

## Stimulate Creativity by Fueling Passion

Teresa M. Amabile

Harvard Business School

[tamabile@hbs.edu](mailto:tamabile@hbs.edu)

Colin M. Fisher

Harvard Business School

[cfisher@hbs.edu](mailto:cfisher@hbs.edu)

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### **Stimulate Creativity by Fueling Passion**

People will be most creative when they feel motivated primarily by the interest, enjoyment, satisfaction, and challenge of the work itself – and not by external pressures. This is the “Intrinsic Motivation Principle of Creativity” (Amabile, 1996), and it suggests that the social environment, particularly the presence or absence of external pressures in that environment, can influence creativity by influencing people’s passion for their work. Managers can influence the level of creativity in their organizations by establishing work environments that support passion for the work.

Intrinsic motivation is the motivation to do work because it is interesting, engaging, or positively challenging. In its highest form, it is called passion and can lead to complete absorption in the work (Csikszentmihalyi, 1990). The elements that make up intrinsic motivation include a sense of self-determination in doing the work (rather than a sense of being a pawn of someone else), a feeling that one’s skills are being both fully utilized and further developed, and positive feelings about the work, which may be akin to positive affect or positive emotion (e.g., deCharms, 1968; Deci, Koestner, and Ryan, 1999; Deci and Ryan, 1985; Lepper and Greene, 1978).

A considerable body of research over the past 35 years (conducted with both children and adults) has demonstrated that external pressures in the work environment, also called extrinsic motivators, can decrease intrinsic motivation and, as a result, can decrease creativity. Most of this research has been experimental, demonstrating that reduced intrinsic motivation and reduced creativity can be caused by each of several different extrinsic factors, including: expected external evaluation (Amabile, 1979; Amabile, Goldfarb, and Brackfield, 1990; Hennessey, 1989), surveillance (Amabile, Goldfarb, and Brackfield, 1990), contracted-for reward (Amabile,

Hennessey, and Grossman, 1986; Hennessey, 1989; Kruglanski, Friedman, and Zeevi, 1971); competition with peers (Amabile, 1982, 1987); and constrained choice in how to do one's work (Amabile and Gitomer, 1984; Koestner, Ryan, Bernieri, and Holt, 1984). Each of these factors causes lower levels of intrinsic motivation and creativity. In fact, one experiment demonstrated that simply thinking about extrinsic motivators led to temporarily lower levels of creativity in adults (Amabile, 1985).

Non-experimental research in organizational settings has largely supported these findings. This research suggests that there is indeed a link between intrinsic motivation and creativity (e.g., Amabile, Hill, Hennessey, and Tighe, 1994; Dewett, 2007; Shin and Zhou, 2003) and that extrinsic constraints in the work environment operate as killers of intrinsic motivation and creativity at work. This research also suggests, however, that certain other work environment factors operate as stimulants and supports of intrinsic motivation and creativity (e.g., Amabile, Conti, Coon, Lazenby, and Herron, 1996; Amabile and Gryskiewicz, 1987; Andrews and Farris, 1967; Pelz and Andrews, 1976; Stahl and Koser, 1978). Interestingly, although constraints on how to do one's work can undermine intrinsic motivation and creativity in organizations, clear ultimate goals for the work can support intrinsic motivation by providing a structure for focusing creative efforts (e.g., Shalley, 1995). Moreover, as we explain below, certain forms of reward can be beneficial for both intrinsic motivation and creativity in organizations.

Before effects of the work environment on the passion for creativity can be fully understood, it is important to define the basic concepts. Creativity within an organization is the production of novel, appropriate ideas by individuals or small groups. Those ideas can appear in any organizational activity, and are not limited to the domains usually considered to be

“creative” (such as R&D, marketing, and strategy formulation). Innovation is the successful implementation of creative ideas by an organization. Notice that ideas cannot be merely new to be considered creative; they must be somehow appropriate to the problem or task at hand. Notice also that it is possible to have many creative contributions – that is, a great deal of creative behavior by individual employees or teams – without having any significant innovation within an organization. This outcome will arise if the new ideas are not communicated or developed effectively within the organization. However, it is not possible to have much innovation in an organization without considerable creativity.

Contrary to popular notions that creativity is the sole province of a few rare geniuses, creativity appears across most levels of human ability. Reviews of the literature suggest that, at low levels of intelligence, creativity is relatively low. However, at higher levels of intelligence (from slightly above average up to genius levels), all levels of creativity are found. In other words, the variability in creativity is much greater for higher levels of intelligence than for lower levels of intelligence (e.g., Stein, 1968; Wallach, 1971).

This suggests a continuum of creativity from the simplest “garden variety” ideas for small improvements to the highest levels of creative achievement in any field. Certainly, products at the highest levels of creativity appear to be qualitatively different from products at the lower levels; it seems odd to compare the invention of the microcomputer with an incrementally improved microcomputer processor. However, the underlying processes do appear to be the same. A useful analogy comes from work in dynamic systems, which has shown that the different gaits of a horse on a treadmill (walking, trotting, cantering, and galloping) appear to be qualitatively different activities. Yet these qualitatively different outcomes arise from gradual quantitative increases in the underlying system: the speed of the treadmill and the energy output

of the horse. Similarly, it is quite possible that the most astonishing human accomplishments come about by people doing more, and better, work than goes into the more ordinary instances of creativity in everyday life.

### Contextual Factors: Features of the Work Environment

Several specific features of the work environment can influence intrinsic motivation and creativity. Challenge, a sense of having to work hard on personally important, enriched, and meaningful tasks, appears to be crucial. (See Chapter 6, this volume.) Autonomy, a sense of freedom in how to carry out one's work, also plays a significant role. (See Chapter 11, this volume.) Work Group Supports include feelings of mutual support for ideas, constructive feedback on ideas, and shared commitment to the work within a team; they also include a broad diversity of skills and backgrounds within the team. Diversity of skills and backgrounds can even mean including individuals lacking "standard" areas of expertise. Supervisory Encouragement includes setting clear strategic goals for a project (while allowing the operational autonomy that is important for creativity), encouraging open communication and collaboration within the team, giving useful, positive feedback on ideas, and supporting the work group within the organization. (See Chapter 15, this volume.) Organizational Encouragement is the sense that top management encourages, supports, and recognizes creative work (even when that work might not ultimately lead to a successful product), that there are mechanisms for fairly considering new ideas, and that the entire organization collaborates and cooperates to develop new ideas. Organizational Impediments can have negative effects on intrinsic motivation and creativity; these include political problems within an organization, extremely negative criticism of new ideas, and an emphasis on maintaining the status quo.

All of these features have been identified through research within organizations (e.g., Amabile, Schatzel, Moneta and Kramer, 2004; Amabile and Gryskiewicz, 1987; Andrews and Farris, 1967; Carson and Carson, 1993; Leonard & Swap, 1999; Oldham and Cummings, 1996; Pelz and Andrews, 1976; Stahl and Koser, 1978; Tierney and Farmer, 2002; Zhou, 1998; 2003). One study that used a validated instrument to assess the work environment (Amabile, 1995), and obtained outcome measures from independent expert assessments of creativity, demonstrated that these work environment factors distinguished organizational teams producing highly creative work from those whose work was disappointingly uncreative (Amabile, Conti, Coon, Lazenby, & Herron, 1996).

Note that two of the contextual features that relate to creativity stem from the nature of the work and how it is presented to an individual. A sense of positive challenge arises from the person's perception that the work uses and develops a set of important skills to accomplish an important goal. A sense of freedom arises from the extent to which the person has control over and discretion in carrying out the work. Because these features capture several aspects of the job characteristics model (Hackman and Oldham, 1980), job design must be considered an important part of the context for creativity.

Supervisors and group leaders play a key role in creating a suitable work environment for creativity. For example, recent studies have found supervisory support linked with higher creativity (Amabile, et al., 2004), but more controlling supervisory behavior linked with lower creativity (Zhou, 2003). Another study found that even dissatisfied employees' creativity can be enhanced through a work environment in which they are supported and encouraged to share their views (Zhou and George, 2001). Creating such an environment can have benefits beyond stimulating creativity; one study found that workers who have appropriate support and autonomy

to do challenging, creative work tend to be more satisfied and intend to stay longer with their organizations (Shalley, Gilson, and Blum, 2000).

### Determining Factors

The creative process is generally conceived as composed of four basic stages: Problem definition or problem finding, when people try to understand or articulate the specific problem to be solved; preparation, when they gather potentially relevant information from a number of sources; idea-generation, when they try to come up with interesting candidate ideas among which to select; and validation/communication, when the final idea is worked through and communicated to others (Amabile, 1996). These stages may occur iteratively or non-linearly over time, or in a more immediate and improvisational fashion (Fisher and Amabile, 2008). Intrinsic motivation appears to have its strongest influence in the problem-definition and idea-generation stages. Both of these stages require particularly flexible thinking and deep involvement in the problem. It appears that intrinsic motivation fosters just this sort of thinking process. One study discovered that people who were more intrinsically motivated toward doing work in a particular domain (verbal activities or problem-solving) produced work that was independently judged as more creative (Ruscio, Whitney, and Amabile, 1998). Moreover, people who were intrinsically motivated were more likely to engage in exploratory, set-breaking behaviors while they were working on the task; that is, they were more likely to take novel, flexible approaches to the activity as they were trying to figure out how to tackle it. And intrinsically motivated people were more likely to concentrate on the activity, becoming deeply involved cognitively in it. Importantly, involvement mediated the effect of intrinsic motivation on creativity; in other words, intrinsic motivation appeared to influence creativity primarily because it influenced depth of involvement in the task.

Thus, the creative process can be thought of as a maze that the problem-solver has to navigate; getting out of the maze is analogous to finding a satisfactory solution to the problem. Following a familiar, straightforward path for solving problems of that type does indeed lead to an exit. However, such approaches to problems are unlikely to yield creative solutions. In order to discover those more creative solutions – those other ways out of the maze – it is necessary to deviate from the familiar, and to take the risk of running into a dead end. If people are *primarily* extrinsically motivated, they are motivated by something outside of the maze – by a reward or a deadline set by someone else, for example. Under these work environment circumstances, they are unlikely to get very involved in the problem itself or do much exploration for a new solution. But if people are primarily intrinsically motivated – if they have a basic interest in the task and if their work environment allows them to retain that intrinsic focus – they enjoy the process of exploring for one of those more creative solutions.

Some research suggests a connection between positive affect, intrinsic motivation, and creativity. Experiments demonstrating a negative impact of extrinsic constraint on intrinsic motivation and creativity generally reveal that people not working under extrinsic constraint feel better about the experience and about the work that they have done (e.g., Amabile, 1979; Amabile, Hennessey, and Grossman, 1986). Moreover, in addition to experimental evidence that induced positive affect produces more flexible thinking (e.g., Isen, Daubman, and Nowicki, 1987), there is evidence inside organizations. A recent field study of the daily experiences of workers in seven companies found that the level of positive mood on a given day predicted creativity that day as well as the next day (taking the next day's mood into account) (Amabile, Barsade, Mueller, and Staw, 2005). This suggests that positive work environments might influence intrinsic motivation in part by influencing how happy people feel about their work.

Certainly, the work environment's impact on motivation is not the only determinant of creativity. To stimulate creative productivity, managers should not only engineer supportive work environments (Amabile, et al., 2004); they should also select for employees who demonstrate high levels of each of the individual components of creativity (see Amabile, 1983; 1996), and they should help to develop those components. The first component is expertise, or skill in the domain where the person will be working. This expertise is a function of the person's talent in the domain, as well as formal and informal education and experience. Not surprisingly, research has shown that, all else being equal, people are more creative if they have more education and experience in a field (McDermid, 1965; Scott and Bruce, 1994). The second component is a set of creativity-relevant processes stemming from the person's personality, cognitive style, and working style. In general, people produce more creative work if they are oriented toward risk-taking and independence, if they know how to take new perspectives on problems and question basic assumptions, if they have a high tolerance for ambiguity, and if they work hard by energetically and persistently pursuing the problems they are trying to solve (MacKinnon, 1965; Feist, 1999). The third component is intrinsic motivation. Although – as discussed above – intrinsic motivation can be influenced positively or negatively by extrinsic constraints in the work environment, people do differ from each other in their baseline levels of intrinsic and extrinsic motivation. Research has shown that there are stable individual differences in people's basic intrinsic motivation toward work (which can be broken down into challenge motivation and enjoyment motivation) and their basic extrinsic motivation toward work (which can be broken down into recognition motivation and compensation motivation) (Amabile, Hill, Hennessey, & Tighe, 1994). These basic intrinsic and extrinsic motivational orientations are more or less orthogonal, however; it is possible for people to be high on both

intrinsic and extrinsic motives, high on neither, or high on only one. Recent research supports the importance of individual employees' intrinsic motivation orientation to their creativity at work (Munoz-Doyague, Gonzalez-Alvarez, & Nieto, 2008).

A person's creativity skill (the second creativity component) can interact with features of the work context to influence the level of creative output (Shalley, Zhou, and Oldham, 2004). One study demonstrated that technical employees were most likely to produce patent disclosures and receive high ratings on creativity from their supervisors if they not only scored high on a test of individual creative personality, but also if they had both complex jobs and noncontrolling, supportive supervisors (Oldham & Cummings, 1996).

Further, for individuals to aggregate their knowledge and skills to create creative products in a group, several group processes are necessary. For instance, one study showed that, although the three individual creativity components were important in predicting individual differences, group creativity was an aggregate of each individual's creativity only when the group engaged in certain behaviors. These behaviors, termed "team creativity-relevant processes," included such activities as effective communication, providing feedback during group tasks, and addressing conflict when it occurs (Taggar, 2002). Another study also showed that, in cross-functional teams, freedom to express doubts and effective management of disagreements was associated with higher levels of creativity (Lovelace, Shapiro, & Weingart, 2001). (See Chapter 18, this volume.)

#### Exceptions to the Basic Principle

The research evidence overwhelmingly points to the importance of intrinsic motivation for creativity. However, under some circumstances, certain forms of extrinsic motivation may support intrinsic motivation and creativity – or at least not undermine it (Amabile, 1993). This

“motivational synergy” is most likely to occur when people start out highly intrinsically motivated to do their work, and when the extrinsic motivators are limited primarily to the stages of the creative process that involve the preparation to generate ideas or the validation and communication of the final idea. Synergistic effects are unlikely when people feel that the extrinsic motivator – say, a reward – is being used to control their behavior. Synergistic effects are likely, however, when people feel that the reward confirms their competence and the value of their work, or enables them to do work that they were already interested in doing. There is considerable evidence that such “informational” and “enabling” rewards can have powerfully positive effects on intrinsic motivation (see Deci and Ryan, 1985).

In addition, three specific features of the social work environment require qualification: competition, time pressure, and resources. First, competition appears to have different effects on creativity depending on the locus of the competition (Amabile, 1982; 1987; Amabile and Gryskiewicz, 1987). When people are competing with peers (peers with whom they might ideally be sharing information), their creativity seems to be dampened. However, when they are competing with outside groups or organizations, creativity may be stimulated. Second, time pressure appears to have somewhat paradoxical effects although, overall, there appears to be a somewhat negative impact of time pressure on organizational creativity (Amabile and Gryskiewicz, 1987; Amabile, Conti, Coon, Lazenby, and Herron, 1996; Amabile, Hadley, and Kramer, 2002). Research suggests that, when time pressure is unavoidable, the type of time pressure matters (Amabile, Hadley, and Kramer, 2002). If people’s time is fragmented by a large number of demands unrelated to centrally important problems (the most common form of time pressure in organizations), creativity suffers. On the other hand, if people believe that there is a real urgency to solve the problem, because their unit, their organization, or the world has a clear

need for a swift resolution, they may be spurred on to higher levels of creativity by that time pressure – as long as they are protected from unrelated interruptions and allowed to focus on the central problem (a set of conditions that is relatively rare in organizations). The effects of time pressure on creativity, though, require ongoing research; one recent study found that, for certain employees and under certain conditions, a moderate degree of time pressure appears to be optimal for creative performance (Baer and Oldham, 2006). Third, the availability of tangible and intangible resources for projects has somewhat complex effects (Amabile and Grysiewicz, 1987; Amabile, Conti, Coon, Lazenby, and Herron, 1996). Although, in general, an insufficiency of resources is associated with lower levels of creativity, there may be a threshold effect. That is, although it is rare to find high levels of creativity when resources are extremely scarce, adding resources above a sufficient level may not add to creativity.

Although the vast majority of studies on contextual effects on creativity have focused on the social work environment rather than the physical work environment, there is a small body of research suggesting that the physical environment may play a role. Specifically, it appears that people who work in densely crowded spaces that provide little protection from unwanted intrusions exhibit lower levels of creativity than those who work in more protected spaces (Aiello, DeRisi, Epstein, & Karlin, 1977; Alencar & Bruno-Faria, 1997). Nonetheless, the weight of research evidence suggests that the social environment is a more powerful influence than the physical one.

### Implementation

Managers can directly affect employee's intrinsic motivation and creativity by the ways in which they construct assignments, teams, and work environments. The research suggests that it is important to select people not only on the basis of their skills but also on the basis of their

interests. People should be matched to projects that will effectively use their best skills and tap into their strongest passions. Teams should be formed so that, as long as they have some common language for discussing the problem at hand, the team members represent a diversity of backgrounds and perspectives. Team leaders and direct supervisors should clearly communicate overall strategic goals for a project, but allow the individuals working on the problem to make decisions about how to accomplish those goals. Supervisors and peers should be genuinely open to new ideas, but should also give constructively challenging feedback on those ideas. Top-level managers should clearly communicate their desire for creative ideas throughout the organization, recognizing such ideas when they occur, and rewarding creative work with additional resources that will enable people to do work that excites them. In general, creativity should be rewarded in ways that convey information about the sort of performance the organization values most highly. Moreover, there should be mechanisms to foster idea-sharing and general communication about work across the organization, as well as mechanisms for containing turf battles and political problems. Finally, sufficient resources should be provided for creative projects, and there should be a careful examination of time-frames and an avoidance of extremely tight or arbitrary deadlines where possible.

Some specific tools can be useful for fostering creativity in organizations. Techniques for creative thinking, such as the Creative Problem Solving (CPS) Process, appear to increase the fluency, flexibility, and originality of people's thinking to some extent (e.g., Puccio, Firestien, Coyle, and Masucci, 2006). The paper-and-pencil instrument KEYS: Assessing the Climate for Creativity can diagnose an organization's work environment stimulants and obstacles to creativity (Amabile, 1995; Amabile, Burnside, & Gryskiewicz, 1999). And an "innovation office" within a company can serve as a mechanism for improving the care and attention give to

new ideas. However, setting up an innovation office, or hiring consultants to “teach” creativity skills or conduct a work environment assessment, will most likely backfire unless such actions are accompanied by a deep management commitment to understanding and improving the context for creativity for the long term.

### Case Studies<sup>1</sup>

As Dwight Walton, the CEO of Karpenter Corporation, looked out across the manicured lawns of his company’s sprawling suburban campus, he wondered whether there was a problem in his largest division – Karpenter Indoor Living and Home Maintenance (ILHM). Karpenter was one of the dominant names in power tools and appliances – its products appeared in nearly 80% of American homes – and was among the most highly-regarded companies in the world. Much of Karpenter’s success came from ILHM, which had created and managed the products that accounted for a healthy portion of the company’s revenue. Cross-functional teams within this division were responsible for all aspects of a particular product line (e.g., power tools, food preparation equipment) and were composed of members from R&D, marketing, manufacturing, and finance. Along with maintaining their current product offerings, these teams were responsible for designing and developing many of the new Karpenter products.

Despite Karpenter’s long-running success, Walton was concerned that this year’s profits looked less certain. Moreover, the stream of creative products from ILHM had slowed considerably and a few key employees had left in recent months. He began to wonder what was

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<sup>1</sup>Karpenter and O’Reilly are pseudonyms for two real companies we studied. Over the course of several months, we collected daily diary entries from teams doing creative work in seven organizations. Names and facts about the companies, teams, projects, and individuals are somewhat disguised to protect confidentiality. The character of Heather Shaw and the vignette presented here are fictional; however, they represent the general findings of our study.

causing these problems; ILHM teams had been successful for many years by leveraging diverse perspectives from across the company and using well the high degree of autonomy they had traditionally had in running their product lines.

Fortuitously, Walton's next meeting was with Heather Shaw – an outside consultant, who had collected data about the daily work experiences of ILHM teams, as well as teams from six other organizations. During his last meeting with Shaw, Walton had asked her to see if there was anything she had found that might help explain the drop in creative productivity. As he cleared away the papers from his prior meeting, he wondered if Shaw could tell him anything useful.

In her presentation, Shaw began by telling Walton that the ILHM teams had the lowest ratings of intrinsic motivation of any teams she had studied, explaining intrinsic motivation and its link to creativity.

“How can that be?” interrupted Walton. “These teams have autonomy, exciting challenges, and support for their work – all the things that they told me in b-school should increase intrinsic motivation.”

“Yes, those things do help – when they are experienced that way by your employees,” Shaw answered. “But, it looks as if your people don't feel that they have a real say in how to do their work and have trouble getting other units and their supervisors to support their ideas and decisions.”

Shaw then explained that, despite the teams' nominal autonomy, divisional management often made decisions without consulting or informing the team. Without naming specific individuals or divulging any details about the confidential diary data that the divisional team members had sent her for a period of time, she described the ways in which intrinsic motivation was systematically being stifled. The diaries that Shaw had analyzed contained powerful

information about how things had changed since a new ILHM management team had come on board a year earlier. As one team member recounted:

Once again, Dean [divisional VP of R&D] has struck. Without informing ANYONE on the team, he has the CAD department redesigning one of our products. The team doesn't even know if we want to work on this project at all this year. (Theoretically, we have control of our capital budget and we have much higher priorities, with much greater potential to improve the bottom line, than this project)...So, the team is responsible for the outcome of our business, but someone else is making the decisions that seal our fate. And, not only are they making these decisions, but we have to find out by accident because they don't have the common courtesy to inform us of what they are doing. Just f--king wonderful!!

“You may have told these teams that they have autonomy over decisions about what to work on,” Shaw continued, “But, in practice, your people aren’t experiencing it that way. Making decisions for a supposedly autonomous team will decrease the team’s perceptions of ownership of their work, and, thus, intrinsic motivation. Failing to consult or even inform them only lowers motivation further, by arousing anger and frustration, and leading to perceptions that they are not valued by the organization.”

As Walton listened stoically, Shaw began to explain how organizational and supervisory supports for the teams’ initiatives were also lacking. She gave several examples of times when a team created a new product but had trouble coordinating with other parts of the organization. Not only were requests for help from central departments, such as manufacturing, not granted,

but again, the team was not informed about decisions that affected their products. As described in a team member's diary:

We have been working very hard to get production running, so we can fill a huge order that has a very tight deadline. Yesterday, production was up and running, and everyone breathed a sigh of relief. But, when we came in this morning, we found out (again by accident, because no one made the effort to tell us) that Manufacturing had shut down production and was refusing to start back up until all the packaging arrived. The packaging was due today, and they had an empty warehouse to stage the parts until it got there. But, without asking/threatening/informing anyone on the team, they just did what they damn well pleased. By the way, they definitely knew this was a hot order, but they just shrugged their shoulders and said it wouldn't be their fault if the order didn't ship. Where in the hell are the common goals, communication and sharing, and teamwork that top management claim they are fostering in this organization?? I'm sure not seeing much evidence.

Shaw told Walton that there were several specific instances showing a lack of organizational support for team innovative efforts, and she described the general nature of those instances.

Further, team members within ILHM felt they received mixed messages from leadership – including their team leaders, division leaders, and even top corporate leaders, about innovation priorities:

Had meetings with Steve (team leader), Allen (finance person on the team), and Beth (product development head for the team), to discuss how to reposition our proposal for a new hand-held mixer. This project has taken over 1 year to

develop, mainly because the division's Management Team [MT] continually asked for more analysis, and R&D was slow in developing a reasonable technology to create a soft grip handle. Finally, the team rallied to present a viable project which the MT approved, only to have the COO say he wants a hard grip handle [instead,] at a \$5 lower retail. Steve waffles back and forth. Allen is very helpful in running the financials and giving meaningful discussion on the subject. Beth is contrary on most points - really doesn't seem to care one way or the other. Very frustrating project, getting little support from Corporate, MT, or key team members other than myself and Allen. Yet, all agree that the competitive situation is becoming desperate - especially since Boltmann [a key competitor] has just come out with yet another new hand-held mixer. I'm still trying to catch up to their last new mixer - UGH! Result was that Allen & I have prepared yet another proposal to show the MT tomorrow, but I need to get Steve to buy in; not sure which way he will go.

Because of problems coordinating and communicating with the rest of the organization and mixed messages about what to work on, this team ultimately failed to come up with a new product to successfully challenge Boltmann's competitive position.

“The people you need to come up with creative ideas are having trouble coordinating and communicating with other parts of the organization, which leads to trouble even within the teams; this means they devote a lot of energy to this, rather than developing products. Also, they don't feel respected or supported in their work and ideas,” Shaw said. “I think you need to address these issues in order to increase the intrinsic motivation that is so essential to creativity.”

“So, there are people who don’t like their bosses and get frustrated by the reality of working in a big organization,” muttered Walton. “You show me a place that doesn’t have problems like that...”

“Actually,” said Shaw, “that’s exactly what I’d like to do.”

Shaw proceeded to tell Walton about another company she had studied (without divulging its identity) - O’Reilly Coated Materials. O’Reilly was considered an innovative leader in the coated and laminated fabrics industry. Its core products included industrial goods, such as awnings, canopies, tents, and military supplies, and consumer products, such as luggage, toys, and sports equipment. O’Reilly was just coming off another strong fiscal year. The motor behind this impressive performance was O’Reilly Central Research (OCR), which was composed of teams of scientists and technicians responsible for creating the new products and innovations to keep the company healthy.

Protecting the confidentiality of the O’Reilly company, teams, projects, and individuals, Shaw used her analysis of the OCR diaries to tell Walton of specific factors supporting intrinsic motivation and creativity there. In contrast to the reports about feeling disrespected, unsupported, and micro-managed at ILHM, OCR teams reported norms of cooperation and support across the organization. As one OCR team member reported:

Met with a number of contributors to the project - people in the Research Analyses group [at OCR] who have helped tremendously, although they are not officially team members - to get them to present their contributions at the project review. Meetings went well and I am glad that they will get a chance to show their contribution to the success [of this project].

Supervisory support was also commonly mentioned by the OCR team members. One wrote:

Our VP/Director of R&D shared what he reported to the CEO, about OCR's very significant contribution to the business of the Corporation this past [fiscal] year.

This makes us all feel very good and look forward to an even better year next year.

Another team member wrote:

The Gate review [project review by upper management, to decide whether to move on to next stage] and the meetings with the Technical Directors of the divisions went very well. They are completely supportive of all aspects of the project and were thrilled by the progress the team has made over the last few months. I could not have asked for anything more !!

“In your ILHM teams, the diary entries I analyzed often focused on the many obstacles and setbacks people had to overcome,” Shaw explained. “At this other company, most of the entries described small steps forward in the work, or things in the work environment that enabled people to make those steps forward. Those teams had considerable autonomy, and were always consulted about possible modifications in project priorities.” Walton nodded and shifted uncomfortably in his chair. “Your ILHM team members also reported a lot of criticism and negative feedback, almost never reporting praise,” she continued. “This was another point of contrast between the companies.”

“I think that the work environment here – the factors that are external to the creative work itself – are interfering with your teams’ creativity by undermining their intrinsic motivation. It doesn’t have to be that way, though. This other company’s teams rated their mood, their work environment, and their intrinsic motivation much higher than your teams did. Not surprisingly, their creative productivity was a lot higher, too. The differences can’t be explained away by

individual personalities or skill levels; our measures of those don't show much difference between the two companies.”

“Although I've mentioned that some of the other company's diaries expressed positive emotions, it's really interesting that most of that company's diary entries did not express any emotion at all, but instead talked about the work itself. In contrast, your ILHM teams wrote extensively about their frustrations with the work environment created by superiors and other parts of the organization. Regardless of how that came to be, you don't want these people thinking about their frustrations when you need them to focus on making great new products – you want them thinking about the products.”

As their meeting ended, Walton thanked Shaw for her work and saw her out. Despite the report, Walton couldn't shake the feeling that the comments from his workers were little more than whining at the realities of organizational life. “If my ILHM teams worked harder and smarter,” he thought, “they'd get the results we need. On the other hand, maybe there are some things I could change to make it easier for them to focus on the creative work I need them to do...”

Epilogue: As in our fictitious vignette, the real Karpenter top management team was shocked to find out how frequently their team members experienced negative emotions, how low their intrinsic motivation was, and the degree to which the team members perceived management as over-controlling, overly critical of new ideas, indecisive, and generally unsupportive. All of these measures were far more positive at O'Reilly. So were measures of creativity. Coworkers at Karpenter rated each other's creative contributions so low that the averages had almost no overlap with the high coworker ratings at O'Reilly. However, even in the face of this evidence,

Karpenter's top management believed the company's work environment to be fundamentally healthy, with a suitable climate for improved creativity.

A year after our study ended, the poor motivation and low creativity exhibited by Karpenter's ILHM employees caught up with the company; profits dropped dramatically. A year later, Karpenter was taken over by a large conglomerate and eventually ceased to exist. O'Reilly, on the other hand, continues as a healthy, profitable firm.

### Conclusion

People do their most creative work when they are passionate about what they are doing. Such high levels of intrinsic motivation are influenced both by a person's basic interest in a particular kind of work and by the work environment surrounding the person. Managers can support creative productivity by matching people to projects on the basis of interest as well as skill, by using rewards that recognize competence and support further involvement in the work, and by establishing a work environment across the organization – from the level of top management to the level of work groups – that removes the barriers and enhances the supports to active, collaborative, intrinsic involvement in the work.

In establishing that work environment, managers should strive to first remove micromanagement of creative work and limit excessive time pressure, particularly time pressure when workdays are marked by fragmented demands unrelated to the organization's most important creative work. They should also take steps to calm political problems that play out on the battlefield of creativity, resulting in excessive criticism of new ideas and an emphasis on maintaining the status quo. Managers can enhance supports for intrinsic involvement in the work by giving people tasks that are meaningful to them and that positively challenge their skills. Middle-level managers should form work groups that combine diverse perspectives and talents,

and then facilitate the members of those groups to work collaboratively as they both support and constructively challenge each other's ideas. Low-level managers – immediate supervisors – should set clear overall goals for projects, but give people as much operational autonomy as possible; they should also serve as champions for creative projects in the organization. Top organizational leaders can provide encouragement and support for creative work in a number of ways, including the establishment of well-coordinated mechanisms for developing new ideas and systems for recognizing and rewarding creative efforts. Perhaps most importantly, the passion for creativity can be stimulated by an open flow of ideas across an organization in which people feel safe to give honest, constructive feedback on someone else's brainchild – and to fearlessly share their own.

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### Classroom Exercise #1: “Scribbles”

To illustrate in real time a few “creativity killers” – environmental factors that undermine creativity by lowering intrinsic motivation – you will instruct students to make a creative drawing out of a scribble under tight time pressure, surveillance, constraint, peer competition, and unclear/meaningless goals, with external evaluation looming. This exercise takes 15-30 minutes and is best used at the very beginning of a workshop/class on creativity.

To run this exercise, first tell the class that they are going to take a short test of their individual creativity. Emphasize the word “test” during the instructions, and continue to remind them that their test will be evaluated – judged by their classmates according to a procedure that you will explain after the test. Tell them that this test is used for assessing artistic creativity, but is also a good indicator of their overall levels of creativity. Make sure that all class members have a blank sheet of paper and a pen or pencil. Have students draw a single, large scribble or squiggle on their page and then stop. Then, have students exchange their papers with another person near them and put their names on the new paper (which has someone else’s scribble). Tell the class they will have two minutes to make a creative drawing based on this scribble and give it a creative title. Then give the signal for them to start. As students make their drawings, move throughout the room and look at students’ drawings. In reality, give students somewhat less than two minutes (perhaps 90 seconds), and announce how much time is remaining every 30 seconds when there is one minute left. When there are 30 seconds remaining, remind students to give their drawing a creative title. Count down the last 10 seconds aloud. Then say, “Stop! Pencils down!” and have all students pass in their drawings. There is likely to be much nervous laughter among students during the exercise, and it is fine for you to maintain a pleasant

demeanor. When drawings are being passed in, begin to make the atmosphere truly light and fun by inviting students to glance at the drawings as they go by.

After you have the drawings, begin by assuring students that their creations will not actually be judged, and that the reason for the exercise was to give everyone the same shared experience of trying to be creative on the same thing at the same point in time. Then debrief the class on their experience of creating something that was supposed to represent their true creativity, asking them to focus on any factors that made it difficult to be creative. Record their comments on the blackboard in three columns corresponding to the three creativity components. After taking comments for a few minutes (ideally waiting until the major work environment impediments have been mentioned), label these columns “task expertise,” “creative thinking skills,” and “work environment → intrinsic motivation.” Emphasize that this task was not really a test of creativity, but a demonstration of what happens to intrinsic motivation and creativity when people are told to “be creative” in a work environment full of extrinsic constraints and extrinsic motivators. The debriefing should include a brief explanation of intrinsic motivation and the other two components of creativity, extrinsic constraints/motivators, and the intrinsic motivation principle of creativity. For an additional element of fun at the end of the class or workshop, spread out the drawings on an empty table for an informal “art show.”

### Classroom Exercise #2: Your Ideal Work Environment

The purpose of this exercise is to allow students to think about the sort of organizational work environment that they should seek (or create) for their future career moves, if they wish to optimize their own opportunities for creative work. It takes about 30-45 minutes, depending on how much time you allocate for discussion.

In this exercise, students will rate how important various aspects of their work environment are for their own personal creativity. For that reason, the exercise is most appropriate after you have taught them about how various aspects of the work environment can facilitate or impede creativity. Begin the exercise by asking them to reflect for a few moments on their prior work experiences (or school-work experiences, if they have not yet held jobs). They should try to recall, in detail, one or two instances in which they did truly creative work, and think about the work environment surrounding them in those instances. Then they should recall, in detail, one or two instances in which their creativity was blocked, and think about the work environment surrounding them in those instances.

Next, tell them that they will generalize from these instances (and others like them) to the future work environments that might best support their own creativity. On a sheet of paper (ideally, a form that you have prepared for them in advance), have students privately indicate whether they would like to HAVE or AVOID the following features of the work environment. Then, they should indicate whether each of those features is VERY IMPORTANT to them, SOMEWHAT IMPORTANT to them, or LESS IMPORTANT to them. Remind them that they will likely have to make trade-offs, that it is unrealistic to rate everything as VERY IMPORTANT. This first part of the exercise (remembering specific instances and then completing the form individually) generally takes about 15 minutes.

1. **Freedom** in deciding what work to do or how to do it
2. A sense of **challenge** in your work – working hard on challenging or important projects
3. Sufficient **resources** – including funds, materials, and information – to accomplish the work.

4. **Supervisory encouragement** from a good work model who sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group.
5. **Work Group Supports** from people who are diversely skilled, communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing.
6. **Organizational Encouragement** that promotes the fair, constructive judgment of ideas, rewards and recognizes people for creative work, helps foster an active flow of new ideas, and maintains a shared vision of what the organization is trying to do.
7. **Organizational Impediments**, including internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo.
8. **Workload Pressure**, such as extreme time pressures, unrealistic expectations for productivity, or distractions from creative work

After students have indicated whether they would like to HAVE or AVOID each feature of the work environment, and how important the features are to them, have them brainstorm (in pairs or small groups) ways in which they can find or create their ideal work environments.

Have them consider the following questions: What sorts of companies and industries should you look for? What sorts of companies and industries should you avoid? What can you do to proactively create your ideal work environment? If there is time, you may wish to continue with a whole-group discussion in which students share some of the insights they developed through the individual exercise and the small-group discussions. This exercise will help students identify

those few key features that deserve most of their attention as they look for jobs or think about establishing their own work environments.