

# Effects of individual information processing and situational variables mediated by mental imagery on consumer creativity

Cyrielle VELLERA - PhD candidate in Management Sciences, specializing in Marketing

## General context

Today companies face huge competition, customer volatility and complexity, innovation delays and product lifecycle reduction. In this context of complexity, constant change and deep uncertainty, companies are increasingly concerned with their capacity for innovation. Thus it is vital for companies to create, develop and launch new products. Innovation drives company growth and durability, and is a strategic necessity that cannot be ignored.

Every year, a multitude of products are launched on commercial markets. However, new product introductions are generally a flop with the failure rate remaining high and steady.

When developing new products, more and more companies are adopting consumer-oriented approaches. They are trying to integrate consumers in their innovation process and more specifically involving them in idea generation tasks like brainstorming. Nevertheless, the success of these methods depends on the participant's nature and more concretely on their creative qualities, innovation and idea generation being strongly linked to creativity. *"All innovation begins with creative ideas... We define innovation as the successful implementation of creative ideas within an organization. In this view, creativity by individuals and teams is a starting point for innovation"* (Amabile, 1996). Consequently, in this dissertation we will grant special attention to individual creativity, an intrinsic characteristic of all human beings. For example, individuals with a low level of creativity will express a small number of not highly original, comparatively low value ideas.

Creativity is the central topic of this dissertation. It is defined as an ability to realize something that is both new (original, novel, different from other existing ideas or objects, not predictable, involving a minor or a radical rupture with previous work) and useful (that successfully meets current needs and expectations, something appropriate, which fits the current problem constraints). It can refer to an idea, a product, a drawing, a musical composition, a mathematical formula, or an advertisement, to give but a few examples. Creativity is a multifaceted approach that results from individual factors and environmental contexts and is a stable cognitive trait. Indeed, some individuals are creative, while others are not. Moreover, individuals are generally not creative all the time. Here, creativity is considered as an occasional state. Thus, certain circumstances and contextual stimulations can reveal, liberate and develop individual creativity.

The main question of this research is: **what are the influences of individual and situational variables on consumer creativity, knowing that this influence will be experienced by means of mental imagery?**

This dissertation focuses on individual creativity and seeks to advance understanding of how individual characteristics and specific cognitive process are used to increase creativity, and thus the creation of more original ideas and products. More precisely, this research focuses on two major information processing concepts: mental imagery and analytic or global processing styles.

## **Theoretical framework and objectives**

(1) We have decided to focus on **mental imagery**. Mental imagery is defined as a *“quasi-perceptual experience; it resembles perceptual experience, but occurs in the absence of the appropriate external stimuli. It is also generally understood to bear intentionality and thereby to function as a form of mental representation”* (Stanford Encyclopedia). According to MacInnis and Price (1987) mental imagery is *“a processing mode by which multisensory information is represented in working memory”*. Holt (1964) gives the following definition: mental imagery is a *“conscious subjective presentation of a quasi-sensory but nonperceptual character”*. An important distinction is made between different types of mental imagery (Richardson, 1969). In this dissertation, we will use these two sub-categories that are predominantly stressed in the literature, as our basis of exploration. Memory images represent events or sensations that have been previously experienced or personally observed by the individual. Conversely, imagination images refer to a never-before-experienced event or unseen object. Imagination images involve more complex processes including combinations of previous activities and prior experiences. Moreover, mental imagery is a cognitive process, a sensory experience involving sight, smell, taste, and tactile images. This dissertation will refer predominantly to visual imagery, it being the most discussed sensory dimension.

As a final note, mental imagery is a multidimensional concept and is explicitly described by various terms like quantity, ease and vividness.

The importance of visual imagery has been recognized in Marketing and more precisely in the design process: mental imagery is *“one of the central cognitive inputs for the design process”* (Lorenz, 1990; Roozenburg and Eekels, 1995; quoted by Dahl, 1999). Mental imagery is highly regarded for its easiness and effective guidance in new product development, product property design and appearance, spatial representations, issues, and anticipation of transformation. In others words, mental imagery is central in creating designs instantaneously and without any formal process. The use of mental imagery in the creative process has been highlighted in analyses of certain historical,

notably creative individuals including Descartes, Einstein, Freud, and Dali. These “creators” reported using mental imagery during their productions. Moreover, recent research (Dahl et al. 1999) highlights the influence of visual mental imagery on new product design initiated by designers, revealing that imagination images lead to more creative designs. It is, however, essential to go beyond these findings and investigate how we can integrate customer creativity into the creation process.

Individuals are not equal in their visualization performance, and furthermore, there are individual differences in imagery processing. These differences in individual imagery abilities play an important role in imagery processing especially in imagery vividness and controllability. The Vividness of Visual Imagery Questionnaire (Marks, 1973) is the most common scale used to assess these differences. This tool distinguishes strong image makers and weak image makers. The pioneer author, Schmeidler (1965), measured the relationship between mental imagery and creative thinking and found a slight but statistically significant positive correlation between these concepts. Several studies revealed this link; nevertheless, results remain not conclusive (Gonzalez, Campos, Perez; 1997).

The first objective of this research will consider the effects of individual differences in vividness and controllability (strong image makers and weak image makers) on mental imagery elaboration and creativity. Our first goal is to:

**=> Explore and clarify the main effects of mental imagery abilities on mental imagery elaboration and creativity.**

(2) Visual mental imagery can be induced by various external sources (Lutz and Lutz, 1978): pictures, concrete words and **instructions to imagine**. In this dissertation, we will focus on imagery instructions as a source of imagery generation.

The second objective of this dissertation aims at considering the main effects of instructions to imagine (with and without instruction to imagine) on mental imagery elaboration and creativity. Thus our second objective is to:

**=> Underline the main effects of instructions to imagine on mental imagery elaboration and creativity.**

(3) Thirdly, according to Jung’s Personality Theory (1921), individuals are born with preferences and specific dispositions. **Cognitive styles** are defined as “*consistent individual differences in the ways people experience, perceive, organize, and process information*” (Martinsen and Kaufmann, 1999). In other words, a cognitive style is a “*manner or way of processing information*”. Because of the multitude of existing cognitive styles, in this present study we will pay close attention to **global processing modes and analytical processing modes**. More concretely, some individuals treat stimulus separately; they use an analytic approach. Inversely, certain individuals

treat the stimulus as an integral whole, or globally. To determine individual styles, the Matching Familiar Figures Test (MFFT) developed by Kagan (1963) is a good academic reference.

People with a global style tend to prefer big issues and ignore details. Sternberg and Lubart (1995) state that “... *global style is a key for creative thinking [...] a creative solution can be obtained only by extracting oneself from the details and taking a look at the big picture*”. People with an analytic style, on the other hand, focus on details. They are more concrete and pragmatic. The previous author claims that analytic individuals “*can be creative but they tend to be creative in the small [...] ideally, a creative person would be more global*”.

In light of these divergent views, we intend to explore the global and analytic modes of processing on mental imagery elaboration and creativity. As a result, our third objective is to:

**=> Examine the main effects of global/analytic modes of processing on mental imagery elaboration and creativity.**

(4) We also seek to advance understanding of **interactions** between our three **explicative variables**: mental imagery abilities, mental imagery stimulations and information processing style on mental imagery elaboration and creativity. In others words, we want to see which configuration leads to creativity. Our fourth goal is thus to:

**=> Consider interactions between mental imagery abilities, imagery stimulations and global/analytic processing mode and their effects on mental imagery elaboration and creativity.**

(5) Finally, we want to test the **moderator role** of other individual variables (implication, tolerance for ambiguity...) on mental imagery and creativity. Our last objective is to:

**=> Test the moderator role of additional individual variables on mental imagery elaboration and creativity.**

## **Methodology and experimental design**

A four step experimental process will be used.

- First, we will differentiate between participants by their mental imagery abilities and cognitive processing modes (analytic versus global style).
- We will then give them a creative task to perform and we will manipulate imagery instructions (with and without instructions to imagine).

- Next, participants will be invited to complete a questionnaire investigating their own imagery dimensions: the nature and form of their visualizations and moderator variables.
- Finally, judges will randomly evaluate all of the creative ideas previously generated (creative versus non creative ideas).

## **Implications and contributions**

The results of this research will be used to suggest which individual characteristics and cognitive processes lead to creativity. More precisely, these findings will encourage efficient ideation techniques based on a creative approach.