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Visual form Generation: Optimizing Creativity Vis-À-Vis Hurlburt's Model

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Abstract

Creativity (the generation of new ideas and forms that provide valuable solution to a given problem often from an existing idea, knowledge and object) is indispensable in form generation. It determines to a large extent the aesthetic and functional products the artist and designer produce that immensely impact on our everyday lives. A key challenge facing the artist and designer is how to use understanding of the creative process (albeit, adocumented process with prevalent unawareness) to optimize creativity in the course of form generation. Therefore, this paper focuses on how to optimize creativity in the process of generating visual form using Hurlburt?s model of the creative process. It employed qualitative research method, which utilized the Critical-Historical-Analytic examination and Content Analysis. The paper introduced the reader to the need for optimizing creativity in order to generate aesthetic and functional visual forms. Also, it thoroughly examined the creative process that affords visual forms. Furthermore, the paper showed how creativity was employed to explore, combine and transform past and existing forms into new aesthetic and functional products.

Index terms— visual task resolution, problem-solving process, form-generation process, creative process, tangible product.

Visual form Generation: Optimizing Creativity Vis-À-Vis Hurlburt's Model Ebigbagha Zifegha Sylvester Abstract-Creativity (the generation of new ideas and forms that provide valuable solution to a given problem often from an existing idea, knowledge and object) is indispensable in form generation. It determines to a large extent the aesthetic and functional products the artist and designer produce that immensely impact on our everyday lives. A key challenge facing the artist and designer is how to use understanding of the creative process (albeit, adocumented process with prevalent unawareness) to optimize creativity in the course of form generation. Therefore, this paper focuses on how to optimize creativity in the process of generating visual form using Hurlburt's model of the creative process. It employed qualitative research method, which utilized the Critical-Historical-Analytic examination and Content Analysis. The paper introduced the reader to the need for optimizing creativity in order to generate aesthetic and functional visual forms. Also, it thoroughly examined the creative process that affords visual forms. Furthermore, the paper showed how creativity was employed to explore, combine and transform past and existing forms into new aesthetic and functional products. And presented how creativity could be optimized in development of tangible form. The paper ended with the need for artists and designers to be conversant with the creative process and optima secreativity in the process of tangible product development.

keywords: visual task resolution, problem-solving process, form-generation process, creative process, tangible product.

1 I. Introduction

very day weencountera variety of ever-increasing number of aesthetic and functional products that largely involves the artist and designer in its production process and immensely affect our lives. Examples include home (kitchen

utensils, electronic gadget, textiles etc.), school (furniture, books, chalk, etc.), street (billboards, posters and signposts, etc.); and transport system (bicycle, motorcycle and cars), to mention a few. So, we ride in, sit on, look at, talk into, activate, operate, put on, take from, inject with and listen to products, which emanate from form generation hinged on creativity.

Creativity, involves the generation of new ideas and forms that provide valuable solution to a given problem, which is often derived from existing ideas, knowledge and objects. Sefertzi (2000) citing Boden (1998) states that creativity involves new combinations of familiar ideas (combinational), exploration of structured concepts (exploratory), and transformation of some dimension of the structure, so that new structures can be generated (transformational). This is indispensable in innovation, growth and development of objects. Sefertzi (2000), citing European Commission (1998) states that it is not possible to generate innovations without creativity. So, creativity is even "more important than technical skill" ??Hornby, 2015: 345). There fore, in the production and development of tangible visual form, creativity is of prime importance for the artist and designer.

However, the prevalent lack of understanding of the creative processis a key factor that militates against creativity. This is a real problem. Gilkey (2008), states that a large part of the problem is the air of mystery and mysticism around the creative process, whereby most people are ignorant of the existence of a documented process, and assume/reinforce the idea that some have creative potentials and others do not. The truth is that everybody has the potential to be creative and an understanding of the process would help to foster creativity (Sefertzi, 2000).

Therefore, this paper considers how to optimize creativity, using a documented thought process that guides the creative disposition of the artist/designer in the course of resolving visual tasks. This is necessary because a grasp of the creative process impact on the way knowledge is developed and translated in to tangible product. A veritable theoretical framework that lends itself to serve as a guide for this discussion is the Hurlburt's model of the creative process.

2 II. The Hurlburt's Model of the Creative Process

Hurlburt (1981) describes/prescribes the creative process based on Freud's topography of the human mind, which identified three levels of consciousness: conscious, preconscious, and unconscious ??Ejembi, 1989:259; ??llyn and Bacon, 2003:1). The Hurlburt's model (figure 1) shows the creative activities at the three levels of consciousness. These three levels of consciousness in the human mind are:

The Conscious (small); This is the portion of the human mind that holds what one is aware of. The experiences in this state of mind can be expressed in words and thought about in a logical manner. For (i) experiences in this state of mind can be expressed in words and thought about in a logical manner. For example, when the artist/designer acts on the basis of given information about the aims and target audience of the source and search for reference materials to have a better grasp of the design task in order to proffer a satisfactory solution, he/she does these at the conscious level.

The Preconscious (small-medium); this is the normal, ordinary memory, where, although things stored are not in the conscious, they can readily be accessed and brought to the conscious. So it is an interim between the conscious and the unconscious.

The Unconscious (enormous);this is the part of the mind that is not possible to access at will. It is a place where urges, feelings and ideas that are connected with anxiety, conflict, pain and all unpleasant experiences are repressed and dumped (Allyn and Bacon, 2003:1, quoting Freud). These repressed experiences exert influence on our actions and conscious awareness.

According to Allyn and Bacon (2003), materials of information pass easily back and forth between the conscious and preconscious, which can slip into the unconscious. Truly unconscious materials cannot be accessed voluntarily. So, creative activities, which are deliberate, are carried out in the conscious and preconscious levels, which are sometimes influenced by repressed experiences in the unconscious level of the mind. Hurlburt's model shows four of these activities as follows:

Intellectual is the first activity in the creative process.

As information enters the mind at the conscious level, activities to understand the information through critical/intelligent thinking are begun. This process to understand the information and contemplate about it constitutes the intellectual activity. For example, the creative process starts when the graphic encoder gets a request for media as he/she thinks about the design task or media request. about solution and meet user-needs. For example, as the graphic encoder thinks about the media request and gets more information, the search for, ideas from reference materials is embarked on. This(ii) (iii) (i) (i)

could greatly influence the graphic encoder in the encoding process.

Intuitive/emotional is the third activity in the creative process. Intuitive activity involves ideas based on feelings rather than on knowledge or facts. It influences the emotional activity, where opinions are strongly affected by ones feelings rather than thoughts established on proven ideas. The activities at this stage are influenced by information from the inductive activity through memory-the preconscious level of the mind in the same way as ideas/opinions formed at this stage could affect the information from memory. For example, the graphic encoder's information and knowledge gathered from reference materials to solve a given design problem could be influenced by a fresh idea, which might just cropped up, in a flash that is not based on known fact. ??jembi (1989:260) quoting ??urlburt (1981: 10), observes that, this is as a result of the bridge, which the

preconscious level provides between the clear deductive mind of the accessible conscious and the mysterious unconscious. 'This interim level is probably the origin of what we call intuition, which is the quick and ready insight that produces ideas without the apparent involvement of our conscious thoughts'. Also, known facts might not look right and could be modified in a way that is greatly governed by ones feelings. Emotional/Conscious level is the fourth activity in the creative process. It involves the creative processing of information based on facts, knowledge, and feelings. All the other activities: thinking about the information in order to understand it, searching for existing knowledge in order to solve a given design tasks, and using ideas that seem right based on feelings, come together in the conscious level. These are very important activities the artist/designer engages in when generating visual form.

The Hurlburt's model shows the creative process in the human mind in a way, which presents the mind as if it were an automatic structure, programmed to allow the creative development of information to follow a specific pattern of activities. But the human mind do not always work this way in the creative use of information. As information enters the conscious level of the mind, even before the inductive activity, there could be a leap of insight-a sudden flash of solution from within. This could be stimulated by external factors, e.g. the pressure of short deadline/urgency that often does not allow adequate time to understand and make references to information yielding materials. Moreover, Furthermore, the model did not take into account the useful role of dream in the creative process. Many creative works and activities are based on the influence of the unconscious level through dreams. For example, Surrealism -reflected dreams, repressed and painful thoughts and experiences dumped in the unconscious. The usefulness of dreams in the creative process is stressed when **??**lover (1990:9) states that: "Dream-work (primary process) is somehow able to translate what is unconscious, repressed and unacceptable into an artistic construction". So, the creative process in form generation is influenced by activities in all the three levels of consciousness of the mind.

Nevertheless, the model is useful. It shows that information need be properly understood through gathering of reference materials in order toproffer creative solutions to design tasks. Also, it reveals that intellectual, inductive, emotional and conscious activities are indispensable to generate form. And it shows that the leap of insight from the unconscious level, impact on how the artist/designer thinks. This is important to the artist and designer in form generation.

3 III. Creating new Product from Existing form

The aforementioned model shows that the creative process of the artist/designer begins with information that enters the mind. This is influenced by internal and external activities in the course of translating the information into tangible new products. How these activities were harnessed to provide the necessary information and knowledge to create new products through exploration, combination, and transformation of existing structures are exemplified respectively. First, the Giralda, an ancient architectural form in Seville, Africawas adopted and adapted to create new visual templates in America and Europeusing exploratory strategy of creativity. Second, masks, sculptural forms from Congo in Africa were adopted and adapted to create new templates of painting in America and Europe through combinational strategy of creativity. And third, forms from natural objects and geometrical shapes were adopted and adapted to generate new aesthetic and functional forms, using transformational creativity.

4 a) Exploration of Features in Existing Form

The adoption and adaptation of the Giralda (a minaret in Seville, Africa built from 1184-1198) in America, is a classic example ofexploratory creativity. The Madison Square Garden, which is the new form generated from the exploration of the features ofthe Volume XVI Issue VI Version I a creative idea could suddenly emanate from an object which was not deliberately sort for, and form the needed basis on which to effectively transform an information into a desired product that meet user needs. precedence (Giralda), was a success (see plate 1). The Madison Garden Tower was so successful that it became "a template for grandiose corporate towers all over the United States" **??**Werner, 2008, pp. 21).

5 (ii) (iii)

The creative process of the Madison Garden Tower begins with thinking about the design task (intellectual activities) and gathering of relevant reference materials(inductive activities).

According to Werner (2008, pp. 21),the designer, architect Stanford White (1853-1906), may have read and been inspired by an 1885 issue of the leading professional magazine "American Architect". It featured floor plans, elevations and illustrations of the Giralda that provided the needed information, knowledge and motivation to resolve the design uncertainties with salutary effect.

The above shows that reference materials and existing forms are veritable sources of inspiration salient for creativity. It is necessary for the definition and analysis of a given felt need to be resolved. This inspiration phase of the creative process, is where research and many ideas are generated and could be improved upon by experimenting with association and movement; analogy, critical questioning, searching oblique sources, trawling; brainstorming, backtracking, randomization, shifting perspectives, provocations, changing focus, etc. (Petty,1997, Para 4). Also, this stage is where preliminary work such as reading, writing or revising earlier work is involved,

(Gilkey, 2008, Para 6). Gilkey (2008), states that inspiration is a necessary step to Incubation, a stage of percolating an idea that the outcome is not certainly known in terms of when it is going to come out. A stage of break following deep contemplation that brings fresh perspectives and insights. It involves the making of new connections, separating unnecessary ideas and searching for other ideas. This leads to the stage of Illumination, which is the "Eureka" moment whereby brilliant ideas crop up and flashes through the mind, a burst of insight, which need be recorded or written down at the moment; and then implemented.

Preparation, Incubation, Illumination and Implementation stages, constitute the intellectual, inductive, intuitive and emotional activities in the mind. These often begin with the definition, analysis, ideation, selection, implementation, and evaluation of design task, ideas and information (Walls chlaeger and Busic-Snyder, 1992, pp 11).

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8 (A)

So, the task of building Madison Square Garden started with thinking about the design task after clarification has been made with the requesting Source. This was followed by gathering of information through reference materials (for example, the American Architect Magazine). Then, intellectual activities were consciously carried out to understanding the information provided in the drawn elevations of the Giralda. The features were explored using knowledge (technical, procedural, practical), expertise, and critical thinking strategies (discussed later in optimising creativity in product development).

So, using facts, knowledge and feelings, the architect, White Stanford, employed selectivity, exaggeration and shifting perspective techniques to adapt the information derived from the features of the Giralda, to createMadison Square Garden. Thiscould be seen in the length, space and pattern modifications depicted.

7 b) Combination of Features fromExisting Form

The adoption and adaptation of the features of African aesthetics in masks from Congo to create new templates of painting in America and Europe, is a superb example of combinational creativity. Like the design of the Madison Garden Tower mentioned, the Congolese masks were adopted and adapted to create new forms through a combination of and creative thinking that propelledthe adoption and adaptation of sophisticated abstraction, high stylization, reverse application of concave and convex lines, and infusion of forms with spirit (Meldrum, 2014).

8 c) Transformation of Features of Existing Form

Form from a natural object or geometrical shape often serves as veritable source to generate new aesthetic and functional forms through transformational creativity. This involves selectivity, association, exaggeration and morphology techniques. Wallshlaeger and Busic-Snyder (1992, pp. 127) lucidly illustrated this in the transformation of shapes (as shown in plate IV a, b, c). In the illustration (IV a), a rectangular plane was transformed into a tape dispenser by gradual modification of selected points of the rectangle. The ideas, knowledge, motivation and other necessary variables considered during the creative process to actualize the generation of tangible products are discussed later (see optimizing creativity). The illustration (IV b) is the transformation of a summer squash into a flamingo. This modification of shape was based on association of the transformed shape with an existing natural form -a flamingo bird. And the illustration (IV c) is the transformation of a shape from natural form, an insect into a utility product -a pair of scissors, through morphology and exaggeration techniques. The illustration of how information derived from existing geometric and natural forms was creatively used to generate new forms (Tape dispenser, Flamingo, and Pair of scissors) illuminates the effective use of existing forms to engender material innovation, growth, development and success.

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The need to grasp and hinge the generation of new forms on existing ones cannot be overemphasised. It serves a heuristic function and a fertile source of inspiration and knowledge. This is expressed when Werner (2006, pp. 21) citing Warren (1893) states:

IV.

10 Optimising Creativity in form Generation

From the model andexamples ofcreativity discussed, the centrality of the use of necessary information is brought to the fore. To achievean optimum level of creativity, the interest, satisfaction and challenge in the use of information; the ability to think, explore, combine, and transform information;and the time, experience and expertise to harness all relevant information to resolve a problem satisfactorily are crucial in a creative endeavor. According to Adams (2005, pp. 4), knowledge, creative thinking and motivation are the essential components of creativity. Therefore, a tactical and strategic promotion of these components equate optimizing it.

Knowledge is fundamental to creativity. It is all the necessary information harnessed to solve a given task. A deep understanding of relevant information arising from experience and long term on few areas of expertise

and a wide understanding across many disciplines often provide the needed knowledge (technical, procedural and practical) that elevates creativity to a crescendo. **??**dams (2005, pp. 4), states that "we must balance between depth and breadth of knowledge of knowledge in order to maximize our creative potentials". So, adequate knowledge from collaborative efforts and interdisciplinary study foster creativity.

Acquisition of sufficient and necessary knowledge for creativity enhancement takes time. This requires definition of the body of information relevant to a given task, analysis of the information to be sort, ideas that are salient to solving the task from the available amount of information, selection of plausible ideas, implementation and evaluation of ideas and information that would meet desired goal. According to Adams (2005, pp. 5), the amount of time spent in a creative domain is directly linked to the output. Therefore, a reasonable amount of time is needed to be spent on knowledge acquisition and appropriation in order to maximize creative effort.

Equally important to employing creative impetus at apex level is a flexible and imaginative thinking skill. This is critical to exploring, combining and transforming the feature, process, and system of existing forms into new product. This could be developed through many techniques. A key technique is analytical, which employs interrogative strategies. These idea discovery tactics include "Questioning": Put to other Uses? Adapt?

Volume XVI Issue VI Version I Plate II: (a)Shape transformation from a rectangular plane to a tape dispenser, (b) from a summer squash to a flamingo and (c) from insect to a pair of scissors (Wallshlaeger and Busic-Snyder, 1992) Reverse? Combine? "5W and H": Who, Where, What, When and How; "Pentad": Act, Agent, Agency, Scene and Purpose; "Shifting Perspectives": Contrast, Variation, Distribution, Features, Process and System **??**Winterowd, 1981; **??**erfertzi,2000;Adams, 2005; **??**nd Lucas,2010). This kind of questions have better application for specific analytical purposes and stimulate different ways of organizing known information and help approach problems from different angles.

In addition to the above analytical techniques, there exist the intuitive, divergent and convergent tactics of generating creative ideas. According to Adams (2005), the intuitive techniques such as the "Wishful Thinking" gives a whole answer at a time that is based on ideal possibilities. This aims at providing less structured solution to ill-defined questions and tends to skip steps in a sequence. Moreover, divergent and convergent thinking techniques are important to creating ideas. While divergent thinking is the generation and free flow of ideas towards many alternatives, convergent thinking is the filtering and focus on ideas to generate acceptable solutions **??**Serfertzi, 2000 pp.3; **??**uoting Hall, 1996). The complementary role of divergent and convergent thinking in creative effort makes it an interesting mix. Divergence helps forcing towards many alternatives and possible options before convergence on an appropriate solution. These techniques help to developing intelligence pivotal for insightful thinking beneficial to optimizing creativity.

According to Adams (2005, pp. 6; citing Sternberg), insightful thinking helpssynthetic, analytic and practical intelligence. It fosters synthetic intelligence through selective encoding(distinguishing relevant from irrelevant information), selective combination(combining bits of relevant information in new ways) and selective comparison(relating new information to old ones in new ways). Also, insightful thinking helps analytic intelligence employed in evaluation and improvement of ideas. And it helps in practical intelligence that enhance the ability to apply intellectual skills in everyday context.

Motivation to forge ahead in the course of a creative effort is a key factor in maximizing ones creativity. Without the dogged determination mustered from within to cope with the challenges confronted in the creation process. Achieving desired creative result requires sufficient interest and motivation in order to bring adequate knowledge and creative thinking to fruition. **??**dams (2005, pp. 8; quoting Nakamura and Csikzentmihaly, pp. 258) states that: "Even more than particular cognitive abilities, a set of motivational attributes: childlike curiosity, intrinsic interest, perseverance bordering on obsession?seem to set individuals who change the culture apart from the rest of humankind". available or possible options and conventional order. This kind of innate childlike exploratory and experimental characteristics is more enduring when compared with extrinsic motivation. Adams (2005, pp. 8; quoting Amabile, pp.78) states that "people will be most creative when they feel motivated primarily by the interest, satisfaction and challenge of the work itself -and not by external pressure [i.e. extrinsic motivation]".

V.

11 Conclusion

Creativity is pivotal for form generation, which critically impactson our everyday lives. It involves the utilization of information to generate new ideas and products through exploration, combination and transformation of usually existing forms. Understanding the process of creativity is needful to develop creative solutions with salutary effects.

Optimizing creativity is crucial for product development. Towards this end, intrinsic motivation from childlike curiosity, flexible and imaginative thinking arising from analytical, intuitive, divergent and convergent strategies are in dispensable. Likewise, indepth and broad knowledge from collaboration and interdisciplinary study, and adequate time, experience and expertise on creative enterprise are essential.

Artists, designers and other stakeholders engaged in form generation should be conversant with the creative

1

Figure 1: Figure 1 :

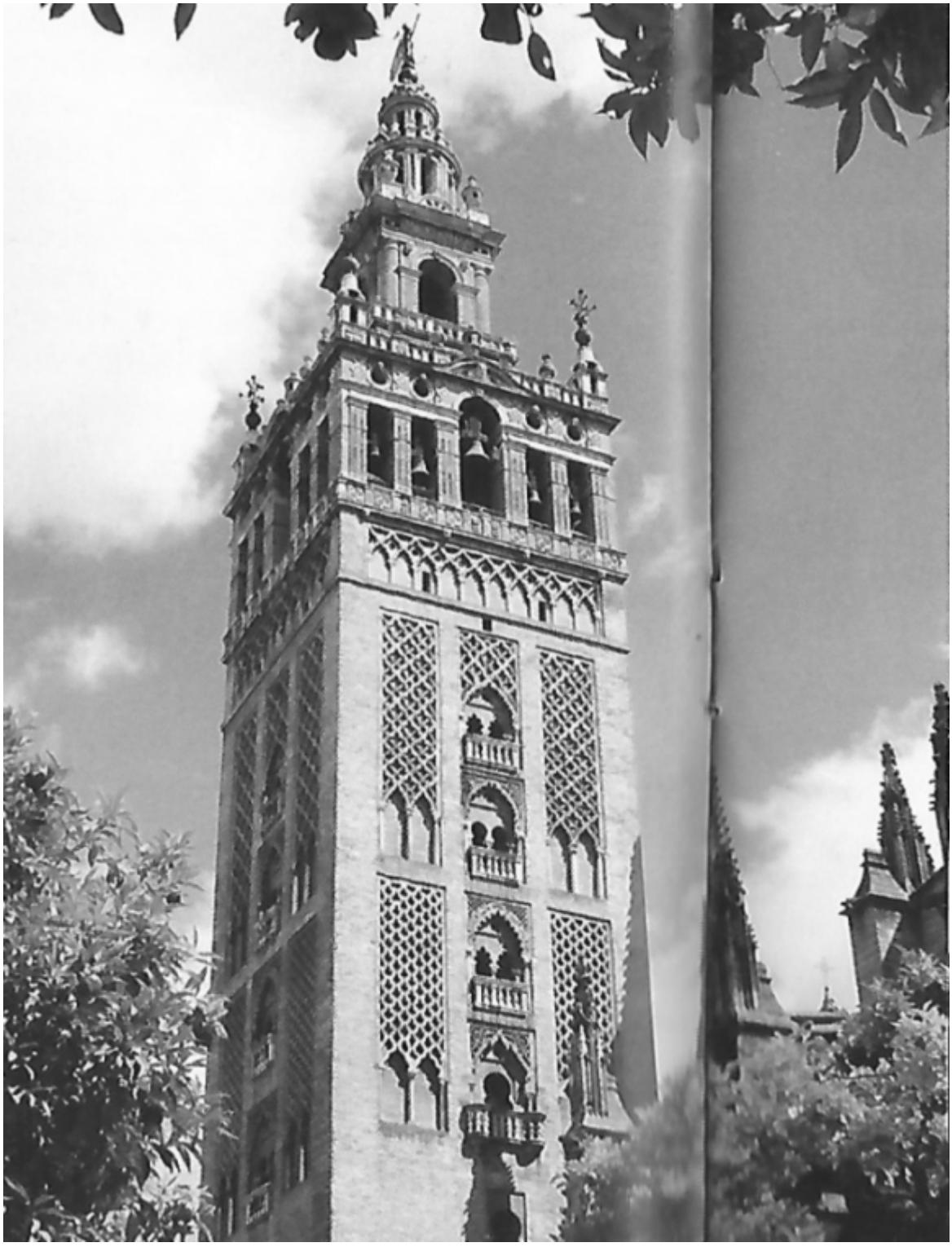

Figure 2:

Figure 3:

Figure 4:

Figure 5:

process and strategies to optimize creativity. This would facilitate effective generation of pleasing visual forms for aesthetic and functional purposes. [1] [2]

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[2] © 2016 Global Journals Inc. (US)Visual form Generation: Optimizing Creativity Vis-À-Vis Hurlburt's Model

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