

*Arrange ten coins as above, then move only two coins to form a Greek Cross. The coins must form two rows, each containing six coins when added up either horizontally or vertically.*

ARE YOU A CREATIVE EXECUTIVE?

**Creative people have distinct characteristics that often set them apart from the crowd. Here's an opportunity to find out if you're in this special group.**

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President  
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How well you perform this basic exercise in mental agility—and how well you do with several others presented later in this article—may provide some telling clues about your ability to think and act creatively.

As the box on page 15 indicates, the creative person—the creative executive—has many distinct attributes that set him apart from the crowd.

To start with, the creative executive has more energy, is more impulsive, and is more responsive to emotions and feelings than the less crea-

tive manager. He or she has something researchers call “flexible repressions”, which means that the creative person can bring a lot of material buried in the subconscious to conscious awareness.

The real well of ideas is the subconscious, and someone with a distinct lack of inhibitions, such as a creative executive, has a relatively uncluttered pipeline to this source. As psychologist A. H. Maslow put it: “The really creative person is one who is not ‘afraid’ of his uncon-

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*Games*, which he wrote with George P. Hough, Jr. (Harvest/Harcourt Brace Jovanovich, 1977). The book also is available from his company, Princeton Creative Research, Inc., Box 122, Princeton, N.J. 08504. \$4.50 postpaid.

scious. This is the person who can live with his unconscious. . . his childishness, his fantasy, his imagination, his wish fulfillment, his femininity, his poetic quality, his crazy quality. He is the person. . . who can regress in the service of the ego. . . voluntary regression. . ."

Both fluent and flexible in their thinking, creative executives can generate large numbers of ideas rapidly. He or she can choose and investigate a wide variety of approaches to problems, discard one frame of reference for another, change approaches, and adapt quickly to new developments.

Your less creative colleague probably suffers from "hardening of the categories", which is a lack of flexibility that often results from over-familiarity with objects or ideas. The really creative executive allows his thoughts to mill about without categorizing.

The Greek cross coin problem presented above illustrates the need for flexibility in thought patterns. It can be solved only by moving one coin from the right side of the horizontal row to the left and placing the bottom coin on top of the center coin.

You may cry foul, but there is nothing in the puzzle wording that prevents working in more than two dimensions.

The common or usual ways of problem solving simply do not work with this problem. Most people impose unnecessary restraints on themselves —restraints that are not in the problem statement. This problem, as with many that managers face daily, involves a change in the frame of reference. Hardening of the categories makes this kind of change difficult.

### Youthful curiosity

Creativity is contingent upon how much of our innate curiosity and youthful sense of wonder has remained intact. Unfortunately, these attributes are educated out of most of us by the pressures of conformity and conservatism. Very few adults retain them, but the creative executive holds on to an intense curiosity about everything. An interested, expectant, responsive at-

titude toward life keeps the creative mind well stocked with all kinds of information that can be drawn on when engaged in creative activity. Creative executives are not content just to see how something works, but they delve into the whys, the cause-and-effect relationships of what they see and perceive. Their curiosity is not centered just on their own fields; their spectrum of interest embraces disparate areas and generates spontaneous enthusiasm toward almost any puzzling problem.

### Originality and openness

Originality in thought is another trait of the creative executive. He or she can think of unusual solutions and can see remote relationships between phenomena. Such persons are likely to perceive the unexpected, the novel, and the fresh in everything they encounter.

The creative individual's openness to unusual ideas sometimes extends to the point of gullibility. Such managers are usually quite ready to entertain bizarre or crackpot ideas and frequently play around with them seriously before discarding them. New perspectives, new concepts, and venturesome ideas offer an endless source of mental exercise.

To solve the following problem you must "stand it on its head".

It was the 16th hole in the annual Bob Hope Desert Classic, and the tall, handsome newcomer had an excellent chance of winning. His iron shot fell just short of the green, giving him a good chance for a birdie. Smiling broadly, he strode down the fairway only to stop in dismay. His ball had rolled into a small paper bag carelessly tossed on the ground by someone in the gallery.

If he removed the ball from the bag, it would cost him a penalty stroke. If he tried to hit the ball and the bag, he would lose control over the shot. For a moment he pondered the problem. Then he solved it.

(The solution to this problem, along with solutions to other problems in this article, appears on page 52. But don't look until you have finished reading the entire article.)

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Solving this exercise requires purging the habitual or established way of doing something.

### **Sensitivity to problems**

The creative executive not only finds fresh approaches to problems, he also detects problems. The ability to see "need" areas or to be aware of the odd or promising allows this manager to note gaps in his company's products, processes, and applications.

Such executives can also see the significance or possibility in situations that a less sensitive manager might overlook. They are acutely aware of peoples' needs and of the unrealized potential of their staffs. Always interested in improving upon existing products or situations, these managers are like the Socratic philosopher with a "thorn in his fles" —perpetually disturbed by something. For the creative executive, there is hardly a situation free of problems; this happy state of dissatisfaction keeps his ever-present problem-orientation alive.

### **Confidence to dare**

Daring to transcend accepted patterns of thinking and to stick to convictions in the face of possible discouragement or censure is very necessary in creative work. Rare indeed, however, is the established creative executive, and, even rarer, the novice, who can maintain complete detachment from criticism.

Self-confidence is an important attribute that can be developed only through experience and exercise. It has been said that nothing breeds success like success, and this is probably true; but the corollary that failure breeds failure need not also be true. Thought fear of making a mistake is a devastating emotional block to creativity, executives should realize that progress is made through failure as well as through success.

Since most executives' career orientations are governed by the premise of success, the specter of failure looms large. In the risk-taking enterprise of creativity and innovation, however, failures do occur. Failure should be regarded

as a situation from which new or improved ideas may arise. Almost every area of corporate development has had its history of failures that ultimately led to success. In reality, the greatest failure is not to attempt a new idea at all.

The fear of failure prevents many executives from daring anything really creative, especially when the element of risk taking is considerable. So the young executive needs encouragement and recognition in order to develop the confidence that he or she will eventually come through, no matter how many failures there are.

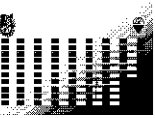
### **High motivation vs. "success"**

Some executives, however, blunt their effectiveness by excessive motivation or the desire to succeed too quickly. The overmotivated executive may narrow his field of observation, looking for and using only clues that provide a quick solution to a problem. This person frequently passes up leads to novel or better solutions by picking the first workable solution rather than considering alternatives.

Overmotivation can also result in excessively ambitious goals. Some executives want to tackle only very big and complex problems. Failure to solve such complex problems successfully can undermine confidence to tackle problems well within their capabilities.

A lack of persistence or a feeling of flagging interest is often a signal to get away from a problem and relax for a while. Many creative executives turn to another problem because they find they function best when involved in several undertakings simultaneously, each at a different stage and each affording the chance to "relax" when necessary.

During the creative process, however, the creative executive maintains an uninterrupted rapport with the "proposals" that emerge from his subconscious as he forms them into something that makes daylight sense. This requires great self-discipline.



### Toying with ideas

There is often a seemingly light side to the creative executive's involvement in work. He may seem to be lost in an irresponsible play of ideas, relationships, and concepts, which he shapes into all kinds of ostensibly incongruous combinations. However, this apparently purposeless exercise strengthens and, at the same time, loosens the "muscles" of imagination. It enables the person to come up with more unique solutions to problems.

Creative executives have often found that playful sketching and shaping of ideas helps them come upon really valuable ones. Furthermore, this toying serves to get them in a proper mood to start ideas flowing. These quasi-serious exercises relax the ever-present critical and conservative orientation of the conscious. By putting this watchful censor to sleep, they can set the stage for the emergence of novel ideas and solutions.

### Tolerance of ambiguity and complexity

One reason for the lack of creative ideas among many executives is their strong preference for predictability and order. Many immediately reject ideas that either do not fit into an established pattern or are too elusive for immediate comprehension and categorization.

On the other hand, creative executives can tolerate a high degree of ambiguity. They are actually suspicious of any pat explanations and have developed a healthy respect for groping around and for the unknown during the creative process. Creative persons can perceive a variety of possibilities and are able to simultaneously consider and balance different, even conflicting and contradictory, frames of reference and concepts.

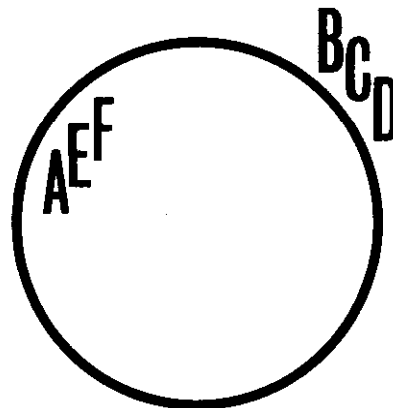
### Selectivity

Likewise, creative executives differ from the less creative or noncreative in the quality they show in their selection of elements when con-

fronting a problem. They are able to choose more fundamental aspects and cast the superfluous aside. In creative problem solving, it is, as a rule, not necessarily the executive who is highly fluent with the problem who shows the highest degree of creativity. Whether fluent in thinking or not, the executive who can grasp the heart of the matter frequently shows the highest degree of creativity. In creative thinking, it is quality that counts, not necessarily the quantity of ideas.

Creative solutions to problems are often simple, elegant, even obvious. Yet it is the obvious that often escapes us in trying to solve problems. For example, the simple solution is called for in the following exercise.

*Determine the system being used to place all the letters of the alphabet either inside or outside the circle. A, E., and Fare inside, and B, C, and D are outside. Where do the other letters belong?*



Similarly, other system puzzles can have less direct, but still straightforward solutions. In the following number problem, for example, you must consider that the solution may not lie in mathematical manipulation of the symbols. With that caution in mind, find the general rule that governs this series:

18, 11, 15, 14, 19, 16, 13, 12, 20

## Creative memory

The subconscious is a storehouse of facts, observations, impressions, and other memories. While the creative executive's mind is always richly stocked with these memories, this does not in itself indicate creativity. As a matter of fact, a prodigious memory can act as a deterrent to creativity.

What makes memory creative is the dynamic mobility of the components. Where the uncreative memory files its data and impressions within neat and independent cubicles, the creative memory's boundaries are permeable. All kinds of related and unrelated data and ideas can always be cross-indexed and interrelated.

The creative mind is continuously rearranging, pruning, discarding, relating, and refining, these data and ideas. In such a permeably structured memory there is the ever-present possibility for new configurations and combinations.

Creativity requires exact, recallable observations and discriminating use of the senses. Try this simple test: In the margin of this page, draw the face of your watch—without first looking at it.

This test illustrates the effect of overfamiliarity. We look at our watches so often we cease "seeing" them. That's what happens when behaviors become automatic and when we take objects too much for granted.

Here's a similar experiment to try on a friend or yourself. Without looking at your telephone, indicate what letters and/or numbers appear opposite the first finger hole on the dial or on top of the upper-left button of the touch-tone telephone.

Another type of memory—associative—is tested in the exercise at the top of the page.

## Incubation

There comes a time when thinking becomes clogged, when errors pile up, and when no significant insights occur. At this point, the creative executive stops working on that particular

problem and turns to something entirely different. According to Dr. a. Schlien of the University of Chicago, "Although he has confidence in his ability, the creative individual also has an attitude of respect for the problem and admits the limits of his conscious power in forcing the problem to solution. At some point, called 'incubation' by many who have reported the porocess, he treats the problem as if it had a life of its own, which, will, in its time and in its relation to his subliminal or autonomous thought processes, come to solution."

*In the sets below, think of a fifth word that is related to the preceding four words. (You can form compound, hyphenated words in some cases, or commonly used expressions.) After you have found the fifth word, think of at least two additional words that can be used with it.*

*Example:*

**Dream Plan Legion All** \_\_\_\_\_

Answer: American (American dream, American plan, American legion, all-American).

Examples of other words that can be used with "American": American cheese, American eagle, American English, American Indian, etc.

Now practice your associative skills with the following sets:

1. HOUSE	TOP	FACE	CATCHER	_____
2. DOWN	WHISTLE	CALL	CRY	_____
3. POT	APPEAL	OPPOSITE	HYGIENE	_____
4. RICH	OUT	DUMB	DOWN	_____
5. BOX	SHEET	CHAMBER	STAND	_____
6. LOVE	LEAVE	CALL	BAY	_____
7. VALUE	JACKET	END	LEARNING	_____
8. OFFICE	CAMERA	CARDBOARD	SPRING	_____
9. PIPE	LAND	LAY	BASKET	_____
10. CHICKEN	TIME	CLEANING	LOCK	_____
11. PAINTING	PRINT	BOWL	NAIL	_____
12. CHINA	WHITE	MEAL	ASH	_____
13. SCREEN	SALE	WATER	STORM	_____
14. OPERA	VERSE	RED	HOUSE	_____
15. HUMOR	NATURE	FAME	TAKE	_____
16. EDITOR	FATHER	FOLK	HALL	_____
17. TAP	GAUZE	SERVICE	HIGH	_____
18. UNDER	BROKE	GO	AFTER	_____
19. FOURTH	GUARD	POLITIC	ENGLISH	_____
20. UNCLE	OVEN	TREAT	COURAGE	_____

The creative executive also likes to contemplate, reflect, meditate, or just "chew the men-

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tal cud." Durign these periods he often gets some of his best ideas.

Some managers tackle problems with a dogged effort. Although commendable, keeping busy without time for relaxation or change of activity frequently serves as an effective barrier to novel solutions. The executive who knows when persistence with a recalcitrant problem begins to result in diminishing returns, and who then drops it for a while, frequently finds that on returning to it a fresh approach comes with greater ease.

There is a popular but fallacious notion that the creative individual relies on effortless insight and unforced spontaneity. True creativity requires a great deal of selfdiscipline and old-fashioned effort.

The majority of creative executives do not know the meaning of an eight-hour workday. Their preoccupation with problems is incessant. Creativity, in whatever field, is generated by hard thinking, prolonged reflection, and concentrated hard work. But creative persons have their moments of joy when ideas start flowing after a disrupting hitch.

Frequently, however, the intense struggle with problems is useless. But these efforts, futile as they seem to be, are not necessarily wasted because they activate the subconscious processes of celebration and incubation. Without pre-

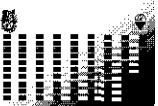
paratory work, the subconscious can be notoriously unproductive.

Whatever the field, creation is a product of hard thinking, prolonged reflection, and concentrated toil. There is a continuous assimilation of data and observations, a continuing pondering on the causes of regularly met difficulties, and a sorting out of hunches and ideas that flash across the firmament of consciousness.

Creative executives develop a retrospective awareness of when they have solved problems creatively. They take note of the methods that have succeeded and failed. They try to learn "why" by retracing as far as possible the routes followed and those avoided.

Creative individuals schedule their creative thinking periods for times when they have their most favorable mental set for producing ideas.

They are aware of their personal rhythms of output. By keeping a record of the most creative periods during a day, they can establish a pattern and plan ahead, reserving peak periods for concentration, contemplation, and uninhibited thinking, and using the less productive times for reading or routine tasks. But even without a time sheet of productive periods, the creative executive develops a sensitivity to moods that promise good returns —and knows when these moods are approaching.



## A Creativity Checklist

The creative executive has distinct characteristics that set him apart from less creative colleagues. However, there is no perfect example, because no one executive could have all the attributes of creativity to a uniformly high degree. Thus there are many gradations of attributes and skill levels among creative persons, but all such executives have some measure of these characteristics in common.

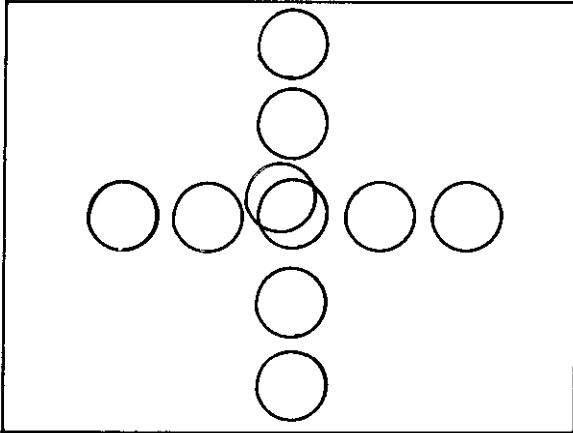
The following checklist of behavioral and personality attributes offers further insight into the makeup of the creative executive. It was adapted from a listing by Dr. Ross L. Mooney of Ohio State University, a leading researcher in the field of creativity.

The creative executive:

- Is willing to give up immediate gain or comfort to reach long-range goals.
- Is determined to finish work even under conditions of frustration.
- Has a great amount of energy, which is channeled into productive effort.
- Perseveres despite obstacles and opposition.
- Has the ability to examine his or her own ideas objectively.
- Has great initiative.
- Is irritated by the status quo and refuses to be restricted by habit and environment.
- Has many hobbies, skills, and interests.
- Can open up to experiences and abandon defenses.
- Feels he or she has untapped potentials.
- Criticizes him or herself more than others do.
- Is not afraid to ask questions that show ignorance.
- Likes ventures involving calculated risks.
- Believes, even after repeated failures, that he or she can solve a problem.
- Has the confidence to meet new problems, find out new things, and do original things.
- Is willing to stand alone if integrity demands it.
- Does not blame others or make excuses for errors or failures.
- Competes with self rather than others.
- Has neither fear nor resentment toward authority, and is nonauthoritarian.
- Is open and direct with people and respects their right.
- Wants to examine things from another's viewpoint.
- Knows how to give inspiration and encouragement.
- Is governed by inner stimulus rather than outer command and has a rising level of aspiration.
- Gets the greatest pleasures from creative activities.
- Believes that fantasy and daydreaming are not a waste of time.
- Has an inherent desire and respect for perfection.
- Wants to integrate utility with the aesthetic.
- Moves toward solutions using intuition.
- Knows that getting stuck on a problem is frequently because of asking the wrong question.
- Is alert to new perspectives, and knows that much depends on the angle from which a problem is seen.
- Is willing to listen to every suggestion, but judges for him or herself.
- Always has more problems and work than time to deal with them.

## ANSWERS TO CREATIVITY PROBLEMS

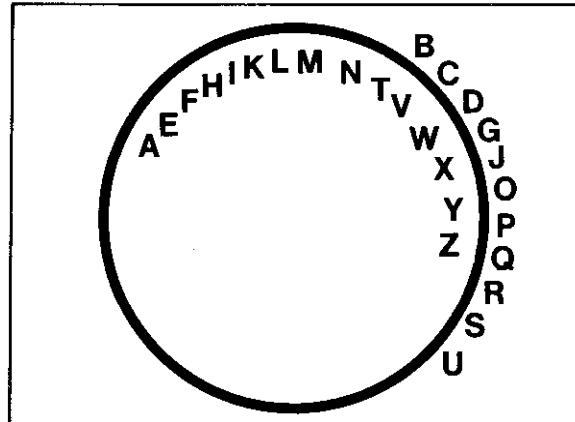
**Cross of Coins:** This problem can be solved only by moving one coin from the right arm to the left and placing the bottom coin on top of the center coin.



You may cry foul, but there is nothing in the puzzle wording that prevents working in more than two dimensions. In most problems of this kind, the solution involves sliding the coins from one position to another. This problem illustrates how hard it is to break out of usual ways of problem solving, and how easy it is to read into a problem constraints that are not there.

**Sixteenth Hole:** The golfer took matches from his pocket and set fire to the bag. Although standard problem solving would demand getting the ball out of the bag, the best solution was getting the bag from around the ball. This problem, as with many, requires a reversal in thought patterns.

**Alphabet:** The key to this problem is not some complex interrelation of numbers of vowels and consonants, but in the shape of the capital letters. Letters with straight lines belong inside the circle.



**Numerical Series:** Translate the digits into words and arrange the alphabetically, thus: Eighteen, eleven, fifteen, fourteen, and so on.

### Associative Memory:

- |            |               |
|------------|---------------|
| 1. DOG     | 11. FINGER 2. |
| 2. WOLF    | 12. BONE      |
| 3. SEX     | 13. FIRE      |
| 4. STRIKE  | 14. LIGHT     |
| 5. MUSIC   | 15. ILL       |
| 6. 16.     | 16. CITY      |
| 7. BOOK    | 17. WIRE      |
| 8. BOX     | 18. GO        |
| 9. WASTE   | 19. BODY      |
| 10. SPRING | 20. DUTCH     |

One of the secrets of problem solving and one of the basic tenets of the scientific method is to look for the simplest explanation that will account for all of the observed facts. Always move from the simple to the complex. It is much more difficult to move in the other direction.

