Seating Facilities Design as a Sign
—Semantic Model for Generating Socio-cultural Meanings of Seating Facilities Design
in Javanese Society of Indonesia

Summary
This research aims to formulate the semantic model in understanding the production of socio-cultural meanings represented by seating facilities design's affordance. As a case study, the authors analyse the Javanese seating facilities' visual entities (form, structure, ornamentation), the symbolic meanings, and relate them to the term of sign production derived from the theories of non-verbal communication. The result can be given as follows: (1) The meanings of seating facilities can be represented by three codes of signification: iconic, indexical, and symbolic code. (2) These signification codes mediate the referential level (e.g. mythical and symbolic acceptance) to the perceptible level (e.g. product's visual composition) of cognitive thinking in signifying meanings. In the referential level, four types of myth can be divided: religious, cosmological, behavioral, and naturalistic myth. (3) By outlining the general process of signification in systematic way, the semantic model can be formulated and used for analyzing and developing the representational function of product.

1. INTRODUCTION
To analyse and design the product termed as a cultural representation, both the designer and users need a systematic way to signify the complexity of subjective interpretations of the product. It is imperative to conceptualize the semantic entity expressed by the product's visual appearances through a semiotic approach, that is an understanding that a product can be conceived as a sign. In this point, the authors aim to clarify the applicable principles and typical categories of sign in the production of cultural meanings expressed by the product's visual composition.

The systematic thinking and classification of signification then can be used as a semantic model served as a cognitive device to interpret and develop the representational function of product. The authors take the seating facilities design of Javanese society as a case study, which can be divided into some types ranged from the throne, chair, bench, to the mat type. The constitution of the semiotic sign in the case of Javanese seating facilities design has been used to analyse its function as a sign.

Located at the central and eastern part of Java (Figure 1), the Javanese have been acquainted with all the seating cultures of Euro-Asia, have taken and inherited from them what it has needed or wanted to be suited to their own ways of life. The cultural influence of Islam, Hinduism, Buddhism, Christianity made their seating behavior become remarkably eclectic and brought their seating facilities to various types and cultural meanings.

To discuss the representational function of Javanese seating facilities design, it is necessary to have a previous understanding about the three main factors which participate in the cognitive thinking in interpreting the world among human beings. These three main factors are: first, interpretation which derived from the experience of the real world through regular seating interaction. Second, an image about the world in the mind which is created in so-
3. ANALYSIS

3.1 Types of Seating Facilities Design

The term "seating facilities" is defined to refer pieces of equipment that are provided for a seating purposes, not limited to the seating furnitures (e.g. chair, bench, stool), but also another equipments which are commonly used in the Asian people, such as: a mat, a carpet, a Muslim’s individual rug (sajadah), cushions. Based on its form tradition and technical quality, the Javanese seating facilities design has been differentiated into some types which can be briefly outlined as follows (Figure 2): (1) The king's throne: an ornamented bench facilitated with a footstool. (2) The throne bench: an ornamented bench functioned as a king's throne in all of his daily meetings. (3) The chair type: a seating facility which can be conceived as a product with typical elements, such as: legs, seat, and back rest. The use of chair for this community was a behavioral influence from European colonist and Chinese traders. It is noted that since the 16 AD, the European colonist shipped a large scales of European style furnitures (e.g. Queen Anne style, Neoclassic style, etc.) to facilitate their officials activities in running authorities in Java. Those types of furniture then became a prototype for being reproduced and developed by the local craftsmen with using their indigenous materials and techniques. There were some chair styles as a result of local reproduction and naming which are: (a) 'Burgomaster' style (b) 'Raffles' style, (c) 'France' style, (d) 'Beidermeier' style, (e) 'Naga' style, (f) 'Gobang' style, (g) 'Becak' style, (h) 'Portuguese' style, (i) 'Kuan Mao' style, and (j) 'Lohan' style (Figure 3). The use of chair then was adapted by the Javanese nobles and local authorities who work for the colonial government to represent their nobility. Aside from its function to afford comfortness, the chair type was also used for the nobles to exhibit their social status, due to the fact that this type could be embellished by a various kinds of ornamentation and styling. (4) The wide-seat bench type: it is usually made simply from bamboo or wood, used for indoor and outdoor purposes. (5) The short-leg stool type: a portable stool for squatting, folded-side knee posture, and stretching legs. (6) The mat type: this type can be differentiated into two sub-types which are the refined and rough mat. The refined mat is to facilitate all kinds of floor seating postures for formal occasion (e.g. praying ceremony, meeting, etc.). Refined mats are: rug, carpet, refined pandanus grass-woven mat, and Muslim's single rug for praying called sajadah (Figure 2: 6a). While the rough mat type which is to facilitate all kinds of floor styled postures for informal interactions (e.g: relaxing the body, etc.). The rough mats are: rush, bamboo-woven
<table>
<thead>
<tr>
<th>No.</th>
<th>Types</th>
<th>Material</th>
<th>Usage</th>
<th>Form and Surface</th>
<th>Ornamentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>King’s Throne Type</td>
<td>- Gilded wood (Gold, Silver)</td>
<td>Footstool, non-backrest,</td>
<td>- Primary motif:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cotton</td>
<td>decorated</td>
<td>‘garuda’, ‘makara’ motif</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fabrics</td>
<td></td>
<td>- Secondary motif:</td>
<td>Floral patterns</td>
</tr>
<tr>
<td>2</td>
<td>King’s Bench Type</td>
<td>- Gilded wood</td>
<td>Non-backrest, and</td>
<td>- Primary motif:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cotton</td>
<td>decorated</td>
<td>‘garuda’, ‘makara’ motif</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fabrics</td>
<td></td>
<td>- Secondary motif:</td>
<td>Floral pattern</td>
</tr>
<tr>
<td>3</td>
<td>Chair Type</td>
<td>- Gilded wood</td>
<td>Backrest, armrest/</td>
<td>- Primary motifs:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Polished wood</td>
<td>non-armrest and decorated</td>
<td>‘naga’, ‘wayang’,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Rattan matting</td>
<td></td>
<td>lotus motif</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cotton</td>
<td></td>
<td>- Secondary motif:</td>
<td>all stylistic patterns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fabrics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Wide-seat Bench Type</td>
<td>- Bamboo</td>
<td>Non-backrest, wide-seat</td>
<td>- Primary motif:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Wood</td>
<td>and non-decorated</td>
<td>‘garuda’, ‘makara’ motif</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Short-Leg Stool Type</td>
<td>- Wood</td>
<td>Non-backrest, single-seat</td>
<td>- Secondary motif:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and non-decorated</td>
<td></td>
<td>all stylistic patterns</td>
</tr>
<tr>
<td>6a</td>
<td>Mat Type (Refined)</td>
<td>- Polished Pandanus</td>
<td>Refined texture, wide/</td>
<td>- Primary motif:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fabrics (e.g. rug, carpet)</td>
<td>single seat and decorated</td>
<td>‘lotus’, ‘kabah’ image,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>geometric shapes</td>
<td></td>
</tr>
<tr>
<td>6b</td>
<td>Mat Type (Rough)</td>
<td>- Rush</td>
<td>Rough texture, wide-seat</td>
<td>- Secondary motif:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Straw</td>
<td>and non-decorated</td>
<td></td>
<td>all stylistic patterns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Bamboo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2: Six Types of Javanese Seating Facilities Design

mats (Figure 2: 6b).

These six types of seating facilities design have different typical basic forms, structural configurations, and surface treatment. These differences connote the degree of user’s social ranks (upper and lower class), and determine the pattern of seating interaction among them (formal and informal). For instance, the throne which has a high-elevated seat equipped with a footstool and a full-decorated surface was associated as a sacred seat for the god’s reincarnation figure. The chair type also has an elevated seat and a decorated surface to represent nobility. It is different to the rough mat, short-leg stool, and wide-seat bench which are made commonly without any surface treatment or decoration. These informal types represent themselves as seats for peasant class in the informal interaction.

Furthermore, the ornamentation embellished on the basic form of seating facilities design is necessary to be outlined.

3.2 Ornamentation

The ornamentation for the traditional community is not mere as an attractive embellishment, but as an effort to communicate the shared symbols, mythical values, and visual coding among members of community. The tradition of ornamentation for the Javanese began from the Dong-Son era (500 BC) sourced from Indian mythologies.

The ornamentation of Javanese seating facilities design can be segmented into ‘primary’ and ‘secondary’ ornaments. The primary ornament is mostly an image to embel-
lished on the center part of form, such as: crown-like ornament on the chair’s headrest, or on the center of the seat. While the secondary ornament is a motif to be placed around the primary ornament, usually to strengthen the balance of formal composition. Another segmentation can be also made through different ways of visualization: realistic, abstract, and geometric. In Hindu period (8-15 AD), the realistic figure of deities and imaginative figurines were widely used. But since Islamic period, the abstract or geometric motifs tended to be more developed. The Islamic aesthetics prohibit the portraying of human beings and animals in realistic way, instead of the use of abstract (e.g. floral icons, stylistic calligraphy) and geometric ornaments.

Through its compositional category (primary and secondary), the popular ornaments of seating facilities can be described as follows:

1) Primary ornaments: (a) 'Makara' image: the makara came to Java with the Hindu culture. It is an imaginary animal having the shape of a fish and the trunk of an elephant. This symbol is used to protect against evil. (b) 'Garuda' image: in Hindu mythology, among the birds a very special place taken by the garuda as a ride of Vishnu god. Garuda is also the sun bird or sun eagle. (c) 'Kabah' image: the small cubicule shrine in the Great Mosque of Mecca to represent the holy-direction in which Muslim turn in praying. (d) Lotus image: it is embellished on the corners of throne’s seat. In Hindu-Buddhist mythology, the lotus is used as a sacred seat for deities and Buddha, symbolizes purity. (e) Arabic calligraphy: it has spiritual signif-

Figure 4: Ornaments of Seating Facilities

nificance, specifically in connection with the scripts of holy-Quran. This ornament is called arabesque that is to say of various linear and band ornamentations, often very artfully interwoven and interknotted. (f) 'Wayang' figurines: the wayangs are figures in traditional Javanese drama depicting tales based on Indian epic literature. (g) 'Naga' (dragon) image: the dragon pertains to female side, the waters and the underworld.

2) Secondary ornaments: (h) 'Meander' motif: the meander can be described a series of T’s, alternately upright and upside down. Originally, it was a part of Chinese art. (i) Flame motif: the flame is a symbol of magical power, usually used as border decoration. It is characterized by the shape of a reversed point of interrogation. (j) 'Swastika' motif: the swastika is a hook and key form. It symbolizes the rotation of the celestial bodies, or more specifically is
a symbol of the sun. It usually occurs as part of space-filling ornament. (k) Cloud motif: it originated under Chinese influence, has the longeze-shaped spirals. (l) Plant motif: since Hindu Period, the plant motif is a chain of flower and leaves. (m) 'Kawung' motif: it is based on geometrical design, it is the shape of sugar palm, consists mainly of circles placed in a row, so that they partly overlap. (n) Double spiral motif: the concatenated double spiral pattern has the shape of an S. This motif is running side by side in order to fill up the available space. (o) 'Tumpal' motif: it consists of a row of isosceles triangles, covered with vegetable motifs in woodcarving. Its form is commonly carved on the border of fabrics, mat, and chair's legs.

From the above explanation, it can be derived that the basic form, structure, and ornaments of seating facility are visual entities which have a relation to the the shared meanings referred to the religious (e.g. lotus, kabah image, arabic calligraphy, etc.), cosmological (e.g. garuda in upper world, naga in lower world), naturalistic (e.g. human, floral, animals figurine, etc.), and behavioral acceptance (e.g. elevated seat for the noble and non-elevated seat for the peasant). These visual entities can be further conceived as a sign.

3.3 Product as a Sign

Basically, the semantic of product can be grasped by dividing its references into two parts: denotative reference and connotative reference. It can be illustrated with the example of seating facility design. As a denotative reference, a seat-furniture refers primarily to an object for human sitting. And as a connotative reference, it also refers more widely to a certain conception of sitting specifically its overall ideology as cultural behavior and its symbolic use, which has influenced the design. In this point, in order to improve an analysis of design studies or practices, it shall be more analyse, specifically how the connotative reference of a product actually functions as a sign.

Charles S. Peirce, a semiotic theorist, argued that signs are divisible by three trichotomies: first, according to the representamen; second, according to the relation to its object; third, according to interpretant. The representamen (R) is the form of product interpreted. The object (O) refers to another quality, thing, action, fact, event or the like. And the interpretant (I) is conceived as being like a process of interpretation, an on-going sign production, is equivalent to a mental effect deriving from the user's thought and experience. For Peirce, the Interpretant is the effect of the relation between R and O in the mind of the user.

The existence of representamen has three categories as potential segments to be connected to the O, which are: icon, index, and symbol. The iconic sign of product are combination of some distinct elements and visualization. It is interpreted as being like something else, the form seems to metaphorical resemble or be similar to another form, and refers to an O merely by virtue of characters of its own, it is like that thing and used as a sign of it. The indexical sign is a sign that is contiguous to its object O by through the use function of product. And the symbols of product are some perceptible qualities conventionally connotate symbolic meanings. It is connected with its object O by virtue of the idea of the symbol-using mind based on established habit or social conventions. Through metaphorical mode of signification, symbolic references must be known in order to be socially understood.

The triadic relation of representamen, object, and interpretant provides a starting point for the application of the product semantic in analysing seating facilities design. As a sample, the authors analyse a semantic of Muslim's praying rug (sajadah) as shown in Figure 5. A sajadah (R) can refer to an Islamic prayer act (O) which gives an interpretation that it is a tool for sitting, used by Muslims in admitting the existence of God (I). At the relation R-O, the iconic sign of sajadah is its rectangular form, pliable materials, dim colors and Islamic ornaments. The indexical sign is its function for facilitating certain acts and the symbolic sign is its conventional associations and ideas related to the Islamic representation.

4. DISCUSSION

4.1 Seating Facilities as Iconic, Indexical, and Symbolic Signs

Every perceptible characteristic of product's affordance can be considered as a sign morpheme. It can be a form's component, structural construction, motif, image, material, texture, contour, and color. In semiotic analysis, these sign morphemes are usually termed as a syntactic dimension of object, aside from a semantic and pragmatic dimension.

With semiotic concept, the authors have aimed at an
analysis in which different perceptible elements of seating facilities design can be taken into consideration while still being conceived as an integrated whole. By identifying the perceptible characteristics of seating facilities design and relating to the codes of signification (iconic, indexical, and symbolic sign), the semantic of product can be systematically analysed.

The user can find that the form of chair’s legs is similar to the form of animal’s legs. This chair’s legs can be functioned as an iconic sign. The user can also interpret that a mat as indexical sign as a tool for sitting on the floor, and the chair is for sitting on the elevated position. As a symbolic sign, the seating facility can conceived for the impression of balance, sacred, nobility, etc. The systematic classification towards icons, indices, and symbols of seating facilities design can be described as follows (Figure 6):

1) Icons - It refers to some physical elements of seating facility which are potentially related to any perceptual resemblance, such as: (a) Formal parts (e.g. headrest, backrest, legs perceived as the human head, body, and legs), (b) Material (e.g. combination of the rigid materials and pliable materials as to the natures of human’s bone and skin), (c) Colors (e.g. combination of artificial and natural perception towards color), (d) Ornamentation (e.g. segmentation of primary and secondary embellishment derived from the evaluation of body parts).

2) Indices - It refers to the perceptible elements affected by its use and circumstance, such as: (a) Whole form related to the use (e.g. seat is facilitated or not facilitated by backrest, armrest, or footstool to represent particular postures), (b) Texture (e.g. smooth textures is tactile), (c) Contour (e.g. soft contour is comfortable for the body), (d) Spatial compositions (e.g. different sitting direction to open or avoid interaction).

3) Symbols - It refers to the elements of product which have established meanings by convention and shared idea of the symbol-using mind, such as: (a) Symbolic use (e.g. height of seat position symbolizes social status of the users), (b) Symbolic form (e.g. symmetrical form symbolizes proper postures), (c) Symbolic space (e.g. sitting directions symbolize relation to the God’s power), (d) Symbolic material (e.g. refined material symbolizes nobility), (e) Symbolic color (e.g. colors painted on dominant layer emphasizes its symbolic meaning), (f) Symbolic ornament (e.g. motifs represent religious, cosmological, and naturalistic images).

These three types of semiotic sign constitute a generic concept in the signification process of their object relations (R-O). An index may include an iconic sign; a symbol may include both iconic and indexical signs. The color of a product may refer as an iconic sign and the same colour may have a symbolic content. But it has to be noted that the one code of signification cannot transform into another codes; an iconic sign cannot change into an index.

4.2 Semantic Model for Designing Seating Facilities as Cultural Objects

The seating facility is a cultural product, that is, an object corresponds to culturally defined meanings. What a cultural product expresses is mediated by product language which, as well as verbal language, consists of codes and modes to relate hidden discourses in mental level to the perceptible level (verbal utterances or visual appearances). For designers, the iconic, indexical, and symbolic signs of product serve as signification codes to mediate the referential meanings to the product’s appearance; and it will operate conversely for the interpreters when they analysing a product. A designer must master some forms of product
Figure 6: Classification of Seating Facilities' Affordances as Signs, Signification, and Referential Resources
language to be able to embody the 'self-explanation' of a product. The 'self explanation' is a sign that refers not only to the practical function of the product, but also includes the representational function which provides information about other qualities (cultural, historical, and social features) associated with the product.

The relationship of a product (Representamen) to its referential concepts (Objects, and Interpretants) is called signification. There is two preliminary order of signification: the first is that of denotation, the second is that of connotation and occurs when the first order of meanings of the sign meet the values and established discourses of the culture. The denotation refers to the general function of product and assumed that is objective and value-free for all their formal differences. The denotative meaning of seating facilities is the general function of its use.

While the connotation occurs when the denotative meaning of sign is made to stand for the value system of the culture or the person using it. It then produces associative, expressive, or evaluative shades of meanings. In this case, myths serve as a source of connotation - a set of signs which implies familiar and influential social structures of thinking. Myth is also a chain concept widely accepted throughout a culture, by which its members categorize their symbolic values or understand a particular topic or part of their social experience (e.g. balance as good, proper, formal, etc.). The members of community share common perceptions and evaluation towards visual entities of seating facilities design, by virtue of possessing the same kinds of myth which serve as cultural bound. In this point, the myth related to the seating culture can be categorized into four headings: religious (refers to the god's existence and its relation to the human beings), cosmological (refers to the creation of universe), naturalistic (refers to the natural things in human environment), and behavior acceptance (refers to the behavioral relation between people).

As regards the way a variety of invisible myths affect the product's forms, it is necessary to systematize the transformation of cultural meanings which is experienced, imagined, and evaluated in the cognitive thinking into a semantic model. As shown in Figure 7, the authors have divided three levels of cognitive thinking based on the Peirce's philosophy. First is the mental level which consists of myths as resources of meaning. Second is signification level, that is, to serve as a way and codification to mediate referential meanings to the product's visualization through iconic, indexical, and symbolic code. And lastly is perceptible level that includes all of the acts in visualization: material chosen, formal configuration, surface treatment, usage and spatial placements.

In the mental level, for the Javanese, there are mythologies which provided the basis of their symbolic classification system. The binary ideas related to the gods and evils, the prohibition to portray an Islamic God, the Hinduistic stories, these are examples which can be termed as a religious myth. In the cosmological myth, there are ideas derived from their effort to structure the universe, such as: the upper world for deities, the lower world for human beings, and the body as well as the earth is the center of universe to control anger (red:south), wisdom (black:north), purity (white:east), and desire (yellow:west). In the myths relate to their naturalistic surrounding are the binary opposition between left or right side of human body, sun and mountain, flora and fauna, and another. While the behavioral myths relating to the culture of sitting are the ideas provided as a basic evaluation of social behavior, such as: sitting as sacred (e.g sitting for meditation or praying) and profane activity (e.g sitting for individual resting), frontal symmetrical arrangement of bodily forms are proper and asymmetrical is improper postures, etc.

As well as linguistic, the semantic of product has referential 'modes' to serve as a particular way to transfer those mythological or symbolic references into the level of signification. There are two fundamental modes of communicating meanings, which are: metaphor and metonymy. In metaphorical process, the interpreters, by act of imagination, comprehend some entity from the point of view, or perspective, of another entity. For example, the different height of seat position between the king and his inferiors is a metaphor for the hierarchical structure of universe. While metonymy works by using a part or element of something to stand for a whole. For example the form of lion's leg carved on the noble chair's legs is metonymic: a feline's power is interpreted as standing for the whole of the reality of felines which it symbolize powerful authority of the nobles. Metonyms work syntagmatically and use the part of mythological story to the signification of visual text and visualization.
In interpreting seating facilities design, through metaphors and metonymies the interpreters have constructed mental worlds to mediate between themselves and external realities. The icons, indices, and symbols of seating facilities design provide many channels for interpreting particular informations within widespread mythical acceptances in the referential level. And the formal characteristics of seating facilities and the ways of visualization through their formal parts, such as: realistic, abstract, and geometric, are to embody these three codes of signification. It can be shown by example that an interpretation of the king's throne needs closely identification of its formal structure as to be visual entities (iconic interpretation), its relation to the king's seating posture in maintaining his conformity and his position to be higher than his subordinates' position (indexical interpretation), and lastly, its relation to the symbolic-using mind towards the king's existence (symbolic interpretation). The various informations derived from this interpretation refers to the myths existing in the hidden or referential level: upper world is deities world, sacredness is gold, etc.

In developing seating facilities design, the designers can use any comprehension derived from the religious, cosmological, naturalistic, and behavioral myths as a conceptual backround in determining icons, indices, and symbols of product as well as the product's visual composition to pro-
vide a representational function of product. This semantic model will be useful for designer as a guidance to develop seating facilitating design or any cultural product through design workshop and lectures, considering that the myths are never entirely fixed, because they are produced, circulated and exchanged through different times and ideologies.

5. CONCLUSION

The seating facilities design can be conceived as a sign and can be systematically understood by using the semantic model formulated on this paper. In synthesizing this semantic model, several findings can be outlined herein: First, the seating facilities' affordances (formal parts, structure, and ornamentation) can be perceived as icons, indices, and symbols which serve as signification codes in producing connotative meanings. Second, the cultural meanings referred by these signification codes are derived from the myths and symbolic schemes prevalent in the community. Third, the myths related to the culture of sitting can be divided into four headings, which are: religious, cosmological, behavioral, and naturalistic myth. Fourth, the clusters of information circulated from the referential level (level of mythical and symbolic acceptances) to the perceptible level (level of visualization) can be charted into a semantic model that is intended to make the process of signification systematically understandable and can be used for interpreting and determining the product's representational functions. Thus, the semantic model formulated on this paper can serve as a device for designers to generate ideas in design development of seating facility as a cultural representation suitable to certain community, through design workshops and lectures.

Not limited to the Javanese, in Indonesia as a country with more than a hundred ethnic groups which each has an own cultural identity, the application of this semantic model in design workshop can be undertaken by collecting local furniture designers, craftspeople, design intellectuals in every ethnic or region to generate their ideas generated from their own religious beliefs, cosmological, behavioral, and naturalistic myth. However, the cultural identity is not a static thing, but a process of change. Hopefully those various changes and modifications of their original viewpoints can encourage rich design innovation in every ethnic group.

References

1) Hatcher, Evelyn P.: Art as Culture. New York: University Press of America. 1984, p.113
6) Hoop, Van Der; Indonesische Siermotieven, Batavia: Koninklijk Bataviaasch Genootschap Van. 1949, p.14
8) Gros, Jochen; Reporting Progress through Product Language, "Innovation", the Journal of Industrial Designers Society of America, 1984, p.10
11) Tilley, Christopher; Metaphor and Material Culture. Massachusetts: Blackwell Publisher Ltd. 1999, p. 4-5