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Over the Mainstream

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Illustration depicting Usbek and Rica from *Persian Letters* by Montesquieu (1721)

Cultural Considerations on Affordance Theory

A Cultural and Narrative Report

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Introduction: The Inter-Relation of Affordance Theory and Design Thinking

The term Design Thinking is being introduced more and more to the design community, the question of how designers think was introduced first by Nigel Cross (Cross, 2008) and after popularization of this term by IDEO, it became more and more widespread. The possible question arising from this stream is that whether all designers think the same or not, and what would be the similarities and differences between them. This reaches us to the problem of language, design language and possibilities of global design language. That is how terms such as design semantics, design driven innovation and finally affordance theory comes to mind. Affordance theory itself sounded popular by design community, but there were many debates about the ambiguity emerging from this term, which has been risen through different interpreta-

tions. We thought cultural considerations of the concept might be helpful for designers, but the question rises up: how such considerations could be helpful for designers. The possible answers are something that we try to open up in this paper.

The Story of Affordances

This word was invented by James J. Gibson, as an ecological psychologist. He was invited by US Army to support and improve the behavior of American pilots in the Second World War. The problem was that young pilots could not drive the airplanes well and they fell into deadly accidents. He was asked to see how these accidents could be reduced. During his research, Gibson found out that professional pilots do not look at control panel and they drive the plane intuitively. This was a very good finding, but

another problem emerged, there are no tools for helping the researcher analyzing such a phenomenon. That was the reason the term affordance was invented by Gibson as the core solution. Affordance refers to the information, which is present in the environment, therefore there is no need to do anything regarding information processing in the human brain, it is being *picked up*, through tuning of the human with the environment. The act of tuning can also be interpreted as trying to be in the context and situation where tuning such information would be possible (Gibson, 1979).

Affordance and Design. From Smets to Norman

Gerda Smets, Emeritus Professor of Delft University of Technology, defended the concept of affordance as a possible scientific basis of Industrial Design Engineering in 1980s in Delft (Smitsman, 1986). Meanwhile, Donald Norman, used the term “affordances” in his well-known publication: *Design of Everyday Things* (Norman, 1988). The problem he tried to solve was to make objects and tools around more usable, in a way that there would be less catalogues and instructions and the object itself would tell you how to be used. It became very popular, since designers have finally felt they have found the language to declare and present their creativity and imagination. However, the game was not over.

Challenges with the Term Affordance

Donald Norman himself started the challenges about the term affordance. He didn't agree with the concept of affordance, in a way that Gibson did. He claimed he had never agreed, nor understood what Gibson meant by affordance. However, he claimed that he doesn't agree with designers when they say “I put an affordance here”, he mentioned that he would rather use perceived affordances, rather than physical affordances. Later on, he was inspired especially by Clarise Des Souza, *Publication Semiotic Engineering of HCI* (De Souza, 2005). But while he tried to review his critics in the second edition of

Design of Everyday Things (Norman, 2013), he changed his mind dramatically and mentioned that “signifiers” are more important for him than affordances for designers (Norman, 2008). While he acknowledged the importance of culture in detecting affordances, he totally changed his direction toward cultural significations, rather than physical associations. This has led the potential for a global design language in a dead-end stop. Can we hope that we could reach a global language for designerly way of thinking, and if not, what is the problem then, and where is the problem?

Possible Contributions of Culture to Solve the Affordance Dilemma

We, the authors, believe that applying the concept of culture in understanding affordance can be extremely helpful in solving the dilemma of a possible global language generate-able from Ecological Psychology. It can be done in two ways:

- 1 Cultural embeddedness of the affordances: affordances are culturally embedded (Ajdari, 2008). Meaning that they are detectable and graspable in the culture, through the culture any by culture.
- 2 Cultural narrative or understanding of the term affordance: to narrate is to accept that neutral observer or scientific observer does embed his/her own viewpoint and he/she cannot be independent as what we expect from him/her like in physics or other natural sciences. When we narrate the scientific terms in a cultural way, it would give us a better understanding to reach a more comprehensive conception.

Affordance, Culture and Interactivity. A Possible Manifestation

The main argument between Gibson and Norman, the confrontation of physical affordances and cultural affordances, is refer-able to a larger discussion, that was first introduced by Mark Bickhard in his publication *On the nature of representation*. In that book he claims that there is a bigger debate between representation-ists and interpretation-ists (Bickhard, 1983). How is it possible

then? Those related to school of representation claim that information is made in the brain, that environment is neutral and what is named as *meaning* is made in the brain or the mind of human element. There is no information to be picked up by human element. On the other hand, those in the school of interaction or interactionists believe that information is in the environment and meaning emerges, or even revealed from interaction. What does it mean, it means that information is alive in the environment and we just need to pick it up. But is the fight really about the representation-ism and interactive-ism?

The first cultural consideration, to us, appears here. The term "interaction" in this context (Affordance theory) by itself also embeds the existence of another party, in other words you need to acknowledge the existence of otherness (altro in Latin) in order to accept there is a message which is in the environment. We need to acknowledge that there is someone, or something else that *has sent the message*. In other words, if we are receiver of the information in the environment, which we can pick it up, then we need to acknowledge or at least assume that there is a *sender*. If we are *receiver* through Affordances, then there should be *sender*, whether someone, or something.

But then the question comes, who is such a sender that puts information in the environment and helps us emerge meaning through interaction with him? Are you talking about God as a sender? Are you talking about a Supreme Intelligence? Are you talking about metaphysics? What are you talking about?

According to our cultural interpretation, well this is the origin of the problem or confusion. Finally, which one is right: perceived affordances or affordances? Are affordances perceived or they are present in the environment? Such a discussion, existence of a sender for information to be received by human element, in the context of representationists and interactionists, affords resistance from scholars, at least academic scholars, that this discussion is not scientific, that it brings us to religious discussions, that it brings us again back to religious debates. The west, and the world, has suffered a lot from religious wars and whatever discussions that related to Bible, let us bypass it!

But the problem is still unsolved, what should we do with the sender? We do not believe in God in academic context because it puts our scientific discussion into a non-scientific context, at least we cannot falsify it in a popperian way (regarding conjectures and falsifications). Then what should we do?

That is how the word cultural affordances could help. You do not need to believe in God in order to believe in being a sender who sends messages. You can believe in another human, who sends messages through objects, artifacts, words, and can communicate with you. You can believe in existence of another human, who is activating your intuition *mediating* through culture. Existence of *otherness* does not afford necessarily existence of God, but existence of another intelligent being, another *dasein*, another human, another collective experience, another community, another.... up to infinity!

Affordance and Inspiration. Some Cultural Narratives

There is a lot to discuss, here in this paper just some cultural considerations from the last author [Alireza Ajdari] is introduced in the form of cultural narratives:

"The story started from Delft Studio-lab, where my ex-promoter was working on inspiration Engineering research group, led by Ianus Keller. At that group, where I was honored to join, them. They were trying to find sources of inspiration for designers and Pieter Jan Stappers considered affordance theory as a possible theoretical framework for inspiring designers. However, the communication problem appeared, not only I was Iranian and they were Dutch, two different cultures without a history of a fixed communication, but artistic and technical background generated different associations and interpretations, which was challenging for a project management.

What happened next was another story, however through this journey I reached Italy, where Sebastiano Bagnara, as my supervisor gave the key, cultural affordance. He recommended a very strange book named as *The Persian Letters*, by Montesquieu, the story of two Persian merchants who visit Europe and criticize the superstitious existing in Europe.

He wanted to insist that cultural comparisons and cross-cultural studies would help us reach a more realistic enlightenment, what our design community needs very much. Those two merchants were comparable to the Maggie looking for the Christ, here the third Maggie is the reader and lost Christ is the real enlightenment. The lesson was not just this. Now our understanding is canonized by science, as it was canonized in the Middle Ages by religion. If culture can help us reach a better understanding in the age of enlightenment and help us criticize our religious belief and wipe away superstitions, then the same can happen for our scientific beliefs as well. The same can be true for affordance theory. Cultural associations and cultural readings of affordance concept can help us better understand and enrich the scientific efforts for designer-ly ways of thinking through affordance theory. In this case superstitions would be fixed beliefs which deprive us to understand the problem, or solutions as it is or as it can be.

Years after, while unexpected, through a coincidence I came to Quran, a chapter named as Yasin. When I re-read the chapter, I found some sentences which forced me to think: 'There are people who apparently hear and have ears but cannot hear. There are people who apparently see and have eyes but cannot see and find out why. We put walls in front of their ears and eyes, and those who betray will not see and hear' (narration by content). My interpretation was that intuitive thought is not easy to grasp, it comes from hard effort and it comes from resistance to keep ethical and humanitarian values.

This led me to a very strange comparison between cultures, why we do not see what an artist sees. The pain of artist is two: one is to see what others cannot see and the other is to visualize what is invisible in a language that others could see!

I had come the term *understand* or in German *verstehen*, what could the similarity between *understand* and *stand*, or between *stehen* and *verstehen* (equivalent in German). There someone who was busy with comparative studies gave me the answer. When you stand in the right line (Ver), or when you stand and try to resist in order to keep what the world wants to deprive from

you, namely as natural principle, the flow of knowledge comes to you and you will understand. In other words, understanding comes from resistance. Designerly ways of understanding does come from resistance against what is going to deprive people from their right to survive, if not named as industry!

This sounds maybe ethical, not scientific. But what about goal of design, isn't to make the world better? How can we measure better? Can we answer that in science or in ethics? And accepting the pluralism behind ethical systems in order to reach a global answer? Well, the game is not over, so let's play again, let us think again.

Other lessons that very wise people taught were these:

'Intuition is not Sacred Revelation, intuition is embedded in culture, every culture does embed different human experiences, privileges and of course mistakes. Cultures are mirrors of human experience, so learn from them but not every culture is perfect. We do need to listen to each other, to learn from each other'.

'You should be very careful about religious associations, there were many wars and bloodsheds in the history, people do need spirituality but not bloodshed in the name of rituals'.

Personally, I refer to the life of the originator of archeology, who tried to re-read Troy and other works of Homer not as a literature work of art, but as evidence to find the hidden civilizations. Can it be done with our religious texts as well? and if yes, then how? How to re-read the spiritual heritage of humanity without repeating the Inquisition mistakes or other strict ways of understanding the world? It is a big question, but the I was not the only one who refers to this proposal. The first one who might have been considered as a scientist who referred to bible as a source of scientific inspiration was Isaac Newton. Many of his handwritings were religious and many do consider him as a scholar of theology, rather than a physicist".

Conclusion

We tried to open up the importance of considering cultural relativity in understanding the concept of affordance theory. We claimed that affordance theory has a good potential to reach a global language for integration of intuitive and logical thinking, namely design thinking. Moreover, we tried to solve the dead end for affordance theory (signifiers instead of affordance), through introducing of cultural affordance and the necessity of cultural narrative and cultural reading for the concept of affordance. While we tried to show that considering culture as a mediation instead of culture as convention, would give designers inspirational values for her/his creativity. The second challenge would come from this item that to show that

considering culture as convention would lead us to Saussure consideration of concept of semiosis (and culture in general), that would confront signifiers (cultural association) with affordance (physical association). However, there is another model of analyzing sign, which was based on trinity of object, representamen and interpretant. This model is introduced by Charles Sanders Pierce in 19th century. Professor Massimo Bonfantini introduced this concept in Italy for the design community. Having this analogy would help designers mediate and direct their creativity, whether through cultural or technical associations. We claim that signifiers that Norman referred to follows Saussure's concept of semiotics, rather than Pierce conception of design semiotics. But this could be another title for further discussions.

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