambisan, in press). However, the spinning of webs whose nodes reach out far beyond the individual worksite is also central for the more traditional professional service organizations such as accounting or law firms. Anderson-Gough et al. (2006), for instance, report the case of a large accounting firm in which networking became a form of working together through which knowledge was shared and complex advisory cases were handled.

Obviously, under conditions of knowledge-based competition neither the ‘free’ market nor the hierarchy model seem to be suitable exchange systems for enhancing innovation and

integrating distributed expertise. Knowledge transfer through markets is subject to market failures since 'know-how, or tacit knowledge, being locked in the brains of technologists, technicians, foremen, and middle managers, is not marketable with equal ease' (Bunge, 1998: 251-252). In hierarchical exchange systems, on the other hand, people tend to listen more carefully to messages from their supervisors than from their subordinates or outsiders, discouraging horizontal network spinning and learning (Hedlund, 1993). As a result, hierarchical organizations are rather ill-suited for coordinating professional work. Instead, we argue that under conditions of knowledge-based competition, a pluralist and participatory model of organization is becoming the 'new' coordination logic. In what follows, therefore, we shall examine such a pluralist organizational concept with its opportunities and problems, taking the archetype of heterarchy – the 'rival' of hierarchy in organization theory – as our model.

Nature, origin, and extension of the heterarchy concept

The word heterarchy comes from the Greek words *heteros* (the other, the neighbor) and *archein* (to govern) and means literally 'governance of the other'. The idea of a heterarchical organization originates in neuroscientific research conducted by Warren McCulloch, who in 1945 described the way the human brain works as a *nervous net*. In contrast to earlier concepts, based on a hierarchical functioning of the human brain and thus allowing only sequential processing, he postulated a model which he termed 'heterarchy.' The heterarchy involves a circular and multidimensional structure of the nervous system where, in particular, parallel processing is possible. In particular, nervous nets are systems of distributed and interacting centers whose relations are non-hierarchical, and whose organization is the emerging product of interacting nervous nets located in specific domains of nearly all parts of the brain (Kaehr & von Goldammer, 1988; McCulloch, 1945; von Goldammer, 2005).

The concept of heterarchy is regarded by modern organization theory as the archetype of a *non-hierarchical organization* (e.g., Birkinshaw & Morrison, 1995; Clark, 1985; Foerster, 1984; Grabher, 2001, 2002; Hedlund, 1986, 1993; Hejl, 1992; Ogilvy, 1977; Perrow, 1982; Reihlen, 1999; Sölvel & Zander, 1995; Stark, 1999). It is the works of Gunnar Hedlund (1986; 1993) on complex multinational corporations that probably had the greatest influence on the proliferation of this new organizational model in the research community. Most organizational researchers who use the term heterarchy refer to his concept.

Somewhat contrary to Hedlund's interpretation of a heterarchy, which is nested within McCulloch's brain metaphor, we now connect the idea of a heterarchical organization with established social science research – the theory of democracy and pluralist social systems. In

search for alternatives to the formal, hierarchical logic of organizations, a conceptual link to the existing organizational literature can be established by drawing from the long philosophical tradition on non-hierarchical social systems. While hierarchical organizational logic is more rooted in the Platonic tradition, which is characterized by central leadership, uniformity, and systematic order, heterarchical organizational logic follows the Aristotelian tradition of a negotiated order. It rests on the idea of pluralist decision-making organized along many strands – an idea which seeks to confront the rigidity and disproportionate concentration of power found in authoritarian systems with a model which organizes the creative variety of a limited conflict between rival protagonists (Aristotle, 1938; Rescher, 1995). The idea of a pluralist organization with a negotiated order can be seen as the social equivalent to McCulloch's pluralized, multicentered nervous net ordered along multiple dimensions.

Accordingly, unlike hierarchy, which is monocentric, assigning the ultimate task of coordinating decisions to management boards and using an unambiguous definition of rights and obligations in a hierarchical system of directives to guarantee cooperation, heterarchy is a polycentric organization concept with democratic decision-making structures. This means that coordination in heterarchies is more likely achieved by means of horizontal accommodation between decision-makers who are relatively interdependent on one another, whose rights are in principle equal, and whose decisions are made by mutual agreement. Hierarchy's directive principle thus stands in opposition to heterarchy's negotiation principle, so that heterarchy can also be characterized as a *negotiated system* (e.g., Scharpf, 1993; Willke, 1995).

Especially in PSFs, where decision-making critically depends on the integration of dispersed expert knowledge, a non-hierarchical leadership style has been identified as the hallmark of good managerial practice. More than 40 years ago, Zand (1969) pointed out: '... in the knowledge organization a manager who does firmly and forcefully assert his supervisory right to direct, will undoubtedly be seen as ... incompetent. He appears to his subordinates as incapable of using their knowledge capabilities' (p. 129). On the contrary, a number of scholars such as Boland et al. (1994) or Brown and Duguid (1991, 2001) have argued that coordinating knowledge work involves the cultivation of common work practices, mutual interpretations of joint enterprises, and shared epistemic views (Sole & Edmondson, 2002) within a community of semi-autonomous practitioners. Creating shared 'thought worlds' (Dougherty, 1992), 'interpretative communities' (Fish, 1980) 'communities of practice' (Wenger, 1998), and 'heedful interrelating' for knowledge integration (see chapter 2), however, cannot be imposed on others; they are rather emerging products of socially negotiated meaning. As Brown and Duguid (2001: 209) emphasize: 'For such organizations, the most

important relationship between quasi-autonomous communities within a dynamically structured firm must be one of negotiation – negotiation that allows change ….'

Governing regime of heterarchies

Governing regimes can be described along the dimensions of competitive versus non-competitive; cooperative versus opportunistic. Heterarchies score high on both dimensions; they are highly cooperative as well as highly competitive governing regimes, and have therefore a cooperative and a competitive dimension. These dimensions will be further analyzed below.

Cooperation and the creation of opportunities for participation

The concept of cooperation is an essential mechanism to form any kind of social group (Bunge, 1989: 343-347) and can be defined as mutual help of two or more individuals. In an organizational setting, mutual help requires at least two things. Firstly, organizational members must have the opportunity to access information and communication partners freely in order to explore prospects of cooperation. One of the advantages of an ideal free organization is that each member has access to the cognitive abilities and achievements of his or her fellows (Bunge, 1983: 104). Therefore heterarchies are designed to offer a maximization of participation opportunities, so that no members are excluded on organizational grounds from communication and decision-making processes. This possibility does not exist in organizations or communities divided into groups (e.g., bureaucracies) that exert some monopoly on specific cultural, political or economic activities. Prominent and rather extreme examples of such free organizations are the open source communities such as Linux or the Apache software community. In contrast to commercial software development projects in which access to developers and the source code is restricted to insiders who have information and authority to modify the software, open source communities give free access to the source code and encourage individuals to play a role in developing and enhancing the product. Similarly, the free internet-based encyclopedia Wikipedia allows all Internet users to contribute new content and validate existing entries (Parhankangas et al., 2005; von Hippel & von Krogh, 2003). In both cases, open source communities created organizational conditions that greatly enhance organizational transparency and participatory opportunities. PSFs attempt to create similar conditions for knowledge creation and transfer by developing sophisticated knowledge management systems (Reihlen & Ringberg, 2006; Werr & Stjernberg, 2003).

Secondly, cooperation requires active participation. In contrast to hierarchy, the dependence relationship of organizational members is mutual rather than one-sided: they are not

recipients of instructions, nor are they purely suppliers of information to headquarters; rather, they are involved in a participative process of meaning creation and decision-making. A co-operative process of this kind is based on mutual exertion of influence through dialogue and not on the one-sided use of coercive power. Following Popper, the good professional of an open, free, and progressive organization adopts 'an attitude of readiness to listen to critical arguments and to learn from experience' (Popper, 1963, chap. 24, sect. I). The pluralist character of heterarchy thus demands a cooperative order, which cannot only guarantee its members meaningful participation in decision-making, but in which authority is also checked with the help of rational debate, and the latter is moderated so as to save authority (Bunge, 1998, 1999). In addition, it is only through participation that people learn to use their ideas and experiences to help shape the creation of meaning and decision-making, and this participation promotes mutual understanding and the education of an informed, learning community.

The large number problem and the emergence of fluctuating hierarchies

Decision-making solely on the basis of multilateral bargaining processes is neither practicable nor economic if the number of independent decision-makers is so large that group-related conflict-resolution mechanisms and cognitive processing abilities are overstretched. The problems of coordination by negotiation rise with the number of independent decision-makers involved and with the number of their mutually dependent options. The larger the number of decision-makers, the more transactions that are needed for negotiated coordination. The *large number problem*, as Scharpf (1993) calls it, makes a purely heterarchical system organizationally indecisive (see also Hejl, 1992). Heterarchies must therefore take account of the possibility of forming temporary hierarchies. Hejl sees in this a general theorem of the logic of heterarchical control, which he formulates thus: 'In order for a system to regulate itself, it must be organized heterarchically while allowing for temporary hierarchies' (Hejl, 1992: 129).

If one assumes that organizations' problems are unambiguous, known, and recurrent, then expert skills could be brought into alignment with the formal structure of the organization: in other words, the principle of 'command through knowledge' would be put into effect. However, if the organization is confronted with a significant proportion of novel problems evincing a high level of ambiguity, there is an increasing gap between formal authority and responsibility on the one hand, and the expert knowledge needed to solve these problems on the other. Instead of taking the relevant and distributed expertise to a formally responsible decision-making instance, heterarchies therefore create various, fluctuating hierarchies with

overlapping memberships (Hedlund, 1994). These hierarchies assign the decision-making responsibilities to those individuals and/or groups who have the knowledge necessary to solve the problem. A heterarchy can thus flexibly create a one-off set of internal and external connections in order to solve a specific problem. In contrast, a hierarchy creates a rigid structure of relationships to deal with *all* the problems, irrespective of how the knowledge is spread around the organization at a given moment in time.

The heterarchical logic of organizations thus pursues the aim of continuously accommodating management structures to the problem-solving capacity available within the organization or community. The more varied the problems that the organization has to deal with, the more often the management structures must be re-configured, giving the impression of a fluctuating order.

Competition for leadership

An organizational regime allowing temporary hierarchies must establish a mechanism for formally or informally appointing organizational members to temporary leadership positions (Dahl, 1971; Schumpeter, 1942). In principle any member of the organization – providing he or she possesses the knowledge relevant to the problem, can aspire to the position in question. Miles and Snow (1995), for instance, document the case of an Australian technical consultancy network called Technical and Computer Graphics (TCG). The governing structure has no central network owner. Instead, leadership authority is allocated and negotiated through a process of triangulation meaning that it involves a three angle partnership structure among different stakeholders such as a TCG firm, a developing partner, and a major customer. Depending on the task, leadership positions can rotate among network members.

Even though heterarchies are organized democratically in this sense, this does not mean that all members of the organization carry the same weight and have an equal chance to advance to leadership positions. Here, Aristotle's concept of proportional equality is more illuminating, where it is not numbers that count, but 'worthiness' (Aristotle, 1938). Status differences in heterarchies result not from formal positions, as in hierarchies – after all, the distribution of functions in heterarchies is fuzzy and fluid – but from reputation (the measure of 'worthiness') due to expert knowledge and/or relational capital. Since reputation is a social construction, in our case, assigned by organizational members to an individual, differentials in reputation account for differences in power and career opportunities. Thus, leaders in heterarchies are not appointed by a superior but selected through a process of political competition of individuals that run for temporary positions. During this process of competitive selection

moderated by dialog and debate, reputation of an individual for having problem-specific expertise and valuable network ties becomes the key selection criterion.

Heterarchy is primarily a more modest form of organization. It is based on the intelligent individual initiatives of its members, competing cooperatively for temporary positions. These positions are in their turn vehicles whereby the members can gather new experience and enhance their own specialist reputations. Thus the organization becomes a place where competent and responsible leaders are selected – albeit leaders who only exercise their functions temporarily before being called to a new project or a new office. Unlike an autocratic system of directives and control, a democratically organized heterarchy is characterized by the fact that the power of its leaders is subject to checks and limitations, and organized polycratically (Bunge, 1998; Dahl, 1998; Sartori, 1962/1958). To quote Sartori (1962/1958: 151): 'In a democracy no one can choose himself, no one can invest himself with the power to rule, and therefore, no one can arrogate to himself unconditional and unlimited power.'

Balancing entrepreneurial autonomy with integration

Decision-makers within a heterarchical system are mutually dependent, which leads to a situation where such a system operates in a tension field between entrepreneurial autonomy and integration. The entrepreneurial autonomy of professionals results from the fact that organizational preconditions are usually less strict, thus allowing greater individual freedom of action and development. It opens up the possibility for them to define their own goals, to act according to their own convictions and values and to a certain extent to pursue their own interests. A limit must, however, be set to the potentially self-centered or personal interests where these stand in the way of lasting relations between decision-makers, and of the efficient fulfillment of the organization's goals as defined by the powerful 'stakeholders'. Hence the extent of entrepreneurial autonomy must be clearly delineated. Actions motivated purely by self-interest (the credo of an individualistic moral) lead merely to negative coordination; the individual decision-makers then only allow other people's initiatives when these do not stand in the way of their own interests. Collective action however presupposes *positive coordination*, which seeks active 'tuning' of a complex decision-making process (Scharpf, 1993). Positive coordination of this kind requires the mobilization of the decision-makers to make their best individual contributions to the solution to a complex problem on the basis of the division of labor. In hierarchies, they can, in case of doubt, be forced to act this way, but this possibility is not available in heterarchies, so that here, other conditions have to be created to permit collectively-agreed action. One necessary precondition for the viability of a heterarchical sys-

tem is therefore the cultivation of collective convictions, values and norms, along with the joint development of rough goals to compensate for the lack of formal integration mechanisms. The organization's culture not only relieves the decision-makers of the burden of fundamental problems of orientation and coordination, but also represents a common identity and supports the emotional obligation of the individual vis-à-vis the community (see Schein, 1985; Smircich, 1983). It thus provides a normative basis for the successful mobilization of social sanctions when collective morals are violated, rules of behavior transgressed and the aims of the organization impeded.

In a case study of a consulting firm, Robertson and Swan (2003) illustrate how the firm dealt with the managerial dilemma of how to balance autonomy with integration. The key insights are illustrated in the following narrative:

> *'... a strong culture based on an acceptance of ambiguity (e.g. in roles, power relations, organizational routines and practices) promoted the development of a loyal, committed, effective workforce and sustained a fluid and flexible form of project working over time. ... Thus the culture that embraced ambiguity (a consensus that there would be no consensus) engendered a form of normative control whereby consultants operated freely and at the same time willingly participated in the regulation of their own autonomy.' (Robertson and Swan 2003: 831)*

The particular tension between individual autonomy and the sharing of collective obligations is also documented in empirical studies on partnerships in professional services. Partnerships represent some typical features of a heterarchy such as self-organizing autonomous teams and strong employee involvement (Greenwood, Suddaby, & McDougald, 2006). Empson (2007), for instance, who studied law firms, suggests that a partnership structure is built upon collective ownership of the firm and unlimited personal liability. While as owners partners have a strong self-interest in maximizing their autonomy, giving them an individualistic impulse, their personal liability serves to bind and mutually control and support them. Empson argues that it is the professional ethos or the shared professional moral code that resolves this particular tension between individualist and collectivist demands of a partnership structure.

The special relationship between entrepreneurial autonomy and integration makes heterarchy an extremely flexible form of organization, coordinated sometimes tightly, sometimes loosely, having recourse to the distributed intelligence of its members, seeking to stimulate

their creativity by cooperative competition, and with the capacity to form spontaneous patterns of coordination geared to the solution of particular problems. In contrast to the simple and one-dimensional hierarchy, heterarchy is much more fluctuating and less transparent: the rights, duties and responsibilities of each member are not precisely defined, nor is there a clear and stable hierarchical structure.

Discussion

As described in the foregoing arguments, heterarchy represents an independent – and interdependent – model of organization. It neither shows elements of a hierarchical system of directives and controls, nor does its coordination rest on the invisible hand of the market. Heterarchy as we have described it, like the pure form of hierarchy, is an idealized archetype. The construction of such archetypes has the advantage that a consistent thought-model with its forms, preconditions and problems can be better compared with its alternatives than if one were to choose from the outset a diffuse mixed form which fell somewhere between the polarities of hierarchy and heterarchy.

In what follows, several central aspects of the heterarchy model will be reflected upon. This discussion aims to weigh, but not necessarily evaluate, the positive and negative aspects of a heterarchical organization. Through such discussion, the saliency of heterarchy for PSFs may emerge. We argue that the heterarchical organizational form is to be seen not only as a problem-solver under knowledge-based competitive conditions, whose special character as a negotiated system emerges as its particular strength, but also as itself a generator of deep-seated problems if its Achilles' heel is not recognized and taken into sufficient account. In this latter case, the potential strength of heterarchy proves at the same time to be its greatest weakness: When the great expectations placed in the skills of the members cannot be fulfilled, or the self-regulating capacity of the organization breaks down.

The socialized professional: Heterarchy's image of human nature

The particular character of heterarchy as a kind of negotiated system allows the professional a measure of autonomy while requiring from him or her a necessary degree of self-limitation in order to realize common goals or to carry through a collective problem-solving process. The 'space' thus granted is to be filled by the decision-makers using their own initiative, curiosity, creativity and urge to discover – which ultimately form the foundation for the development of original and unconventional ideas. Initiative and enterprise can hardly be steered from without, however, but are based in large measure on intrinsic motivation of the creative expert (Deci, 1992; Osterloh & Frey, 2000). Self-limitation on the other hand re-

quires the recognition of, and socialization with, the organization's collective norms of action, which safeguard common interests and reduce the destructive effects of conflict and competition. Gearing one's own behavior to collectively acknowledged moral principles such as openness, tolerance, honesty and partnership contributes towards an 'organization of trust', which in turn leads to lower transaction costs in the decision-making process than when the decision-makers have to act on the basis of suspicion, manipulation, deception, etc. This allows a reduction in the activities and resources, which in 'organizations of mistrust' have to be invested in surveillance, inspection and control (Etzioni, 1988). Heterarchies expect their members to show initiative, an expectation that is linked to a moral obligation to pursue common goals and maintain common standards. The democratic form of decision-making requires the social skills and persuasive abilities needed to prepare decisions and harmonize actions.

This, however, reveals at the same time a central weakness of the heterarchy model, one that cannot be ignored. If one cannot count on the necessary motivation, commitment, drive, education and cooperativeness on the part of the members of the organization, the above advantages are transformed into major drawbacks. The advantages of an open, adaptable system can then quickly change into the disadvantages of the 'tyranny of a mediocre majority' where individual achievement is not valued, or even into anarchy. The viability of a heterarchical organization thus depends fundamentally on the qualities of its members, so that the selection of suitable staff and their ongoing development in specialist and social skills comes to be of overwhelming importance for the management of heterarchies (see the person-job fit hypothesis from Holland, 1973). As research on the accounting and consultancy industry indicates, professional service firms, which are highly dependent on the human qualities of their employees, have devoted substantial resources for selecting new personnel as well as training and socializing them into socially integrated professionals (Chatman, 1991; Maister, 1985). Chatman's (1991) study of accounting firms, for instance, suggests that selecting and socializing practices work in tandem to create, maintain, and change a dynamic person-organization fit. Without proper investments in its human resources, heterarchies are likely to get out of balance; a topic which will be discussed next.

Cooperative competition and 'bounded' conflict

Analyzed from a political science perspective, heterarchies are participatory democracies. In contrast to Schumpter's (1942) view of democracy as a method of obtaining political decisions solely through competition for political office, the heterarchy model has more in

common with Dahl's (1971) idea of a *polyarchy*, which combines free competition with participation in leadership decisions (see also Bunge, 1998). While competition describes the extent to which political posts may be freely fought over (a state of affairs which is in principle absent from hierarchies), the participatory element describes the degree of opportunity to take an unconditional part in leadership decisions. Thus every participatory democracy, which unites competition with cooperation, is in a situation of 'limited' conflict (Bunge, 1989; Mintzberg, 1989; Rescher, 1993; Stacey, 1992).

Competition in heterarchies stems from the fact that different perspectives, values, convictions or simply differences of opinion are accepted because this is the only way to mobilize the knowledge and creativity spread throughout the organization. If there were an omniscient leadership, from an epistemological point of view pluralist organizations would be superfluous. Especially advisory problems have been described as 'wicked' (Mason & Mitroff, 1981; Rittel, 1972) or 'multi-context' (Kirsch, 1988) issues requiring the ability to reflect upon multiple perspectives in order to create professional solutions (Schön, 1983). Under these conditions issues are usually the subject of conflicting positions, and this is true especially of novel problems. People can, as Rescher makes clear, behave rationally while not sharing each other's position, because the variety of personal experience and the differential importance attached to cognitive values and methodologies lead to their forming different convictions, judgments and assessments, which cannot always be harmonized in discourse (Rescher, 1964, 1985, 1993).

Instead of suppressing the inevitable disagreements by authoritarian pressure or indoctrination, heterarchies cultivate variety of opinion, which generates conflicts and confrontations between the political coalitions, which in turn are in competition for projects, offices and resources. Contradiction and criticism provide the only reasonable motivation for re-thinking one's own knowledge against the background of contradictory arguments. As Popper (1965) once pointed out: 'Without contradiction, without critique, there would be no reasonable motive for changing our theories: there would be no intellectual progress' (p. 266). Accordingly, creativity and learning in organizations are not the product of orientation-monism and consensus, but of orientation-pluralism and conflict (Rescher, 1977, 1985, 1988, 1993).

Disagreements and disputes always carry the danger that productive competition escalates into destructive conflict. Resources are then wasted on unproductive rivalries, while the organization is at risk of degenerating into a fragmented community of hostile groups, and valuable plans, projects and ideas from other groups within the organization are blocked for

no better reason than that they originate from a rival. An excess of competition and conflict leads to fragmentation of the heterarchy, which then gets bogged down in its micropolitical 'trench warfare', losing sight of its actual task and no longer able to integrate its activities into a consistent pattern of action (on destructive conflicts see Mintzberg, 1983; Rescher, 1993).

The destructive forces of competition and conflict in heterarchies must be absorbed by cooperative elements, if the ability of the organization to act and take decisions is to be guaranteed. Cooperation stands for an organization's ability to work together as a team, and to adhere to collectively binding rules and procedures. The sharing of information and knowledge for the joint formulation and reformulation of problems can only be ensured by cooperative behavior on the part of the professionals. Instead of aiming at a leadership whose function is to promote consensus by avoiding disagreement, the leadership of heterarchies must rather be based on the rational management of conflicts, in order to safeguard the ability of the organization to take decisions, but without abolishing or suppressing pluralism of orientation or differences of opinion (Rescher, 1993). What is needed is not the ability to reach a consensus, but rather the ability of a community to resolve its conflicts in a democratic manner.

The concept of cooperative competition on which heterarchy is based makes it a particularly fragile – but also innovative – social structure. An excess of competition and conflict due to an absence of shared responsibility and a common cultural base within the organization leads to the degeneration of a heterarchy into a politicized organization, in which each actor seeks only to pursue his or her own interest, and accepts other people's decisions only if they do not stand in the way of his or her own goals. An excess of cultural control robs the heterarchy of its pluralist character and turns it into an ideological 'faith community' which has sacrificed its creative strength on the altar of unitary dogma.

Exploration, exploitation, and contextual ambidexterity

March (1991) noted that every organization operates in a field of tension between 'exploration' (learning 'new' things) and 'exploitation' (the efficient use of what is 'familiar'). This seems to be true of both innovative and standardized PSFs, albeit with different individual weightings (Maister, 1993). What we must ask ourselves now is how the different types of problems (Rittel & Webber, 1973; Simon, 1973; Stacey, 1992) – innovation problems and routine problems – which are not far below the surface of March's concept, are dealt with in a heterarchical structure. In order to make this clear, we shall first examine the demands that problems make on coordination, before placing these in the context of the heterarchy model.

Innovative problem solving is not a linear process: the results of successive steps are variable. It is neither known when a next step is necessary, nor what its results will look like. The whole problem-solving process is therefore self-organizing, and inaccessible to prior analysis. The identification of subsequent coordination requirements does not precede the learning process, but results from it. If this fact is accepted, the problem-solvers, under these conditions, can organize their activities only through self-coordination (negotiation).

By contrast, those dealing with routine problems, in Maister's (1993: 26-27) terms the efficiency-based practices, can exploit the advantages of formal organization. Routine problems as a rule show a high degree of repetitiveness, which allows decision-makers to analyze the problem with its input quantities and to form a good idea of the degree of coordination required. For recurrent, predictable and analyzable problems like these, it would be inefficient to initiate a creative learning process if the decision-makers already understand the problem completely and have a good idea of its structure and internal dynamics. Problem ambiguity, a characteristic of innovation problems, plays no role here, or at any rate a lesser one.

The organization of these various problem-solving processes within a heterarchical order is directly linked with the democratic coordination logic. A major difference between this and hierarchy is after all that *organization decisions* in heterarchies are in principle decentralized (rather than laid down by company management or some central organizer) and the result of a participatory bargaining process. The structures and coordination patterns are thus not – as Etzioni pointedly makes clear, the result of authoritarian dictates, but a jointly negotiated framework, within which people operate freely, but where they can also limit their behavior by more or less restrictive rules. Within this framework they are continually crossing the threshold between autonomy and order (Etzioni, 1988). The organizational framework conditions in heterarchies, in which innovative and routine problems are solved, are thus the product of negotiations and not of central directives.

More recently, the ability to switch between exploration and exploitation or innovative and routine problem-solving has been described with the concepts of *ambidexterity* (see Bledow, Frese, Anderson, Erez, & Farr, 2009). The term ambidextrous describes the capability of individuals or organizations to perform explorative and exploitative activities and switch between these different modes (Gibson & Birkinshaw, 2004). Contrary to O'Reilly and Tushman's suggestion to separate these two different learning activities structurally, the concept of heterarchy offers a very different and more adequate alternative for the context of professional work. Since professional problem-solving can never be fully standardized because

professionals will always face a degree of novelty and unpredictability in their service encounters, an organizational framework rather has to enable individuals 'to make their own judgments about how to divide between conflicting demands of alignments' (Gibson & Birkinshaw, 2004: 211). In heterarchies, the conflict and tension between the exploration and exploitation has to be managed and negotiated by professionals instead of being organized 'out' of the system (Bledow et al., 2009). Gibson and Birkinshaw (2004) denote this type as *contextual ambidexterity*, which is founded, as we argue, on a heterarchical logic of organization and facilitates a very different type of leadership (Reihlen, 2009; Rosing, Frese, & Bausch, forthcoming).

Conclusion

Heterarchy as a pluralist form of organization looks to the beneficial powers of variety of opinion, disagreement, and cooperative competition as the driving forces behind the exploration of the 'unknown' and the learning of new knowledge. Democratic procedures are mobilized to translate the variety of orientations among the members of the organization into collective action. The professional partnership form based on principles of professional autonomy and self-governance share many features of the heterarchy model described in this chapter (Greenwood, Hinings, & Brown, 1990; Greenwood, Suddaby, & McDougald, 2006). In partnerships,ownership and management are fused facilitating norms of reciprocity and democratic decision processes among partners. Yet, professional partnerships do not grant all members of the organization equal opportunities for participation and competition for leadership positions. Professional partnerships are more elitist governance systems (unlike the non-hierarchical organization of TCG described above) and work best in PSFs with less diversified knowledge fields (Harlacher & Reihlen, 2010). Interestingly, the emergence of large PSFs such as the 'Big Four' accounting conglomerates created a form of organization, which reestablished a managerialist ideology replacing partnership self-governance with forms of hierarchical control. Hierarchical control in the context of PSFs can proscribe access to necessary distributed knowledge and stymie the creativity, exploration, and innovation needed to face knowledge-based competition. Especially, when PSFs move from mono- or multidisciplinary to transdisciplinary practices requiring reflective and distributed learning, decentralized control, and close collaboration across professional fields, heterarchical forms of organization emerge as governance practices to handle these complex issues.

As we have shown, however, the way a heterarchy functions likely depends on its fulfilling the conditions on which it is premised. Without a supportive organization culture, and staff who accept the fluctuating character of their positions and tasks, relegate their individual

goals in favor of joint problem-solving processes, show initiative, and are willing to cooperate, there is the latent danger of engendering a system which is incapable of taking either decisions or actions. Accordingly, successful company heterarchization will likely require various support measures, including human resource development programs to train multifunctional, socially competent staff (Aoki, 1988, 1990), the creation of fair conflict-regulation mechanisms (Dahl, 1989; Schminke, Ambrose, & Cropanzano, 2000), participatory decision-making processes (Lawler, 1986; Manz & Sims, 1987), free access to information (Dahl, 1985), and reward systems fostering cooperation and continuous learning (Lawler, 2000). Through such measures, heterarchical forms may supplant hierarchical organizations, thereby creating new structures in which knowledge workers may perform and compete effectively. Indeed, in the context of the pace of change, complexity, and need for multiple sources of knowledge in PSFs today, we hope that our discourse and reflection demonstrate that the heterarchical organizational form has much to offer.

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