Muses in Design

Inspiration Techniques for Product Formgiving

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Rational or Systematic Formgiving Muses
Intuitive Formgiving Muses
Contemplative Formgiving Muses
Related Approaches and Studies
Cases

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Maaike Mulder-Nijkamp

Boom

Acknowledgements

The most interesting part of writing this book was the discussion about how to address the variety in shape-inspiration techniques which we collected and arranged into various categories, as well as the understanding we accumulated from the different approaches during our collaboration with colleagues and from their passion for product formgiving or design.
One goal in writing this book was to interconnect the various ways in which a product designer finds inspiration in order to give form to 'hardware' products. If we've succeeded in doing so, this is largely due to the contribution and comments of the many people who encouraged us to think more deeply and broadly about the subject's different aspects.
We really enjoyed our mutual cooperation, our discussions on the various topics, the text and illustrations, but also the warm personal meetings we had in the course of the writing process, including the opportunity to get to know each other's families.

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a series of inspirational form-related design exercises and with the collection of pictures and design results we could use in this publication.
We are furthermore beholden to Cheryl Akner-Koler for an interesting e-mail discussion about form inspiration, and for providing us with the – for our purpose – perfect description of the 'formgiving' concept.
Last but not least, we thank all the students of the University of Antwerp and the University of Twente for permitting us to use the outcomes of their design exercises in our book to illustrate the way we see things.

Jan Corremans and Maaike Mulder-Nijkamp

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2.3 Contemplative Formgiving Muses

Foreword

Left page:
Clio, the muse of history, holding writing tablets, and Erato, the muse of lyric poetry, holding a lyre. Detail from the Muses Sarcophagus, representing the nine Muses and their attributes. Marble, first half of the 2nd century AD, found by the Via Ostiense.

When trying to define a subject one is dealing with, it is sometimes easier to describe what it is not about, than what it is about. This is also the case with the publication at hand.
This book focuses on a specific aspect of the *formgiving process* in product design. It is not about design methodology, being the skill of controlling the entire innovation and development process, it is not about product aesthetics, and it is also not about creativity in the sense of enumerating the various creative methods that can be applied throughout the stages of a design cycle. Nor is it about what 'good design' ought to be, or a recipe or formula for creating meaningful or significant products.

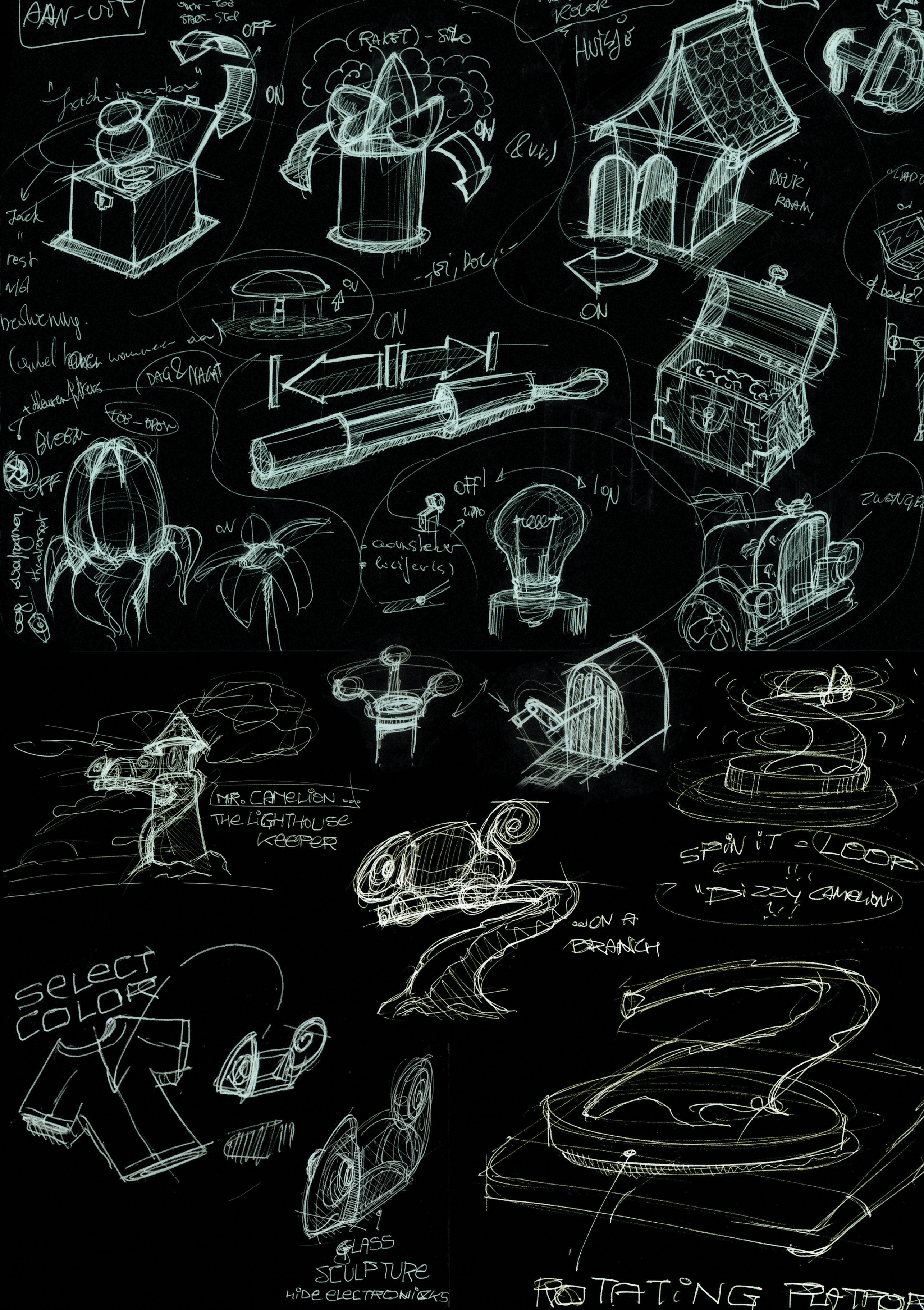
This book is intended for designers and design students in order to support their formgiving skills, more particularly as to originating ideas during the elusive stage when searching for ideation with a view to form.
Our experience in teaching the practice of product design has shown us that lots of students suffer from 'blank-page paralysis' and struggle with the process of finding ideas or inspiration regarding a product's shape. This difficulty is often due to a lack of methods or techniques for students to use in coping with specific design challenges. According to Dorst [1], the nature of the problem considered in a problem-solving situation depends on the problem solver's expertise level. Without any design plan or guidelines – and without design experience – novice designers usually turn towards themselves as the ultimate source, instead of actively searching for appropriate creativity techniques. And ideas that come out of the blue are generally not the best ones.

By this book, we attempt to extend one's insight into the possible ways of finding formgiving inspiration. The different inspirational techniques here are divided into three main categories, rational,

intuitive and contemplative, offering the designer different approaches to using inspiration within the design process. At the end of the book, the novice designer will hopefully have added to his knowledge of inspirational techniques and will have learnt that one may discern different levels in formgiving.
We hope that, in examining this publication, starting designers will be able to gather a stock of potential possibilities for using in their own design processes.

Maaike Mulder-Nijkamp
Jan Corremans

Right page:
Form Ideation sketches for a Remote Led Control Device.



AAN-UIT
OFF
ON
(RAKET) - SILO
ON
(& v.v.)
ON
Jack
rest
DAG & NACHT
OFF
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ON
MR. CAMELION ...
THE LIGHTHOUSE
KEEPER
SPIN IT - LOOP
"DIZZY CAMELION"
... ON A
BRANCH
SELECT
COLOR
GLASS
SCULPTURE
HIDE ELECTRONICKS

Framing the subject

Introduction

Two notions are highlighted by the title and subtitle of this book: ‘muses’ and ‘product formgiving’. The definition of the concept ‘muse’ is simple and easier to explain than the notion of ‘product formgiving’. Within the context of this publication, product formgiving and other closely related notions – like product design, product development, industrial design and design engineering – need more explanation.

Muses

In classical mythology, a Muse was any of the nine sister goddesses, each one of whom was regarded as the protectress of a different art or science [2]. They are daughters of Zeus and Mnemosyne, and their names are Calliope, Clio, Erato, Euterpe, Melpomene, Polyhymnia, Terpsichore, Thalia and Urania. Today, a Muse as a concept is generally defined as the inspiration that motivates artists, thinkers, poets

Sarcophagus known as the Muses Sarcophagus, representing the nine Muses and their attributes. Marble, first half of the 2nd century AD, found by the Via Ostiense.

or designers in their creative process. This book focuses purely on inspiration in the early stage of giving form to industrial products.

New product development, industrial design, formgiving

According to Wikipedia [3], new product development (NPD) in business and engineering is the overall process of bringing a new product to market. These products can be tangible (physical) or intangible (a service, experience or belief). There are two parallel paths involved in the NPD process: one is the idea's generation, product design and detail engineering, the other involves market research and marketing analysis.

Industrial design is defined as the use of both applied art and applied science in order to improve a product's aesthetics, ergonomics, functionality and/or usability, though it may also be used to improve the product's marketability and even its production. The role of an industrial designer is to create and carry out design solutions regarding problems of form, usability, physical ergonomics, marketing, brand development and sales.

Industrial design can overlap significantly with engineering design,

Product Design:
Food cooler

and the boundaries of the two concepts may vary, but in general engineering focuses principally on the functionality or utility of products, whereas industrial design focuses first and foremost on their aesthetic and user-interface aspects.

This book might have focused on innovation or creativity in a broader sense, but we chose to emphasize the early stage of the creative formgiving process, and more specifically the inspirational phase prior to an industrial product's creative formgiving. In other words, it focuses on the first steps in the actual creation of a physical product's form for a specific industrial product. We realize that this is a very narrow field, but we intentionally go no further, because broadening the research field would lead us too far astray from our focus. That is why we deliberately do not elaborate on aesthetics or creativity either, because in the literature such topics have already been discussed at large. Throughout this book, we use the concept formgiving as defined by Cheryl Akner-Koler [4], in reference to the 'formgiving process' or the aesthetical involvement needed to organize the concrete form on behalf of products. The noun is derived from the Swedish formgivning (German Formgebung, Dutch vormgeving) meaning the creation of the physical form that reflects a design team's intentions during the overall product development process, from ideation to the final prototype. One objective of the book is to present the insight that inspiration is not an indefinable concept, but that designers are able to create their own muses by using a set of tools and techniques in the process of structuring their formgiving. Every design tells a particular story. As stated by Crilly [5], it is important to communicate the right message with a design by changing different aspects of the product's appearance, such as its form, materials, colours etcetera. Using different inspirational techniques will help designers to create their own personal story in their projects, so as to subsequently arrive at more meaningful designs. More inspiration means more ideas, and this is totally in line with Steven Johnson's statement [6] "The trick to having good ideas is not to sit around in glorious isolation and try to think big thoughts. The trick is to get more parts on the table", or with the quote of Jonathan Ive, Apple's head designer [7] "The ideas aren't the most difficult bit. It's the actually making them real. Giving an idea

body is very hard." Applying inspirational tools and techniques can help to get more parts on the table or to make ideas become reality. The chapter about the design muses focuses on this matter and compiles different creative techniques in formgiving that can support the designer to bring more formgiving solutions onto the table.

A second objective is to show designers (and design students) how inspiration in formgiving works, and to gain insight into different ways of finding inspiration. Expanding their knowledge on inspiration techniques will help to inspire them and also give them more confidence in starting on a next design assignment.

Coming to grips with our brain

To get more grip on the concept of inspiration, we should improve our idea of how the human brain works. Each individual thinks and acts in a personal way, is more interested in particular areas – and, above and beyond all, is most effective in particular ways. The way designers search for inspiration is usually related to their personality, and the tools they apply will be the tools they feel comfortable with. How individuals in fact think and create is influenced by their left- or right-brain dominance. A proper understanding of the left- and right-brain 'mechanism' can help designers to become more productive, efficient and creative.

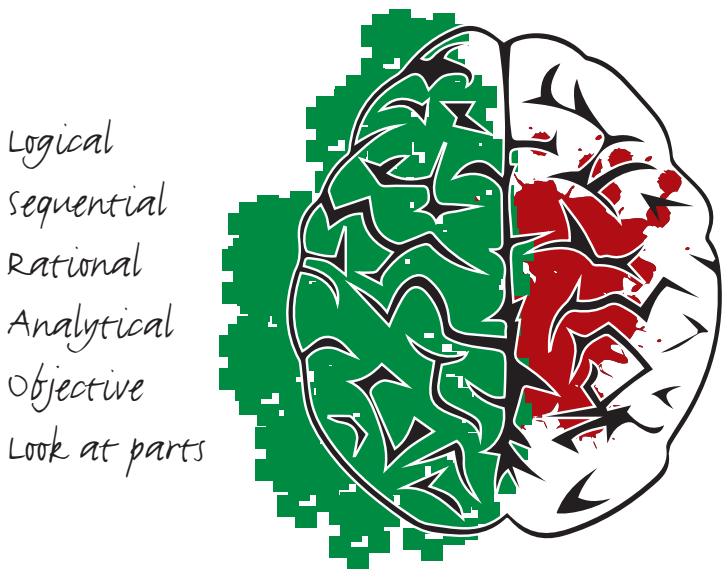
The concept of the left and right brain originated in the 1960s, and has become a well-known feature of human psychology. Every individual uses both hemispheres, but each of us has a dominant side which to a large extent determines our personality. [8]

So, it is common knowledge that our brain is divided into two halves: a left and a right side. Each side has a different way of processing information, and the most important difference between left and right is the visual aspect.
The right side of the brain looks at a visual reference as a whole, be it a product, an object or a work of art, and subsequently works its way towards perceiving the finer details. The left side of the brain first sees

the details and then puts them together to form 'the bigger picture'. In our head the two sides cooperate in order to constitute a fully functional human brain. However, each one of us has a dominant side influencing our personality traits and behaviour.

The contrast between the left and the right brain

People with a left-side dominant brain tend to be very organized; they prefer schedules and deadlines, and love rules and regulations. They are more auditory learners, logical thinkers, and are better at using words to remember things rather than visual aids. They process ideas in a step-by-step, algorithmic way.



People with a right-side dominant brain depend more on visual references for understanding something, and so tend to be visual learners. They are very intuitive and curious about the world, more emotional, and are better able to comprehend and reflect upon their feelings. As a minus, they tend to be disorganized and have difficulty in judging the difference between main and secondary issues.
Right-brained thinkers are less common than left-brained thinkers.

Therefore, they tend to see the world differently from most people, for their naturally heightened visual nature and curiosity enables them to consider more alternative solutions as well as how these may be applied visually. A tentative conclusion here could be: those with right-brain dominance may be more naturally creative.

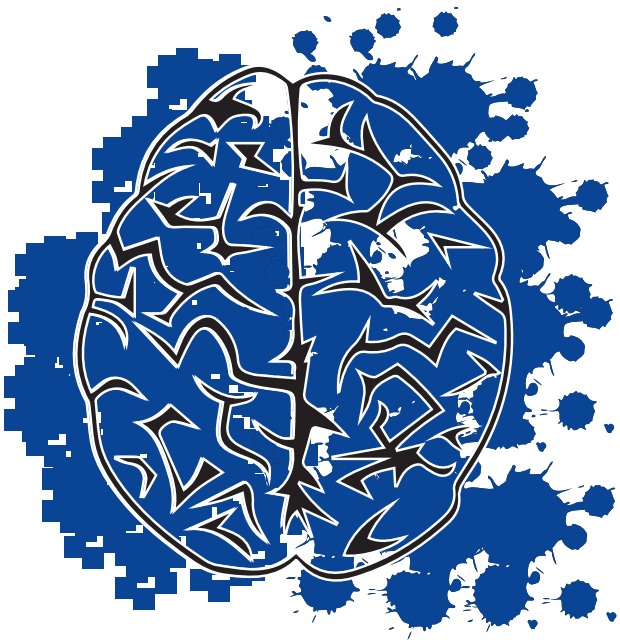
Random
Intuitive
Holistic
Synthesizing
Subjective
Look at wholes

Left-brain thinkers are far more common, and far more logical and analytical. They may perhaps feel at a disadvantage for not having that 'natural' creativity. In reality, however, left-brained people can be just as creative, because creativity can translate itself in more ways than one. In their creativity, right-brained people may lean more towards intuition, emotion and towards thinking outside of the box, while left-brained people in their creativity may lean more towards order, realism, patterns or guidelines.

Industrial design and design engineering cover a broad range of aspects. The more 'intangible' ones, like the visual appearance, attractiveness and aesthetic perception of products, are related to emotions and refer more to the brain's right part, while other aspects like technical issues, production constraints or figuring out how things work refer more to the left side.

It is obvious that the product designer's profession relies on a balanced applying of artistic and rational skills, and thus on a balanced use of both hemispheres. So, to become a successful product designer he or she should master the skills ascribed to both brain hemispheres

Logical
Sequential
Rational
Analytical
Objective
Look at parts



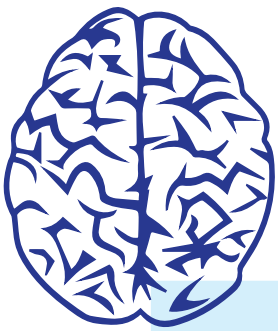
Random
Intuitive
Holistic
Synthesizing
Subjective
Look at wholes

Whole-brainers

Design engineers should be whole-brainers, able to apply both ways of creative thinking to the problems they must solve. Today's design challenges require a combination of technical expertise, innovative ability and the skills to both develop and implement complex solutions, besides to translating the overall solution into an attractive and aesthetic result. A product designer may not always operate within all of those dimensions at once, but without the ability to integrate them, he or she does not possess the skills to provide solutions and leadership in the face of today's complex challenges.

Are you a whole-brainer ?

In conclusion, one could say that good product designs are a result of a balanced mix of left-brain and right-brain creativity. But before you can discover how to harness your own creativity, you must find which side of your brain is dominant. As we know ourselves best, we may already have a good guess based on the definitions above. But for a more accurate outcome, there are a number of tests and quizzes one can do online in order to find out which side of your brain is dominant.



The Hemisphere Dominance Inventory

The Hemisphere Dominance Inventory can give you a quick insight into your own brain dominance.
The following done on the web page (http://www.biologycorner.com/anatomy/nervous/dominance_test.html).

1. If you had to give someone directions to your house, which of the following methods would you most likely use?
a. Write a paragraph that explains where and when to turn
b. Draw a road map

2. Which of the following are you better at solving?
a. Jigsaw puzzle
b. Crossword puzzle

3. Do you remember faces easily?
a. Yes
b. No

4. Do you think you'd earn higher grades in a geometry class or in an algebra class?
a. geometry
b. algebra

5. Imagine that you're vacationing at a resort. Which of the following would you most likely do?
a. Obtain a brochure of local attractions and plan what you'd like to do for the day
b. Drive around without a plan and decide what you'd like to do as you drive along

6. Was it usually easy or difficult to learn grammar in school?
a. difficult
b. easy

7. Imagine enrolling in a music course. You and a partner in the course must write a song. Which of the following would you prefer to do?
a. Write the lyrics
b. Compose the melody

8. When you read a new chapter in a textbook, which of the following are you most likely to do?
a. Skim through the entire chapter first to get a general idea of what the chapter is about
b. Read the chapter from beginning to end without doing much skimming

9. In which of the following English classes would you most likely enroll?
a. Journalism
b. Creative writing

10. ***Imagine that you volunteered to work for the school newspaper. Which of the following would you rather do?***
a. Cut and paste and lay out the stories and decide which stories should appear where
b. Write one or two of the stories

11. After reading a new chapter in a textbook, which of the following would you rather do?

a. summarize the chapter
b. outline the chapter

12. if you had an important project due in a class, would you prefer to work?
a. in a group
b. alone

13. Which of the following classroom situations do you prefer?
a. A teacher announces assignments on a weekly basis and sets specific weekly due dates
b. A teacher announces all the assignments at the beginning of the course and allows you to complete them at any time before the end of the course

14. Which of the following statements best applies to you?
a. I'm good at guessing a person's mood by his or her body language
b. I'm not good at guessing a person's mood by his or her body language

15. Which of the following would you rather play?
a. Scrabble
b. Checkers

16. With which of the following statements do you most agree?
a. We should continue exploring outer space since one day this exploration may benefit us
b. We should continue exploring outer space only if we can be sure ahead of time of certain benefits we would receive

Scoring

How many 'a' answers did you have for odd-numbered questions?
How many 'b' answers did you have for even-numbered questions?
This sum gives you your Left Hemisphere Total.

How many 'a' answers did you have for even-numbered questions?
How many 'b' answers did you have for odd-numbered questions?
This sum gives you your Right-Hemisphere Total.

Left-Hemisphere Dominance (left total = 10 or more)
Your score indicates that you are generally a highly organized person. If you are sloppy, even your mess makes sense to you. When given a job to do, you like to approach the task one step at a time, rather than plunging into it. If you are involved in extra-curricular activities, you are probably well-disciplined. For example, if you are a musician, you'll probably closely keep to a practice schedule. In the future, you'd probably do well in one of the following area: accounting, engineering or computer programming.

Right-Hemisphere Dominance (right total = 10 or more)
Your total indicates that you use intuition and creativity to achieve certain goals, rather than an outlined, detailed plan of action. You feel that too much planning tends to limit possibilities. If you are involved in extra-curricular activities that require practice or drilling, you perform well when inspired, but otherwise do not enjoy the routine of practicing every day. Chances are good that you are interested in one of the following areas: music, art and athletics.

Balanced Hemispheres (both totals = less than 10)
As indicated in the previous descriptions, left-hemisphere people prefer structure; right-hemisphere people do not. Your score indicates that you fall somewhere between these two extremes. When given a job to do, you may prepare yourself by making lists (something a left-hemisphere person would do), but the lists may not be highly organized (which a right-hemisphere person may prefer).

Another more comprehensive brain dominance test :
http://www.wherecreativitygoestoschool.com/scholarships/changeyourlife/braindominance_test.aspx

Once you have discovered your own brain dominance (or balance), you will better understand your positive traits and the approach of your natural preference, but you can also better assess your weaknesses and focus on improving your 'weaker' brain half, by identifying your deficiencies and thinking of ways to make use of them.

Structure of the book

The first chapter of the book frames the subject and sketches the background.

The second chapter, Formgiving ideation muses, introduces and explains a number of form-creativity tools and techniques, divided into four categories: rational, intuitive and contemplative inspiration techniques or 'muses' plus an additional category of 'Related approaches and studies'.
Right-brain dominant designers will feel comfortable with the intuitive approaches, while left-brain dominant designers will tend more towards the rational approaches. The contemplative approaches form the more advanced and combined techniques, and thus are more suitable for complex design challenges.

Hopefully, these tools and techniques can help designers to make the formgiving process more diverse and easier to manage, thus aiding them in creating new and unexpected form approaches. If left- or right-dominant brainers can take steps towards becoming whole-brainers through training techniques contrary to their brain dominance, they will be able to broaden their formgiving scope by broaching new techniques that formerly seemed 'unnatural' to their personality.

The formgiving tools and techniques presented in this book do not intend to give straight answers to formgiving issues. They aim to open up the mind and may provide the impetus to look at challenges in more ways than one. Eventually, it is up to the designer to translate the inspiration of the muses into innovative and 'inspired' projects.
In the third chapter, Cases, examples and case studies of student

projects are collected, and the applying of the muses in educational design practice is illustrated. Some projects and exercises are simple and straightforward, others show more depth and rely on combinations of formgiving tools and techniques.

A number of issues in the book are underpinned by a more scientific approach, thus illustrating that some of the presented inspirational tools have proven effective and rely on or fit in with a theoretical framework.
A large part of the illustrations in this book show student results. In an educational setting, a designer has more freedom to come up with diverging or more extreme ideas, since he or she is not hindered by economic reality.

We would furthermore like to thank the students for their fresh and creative contributions.

References and Further Reading

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