The role of sign elements in holistic product meaning

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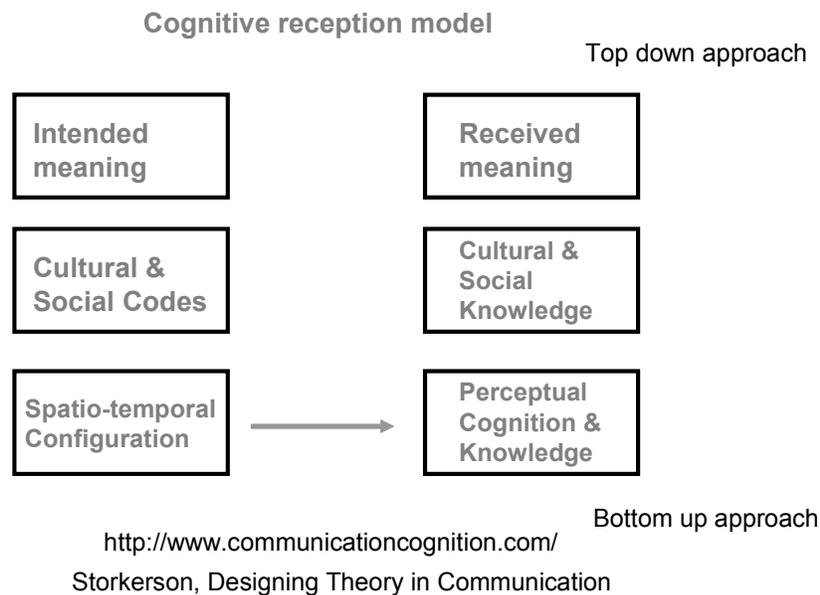
Introduction

Cognitive reception model is presented to explain the role of visual and tangible sign elements for meaning communication in products. When the designer sends the intended message with the help of sign elements it is a bottom up cognitive approach leaving the receiver only to comprehend the given elements. For a more user centred approach a cross-disciplinary research background is introduced to explain how the unique received meaning is built as a top down process with the emphasis on the individual experience connected to metal imagery, identity and context. A case study example about meaningful craft relationships demonstrates how the designers are only partly able to provide for an intended meaning through sign elements.

The aspects of product communication process

There are research approaches for analysing meaning in human product relationships through sensual sign elements but also such approaches exist that consider holistic, individual receiver experience. The interaction of these different approaches is clarified by the interdisciplinary communication process (Storkerson 2003). Applied to product communication this description shows how the designers' interpret the company brief through their cultural socialisation and personal experiences and concretise the interpretation to visual and tangible product elements transporting the intended meaning. The receiver perceives the design elements through visceral, behavioural and

reflective processes (Norman 2004). These perception processes mix with the receiver's acculturation and personal experience leading to the received meaning.

Cognitive reception model

Top down approach

Intended meaning		Received meaning
Cultural & Social Codes		Cultural & Social Knowledge
Spatio-temporal Configuration	→	Perceptual Cognition & Knowledge

Bottom up approach

http://www.communicationcognition.com/
Storkerson, Designing Theory in Communication

In the bottom up cognitive process with visual and tangible sign elements created by the designer she is the force of the communication delivering the message intended through composition of the elements and the target segment is supposed to understand the meaning in a similar way. The approaches considering holistic, individual user experience can be described as top down approaches where the individual comprehension forms the main issue and the user's unique experience is the main result of the communication.

In this paper the spatio-temporal configurations that the designers utilize to transfer intended product meaning to the receivers' process are described by the visual and tangible sign elements. The designer chooses and combines such elements as form, color, material, weight, size, patterns and even sound and scent as the building blocks for the product message. The receiver is able to perceive these sign elements with different senses. The whole composition, shape and style of the product are built when these elements, their relationships and emphasis are decided.

The receiver has two perception possibilities: holistic or linear separate element processing. It is possible to assume that both occur. The product may first be perceived as a whole and in further processing individual elements may become salient. (Bloch 1995, 19). According to the holistic Gestalt position the whole has an organization of dynamic properties that cannot be reduced to the parts (Crozier 1994, 41-49; Roth - Bruce 1995, 96-102). The perception of the whole serves in revealing the whole 'feel' of the product with the emotional experiences first at the visceral level influencing the behavioral responses and reflective assessments (Norman 2004).

Categorization, a mental activity of grouping like things together is one cognitive model explaining Gestalt perception. The boundaries for certain categories are fuzzy and dependent on context. Experiences and familiarity produce differences in categorization. (Roth - Bruce 1995, 19-54, 73-95, 111-130). The acceptable distance from typical features forms the possible range of variation in a category member. The first impression categorization defining suitability to consumer's use functions, situation and user roles is a step for further consideration in the buying process.

Style discrimination differentiates products through overall composition and impression. As a multi sensory device style causes intellectual and emotional associations and triggers our emotional understanding (Schmitt- Simonson1999, 84-85). Style deals in surface impression, yet people read deep meanings from it connecting the impression with the values (Ewen 1990, 43; Postrel 2003). Style conveys mood and thus stretches over product category limits allowing people to possess different products of the same style and presenting even stereotyped collections of products for certain roles.

Here are easy chairs that a real user chose from a selection of 90 chairs as suitable for own use. If we look at the visual and tangible elements of these chairs they are only approximately similar: the rather light natural colors and materials and simple, slightly padded curving forms. In the style point of view these chairs represent something that is simple and natural. The claim here is that it is more about the general feel and style Gestalt that makes all these chairs appealing to the user than the exact elements.

Especially in style distinction people with design acumen have excellent sensory connections and sophisticated preferences (Bloch 1995, 22). In an easy chair sorting research the non designer respondents chose the same products in social and design feature sorting task not showing design acumen for visual element nuances (Kälviäinen – Miller 2004). There is no point in producing variations, which are not perceived as different by the consumer. More important is that the products reach the right lifestyle impression for the customer.

We interpret intangible product meanings with the help of associations, 'Stimulus Chaining' that occurs in human cognition. Stylistic attributes can become strongly associated with other product features. Low, sleek cars might be imagined to be fast. (Shackleton 1996, 15). An owner of this car is easily associated as owning the same interpreted quality. Inanimate products can be attributed human characteristics and it is possible for the perceiver to project own felt life into the product and become fused with it (Crozier - Greenhalgh 1992, 70-74). Products can thus become part of our identity.

Products are used for interpreting collective dreams displayed in lifestyles and in the experience systems such as eating or dressing. Products carry meaning through these systems governed by rules and context. Latent rules facilitate sign production, sign combinations and interpretative responses. (Mick 1986, 197). In spite of the rules the object world is still expressive of complex social and individual realities in the practices of everyday life as the possibilities of interpretation vary with structures that interlink with each other. Product meaning is interpreted both as denotative messages conveying information about functions and what the products stands for and connotative messages conveying subjective impression and emotion about the product (Heilbrunn 1998, 196). There is even a possibility of conflict in these different messages.

Metaphoric similarity and metonymic continuity provide a foundation for much of our comprehension of meaning in everyday life. Metaphoric similarity helps us to adapt to new situations by conveying an unfamiliar domain in terms of a familiar one sharing similarity in function, structure, property, or sensory impression along different senses. (Spiggle 1998, 160). Physiologically based image schema involves patterns from our bodily interaction with environment and transfer of experience from one sense to another. Thus, positions such as 'down' associates with inactivity, 'upright' with activity, 'over' ideals and 'under' our reality. (Zaltman 1997, 425- 426; Lupien 1995, 219). The embodied emotional experience is extremely relevant also in symbolic product meanings.

Metonymy works by associating things in the same whole causally, culturally, temporally, spatially, physically or structurally (Spiggle 1998, 160-161). Understanding through metonymy occurs in clothing ensembles where the men's shoes are combined to a suit and even to an office. This understanding arises from category and style in objects, their combination rules and stereotyped uses.
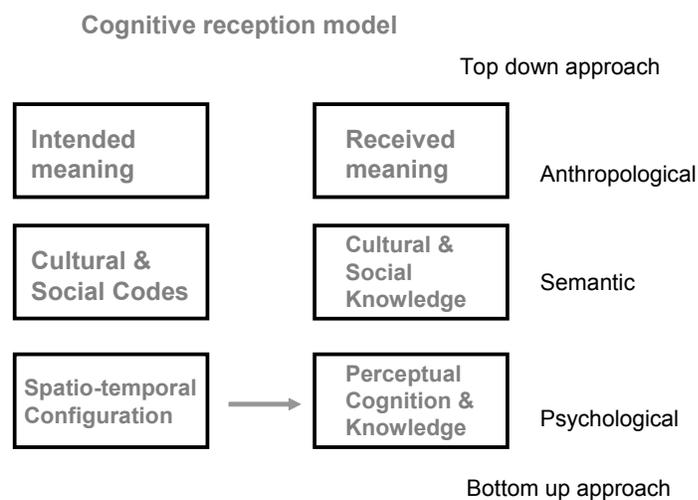
Narrative is an even a wider composite explaining our understanding, sense making, coherence, reality mapping, and exploration of conflicts and contradictions. We try to form meaningful stories out of incoming information by providing goals, plots, ends and

central themes. (Escalas 1998, 254-259; Thompson 1998, 130-137). Our emotions have different plots such as dramatic moments awaking more emotion than steady ones. Narratives also make emotions meaningful by placing them in the context of an individual's personal history and future goals. (Escalas 1998, 256-258).

Gestalt position can cover wider ground than compositional perception of visual elements. Typical Gestalt constellation in product pleasure is taste that is about the boundaries and possibilities of the consumers' use situation with the subjective, meaningful aspirations, social placements and interaction (Kälviäinen 2002). Taste is a rather permanent distinction relationship to products that we want to possess because they have a pleasurable fit for our life. For this reason taste is not merely about aesthetics.

The tools for grasping the consumer meaning

The cognitive reception model offers possibilities to look at the interaction tools that can be used in searching the building possibilities for complex product meanings. The diverse tools can be used for inspecting either cognitive bottom up processes or top down processes.

Cognitive reception model

Top down approach

| Intended meaning | | Received meaning | Anthropological |

| Cultural & Social Codes | | Cultural & Social Knowledge | Semantic |

| Spatio-temporal Configuration | → | Perceptual Cognition & Knowledge | Psychological |

Bottom up approach

Tools for investigating the role of sign elements for
the holistic meaning

Practical perception tools originating from psychology tackle the questions of mental maps, feelings and behaviour. As they require some existing stimulus material they are often on the bottom up process end of the communication process. The psychological tools overlap with semantic tools building signification out of various elements both perceived and self chosen. The tools for holistic approaches have their origin in anthropology and sociology and they emphasise the construction of deep meanings through personal acculturation, history and context. The research issue is the life of the user so they present more of a top down look at the communication process.

Psychology offers distinction and categorization techniques that are useful for obtaining information about nuances in differentiation, product hierarchies, categories and even holistic perceptions as they can also determine for whom or for what purposes or contexts the product seems suitable. So in addition to simple feature and product category information these methods can provide information about brand families, product use families and product experience families. Distinction and categorization require existing stimulus material and often existing products are used. (Kälviäinen - Miller 2005). This leads to bottom up approach not considering the genuine starting points of the individual receiver.

There are many quantitative ways and computer based study tools of producing information about product distinction and categorization based on attributes and visual materials. A semantic differential scale with bipolar words can define attributes or style. Problems in the bipolar scaling occur when products have multidimensional or contradictory qualities difficult to describe in words. The experience from a User Image Tool that allows building various task type visual questionnaires for specific product development projects confirms the communication possibilities provided by using visual images as research tools (Antikainen - Kälviäinen - Miller, 2003).

Distinction and categorization tell how we see differences between products and even what we find pleasurable or suitable. Research approaches that can determine what are pleasurable meanings in relation to the consumer's experience are also important. The

pleasure judgments we make reflect our mental, multi sensory imagery map that is used unconsciously to organize sensory experiences. Visuals summon us to draw through associations from our diverse sensory modes in order to grasp its feel and thus meaning. (Belk 1998, 290-291; Zaltman 1997, 296; Lupien 1995, 223-225). Emotional experience of meaning is shared nonverbally through emotional understanding that involves interdependencies among cognitive, physiological, expressive, and phenomenological components that verbal information scales cannot easily grasp (Belk 1998, 294-295; Zaltman 1997, 427-428). Pleasure is about the overall sensual experience and holistic atmosphere difficult to put in words.

Psychology based projective techniques appropriate associations and the narrative nature of peoples' understanding. They approach mental images in unconscious level. By using projective techniques, it is possible to obtain information about how consumers construct meanings and assess pleasure. With open and ambiguous stimulus material it is possible to provide a 'deep', interpretive qualitative results about patterns and deep semantics. (Kälviäinen - Miller 2005). Projective techniques permit a wide variety of subject responses, are highly multidimensional, and illicit rich data.

For sharing values, feelings, experiences, ideas, multi sensory mental images and maps a wide range of stimulus materials, scaffolds or probes, can be used. Generic stimulus can be colors, materials, abstract forms or styles. Stimulus images can come from different walks of life, provide metaphors or other meaning building tools. (Kälviäinen 2002; Kälviäinen-Miller 2005). In addition to images words, sentence completion, or music can provide stimuli.

In creative 'make' methods different sensuous mind images of the participants are produced in tangible materials. Ambiguous visual stimuli let people creatively express memories, thoughts, feelings, dreams and new ideas as it can affect different memories, feelings and projections in different people. The visual nature liberates to make meanings beyond words and helps to fill in what is unsaid. (Sleeswijk Visser et. al. 2005). Mind maps, mood- or storyboards of visual images and words can be easily

made by the participants depicting attributes, features, feelings and user identities or roles to represent the associative connections and meanings attached to product feel.

Stimulus can be collected by the researches or by the users themselves. For participatory make methods it is important to create a set that is evocative, not only relevant. Possibilities of associations, association chains, metaphors and different senses have to be considered. The participants themselves can supply pictures that they feel connect to the marketing area in question and they can even interpret their own metaphors as in the 'penetrating the mind by metaphor' proceedings (Zaltman1997, 2003).

The narrative nature of object meanings and actions can be used as a tool to reveal motivation and goals of action. For instance, 'ideal world' stories reveal aspirations of what they would like to be. Also preferable life themes and experience systems can be studied though narratives. A narrative can be constructed by combining smaller associations, or even single word associations and in addition to words stories can be assembled into visual storyboards.

Anthropology provides the context and an experience story from a cultural-systems approach expressing patterns of meanings, values, perspectives and worldviews which also exist in material objects (Tso 1999, 70). Anthropology uses ethnographic research that articulates layers of meaning in everyday behavior constellations. Interviews, observation, photographing, and the use of video are all ethnographic tools for giving a detailed account of the arrangement of experience. (Arnould 1998, 86-91). Interest is in the intrinsic meaning systems of the user so ethnographic research explains a top down process. Ethnography for design tries to make sense of how the users make sense. (Salvador – Bell – Anderson 1999, 35). It tries to grasp the guiding themes of behaviors and capture those especially charged moments in user's life, which are pregnant with meaning and are relevant for the product use.

An example of visual and product based ethnographic observation is a socio-semantic analysis developed by Harold Riggins. It is possible to observe the selective display of domestic objects that establishes and reinforces personal identity and forms a living stage for social interaction. (Riggins 1990, 341-367). The living stage offers a comprehensive picture of the product in the use situation in the user's visual world of feel such as bohemian, minimal, nostalgic or extravagant. Instead of singular possessions or particular brands we use combinations of objects connecting to values, identity, aspirations and social actions. An object can change its meaning drastically if different objects and atmospheres surround it. The construction of the whole structure of the user's stage, surroundings, boundaries, space, highlighting, hiding, relations and product choices describe the aspirations and identity of the user. The complete setting offers certain social interaction, communication and distance possibilities. The product has a certain role in the surrounding environment with the time and organization of action. (Kälviäinen 2002). New products can be adjusted by their character to fit the compositions of different users. The idea of staging combines two future bound methods used in design: a depiction of product use action as scenarios and atmospheric, visual and tactile product environment as fashion trend forecasting.

Craft case: deconstruction of pleasurable meaning

A case study of craft product meaning is presented to explain how the different product communication approaches work. Through this example limitations of coding meaning only with bottom up sign elements are suggested.

Craft product relationship stories were gathered from 30 Finnish respondents in thematic, in-depth interviews during summer 2002. The interviews consisted of visual judgement tasks from 60 craft pictures, discussions of craft consumption, and an introduction of an own meaningful craft product.
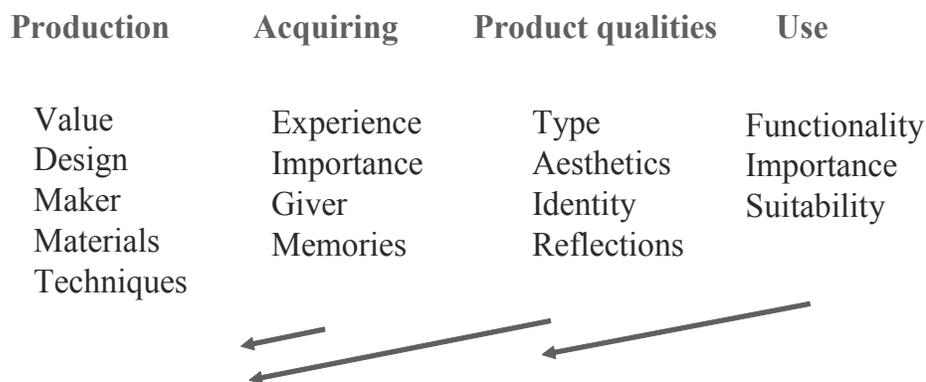
A bottom up visual judgement task provided the most negative craft products from a material of 60 pictures in the interview. The negative response for the first product was due to the interpretation of it being too naïve. This felt superficial for many respondents as it contradicted with their perception of life as broken and not so perfect. The second product received negative evaluation because it was abstract, hard to categorise and understand. People wanted to have some own, easily understood meanings in the products. The last Gestalt was experienced as threatening and associated with war and hard people in spite of the flowers and hearts in the decoration. These negative choices were given here as an example because they reveal what was important in the positive product choices: meaning interpretation that connects with the persons' life views, understanding and identity preferences.

Top down approach was a description of the respondent's own meaningful craft product relationship. The deep craft experience consisted of a tendency to build narratives connected to the product owners' identity and life history. The meaningful products helped to reinforce the owner's identity by connections to the owner's personality, activities, family roots, social relationships or memories of meaningful occasions. A whole process of making, acquiring and using the product built the product meaning which was reflected through the personal background and experiences of the owner also when considering the actual properties of the product. Aesthetics and the materials

used in the products gave connotations of the different themes, for example, identity and roots. One product relationship carried several themes at the same time with varying combinations for different respondents. Stories did evolve from the important products: they were entangled to the personal process of using and acquiring the products and imagining the making process. (Kälviäinen 2006).

Through the craft relationship experiences it is possible to derive to the following modes for product relationship:

Production	Acquiring	Product qualities	Use
Value	Experience	Type	Functionality
Design	Importance	Aesthetics	Importance
Maker	Giver	Identity	Suitability
Materials	Memories	Reflections	
Techniques			

The sign elements that a designer can consciously put into the products are limited to the type and aesthetics in the product qualities mode and functionality in use. The respondents first talked about the immediately perceivable product qualities. Then they moved into seeing the product in the use context and then in the past how it had become so important. Here the acquisition process played an important role. The product qualities evoked denotative meanings connected to the functions in practice and to meanings connected to crafts making. Also many connotative, personal meanings were presented connected to the owner identity, life contexts, life history and

individually lived experiences. The sign element role was not only about aesthetics as pleasure was connected more to meanings than aesthetic effects.

These modes present the building materials for the meaningful, intensive product relationships. The arrows from the traditional design issues of functional and aesthetic qualities connect to narrative qualities of identity, life histories and unique craft making images as a core for deeply motivated craft experiences. This core is supported by the products role as an important, displayed and protected product in the owner's life. The results suggest that a designer can only build scaffolds for the users to build their own narratives that produce meaningful experiences and thus meaningful product relationships. To be engaging products have to be capable of becoming rooted in the consumer's values, memories and intuition about the past and present, even future.

Conclusion

In the saturated markets businesses strives for a deep emotional connection between the user and her experience with products and services. The user meanings and contexts must be understood in authentic way in order to connect emotionally, understand latent needs and provide real engagement. For capturing the top down processes required for inspiration and Gestalt feel research should provide means to anticipate and map how the user will interpret and experience the visual messages in products and other touch points. The assumption that the product is finished before it goes to the consumer is breaking up with the arrival of mass customization, personalization and interactivity in products. For these kinds of solutions the communication as both a bottom up and top down process is essential. Reflection is needed in the issues where meaning scaffolds can be built and where the meaning building has to be left for the receiver's departure-points. The role of visual and tangible sign elements is important but only as scaffolds connecting to the meaning building with users' life histories and experiences. Engagement is about individual meanings.

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