Systemic Creation of Organizational Anxiety

An Empirical Study

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Inquiry into a product development organization in the semiconductor industry revealed a high level of organizational anxiety. Using causal loop diagramming in conjunction with qualitative data analysis, inside members of a research team created a map of the organization's cognitive schema (or collective mental model) using data obtained from informants in the organization. The map showed how the organization's use of classic defense mechanisms to control organizational anxiety instead created feedback loops that amplified it. Suggestions for controlling anxiety systemically are offered.

Many people experience anxiety, an intense feeling of apprehension and fear, in circumstances where these emotions are warranted, such as acute physical danger. But

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471
since the dawn of psychology and psychotherapy, psychoanalytic scholars have suggested that anxiety, at an unconscious level, is virtually endemic to the human condition. For example, late in his career, Freud (1920/1955) focused on the notion that people engage in an elemental internal struggle between instincts of life and death. Using this idea as a springboard, Klein (1948/1975) suggested that the young child’s struggle between life and the unease associated with death leads to something she called “persecutory anxiety.”

More recently, psychoanalytically oriented organizational researchers have proposed that individual anxiety has an organizational analogue and have suggested some reasons for its existence (Diamond, 1991; Hirschhorn, 1988; Hirschhorn & Young, 1991; Kets de Vries, 1991; Kets de Vries & Miller, 1984). Hirschhorn and Young (1991) and Diamond (1991) suggested that a struggle, very similar to the one within individuals, takes place within work groups and organizations. Although organizations do not suffer death in the same way that individuals do, they do face the possibility that their financial or operational viability (the analogue to being alive) will end. Organizations face the possibility of ceasing to exist (the analogue to death) through bankruptcy, takeover, mergers, and so on. Scholars propose that organizations engage in struggles between continued existence and demise in a process similar to the one described above for individuals. The result is organizational persecutory anxiety (Jaques, 1955) or “annihilation anxiety” (Hirschhorn & Young, 1991).

There is extensive literature about how work groups and organizations attempt to cope with their anxiety. Some of this is based on the work of Klein (1946/1975), who showed how individuals cope with anxiety by using splitting, introjection, and projection1,2 (see Morgan, 1997, p. 223, for a comprehensive listing of these and other psychodynamic concepts). Splitting is the result of the elemental struggle between life and death mentioned above—people separate (split) the “good” aspects of their existence from the “bad.” They project bad onto others and introject good into themselves. Hirschhorn (1988) showed how the manic defense can be used by work groups and organizations. An anxious manager may split good and bad by considering himself omnipotent (introjecting good) at the same time that he views lower level participants as unworthy (bad). The manager may almost literally project these feelings onto workers by punishing them—with extra work, unreasonable schedules, unachievable goals, and so forth. Inspired by Klein, Bion (1959) did extensive work with groups in anxiety-provoking situations. From this work, he identified three “basic assumption” defenses against group anxiety. These defenses are designed to help the organization and its members cope with their anxiety. The first is dependency, where a group ceases trying to solve its problems in a healthy way while it waits for a messiah to save it. The second is pairing, where two ostensibly “good” actors who are related to the group (two group members, or one member and a consultant, or even one member and

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a faddish management concept) combine to undermine and eliminate a "bad" leader. Finally, Bion identified flight/fight, which occurs when the members of a group cease constructive problem solving either by (a) blaming all the group's problems on an outside agent or (b) pretending that no problem exists.

As we will see later, Klein's and Bion's behavioral models of anxiety are the most relevant for the present study. Jaques (1955) and Menzies (1960) showed how anxiety in organizations can take on a form different from behavior, even resulting in an organization's structure (in the sense of hierarchy) becoming a defense mechanism. Issues not addressed by these researchers, but addressed in the present article, include how organizational anxiety manifests itself in an organization's cognitive schema (Weick, 1979), and how that schema can provide an "auxiliary causal account" (Lofland & Lofland, 1984) of the dynamics of organizational anxiety.

COLLECTIVE MENTAL MODELS AND SYSTEMS THINKING

Weick (1979) suggested that through a process of enactment, selection, and retention, an organization's members create a cognitive schema or map of the most important aspects of their collective experience. This schema channels future action, which leads to further refinements of the map, which leads to future action, and so on. Senge (1990) described the phenomenon of cognitive maps through the term "mental models," which can apply to either individuals, groups, or organizations. He defined mental models as one of the five key disciplines of learning organizations, but another of these disciplines is systems thinking—understanding how the many elements of an organization are connected and interrelated. Senge describes how dynamic structures like mental models of systems can be described with causal loop diagrams. These are composed of system elements whose causal linkages are symbolized by arrows. An increase or decrease in the value of the component at the tail of the arrow affects the value of the component at the head of the arrow. Positive causal links ("+" at the arrowhead) indicate that the values move in the same direction; that is, an increase in A leads to an increase in B. Negative causal links ("-" at the arrowhead) indicate that the values move in the opposite direction; that is, an increase in A leads to a decrease in B. System components are connected in closed unidirectional paths that result in feedback loops. Causal structures dominated by reinforcing feedback loops generate behavior that moves component values progressively away from initial or equilibrium values. In contrast, structures dominated by balancing feedback loops generate behavior that resists continued change in a given direction and directs system behavior toward a goal or equilibrium condition (Goodman, 1974). Balancing feedback loops and reinforcing feedback loops combine to produce much of the behavioral change observed over time in organizations (Forrester, 1961; Senge, 1990). In the present article, we examine the issue of how anxiety might appear in an organization's collective mental model.
RESEARCH QUESTION

The present article will address how one organization dealt with the anxiety that was a salient aspect of its existence. The central research question is, "How is anxiety incorporated into an organization's mental model?" Secondary questions are, "What was the source of the anxiety?" "How does the anxiety system created by members of an organization channel their action?" and "Did the organization's mental model typify any theory on how organizations manifest and cope with anxiety?"

This article will show that people in this organization create dynamic conceptual structures whereby organizational anxiety generates and influences organizational behavior, leading to even more anxiety in the organization. This article will also show that well-known constructs of organizational anxiety are central to this conceptual structure. The findings of the present study go beyond merely supporting the existence of these constructs. Using causal loop diagramming to reveal its dynamics, the study allows a new and deeper understanding of the phenomenon of organizational anxiety. We take a qualitative, in-depth look at one large organization. Data-gathering methods are a blend of participant observation and unstructured interviewing, followed by analysis of qualitative data and causal loop diagramming. We begin with a description of the setting.

DESCRIPTION OF SETTING

Computer Chips International (CCI) is a large manufacturer of semiconductors. The fieldwork for this research took place at CCI's Seaport plant, located far from CCI's corporate headquarters. In early 1993, CCI's Data Shaping Division (DSD), located in the Seaport facility, became involved in a university-based research project designed to assess how the concepts and tools of learning organizations (Senge, 1990; Senge, Kleiner, Roberts, Ross, & Smith, 1994) can enhance the effectiveness of organizations like the DSD. Data for the present article came from an early stage of this project.

Brief History of the Seaport Facility

The Seaport facility was started in the early 1960s. Over the years, the plant's ownership changed many times. The Seaport facility initially was a computer chip fabrication facility. Today, it still includes a large "fab," but it also has substantial research and development capacity. The DSD, which is the dominant division housed at Seaport, has developed a distinctive competency in the design and fabrication of low-priced, commodity-like computer chips. Like many firms in the semiconductor industry, CCI has had its share of fluctuations. The Seaport plant has been through three owners, each of whom has manipulated the size of Seaport's labor force—expanding it during upturns, shrinking it during downturns. At the time of this research, the labor force at Seaport was approximately 1,800, substantially below the peak number of about 3,000. These fluctuations have had a powerful effect on the culture
of the Seaport facility, a facility generally agreed to be distinctively different from corporate headquarters. The effect has been to create a very strong work ethic among the staff, based partly on a desire to avoid layoffs by being the best at what they do.

The distinctiveness of the facility’s culture is heightened by Seaport’s location. The Seaport area has a very attractive quality of life. It has substantial natural beauty that is enhanced by a relatively low cost of living, good schools, and reasonable access to major urban centers. A major issue for Seaport’s workers is that there are no other semiconductor facilities within hundreds of miles of Seaport. A layoff from the Seaport facility means an undesirable move to a distant part of the country. Voluntary turnover is lower at Seaport than anywhere else in the semiconductor industry. Many people have been working there for more than a decade, which is significantly longer than average for this industry.

Description of the Situation During the Present Research

Management of the DSD selected five line people and two staff people to look into new ways to reduce cycle time for the division. This group became known as the Inception Team. The team decided (among other things) to form an alliance with a university research center by being the site for a research project. The Inception Team and the university researchers focused their efforts on a subunit of DSD, the Progressive Logic Department (PLD). This department had approximately 100 engineers working in five units; four on various aspects of product development and one performing a support function. The research reported here occurred over a 1-year period from August 1993 to July 1994.

RESEARCH METHOD

The seven Inception Team members and three university researchers made up the project research team, creating a mix of inside and outside perspectives and expertise. The inside members were from design, testing, marketing, and human resources. The three outside members were the research project manager (a person extremely well versed in the five disciplines of the learning organization), an expert in system dynamics modeling (Forrester, 1961), and a person with skills and experience in qualitative field research and organization theory.

Data Gathering

All inside members of the team were trained in qualitative data gathering, primarily the recording of field notes, qualitative interviewing, and participant observation (Glaser, 1978; Glaser & Strauss, 1967; Lofland & Lofland, 1984; Taylor & Bogdan, 1984). Five of the Inception Team’s members became active interviewers and participant observers. One of the outside members of the team also did a great deal of participant observation. The team’s inside members also were trained in systems thinking. The primary emphasis was on developing the ability to appreciate feedback
in organizational systems (Forrester, 1961) by doing causal loop diagramming (Richardson & Pugh, 1981) and by understanding systems archetypes (Senge, 1990).

Over a 6-month period, 40 members of the PLD were interviewed by four inside researchers. In unstructured interviews, the respondents, who represented a broad cross section of Progressive Logic, were asked to reflect on things that enabled and things that inhibited new product development. Also, an average of two meetings per week was observed by three researchers (two inside and one outside). The meetings were of various types—planning, technical, and management—cutting across all five units of Progressive Logic. Finally, the inside researchers kept field notes on ongoing interactions they had with other people in the department. The inside members' knowledge of the relations among the various groups in Progressive Logic were helpful during the data-gathering phase.

Data Analysis

The inside researchers were trained in methods for analyzing qualitative data (Glaser, 1978; Glaser & Strauss, 1967; Lofland & Lofland, 1984; Miles & Huberman, 1984; Taylor & Bogdan, 1984). All 10 researchers engaged in qualitative data analysis. First, all participants reread at least some portion of the data; any given subset was read by at least two researchers. Second, the research team met in a series of day-long analytic sessions designed to make systematic sense of the data. Third, the research team uncovered several important themes: communications, learning, incentives, resources, decision making, management interactions, metrics, and anxiety. Fourth, the team reached consensus on anxiety as the most important and interesting of the themes. Fifth, the team's members wrote individual theoretical memos (Glaser, 1978) attempting to capture more detailed interpretations of the anxiety theme. Sixth, the team came together to share these memos. At this point, an innovative event occurred in the data analysis. One inside researcher, motivated by his exposure to causal loop diagramming, presented his memo in graphical rather than verbal form. Subsequently, the team used the data it had gathered and analyzed to refine the diagram in that memo into a causal loop diagram (see Figure 1) of the organizational schema or system that the division's members had created. This finding makes up the heart of the present article.

Data Checks

Guba and Lincoln (1982) offered several criteria for evaluating, and strategies for assuring, the rigor of qualitative research projects. They argued that data from any scientific inquiry must meet each of four tests: (a) truth value, also known as internal validity or credibility; (b) applicability, usually called external validity or transferability; (c) consistency, the well-known criterion of reliability or dependability; and (d) neutrality, the extent to which the data are confirmable or "objective."

Triangulation in the form of multiple data sources (interviews, observation, and participant observation) tapped by multiple researchers helped credibility and dependability. The presence of inside and outside researchers also improved credibility and
objectivity by enriching the research team’s constant dialogues over reliability and objectivity. Credibility was fostered by persistent engagement; namely, the inside researchers’ longevity with and extensive local knowledge of the site and the outside researchers’ persistent year-long involvement with and resultant knowledge about conditions at the field site. Most important for credibility, the results of the analysis were shared with all members of Progressive Logic in large- and small-scale meetings, an effort that revealed widespread agreement with the conclusions. Transferability was strengthened by gathering the data from 40 members of a rich field site very much embedded in the real world of the semiconductor industry. Finally, objectivity was improved by training researchers in qualitative methods to ensure that data were gathered in as verbatim a manner as possible.

**FINDINGS**

The findings of the Inception Team concerning organizational anxiety in the PLD are captured in Figure 1. It is important to note that nothing in the diagram in Figure 1 represents anything objective. The items named and the causal relationships depicted in Figure 1 were generated by the inside researchers based on their interpretation of the gathered data and their own local knowledge. Figure 1 is a representation of the cognitive map (Weick, 1979) enacted by the members of the PLD. It represents “sensible” and “plausible” sensemaking (Weick, 1989) by the members of that department. It does not in any way represent some sort of objective assessment of anxiety.

Four of the five elements typically found in causal loop diagrams are depicted in Figure 1. First are variables such as Anxiety and Search for Daddy. (For the balance of the present article, variables in figures will be written in initial caps.) It is worth noting that the specific wording of the variables is idiosyncratic to the members of Progressive Logic. For example, Only Game in Town refers to how the Seaport plant is the only semiconductor facility within hundreds of miles, resulting in a feeling of limited alternative employment opportunities. Particularly idiosyncratic terms will be explained as the need arises. Second, there are positive links among elements of the system. For example, three factors—Only Game in Town, Perception of Failure, and Layoffs—cause increased anxiety when they increase. Third, Figure 1 shows negative links where changes in one element lead to changes in the opposite direction for the other. For example, as Understanding (grasping the essence of the issues facing the company) increases, Resources Used Making Decisions decrease, and, vice versa, as Understanding decreases, Resources Used Making Decisions increase. Fourth, there are three reinforcing loops (i.e., loops that move the system away from equilibrium) in the department’s cognitive schema, identified in Figure 1 as R1, R2, and R3. These loops make up the present study’s most significant findings and will be discussed in detail below.

The only element typically found in causal loop diagrams that is missing here is the balancing feedback loop. This indicates no inclusion in the schema of control factors that make the system return to equilibrium after a disturbance. Reinforcing loops, in contrast, tend to amplify disturbances and move the system farther from
FIGURE 1: Anxiety System in the Progressive Logic Department

NOTE: + = positive link (variable at head of arrow moves in same direction as variable at tail), - = negative link (variable at head of arrow moves in opposite direction as variable at tail).
equilibrium. It is noteworthy that all the loops identified by the internal researchers in this organizational system amplify the focal phenomenon—Anxiety—and no loops help to keep it under control.

**Anxiety Reinforced**

*The Messiah Loop*

The first reinforcing loop is R1. As Anxiety about the organization’s performance increases, the members of the department Search for Daddy; that is, they look for a savior. This search reduces the organization’s Accountability (being truly empowered to act on business initiatives), in turn reducing (because of the positive link) its Perceived Ability to Succeed, which increases (because of the negative link) Anxiety. So, an increase in Anxiety leads to even more Anxiety. The R1 loop corresponds quite well to Bion’s idea of dependency as a defense mechanism (hence, the label messiah loop). Dependency occurs where an anxious group or organization waits for a messiah to save it. Progressive Logic respondents called this a Search for Daddy. The irony here, similar to what Bion pointed out for his respondents, is that dependency not only is ineffective as a defense or coping mechanism but it actually can set in motion a systemic logic that is self-defeating—the result of the Search for Daddy is more Anxiety, not less.

The organizational learning literature shows that this loop has the characteristics of a “shifting the burden” systems archetype (Senge, 1990). The organization searches for the messiah but suffers the unintended consequences of weakening its internal coping mechanisms and strengthening its external dependencies. Figure 2 illustrates this archetype. Instead of addressing the anxiety problem directly by increasing their Capacity to Succeed (loop B1 in Figure 2), the organization’s members attempt to shift their burden to an intervener by Searching for Daddy (loop B2 in Figure 2). If organization members were held accountable, instead of Searching for Daddy, they would feel Pressure to Learn and Perform. But the Search for Daddy reduces Accountability, in turn reducing the Pressure to Learn and Perform, which reduces the Capability to Succeed, ultimately (after a delay) increasing Anxiety, forming a reinforcing loop (loop R4 in Figure 2). A healthier response to anxiety would be to learn and to perform, thereby reducing anxiety in a more fundamental way. But the quick fix, for which the shifting the burden archetype is noted, reduces the system’s need, and ultimately its ability, to apply the fundamental solution.

*The Bureaucratic Defense Loop*

Reinforcing loop R2 in Figure 1 works differently. Here, increased Anxiety leads to increased Focus on Metrics (responding to short-term setbacks by strenuously increasing the emphasis placed on meeting financial targets), which in turn causes the Resources Used Measuring to go up. As measurement increases, the Resources Available Per Project are reduced, which increases the Resources Requested. This in turn lowers the Percent(age) Resources Received, reducing the Perceived Ability to
Succeed and ultimately increasing Anxiety. Loop R2 captures the collective enactment of Klein’s manic, or Diamond’s bureaucratic, defense, leading to the label bureaucratic defense loop. Anxious managers project the organization’s problems onto their subordinates and seek to punish them. They operationalize this punishment with a hyper-focus on quantitative metrics, slavishly using them to control organizational action. Through this emphasis on metrics, the managers deplete the organization of the physical, financial, and (perhaps most important) psychological resources its members need to succeed. This ultimately leads to higher levels of anxiety. The organizational learning literature describes this as a “fixes that fail” systems archetype (Senge, 1990), as depicted in Figure 3. In this archetype, an intended policy of reducing anxiety by increasing performance (Figure 3’s loop B3) is thwarted by unintended consequences associated with the focus on quantitative metrics. These side effects (loops R5, R6, R7, and R8 in Figure 3) serve to negate the effectiveness of that focus. For example, the intended effect of Focus on Metrics is to raise performance, which should reduce Anxiety, as shown in balancing loop B3 in Figure 3. However, the Focus on Metrics has at least three unintended side effects. First, Perception of Punishment increases, which (after a delay) increases Anxiety (loop R7). Second, as depicted in the original
causal loop diagram of Figure 1, the Focus on Metrics increases the Resources Used Measuring, reducing the Resources for Project Work, which, after a delay, lowers Project Output, leading to an increase in Anxiety (loop R8 in Figure 3). Third, the Focus on Metrics often leads management to pull revenue into the current quarter from the following quarter. The financial gimmickry of this move directly raises Anxiety (loop R5), but it also substantively degrades performance, because the next quarter's financial results are depleted, thereby raising Anxiety after the delay (loop R6).

**The Fight Loop**

In the third reinforcing loop in Figure 1, R3, increased Anxiety leads to increased Internal Competition, which leads to a greater Need to Be Right. Increasing the Need to Be Right reduces the number of Questions asked, which lowers Understanding and increases the Resources Used Making Decisions. The rest of the loop follows the end of the R2 loop, with a result of even greater Anxiety.

This loop is the systemic enactment of one side, fight, of Bion's flight/fight basic assumption defense. Anxiety leads to Internal Competition as all members of the organization seek to secure their places in the face of uncertainty, layoffs, and so on. As the stakes rise, the Need to Be Right (Argyris, 1990) rises, and inquiry is discouraged in favor of "winning" at all costs. The resultant decrease in Understanding
taxes the fixed pool of Resources Used Making Decisions, which reduces the Resources Available Per Project (and by implication reduces the probability of success), which increases Anxiety. Again, as Bion pointed out in his work, this defense mechanism against anxiety has the opposite effect—when it is used, anxiety increases.

This systemic behavior is symptomatic of a lack of shared vision (Senge, 1990). Irrational decisions are made when a larger purpose and goals are poorly defined. Also, members of the organization need to develop the capacity to question their individual mental models and the mental models of others. To overcome the fight loop, it is vital to examine mental models while defusing the defensive routines (Argyris, 1990), such as the Need to Be Right, that block learning.

In summary, the mental model of anxiety held by the members of the PLD is a grim one. All the loops are reinforcing. This is good if something starts to move anxiety downward, because the reinforcing loops will reduce anxiety even more in a kind of virtuous circle. Unfortunately, what seems to exist in this organization is a vicious circle. All the reinforcing loops point to an increase in anxiety and a steady worsening of the situation.

Answers to Research Questions

These findings provide clear answers to the research questions posed earlier. First, this organization has experienced pervasive anxiety based on a long period of fluctuating performance, a history of layoffs, and distance from similar facilities. Such an organization will incorporate this anxiety into its mental model. Second, it is surprising that the structure of the mental model, and the behavior it shapes, incorporates defense mechanisms that are well known to scholars. Moreover, given the way the elements of the mental model are connected, using these defense mechanisms results in more, not less, anxiety. In other words, the mental model created in response to organizational anxiety is designed to help cope with the problem but succeeds mostly in exacerbating it. The firm's history indicates that anxiety has fluctuated over time and has not been successfully controlled.

DISCUSSION

Lack of Balancing Loops

The lack of balancing loops is a remarkable feature of Progressive Logic's mental model of its anxiety. All the loops in the Progressive Logic schema tend to increase anxiety. Perhaps anxiety was so salient in Progressive Logic that at the time they were producing the data for their causal loop diagram (in Figure 1), the division's members simply were not thinking about loops that might keep anxiety within bounds.

In other empirical studies of organizational cognition, Axelrod (1976) and Bougon, Weick, and Binkhorst (1977) found that organization members tended not to identify balancing loops. In the present case, members of the internal research team had received extensive exposure to causal loop diagramming and analysis and had no
apparent compunctions about identifying balancing loops, as evidenced by the many negative links they identified. However, the team was working from the qualitative data gleaned from interviews and field notes, and those data did not provide any evidence that the members of Progressive Logic saw balancing loops. It is plausible that the long and pervasive experience of anxiety at CCI led to a focus on how anxiety worsened, not on how it could be alleviated. Nevertheless, because the site has been successful for decades, one would think that some balancing loops exist, or else the site would have become paralyzed by anxiety.

The archetypes mentioned earlier explain how balancing loops might exist in a situation such as this. Because of delays in these systems, it is likely that anxiety would oscillate; that is, rise and fall. For example, in the shifting the burden archetype, the speed of the quick fix would, for a time, mask the fundamentally deteriorating position of the firm, keeping deeper anxiety at bay for a while, only to have it return. In the fixes that fail archetype, the deleterious effects of focusing on metrics do not take effect until after a delay, so anxiety decreases before it increases again. Either way, anxiety falls in the short term but rises in the long term.

Three exogenous factors—Only Game in Town, Perception of Failure, and Lay-offs—are shown in the schema to cause anxiety. Of these, Only Game in Town is the only really exogenous factor. One easily could hypothesize some negative links between Lay-offs and Perception of Failure and other elements in the schema that would create balancing loops. For example, were Resources Available Per Project to go up, Lay-offs would go down, reducing Anxiety, reducing the Focus on Metrics and the Amount of Resources Used Measuring. This would increase the Resources Available Per Project, further reducing the threat of Lay-offs, therefore reducing Anxiety. Another plausible negative link would go from Perceived Ability to Succeed to Perception of Failure. As the Perceived Ability to Succeed increased, Perception of Failure would certainly decrease, as would Anxiety. Finally, it is possible that the members of Progressive Logic have developed coping mechanisms in their private lives (e.g., loving families, close-knit religious communities) that ameliorate their collective anxiety. These mechanisms do not appear in the department’s cognitive map, perhaps because they are so idiosyncratic to each PLD member.

These hypothesized links were not salient to the members of Progressive Logic at the time the data were gathered. Otherwise, they would have included them in their schema. But prior to doing this exercise, the department’s members did not know about the systemic nature of their anxiety. After gaining some insight into the systemic structure of their collective anxiety, they might admit that something has to be keeping it within bounds. Perhaps gaining better insight into the department’s objective success would help reduce anxiety. Or, as Klein (1948/1975) suggested, perhaps members need to achieve the “depressive position,” a realistic view of the negative and positive things about the organization. A cognitive schema that contained the links in Figure 1, along with the links hypothesized above, might be a fair representation of a collective depressive position. Finally, the systems archetypes discussed earlier also help to explain how anxiety is controlled. The quick fixes of Search for Daddy and Focus on Metrics help improve performance in the short run, but in the long run the Anxiety
problem is worse. Rather than flying out of control, Anxiety oscillates and is easier to deal with during its down cycles.

**Endogenous Nature of Anxiety**

It is noteworthy that the anxiety loops already found in Progressive Logic's causal loop diagram are endogenous. In other words, much of the anxiety that the members of Progressive Logic face is of their own creation, or at least of their own intensification. Bion (1959) and Klein (1948/1975) hinted that defense mechanisms against organizational anxiety tend systematically to increase it, but Progressive Logic's schema is empirical evidence of this point. This is an example of what Forrester (1971) called the "counterintuitive behavior of social systems." In any case, it is good news, for whatever people create in a system, they can change if they gain insight about it. System dynamics (Forrester, 1961) offers three suggestions for altering systems: strengthen good loops (of which there are none in Progressive Logic's schema), weaken bad loops, or change the structure of the system by deleting or adding feedback loops.

**Weakening Bad Loops**

There are three bad loops in the PLD schema that might be weakened. For example, the bureaucratic defense loop might be weakened by a reduction in the Focus on Metrics. Progressive Logic's management could, if it received adequate support from its management, reduce the number of, or use more relevant, metrics; it could increase the division's ability to respond to customers and not internal metrics, or reduce bureaucracy, or free up Resources Used Measuring. Each of these steps is possible, and all would weaken the bureaucratic defense loop. The fight loop could be weakened by reducing Internal Competition or the Need to Be Right, increasing the saliency of asking good questions, or reducing the Resources Used Making Decisions. The messiah loop could be weakened by reducing the desire to Search for Daddy and by increasing empowerment and accountability.

The strength of the loops in Progressive Logic's causal loop diagram is no doubt affected by various parameters (Forrester, 1961). For example, some parameters affect the strength of the organization members' desire to Search for Daddy. Finding that parameter would help in designing a strategy to weaken the loops in which Search for Daddy appears. Obviously, finding out what those parameters are would be real leverage points (Senge, 1990) in the anxiety system. Unfortunately, the present study did not uncover these parameters; that issue awaits further research.

**Changing the Structure of the Existing System**

This involves adding links to or removing links from the schema to destroy old or create new feedback loops. Several suggestions for adding links were made earlier in the section on the absence of balancing loops. But there are other links that could be added. Indeed, it is difficult to imagine many of the previous subsection's changes happening without additional links.
For example, one of the objectives of the university center’s research is to increase the Use of Inquiry Skills by Progressive Logic’s members (see Figure 4). Inquiry skills are methods of conversation that can be used to overcome organizational and interpersonal barriers to understanding and learning. They are described in detail in Argyris (1990), Bohm (1996), and Isaacs (1993). Should the project succeed, in response to increased Anxiety, the members of the organization would invoke greater use of those skills, which by their very nature would decrease Internal Competition and the Need to Be Right and would increase Questions, thereby increasing Understanding in several ways. This would reduce the Resources Used Making Decisions, increasing the Resources Available Per Project, raising the Likelihood of Success, and ultimately reducing the Anxiety level. These same inquiry skills, it is posited, would help Progressive Logic’s members understand the counterproductiveness of Searching for Daddy, thereby weakening a bad loop. They would realize that they are their own best hope for success. This would increase their Accountability, ultimately reducing Anxiety.

The changes in the bureaucratic defense mentioned earlier are not likely to happen unless management realizes the self-defeating quality of its projections onto others in the organization. Here is an instance in which it is hoped that the removal of causal links from the schema will significantly change the feedback structure. (See Figure 4 for a depiction of the links that would be removed and Figure 3 for a depiction of the “hidden” links that would be removed and would thereby reduce the likelihood of a fix that fails.) If management better understands the anxiety-intensifying system it has created, this may motivate it to remove the links that make up the bureaucratic defense loop. Instead of projecting its anxiety onto the bad others in the organization, management would recognize both the good and the bad in the way the organization operates. In a difficult but fundamentally healthier process, the organization’s members would examine things in a manner more systemic than traditional metrics allow and would join together to do the work needed to improve performance.

CONCLUSION

The present study provides strong empirical support for the idea that the members of an organization who have experienced lengthy anxiety would enact a cognitive map that includes some well-known theories of anxiety in organizations. The study demonstrated that two of Bion’s (1959) basic assumption defenses—dependency and flight/flight—as well as Klein’s (1946/1975) manic (bureaucratic) defense, were incorporated into the cognitive map of the PLD. Although Bion and Klein demonstrated the existence of these phenomena in small groups and individuals, respectively, the present study showed how they are manifest in the causal schema of an organization with more than 100 members.

Our work expands traditional views of organizational anxiety by using causal loop diagramming to help think through the dynamic effects on organizational behavior of organizational anxiety. This tool is potentially helpful for research purposes and as a means for organizational members to better understand anxiety in their workplaces.
FIGURE 4: Suggested Changes to Progressive Logic Department Anxiety System

NOTE: + = positive link (variable at head of arrow moves in same direction as variable at tail), – = negative link (variable at head of arrow moves in opposite direction as variable at tail). Added links shown as bold arrows. Deleted links shown as dotted arrows.
and improve their situations. Organizational members want to know how to improve organizational performance and probably are very interested in reducing dysfunctional organizational anxiety; this in itself might help improve performance. Causal loop diagramming gives organizational members a tool for improved mapping, and better understanding, of dynamic phenomena (in this case, anxiety). This in turn creates the opportunity for taking steps to improve performance.

Researchers are, or should be, interested in helping to make those things happen. Much of the literature on organizational anxiety has been good at description and explanation but short on ways to help. There has been some very useful discussion of ways to help individuals and smaller groups (e.g., see Kets de Vries, 1991; Kets de Vries & Miller, 1984) but relatively little discussion of ways to help entire organizations. The present research provides an avenue that might help.

The approach reported here starts with the organization’s members drawing a causal loop diagram that gives them greater shared insight into how they create their own problems. The second step would be to find the possible leverage points in the system. This effort would begin by examining the links and loops in the causal loop diagram and would be greatly assisted by system dynamics simulation (Forrester, 1961; Richardson & Pugh, 1981). Modeling the system would require participants to identify the parameters believed to affect the strength of the loops, and would provide a means of testing subsequent hypotheses. Modeling also would facilitate the redesign of anxiety-producing structures. It is in these parameters and new designs that the leverage points are likely to be found. The third step would be to co-design interventions that apply pressure to those leverage points. In this case, the suggested interventions involve tools—particularly inquiry skills—used to deepen collective self-knowledge even further. The hoped-for outcome would be less reliance on self-defeating defense mechanisms and greater reliance on inquiry and on the organization members’ own self-knowledge, skills, and resources.

Because organizational anxiety is such an endemic phenomenon, it is often regarded as something over which people have little control. The present article demonstrates the contrary. The people caught up in anxious organizations create mental models that channel organizational behavior in ways that contribute to and worsen the problem. Far from being unable to control anxiety, people in organizations have the tools to understand better how they contribute to the problem, and with this greater understanding they can take intelligent steps to improve their situation and their effectiveness.

NOTES

1. Note that Klein’s use of the term manic defense is typical of the idiosyncratic way she named various phenomena. Manic typically implies grandiosity, and in her use of the word, Klein clearly does make that implication. To avoid confusion, we will adopt the term bureaucratic defense, which is analogous to the “ritualistic organizational defense” postulated by Diamond (1993).

2. Note that projection is an element in many other kinds of psychodynamic defenses besides Klein’s manic defense.
3. The name of the company, its departments, products, and location are all disguised to protect the company's confidentiality.

4. Note that the word *archetype* is not being used in its Jungian (1971) sense. Rather, it follows Senge's (1990) use of the term to refer to patterns of systemic structure found in many different contexts.

5. This graphical representation could also be framed as the group's calling on its group-level unconscious. (We are indebted to Clayton Alderfer for this observation.)

6. However, as previously noted, reinforcing loops work for good as well as bad. Were something to reduce anxiety, the reinforcing loops would keep that effect going. However, there was no evidence in this instance that such an event occurred or was on the minds of Progressive Logic's members.

7. On the other hand, there might be a different loop altogether; increasing the resources spent on a project might lead to even greater pressure on metrics like return on investment. In such a fix that fails, anxiety would go up with an increase in funding.

8. The present study focused on organizational anxiety because that was salient here, but any other phenomena of interest could be studied, and their deleterious effects ameliorated, using these methods.

9. However, a moderate degree of anxiety might be functional, acting as a kind of energizer. For example, Schein (1993) discussed "Anxiety 1" (a feeling that inhibits learning because the learning would be too disruptive or difficult) and "Anxiety 2" (fear, shame, or guilt associated with not learning anything new). According to Schein, the key organizational problem is to create enough Anxiety 2 to prod learning, but not so much that it too becomes paralytic.

REFERENCES


