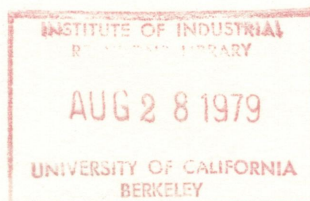# Working Paper Series

Learning from Differences: Organizational
Adapation at the Interface of Complementary
Orientations (A Matrix Organization Example)

by
Harvey F. Kolodny

(WORKING PAPER   WP - 79-07)

FACULTY OF MANAGEMENT STUDIES

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Abstract

Differences between complementary organizational orientations develop into sources of tension in an organization, sources that stimulate organizational adaption. These sources of tension are ideal locations for organizational researchers to direct their clinical investigations. They are among the most critically sensitive processes in the organization. Empirical investigation that begins at these tension points will generally lead quickly to comprehension of complex processes, particularly when high and low performers are also compared. An example is drawn from balance of power issues in matrix organizations to illustrate the outcomes of just such a research focus.

Learning from Differences: Organizational Adaption at the Interface of Complementary Orientations (A matrix Organization Example)

In the developmental stages of learning, comparisons drawn between differences are more likely to lead to successful new learning than are comparisons of similarities. The latter require a more sophisticated level of cognition (Vygotsky, 1972). For theorists attempting to understand behavior in organizations, the message is much the same. Given the relatively immature state of development of the organizational field, comparisons made between different organizational arrangements or behaviors will lead to a more rapid development of knowledge than will comparisons made across, say, several successful organizations of a similar type. We don't have the sophisticated conceptual knowledge to discern the fine distinctions between one situation and another similar one. However, we can usually identify the more extreme differences between organizations with respect to, for example, some of their structural arrangements (Burns and Stalker, 1961; Woodward, 1965) or according to the processes utilized by more and less effective performers (Lawrence and Lorsch, 1967) or according to very different leadership styles of key actors (Vroom & Yetton, 1973).

In our literature, the word "differences" can mean a variety of things. Differences can be opposites, they can be the polar ends of a construct or variable, they can be paradoxes or contradictions, they can result from the dual "horns of a dilemma" or they can be a consequence of complementary concepts. For the organizational theorist, the learning from differences takes place at the point of intersection or overlap or fusion where a kind of tension is created by the differences. It is the tension that requires explanation on the part of the theorist. And there are clues to guide the theorist to that tension, for if the difference is something experienced by the organization itself, it is generally

manifested in some form of organizational change or adaption, i.e., some movement to reduce the tension and its accompanying organizational ambiguity or uncertainty.

There is an impressive tradition of organizational researchers who have used organizational differences to generate conceptual understanding. Some have been masters at the art. Perhaps because of their early training in Marxian or Hegelian type dialecticism, sociologists have been particularly adept at learning from differences. For example, Peter Blau (1970) has explicated how Max Weber juxtaposed three bases of authority against each other to utilize a dialectical argument to refine concepts and promote clearer understanding (see Box A). Alvin Gouldner, another of Robert Merton's students, was also guided by Weber's "ideal types" of authority in carrying out his classical gypsum plant study in which he compared and contrasted three "ideal types" of managerial style: mock, punishment-centred and representative democracy (1954). Gouldner "invented" mock bureaucracy to be able to set it off against the other types and to analyze the data he had obtained. As theorists we need some framework, some conceptual scheme to make sense of the data we collect or observe. Setting up "ideals" or extreme types is one way to define the boundaries of the territory within which we can work.

Box A - Blau on Weber's Types of Authority

Authority Type	Undermined or Threatened By
Traditional	- revolutionary ideals of charismatic leader - rational pursuit of ends rather than traditional arbitrariness
Charismatic	- crystallizing the revolution into traditional order - bureaucratization into rational, formal organization
Legal-Rational	- attraction of charisma - power of tradition

Ideal states, then, bound the set - the domain of study. The ideal states, however, are not arbitrary creations established merely to set limits. Within themselves they must be internally logical and constitute a consistent set. It is this demand on the attributes of ideals that forces the field bound by them to be an appropriate territory for the phenomena being investigated. For example, in identifying "cosmopolitans and locals" Gouldner (1957) bounds a professional organization's territory. The organization itself must attend to both orientations: the acquisition and maintenance of specialist knowledge and the application of such to the specific purposes of the organization. However, the individuals within the organization can differentiate their personal orientations to be cosmopolitan or local and only a loose coupling (Weick, 1976) coordinates their organizational activity. It's rare that anyone aligns totally with the pure logic of a cosmopolitan or of a local; however the "ideal states" set off the boundaries on the range of behaviors and, as such, on the

range of the organization's domain.

Merton was himself a strong advocate of learning from differences. In drawing distinctions between manifest and latent functions (1957) he suggested that theorists would be able to "direct attention to theoretically fruitful fields of inquiry" (p. 65) which they should pursue in "the study of unintended consequences of social practices as well as in the study of anticipated consequences" (p. 66). Each consequence was, in effect, one part of a duality and the study of the other part would lead to rich understanding.

Beginning with his recognition that both mechanistic and organic organizational forms had functional consequences in different contexts, Tom Burns became a master of this technique (Burns and Stalker, 1961). In his BBC study (1978) he identified a series of dualities: the rank and authority hierarchy should also be understood as a career ladder; the success system was also a failure system; the dedication to a vocation by people in the organization also served to reduce the organization's flexibility to change; the need to adapt to a perception of what's wanted forced a digression from a sense of self. Burns has suggested that in organizational theory building: "Comparison is all!" In the tradition of Burns, this article suggests that those comparisons can be fruitfully made within the organization as well as across organizations.

Hence diffences can be treated as ideals, as abstractions to serve the purpose of dialectical disputation, as contradictions to generate creative conceptualization (Rothenberg, 1979), as paradoxes, as opposites, as dualities, as dichotomies - true and false (Roethlisberger,

1977). Of late, however, they have been of most value when treated as complementary relations. The late Fritz Roethisberger (1977) referred to it as the concept of complementarities, as two complementary ways of looking at social reality, at concrete systems and abstracted systems. "This (complementary) conception of social reality offers the opportunity for the development of knowledge and action in ways that avoid the confusions and inconsistencies that we have fallen into" (p. 465).

Treated, then, as complementary relations, classical dilemmas or paradoxes such as conformity and deviation (Berg and Buss, 1961) or stability and flexibility (Thompson, 1967; Weick, 1969) guide us not only to more comprehensive theories of explanation about organizations but also to points of critical sensitivities where learning about organization will be most fruitful. These critical sensitivities occur at the intersection points of complementary relations, i.e., at the points where simultaneously important but different organizational orientations intrude on each other. It's here that organisms and organizations experience tension and a drive to reduce that tension, which leads to learning and adaptability.

Organizations must pay attention to both their environment and their internal arrangements, and at their juncture, where boundary managers cope with varying degrees of uncertainty, we can learn much about the organization, particularly how it adapts. Organizations are specialized through division of labor principles and these specialist functions are coordinated to provide applicable and appropriate responses to their environment. At the juncture, of the specialization and

coordination functions, or the differentiation and integration activities, we can learn extensively about the processes that underlie organizational functioning (Lawrence and Lorsch, 1967; Galbraith, 1972).

If the complementary orientations are long-run and short-run, or social and technical, or rational and innovative, (Kolodny, 1979b), the reasoning is the same: there is a tension created at the juncture and that tension is a critical point to focus on for organizational understanding. It's the point of adaptability or organizational learning, and of organizational survival.

Researching at the Tension Point

In a perceptive piece of clinical investigation, Lawrence and Lorsch (1967) developed a scale of increasingly complex methods of coordination utilized by organizations in environments of differing uncertainty. Building off their own findings that the more differentiated an organization became the more difficult was the task of achieving appropriate integration, the researchers were able to focus in on and concentrate on the variety of devices used to achieve that integration. Observation and interviewing in three different types of organizations (organizations in high, medium, and low change environments) led them to identify three different patterns of achieving appropriate integration. All three utilized some mechanisms in common, but each differed in the additional integration devices used as the complexity of their situations increased. Lawrence and Lorsch also selected a high and a low performer in each of the three types of organization to be able to compare and contrast the different patterns of integration used by more effective and

and less effective performers.

Rate of Change in Environment

	High	Medium	Low
Hi			
Lo			

Performance

Figure 1

Figure 1 summarizes their research design. The high vs. low performance criterion allowed them to identify patterns of effective organization. There is likely to be less variety in effective performance than in ineffective performance. There are many ways to do poorly. The high, medium, low criteria allowed them to center on a tension point. Earlier research had suggested to them that different organizations had different patterns of integration and differentiation (Lorsch, 1965). Believing that uncertainty in the sub-environments of the differentiated units was the cause of the differences, they chose different organizations in sectors of differing uncertainty and were able, thereby, to create a research design that concentrated on the point where that uncertainty was taken up in the organization. That point was a point of tension, of differences that amplified the researchers abilities to learn.

In a conceptual piece, Galbraith (1972) built off Lawrence's and Lorsch's work to develop a more comprehensive and more generalized model of the way organizations respond to uncertainties. The empirical basis of Galbraith's model is outlined in a 1970 article which analyzed the structure of an airframe design and manufacturing organization before and

after a significant increase in uncertainty. Again, focusing on the critical points of interdependency between product and process design areas. Galbraith was able to identify a variety of integrative devices used to achieve the required coordination and explain organizational behavior.

In a 1974 study that has achieved less attention than it deserves, Kotter and Lawrence compared 20 mayors and their patterns of municipal governance. Some were very successful and well known mayors. Some were failures in their roles. Each mayor was but one part of several key domains that had to be considered to understand the mayor's role. The others were: the city environment, the network of resources, and the key tasks that had to be done. The researchers focused on the intersection of each of the domains with every other domain and postulated a model that called for co-alignment between all the domains. The successful achievement of that co-alignment could be studied by examining the processes used by mayors. The researchers identified three key processes: planning (which they referred to as agenda setting), resource management (which they refer to as network building and maintenance) and task accomplishment.

In a recent study of the management of large research and development programs in both the public and private sectors, Beddows, Lane and Lawrence (working manuscript) focused on three sets of logics that such R&D programs face: technical, social and organizational. In addition to many other insights about successful large program management, the researchers used the comparative aspects of their research design to increase understanding of organizational adaption. The organizational logic in their model links together the technical and social logics through a series of mechanisms that include boundary management, synthesizing the contrasting logics, establishing criteria for scientific and social success and by switching organizational resources and logics to match changing conditions. Once again, the researchers' learning comes from exploring the tensions created by different logics or orientations that

must interact because of an interdependency requirement, and from identifying the actions taken by different organizations to reduce that tension in ways that are effective; i.e., by studying effective organizational adaption.

Matrix Organizations

Matrix organization designs are a form comprising the complementary orientations discussed earlier. The complementary orientations of a matrix tend generally to be product and functional ones in domestic manufacturing firms, product and area in multinational organizations, and area and function in service sector situations. However, all the combinations can, and do, occur in each of the sectors. The function-product matrix is the one most commonly referred to (Kingdon, 1973; Davis and Lawrence, 1977) and is the one that will be used here to advance the argument about learning from differences.

Product and functional orientations intersect at two primary points in the matrix "diamond" (Davis and Lawrence, 1977): the apex of the diamond, where the chief executive officer integrates the two orientations, and the many bottom cross-over points, where a host of two-boss people serve as functional members of product teams. Both top and bottom cross-overs are tension points created as a consequence of the different orientations. The two-boss person tends to be the focus of much concern both on the part of writers of organizational behavior textbooks and on the part of people who must learn to function effectively in a matrix. The concern is warranted. The tension created at the intersection leads to conflict and ambiguity for the role incumbents because the two-boss scenario challenges much conventional experience and ideology about classical

organizational "one man-one boss" relationships (Kolodny, 1979a) and about clearly defined roles and responsibilities.

The other tension point is no less a source of difficulty. Balance of power issues continually pervade the decisions of the CEO at the apex of the matrix and create a set of tensions that must always be managed and which never go away. The balance of power position in a matrix organization design has no inherent stability of its own. Each change in the sub-environments of the complementary orientations reflects into the organization and is taken up in the many triads, each composed of a two-boss person and the two immediate product and function bosses. The stability of a particular balance position is maintained by a host of forces, some pulling in one direction and some in the other. The study of the forces at this point of differences or tension leads to significant understanding about how the matrix design functions.

The Balance of Power at the Top Cross-Over Point

Two matrix organizations, one considerably more successful than the other in terms of matrix implementation (although that assessment was a subjective one) were studied in an unpublished dissertation (Kolodny, 1976). One of the central focii of that study was the balance of power resulting from the required interaction of two orientations: a product/ program/business orientation and a functional orientation. Figure 2 summarizes the findings of that analysis. The figure is arranged as a Lewinian type force-field or quasi-stable equilibrium diagram (Lewin, 1958).

The forces maintaining the functional power position are lined up in opposition to those maintaining the product/program/business area (or just 'product') power position. Variables whose effects appear to be in direct opposition to each other are aligned against their opposites.

The balance between the orientations is maintained primarily by the CEO, situated at the apex of the matrix diamond. He or she takes actions that give more or less influence to one or several of the variables represented in Figure 2. The more variables the CEO clearly comprehends and can manipulate the easier it is for him or her to maintain a preferred balance position. Not all variables are within the CEO's power to vary. In some cases, the variables lie at the very heart of the organization's business (e.g., non-substitutable resources) and changing them would involve significant policy changes. Others can only be changed slowly (e.g., people management style).

Table 1 provides a brief explanation of each variable and how it contributes to the power balance. By (1) comparing two different matrix organizations at (2) a point of critical sensitivity, it was possible to soon acquire a considerable amount of significant learning about the functioning of matrix organizations. The two different orientations created a tension at the top that had to be appropriately balanced by the CEO if the matrix was to appropriately adapt to the changes in the environments of the two orientations. With this conceptual scheme or frame of reference, the actions of the CEO could be placed in perspective and a variety of variables identified (Figure 2) which, collectively, formed a logical set. The set identified in Figure 2 and explained in

Table 1 isn't necessarily complete, but does come close to setting the
boundaries on the type of actions taken by CEOs in those organizations as
well as in similar kinds of matrix organizations. In different businesses
or in other sectors, some of the variables in the set would likely be
different, though many will hold for all matrix situations.   '

Summary

In matrix organization designs, the bottom cross-over is a second
tension point where an analysis similar to that described for the top
cross-over point can be conducted. Two-boss person situations have been
studied by others, though far from definitively, and they won't be
explored here (see Davis and Lawrence, 1977, for references). The
researcher who chooses to study two-boss situations will acquire considerable
able understanding of how complex matrix organizations function. It
meets the criteria of being a tension point that constitutes a good
entry point to study a complex situation qualitatively, namely, at the
interface of two complementary orientations and through the comparison
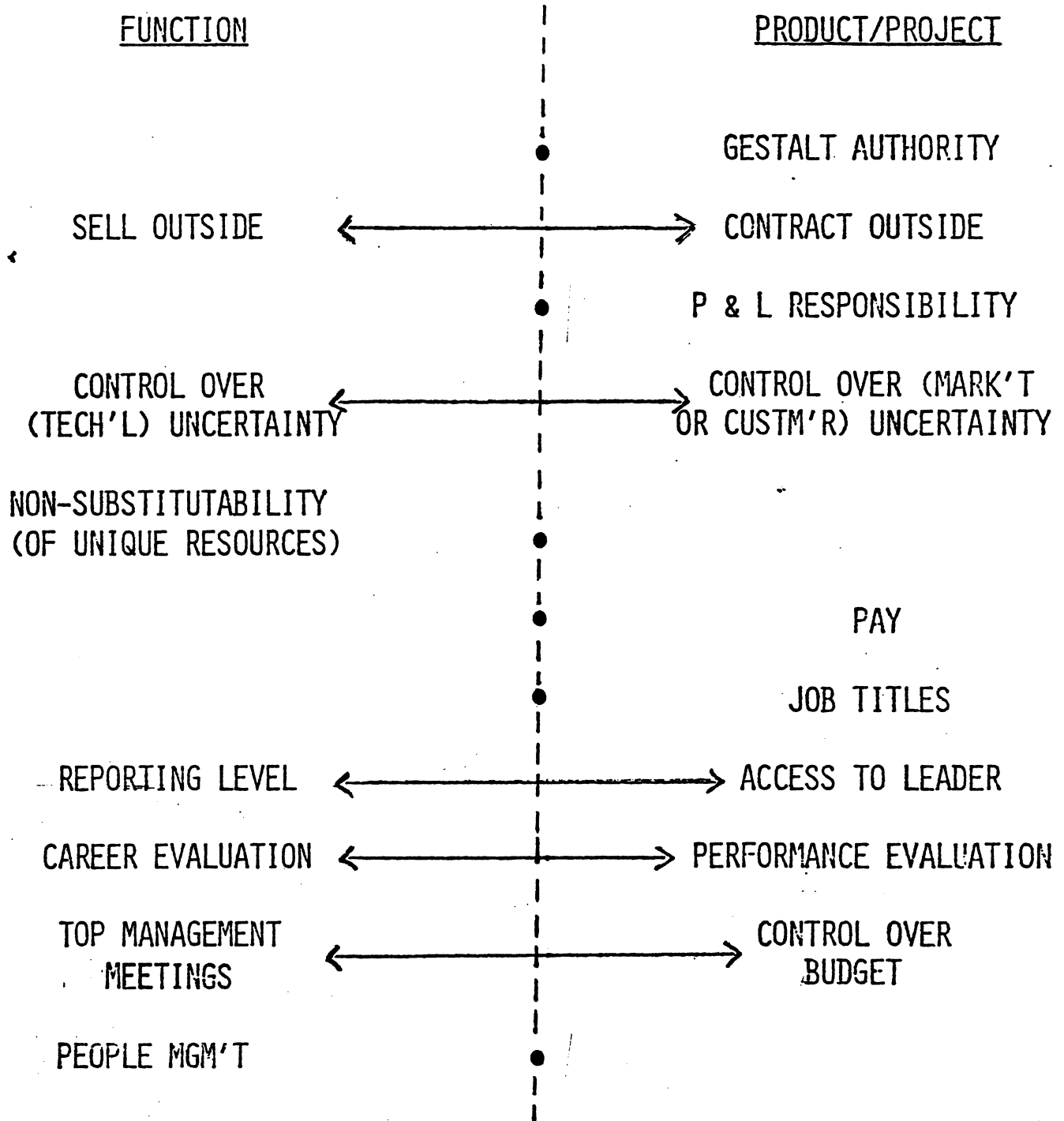of more and less successful two-boss person situations.

FUNCTION | PRODUCT/PROJECT

● GESTALT AUTHORITY

SELL OUTSIDE ←——————————→ CONTRACT OUTSIDE

● P & L RESPONSIBILITY

CONTROL OVER ←——————————→ CONTROL OVER (MARK'T
(TECH'L) UNCERTAINTY   OR CUSTM'R) UNCERTAINTY

NON-SUBSTITUTABILITY
(OF UNIQUE RESOURCES) ●

● PAY

● JOB TITLES

REPORTING LEVEL ←——————————→ ACCESS TO LEADER

CAREER EVALUATION ←——————————→ PERFORMANCE EVALUATION

TOP MANAGEMENT ←——————————→ CONTROL OVER
  MEETINGS   BUDGET

PEOPLE MGM'T ●

Figure 2   THE BALANCE OF POWER IN MATRIX ORGANIZATIONS

Table 1. Some Variables Used to Balance Power
in a Matrix Organization

Variable	Explanation
Gestalt Authority	Product managers are responsible for something whole which, no matter how small, is a type of perceived authority no functional manager, no matter how powerful, ever obtains.
Contracting Outside	The right to buy/access resources outside the organization, even when some are available inside; occasionally used, more often threatened.
Selling Outside	The right to sell resources outside the organization, which ultimately makes the functional manager who does so into a product manager as well.
Profit and Loss Responsibility	A measure of performance congruent with the way the organization itself is measured - a perception that suggests high importance.
Control over Technological Uncertainty	The functional task of controlling important environmental uncertainties for the different specialist areas gives off significant perceptions of power for the functional manager.
Control Over Product-Market Uncertainty	The product task of controlling important environmental uncertainties for the market segments of the different product lines gives off significant perceptions of power for the product managers.
Non-substitutability (of unique resources)	Control over resources developed by the organization and not available elsewhere gives off significant real and perceived power for the particular functional managers.
Pay	Can be used to pay product managers more than functional managers and signal same to the organization to shift power to the product side.
Job Titles	A fictitious perception of power accruing to the seemingly large group of similarly titled program managers, when, in fact, their different goals rarely give them occasion to coordinate any actions.

Table 1.   (Continued)

Variable	Explanation
Reporting Level	Functional managers report directly to the CEO and the organizations understand that they do.
Access to the Top	Product managers often report into managers of product managers who serve as their functional bosses (of how to manage products and programs) while the CEO is their product boss and, as such, always provides them with direct access to himself or herself. The CEO is the only person in the organization, beside the product managers, who manages things "whole" and, as such, can understand the product managers' perspectives and problems.
Career Evaluation	The functional managers exercise a powerful influence over the career trajectories of most people in the organization.
Performance Evaluation	The product managers provide crucial inputs to the short-run appraisal of product/program people and sometimes, when such people are physically located with the product group, provide the only input.
Top Management Meetings	Frequent (often weekly) operations meetings to manage the organization comprise the CEO and the first reporting level, which always includes the functional managers but not always the product managers (as when managers of product managers exist).
Budget Control	Product Managers are often given the budgeted dollars from which they forecast their functional resource needs and negotiate for same with functional managers, which gives them powerful influence.
People Management	Hiring, firing, training, promoting, career trajectory decisions belong to the functional managers; a fact that gives them powerful influence over people.

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