

# Stimulating Creativity

## Overcoming barriers to creative thinking and fostering a dynamic environment within organizations

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**F**lavorists and perfumers understand the frustration that a bad cold and a blocked nose can cause. Volatile organic substances and mixtures used in flavor creation and perfumery become just like any other liquid, lacking their essence and character, and the ability to create anything meaningful with them is temporarily incapacitated. But worse than this, the stimulus and motivation of the job is put on hold until the sense of smell returns. The interaction of volatile organic compounds with the olfactory epithelium is a key mechanism that stimulates the creative juices of perfumers and flavorists, and releases the excitement and elation of either creating something new or matching an existing material. Creative ideas are also stimulated by the accumulation of knowledge and understanding about the subject, having a memory for hundreds of smells and the experience of using them, reading, comparing notes with like-minded flavorists and perfumers, and associations that can form in the mind from other subjects and experiences such as a new food. But for the perfumer and flavorist to express their creativity in the formulation of new products, none of these can be realized without the sense of smell.

### Defining Creativity

So what is creativity? Can it be measured? By understanding it better can flavorists and perfumers use it to their advantage? Can creativity be stimulated and enhanced? Are some people more naturally creative than others? And what of the environment and management structure in which flavorists and perfumers work—are some more conducive to creativity than others? Is it possible to design a business environment and climate in which creativity can be managed and stimulated? These are important questions for individuals and organizations operating in the perfumery and flavoring industries.

Many attempts have been made to define creativity, but despite one's ability to recognize it when it manifests itself, there is still considerable confusion about what it actually is. Creativity is something of a mystery; insights and ideas seem to come from nowhere. Tudor Rickards described creativity as "an escape from mental stuckness."<sup>1</sup> Pablo Picasso said, "Every act of creation is first of all an act of destruction."<sup>2</sup> It is said that he would sit on a chair holding a spoon over a metal plate and, on falling asleep, would be awoken by the spoon falling onto the

plate. From this he would capture the images and pictures forming in his mind at the moment of losing consciousness and use these in his art. Max Wertheimer suggested that "creative thinking involves the breaking down and restructuring of our knowledge about a phenomenon in order to gain more insights into its nature."<sup>3</sup> In many ways this applies to the flavorist and the perfumer, who breaks down the structure of a flavor or a perfume organoleptically/olfactively and/or analytically to gain more insights into its nature before reconstructing it. In the words of a flavorist friend:

"If it does involve creativity then it's more the creativity of the artisan predicated on knowledge, learnt skills and practice, rather than the artist. A flavorist is limited by what must be achieved, is motivated by finding solutions to a problem—an end product. Whenever I've spoken to artists/poets they never seem to worry too much about product, they seem to instinctively know it's going to happen. It's the process of getting there that interests them. Picasso also said 'I don't seek, I find!' That said, there is often that interesting point in the process where things start to emerge, where there's a shift from something amorphous and intangible to something recognizable; that's the bit I enjoy, that's when you realize it is creative."

### The Moment of Insight

Probably the most famous moment of insight was when Archimedes realized the solution to a problem concerning King Hieron's crown and jumped from the bath, shouting, "Eureka, I've found it!" What he had found was the solution to this problem: How can you tell if a golden crown has been adulterated with silver during its manufacture? The problem went through a period of incubation and gestation in his mind before the solution came to him in a flash when he saw water spilling out of the bath and realized that silver and gold would displace different volumes of water because of their different densities. On shouting "Eureka" and running down the road naked, he also demonstrated that the moment of insight is accompanied by emotions such as elation and pleasure and the release of tension on finding a way forward from what is a period of apparent blockage. From this we can deduce another essential requirement for creativity—that ideas and solu-

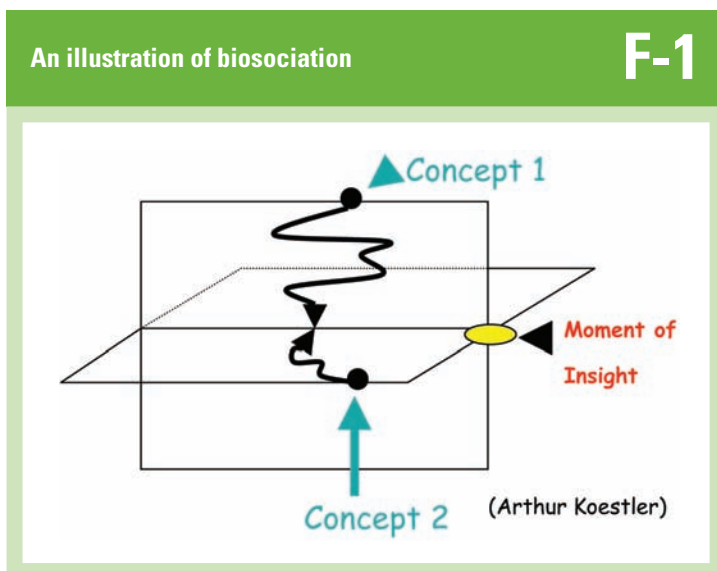
“Fortune favors the prepared mind.”  
-Louis Pasteur

tions appear to arise by chance when people are actively looking for them. It does not happen to people who are not curious or inquiring or who are not engaged in the search for opportunities, possibilities and answers. Good perfumers and flavorists are driven people who are passionately interested in their subject and are self-motivated to find solutions and create new products. Hence, the quote from Louis Pasteur: “Fortune favors the prepared mind.” To emphasize this point, the same flavorist friend told me this story:

“I was working on olive flavors a few years ago and was really struggling. We were camping in Dorset and the last thing on my mind was this problem flavor. I was walking down a country lane and a man was cutting the grass on one side and on the other was a pig farm. Eureka—it was the fruity bit of pig manure combined with the *cis*-3-hexenol. I knew I’d cracked it there and then.”

Arthur Koestler took this one step further by suggesting that applying procedures from one area of knowledge to another can give rise to novel associations that can create moments of insight that form the basis of creative ideas.<sup>4</sup> He coined the word “biosociation” in order to make a distinction between the routine skills of thinking on a single plane and the creative act which always operates on more than one plane. In **F-1**, a concept or phenomenon operates on one plane and a second concept on a separate plane. At some point these two concepts may interact to generate a moment of insight at the intersection of the two planes.

Humor, such as the punch line of a joke, does exactly this when an association is made between two disparate concepts. For example: “I was reading a book today called *The History of Glue* and I couldn’t put it down.” Here, two concepts collide—the book about glue being



**The two-brain model (the early version)** **T-1**

Left brain	Right brain
Words	Sensory images
Logic	Dreaming
Judgment	Feeling
Speech	Visualization
Mathematical ability	Rhythm
Writing	Intuition
Reading	Imagery
Analysis	Emotion

interesting so the reader couldn’t put it down, and glue being sticky so the book couldn’t be put down because the reader’s hands were stuck to it. The pattern underlying all humor is biosociative, and Koestler points out that it is the only domain of creative activity which elicits a sharply defined response in the nature of the physiological effect, i.e. laughter. He goes on to draw the analogy between humor and discovery: The intersection of the two planes was the mechanism taking place when Archimedes absentmindedly watched the familiar sight of water rising in the bath and spilling over as he climbed into it, producing the moment of insight and releasing the blockage in his thought processes. The creative individual is one who makes these remote associations, or biosociations, easily—such as linking the smell of pig manure to newly mown grass.

### The Two-brain Theory of Creativity

People tend to have ideas when they are relaxed or distracted. Some report having ideas when they are driving, walking, when they are in the bath and the shower—rather like Archimedes. The relaxed transition state between sleep and being awake is another point at which ideas and solutions manifest themselves; some people keep a pad of paper by the bed to record some of the ideas floating around in case they are lost by morning. Picasso used this moment with his spoon and plate to attempt to control the flow of ideas and images.

“Imagination is more important than knowledge.”  
-Albert Einstein

So what is going on, and can we understand and control the process? Roger Sperry and colleagues from the California Institute of Technology threw light on this subject through brain research experiments in which they surgically separated and tested the thinking abilities of each half of the cortex of the human brain.<sup>5</sup> This led to the two-brain theory of creativity (**T-1**) in which logic, judgment and mathematical ability lie in the left hemisphere, and imagination, visualization and intuition are believed

to be primarily controlled through the right hemisphere.

More recent work has revealed more complex divisions of labor in additional regions of the brain; one might like to see the old two-brain model as a metaphorical reminder that creativity involves both logic and imagination, both judgment and visualization.

The various elements of the creative process have often been divided into stages. A famous four-stage representation is:

1. **Preparation:** This is where knowledge about the subject/problem to be solved is accumulated in the information centers of the left brain. People who are curious and inquiring will collect data, making them more likely to have ideas and solve the problem: "Fortune favors the prepared mind."
2. **Incubation:** If a solution is not apparent, the information will gestate in the right brain where imagery, visualization and intuition take over. This is the period of "stuckness," or blockage, and depending on the nature of the problem, this is where tension increases. The breaking down and restructuring of our knowledge takes place at this point, and where we gain more insights into its nature.<sup>3</sup>
3. **Insight:** This is the Eureka moment at which the solution is "seen," or the idea is created in the right brain. This is where the associations and biosociations described by Koestler arise, leading to the moment of insight. The voltage generated by the insight depends on the magnitude of the problem/issue at hand and leads to a release of tension.
4. **Evaluation:** This is where ideas generated in the right brain are evaluated and screened by the logical left brain where they may be rejected or move on as potential solutions.

The whole set of left brain/right brain mechanisms are involved. Both hemispheres come into play, but people who tend to operate more in the logical left brain are unlikely to have many ideas, while people who tend to operate more with right brain processes may have many ideas but be poor at evaluation and implementation. Balance is the key. People who have their left brain distracted, such as when they are driving, or people who are relaxed—such as Archimedes in the warm bath, or Picasso falling asleep in his chair on the porch—are moving into their right brain where imagery and visualization take over, and where the flashes of inspiration take place and creative insights arise.

### Stuckness, Mindsets and Barriers to Creativity

Rickards described creativity as "an escape from mental stuckness."<sup>1</sup> Stuckness is the state that Archimedes was in when he was getting into the bath, but it is a little more than that because stuckness may be caused by mental blocks and mindsets that inhibit the moment of insight and act as barriers to creativity. Barriers and mindsets can close the mind to potential solutions; recognizing them and doing something about them can make an individual more creative. Typical mindsets and

barriers include:

- Fear of failure
- Pressure to conform
- Fear of looking foolish
- "One correct answer" thinking
- Failure to challenge the obvious
- Sheer bloody-minded negativity
- Inflexibility in thinking
- Rigid beliefs
- Overreliance on experience

There are many more; Les Jones classified them into four categories:<sup>6</sup>

- Strategic blocks: One right answer thinking and inflexibility.
- Value blocks: Personal values and belief systems.
- Perceptual blocks: Narrow focus of attention and interest.
- Self image blocks: Poor effectiveness through fear of failure, fear of the unknown, timidity.

**"Wisdom can stultify innovation. The more experience you have the more you know why something can't be done."**

**-John Seeley Brown**

Strategic blocks cause people to think in ways that exclude consideration of all possible solutions. Value blocks make it impossible for a person to consider certain solutions because of strongly held beliefs. Perceptual blocks can be due to a narrow experience of life, overlooking opportunities, failing to anticipate threats—poor listeners may fall into this category. In self image blocks the individual succumbs easily to social pressures that reject a new idea from the outset. Jones developed a training regimen, including a computerized questionnaire that identified blocks in an individual and provided personal feedback and the opportunity for counseling and appropriate methods for improving creative skills.

### Barriers to Creativity in Organizations

Individual creativity can also be stifled in an organization by managerial systems, company culture, personalities and other factors, and these can be very difficult to change. Examples are:

- Lack of resource: This reflects the lack of managerial will to foster creativity in the organization.
- Bureaucracy and form-filling.
- Straightjacket management: Over-prescriptive personal action planning and achievement targets leaving no room for creative solutions.
- Functional myopic thinking: Seeing things only from the perspective of individual departments such as production, finance and marketing.
- Rigid hierarchical structures.

- Blame cultures and bullying.
- Resistance to change.
- Fear of criticism: People do not like to be ridiculed for their ideas and are unlikely to offer their creative output in a negative climate.
- Recruitment policies: It has been known for recruitment policies to screen out innovators who produce change and are seen as disruptive in a stable organization—but are, of course, critical to its future.

“The real difficulty in changing any enterprise lies not in developing new ideas, but in escaping from the old ones.”

-John Maynard Keynes

Creating a climate for creativity in an organization is not simple and consideration must be given to people, the process and the structure.

**People:**

- Creating and maintaining an innovative climate begins at the top.
- Allow prudent risk-taking.
- Management should respond positively to new ideas.
- Generating ideas requires a degree of autonomy with minimum supervision.
- Encourage exposure to outside ideas.
- Create a spirit of teamwork.
- Different viewpoints should not only be tolerated but should be encouraged.

**Process:**

- Provide adequate financial resources.
- Provide time for pet projects.
- High rate of failure expected.
- Avoid micromanagement.
- A continuous flow of ideas is required.

**Structure:**

- Improve the marketing/R&D and the purchasing/R&D interfaces.
- Introduce cross-training—train people in different functional areas.
- Use cross-disciplinary teams.

Organizations are now recognizing that ideas and innovation must also come from outside the company. Unilever has adopted an open innovation strategy because it understands that 95% of knowledge is being generated outside the business.<sup>4</sup> Open innovation was originated by Henry Chesbrough and describes why and how companies need to change their processes for creating value from new technologies by forming strategic alliances with their suppliers and other organizations in an open arrangement in which all parties benefit.<sup>7</sup> Perfumers and flavorists are likely to find themselves part of

<sup>4</sup> [www.ideas4unilever.com](http://www.ideas4unilever.com)  
<sup>7</sup> [www.openinnovatie.nl/interviewgrahamcross1.php](http://www.openinnovatie.nl/interviewgrahamcross1.php)

multidisciplinary teams formed from different organizations in open innovation projects, if they haven't already.

### Opportunities for Further Study

Unlocking the creative potential of flavorists and perfumers is crucial to the success of their organizations, and some pointers have been provided in this article. The latest research on the topic can be found in *The Routledge Companion to Creativity*.<sup>8</sup> Some of the issues discussed herein may be helpful in formulating strategy and training, but few courses exist that can address both the left and right brain aspects of the job.

To that end, a new course designed for savory flavorists launched last year in the United Kingdom, "Creating Savoury Flavours," addressing both the left brain and right brain aspects of the job.<sup>b</sup> The laboratory-based course gives flavorists a chance to step outside their normal daily activities and really focus on the components and construction of a savory flavor, undertaking practical experiments with process reaction flavors, enzyme-modified flavors and top notes. They will have the opportunity to go back to basics to examine the interaction between components, study synergies and clashes, understand how a flavor functions in the final food, and trace that performance back to individual components within the formula. An essential element built into this course is the emphasis on creativity and how it can be stimulated and used to give fresh impetus to the role of the flavorist.

<sup>b</sup> [www.vwa.co.uk/courses/specialist/creating-savoury-flavours.htm](http://www.vwa.co.uk/courses/specialist/creating-savoury-flavours.htm)

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### References

1. T Rickards, *Creativity at Work*, Gower Publishing Company, Aldershot, England (1988)
2. C Zervos, *Pablo Picasso*. Paris: Editions Cahiers d'Art, 1–33 (1932)
3. M Wertheimer, *Productive Thinking*, Harper & Row, New York (1945)
4. A Koestler, *The Act of Creation*. Arkana Penguin Books, London (1964)
5. M Le Boeuf, *Creative Thinking*. Sage Publishing, London (1990)
6. L Jones, *Measuring Barriers to Creativity*. In: *Creativity and Innovation: Towards a European Network*. Kluwer Academic Publishers, Boston (1988) 321–336
7. H Chesbrough, *Open Innovation. The New Imperative for Creating and Profiting from Technology*. Boston, Harvard Business School Press (2003)
8. T Rickards, MA Runco and Susan Moger, *The Routledge Companion to Creativity*. Routledge, Milton Park (2008)