

## SYMBOLIC INTERACTIONS AS INSPIRATIONS

M. T. Lai

*Keywords: interaction design, symbolic interactionism, human-centered activity design, interaction, interface*

### 1. Introduction

When designing new products and services, interaction designers often seek out reference material for inspiration when designing new interactions. They may look within and outside of their product space and industry for best practices, current and upcoming trends. In addition, the designers often focus on microinteractions and the user interface. But purely looking within these spaces for inspiration for designing interactions can lead to homogenization and even stifle innovation.

One approach of interaction design comes from the sociological perspective of symbolic interactionism. This approach of interaction design focuses on peoples' actions and interactions with the environment, objects and/or other people and the meaning that is created from these actions and interactions.

This paper explores how this understanding of interaction design can lead to developing a different focus for interaction designers. Specifically, how can interaction designers can use the sociological perspective of symbolic interactionism to utilize symbolic interactions as sources of inspiration to design interactions? The author proposes examining symbolic interactions and connecting meanings embodied in these interactions in new contexts may create new interactions and meanings as well as bridge our past, present and future.

### 2. Problem: new interface technologies

With the development and implementation of new sensor and interface technologies that enable touch, voice, gesture and other advanced methods of human-computer interaction, the focus of many interaction designers is focused on innovating the user interface and the direct interactions in controlling the interface. However, interaction design and its areas of research, practice and study, is a fundamentally different discipline than human-computer interaction [Buchanan 2004]. However, interaction design is often reduced to mean human-computer interaction.

#### 2.1 Focus on microinteractions

A microinteraction is a "contained product moment that revolves around a single use case" [Saffer 2013]. Microinteractions are all about the details. Examples of microinteractions include the slide-to-unlock on the Apple iPhone, pull-to-refresh mechanism developed by Loren Brichter, and flipping a light switch up to turn on the lights in a room. Each of these microinteractions have a specific user action that triggers a specific reaction.

New interface technologies offer designers the opportunities to develop unique forms of microinteractions to differentiate products from other competitors. The touchscreen has transformed the mobile phone with gestures such as the slide-to-unlock and the pinch-to-zoom. Voice recognition is getting more and more accurate every day and now allows users to communicate with it through natural language instead of memorizing key phrases. The Kinect has enabled users to interact with

products and services with body gestures such as waving your hand to change screens. However all these interactions focus on microinteractions. They do not focus on the overall relationship between the users and the product or service.

## 2.2 Focus on user interface

In addition to new input methods, the graphic user interface has also evolved with additional computing power. Visual metaphors are used to help users interpret the meaning of graphics to their digital counterparts, with a strong correlation to everyday objects such as a button, file, folder or desktop. With early versions of touch-based interfaces relied on skeuomorphism, or the visual design elements from the original metaphor, such as the use of leather texture on a calendar application or wood grain of a book shelf on an e-book applications [Basalla 1988].

## 3. An alternative approach: symbolic interactionism

Instead of focusing on microinteractions and user interfaces, we need to design the meaning of interactions between the user and the product or service. The basis of this approach is grounded in symbolic interactionism, a sociological perspective.

### 3.1 What are interactions?

Before we discuss the details of symbolic interactionism, we first must take a moment to understand what are interactions. Simply stated, they are actions and reactions. In detail, a person performs an action with the intention of accomplishing a goal, and he evaluates the perception of the reaction against his expectations. These actions are often directed towards an object and this object can be a person, product, service or even a complex system.

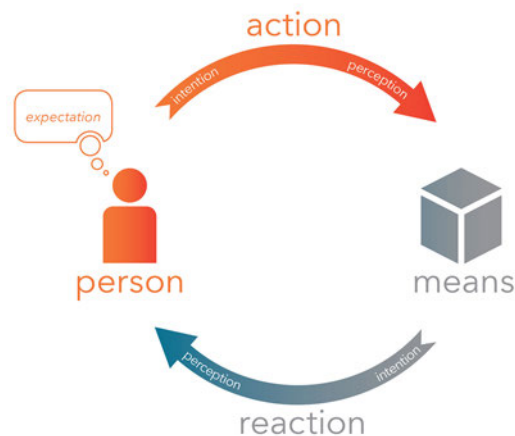


Figure 1. Interactions are actions and reactions

### 3.2 Symbolic interactionism

Symbolic interactionism is grounded in three premises. First, all people interact with things (physical, social and abstract) based on the meanings they have for them. Second, the meanings of all things are created through the social interactions with other people in regards to the person interacting with the thing. Third, these meanings are constantly modified and revised with every new interaction the person has with the thing [Blumer 1979].

### 3.3 Actions have meaning

Through the understanding of symbolic interactionism, we find that actions carry much weight in our understanding of our world. Actions are also symbols, they have meanings associated with them, representing the action through association, resemblance or convention [Worth and Gross 1979].

Looking at the meanings of actions provides insight into the relationships between people and society. Social structure is often represented in the form of status, role, class, authority and position. But it is

expressed through the unique relationship and actions of how people interact with each other [Blumer 1979]. Culture is also defined by what people do. Customs, tradition, norm, value and rules can be expressed in the form of many people exhibiting the same behaviour and actions [Blumer 1979].

These interactions can lead to experiences and in themselves have meanings as well. Diller et al. [2005] have proposed 15 common meaningful experiences: accomplishment, beauty, community, creation, duty, enlightenment, freedom, harmony, justice, oneness, redemption, security, truth, validation, and wonder. [Diller et al. 2005].

By studying different types of personal, societal and cultural interactions, experiences and the meanings associated with them can lead to new sources of inspiration when designing new interactions.

#### **4. Exploration: Symbolic interactions**

This paper proposes an application of symbolic interactionism to identify, analyse and design interactions. This application provides interaction designers a new source of inspiration in the form of symbolic interactions. Symbolic interactions can be a single action or a series of interactions (actions and reactions) that have an embodied symbolic meaning. For example, in Hong Kong, when someone serves tea, the person being served will tap their fingers gently on the table. This action has means keep pouring until the served stops tapping. It also can mean to thank you, especially if the server is a respected host. Historically, the action symbolized humbly knelling before someone of a higher social class.

Symbolic interactions helps designers understand the nature of people and their actions and behaviours in regards to the relationships that they have with the objects (whether they are digital, non-digital, people, environment or abstract constructs) around them. Unlike other approaches to design, it brings the focus to users actions and the meanings associated to them, rather the form, shape, color, typography, texture, materials, and etc. By focusing on actions and their associated meanings, this application seeks to use interactions and meanings from one context as a source of inspiration in new contexts to develop new products and services.

##### **4.1 Identify, visualize, and analyse inspirational symbolic interactions**

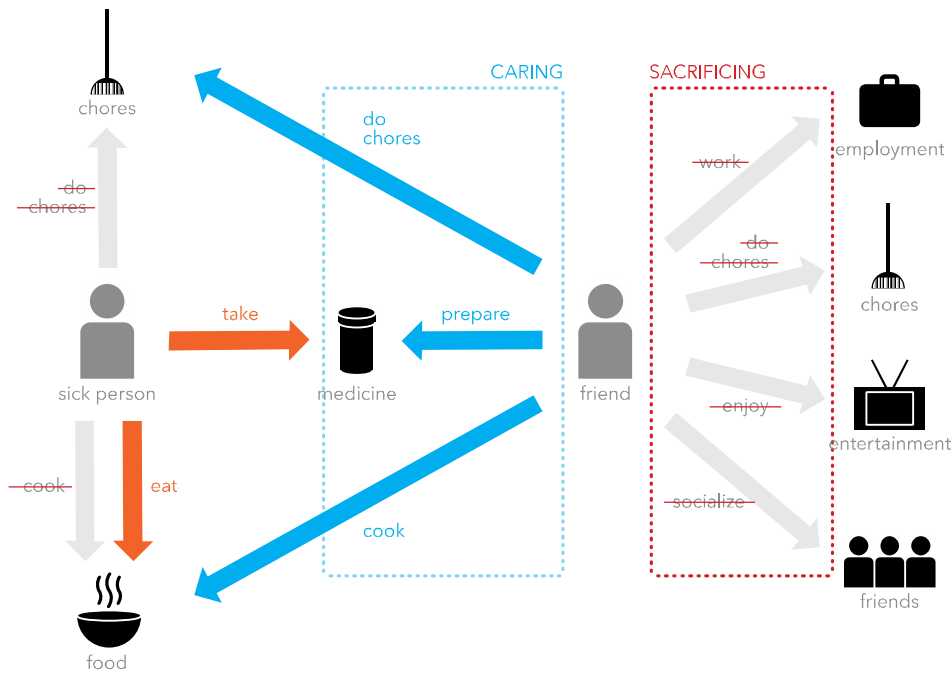
The first step is identifying an inspirational experience or interaction that symbolizes a meaning. The meaning can be predetermined such as a brand essence, mission, or experience strategy that is defined as part of an existing product, service, brand or organization. For example, a brand attribute of Apple could be simplicity, and the inspirational experience could be shopping at the Apple Store.

Then one needs to determine the elements of the experience and the interactions that are symbolic of that meaning. In the example of Apple, actions such as checking out anywhere in the store with any employee with a handheld register and also receiving your receipt in the form of an email may be symbolize simplicity to users and customers.

Alternatively, one may also begin by identifying individual interactions that may be similar to one's project but preferable not a competitor or from within the same industry. Determine the meaning of the identified interaction.

Once an inspirational experience or interaction has been identified, it needs to be analysed and visualized in the form of an interaction model. An interaction model is a visual tool that is often compared to a system diagram. The elements of an interaction model should include the people involved in the interaction, the actions and reactions they perform, and the means in which the actions are facilitated (this may be digital or non-digital objects or environments). Interaction models all express these elements as relationships to each other where actions are expressed as arrows between the people and the means, all for accomplishing some purpose. Interaction models may also include context if it is relevant or significant. It is important to clearly identify the actions being performed and the form of how the actions of expressed.

After visualizing the experience or interaction in an interaction model. Identify the actions that symbolize a meaning to the stakeholders. Actions may have different meanings for different stakeholders. An interaction and its symbolic meaning are the sources of inspiration that interaction designers are looking to identify to be used in another context.



**Figure 2. Interaction model of a friend taking care of a sick person. Actions that are symbolic of the idea of “caring” are identified in the dotted blue box. The abandoning of the actions in the dotted red box are symbolic of “sacrificing.”**

#### 4.2 Identify, visualize, and analyse interactions in target problem space to be designed

The next step is to identify an experience or interaction in which the inspirational symbolic interactions will be inspiring. This may be an existing product or service. It may also be a new context for a new opportunity. Regardless, of the origin of the experience or interaction, the current or existing interactions in the target problem space need to be identified, visualized, and analysed. An interaction model should be created for target problem space in the same manner as the inspirational symbolic interaction’s interaction model. The interaction designer needs to understand the current situation and relationship between the people, their actions, the means, the context and the purpose.

The two interaction models, the inspirational and the target, need to be compared for similarities and difference. If the interaction models are similar in form, then the opportunity for innovating new interactions is low. What the designer should be looking for is opportunity to leverage elements of the inspirational interaction model. If the interaction models are too similar, then a new inspiring experience or interaction will need to be found, analysed and visualized into an interaction model and compared again.

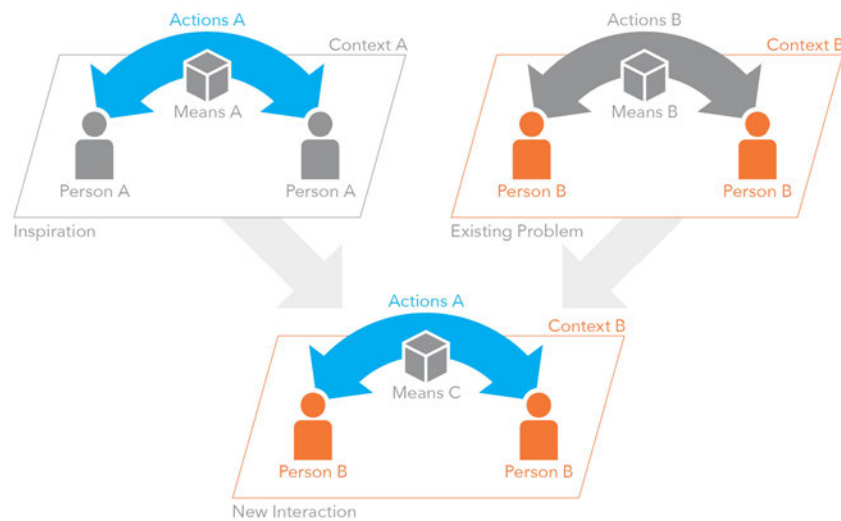
#### 4.3 Transfer inspirational interaction model and meaning to the target problem space

Identify key elements in the inspirational interaction model that contribute to the desired meaning, including actions, means and context. These can be the form of the interactions in regards to the flow and order in how the actions are conducted. It can be the relationships between the people and their actions and other people. By transferring the key elements to the existing interaction model, the meanings should be transferred along with them.

#### 4.4 Prototype and evaluate

The development of the product or service should continue to follow the traditional design process. However, the meaning and actions should be a source of inspiration for developing new microinteractions and interfaces. They should influence the experience strategy of the project leading to the design requirements. The product or service needs to be prototyped and evaluated. Beyond

traditional evaluation, the prototype should also be evaluated to see if the meaning has been transferred to the new context.



**Figure 3. Applying meaningful interactions to existing problem**

## 5. Case Studies

The symbolic interactions tool was used in the classroom environment at The Hong Kong Polytechnic University. The theory and the tool was introduced to the students and were used to develop student projects.

### 5.1 The Hong Kong Polytechnic University (PolyU), Master of Design (MDes) in Interaction Design, Tangible Interactions

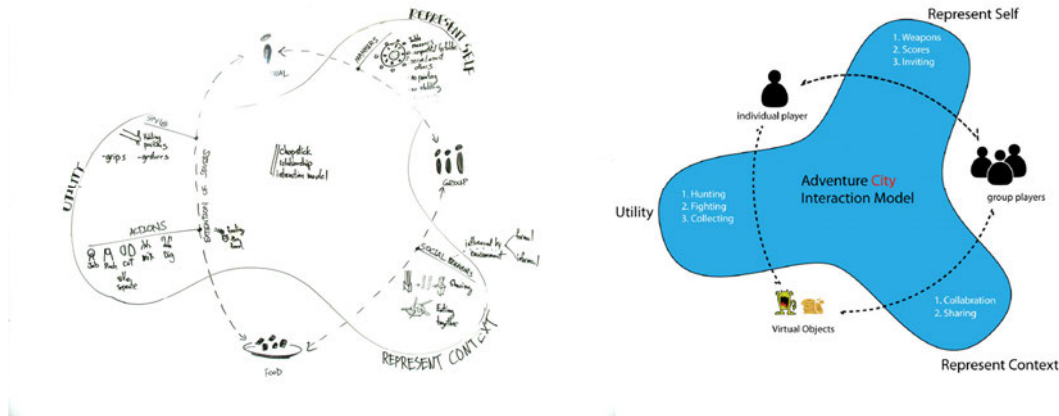
SD5524 Tangible Interactions course at The Hong Kong Polytechnic University, School of Design is a postgraduate level course for Master of Design (MDes) students in Interaction Design. Unlike what the name of the class may imply, the class does not focus on Tangible User Interfaces. Instead, the class looks at making intangible interactions conceptually tangible or concrete.

From the syllabus “This subject focuses on understanding the symbolic nature of the interactions between people and their surroundings, whether they are other people, objects or the environment. These symbolic interactions are a source of inspiration for designing and new forms of interactions. Students will research and analyse cultural customs, traditions, norms, values and rules and the social structures such as position, role, authority and prestige in relation to what people do and how people act toward each other. The learnings will be applied to new contexts in the development of new forms of interactions and interfaces.”

The course is project-based and was supported by lectures, discussions, tutorials and critiques. The course met for three hours twice a week for four weeks for a total of eight sessions. The students worked in teams of three. They were asked to select a meaning and to create an existing interaction model and to identify the five key elements of interaction. There then identified a new situation and its contextual activities and created a new interaction model. They created a new concept based on the new situation and applied the meaningful interactions based on the original inspirations. A final concept video of meaningful interactions and relevant interfaces were developed. Finally each student wrote an individual reflection on the ideas developed in the class.

### 5.2 Student Project 1: Using Chopsticks to Mobile Multiplayer Online Augmented Reality Game

The source of inspiration was how people use chopsticks. The students developed an interaction model that identified three major themes: utility, self representation and contextual representation. These major themes were extracted and applied to an online role playing game that exists in the real world.



**Figure 4. Transferring interactions and meanings from using chopsticks (left) to an online game (right)**

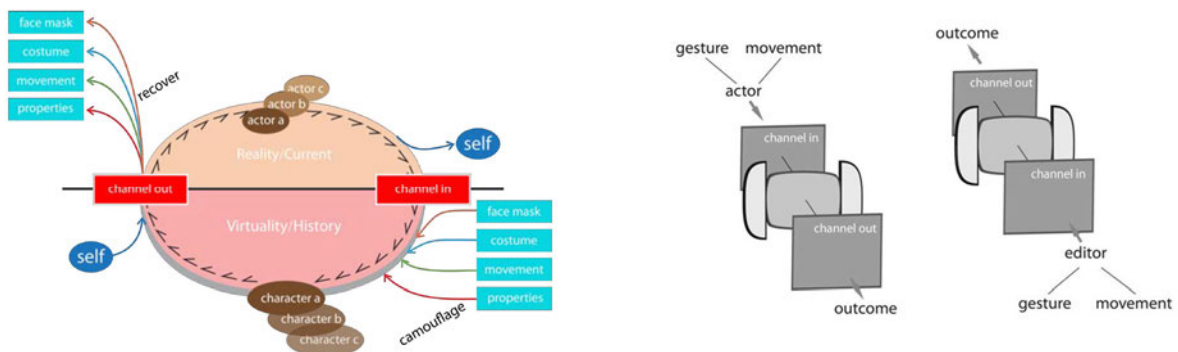
Their new concept was called Adventure City. Players use smartphones and augmented reality to integrate the digital world with the real world. Players interact with virtual objects, characters and enemies in the players' real world environment by expressing them through the phone.



**Figure 5. Title screen (left), players collaborating against a common enemy (middle), objectives (right)**

### 5.3 Student Project 2: Beijing Opera to Taking and Editing Videos

The students selected the Beijing Opera as a source of inspiration. The Beijing Opera is a traditional form of acting in China that combines singing, reading, acting, fighting and dancing to narrate stories. In developing their interaction model, the stage and two doors became a prominent component of the interaction model they developed.



**Figure 6. Transferring interactions and meanings from observing Beijing Opera (left) to an co-creating interactive camera (right)**

FuniMovi is a product and service that allows the photographer and photo subject to create images and manipulate the photos together. The product used gesture sensors to control the product and recognized gestures derived from Beijing opera.



**Figure 7. FuniMovi inspired from Beijing Opera**

## **6. Results**

The case studies showed how the symbolic interactions tool can be used to explore new interactions by leveraging the meaning of actions. The two projects highlighted provided the students with a unique interaction to study and extract interactions and meaning. These interactions meanings were applied to a new context and creating new forms of interactions.

In the case studies, participants were not required to identify connections between inspiration and existent situations. The participants were seeing if the model or meaning could be applied into existent situations to create new forms of interaction. These new forms of interaction may be quite different compared to both inspiration and existent situations.

### **6.1 Student reflections**

“I believe that this development process and skill learned could be very useful in future design and analytical projects.” – Jackson Choi

“Looking at chopsticks from this perspective allowed our team to understand how even the simplest of objects can have profound interaction reverberations, and hence, our major learning from this model was that we could build a concept from simple building blocks and mechanics into an engaging multi-faceted experience.” – Charles Law

“From identify the meaning through human behavior, and design rooted by that meaning, I learnt how to look deep into the symbolic meaning in a design work, how to make a design meaningful.” – Xi Jiutian

## 6.2 Real world applications

Symbolic interactions functions as a tool for inspiration when designing interactions. They can also be used to create added meaning to products and services. They create a stronger tie between existing actions and meanings to new interactions.

## 6.3 Limitations

The current usage of the tool does not identify appropriate meanings and interactions that should be combined into the problem situation. The current examples from the case study does not approach the design process from a human-centered activity design perspective. In addition, the case studies and examples are not real problems.

## 6.4 Further Study

The current study is limited as a exploration of using this approach as a source of inspiration. Additional studies are required to confirm how the inspiration was used and whether the meaning has been transferred. The author also needs to investigate how this method is possibly related to reasoning by analogy. Additional workshops are currently being developed to apply this method to real problems.

## 7. Conclusion

Understanding differ types of human relationships provides designers with new sources of inspiration for designing new and meaningful interactions beyond looking at microinteractions and interfaces. When used correctly, symbolic interactions also become sources of inspiration and innovation for microinteractions and interfaces. By creating connections with meanings and past interactions, we also have the opportunity to connect the past, present and future together.

## References

- Basalla, G., *"The Evolution of Technology"*, Cambridge University Press, Cambridge, UK, 1988.
- Blumer, H., *"The Nature of Symbolic Interactionism"*, *Basic Readings in Communication Theory*, Mortensen, C. D. (ed.), HarperCollins Publishers, 1979.
- Buchanan, R., *"Design as Inquiry: The Common, Future and Current Ground of Design"*, 2004.
- Diller, S., Shedroff, N., Rhea, D., *"Making meaning: How successful businesses deliver meaningful customer experiences"*, New Riders, 2005.
- Saffer, D., *"Microinteractions"*, O'Reilly Media, Inc., USA, 2013.
- Worth, S., Gross, L., *"Symbolic Strategies"*, *Basic Readings in Communication Theory*, Mortensen, C. D. (ed.), HarperCollins Publishers, 1979.

Michael T Lai, PhD Candidate  
Tsinghua University, Academy of Art & Design  
Beijing, China  
Telephone: +86 186 1226 1100  
Email: mike@enlig.ht