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The Creative Organization

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GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CHICAGO

The Creative Organization

Based on Proceedings of a Seminar Sponsored by the Graduate School of Business, University of Chicago, and The McKinsey Foundation

By GARY A. STEINER

The late GARY A. STEINER was *Professor of Psychology at the Graduate School of Business of The University of Chicago. He was the author of* The People Look at Television *(Knopf,* 1963), *and co-author (with Bernard Berelson) of* Human Behavior-An Inventory of Scientific Findings *(Harcourt, Bruce & World, Inc., 1964).*

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FOREWORD

BUSINESSMEN are increasingly seeking to identify, employ, encourage, and capitalize on the innovative---the creative-individual. In doing so, they are driven to ask: How is creativity to be defined? How can this rare and elusive quality be associated usefully with the organization? What can management do-beyond selecting creative individuals-to foster creativity within an organization? And what are the costs of such an endeavor?

These important questions were considered by a distinguished group of scholars and businessmen in a three-day seminar at the University of Chicago, a seminar made possible through the generosity of the McKinsey Foundation for Management Research, Inc.

Professor Gary A. Steiner of our faculty served as Director of the Seminar. In this paper he undertook the difficult task of identifying the critical issues and integrating the sometimes divergent, if not conflicting, views of the participants.

This paper is the opening chapter of ***The Creative Organization*** (The University of Chicago Press, 1965), which reported the full proceedings of the McKinsey Foundation Seminar.

GEORGE P. SHULTZ, Dean
Graduate School of Business
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INTRODUCTION

On February 1, 2, and 3, 1962, sixteen eminent scientists, scholars, and executives met at a seminar conducted by the Graduate School of Business of the University of Chicago, under a grant from the McKinsey Foundation for Management Research, Inc. The topic of the seminar was "The Creative Organization"; its purpose was to explore the factors that foster or impede creativity within and on the part of large organizations.

Participants qualified on one or more of three counts:

(a) research in the psychology or sociology of creativity and related organizational matters

(b) professional responsibility for educational institutions and programs dedicated to the training of potential creators

(c) the actual establishment and nurture of creative organizations

Participants

The list of participants, with their primary titles at the time of the seminar, makes it clear that most fit at least two of the above categories, while some fit all three :

FRANZ ALEXANDER, ***Chief of Staff, Psychiatric Department and Director of the Psychiatric and Psychosomatic Research Institute at Mt. Sinai Hospital, Los Angeles.***

FRANK BARRON, ***Research psychologist, Institute of Personality Assessment and Research, University of California.***

B. E. **BENSINGER,** ***Chief executive officer, Brunswick Corporation.***

BERNARD BERELSON, ***Director, Communication Research Program of the Population Council, New York.***

MARVIN BOWER, ***Managing Director, McKinsey & Company, Inc.***

JEROME S. **BRUNER,** ***Professor of Psychology, and Co-director of the Center for Cognitive Studies at Harvard University.***

Participants (continued)

HAROLD GUETZKOW, *Professor of Psychology, Sociology, and Political Science, Northwestern University.*

PAUL E. MEEHL, *Professor, Department of Psychology and Neurology, University of Minnesota.*

ROBERT K. MERTON, *Professor, Department of Sociology, Columbia University.*

DAVID M. OGILVY, *Chairman, Ogilvy, Benson & Mather, Inc.*

PETER G. PETERSON, *President, Bell & Howell Company-*

MILTON ROKEACH, *Professor, Department of Psychology, Michigan State University.*

WILLIAM SHOCKLEY, *President, Shockley Transistor Corporation.*

MORRIS I. STEIN, *Professor of Psychology, and Director of the Center for Human Relations, New York University.*

RALPH W. TYLER, *Director, Center for Advanced Study in the Behavioral Sciences.*

W. ALLEN WALLIS, *then Dean, Graduate School of Business, University of Chicago, now President, University of Rochester.*

GARY A. STEINER, *Director of the McKinsey Seminar, Associate Professor of Psychology, Graduate School of Business, University of Chicago.*

Guests

The following guests also participated in one or more of the sessions:

CHARLES W. BOAND, *Partner, Wilson & McIlvaine.*

FAIRFAX M. CONE, *Chairman of the Executive Committee, Foote, Cone & Belding.*

THOMAS H. COULTER, *Chief Executive Officer, Chicago Association of Commerce and Industry.*

PHILIP M. HAUSER, *Professor and Chairman, Department of Sociology, University of Chicago.*

ROBERT I. LIVINGSTON, *President, Walter E. Heller & Company.*

EDWARD C. LOGELIN, JR., *Vice President, United States Steel Corporation,*

FORREST D. WALLACE, *Managing Director, Chicago Office, McKinsey & Company, Inc.*

From the Graduate School of Business:

SELWYN W. BECKER, ***Assistant Professor of Psychology.***

NORMAN M. **BRADBURN,** ***Assistant Professor of Behavioral Sciences.***

ROBERT L. **FARWELL,** ***Associate Dean.***

JOHN E. **JEUCK,** ***Robert Law Professor of Business Administration.***

JAMES H. **LORIE,** ***Professor of Business Administration.***

MANNING NASH, ***Associate Professor of Anthropology.***

Topics

The meeting itself was loosely organized around papers prepared in advance. The following outline served to set the boundaries for the papers and the discussion at the meeting:

I. The raw materials-the individual members of the organization.

A. Do individual differences in creativity exist?

B. If such differences exist, are they general or specific to particular skills?

C. If such differences exist, and if the differences are large enough to make a difference:

1. Can they be measured in principle?

2. Can they be measured in practice (i.e., reliably and economically enough to be useful in personnel selection), and how?

D. What are the distinguishing characteristics of the creative individual?

E. What are the characteristics of the creative process? What psychological state is optimal for creative production?

II. The organization itself.

A. What organizational variables under the control of management can foster or retard creativity? Is it possible to specify and manage the relevant internal factors?

B. Are these consistent or inconsistent with other organizational objectives; i.e., what are the costs of creativity?

Topics (continued)

III. The external environment

A. Consider the organization as a whole, operating within a larger social and economic environment. What type of environment is most likely to produce a creative organization?

On the pages that follow I have attempted to integrate the ideas expressed at the conference; to say what it all seems to come to, in answer to the questions that made up the outline. The ground rules for this summary are hard to state, because they were hard to formulate and harder to adhere to. In general, though, here is what I tried to do.

-To put each of the major questions to the transcript and frame an answer that would probably be recognized by most of the participants.

-To maintain some distinction between findings and opinions, however enlightened or stimulating; that is, to separate those questions for which the seminar provided some answers based on research from those that it spoke to principally in terms of experience, judgment, and insight.

-To collect the various pieces that bear on any given question and point out consistencies and inconsistencies; and, wherever possible, to suggest some resolution for the latter.

-Finally, to do all of this in ordinary English by skirting or translating the technical jargon on the one hand and the management variety on the other.

Beyond that, I have in some instances drawn on research not represented at the seminar where I happened to know of it and where it seemed particularly germane. By and large, however, this summary reports answers only as suggested in the McKinsey Seminar on the Creative Organization. If all that were known about these matters were what was said in our three-day meeting, this is what, in my view, it would amount to.

Definitions

First, a few words about what the key terms in this summary mean:

"Creativity" has been defined in a number of ways in the psychological literature, in business discussions, in the arts and sciences generally. And within the transcript of this seminar there appear many explicit, and many more implicit definitions of varying degrees of generality.

We make no attempt to frame a master definition at this point. But for purposes of this overview, it is necessary and hopefully sufficient to make this general distinction:

Creativity has to do with the development, proposal, and implementation of ***new*** and ***better*** solutions; ***productivity,*** with the efficient application of ***current*** "solutions."

What "better" means, and who is to say, are two of the sticky methodological issues in the field. What it most often means in these pages is: better according to professional colleagues or superiors. The meaning of "solution" obviously varies by field; in the following, solutions range from practical answers to specific problems through new concepts in art, music, and architecture to the most general and abstract conceptualizations that characterize a breakthrough in, say, theoretical physics.

Many of the studies we considered distinguish "high-creative" from "low" or "average-creative" groups. It should be clear that "high" and "low" are relative and not absolute designations. In most of the samples under investigation, both "high" and "low" groups would qualify as highly creative within the population at large; and often even within the profession. It would, therefore, not have been euphemistic-just too clumsy-to use the designations "more highly creative" and "less highly creative." Bear in mind, though, that this is what the shorthand distinction between "high" and "low" means.

And now to the general findings and conclusions of the seminar.

I. The Raw Material: Individual Creativity

Do individual differences in creativity exist? Does it make sense to speak of more and less creative people in some such way as ***we speak*** of ***more and less intelligent, more and less co-ordinated or more and less musical people? Or is personal creativity, like fathering twins, mostly a matter*** of ***being in the right place at the right time?***

As important as circumstances are in determining who will create what and when, it seems that there are consistent and persistent differences in individual creativity. Under the same conditions, some people are likely to be more creative than others; and these differences are likely to show up in other situations and at other times. In fact, in most fields the distribution of creative contributions is something like the distribution of personal income in the United States: a small percentage of people accounts for a large share of the total.

Are these differences in personal creativity specific to particular areas of endeavor, or is there such a thing as general creativity?

That issue involves the distinction between ***capacity*** and ***performance.*** Except for a few outstanding examples of former years, the most creative people in one field are not likely at the same time to be the most creative in another. But this may be largely a matter of specialization in training and effort. Would an unusually creative architect be likely to be highly creative in chemistry also, assuming equal training and opportunity? And are highly creative architects, or chemists, distinguished only by greater creativity in their respective professions, or can they be distinguished from their less creative colleagues in personal capacities and characteristics beyond differential performance on the job?

The results of various testing programs suggest that the qualities and capacities that distinguish more from less creative practitioners of given fields ***do*** extend beyond the specific area of professional competence. Creative architects, for instance, differ not only in the way they approach architecture, but also in the way

they approach any number of situations and tasks, some far removed from and apparently unrelated to the specific demands of their profession.

And what is more, there seem to be at least some differences that hold across diverse fields; for example, some of the same personality characteristics that distinguish between architects of high and average creativity have been observed in studies of creativity among industrial research chemists ; and even in high school children differ in general creativity.

Granted that people differ in "creativity," are we really talking about anything more than general intelligence?

Yes. General intelligence seems to bear about the same relationship to on-the-job creativity at the professional level as weight does to ability in football. You have to have a lot of it to be in the game at all; but among those on the team-all of whom have a great deal of weight (or intelligence) to begin with-differences in performance are only slightly, if at all, related. In short, in the total population, creativity in most fields is associated with high intelligence-probably more so in some (e.g., physics) than in others (art). But within a given group of practitioners, operating at roughly the same professional level, differences in general intelligence provide no significant prediction of differences in creative performance.

What, then, are the characteristics of the creative individual, especially those that might be subject to measurement before the fact, so as to make prediction possible?

Although many and perhaps some of the most important characteristics of the creative individual undoubtedly vary according to the area of creativity, studies of "highs?' and "lows" in various fields are beginning to yield some common denominators. The following list concentrates on those differences that are probably more general. In some cases, this assumption of generality stems only from the fact that it seems reasonable on analysis of the characteristics involved vis-a-vis the general demands of the creative process. In others, the generality of the finding is actually supported by research from independent studies in diverse areas.

INTELLECTUAL CHARACTERISTICS

Though measures of general intelligence fail to predict creativity, highs, as a group, typically outscore lows in tests of the following mental abilities:

Conceptual Fluency The ability to generate a large number of ideas rapidly: List tools beginning with the letter t; novel uses for a brick-, possible consequences of a situation; categories into which the names of a thousand great men can be sorted-to name just a few of the tasks that have actually been used.

Conceptual ***Flexibility*** The ability to shift gears; to discard one frame of reference for another; to change approaches spontaneously.

Originality The ability and/or tendency to give unusual, atypical (therefore more probably new) answers to questions; responses to situations, interpretations of events.

Highs, for instance, are more apt to give rare-as well as more-uses of bricks; fewer "popular" interpretations of what an inkblot looks like; in high school, uncommon vs. common career aspirations (e.g., explorer vs. lawyer).

Preference for Complexity Highs often exhibit a preference for the complex and (to them) intriguing, as against the simple and easily understood.

When confronted with complex inkblots, for instance, they tend to seek a more difficult "whole" interpretation that takes the entire blot into account-rather than to identify detailed aspects that clearly resemble certain things.

The usual interpretation is that highs take complexity as a challenge; that they enjoy the attempt to integrate and resolve it.

PERSONALITY

Several closely related personality characteristics distinguish highs and lows in a number of studies:

Independence of Judgment

Highs are more apt to stick to their guns when they find themselves in disagreement with others.

In a situation where an artificially induced group consensus contradicts the evidence of their own senses, lows more often yield in their expressed judgment. And the same is true when the issue at stake is not a factual one, but involves voicing an opinion on an esthetic, social, or political matter.

Deviance

Highs see themselves as more different from their peers; and, in fact, they appear to ***be*** more different in any number of significant as well as trivial characteristics.

At the extreme, highs sometimes feel lonely and apart -with a sense of mission that isolates them, in their own minds, from average men with average concerns.

Attitudes toward Authority

A related distinction with far-reaching implications for organizations has to do with the way authority is viewed. The difference between highs and lows is a matter of degree; but to make the point we describe the extremes:

Lows are more apt to view authority as final and absolute ; to offer unquestioning obedience, allegiance, or belief (as the case may be), with respect approaching deference; to accept present authority as "given" and more or less permanent. Highs are more likely to think of authority as conventional or arbitrary, contingent on continued and demonstrable superiority; to accept dependence on authority as a matter of expedience rather than personal allegiance or moral obligation; to view present authority as temporary.

Attitudes toward subordinates are related in the appropriate direction: those who pay unquestioned allegiance tend to expect it, and vice versa.

Similarly, and in general, highs are more apt to separate source from content in their evaluation of communications; to judge and reach conclusions on the basis of the information itself. Lows are more prone to accept or reject, believe or disbelieve messages on the basis of their attitudes toward the sender.

' Impulse Acceptance"

Highs are more willing to entertain and express personal whims and impulses; lows stick closer to "realistic," expected behavior. Highs pay more heed to inner voices, while lows suppress them in favor of external demands.

So, for example, highs may introduce humor into situations where it is not called for, and bring a better sense of humor to situations where it is. And, in general, highs exhibit a richer and more diverse "fantasy life" on any number of clinical tests.

Does the more creative man have more inner impulses, or fewer inhibitions, or both, and to what degree? The answer is unknown, but there is at least one intriguing finding that suggests a strange combination of two normally opposing traits : In the genius and near-genius, a widely used personality test shows high "schizoid" tendencies (bizarre, unusual, unrealistic thoughts and urges) ***coupled*** with great "ego strength" (ability to control, channel, and manipulate reality effectively). This line of inquiry begins to speak to the old cliche that the dividing line between madman and genius is a fine one. According to this finding, it is fine, but firm.

In sum: Highly creative people are more likely than others to view authority as conventional rather than absolute; to make fewer black-and-white distinctions; to have a less dogmatic and more relativistic view of life; to show more independence of judgment and less conventionality and conformity, both intellectual and social; to be more willing to entertain, and sometimes express, their own "irrational" impulses; to place a greater value on humor and in fact to have a better sense of humor; in short, to be somewhat freer and less rigidly-but not less effectively -controlled.

APPROACH TO PROBLEMS

The more detailed aspects of the creative process are taken up in the next section, where we see highs at work. Here, we briefly note three distinctions as personal characteristics of creative problem solvers; all are especially significant in the management of creativity, and are elaborated later.

Motivation ***Highs*** are more perceptive to, and more motivated by, the interest inherent in the problem and its solution. Accordingly, they get more involved in the task; work harder and longer in the absence of external pressures or incentive; and generally place ***relatively*** greater value on "job

interest" versus the extrinsic rewards of salary, status, etc. There is no evidence, however, that the ***absolute*** importance of external incentives is any less for highs than for lows.

Orientation

Somewhat along the same lines:

Lows are more likely to see their future largely within the boundaries of one organization; to be concerned chiefly with its problems and with their own rise within it; to develop extensive ties and associations within the community; in short, to be "local" in their loyalties and aspirations.

Highs are more apt to think in terms of a larger community, both residential and professional; to view themselves more as members of the profession (whether management, chemistry, or teaching) than as members of Company X; to take their cues from the larger professional community and attempt to rise within it; to be more mobile, hence less "loyal" to any specific organization; in short, to be cosmopolitan in orientation and aspiration.

Hence, the local is more willing to change assignments, even professions (for example, from chemistry or engineering to administration), in the interests of the organization and his own career within it. The cosmopolitan is more likely to change organizations to pursue his interests and career within the larger profession.

In short, highs change jobs to pursue their interests; not their interests to pursue the job.

Pace

Highs often spend more time in the initial stages of problem formulation; in broad scanning of alternatives. Lows are more apt to "get on with it."

For example, in problems divisible into analytic and synthetic stages, highs spend more time on the former- in absolute as well as relative terms. As a result, they may leapfrog lows in the later stages of the solution process; having disposed of more blind alleys, they are able to make more comprehensive integrations.

One interpretation is that highs have less anxiety to produce; that they are confident enough of their eventual success to be able to step back and take a broad look before making commitments.

Can such differences be measured reliably enough to be of use in selection programs?

Many of these qualities can be measured, at least in part, by simple paper and pencil tests or other controlled observations. But the instruments are far from perfect; and perhaps more seriously, the correlation between each of these distinguishing characteristics and on-the-job creativity is limited. The characteristics "distinguish" highs from lows only in the sense that highs, on the average, have more of, or more often exhibit, the particular quality. And that is far from saying that all highs have more of each than all 1ows.[1]

As a result, as with all actuarial prediction of this sort, the procedure becomes more useful as the number of cases to be predicted increases. If many people are to be selected and it is important that some of them will turn out to be highs, a testing program can improve the odds. This would apply, for instance, in the selection of college or graduate students, Air Force research and development officers, chemists in a major industrial laboratory.

But if few people are being selected, and it is important that almost all of them turn out to be highly creative (the chiefs-of-staff; the top management team; the scientists to head a project), it is doubtful that, at present, a testing program will improve the odds beyond those of careful personal appraisal and judgment.

In this connection, there is the interesting suggestion (not documented) that highs may themselves be better judges of creativity in others; that it takes one to tell one.

As the examples suggest, testing to predict creativity is perhaps least effective where needed most: where the importance of individual cases is the greatest.

THE CREATIVE PROCESS

What are the observable characteristics of the creative process; how does it look to an outsider?

The appearance of the creative process, especially in its early stages, poses a problem to administrators. Up to a point, it may be hard to distinguish from totally nonproductive behavior-undisciplined disorder, aimless rambling, even total inactivity.

[1] **In general, validity coefficients for specific tests at best attain values around .60-which means that they predict about 36% of the variation in observed creativity.**

Irregular Progress

Creativity is rarely a matter of gradual, step-by-step progress; more often, it is a pattern of large and largely unpredictable leaps after relatively long periods of no apparent progress.

The extreme example is the sudden insight that occurs after a difficult problem is put aside, and at a time of no conscious concern with the matter. The insight may come in the middle of the night, or while shaving, or, as in this famous example, while getting on a bus:

> Just at this time I left Caen, where I was then living, to go on a geological excursion under the auspices of the school of mines. The changes of travel made me forget my mathematical work. Having reached Coutances, we entered an omnibus to some place or other. At the moment when I put my foot on the step the idea came to me, without anything in my former thoughts seeming to have paved the way for it, that the transformations I had used to define the Fuchsian functions were identical with those of non-Euclidean geometry. I did not verify the idea ; I should not have had time, as, upon taking my seat in the omnibus, I went on with a conversation already commenced, but I felt a perfect certainty. On my return to Caen, for conscience' sake I verified the result at my leisure. - Poincare

At a level of more immediate concern to most administrators, since few have the problem or privilege of managing a Poincare: the same sort of progress pattern distinguishes creative from merely productive work, and more from less creative activity, in the kind of problem-solving that characterizes the day-to-day activities of the organization.

Suspended Judgment

The creative process often requires and exhibits suspended judgment. The dangers of early commitment-sometimes to "incorrigible strategies"-are apparent at various levels.

In the perceptual laboratory, for example, people who make an early, incorrect interpretation of a picture in an "ambigu-meter" (a device that gradually brings a blurred picture into focus), will tend to retain the wrong perception-actually fail to "see''-even when the picture has been fully and clearly exposed.

Similarly, in the type of small-group problem-solving

or decision-making so typical of the modern organization, people will "stick to their guns" to support a position they have taken publicly, beyond its apparent validity and usefulness.

Finally, at the level of the organization itself, financial, technical, or corporate commitments to products, techniques, physical facilities, affiliations, and the like often stand in the way of change even when change is recognized as necessary and inevitable.

"Undisciplined" Exploration

Again, many creators stress the importance of undisciplined thinking--especially in the initial stages-probably because it serves to expand the range of consideration and raw material from which the new solution will emerge.

In this connection, we hear of the use of artificial disorganizers and "boundary expanders," such as alcohol, brainstorming sessions, sometimes even narcotics; and frequently, the observation that inspiration cannot be willed or worked on; that pressure and preoccupation with the problem are least likely to produce insight-though they may indeed sustain effort in other phases of the process.

The administrative enigma, then, is to distinguish, before the fact, incubation from laziness; suspended judgment from indecision; "boundary expansion" from simple drinking; undisciplined thinking as a deliberate exploratory step from undisciplined thinking as a permanent characteristic; brainstorming from gibberish by committee. In short, how to tell the temporarily fallow mind-open and receptive, working subconsciously, and just on the threshold of the brilliant flash-from the permanently idle one?

There may not, of course, be an answer. In time, outward predictors and distinguishing characteristics (beyond the individual's past history) may emerge. But for the moment, tolerance for risky gambles on creativity is probably one of the prerequisites or costs of playing for the higher stakes creativity provides when it does pay off.

What are the characteristics of the psychological state optimal for creative production?

Motivation

How much should be at stake; how hard should a man be trying, in order to maximize his chances of being creative?

There is an apparent paradox.

We often hear that the creative process is characterized by a tremendous sense of commitment, a feeling of urgency and even mission, that results in enormous preoccupation with the problem and in perseverance.

On the other hand, there is evidence that extremely high motivation narrows the focus and produces rigidity, perseveration rather than perseverance, which not only precludes creativity but reduces productivity (freezing up in the clutch). Some go so far as to say that the absence of pressure is a common denominator in situations conducive to creativity.

There are two suggested resolutions.

One is that the relationship is curvilinear-that creativity first rises, then falls, with motivation: you need enough to maintain effort at high levels but not so much as to produce panic attempts at immediate solution (jumping out of the window instead of looking for the fire escape). And there is, in fact, good evidence of such a relationship in laboratory studies of human and even animal problem-solving.

The other possible resolution involves a distinction in quality of motivation-between "inner" and "outer," "involvement" and "pressure," "drive" and "stress," -related to the earlier observation that highs are more driven by interest and involvement in the task itself, as against external incentives. Perhaps external pressure impedes creativity, while inner drive and task-involvement is a prerequisite.

In short: It may very well be that "genius is 90% hard work" ; but also, that inducing hard work where it does not exist is unlikely to produce genius.

The two resolutions are not mutually exclusive. Motivation of each kind may have a breaking point-a level where it does more harm than good-though it seems reasonable to suppose that higher levels of "intrinsic" than of "extrinsic" motivation would be compatible with creativity.

At any rate--other things being equal-interest in and commitment 'to the problem for its own sake should point to a creative outcome more often than sustained effort purchased by some externally attached reward, simply because the former is more apt to channel energy in the relevant directions.

Open Mindedness vs. Conviction

What intellectual attitude toward one's ideas and suggestions is optimal: how much conviction vs. continual reappraisal; self-involvement vs. objective detachment?

Again, both tendencies appear, and in the extreme.

On the one hand, creativity is characterized by a willingness to seek and accept relevant information from any and all sources, to suspend judgment, defer commitment, remain aloof in the face of pressures to take a stand.

On the other hand, creators, creating, are often described as having conviction approaching zeal.

There may in fact be a sort of simultaneous "antimony" or interaction between "passion and decorum," "commitment and detachment," domination by a problem and yet a view of it as objective and external. The process may involve the continual and conflicting presence of both components.

Or, it may be a matter of stages.

Perhaps the creative process is characterized by open-mindedness in the early, idea-getting phases; then by bull-headed conviction at the point of dissemination and execution.

There could be at least two reasons:

A more open mind that initially examines more alternatives is more likely to be convinced of the one it finally selects. An early commitment to a less carefully analyzed approach may be more vulnerable in the face of attack; beliefs developed through more painful and agonizing appraisal are more apt to stand the test of time.

In addition, creators almost always find themselves on the defensive in the period after the idea has been developed but before it has been "sold." There is an inevitable stepping-on of toes, an affront to the status quo and those responsible for it, that usually leads to some rejection of the maverick-especially if the innovation is not immediately, demonstrably superior. And people on the defensive are apt to overstate their case. In short, open-minded probers may (have to) become fervent proselyters.

As a working summary-hypothesis :

In the exploratory, idea-getting stages, there is great interest in the problem; perhaps commitment to its eventual solution but certainly not to any particular ap-

proach; an open-minded willingness to pursue leads in any direction; a relaxed and perhaps playful attitude that allows a disorganized, undisciplined approach, to the point of putting the problem aside entirely. But at the point of development and execution, where the selected alternative is pursued, tested, and applied, there is great conviction, even perseverance, perhaps strong personal involvement and dogmatic support of the new way.

II. The Organization Itself

What does all this have to do with organization? What are the characteristics of the creative organization; and what are the implications of individual creativity, if any?

There are various ways to approach this question.

One is to reason, deductively, ***from*** the characteristics of creators and the creative process ***to*** the kind of environment that ought to be congenial to them and conducive to creative activity. What does the nature of individual creativity imply about the environmental factors that foster or impede it ? For the most part, this is the way we proceed in what follows.

Another approach is to treat the organization, as a whole, as the creative unit. Perhaps some of the characteristics that distinguish "high" and "low" individuals also apply to high and low organizations, as such.

The characteristics of creative individuals suggest a number of rather direct translations or counterparts at the organizational level; and many of the characteristics independently attributed to creative organizations seem to match items in our description of individual highs.

Here is a brief summary.

THE CREATIVE INDIVIDUAL

Conceptual Fluency . . . able to produce a large number of ideas quickly . . .

Originality . . . generates unusual ideas

Separates source from content in evaluating information . . . motivated by interest in problem . . . follows wherever it leads

Suspends judgment, avoids early commitment . . . spends more time in analysis, exploration

Less authoritarian . . . has relativistic view of life . . .

accepts own impulses . . . playful, undisciplined exploration

Independence of judgment, less conformity

deviant, sees self as different

Rich, "bizarre" fantasy life ***and*** superior reality orientation, controls

THE CREATIVE ORGANIZATION

Has idea men
open channels of communication
ad hoc devices : suggestion systems
brainstorming
idea units absolved of
other responsibilities
encourages contact with outside sources

Heterogeneous personnel policy
includes marginal, unusual types
non-specialists assigned to problems
allows eccentricity

Has an objective, fact-founded approach
ideas evaluated on their merits, not status of originator
ad hoc approaches :
anonymous communications
blind votes
selects and promotes on merit only

Lack of financial, material commitment to products, policies
invests in basic research; flexible, long-range planning
experiments with new ideas rather than prejudging on "rational" grounds ; everything gets a chance

More decentralized; diversified
administrative slack; time and resources to absorb errors
risk-taking ethos . . . tolerates and expects taking chances
not run as "tight ship"
employees have fun
allows freedom to choose and pursue problems
freedom to discuss ideas

Organizationally autonomous
original and different objectives, not trying to be another "x"

Security of routine *allows* innovation
"Philistines" provide stable, secure environment that allows "creators" to roam
has separate units or occasions for generating vs. evaluating ideas
separates creative from productive functions

This analogizing has serious limitations, and it may be misleading. But the table does serve as an organized index to some of the major characteristics attributed to creative organizations, and it is interesting that so many of them sound very much like the distinguishing characteristics of individual highs.

Finally, there is direct, empirical study of actual creative organizations. This may well turn out to be the most fruitful approach, but it was not the major focus of the seminar. In part, this reflects the state of knowledge-systematic studies of creative organizations, as such, simply don't exist as yet. In part, the composition of the symposium is responsible. A meeting with six psychologists and one psychoanalyst, against three sociologists, inevitably speaks mostly in psychological terms.

At any rate, we make no attempt to represent-let alone do justice to-the sociological investigation and analysis of organizational factors that relate to creativity. In what follows, we reason and abstract mostly from the nature of individual creativity, partly from rather informal observations of actual organizations.

What, specifically, can management do-beyond selecting creative participants-to foster creativity within and on the part of the organization?

Values and Rewards

What explicit and implicit goals and values characterize the creative organization? What system of rewards and incentives maximizes creativity?

The creative organization in fact prizes and rewards creativity. A management philosophy that stresses creativity as an organizational goal, that encourages and expects it at all levels, will increase the chances of its occurrence.

But it is one thing to call for creativity; another to mean it; and yet another to reward it adequately and consistently when it occurs. More specifically, creativity as a value should find expression in the following.

Compensation. In most areas of day-to-day functioning, productivity rather than creativity is and should be the principal objective; thus general reward policies tend to measure and stress regular output. But even where creativity is truly desired and encouraged in good faith, activities that are potentially more creative may

be subordinated to those more visibly and closely tied to reward policies. (A familiar academic illustration is the "pressure to publish," which may lead to a plethora of relatively insignificant formula-projects that minimize chances of failure-nonpublication-but also of creativity.)

In the business enterprise, a similar grievance centers on discrepancies in reward between the sowing and reaping aspects of the operation; with the greater rewards for work that shows immediate, measurable results (e.g., sales) vs. that which may produce longer-range pay-off (such as basic research).

It may be inevitable that work closer to the balance sheet will be more swiftly and fully compensated than efforts that have tenuous, uncertain, and in any case long-range effects on corporate profits. But creativity and guaranteed, immediate results don't go together; not between, nor within assignments. If creativity is to be fostered, not impeded, by material incentives, they will have to be applied by a different yardstick.

It is probably this simple: Where creativity and not productivity is in fact the goal, then creativity and not productivity should in fact be measured and rewarded. And if creativity is harder to measure, and takes longer time periods to assess, then this probably requires some speculative investment on the part of the firm that wants to keep and nurture the few men and the few activities that will eventually be worth it.[2]

Channels for Advancement. Where concern is with creativity in a professional unit or other specialized function operating within the larger organization, there is this related implication: To the extent possible, there should be formal channels for advancement and status within the area of creativity.

Where it is impossible to promote a creative chemist without taking him out of chemistry, he faces a choice between money and position on the one hand, his chemistry on the other. The company is likely to lose his services as chemist in either case: to administration within its own walls, or to another organization where a chemist as such can get ahead. (This is one of the chief organizational advantages and attractions of the major university for the research scientist or scholar: parallel channels for

[2] High potential pay-off and low risk are, unfortunately, incompatible-just as they are in the stock market and at the gambling tables.

advancement, of at least equal status, exist outside of administration.)

To some extent this is a matter of organizational size; it is hard to provide for advancement within a department of one or two persons. But size alone is not enough. The nature and number of status levels established, their labels, and especially their actual value within the firm and the larger community, will determine their worth to individuals who hold them.

"Freedom"

Within rather broad limits, creativity is increased by giving creators freedom in choice of problem and method of pursuit. In line with the high's greater interest and involvement in his work, greater freedom is necessary to maximize those satisfactions that are important to him and that channel his efforts into avenues most likely to prove creative. Whether and where there is an upper limit is a point of much contention and no evidence.

But such freedom often puts the appropriate objectives of the organization at odds with the demands of maximum creativity. The symposium itself produced two striking examples.

In one instance, a participant distracted the group by working out and presenting an elegant general solution to a mathematical problem that had been mentioned only in passing as a task assigned to subjects in a creativity experiment. From the point of view of the seminar, he was out of bounds. By following his own interests, he was creative. (Would he have arrived at an equally elegant ***psychological*** insight, had he been constrained to the issue as externally defined?)

More dramatically: After the first few hours of the meeting had been spent in rather academic and abstract discussion, the participant affiliated with the sponsoring foundation reminded us, in no uncertain terms, that the purpose of the grant was to develop useful and understandable guide lines for management and that we had better get on with it. This precipitated a short but heartfelt donnybrook between the advocates of no-nonsense, keep-your-eye-on-the-target, and those of take-it-easy, it's-interesting-let's-see-where-it-leads; between what-good-is-it-if-you-can't-tell-us-what-it-means-for-management, and our-job-is-to-create, yours-to-apply.

Both approaches are valid, but as means to different ends. An organization sponsoring a meeting is rightfully

concerned with maximizing its output. By the same token, creative individuals who attend it are not so concerned with the product of the particular conference, as with the pursuit of interesting lines of inquiry-whether or not they happen to reach fruition during the session. And curtailing and channeling discussion into areas known to be productive obviously limit the chances of coming up with something outside the range of the ordinary.

This, then, is probably one of the principal costs in the nurture of creativity: Except in the rare and fortunate case where a creative individual's interests exactly match the day-to-day operating objectives of his organization and continue to do so over time, the organization pays a price, at least in the short run, for giving him his head. What he returns to the organization may or may not compensate it manyfold.

Communication

Many observations point to the importance of free and open channels of communication, both vertical and horizontal.

On the one hand, potential creators need and seek relevant information whatever its source, within or without the organization; on the other hand, they are stimulated by diverse and complex input.

Equally important, ideas wither for lack of a grapevine. A possible approach, a feasible but half-baked notion, or even a well-worked-out solution must be communicated to those with the power to evaluate, authorize, implement.

The presence of formal channels is not enough. People must feel free to use them, and channels must not be clogged by routine paper-flow that ties up time with "programmed trivia," and creates an air of apathy and neglect toward incoming messages because it is so unlikely that they will contain anything of value.

Since highs tend toward cosmopolitan, professional orientation, the organization must at least provide for and perhaps encourage contact and communication with colleagues and associations on the outside.

As a special case, there is the matter of scientific and professional publication in the appropriate journals, which is often of great personal importance to creators.

There may be problems of security, and the natural jealousy of corporate secrets and employee loyalties. But

in many cases, these are unrealistic or exaggerated, given the high rate of horizontal mobility and the fact that most "secrets" aren't. At any rate, there may be no reason to think that the balance of payments will be "out'‘-there should be at least as much information gained as given away in most external contacts. And in many cases, and within broad limits, the net gain in satisfaction, creativity, and perhaps tenure of highs will probably offset the time and trade secrets lost to the outside.

What, specifically, are the costs** of **creativity? What must an organization be prepared to give up or tolerate** if **it wants to increase its creativity?

First, creativity by definition is a high-risk enterprise -not for society or industry at large, but for any given unit that attempts it. The greater the departure from present practice, the less likelihood that the innovation will work; the greater the potential pay-off, the less the odds of its occurring. Conversely, the larger the number of workers or units independently pursuing any problem, the better the chances that one or more of them will succeed.

In the abstract, then, decisions as to whether and where to attempt creativity, and how much to try for, are much like decisions concerning what to insure, and for how much-though the hopes and fears are reversed.

Secondly, within the unit under consideration, fostering creativity assesses costs in assured productivity. To the extent that energy is consumed in investigation and exploration, it does not go into work known to be productive.

Finally, depending on the personal tastes and preferences of management, there may or may not be costs in "security, " "comfort," and "congeniality" of the environment :

a) Highs are not as deferent, obedient, flattering, easy to control, flexible to ***external*** demands and changes, conventional, predictable, and so on, through a long list of desiderata in "good" employees.

b) In addition, highs are more mobile, less "loyal"- harder to hold by ordinary extrinsic rewards; but easier to acquire by the offer of interesting opportunities.

At any rate, they make for a less stable and secure, more challenging but perhaps more disturbing environment.

c) A creative organization itself is more committed to change, operates on a faster track, has a less certain or predictable future than the efficient, me-too operation.

In short, maximizing creativity is not the principal objective of any organization at all times, or even of all organizations at some times. When it is, there are some rough guide lines as to how it may be fostered-but not, it is suggested, at no cost.

Consider the organization as a whole, operating within a larger social and economic environment. What type of situation is most likely to produce a creative organization?

The seminar produced little agreement, let alone evidence, on this matter. There was some discussion about the effects of competitive position, size, age, and general success of an organization as they affect its need and chances for creativity. But nothing approaching a conclusion is visible.

One of the more interesting, recurrent debates centered on the relative merits of firmly-led, "one man" organizations vs. decentralized corporate entities; on charismatic, inspired leadership by a "great man" vs. the greater democracy of the professionally-managed organization.

The debate was not resolved, but it does call attention to some distinctions that may be important.

Some Final Distinctions

Lastly, we take note of some distinctions that may be helpful, suggested simply by the experience of trying to discuss "the creative organization."

For instance, the preceding debate may reflect a failure to distinguish between a creative organization and one that produces for a creator.

An organization can be an efficient instrument for the execution of externally created ideas, and yet not be in itself creative. For instance, a smooth military unit under a great strategist; a top-notch symphony orchestra under a creative baton; or, in the same terms, a business that hums to the tune of a creative president-these may all

implement creativity and yield a product appropriately called creative. But they are not, ipso facto, creative organizations. And the characteristics that make for creativity within and on the part of an organization as a whole may in fact be quite different from those that make it the efficient tool of a creative master.

Along the same lines, it may be helpful to distinguish between getting people to be more creative, and getting creative people to be more productive. The conditions that induce a Leonardo, a Frank Lloyd Wright, or a Shockley to turn out more of the same-to "repeat" or elaborate on earlier innovations-may be quite different from those that produce original work.

In short, organizations, like people, may increase their net yield of creative ***products*** either by the terms that go into their conception or those that enter into their output. And while the net effects may often be the same, the means are probably not.

For the eventual understanding of "the creative organization," it may be important to learn the difference between creating productivity and producing creativity.