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Towards a New Generation of Organizational Design

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Abstract

Organizational design is an important and longstanding issue in management thought. Until recently, the literature on this subject developed incrementally. But during the last decades, several attempts have been made to renew organizational design considerably by combining it with principles from organizational development, a current in management literature that was considered antithetical to organizational design. Because of this, a whole new generation of organizational design approaches appears to be developing. This article gives an overview of the history of organizational design in order to clarify these recent developments. It portrays the classic design approach, gives an overview of the criticism on classic design and the developmental approaches that were created as an alternative, and elaborates their synthesis in a new generation of design approaches. To contribute to the further development of this new generation, this article concludes with a discussion of perspectives on design that can strengthen the theoretical basis of these new approaches, in particular designing as reflection-in-action, co-construction, and bricolage.

Introduction

Organizational design has a long-standing history in literature. According to Exodus 18:17-27, Jethro, Moses' father-in-law, made an organizational design for the Hebrews in the desert, dividing them into groups of ten, fifty, one hundred, and one thousand, and defining the jobs of their managers (cf. Pindur et al. 1995). And Benedict of Nursia wrote in the fifth century AD on the design of cloister organizations, specifying a division of labor between the abbot, the deans, the novice master, the guest master, and others, and spelling out their tasks, responsibilities, and authority (Kennedy 1999). The beginnings of professional organizational design lie in the last decades of the nineteenth century. In this period, organizational design really became an issue in professional discourse and practice, in particular among mechanical engineers (Shenhav 1995). Typical for that time is the remark of Slater Lewis, who wrote in 1899 "[T]he present is a time of transition. [...] Old fashioned methods of administration are beginning to show signs of wearing out, and of being no longer equal to the strain and intensity of modern industrial working. Very searching questions are consequently frequently asked as to the probable direction in which reorganization is required," (Lewis 1899, 59). This first interest in organizational design culminated in the work of Frederick W. Taylor, in particular in *The*

Principles of Scientific Management (Taylor 1911), one of the first milestones management literature, in which he put forward a blueprint for efficient organizations and a ‘scientific’ way for designing them.

Since the times of Taylor, organizational design theory has changed, especially through the introduction of contingency theory in the 1950’s and 1960’s, but in general, the developments can be regarded as incremental, adding bits and pieces to the framework established in the early twentieth century. During the last decades, attempts were made to renew organizational design considerably by combining it with principles from organizational development, a current in management literature that was previously considered antithetical to organizational design. Because of this, a new generation of organizational design approaches is developing. The purpose of this paper is to clarify these recent developments through a historical overview of organizational design. This history will be structured with a dialectical rather than a linear story-line. First, the classic approach towards organizational design will be elaborated, then the criticism on classic design and the developmental approaches that were created as an alternative will be discussed. And subsequently the recent synthesis of the two into a new generation of design approaches will be elaborated, followed by the elaboration of some recent theoretical perspectives to underpin these new approaches. For the sake of argument, the classic and developmental approaches are described as monolithic, blackboxing the differences among different proponents within each approach. This may oversimplify the history of organizational design, but the point of this review is not to do full justice to history, but to make the main developments visible and to position the most recent design approaches in literature.

The classic design approach

In James March’s *Handbook of Organizations*, a voluminous work from the mid 1960s that presumes to summarize the state of knowledge on human organizations, Haberstroh states “The design of an organization refers, *of course*, to its structural characteristics,” (Haberstroh 1965, 1171, italics added). In the classic design approach, organizational design is primarily aimed at constructing a blueprint for the formal structures of organizations, i.e. the division of labor into functions, the allocation of tasks, responsibilities, and authority of these functions, and the creation of hierarchical and lateral mechanisms to coordinate and integrate them (Triandis 1966; Perrow 1967; Lawrence and Lorsch 1967; Thompson 1967; Galbraith 1974; Mintzberg 1979). The icon of classic organizational design is the organogram, a diagram with functions grouped in boxes and lines in-between to indicate hierarchical and lateral relations (Mintzberg and van der Heyden 1999). But a formal structure comprises more than organograms can picture. Job descriptions, workflow-diagrams, or for instance quality handbooks also represent parts of it.

In the classic design approach, the purpose of designing a formal structure is to control organizational behavior. Mintzberg (1979) compares designing an organization with turning the knobs of a control panel, adjusting and fine-tuning the division and

coordination of labor to achieve stable and productive behavioral patterns. In the words of Foucault (1977), organizational designs are used to normalize and discipline. Designs state the norms for correct behavior and the sanctions on abnormalities. More specifically, job descriptions and work procedures tell employees what they should do, the hierarchical structure tells them to whom they should listen, and lateral linkages tell them with whom they should cooperate, and in which ways. Designers try to minimize unproductive deviances in individual behavior, since they threaten the rationality and the effectiveness of the whole, just as a single malfunctioning gear may cause a motor to grind to a standstill. For this reason, organizations are designed in as much detail as possible (Newman 1973), and these designs are implemented and maintained meticulously, with as few alterations or compromises as possible. Illustrative is a remark in a letter by Frederick Taylor, the father of scientific management, to one of his clients. He wrote with emphasis that the success of his designs rested on the rigid establishment of inflexible procedures, and their exact execution, “whether they are right or wrong,” (Kanigel 1997, 377). His designs were not to be doubted or altered – especially not by the people whose behavior it attempted to regulate.

In Mintzberg’s (1979) metaphor, a designer is the person who turns the knobs of the control panel. In the classic approach, this is the (top)manager of an organization. Parts or aspects of the design may be delegated to management consultants or lower-level employees, but ultimately, the organizational design is considered the task and responsibility of general management (Khandwalla 1977; Harris and Raviv 2002). Ideally, manager-designers would be all-powerful and all-knowing, able and capable of molding the organization to an optimal design. They would know when to turn which knob, and what effects different positions of the knobs would have on their employees’ behavior. In practice, of course, this ideal cannot be attained. Managers are not all-powerful. Designees mostly have the option to cooperate with or to resist the design, and may possibly force the manager to compromise. Nor are managers all-knowing. Even when they consult others, they will have to base their design on incomplete information, and aim for satisficing instead of optimal designs (Simon 1945; 1969). But in the classic design approach, these comments are practicalities and footnotes to the design process. The basic assumption remains that management designs the organization, as well as it can, despite all practical problems and setbacks. In the words of Khandwalla (1977), “the principal agency through which organizations are shaped, regardless of how many or how diffuse the forces shaping them, is management. For it is management [...] that reconciles and manipulates the various pressures on the organization, and through its decisions and directives, gives the organization’s structures and processes distinctive form,” (Khandwalla 1977, 261).

In the classic design approach, designing is seen as rational problem-solving. This view is championed by Herbert Simon (1969) in *The Sciences of the Artificial*. He conceptualizes the design process as a search process, starting with a problem and ending when a design has been found that solves the problem optimally, or at least satisficingly. Typical stages in this problem-solving process are the identification of the problem, the analysis of the problem, the design of a solution, the implementation of a solution, and finally the evaluation how the solution solved the problem (Newell and Simon 1972; Lipshitz and

Bar Ilan 1996). Since design situations can be very complex, with multifaceted problems and large solution spaces, Simon (1969) compares the problem-solving process as a search through a maze, with many dead ends and difficulties in the orientation. To find one's way through this maze efficiently and effectively, he advises to reduce the complexity of the situation in the first stages of the design process. His main heuristic for this reduction is decomposition. Designers should divide a complex problem into sub-problems, until they reach a level at which the problems are manageable. Thus, a hierarchy of problems emerges. The process of analysis involves a descent through this hierarchy, exploring the causes of problems and sub-problems. The process of designing solutions involves a bottom-up movement. It starts on the lowest level by designing solutions for sub-problems, and proceeds by combining these solutions, until an overall solution has been created. This process of decomposition and recomposition matches particularly well with the design of formal structures, which is the focal point of the classic design approach, since a formal structure concerns the decomposition and recomposition of labor. According to Galbraith (1974), decomposition and recomposition form the core of organizational design. "After the task has been divided into subtasks, the problem is to integrate the subtasks around the completion of the global task. This is the problem of organization design," (Galbraith 1974, p.28).

Designing a solution in the classic design approach is strictly separated from the implementation of the solution. Logically and in time, design precedes implementation. The implementation does not start before the best possible design has been chosen. During implementation, there may be compromises on aspects of the design, but the better the design, the better will be the end-result after implementation. When designing, designers should not bother too much about potential implementation problems, because that would thwart the design process and could lead to sub-optimal designs (Williamson 1975).

Simon's (1969) intention, broadly followed by others, and recently revitalized in organization studies (Baligh et.al 1996; Romme 2003; Van Aken 2004; Dunbar & Starbuck, 2006; Denyer, Tanfield & Van Aken, 2008), was to develop designing into a science. In the classic approach, organizational design is regarded as scientific in so far as it is based on a body of scientific knowledge about designs and design processes. This body is conceived of in a logical-positivistic sense, as a collection of related 'justified true beliefs' about organizational designs and the activity-sequences one should carry out to create them. Logical-positivistic design knowledge is typically stated in a law-like form. This law-like design knowledge is applied in concrete design situations through subsumption (Tsoukas 1994). This means that particular cases are put under the general categories in which the law is stated. Toulmin (1976) calls this way of handling knowledge technological Platonism, since specific organizational designs are considered instances of more abstract and pure designs, and designing in a specific context is considered the instance of a generic design method. This technological Platonism does not imply that the classic approach regards the creation of designs as mere deduction from scientific knowledge. Classic designing has a creative element, in particular in the search for alternative solutions. In these creative activities, knowledge is not applied through deduction, but through abduction (Peirce 1923; March 1976). Abduction is the

inference to a novel design, the backwards use of the ‘if...then’ rule. It starts with a ‘what...if’ proposition, a speculation about what might be a good design, and proceeds from there with ‘if...then’ reasoning: if this is a good design, then one can expect certain desirable consequences for the organization. These expectations can be checked by argumentation, simulation, or experimentation, and if they turn out to be incorrect, this is a reason to modify the design and start with ‘if...then’ reasoning again.

Against classic designing

The classic approach has been criticized in management literature on different aspects and on different grounds. This criticism is as old as the classic design approach, but it in some periods – Barley and Kunda (1992) roughly identified the periods 1923 till 1955 and 1980 till at least 1992 – it has been more intense than in others. The six main points of criticism that have been put forward over the years, will be elaborated in this section.

A first point of criticism is that the scope of the approach is too limited. The success of an organization depends not only on the quality of its formal structure, but also – and maybe more importantly – on the informal structure, or organization culture (Peters and Waterman 1982; Schein 1985). These cultural aspects may be influenced by the design of a formal structure, but can also be shaped by other interventions, for instance by encouraging people in face-to-face contact, propagating appealing visions, or cultivating strong organizational values. An approach that solely focuses on the formal aspects of the organization and misses the essential informal aspects is therefore considered ineffective.

A second critical comment is that the classic approach is focused too heavily on (upper)-management, and separates designers and designees too strictly. Designs are meant to control the behavior of the employees in order to make them do what management thinks to be productive. In the classic approach, management designs and employees are being designed. Employees are not seen as co-designers, and their margins to steer their own behavior are made as small as possible. Employees may, of course, choose to resist during the implementation of the design, but in a hierarchical organization the management is most likely to get the best of it. Critics of the classic design approach have argued that employees should be given more influence on the designs that concern them personally (Trist and Bamforth 1951; Mumford 1995; Emery 1993). One argument is that freedom and autonomy are important values in a democratic society, which should also be applied within organizations. Another argument is that employees often have knowledge and skills that are useful for making a good design. Organizational knowledge and skills are distributed among the employees of the organization (Hutchins 1995; Tsoukas 1994), so it is unwise to utilize only the knowledge and skills of the management in the design process (Zell 1997).

A third, related point of criticism is that the classic design approach separates the processes of design and implementation too strictly. Designers are not encouraged to anticipate considerations of implementation during the design process, which may lead to large implementation problems, or even to complete failure of the design process (Freeland 1996). Mintzberg (1990 1994) makes this point for strategy design. “Every

failure of implementation is, by definition, also a failure of formulation” (Mintzberg 1994, 25).

A fourth point of criticism is that, in the classic approach, the design process is too one-sidedly problem-driven, and ignores solution-driven design processes. The argument of the classic design approach against solution-driven designing, viz. that it focuses too quickly on one solution without exploring possibly better alternatives, can be countered by several arguments against problem-driven designing. Design problems often have a ‘wicked’ nature (Rittel 1972), which means that they are unique, complex, and ambiguous. Wicked problems cannot be defined unequivocally, at least not at the beginning of a design process, which makes them impervious to decomposition, thus stalling the design process. Furthermore, working from problems towards solutions becomes problematic when problems change before their intended solution has been implemented (Nystrom and Starbuck 1981), which may result from changing circumstances or a growing insight in the problem situation. And when a solution has been implemented, it is tricky to assess it as a solution to the problem, because the causality between an intended solution and the disappearance of a problem is often ambiguous, especially with wicked problems. For these reasons, design processes are often solution-driven (March 1981; Sköldberg 1994). Solution-driven design processes are not initiated to solve a particular problem, but to implement a particular solution. Through implementing these designs, a whole series of problems may be solved, but which problem will be solved can only be said afterwards.

A fifth critical comment on the classic design approach is that by conceptualizing design as a rational problem-solving process, the role of non-logical processes (Barnard 1938), tacit knowledge (Polanyi 1962), or intuition (Agor 1984) is ignored. Designers may make intuitive shortcuts in the design process. As an example, consider an experienced efficiency consultant who only needs a photograph of a production hall to make an instant diagnosis of the main inefficiencies, without conducting a thorough analysis, and without being able to explain how he came to his diagnosis. According to Simon (1989) this intuition is non-rational, but not irrational, because experienced designers have stored thousands of patterns in their memory, and their intuition is based on the instant recognition of a pattern in a certain situation. By insisting on rational analysis and design, the classic approach fails to appreciate the effective intuitive actions of highly competent practitioners.

And finally, the classic design approach ignores the role of socio-political processes. Design processes rarely take place in a political vacuum. Political wrangling often influences the design process and its outcomes, to the extent that the resulting design totally reflects the interests of the most powerful people (Hickson et al. 1971; Child 1972; Pfeffer 1978, 1981). In politicized situations, designers are not free to explore the entire problem space, as the spaces that are incompatible with the interests of the dominant coalition are shut off. In this sense, the classic design approach is somewhat naïve, and this naïveté hampers its effectiveness.

To counter the classic design approach, a variety of alternative approaches has been developed in management literature. These approaches have received labels like ‘organization development’ approach (McGregor 1960; Argyris and Schön 1978; French, Bell and Zawacki 1989), ‘emergent change’ approach (Burnes 1996), the ‘participative design approach’ (Rehm 1994), or the ironical ‘truth, trust, love and collaboration’ approach (Pettigrew 1985; Buchanan and Boddy 1992). In these approaches, organizational designs are not created by individual (top)managers who, through rational, science-based problem-solving, design and implement new formal structures to control the productivity of their employees. On the contrary, organizations are created in collective processes of the employees of the organization. The object of development may include the organizational structure, but it focuses more importantly on the organizational culture or informal structure. The role of management is to coach, stimulate, motivate, and facilitate employees in solving their own problems. In addition, management propagates a vision of the future, a ‘solution’ in general and appealing terms, as a general guideline for the developmental process. Social processes such as collaboration, communication, negotiation, and self-organization are emphasized over rational problem-solving processes, and if problem-solving occurs, it is locally, integrated in the overall process of learning and negotiating. The knowledge used is mostly local and practical, not stored in ‘the books’, but in the heads, hearts, and hands of employees, learned by doing and reflecting on achieved successes and failures in the developmental process. In short, developmental approaches form the antithesis of classic design.

A new generation of design approaches

Proponents of the classic design approach and of the developmental approach did oppose each other vehemently, on pragmatic as well as on ideological grounds. Designers and developers formed different camps in the community of academics and practitioners, institutionalized in different conferences, academic chairs and consultancy firms. Table I summarizes the main differences, as they have been discussed in the above sections.

	<i>Classic design approach</i>	<i>Developmental approach</i>
<i>Design focus</i>	Formal structure	Informal structure
<i>Design process</i>	Rational problem-solving	Collective learning process
<i>Designers</i>	Management	Whole organization
<i>Designees’ role</i>	Passive	Active
<i>Design knowledge</i>	General, science-based knowledge	Local, experience-based knowledge
<i>Design/implementation</i>	Separated	Integrated

Table I: Main differences between the classic design approach and the developmental approach.

Over the last decades, there have been some attempts to bridge the gap between classic design and developmental approaches. Burnes (1996) has elaborated a contingency theory, in which design and development are accommodated as complementary ways to change organizations. He says that the classic design approach is the most effective in stable environments, while developmental approaches are more suitable for turbulent environments. Others have attempted to synthesize design and development by combining the best aspects of both. These new generation approaches received labels such as ‘developmental design’ or were just presented as more sensible ways to design. Ganzevoort (1985) proposed an approach in which management anchors certain aspects of an organization by design, such as the general vision, the division of labor in the design process, the minimal critical specifications of the design, and the available room for experimentation. Constrained and enabled by these designs, there is room for the designees to shape their organization through learning and experimentation. Yokoyama (1992) advised managers to leave the design of their organization deliberately incomplete. They should design the interfaces with customers, suppliers, government and financiers, in order to regulate the translation of wishes of stakeholders to internal requirements. Within these boundaries they should leave further specification to their employees. “Let life fill the spaces,” (Yokoyama 1992, 122). Mastebroek (1997) searched for a balance between the ‘steering’ of the classic design approach and the ‘self-organization’ of developmental approaches. Strategy, targets, and hierarchical structure are created by design, and within the organizational units, improvement initiatives and experiments are facilitated and encouraged. And Bate, Kahn, and Pye (2000) developed a combined approach in which they mix the design of structure with the developing of culture. A synthesis is necessary, as “organization design without organization development may be likened to an empty temple and organization development without organization design to a tent blown away in the wind,” (Bate et al 2000, 200).

Next to these authors, who have taken the classic design approach and developmental approach as a starting point to create fruitful mixes and combinations, others have tried to apply entirely new perspectives to organizational designing. These perspectives have been developed in other fields of designing, and remain mostly quite conceptual, but they are promising and can help the new generation of design approaches to grow out of its position as in-between of the large classic designing and development traditions. In the following, the perspectives of reflection-in-action, co-construction, and bricolage will be discussed.

Reflection-in-action

One of the most influential contributions to design theory of the last decades is the work of Donald Schön (1983, 1987). He conceptualizes designing as a process of reflection-in-action. Reflection-in-action starts with a designer or a group of designers putting a ‘frame’ – a model, a concept, or a point of view – on a complex, multifaceted design situation, thus creating a starting point for the design process. The designer uses this frame as a hypothesis, and ‘makes moves’, i.e. explores the implications of the frame in terms of consequences and necessary conditions, and reflects on them in terms of coherence, doability, and productivity. “[T]he designer evaluates his moves in a threefold

way: in terms of the desirability of their consequences [...], in terms of their conformity to or violation of implications set up by earlier moves, and in terms of his appreciation of the new problems and potentials they have created,” (Schön 1987, p.63). When designers get stuck in a frame, because the consequences prove too unfavorable, or because important conditions cannot be fulfilled, they reframe the situation by putting a different organizing model or concept on it. They engage in ‘a game with the situation’, making moves and listening to the ‘back talk’ of the situation in order to explore it; they find out the intended and unintended consequences of their moves, and confirm or refute the adequacy of their frame.

A game with the situation may become very complex. A web of consequences, conditions, and appreciations is constructed, and in this web, all moves are reversible. Skilled designers can develop and maintain a web of great complexity, but it is impossible to keep all possibilities open all the time. Therefore, designers must fix certain points in the web by making a decision when they have enough confidence about the most productive route. By making a decision, designers create a criterion to judge further moves, which have to be consistent with the decision. This point can be called a ‘design node’, which has binding implications for further moves and thus creates a path-dependency (David 1985). By fixing one design node after another, not necessarily in a linear process, designers gradually narrow down the range of potential forms and functions, until all points are fixed, at least for the time being, and the design is completed.

The strength of Schön’s work is that it captures the complexities of designing and makes the classic design approach and the developmental approach appear as special cases in stead of normal situations. In the classic design approach, no reframing occurs after the first stage and nodes are fixed step-by-step through rational decision-making. In the developmental approach, the process remains open-ended during the process and nodes become fixed when they have proved their workings in practice. In principle, the new generation of design approaches covers all other possible routes in the game with the situation. However, Schön’s concept are quite abstract and focus on design cognition rather than on design practice, which makes it more difficult to apply it to social design situations like organizational design. This may explain why his work has been applied in a limited number of organizational design studies (Visscher and Fisscher 2009; Visscher and Visscher-Voerman, 2010), and never led to the ‘Schön shock’ that has hit fields like architecture, industrial design and design education (Dorst 1997).

Co-construction

Another perspective, developed within the social studies of science and technology, is designing as a process of co-construction. In the classic design approach, the relation between the form and function of a design is captured in the adage ‘form follows function’. In the new generation of design approaches, this is not necessarily the usual situation. While advancing in the creation of a form, requirements may prove to be too demanding, or new functional opportunities may arise. In addition, the complexities of the design situation may make it impossible to articulate functional requirements

exhaustively at the beginning of the design process. In complex situations, it may be more sensible to limit oneself to global, tentative, and ambiguous functionalities, which are to be further developed and articulated in the course of the design process, together with the construction of forms (Monge 1993). So, in new generation designing, functions and forms are co-constructed (Bucciarelli 1994).

In principle, a co-constructive design process is never totally completed, since any achieved consistency in function and form is temporary, fragile, and open to disturbance (Nystrom and Starbuck 1981). However, there are two points in the process where a temporary closure occurs. When function and form reach consistency in the virtual world (Schön 1983, 1987), e.g. on paper, the design process comes to an end. And when they reach consistency in the real world, the implementation process ends. In the classic design approach, the two points of closure mark the endpoints of two stages in the design process. The first moment concludes the design stage, the second the implementation stage. In this way, design and implementation practices, as well as judging the quality and success of the design, are kept strictly separate. In the new generation design approaches, such a strict separation is an exception rather than a normal case (Leonard-Barton 1988). Design and implementation may also run more or less in parallel, depending on the contingencies of the situation (Visscher and Visscher-Voerman 2010), and in the extreme case, design and implementation processes may even come to a closure at the same moment (Eccles 1994).

The strength of designing as co-construction is that it captures the complexities of the design process. Because of its focus on activities and their (temporary) closure, this concept can handle parallel and open-ended processes much better than phase-models can. But, because phase-models are easily communicable, have an undertone of rationality, and reinforce the ‘illusion of control’ of design processes, they are still dominant, in particular in practice-oriented literature (Visscher 2006).

Bricolage

A third contribution to design theory is the view of designing as bricolage. Bricolage is the situational tinkering with the resources at hand (Lévi-Strauss 1966; Weick 1993). The designer as a bricoleur is a kind of Jack-of-all-trades, improvising a design with the tools and materials he has at hand. The bricoleur differs from a classic designers in the latter’s problem-driven and structured way of working. As an example of a bricoleur, Harper (1987) describes a man from New York who created a tractor from the motor of a hay baler, wheels of a Chevrolet, the gas tank of an outboard motor, and several materials he had accumulated in his shed over the years. The repertoire of a bricoleur is “heterogeneous, because what it contains bears no relation to the current project, nor to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock [...]. [T]he elements are collected or retained on the principle that ‘they may always come in handy’. Such elements are specialized up to a point, [...] but not enough for each of them to have only one definite and determinate use,” (Lévi-Strauss 1966, 17-18).

Productive bricolage requires a set of tools and materials that is generic and flexible enough to be useful in any project, regardless of the specific design situation. Building such a repertoire has a receptive and coincidental nature, since bricoleurs do not search purposefully for a specific material, lacking the guidance of a specific problem. They stumble over materials that are potentially useful, and pick them up without knowing in advance whether and how the materials will be used. But it also has an active side. Bricoleurs go to places where they are likely to stumble over materials, recognize their potential functions and store them in a way that they can be retrieved when needed. They also develop an intimate knowledge of their tools and materials and their potentialities, in particular by using them differently in different projects (Weick 1993). In design processes, which are seen as processes of heterogeneous engineering (Law 1987; Turnbull 1993), materials are mobilized from the bricoleurs' repertoires, contextualized and transformed in order to be useful for the project at hand. While improvising with these materials, bricoleurs closely watch the emerging forms and their functionalities, shaping them step-by-step. There is no blueprint, as in classic design, although one may be constructed in hindsight, reflecting the design that has been created. In the design process, some specific resources may prove to be lacking in the 'shed' of the bricoleur. Acquiring these resources is then project-specific and problem-driven, as in classic design, but it occurs within the context of bricolage.

The strength of the concept of bricolage is that it captures the complexities of applying knowledge to design situations. It thematizes the art of designing rather than the science of designing, it prioritizes improvisation over methodical working, and it parts with the strict separation of the classic design approach between the generic and the specific. But although the concept of bricolage has been used in the field of organizational design, to capture improvisation (Weick 1993) and the building-up of design repertoires (Visscher 2006), it has not been used yet to its full potential.

Concluding remarks

The new generation of design approaches strikes out on a middle road between classic design and development, combining, mixing, or balancing elements from each approach and synthesizing the dichotomies described in table I. Designing in the new generation differs fundamentally from classic designing in several respects. Firstly, the meaning of 'designing' changes. In the new generation, the emphasis is less on the contriving of plans or blueprints and their subsequent implementation, and more on the integral process of bringing a new organization into being. Blueprints can be made for aspects of the design, but they may also be made afterwards to picture the results of the design processes, or be left out entirely. In new generation designing, what was an essential characteristic of classic designing has become a situational option. Secondly, new generation designing distances itself from the classic connotation of control. Classic designing is ideally a controlled process, and its purpose is the control of people's behavior. In new generation designing, there is room for the uncertain and the unexpected, and the purposes of designing are broader and more diverse than in the

classic approach. “Designers hope to improve organizations” as Nystrom and Starbuck (1981) say, “to make organizations more efficient, more humane, more rational, more fun, more useful to societies, more profitable for owners, more satisfying to members, more submissive to top managers, more democratic, more stable, more flexible, or whatever [...]” (Nystrom and Starbuck 1981, xiii). Thirdly, new generation designing is more complicated than classic designing. In the classic design approach, ‘how to’ questions had clear-cut answers. In new generation design approaches, the answer always starts with ‘it depends’, since the middle road between classic design and development offers a wide range of possible mixes. Consider, for instance, the question ‘who should design?’. Roughly, the classic approach says that management should design, while the developmental approach recommends that as many people as possible be involved. The new generation approach advises a middle road between management alone and everyone in the organization, substituting the question ‘who should design?’ for ‘who is to be involved in which stage of the process, to do what for which part or aspect of the design?’. This question elicits subtle, situational answers, whereas in the classic approach the answer is simple, or the question would not have been asked at all.

The new generation of design approaches brings more variety, complexity, and situatedness into the theory of organizational design. In a metaphor given by Schön (1987), it is the beginning of a descent from the pure and rigorous high ground of classic design into the swampy lowlands where practitioners live and work. The new generation comes closer to what organizational designers actually do, thus making organizational design theory more realistic and more relevant for practitioners. To further develop this new generation, more study of actual design practice is necessary. Deepgoing studies of the work of organizational designers can try to capture the complexities and contingencies of organizational design. New perspectives on designing, such as reflection-in-action, as co-construction, and as bricolage can help to grasp what happens in practice and to get away from the old and unproductive feud between design and development.

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