Hypnotist Framing: Hypnotic Practice as a Resource for Poetic Interaction Design

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ABSTRACT
Interaction design has noticed that different notions of users reflect different underlying paradigms, ranging from task-oriented operators, cognitive users, to phenomenological individuals. When exploring non-task-oriented interaction such as poetic interaction design, it would be problematic to reduce a person into a specific type of user, as well as to regard an individual as always in a fixed mental state. Hypnosis is a practice known as its ability to make suggestions and to guide imagery by deliberately changing the mental state of a subject. An apprenticeship-based activity was conducted to reveal the perspective and techniques of a hypnotist, aiming to provide a lens through which interaction designers can reframe the relation between users and artifacts. This study sensitizes poetic interaction with Chinese poetry, collects accounts in the field, draws implications, and critically reflects on poetic imagery and guided imagery in a constructive way to enrich the body of knowledge in HCI.

Author Keywords
Poetic interaction design; hypnotism; practice-led design; poetic imagery; guided imagery.

General Terms
Human Factors; Design; Measurement.

INTRODUCTION
There has been an increasing interest in developing various types of interaction design to meet different human needs (e.g. [4,7,8,9,22]). While it has been broadly acknowledged that interaction design would get much benefit from constructing interactive artifacts beyond only delivering problem-solving products, researchers start to explore new roles for artifacts in relation to users. Gaver [7] believes that defining humans as playful creatures is an antidote to the task-oriented tradition of products. In the paradigms of HCI, the given roles of users are shifting from task-performing, cognitively adapting, to phenomenologically situated individuals [10]. Furthermore, critical design invites users to rethink upon specific topics with a critical mind, emphasizing the importance of knowing by questioning. The scope of critical design covers from social, political, gender to other norms, and thus spurs reflection and discourse from a critical perspective [4]. These growing trends gradually unleash the limits to users and encourage users to be more involved in the interaction apart from merely focusing on functionality and usability. Most of the previous studies consider conscious introspection as the main approach for users to think, understand and experience the interaction with the given artifacts. However, human-artifact interaction can be enriched in many different ways due to the fact that human nature is joyful, poetic, and spiritual [7].

In the present paper, we explore a new form of interaction—poetic interaction, which invites users to create poetic imagination rather than initiating critical thinking. Poetic interaction design encompasses a class of interactive objects beyond instrumental purposes, aiming to elicit poetics in our everyday lives [17]. Since poetic interaction is regarded as an ontology that highlights imagination and association, the obtained experience can be different from person to person. It seems too ambitious trying to design a product that can induce poetic experience in all users [18]. Instead of applying positivism which relies on objective observation among general population, we propose to adopt a constructive approach to investigate poetic experience. Moreover, it needs to be noticed that mental states are important for inducing poetic experience. Although critical minds benefit rational meaning-making, to some extent it might limit the development of imagination and association. In this paper, we attempt to explore other mental states that are more open for poetic experiences. Drawing on the fact that hypnotism is known as an art and practice mastering in changing mental states, this study was undertaken in order to understand how a hypnotist frames human behaviors in terms of underlining mental states, which could be useful for grounding the basis of poetic interaction design.

The primary questions to be addressed in this paper are as follows: What is the mental state when we experience poetics? What is the characteristic that differentiates poetic interaction design from other interaction designs? How
does the experience of reading poems inform us to design ‘embodied poetics’? What is the similarity between a man in a hypnosis state and a user experiencing poetics? How does a hypnotist frame the world? How can the hypnotic perspective as well as techniques inform interaction design?

The remainder of this paper is structured as follows: we start from describing our research method. This is followed by a section sensitizing poetic interaction with illustrative examples of selected Chinese poems, as well as some conceptual discussions. Based on this understanding from poems, we performed an empirical study to investigate the mental states of experiencing poetics through physical practices in hypnosis and master-apprentice conversations with a professional hypnotist. According to these findings, we extract implications for poetic interaction design. In the next section, we have an overall discussion. Finally, the conclusion is drawn.

METHOD
This paper argues that in order to investigate poetic experience, not only the subjects who experience poetics are necessary, but also the researchers would get inspired and sensitized by self-experiencing poetics. Therefore, seeing poetic interaction design as a constructivist project, the researchers should passionately participate in the process of constructing meaning. To shed some light on the possible construction of poetic interaction design, personal/subjective observation, thoughts, stories, skills are embraced as a way of understanding the felt experience of poetics. Thus, a reflexive description of how and when poetic experience gets deeper within our cultural background might contribute to the understanding of poetic phenomena. This reflexive understanding also prepares us for seeking potential practice to better reframe poetics.

When researching such an abstract and phenomenological notion, poetics, we had a chance to meet a hypnoterapist, Ben, who is an NGH (National Guild of Hypnotists) certified instructor and conducted an empirical study that includes self-observation, master-apprentice conversation, and reflexive investigation [1]. The first author took part in several hypnosis sessions and a following two-month of apprenticeship of hypnotism. This auto-ethnographic approach helped us self-reflect on personal experiences and relate hypnotic practice to a broader and deeper understanding of eliciting poetic imagery in interaction.

REFLEXIVITY ON POETICS
Rather than giving a definite conceptual framing of poetics here, we embarked on investigating poetics with reflexivity. Based on the premise that knowledge cannot be separated from the knower with a reflexive approach highlighting the researcher being aware of her effect on the process of research [1], we first retrospect the socio-cultural root of poetics in Chinese culture. Two of the most popular ancient poems in Chinese culture are introduced as examples to elaborate how poetic experience emerges in the context of Chinese language. This allows us to build a common ground for understanding poetics from a cultural perspective.

Slight Strangeness in Collocation
Natural scenes are popular themes in Chinese poetry. ‘A River Scene in Snow’, authored by an ancient Chinese poet in about A.D. 803, Zong-Yuan Liu, is famous for its image of quietness, tranquility, and loneliness in a form of pastoral-like beauty. The translation from Chinese to English is somewhat difficult because every Chinese character in a poem is pictorial and thus ambiguous not only in its semantics but also its syntactic functions. A proximate translation might be as follows:

Birds vanish from hundreds of hills.
Footprints disappear from thousands of trails.
In a lone boat, clad in cape and hat an old man is,
Solitarily fishing on a cold river in snow.

However, this translation is based on rational interpretation of the syntactic functions of characters in this poem. For instance, if the characters ‘river’ and ‘snow’ do not function as adverbs in the fourth line, this part could be interpreted as:

In a lone boat, clad in cape and hat an old man is,
Solitarily fishing a cold river of snow.

Also, if the character ‘boat’ in the third line functions as a verb, the image changes as:

Lonely boating, clad in cape and hat an old man is,
Solitarily fishing a cold river of snow.

Because of the ambiguity of wording in an ancient poem, people nowadays usually make sense of it through descriptive interpretation. The first version above is the most seen interpretation of this ancient Chinese poem. Indeed, the last translation above is the most literal and straightforward one almost in line with the character sequence, but it is rarely understood as so for over a thousand year. Most people need a reasonably instrumental description of a scene, which might lead to an understandable sentence like “an old man is catching fish on a cold river in snow.” This instrumental description provides only a prosaic understanding without any poetic interest. However, a poetic imagery might vividly emerge by accepting the straightforward sentence: “an old man is fishing snow,” which is illogic, absurd, and irrational, yet ludic, imaginative, and poetic. “Fishing snow” creates slight strangeness in the collocation of the verb ‘fish’ and the object ‘snow’, actively stimulating our poetic imagination and the will to make sense of such unfamiliar and irregular things.

This example creates not only a new collocation, a fresh metaphor, and a new verb, but also an endless questioning toward such a poetic, unknown situation on a snowy river.
According our previous work [17], we refer to the type of interaction design based on fresh collocation creation as one providing function imagination, where interaction creates new functions to materialize the relation of an action and an object. The strength of such imagination comes from the fact that interactive technology could embody almost every collocation in a literal sense. However, this does not mean that physically materialize ‘fishing snow’ would be a good poetic interaction design.

**Gestalt & Expression Imagination**

Juxtaposition of scenery description often appears in Chinese poetry. ‘Autumn Thoughts’ by Zhi-Yuan Ma (A.D. 1250 – 1321) is a great exemplar most cited and discoursed in the socio-cultural background the authors situated. We attempt to translate it literally as follows:

Withered vines, old trees, crows at dusk,
A tiny bridge, a rippling steam, cottages
Ancient routes, west wind, a lean horse,
The sun is setting,
The heartbroken one at the end of the world.

To experience the poetic image created by this poem includes not only examining every separate item above, nor appreciating the possible dynamics between items, but also imaging what are not described in the poem. Through the unspoken part of this poem, the poet intended to elicit greater poetic imagination, where Gestalt psychology might provide a frame for understanding such phenomena. This type of poetic imagination majorly comes from intentionally blanked expression to evoke readers’ expression imagination [17] upon which we vividly participate in making meaning. Expression imagination also echoes the notion of Zensign [15], indicating that what is not designed is as important as what is designed.

**PREVIOUS WORK ON FRAMING POETIC INTERACTION**

Drawing on Verplank’s practical framework of interaction design majorly encompassing motivations, meanings, modes, and mappings [24], we have reframed interaction design according to our practical needs of communicating in the design discipline into four aspects: material, expression, function, and form [17]. Material, both literally and metaphorically, indicates physical matters and conceptual ideas to inform interaction design; Expression denotes a general and abstract description of how interaction performs within a scenario; Function indicates the task enabled by a certain interactive technology; Form includes representation, appearance, manipulation and its corresponding movements in interaction. In our framework, interaction design could be performed as an iterative process of investigating material, crafting expression, enabling function, and giving form. Regarding poetic interaction as an ontology of imagination relating to the four aspects of interaction design, we have proposed a practical framework for analysis and ideation, which includes four types of imagination to elicit poetic experience: material imagination, expression imagination, function imagination, and form imagination [4]. Each type refers to a specific source that stirs imagination. For instance, form imagination recognizes ‘form’ as a source for evoking imagination. Thus, poetic interaction design concerns how to stimulate poetic imagination consisting of one or more types of imagination above. Of notice is that one type of imagination might play a dominant role of eliciting poetic imagery over the others. Instead of providing a conceptual definition of poetic interaction, this framework suggests a practical examining of poetic image by identifying four types of imagination described above. This framework also helps designers construct pragmatist poetics in terms of materializing poetic imagination with interaction design language.

**Pragmatist Framing of Poetic Interaction Design**

Vico claims that poetics is a human nature, including elements such as curiosity, imagination, fear, wonder, and superstition [25]. Vico also sees imagination as the center of poetic characters and in our prior work we have followed this viewpoint [17]. Although the meaning of poetics varies in different contexts, there is a need to frame poetic interaction design discussed in this paper.

To provide an opportunity for relating poetics to interaction design within HCI research, we pragmatically frame poetic interaction design with a purpose of operational reference. Poetic interaction design encompasses two features: It delivers artifacts for embodied interaction; it evokes poetic imagery – a felt sensory experience of poetics elicited by artifacts, as poetry does.

**WHY HYPNOSIS?**

Obviously, the mental state and mindset of experiencing poetic interaction is quite different from those of other interaction designs. Interaction design addressing functionality requires an instrumental mental state, while usability requires a cognitive one. Ludic design appeals to the sense of humor and playfulness, and critical design stimulates critical one. As Bachelard conceived an ontology that thrives not only on reasoning but also imagination [3], poetic interaction needs a mental state of users highlighting imagination. Furthermore, imagination – the act of imagining, should not be regarded as a pre-defined activity or product to deliver. The above reflexive experience of poetics and pragmatist framing provide an insight that successful poetic interaction design depends on whether poetic imagery is experienced. In search of a practice that masters in guiding imagery and changing mental states of people, the first author encountered hypnotism [23] and a following apprenticeship of learning it.

**WHAT IS HYPNOSIS?**

In our impression, hypnosis usually indicates that one person is guided by another (the hypnotist) with suggestions made in a special mental state resembling sleep. By asking a certified hypnotist, Ben, his definition of hypnosis showed
how a skillful practitioner applied his professional perspective over everyday life:

Hypnosis is a special mental state that frequently appears in our daily life. We slip into and out of this state for many times in a day unconsciously, you know? Someone named it ‘micro-hypnosis’ and found evidences in the corresponding brain waves. That is, if a subject wears a brain-wave detection device for a whole day, you can easily judge how many times the state of micro-hypnosis appears. This is what I see hypnosis in a broader sense: a state of hyper-suggestibility. Of course, we have techniques and skills to deliberately induce a person into such a mental state very quickly. Basically, hypnosis happens very often to everybody in our daily life.

According to the response, hypnosis is a mental state that accepts suggestions easily and deeply. However, when a person gets into a micro-hypnosis state, it does not mean that she definitely fall asleep.

**Bypassing Critical Mind**

In general, the conscious mind is responsible for critical thinking, and the subconscious mind controls our body and responds to those messages passing through critical mind. You know what I mean? We hypnotists talk to your subconscious mind rather than the conscious mind. Deliberately using inductive methods, hypnosis process deactivates critical mind so that suggestions can affect our subconscious mind.

Ben also thinks that a hypnotist always creates dialogues with the subconscious mind of an individual, while tacit knowledge in practice helps detect whether one is in a proper state of starting dialogues. Regarding such dialogues as effective communication, Ben developed a different communicative skill that does not challenge or persuade people in their conscious phase not only in a studio but also in our everyday life.

If you want to persuade somebody, you have to say ‘acceptable words’, or you just waste you time fighting with the conscious mind. And the result is that, a conscious mind often gets stronger when facing challenges. Different signs, body language, facial expression, dynamics, and fluency of a dialogue will reveal whether communication goes smoothly. “A picture is worth a thousand words”, and indeed, we can provide such a picture with verbal suggestions.

The reflection of an interaction designer is how to design ‘acceptable interactions’ to successfully convey the core idea. Furthermore, in terms of persuasive design and other behavior-changing design, how to create fluent dialogues as well as successful suggestions might indicate an alternative way of communication beyond critical mind.

**Imagination**

If you want to empower a suggestion, you should try to make it acceptable by the subconscious mind rather than by ‘will power’, since will power would further activate conscious mind and suppress subconscious mind. Whenever an idea in the subconscious mind conflicts with will power, as you often see, the idea definitely wins. For example, the idea of falling makes walking on a narrow board 2000 feet above difficult even though the same board is big and safe enough when walking near the ground. Why? The more you try to avoid falling with will power, the stronger your fear grows. Imagination, together with its emotion, stimulated from an idea in the subconscious mind, would often become much stronger. You know why? Our subconscious mind is about 88 to 99 percent of our total mind power, in contrast to our conscious mind, 1 to 12 percent. Remember that subconscious mind is where our imagination and expectation reside. Thus, in my experience, whenever imagination conflicts with will power, imagination wins.

While imagination is one of the human nature, also being at the center of poetic interaction design [17], we find an insight from the above quotes: poetic interaction design would probably fail from the start if it only appeals to conscious mind, critical mind, or will power, where rationality dominates over imagination. Imagination centered design should consider how to bypass the critical mind, 1 to 12 percent of our total mind, and appeal to the powerful and dominant ability in our subconscious mind. Gaver’s advocacy of ambiguity as a resource for design [8] could be understood as encouraging imagination while making meaning.

**Suggestibility**

Whether an individual is easy to get hypnotized depends on suggestibility, the degrees that one listens to and accepts the suggestions. Hypnosis is a state of heightened suggestibility with concentrated attention. In such a state, the subject will not reject suggestions given by the hypnotist. Usually if a smart individual wants to experience hypnosis, she will go into the state very quickly because she is used to getting concentrated. Also, imaginative people are more inclined to be suggestible.

Different levels of suggestibility refer to a diversity of subjects’ abilities. Concentrated and imaginative people usually show a higher level of suggestibility under a proper process of induction. Moreover, three different types of suggestibility (emotional, physical, and intellectual suggestibility) further indicate that people are variably abled in their nature. In interaction design, we usually assume that users are equally abled and there is a universal principle of ‘emotional design’ to evoke similar emotional experience. Therefore a generalization of user experience of using emotional design artifacts might neglect the fact that users are essentially of different types of mental ability. In short, people with intellectual suggestibility might never be able to appreciate or to feel an emotional design artifact. Similarly, investigating poetic interaction experience should first notice subjects’ difference in mental ability. With this
in mind, poetic interaction study might encounter some subjects who do not experience poetics not only because the design might fail to elicit poetics but also they might never feel poetics in their whole life even if given outstanding poems.

TECHNIQUES IN HYPNOTIC PRACTICE

Resonance

The first thing is to create resonance between you and your subject. Synchronize your inhalation and exhalation with the subject as possible. Once you are aware of the breath, you can give instructions in a more efficient way. For example, the instruction ‘Relax!’ given in exhalation works better than in inhalation since exhalation is naturally a relaxing process. Intentionally asking the subject to do what she has just already done also creates confirmation that she believes your instruction made it happen. Give the instruction, “Please sit well and put your hands on your thighs,” right after you observe that the subject has just performed the above actions. The more resonance you create, the easier a subject gives up resisting.

The notion of resonance in Ben’s sense is to make the subject feel that she has listened to the hypnotist’s instructions and has performed accordingly. Resonance implies that the hypnotist gets ‘in tune’ with the subject and the confirmation appears repeatedly. While resonance creates familiarity and sense of security, the subject will immediately persuade herself into relaxation, which prepares the subject for a higher suggestibility. If we embed this notion of resonance into an interactive artifact, the role of the artifact would be actively getting ‘in tune’ with a user, instead of passively waiting for I/O instructions. Poetic interaction design might also communicate better if resonance and possible suggestibility are made ready. This notion of resonance into an interactive artifact, the role of the artifact would be actively getting ‘in tune’ with a user, instead of passively waiting for I/O instructions. Poetic interaction design might also communicate better if resonance and possible suggestibility are made ready. This

Overload of Message Units

We hypnotists are very sensitive to the limit, the tolerance level of message units received by an individual. All data received from the surrounding environment, the body, the conscious mind and the subconscious mind are called message units. When the critical mind is overloaded, I mean saturated, with message units, one might feel overwhelmed. When reaching such a saturation point, one might become overwhelmed and hyper-suggestible. Environmental hypnosis is created by an overload of message units. Therefore, in my studio, sandalwood incense, meditation music, and huge size posters on the wall create an overload of message units for a new comer to slip into environmental hypnosis. In addition to a hypnosis studio, religion space, for instance, a temple with Buddhist chanting, and natural environment like a forest with soothing wind are common examples of environmental hypnosis.

How to create an overload of message units is regarded as an important technique of hypnosis, since the skill, requiring a sophisticated sense and practice about each individual case, would quickly make our critical mind give up the power of control and interpretation. ‘Overload’ does not necessarily indicate more things or information appearing in our surroundings. In a broader sense, unknown situations, disappearance of what ought to appear, contradiction, and incompatible notions would all create pressure and anxiety for understanding. The more pressure sensed, the more message units are created, and the more our critical mind tries to analyze and reason until it can no longer control the input message units. Thus, something beyond logic and reasoning takes over, opening a possibility for imagination, intuition, and impression. In Kahneman’s terms [12], system 2, which is responsible of logic reasoning and operates with effort, gets too tired and gives up.

While the notion of ‘overload of message units’ is to put a subject in the state of hyper-suggestibility, interaction design might take this notion as a design resource for what emphasizes imagination, such as poetic interaction design. Deliberately employing incomplete expression or contradictory function-form mapping would create pressure for users to interpret, which might further accumulate to reach an overload point that the subconscious mind takes over our mind and prepares a proper mental state where imagination, intuition, and association dominate over logic reasoning.

Metaphor

When making suggestions, metaphor is a very powerful communication tool drawing on our association nature. A Chinese idiom, ‘looking at plums to quench the thirst’, serves as a good example to show how the impression of an object can quickly stimulate physical response. You got to know that metaphor is the logic of the subconscious mind with very fast and rich association. A proper metaphor saves your time while creating rich images. Since the critical mind subsides, not only imaginative metaphors but also illogical statements could be acceptable and work well, and above all, much faster than rational words. For instance, “feel that your body is getting lighter and lighter as a balloon sinks into the mud.” Something ‘as light as a balloon’ might never get heavy enough to ‘sink into the mud.’ However, this suggestion could bring a subject very quickly into a deep relaxing state no matter how illogical it is.

Ben himself is good at using inconsistent metaphors in suggestion and daily conversation for the purpose of communication as well as rhetoric richness. Metaphor in suggestion making could be in a way of mash-up instead of communicative concerns of cognitive consistence in interface design. Poetics usually result from ‘fresh
metaphors’ aiming to elicit a vivid poetic imagery rather than rational similarity between metaphors and facts. Therefore, if poetic interaction design applies imaginative or even illogical metaphors for the poetic imagery, it could resemble how hypnotists suggest to subjects with metaphors. Appropriately mashing up metaphors could be a good way when designing poetic interaction.

Relating metaphor to our previous framing of interaction design with Fishkin’s analysis [6], four aspects of interaction design encompass various types of metaphors. *Poetic form* might adopt a ‘noun metaphor,’ *poetic function* a ‘verb metaphor,’ *poetic material* ‘no metaphor,’ and *poetic expression* a ‘noun + verb metaphor’ or ‘full metaphor.’

**Ambiguity**

When a thing has multiple meanings, our normal mind will try to find out the intended meaning. We try to figure out a proper explanation that best meets the situation or context we encountered. Thus, due to the limited resource of our attention, ambiguity holds the conscious mind. Deliberately using ambiguity to confuse and engage the conscious mind of a listener, a hypnotist can do the real work, while the conscious mind being engaged. As I have mentioned, hypnosis is to directly make suggestion to the subconscious mind, ambiguity creates a situation to engage the conscious mind, and thus to bypass it. In other words, ambiguity keeps the guard busy so that suggestion can slip into the subconscious mind. Another technique I often use is called ‘buy-one-get-one-free.’ I would say a sentence with ambiguous meanings and then immediately another sentence with precise meanings. Repeating this pattern for a few times would keep the conscious mind busy and confused so that I could quickly create a hypnosis state.

When a listener feels the anxiety for interpreting an uncertain thing, the conscious mind almost immediately and automatically embarks on engaging in meaning-making. Drawing on such a human nature of always seeking meanings, a hypnotist often uses vagueness as a resource and masters in the skill of balancing ambiguity and precision of verbal instructions in the induction process. In interaction design, Gaver and his colleagues suggest that ambiguity can be seen as an opportunity and a resource for design [8]. Benefits such as *staying open to interpretations* are discussed and three types of ambiguity are empirically identified: ambiguity of information, ambiguity of context, and ambiguity of relationship. However, in a hypnotist’s framing, ambiguity is not only regarded as a resource for design and interpretation, but also a powerful method to change the mental state of an individual. Therefore, if we want to receive benefit of ambiguity in terms of changing mental states for poetic interaction design, tacit knowledge of a hypnotist composing ambiguous instruction might provide another perspective on how ambiguity works.

Based on our previous framing of poetic interaction in four aspects [17], here we identify four types of ambiguity in interaction design. *Ambiguity in material* indicates the unusual usage of a material in an artifact to provide a sense of slight strangeness. *Ambiguity in form* refers to the shape of an artifact intended to be open for multiple interpretations. *Ambiguity in function* enables users to perform a certain task that the purpose or the goal of the function is ambiguous. *Ambiguity in expression* represents an expression intended to be unfinished or incomplete, staying open to interpretation and meaning-making. Four types of ambiguity offer a framework to analyze where the ambiguity occurs as well as where to deploy ambiguity. Drawing on the above ‘buy-one-get-one-free’ method, an ambiguous sentence followed by a precise one, a successful poetic interaction design might design ambiguity in only one or two aspects rather than an artifact with all four types of ambiguity. Regarding temporal factor in interaction process, an ambiguous output followed by a precise output might create a sequence of interaction inclining to changing mental states of users. Such a sequence might prelude an interaction that attempts to convey poetics.

**Anchoring**

Basically I use everything as an anchor: words, objects, movements, and body gestures. Anchor provides a focus for discussion and imagination. Better suggestion techniques encompass asking ‘whether something is over or under’ an approximation (an anchor) you offer, rather than asking ‘what can you tell us.’ In a broader sense, if I offer something before I make suggestion, be it imagination, a fact, an approximation, body movement, audio, or an object, I see it as an anchor that we can concentrate on.

For Ben, setting anchors is an effective skill to provide guidance in our relative if not completely subjective life world. Because we are better at relative thinking than absolute thinking, the first thing coming into our mind will become a focus (consciously or unconsciously) to influence our decision. If we personify an interactive artifact as a hypnotist, the lesson we learned might include asking how the overall features of an artifact as well as surrounding contexts set anchors of poetic impression and how each interactive function or a sequence of interaction can be anchored to a poetic imagery. For instance, the following lyrics by Laurie Anderson (1982) cited in Science Poem Manifesto [20] illustrate how poetic sentences set anchors on interpreting and poetizing a line of program code:

*It’s a sky-blue sky.*

*Satellites are out tonight.*

*Let X = X.*

The very usual logic formula ‘X = X’ here expresses a great sense of poetics only because the first sentence sets an anchor for unusual interpretation with tautology. Therefore, we see two possibilities of anchors in interaction design:
First, anchors from contextual settings and precedent events might transform a prosaic interaction into poetic one. Second, an impressive poetic interaction design might act as an anchor for other designs that are originally prosaic [18]. Our previous work demonstrates how poetic interaction design transforms the impression and association of everyday objects, from functional and instrumental impressions, to imaginative and poetic ones.

**DESIGN IMPLICATIONS FROM HYPNOTIC PRACTICE**

From the above accounts of apprenticeship, we understand that hypnotism has developed theories and practical techniques in detail for guiding people with suggestions. The lessons learned from hypnotic practice could shed some light on the human-artifact-communication, especially in poetic interaction design. Hypnotic practice, as a means of guiding people into a proper mental state before communication, offers designers a great insight into the human—artifact—communication, especially in poetic interaction design. Hypnotic practice, as a means of guiding people into a proper mental state before communication, offers designers a great insight into experience of poetic interaction. If we regard an interactive artifact not only as a passive object providing functions and services but also as an active subject interplaying with a person who naturally gets into different mental states, the following implications we draw from hypnosis would offer a resource for poetic interaction design.

**Poetic interaction could start from resonance**

The first lesson we learned from hypnosis is to get in tune with an individual before communication starts. In order to make a person feel accepted, an interactive artifact could actively create ‘in-phase’ conditions between itself and a person as an initiating phase for further interaction. Resonance might range from physical senses, mental evocation, to ideological understanding. For instance, making LED blink resembling the rhythm of breathing is not only an expressive way representing organic beings, but also a reflexive method to remind a person of her own breath. This physical resonance induces a person into a safe and familiar state rather than a resistive one. Regarding a poetic design artifact as guidance for imagination, building resonance first between the artifact and a person could be a significant feature for further interplay. In addition to pre-recorded patterns (the average breathing tempo or 4Hz brainwave as most hypnotists suggest), the challenge of creating more intelligent and interactive resonance might indicate advanced sensing technology to capture bio-signals to get ‘really in tune’ with a user. Moreover, displaying two artifacts (or two systems) gradually getting in phase appears to be effective to stimulate the will to resonate.

**Deliberately use multiple sensory elements without consensus**

Our mind is good at concentrating on a single sense at a time. In order to create an overload of message units as a hypnotist does, we can offer multiple sensory elements simultaneously. Rather than presenting a consistent idea composed of different sensory elements as a common ‘multimedia’ work does, poetic design could present inconsistent or even contradictory ideas through different senses. For example, Block Lamp by Harri Koskinen deliberately presents a sensation of contrasts, light and ice, in visual and tactile senses respectively [14]. When we perceive two or more undeniable sensory facts, our mind might suddenly feel powerless to reason and explain and thus our conscious mind might give up because of an overload of message units. Our previous work, Scentonight (see Figure 1), is another example employing senses of smell, sight, and hearing simultaneously [18].

**Figure 1. Scentonight prototype: a nightlight with ambient notification of light, scent, and sound [18].**

**Boldly apply metaphors of different types in a mash-up style**

In contrast to interaction design with metaphor for usability, we advocate a bolder use of metaphors for poetic interaction design. Noun metaphors and verb metaphors as well as their composition could be mashed up to create powerful imagination. One of the most promising potentials of interaction design is to embody poetic metaphors by creating new verbs in an interactive artifact.

**Figure 2. Tech Tap by PEGA D&E [19].**

For example, Tech Tap by PEGA Design [19] allows users to ‘take a bottle of jazz music and soft light’ to any space (see Figure 2). Putting the ‘bottle’ under the ‘tap’ gets music and light that will ‘evaporate’ gradually as time goes by. The above literal description of using such embodied metaphors has created novel collocations that invite us to make poetic imagination. “Would you like a bottle of jazz” becomes a fully embodied experience in addition to rhetoric. A practical method to use verb or noun metaphors can be found in the above case. Remember that in a hypnosis state, even wild ideas based on conflicting metaphors can be accepted. Therefore, when this state is elicited, poetic interaction can convey richer imagination by composing fresh and vivid metaphors, instead of using cognitive metaphors with behaviorist’s concerns. However, slight strangeness still sets a subjective standard to differentiate poetic metaphors from pedestrian ones. Also,
void. Similarly, juxtaposition of nouns in the ancient audio through cell phone, while other aspects are obvious or unexpectedly receiving a time capsule made of personal expression only, characterizing the serendipity of Another work, SoundCapsule, creates ambiguity in placement, while the other three aspects are obvious [5]. ambiguity in form, creating affordance for each rotational Twins (see Figure 3), a multi-functional lamp, only adopts though a person tries hard to interpret. Our previous work ambiguities in a work would fail to create meaning even in a poetic interaction. In other words, too many expression. In addition to deployment in four aspects, ambiguity and precision could also appear one another in sequence in the hypnotist Ben’s sense.

Purposefully deploy ambiguity in four aspects of interaction design
Poetic interaction design could adopt ambiguity not only seeing it as a resource for design and openness for further interpretation as Gaver et al. advocate [8], but also regarding it as a means of altering our mental state for better suggestibility as the hypnotist Ben taught. Based on our framework of interaction design [17], we suggest that poetic interaction experience can be elicited by appropriately deploying ambiguity in four aspects of interaction design: ambiguity in form, ambiguity in function, ambiguity in material, and ambiguity in expression. In our empirical investigation, most people would only accept one or two ambiguities among the four in a poetic interaction. In other words, too many ambiguities in a work would fail to create meaning even though a person tries hard to interpret. Our previous work Twins (see Figure 3), a multi-functional lamp, only adopts ambiguity in form, creating affordance for each rotational placement, while the other three aspects are obvious [5]. Another work, SoundCapsule, creates ambiguity in expression only, characterizing the serendipity of unexpectedly receiving a time capsule made of personal audio through cell phone, while other aspects are obvious or void [11]. Similarly, juxtaposition of nouns in the ancient poem above shows clarity in describing scenery objects, but ambiguity in expression. In addition to deployment in four aspects, ambiguity and precision could also appear one another in sequence in the hypnotist Ben’s sense.

Figure 3. Twins [5].

Set temporal and spatial contexts as effective anchors
What we provide surrounding an interactive artifact constitutes a proper ground for interpretation. A urinal intentionally anchored by the atmosphere of a gallery as Duchamp’s Fountain would definitely discriminate itself from what is situated and anchored in a rest room. In hypnotist Ben’s words, anchors are whatever you provide as references. Poetic interaction design has rarely discussed this notion: anchors would greatly determine whether poetic experience is elicited. This notion highlights the importance of surround contexts, be it written script of a poem, poetic landscape, lyric melody, antiques, and so on. ‘X = X’ is regarded as poetic only if anchored by precedent sentences. A near cliché ‘The heartbroken one at the end of the world,’ would not be seen as poetic if there were no anchors set by its precedent sentences.

REFLECTION ON THE POETIC IMAGERY
After framing the contour of poetic interaction design, the focus should go back to the heart of poetic interaction design: what is the experience of poetic? Imagery in poetry is regarded as the backbone of a poem and generally refers to the elements that create pictures in our mind. Poetic imagery thus indicates a combination of words that spark off the senses. How poetic imagery vividly evokes poetic experience makes us reflect on how imagery could be perceived and guided by an interactive artifact. In the therapeutic field, guided affective imagery (GAI) is a special technique that involves the emotional aspect of unconscious mind [16]. GAI also starts with a mental state similar to hypnosis. The subject paradoxically seems to be living in the fantasy while she is still consciously aware of the real life context. The mental states of the subject are floating between the conscious and the unconscious mind, constructing the experience of a ‘quasi-reality’ [16]. This experience is also similar to a common experience of daydreaming. When the subject reaches this mental state, the facilitator would then give a series of neutral themes for the subject to imagine. The subject is encouraged to visualize the theme through verbal description or painting. The GAI session is an intimate one-on-one conversation between the subject and the facilitator. The subject is fully relaxed to follow the guidance of the facilitator. As a result, the subject would be able to visualize the neutral themes in a way to express her emotional states.

Again, we see a strong connection between the experience of the ‘quasi-reality’ and the poetic experience, the predefined theme and the designed artifact, and the role of the facilitator and designer. The final presentation of the design artifact, as the final visualization of a GAI session, usually attracts the most attention, but we are more interested in the convergence of this interactive conversation between the facilitator and the subject, i.e. the interaction between the design artifact and the user. We argue that the poetic experience is not only a momentary glimpse but also an ongoing conversation that intimately converges between the user and the design artifact. When the user accepts the invitation to the ‘quasi-reality,’ this conversation starts. The artifact, as an embodiment of the designer’s will and an implementation of the theme, guides the user to improvise to construct the poetic imagery. This conversation continues to occur when the user attaches to the quasi-reality of the artifact. Therefore, poetic experience is a cumulative phenomenon that keeps changing every time the user engaged in the conversation.
DISCUSSION
Since Kolko coined the term, poetic interaction design, it is usually regarded as a type of interaction design with a vague impression that causes reflection and highlights the emotional awareness [13]. In Kolko’s view, poetic interaction places much more emphasis on immediate or later reflection and emotional awareness rather than immediate feltness of perceiving a poetic imagery. This emphasis not only conflicts with the understanding that reflection is a reasoning activity about poetic moment rather than of poetic imagery itself, but also neglects the point that human ability of perceiving and creating the poetic imagery constitutes the major part of poetic experience. On the other hand, Bachelard’s phenomenological stance toward poetic imagery is very clear, asserting that a sincere impulse toward admiration is always necessary if we are to receive phenomenological benefit of a poetic image [2]. Based on the assumption that people could perceive the poetic imagery emerged from the language a little above signification, Bachelard further advocates living the poems we read.

Acknowledging the above conceptual exploration and philosophical discussion, this study has shown an alternative way of searching for practical knowledge and further implications to inform poetic interaction design practice while concentrating on the core of poetic experience: making the poetic imagery perceivable. Understanding how the imagery can be practically perceived and created became our underlying compass guiding us into noticing related practice. Thus, the encountered activities, such as experiencing a hypnosis session and daily discussion on famous poems provide interaction design researchers empirical materials for this study. Instead of examining the Western theory of poetry to get sensitized, the authors embarked on reflexive reflection on what are mostly concerned as exemplars in the authors’ socio-cultural contexts. Furthermore, drawing on the knowledge about different mental states of an individual and the techniques of guiding imagery, hypnotic practice provides a lens to understand users in more detail, which could definitely contribute to interaction design highlighting imagination rather than practicality.

This apprenticeship experience is not intended to build a rigorous psychological study to inform interaction design, nor is it possible to draw generalization to form a foundation for poetic interaction. It is neither our intention to argue that hypnosis is an academic discipline in psychology, nor is it our concern to investigate its therapeutic use. A pragmatist stance makes us explore how hypnosis frames people and how imagery is guided. Regarding interaction design as a constructivist paradigm while still continuing construction, we seek all practices relevant to poetic interaction by sensitizing the researchers first and then trying to make sense of the emerging activities in our everyday life world. By exploring a possibly relevant practice and changing perspectives from the other side, we offer poetic interaction design a different way of framing the relation between users and artifacts, creating a new opportunity in HCI.

Limitations of this research include the ethics issue in the context of interaction design. Although we gain insight into how hypnotic practice could inform interaction design instead of creating assistive devices for designers to purposefully hypnotize users, applying implications from hypnotic practice might still raise the question of ethics whether guiding users by controlling subconscious mind is proper. If an interactive artifact intentionally serves as an assistive device for hypnosis (as usually employed by a hypnotist), this ethics issue absolutely needs to be carefully addressed, such as imitating the wake-up process at the end of a session. However, there is not enough evidence that such an interactive artifact could create hypnosis state to an extent as a hypnotist does with an assistive device, nor does it allow us to completely ignore this ethics issue so far. We see a continuing need for carefully tackling the ethics issue of applying hypnotic practice in future investigation.

CONCLUSION
This study sensitizes poetic interaction design with a reflexive description of Chinese poetry, reveals hypnotic practice by passionately participating apprenticeship-based activity, provides design implications through a hypnotist lens, and makes critical reflection on the relation between poetic imagery and guided imagery.

Through accounts of master-apprentice conversation, notions of hypnosis, including bypassing critical mind, imagination, and suggestibility are revealed. Practical techniques of hypnosis are further explored and summarized as: resonance, overload of message units, metaphor, ambiguity, and anchoring. Hypnosis is thus understood as a practice interested in altering mental states and making suggestions with imagination. Relating the tacit knowledge of hypnotic practice to poetic interaction design, we propose five design implications:

- Poetic interaction could start from resonance.
- Deliberately use multiple sensory elements without consensus.
- Boldly apply metaphors of different types in a mash-up style.
- Purposefully deploy ambiguity in four aspects of interaction design.
- Set temporal and spatial contexts as effective anchors.

Reflecting on the felt poetic experience, we recognize that poetic imagery is still at the center of poetic interaction. Making imagery perceivable seems to be a dominant factor over other qualities such as functionality, usability, pleasure, criticality, and aesthetics, when designing poetic interaction. Guided imagery therefore might have great potential in modeling poetic interaction as well as
contributing meaningful methods to the design program emphasizing imagination in HCI.

This paper offers interaction design a specific lens from hypnotic practice, seeing the mental state as an important factor when framing users. However, design implications from this framing do not necessarily guarantee success of designing poetic imagery. Rather, these implications resemble how a facilitator guides a predefined theme. Therefore, it is the designer who designs the core poetic image, while the above implications can be woven into the artifact to guide the intended imagery. This study focuses on proposing as many preliminary opportunities as possible, while further study in the future is definitely necessary.

REFERENCES