

# Designer's Highly Personal Experiences of Intuition

## Modeling for Developing Intuition

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**Abstract:** Designers and creative artists often have highly personal experiences of intuition in their creative process. Such experiences may feel extraordinary to designers, who have a great difficulty explaining the experiences. These experiences offer useful insights into the workings of personal creative intuition. However, it is common that these experiences are brushed aside as irrelevant. Alternatively, when such experiences are dealt with, they are sometimes over-fitted to various models with the purpose of validation/invalidation. Based on the authors experience in coaching creativity for designers, interviews with designers, and a survey of intuition literature, we propose a way to legitimize highly personal intuition experiences through the use of stories. In addition, we introduce alternative intuition models from the non-scientific literature for helping make sense of extraordinary experiences. We comment on their usefulness in understanding intuitive experience on personal level. We propose that design educators should appreciate the importance of personal intuition experiences of students and their sense-making for their development of intuition. Last, we propose that educators should consider the utility of models of intuition in addition to validity for the purposes of intuitive skill development.

**Key words:** *experience, design, model, intuition, education*

### 1. Introduction

Intuition is considered to be an essential part of the creative process [1, 2, 3]. However, there is no general agreement as to how the process of intuition exactly works or how intuition can be accurately defined [2, 3, 4]. This confusion extends from conceptual modeling of intuition to actual development of intuitive capacity; yet, if we do not know what intuition is, how can we develop it? If we cannot accurately recognize it when it happens, how can we practice it? These issues pose challenges for educators attempting to develop intuition.

The lack of knowledge about the exact nature of intuition has earlier led to mystification of intuition [5]. This approach was detrimental to any attempts at modeling or developing intuition, as by definition mystical experiences are beyond human capacity to understand. However, recent research has shown that intuition is a valid phenomenon and can be studied at least at the periphery – that is right before and after moments of intuitive thought [3, 4, 6, 7].

Intuitive experiences are highly personal, and can be multi-sensory, and appear as extra-sensory in their character [6, 7, 8]. Due to their character and difficulty in verbalizing them, such experiences are often not researched at a more general level [6]. However, literature and the authors own experience suggests that by being aware of our intuitive experience we can manage its development [9, 10]. Further, according to student centered and constructivist approach to learning, understanding and integrating the student's perspective is essential for any meaningful learning experience [11, 12, 13, 14, 15]. Thus it is important to accept and legitimize the students' personal experience of intuition in order to facilitate the development of their intuitive skill.

This paper concentrates specifically on the intuitions that designers and creative artists have experienced in their creative work. These experiences have been collected both during ten 'Coaching Creativity' semester long classes taught by the authors at the Media Lab of the University of Art and Design in Helsinki, and through semi structured interviews of a dozen designers of various levels of expertise conducted in Finland in 2008 and 2009. By giving examples of personal intuitive experiences we illustrate how different they are. Further, we argue the usefulness of letting the students to embrace these experiences, no matter how unusual they may be. We look at different models of intuition, scientific and alternative, and discuss their utilitarian value in the students' understanding of their own intuitions. The validity of the models is not of interest here, as we are mostly interested in the usefulness of various models for the purpose of development of intuition.

## **2. Legitimacy of personal intuitive experiences**

Intuitive thinking appears to be both a personality trait [2] and a developmental skill or ability [2, 5, 9].

Personality can further influence an individual's preferred decision strategy towards that of more deliberate and rational or towards more intuitive and non-conscious [16]. As a skill, intuition appears to have a developmental continuum that changes according to practice and experience [17, 18]. Designer's domain intuition can develop through implicit learning of expert knowledge [19]. The development of intuitive skill may also benefit from directed practice, which is dependent on the quality of corrective feedback [19].

The authors' experience is that designers in general lack access to more intentional training of intuition. This is due to many factors, some stemming from cultural-historical reason such as changing trends in design education [20] and others from difficulty of consciously training non-conscious processes [21]. However, all this does not mean that intuitive skill cannot or should not be educated.

The highly personal intuitive experiences are usually ignored in the education and in the design literature. A novice designer reflects himself with a public image of the designer – which these days usually excludes the such an experiences. While it used to be that the design intuition was mystified, now it's more common to deny the existence of the extraordinary due to a fear of looking unprofessional [22, 23].

Most novice students interviewed are in the beginning of their journey as designers, just getting to deepen their knowledge about their creative process, and usually very unsure of their personal competence. It is not easy to talk about the highly personal experiences, partly due to the fact that our vocabulary is too limited to adequately describe the moments, which are experienced personally as you go through creative process [24]. The students find it demanding to admit the existence of such experiences or to talk about them to other designers.

Lloyd-Mayer states that we suffer from an underlying cultural disinclination for publicly acknowledging certain highly subjective, highly personal experiences. We're especially reluctant to credit personal and subjective factors when it comes to things we prefer to be dictated by rational and objective

thinking [22]. The fear of appearing credulous leads many people to deny their personal reality, which can paralyze their creativity [ibid]. Highly personal intuitive experiences are true for the person experiencing them. They can also become more useful, if they are accepted as legitimate, which in turns enables reflecting on them.

Due to the essentiality of intuition in the creative process, it appears obvious that intuition should be acknowledged and promoted in the development of design creativity. This includes legitimization of intuitive experiences and acceptance of their sometimes unusual appearance. As intuition is a very personal experience, it is important to remain open-minded towards all kinds of feelings and perceptions, and consider them valid in the sense of first person lived experience, which is what we attempt to do in this paper [22].

### **3. Models of intuition**

Current cognitive science is possibly the most successful in modeling particular facets of intuition, due to the systematic application of the scientific method. Such models are testable, falsifiable and offer practical utility. However, the utility offered is still limited. The authors have found in their own tutoring work with designers and creative artists for the past decade that using aforementioned models makes it is easy for students to dismiss intuition, or assume that intuition should be submitted to strict control of the rational deliberation. Cognitive research on the other hand suggests that too much of this type of deliberation may hinder intuitive judgment, and that judgments can feel less satisfactory [25]. Further, cognitive models do not necessary make it easy for the practitioner or educator to bring intuition forth, or help to develop intuition. Also, as stated earlier, due to the complexity of such models and how they are commonly applied to normatively grade people's experience, they do not always make sense out of the personal experience of intuition. To get around these limits, practitioners and educators have often turned to alternative models of intuition (see ch. 3.2). Alternative explanatory models explain intuitive experiences differently to many of the cognitive models. These models have several challenges. The field of these alternative theories is often incoherent: the models agree neither with the field of scientific research nor with each other. In addition, the terminology may be difficult to understand and information may be presented in an ambiguous way. In short, the models are neither scientific nor models that can be used to assess the objective validity of intuitive experiences. Regardless, the authors feel that the utility of these models is weighed in practice by how much they help students' intuitive thinking. While the scientific validity of these models is suspect, for the purposes of development of intuitive skill we are only interested in their developmental utility. Thus, comparison of models presented herein is not about what is scientifically true, but how each model may help students in their development of intuitive skill.

#### **3.1. Cognitive Models of intuitive judgment**

Cognitive theories model intuition either very loosely as thinking processes that fall into the system 1 of two-system-model of thinking [26], or more specifically as a heuristic short-cut for making rapid non-conscious judgments [4]. The first definition potentially includes all types of rapid non-conscious thinking types including, but not necessarily limited to instincts, reflexes, emotional habitual patterns, over-learned skill automations, imaginary ideation, moral judgments and even insights. This broad definition is problematic, as it functions as an aggregating category and not as a focusing definition. In other words, it is unlikely that educators of intuition can come up with common exercises that cover reflexes and instinct, learned emotion patterns and tacit knowledge, automatic context recognition and narrative implicit reasoning, and so on. Thus, we need a more focused

definition of intuition, even if only of particular type. The definition of intuition as a learned heuristic on the other hand limits intuition to experientially acquired non-conscious models and mostly knowledge domain specific short-cuts [27]. These heuristics are often defined as being highly prone to errors and as such must be exposed to rational analysis (i.e. system 2) [26]. This definition excludes the possibility of domain-independent global intuition since it relies exclusively on learning from direct experience [28].

Further, heuristic models mostly note that this mode of thought is so prone to systematic bias that intuitions derived from it should be rationally analyzed [4]. While biases of heuristics are certainly undeniable, the exposing of intuition to constant rational judgment poses a paradox. Over-analyzing intuitions rationally has been shown to reduce the accuracy of intuitive judgments [29]. In practice this paradox becomes a problem, when we do not know what a sufficient analysis is and what an over-analysis is.

Regardless, the heuristics and biases tradition of cognitive sciences offers useful reminders for the development of intuition: if intuition is seen as a holistic non-conscious representation matching process of past experiences [4], then critical to the development on intuition accuracy is proper feedback. That is, intuitive judgments should be evaluated for their accuracy. Naturally this evaluation cannot be carried out for all types of intuitions, for which no practically easy test of accuracy can be devised [30].

Other dual-process intuition-analysis experiments suggest that people believe in intuitions, because of the ease at which they arise, even when these intuitions are clearly incorrect [31]. Another finding suggests that the more rational counter-evidence is presented, the less people trust their intuitions, even when the evidence is incorrect. Further, not following one's intuition leads to a lower confidence in the judgment made [ibid.].

These additional findings, while not full models, are helpful for intuition development. First they remind that the feelings of correctness accompanying intuitions are not necessarily a good measure of accuracy of intuitions. Second, they remind students of the detrimental power of doubt: any intuition, regardless of how strongly experienced and whether it is correct or not, can be swept aside with enough of doubt. Here it is useful to remember that doubt and post-intuition rational analysis are not the same, even though it is common for doubt to follow prolonged critical analysis of intuitions. From the point of view of development, the goal would be to be able to have enough trust for intuitive experiences to arise and to be attentively sensed. Afterwards it is critical to analyze accuracy of intuitions to a sufficient degree, yet retaining an emotional belief in the meaningfulness of such experiences (i.e. resist doubt).

### **3.2. Alternative explanatory models of intuition**

In alternative explanatory models unusual intuitive experiences are commonly seen natural and understandable. A common theme in these theories is describing structure of consciousness as fields or developmental layers [32]. In some yoga traditions for example, the consciousness has been divided into several layers, which become more subtle as one moves outside the layer of the physical body [33]. One of these layers is called the layer of intuition, which is separate from the logic and rationality of the conscious mind. The layer models remind students that there is information beyond rational thinking, and that access to some types of intuition may require contemplative calming of thoughts.

Some layer models make a distinction between mental layer, emotional layer, physical layer and intuitive layer [33]. Students have found this useful as it separates bodily sensations, intuitive appearance of information, and potential emotional reactions from each other. While the three are often causally linked, it helps

to understand that the body may feel sensations due to many other things than intuition, and that not all intuitions are accompanied by intense emotions [17]. While these processes are often temporally linked, they are not the same. Understanding this helps student to develop the accuracy of their recognition, e.g. what is an intuition and what is an emotional conditioned response.

Layer models of consciousness are further extended in field models that also model intuition at a very high level. Barbara A. Brennan presents a model of anthropogenic energetic fields in the book *Hands of Light* [10]. She extends the layer model to visual observations of the energetic field around humans. The field ‘vibrates and can be sensed by touch, taste, smell, and with sound and luminosity perceivable to ‘higher senses’ [10]. This and other fields can act as a source of knowing for people, even if they are unaware of this. If a person has highly developed consciousness, she may sense different type of vibrations and energy levels [10]. That kind of person may ‘know’ things, but doesn’t always know how she knows.

The field model along with its descriptions of vibrations for various information types coincides with student’s experiences of weird bodily sensations. The model suggests that other entities can influence us and this vibration can be sensed through various senses, and that each different type of vibration is felt differently. It then remains the task of the student to become attuned to these vibrations and give meaning to each of them.

The alternative theories presented add to the students’ and designers’ understanding of their personal intuition. Feeling of being connected to information outside one’s physical body, events of synchronicity and acts of apparent mind-reading roughly match with the theories layers, fields and mind-matter interactions. In these models, consciousness is seen as a part of bigger fields that link us to other people and to things [8].

Next we give examples of the designers’ personal experiences of intuition to illustrate further how the different approaches/models fit into the experiences of students.

#### **4. Stories of personal experiences of intuition**

The authors have interviewed a dozen of creative artists and designers about their experience and use of intuition [17]. In addition, the authors have coached several dozen MA level design students during several semester long courses on intuition and creativity (since 2004; 20-25 students a year). Approaches used to gather experiences of intuition during the course are story elicitation [34], sharing and telling stories and personal sense-making through the use of stories [35]. The small sampling of anonymous quotes included here are from the interviews or from the several instances of courses on coaching creativity, unless otherwise stated.

We have divided the stories of personal intuition experiences to two broad categories, based on what they refer to. First group of stories deal with the unusual sensory experiences felt during intuition, and people’s reactions. Second are stories about sources of intuition, in which people experience a source of their intuitions emanating from outside the physical self. This includes stories about interpersonal intuitions between people.

##### **4.1. Sensory experiences and intuition**

Designers describe sensing intuition via various sensory modalities. Some designers describe that their personal intuitive experience is supported by ‘seeing shiny stars’, ‘hearing voices’ or ‘feeling outer body sensations’. Some have mentioned seeing bright twinkling stars when getting ideas worth continuing, while others take guidance from voices. These sensations work as guiding signals to the designer.

*"Even as a child I saw bright stars. When thinking of possible answers to a question on a historical date for an exam on history a small star would twinkle alongside with the correct year. I knew then that was the correct answer. I told nobody of my method – I thought it was cheating. Later I have used this countless of times in various situations when looking for the right answer." – arts teacher*

A typical normative explanation for this would be some sort of a visual hallucination and at its most diagnostic manner a strong prompt to seek medical care. However, alternative models make even these types of odd experiences legitimate: fields can vibrate into senses and information that is valid can be thus sensed.

Bodily sensations are also implied by layer models, which suggest that informational layers of external intuition can influence a person's physical body layer. Perhaps the most common experiences are bodily sensations: shivers, vibes or feeling of energy. When these sensations are explained with everyday words, like goose bumps, they are commonly accepted. However, if they have a different kind of nature, like outer body sensations, they appear as peculiar. Commonly terms like 'good vibes', 'sixth sense' or 'gut feel' are often used.

*"Every time I get a good idea, I feel as if my body is pricked with very thin needles all over. It doesn't hurt at all. They are not like cold shivers, but different. If I get a particularly great idea, I feel these pricks on my scalp too. Using these sensations I can recognize particularly good ideas." –designer*

Somatic sensations are natural in field models. Different fields can carry information and vibrations from these fields can cause subtle body sensations that can be noticed if tuned into. Often the sensations are more subtle than those accompanying strong emotional reactions.

#### **4.2. Experiences of external sources of intuition**

Some designers interviewed describe a source they are able to connect themselves to through intuition when at their most creative. There is a strong feeling of 'receiving' ideas, being energized, and getting empowered. Many report a qualitatively different experience between 'receiving ideas' and the experience of ideas rising from the sub-conscious mind.

*'Sometimes when designing, I use a method where I lift my consciousness above my head. Once I had to invent a good name in a very limited time and my head was totally empty. I used this method and instantly the name dropped into my head. After that all the other name choices felt lame. I strongly felt the name was given to me. I could never have invented such a good name myself.' – arts teacher*

Again, a normative explanation for this might be an intuition rising from the unconscious and not merely sub-conscious thought and merely feeling as if coming from 'outside'. However, this does not seem to help some students who feel that these intuitions from 'an external source' feel qualitatively different from those rising from inside one's non-conscious mind. Field models accept that intuitions may come from outside of one's physical body and may also be sensed differently. In fact, they imply that the non-conscious intuitions and so called 'external intuitions' are of different kind – both experientially and in the type of knowledge gained. As such, students of intuition may consider developing them differently. Overall the model suggests that there are different types of intuitions. One should pay attention to the differences in the quality of sensations within an intuition and try and find meaning in the differences, instead of putting all intuitions into one big messy category.

Some designers feel anxious, lost, and not skilled enough without the empowering feeling of this connection to 'an external' source of intuition. Some of them report a strong dependency on that source, yet they do not know how to intentionally connect to that source. Some of the expert designers have learned to handle the

intuitive connection to this source through experience, even though they are not fully aware how this connection is working, or how they can describe it verbally. Elizabeth Lloyd-Mayer states in her study of highly unusual experiences that people typically cannot report why they carry out much of the behavior that stems from workings of the unconscious mind, even though the behavior appears formed in the full consciousness.

To encourage intuitive ideas to arise, creative people try to recreate environments in which they have previously experienced such intuitions [2].

*“To be able to reach the essential mode for designing, I always need a nice cup of tea beside me. But, you know, I hardly ever drink it! After the course [coaching creativity] I am not dependant on it any more. I can reach the mental state without it.” – design student*

This may involve props to act as stimuli (cigarettes, drinks), an idiosyncratic ritual (bath, careful preparations), or physical activity (jogging, vacuum cleaning). Still, the connection may not work. Designers describe that without a working connection they are forced work more with ‘copy-paste – trial & error’ kind of routines without the empowering faculties reached through intuition. The resulting outcome is usually something they do not rate very highly. Many report that the unpredictability of this intuition connection causes a crisis of self-confidence in their domain expertise.

Alternative models again suggest that while it is perfectly possible to be creative and intuitive without feeling an access ‘to an external source of intuition’, the external source does exist, is qualitatively different and does require different methods of access. While the actual methods may vary from person to person, just the act of accepting that such a source may exist and that it can be reached differently, can further help the intuition development efforts of students.

Some designers report interpersonal intuitions. Transferring pictures ‘telepathically’ is not among the common methods taught in design – yet many visual designers tell how they are able to ‘visualize ideas from inside others' minds’. Others puzzle at the simultaneous emergence of almost identical ideas.

*“Sometimes I wonder how is it possible that in the same design competition somebody has submitted the same idea as mine even executed similarly, but from another side of the planet. I thought this was odd, because I had not seen or heard similar kind of idea anywhere before, and I knew I had surely developed it myself from the beginning to the finish.” –design student*

Experiences like above are made sense of by viewing them from the point of view of thought fields. The normative way is to say they were random coincidences due to cultural trends and think nothing more of them. In the field model thoughts extend beyond the physical body and can be sensed by other people on a crude level. According to the model it is also possible to become more attuned to these fields and thus develop an intuitive sense in designing, something which the beginning designers most strongly express yearning for.

The above is but a very small sampling of descriptions of the kinds of experiences designers often go through. However, before they were shared and accepted, for many a student these experiences practically did not exist. In the authors’ experience, stories of personal experience require situation of strong trust, before they can be freely shared. The methods we used were accentuating confidentiality, re-telling of personal stories of well-known artists and scientists, and emphasizing that each person’s own experience is valid for them (e.g. non-normative nature of intuition). We found that the sheer act of sharing stories in a small trusted group of peers and finding out that the experiences are not frowned upon or quite as crazy or as one thinks, already relieved many a student immensely. It also encouraged students to further observe and reflect on such experiences.

## 5. Truthfulness over usefulness can hinder intuition development

Heuristic tradition has shown that intuitive thoughts can also be highly useful, accurate and in some situations superior to rational reasoning [7, 27]. Approaches that explain away all intuitions as useless noise create false negative errors of classification: real and useful intuitions are discarded as ‘not real’. This is often done by over-fitting the experiences to too crude versions of intuition models, and as a result classifying experiences not described by the model as irrelevant or superfluous by-products of human thought.

The normative over-fitting of cognitive models of thought to experiences poses problems for the development of intuition. The authors have found that especially the scientifically educated designers can often err on the side of over-rationalization when thinking about their own intuitive experiences. For example, all instances of synchronicity are explained as mere random probabilities. Bodily sensations are attributed to simple physical causes (e.g. “something I ate”) or random affective changes (e.g. “sometimes I just feel this way”) instead of thinking of the potential emotional connections or underlying reasons behind the physical sensations.

Second problem with the strict normative use of models of validity (i.e. ‘what is true’) is discarding developmental potential (i.e. ‘what is useful’). In an educational situation, stories like fables can be utter nonsense for their content validity, but help students to make sense of their own experiences, thus offering developmental utility. The authors have experienced this type of “validity over utility” attitude in their own and in their students’ as well as peers’ thinking. Often the suspension of validation judgment requires considerable effort and reasoning on the part of the student. Without actually trying to use intuition and suspending one’s disbelief, there cannot be success in intuitive development through such experiences.

Indeed, in our experience, in order to help students to develop their intuition, the use of cognitive models alone does not appear to be enough. While cognitive theories do often help students to understand many of the pitfalls of intuitive thinking, the theories do not necessarily make sense of personal experiences for those experiencing them. The authors argue that students benefit from personal acceptance and sense-making of their own intuitive experiences, which in turn can empower them to further use their intuitive capabilities through a process of transformative learning [36, 24].

Students frame their intuitive experiences as meaningful events to themselves and become encouraged to use them in their creative work. Through a transformative process students understand that it is perfectly acceptable to have these experiences. Further, such experiences cannot be always put into words properly, or such experiences might appear as quite unusual when verbalized. Most importantly, students feel that intuitive experiences can be used as signals to guide their own design decisions – alongside with their rational faculties.

The authors argue that offering stories and alternative conceptual models can help students to construct meaning out of their own intuitive experiences, and thus learn towards more intentional development of their intuition. Based on the experience of authors, this meaning-making can lead to student transformation that becomes evident as marked qualitative leaps in student’s creative process. Merely describing these models to some students produces instant ‘aha’ moments and an accompanying sense of relief. To most it doesn’t matter if a model is scientifically valid or not. The student may express that she doesn’t believe in the validity of the model, but because it helps to model the personal intuitive experience it is useful. The resulting qualitative change in the students’ behavior towards their own experiences of intuition can in our opinion be marked. It is characterized by increased trust in and reduction of doubt towards personal intuitive experiences.

## 6. Summary and conclusion

We have attempted to show that using cognitive models normatively for assessing intuitive experiences can have pitfalls for developing intuitive capability: experiences can be denied altogether, they can be over-fitted to non-descriptive models, or explanations given make no sense to the students, thus not advancing their understanding of their own intuitive experiences. We have further tried to show that supplementing these models with alternative models can in practice enhance the utility of both groups of models. In effect, we are arguing that for the purposes of modeling intuition with the intent of developing it, practitioners should choose widely amongst the models they apply in their education practice. Designers' have the luxury of not being limited by validity alone and should consider the utility alongside with scientific validity.

Regardless of the models chosen, another important fact is to legitimize even the unusual personal experiences of intuition that people have: enable sharing them, accept them as is and help bring out the personal meaning in them. This actively manages the process of intuitive experiences, which in our experience fosters transformative learning of intuition and can lead to significant leaps in the use of intuition in the design process.

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