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Deconstruction as a structured ideation tool for Designers

Daniel ECHEVERRI^a

^a Zayed University,
Daniel.Echeverri@zu.ac.ae

Abstract: *Strategies, systems, experiences and services are part of the new challenges faced today by design students and designers. These challenges include shifting audiences with specific needs due to the broad offer of services and products that often create new needs. Besides, there is a great demand for multidisciplinary designers that are able to generate and perform ideas in a co-creation environment.*

One approach to meeting these challenges include an open-ended, scaffolded brainstorming process. Structured methods have many benefits such as collaboration between teammates, ordered and constructive creative sessions as well as increased efficiency. One structured method that has found a place inside classrooms across the world is the Deconstructive discourse. This research follows its definition as a mode of questioning stereotypes, traditional ideas and popular views by comparing them and exploiting their visual and verbal signs for their meanings. This paper explores the use of Deconstruction as a structured ideation tool that correlates the effort to educate students on the rationality of a project. It presents five case studies, each one in a different context and describes how this tool stimulated and enhanced the students' learning and ideation process. The research and the framework presented here were initially applied as a Design teaching method. However its use can be adapted into other learning environments such as PreK-16 education in courses like language education or aimed to stimulate problem solving and creative thinking.

Keywords: *Deconstruction; ideation; semantics; critical thinking; design teaching*

Introduction: The Framework

Several authors agree that Deconstruction is useful as a critical tool because it exposes the gap between value and concrete inside culture and that there is an important space for it in the studio classroom (Lupton, 1991). Deconstruction can be defined as a mode of questioning stereotypes, traditional ideas and popular views by comparing them and exploiting their visual and verbal signs for their meanings. This framework is a structured ideation tool that uses the concepts of sign and the elements involved the creation of meaning. Its composed by three stages each one related to the Deconstructive process: Binary Pairing, Question Assumptions and Exploit Signs (Table 1). **Binary Pairing** are terms or ideas that have opposing meanings like “white/black”. (Cruickshank, 2010). **Assumptions and Contradictions** invite to question and critique the fundamentals of those binaries. The last stage, **Exploit Signs** uses different tools to analyze the semantics of the known assumptions. (Hong, 2004; Lupton & Miller, 1994).

Table 1 Framework stages

Binary Pairing (Higgs, 2002; Rago, 2004; Stephens, 1991)	Assumptions and Contradictions (Derrida, 1980; Rago, 2004; Stephens, 1991)	Exploit signs (Derrida, 1980; Lupton, 1991; Walker & Dell, 2008)
Set of ideas that have a fixed relationship.	Differences and oppositions between the ideas paired.	Critique of visual and verbal signs with multiple meanings

Each stage is connected by a set of operators that help questioning the binary and its assumptions (Table 2) (Balkin, 1996). In Stage 1 and 2 the operators are related to the basic sign theory from Saussure and Stage 3 is connected by representation tools from the Deconstructive discourse like denying, duplicating or attaching. (Hong, 2004; Hong & Hwang, 2006).

Table 2 Framework operators

Questioning Operators	Analyzing Operators	Representing Operators
Element A depends on Element B	Semiotics	Quotation
Element A over Element B	Pragmatics	Fragmentation
Element A is a subordinate of Element B	Semantics	Repetition
Element A is a special case of Element B	Syntax	Decontinue
Element A resembles Element B	Style	Disjunct
Element A means Element B	Function	Decentre
Element A indicates Element B		Decompose
Element A is an abstract concept of Element B		Deny
Element A is arbitrary relationship of Element B		
Element A is caused by Element B		
Element A is the opposite of Element B		









This framework is represented in three groups of cards created to build a hierarchical organized structure (**Figure 1**). Card sorting is a qualitative and exploratory research technique. This method allows the finding of patterns in the users' mental models and behaviors while involving them in the creative process. It also grants the development of critical thinking and categorizing and relating objects (Spencer, 2009).

Each group of cards represents one of the three stages involved in the Deconstructive process and contains multiple operators that connect one stage to the next. Different visual and physical characteristics were assigned to the groups like tessellated shapes similar to a jigsaw puzzle that can be interlocked with the following stage: a half circle for Stage 1 and half rhombus for Stage 3 while Stage 2 connects with the previous two.



Figure 1 Complete card deck, Binaries cards (Stage 1), Question Stereotypes cards (Stage 2), and Represent Stereotypes cards (Stage 3)

The cards are color coded in each stage: yellow for Stage 1 cards, orange for Stage 2 and red for Stage 3. The design of the card includes the name of the stage, one operator and a definition exemplified by building bricks (**Figure 2**). This exemplified visual representation acts as a dynamic element that transforms, connects and adapts as they represent different moments in the ideation process externalizing them through a mental model represented in the card structure.

Stage 1: Idea	Stage 1: Binary	Stage 2: Find Stereotypes	Stage 3: Exploit Signs
			
Stage 1 – Questioning Operators			
A depends upon B	A is a special case of B	A is caused by B	A over B
			

Stage 1 - Represent Operators			
A opposite of B	A subordinate of B	A symbolizes B	A is a metaphor of B
A indicates B	A resembles B		
Stage 2 – Analyzing Operators			
Style	Function	Structure	Meaning
			two orange blocks next to each other
Signs	Context		
two orange blocks next to each other			
Stage 3 - Represent Operators			
Duplicate	Attach	Interrupt	Repeat
Separate	Break Down	Deny	Slant

Figure 2 Visual representations of the operators in the Framework.

In order to understand the way the ideas were created during the pilot study and subsequent tests, Syntactic Representations were used. These representations can be defined as the assemblage of relevant information in a sentence or in the case of this framework an idea in a mental representation. This embodies particular content that has formal properties (Brannigan, 1996; Zwicky, 1990). A preliminary development of this ideas has been presented previously in (Echeverri, 2014a) and (Echeverri, 2014b).

Case Studies

This section presents three case studies from different exercises carried-out between 2013 and 2014 in order to explore how students and designers can use the Deconstructive process to ideate.

Case 1: Binary construction during ideation

This first case was the pilot study done during the summer of 2013 to evaluate the application of the framework in an ideation context. The participants received a Task

Description along with a workbook to guide them through the pilot (**Figure 3**). It had a short brief adapted from the Electrolux Design Lab Contest from 2013 that approached the changes and challenges in design, inspired by urban living and the need for sustainable design. The participants were asked to propose a solution using the Deconstructive Framework based on any of the 3 topics described in the brief: Social Cooking, Natural Air or Effortless Cleaning. Only the pilot study and the cases presented in this section, allowed the participant to deconstruct an idea using several cards. The Syntactic Representations in the examples from Case 2 and Case 3 present a single element on each stage in the ideation process to facilitate the ideation process.



Figure 3 Participants A and B using the workbook to aid their ideation process.

Participant A: Trees as the center of home living



Figure 4 Proposed idea of Deconstructed Living Space

This participant defined the binary as "idea of a tree" (a) symbolizes (b) "nature" (c). The student explored each card available in the deck and analyzed the examples and definitions given in the workbook. This idea was later expanded and deconstructed as an architectural space where a tree is the center of housing living, similar to a tree house. (**Figure 4,5**). The student justified the idea by qualifying (d) trees as oxygen producers (e₁) and that by them being usually tall (e₂, e₃), homes should be built to take benefit of both facts by changing their traditional architectural structure (f₂). In the structure was also proposed (f₁) the idea that instead having hard floors made out of wood or marble it was better to have soft grass that would feed the tree (f₃).

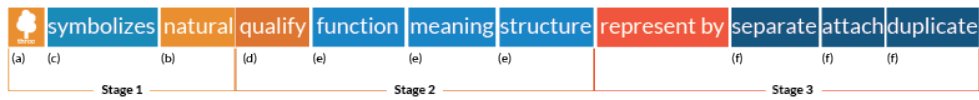
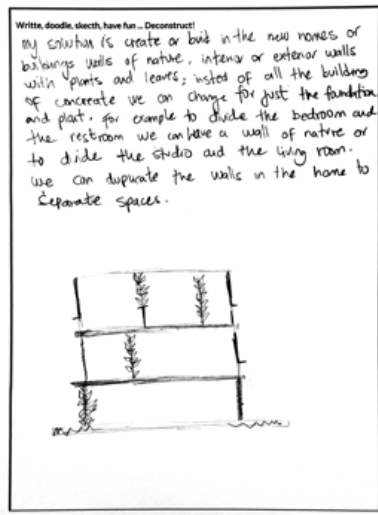


Figure 5 Syntactic Representation Participant A

Participant B: Dividing living spaces with vertical gardens



Similar to the idea presented in the previous example, this participant also explored the creation of a "live space" that deconstructs the notion that the walls in a house are solid and lifeless. In this case, the student proposed having vertical walls made out of bushes and plants that allow continuous air flow and at the same time maintain a comfortable temperature in the house (Figure 6,7). The participants' binary was: "Idea of a tree" (a) indicates (c) "Idea of air" (b) and then deconstructed by exploiting the function (e₁) of a wall; the meaning (e₂) of it as being part of a solid space and changed the context (e₃) of the plant into an indoor space. By duplicating (f₁) and repeating (f₃) them, the participant attached (f₂) new meaning to the idea of organic walls into a housing space.

Figure 6 Living walls that separate spaces.

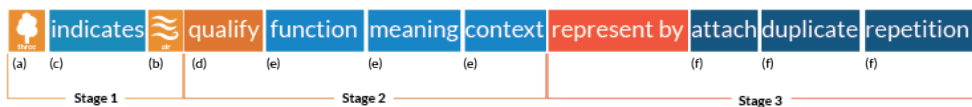


Figure 7 Syntactic Representation Participants B

Case 2: Building patterns from everyday objects

In this exercise, groups of 3 students were asked to pick one idea from a set of eight preselected photos of things that could have multiple meanings. Participants were instructed to choose an idea and give a new meaning to it by building a binary. The objective of this exercise was to evaluate the ability of the participants to build a structure using the cards while applying different deconstructive tools, and at the end create a pattern based on the questioning of their initial idea (Figure 8).



Figure 8 Students from Group A during the exercise at Kent State University

Group A: Oranges and Lemons

The initial step for this group, was to build their structure based on a series of tiers that helped them select, discard, and evaluate their possibilities in terms of how the cards where going to be combined. They validated each tier group and discarded the ones that they believed did not apply to their views on the ideas or where difficult to understand. As the structure evolved, the group members negotiated between themselves in order to proceed with the final idea.



Figure 9 Syntactic Representation of the idea from Group A

According to this group, the deconstructed idea of an orange (a) was built around the similarities (c) this fruit has with a regular lemon (b) for example being round, citric, acid in their taste and similar texture in their skin (d). They defined these four reasons (e) as the questioned stereotypes in the binary "an orange resembles a lemon". Group A decided to exploit this binary by duplicating (f) the resemblance among the elements common to an orange and a lemon (**Figure 9,10**) creating an interesting mix between the outside texture of the orange represented in small dark orange dots and the inside of a lemon. This representation keeps certain elements shared in the binary like the color scheme and the shape of a leaf commonly drawn in fruits.

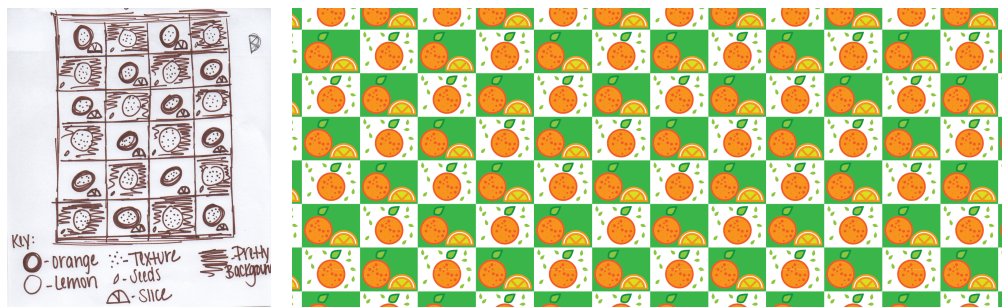


Figure 10 Left: Sketch presented by Group 1 the end of the exercise. **Right:** Pattern

Group B: Cats and Dogs

The initial process for this group was to evaluate each one of the cards and sort them according to the definitions that were clear for them. A second tier was created between the cards and the possible ideas that they had available. A noticeable leader took charge of the group and became the last voice in the way the cards and the ideas were created. This hierarchy was maintained across the exercise: a leader directed the group, two students became the ones who executed and a fourth was a passive validator. This group stated that a cat (*a*) is the opposite (*c*) of a dog (*b*) following a popular view on both animals and their behavior. They listed several qualifiers (*d*) on the structure (*e*) of both ideas: the noise a cat and a dog makes, their shapes and colors (**Figure 11**). According to them, the mentioned qualifiers define the way cats and dogs are commonly represented (as a stereotype).



Figure 11 Syntactic Representation of the idea from Group A

This group decided to deny (*f*) several aspects from the stereotypes described by them including the sound emitted by both animals and later represented by the onomatopoeia of “bark” in their resulting graphic (**Figure 12**). Other aspects like the shape of their bodies where exploited by having the common idea of a spotted dog and a spotted cat. As seen in Figure 12 both animals became ambivalent for this group; a cat can be a dog and vice versa by deconstructing their stereotypes. The framework facilitated the exploration of what this group considered were stereotypes of their ideas, and helped them to build a structured thought process.

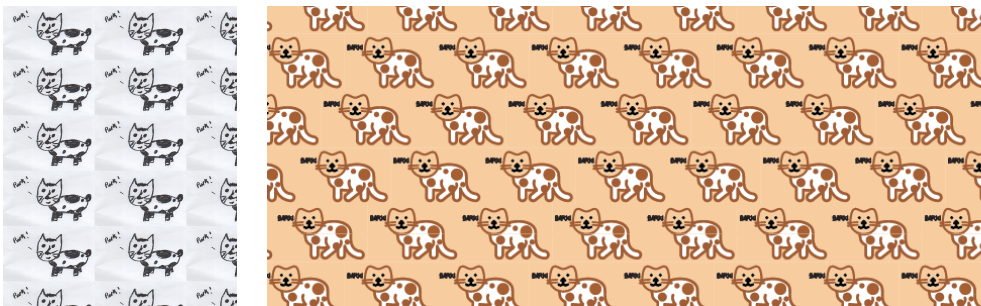


Figure 12 Left: Sketch presented by Group Right: Pattern

Case 3: Deconstructive Mental Mapping

During the 2014 International Symposium on Electronic Art held in Dubai, the College of Arts and Creative Enterprises held an exploratory workshop consisting of interactive

exercises. This workshop required participants to approach a single idea from its multiple meanings. A total of 21 students participated and were grouped in teams of 3. The first part of the workshop introduced participants to how meaning is created and how deconstruction is used to explore and decompose created meaning. A short mention of Derrida's work was part of the introduction and the presentation concluded with a quick overview of current applications of Deconstruction in Design, Arts and Architecture with examples from Reem Koolhas, and Comme Des Garçons. The second part of the workshop required the students to use the cards to deconstruct common ideas (e.g. fruits, kitchenware, nature) and to explore their meaning by using the cards from the Framework. This last group of cases presented in this section requested the use of the whole deck instead of a single card. The idea behind this change was to study the ability of design students to explore meaning from multiple perspectives. Afterwards they were requested to present their outcomes to the workshop audience.

Group A: Watermelons for the summer



Figure 13 The cards were used as a mental mapping

According to this group, the "idea of watermelon" (a) resembles (c) Summer (b) because it is a fruit that is commonly consumed during this season due to its high water content and freshness. To understand each of the tools in the Framework, this group of students decided to explore them as iconic representations of a watermelon (**Figure 13**). For example they represented "interruption" of the idea by organizing icons in an up and down rhythm. They used the cards as a tool that allowed them to map different concepts by using also paper and markers, in a similar fashion to using post it notes to ideate. The second stage was about using the context (e) of consuming watermelon and explored ways to deny (f) this original stereotype. For this group, it would be the anti-watermelon, a fruit that can be skinny (in terms of the thickness of its husk), bitter, dry, sour and instead of its traditional pink color, it would be black. (**Figure 13, 14**)



Figure 14 Syntactic representation

Conclusions

According to the AIGA (American Institute of Graphic Arts), strategies, systems, experiences and services are part of the new challenges faced today by students and professionals in general. These challenges include shifting audiences with specific needs due to the broad offer of services and products that continuously create new needs. Also limited resources that need sustainable solutions with low impact to the environment, as well as low production costs. Besides, there is great demand for multidisciplinary professionals who are able to generate and perform ideas in a co-creation environment (AIGA, 2009).

This research sought to develop and validate a Deconstruction-based tool for generative ideation presented as a card sorting method. The results indicate that questioning stereotypes by using an open-ended structured tool is an effective way to generate ideas. The correlation between sign and meaning in a cultural context is a key factor for exploring complex creative challenges. By probing-stereotypes and approaching an idea from several points of view, students can create multidisciplinary projects that can be developed in a co-creation environment. The diversity of the outcomes proposed by the participants showed evidence that the framework is a flexible tool that can be adapted according to the needs of the student. It only requires knowledge of the basic theory of semiotics, which makes it appropriate, from PreK16 education to professionals.

The first Case Study sought to explore the possible applications of Deconstruction in the ideation process when solving a problem. This first approach presented several challenges in term of how the framework is used; a wide range of options, sometimes confusing to the participant, became a problem due to its complexity. Yet, the participants agreed that the framework allowed them to understand a tiered process that was helpful to come up with ideas. The second case study approached a more light and functional way to use the framework by simplifying the rules and the general communication of it. This was noticeable through out the testing process; it allowed the participants to ideate faster and test the many possibilities before making an ideation decision. By exploring visual representations of the rules in the framework, the participants were able to apply different Deconstruction-based strategies. Syntactic representations of each one of the participants' projects permitted to test their ideation process as well as the logic behind a deconstructive process. Certain roles were seen when the participants were using the cards: the Follower that trails the group's opinions, the Leader that organizes and arranges the ideas, and the Executioners that were responsible for sketching, writing and organizing the cards. The final case study was aimed at showing the framework use in a co-creational environment, similar to every day classes, where students work in teams to solve a problem and come up with a single idea. The final versions of the cards used in the framework were clear and easy to understand, the visual representations backed the ideas and helped the students apply stages and operators as part of a Deconstructive process.

Considering the outcomes from the case studies presented in this paper, it can be concluded that Deconstruction helped the participants in the creation of new meaning by understanding an idea from its many angles and prevents leaving its alternative meanings out. Every single idea that has a meaning is conditioned by the experience of its creator and that is what this framework achieves. The framework takes those

experiences and transforms them into tangible outcomes. The cards are a generative thinking tool that looks to build meaning that can be applied to any field; from living spaces that make use of plants and trees as structural components with an environmental purpose, to explore everyday objects that can be overlooked. The applications of Deconstruction are almost infinite inside and outside the classroom and the studio environment.

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