WOVEN FURNITURE DESIGN: IN SEARCH OF FORM AND TEXTURE

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Abstract:
The paper researches wicker furniture design in an attempt to analyse the existing materials, techniques, tradition in basket-weaving and furniture-weaving. This leads us to research into the potential of wicker in form-building and provides an explanation of modern designers’ interest of in this material and technique. The analysis is aiming at revealing the bi-fold role of the weaving technique both as a surface-covering and as a structural building material. In this way, the shift from the simple use of weaving as caning, to structural building of objects, is outlined. The authors attempt a morphologic analysis of woven furniture examples, structural classification according to types and kinds of materials used; this is done by case-studies of 20 examples, selected for their interest and archetypal view, as well as their noted authors. In this way, we can give an answer to the question: Is woven furniture strictly kept into the realm of outdoor and hotel use, or can it ‘return’ to our homes with the corresponding functional and aesthetic potential?

Key words: woven furniture design; wicker; basketry techniques; rattan furniture; contemporary design.

INTRODUCTION

THE TERM WICKER

As part of the theme of crafts and modern design, in this paper we shall attempt to see how the ‘crafty’ look of woven furniture is relating to serial production; and why it is so attractive to modern man. The Webster’s Dictionary (1986) gives the following explanation of the word ‘wicker’: “a small pliant twig or osier: a rod for plaiting basketwork; 2a: wickerwork, b. something made of wicker (as a basket)”. According to Miriam Plans (2004), “the word ‘wicker’ is believed to be of Scandinavian origin, coming from the words ‘wika’, which means ‘to bend’ in Swedish, and ‘vikker’ meaning ‘willow’. Many people think that ‘wicker’ is an actual material. Rather, it is a class of furniture woven from a number of materials, including rattan, cane, bamboo, reed and willow”. The materials, from which all kinds of woven products are made, are a great number. Here we can enumerate osiers, sea grass, sweet grass, palm leaves (to give some tropical examples), raffia; but also the twigs of all sorts of local plants, e.g. the vines of blackberry, etc; to which we can also add the needles of the American Southern Longleaf Pine.

OBJECTIVE AND METHOD

In this paper, the authors use a case study method. Selection of individual examples was done both for their originality and the specific type they represent. On their basis, selection, classification, visual identification and comparative morphologic analysis was used to bring out the connection between basketry and furniture caning and weaving. Tables were used to present graphic material in an orderly manner. Our paper uses research of material, classification of basket types and derivative sculpture objects, mat-weaving patterns; this section is aimed at discovering more sources of design inspiration. Case studies of modern wicker furniture design are researched, on the basis of which we outline features, morphology and, most of all, form-building potential of wicker. To bring clarity in a visual matter such as design cases, the authors have researched design trends developed in time. The paper is aimed at becoming a source helping designer research.

EXPOSE MATERIALS

A great number of natural and man-made materials are used for making woven products, they provide strips weaving. A brief overview of some of these materials follows.

NATURAL MATERIALS
The most common natural material used for the production of woven furniture is rattan. Roughly 600 species of palms in the Calamoideae subfamily exist most of which are “climbers that use thorny stems and
leaves to hold on to the supporting structure of other plant species” (Meijaard et al. 2014). Rattans have slender stems, 2–7cm diameter and long internodes between the leaves. With a growth rate of 36 inches per day, it is an abundant and renewable material. Rattans are cultivated within forests and swidden land. “Rattans are ready for harvest 5–7 years after planting. In clustering species, the general harvesting cycle is 3–4 years, with each cluster of rattan stems yielding around 20–25kg” (Meijaard et al. 2014). Because of its flexibility and its long stems of great strength, rattan is primarily a building material. In its un-split form, it is used to provide structural parts in furniture and construction. “The outside skin of the rattan pole is usually peeled off, to be used as rattan weaving material. The skin is cut into strips used for the weaving process of seats and backs for chairs, and also to bind furniture joints together for reinforcing and decorating purposes” (Benhua et al. 2016).

Bamboo, a member of the grass family Gramineae Poaceae, includes over 70 genera and 1200 species. Most bamboo species are native to warm and moist tropical and warm temperate climates. “One of the fastest-growing plants in the world, it can increase to 10-30m in 40-60 days, and reach complete height and diameter within one season. Bamboo usually can reach optimum material properties for 4 years; its timber has special properties of split, easy preparation, high strength, moderate rigidity, and good toughness, much higher than that of general timber” (Benhua et al. 2016).

“The wood properties of bamboo mainly depend on the components and structure of the cell wall. (...) Like wood and agriculture residue, bamboo is mainly composed of cellulose, hemicelluloses, and lignin, even though the contents of these compositions are different”(Benhua et al. 2016). As an important biomass material, bamboo could be sustainable for utilization once planted. “Bambusa vulgaris is mostly cultivated by the rural community because of the high growing rate, thick culm wall, uniform internode size and the high yield of shoots produced. 2 year-old culms are used in handicraft and basketry industry; 4 year-old culms are normally used for panels, parquets, furniture and construction purposes” (Wahab et al. 2009).

Bamboo stems are processed by splitting into halves, quarters or eighths. Having high elasticity, the material can be bent after harvesting, and is dried bent (Бърдаров и Владимирова 2014). Like rattan, bamboo has a hard outer shell, which is peeled, in order to make a weave. It is also used for the structure of wicker furniture. Its natural durability of less than two years is due to high levels of starch. These turn untreated bamboo to material easily vulnerable to fungi, rot and attracting insects such as termites (Boran et al. 2013).

Palm leaves are used to make woven products such as bags, carpets and furniture. Abacá, also known as Manila hemp, is a species of banana (Musa textilis), native to the Philippines, grown as a commercial crop in the Philippines, Ecuador, and Costa Rica. The plant grows to 4.0–6.7m, and averages about 3.7m. The fibre, extracted from leaf stems, is classified as hard fibre, along with coir, henequen and sisal. The leaf sheaths contain the valuable fibre (Bailey 1947).

The Raffia palms (Raphia) are a genus of about twenty species of palms native to tropical regions of Africa, and especially Madagascar, with one species (R. taedigera) also occurring in Central and South America. They are remarkable for their compound pinnate leaves, the longest in the plant kingdom; leaves of R. regalis up to 25m long and 3m wide are known (Tucker et al. 2010).

Cane (the plant) is any of various tall, perennial grasses with flexible, woody stalks, and more specifically from the genus Arundinaria (Brako et al. 1995). Cane is used “… for weaving baskets, for hampers, chairs with the use of seagrass to beautify it, for beds of different sizes for children and adult, cupboards, tables of different shapes and sizes and can also be used for walking sticks. It can also be used for boats and roofs according to history” (wikipedia.org). Cane is usually processed by splitting into halves, quarters or eighths. Having high elasticity, the material can be bent after harvesting, and is dried bent (iculty attributable to fungi, rot and attracting insects such as termites (Boran et al. 2013).

Cattail is the material used in genuine rush weaving and is the common marshland plant found almost everywhere in northern latitudes. These plants have many common names: bulrush, reedmace, cattail, punks, corn dog grass, etc. These are names of plants of the genus Typha – plants in the family Typhaceae (Stevens 2013). The leaves of the cattail are harvested, dried, pressed flat, twisted together two to five straws at a time to make various widths, and woven in some variation of the diagonal cross pattern. Cattail is woven onto frame that forms the top and back of the chair. This material is very durable with beautifully variegated coloring, featuring hues of pale greens and ambers. With time cattail mellows into an equally attractive golden brown (furniturerenewal.com).

Seagrass is a flowering plant, belonging to four families, all in the order Alismatales, which grow in marine, fully saline environments (Waycott et al. 2014). It is used in baskets and furniture, and woven like rattan. This grass comes in varying strand sizes and can also vary in the tightness and uniformity of the twist.

Hierochloe odorata or Anthoxanthum nitens, also called Sweet Grass, Manna Grass, Mary’s Grass, or Vanilla Grass, etc., depending on the geographic latitude. It is a plant which is common above 40 degrees north latitude in Asia, Europe, and North America. (Hope and Gray 2009). “The plant is harvested
by cutting grass in early to late summer at the desired length. Sweet grass is sun-dried and must be soaked in warm water until it becomes pliable. The pliable grass is typically braided into thick threads and then re-dried for use (wikipedia.org).

Different tree species are also used in view of their unique qualities: wood flexibility and easy splitting. Such is the case of black ash (Fraxinus nigra) in the USA. Since it does not have fibers connecting the growth rings to each other, it can be easily turned into splints. Other species include the willow, osiers and hazel switches, birch bark, poplar, etc. Tree roots, e.g. the roots of spruce, fir, cedar are known to be flexible and of great length, and are gathered for weaving as well. Willow is a natural material from Europe and the United States and is a common weaving material that comes from willow trees and shrubs of the genus Salix, family Salicaceae, mostly native to north temperate areas and valued as a species grown for its decorative qualities, providing shade, erosion control, and timber.

Vines of various local landraces (bramble, or blackberry – Rubus fruticosus) are used for basket-making; corn leaves and straw are other materials.

Pine needles of Pinus palustris, commonly known as longleaf pine are used for a specific coiling technique used for baskets. This species is native to southeastern United States (Farjon 2013). The average length of the longleaf pine needles is 15 to 38 centimetres. The ancient craft of coiled basket making was conceived by Native Americans in Pre-Columbian times.

MAN-MADE MATERIALS

Paper-wrapped high tensile wire is made from heavy kraft paper twisted to form uniform strands and formed into large coils. The weaving of paper-wrapped high tensile wire was invented in 1907 by the American Marshall B. Lloyd. This machine-woven fabric became known as Lloyd Loom and it revolutionised an area of the furniture industry. “In 1921 Lusty, a packing case manufacturer, acquired the rights to mass-produce furniture using the American method of weaving twisted paper fibre, patented under the name Lloyd Loom. The product, which could be woven in a variety of patterns, was attached over bentwood frames and often imitated popular furniture forms made in other materials” (Williams 1994).

Synthetic materials

Synthetic wicker furniture is usually made of aluminum structural frames. Resin-wicker refers to synthetic material, usually nylon, polyethylene, high-density polyethylene (HDPE), vinyl or PVC. Woven plastic strips cover furniture frames made of metal or wood, and are much more durable than traditional wicker (patioproductions.com). Modern synthetic materials used in furniture are UV resistant and weather-proof, non-toxic and non-pollutant; pleasant to the touch, low-maintenance, lightweight and long lasting.

USES: BASKETRY AND OTHER OBJECTS

There is an obviously analogous manner of building baskets and furniture pieces. Basketry includes the creation of “receptacles made of interwoven, rather rigid material, but it may also include pliant sacks made of a mesh indistinguishable from netting – or garments or pieces of furniture made of the same materials and using the same processes as classical basket-making” (Balfet 2015). In this respect, the same author goes on to say, that this “handmade assemblage of vegetable fibers … is relatively large and rigid, so as to make a continuous surface, usually (but not exclusively) a receptacle”.

Hélène Balfet (2015) distinguishes two basic structural types of baskets: coiled and non-coiled constructions. The first predominate “in dry, subtropical savanna regions or roots and stalks found in cold temperate zones”. Non-coiled are subdivided into three types: wattle construction, lattice construction and matting or plaited construction. Plaiting techniques are used in tropical zones that “have palms and large leaves that require plaiting techniques”. This explains “sewed coiling that predominates in the African savannas and arid zones of southern Eurasia” or “coiled construction”, as the author calls it, against “various forms of plaiting in hot regions” – or “wattle” and “lattice” constructions. The wattle construction represents “a single layer of rigid, passive, parallel standards held together by flexible threads in one or three ways, each representing a different type” (Balfet 2015). Matting construction of weave is different, because “standards and threads are indistinguishable in matting or plaited construction; they are either parallel/perpendicular to the edge (straight basketry) or oblique (diagonal basketry). Such basketry is closest to textile weaving” (Balfet 2015). Similarly, the British basket-maker Polly Pollock (1993) differentiates between four different basket-weaving techniques (Table 1): coiling technique (“stitching and wrapping … bundles of grass, the basket spirals up”); plaiting, a technique using strips of materials either to form a bias weave (45°) or checker weave (90°). No distinction is made between warp and weft in this type. Stake and strand technique means that the baskets feature structural stakes, woven with a softer and flexible strand, or weaver. Cane and bamboo can be used for the structural stakes in Asia, while willow is the material used in Europe. Polly Pollock points out a fourth technique, namely twining, which is also using warp and weft elements.
One of the most popular patterns is the “Vienna Straw Weave”, which combines perpendicular and diagonal weaves at the same time. Stuart Lawson (2013) refers to rattan weave as ‘structural textile’.”Woven textiles can be flexible or rigid and use thread, encapsulated wire or various organic fibres such as rattan for their construction. The more rigid the strands, the less need there is for tension or framing to support the weave. However, thin-stranded, open weaves such as a cane-woven seat, work very well under tension to provide elastic, comfortable cushioning with free air movement, using a minimum of materials. Nearly all structural textiles applied to furniture are industrially produced, pre-woven sheet products that, with varying degrees of handwork, are tension-fitted to frames. A smaller-sized craft industry weaves and applies single strands to furniture by hand” (Lee 2011).

Basket-weaving has been raised to the level of sculpture art by modern Japanese authors. “Japanese ikebana baskets still echoed the Chinese archetype, which maintained a vessel form that served to contain the flowers” (Lee 2011). The exhibits from the exposition “Japanese Baskets and Sculpture in the Cotsen Collection”, held at Asian Art Museum, San Francisco, in May 2007, show a remarkable richness of structural weaving methods. “The techniques of weaving bamboo in strips vary with each basket (…) Many of the baskets were originally made for the tea ceremony or for flower arranging, activities with profound artistic and philosophical meanings in Japanese culture. And many were created by artists who represent basket-making lineages and by others who have been designated in Japan as “Living National Treasures” in recognition of their mastery” (The Asian Art Museum 2007). The transition from a functional object (tea ceremony flower basket) to abstract sculpture is a proof that authors, aware of the form-building potential of
the weaving technique, naturally evolved to abstracts. This gives us the ground to find a potential to turn those structures into designed furniture pieces.

WOVEN STRUCTURES: SHORT HISTORY

A great many number of household items are made by weaving fibres of different plants. Such objects have been found in Ancient Egyptian tombs, or have been depicted on Greek vases, on wall paintings, carved out on gravestones etc. Many objects were prepared by organic fibers: such as woven rush mats, baskets, sandals, trays, chests, wickerwork stands, conical hats in Asia, tea strainers in Japan, etc. In Ancient Rome, round wicker armchairs were produced, considered to be originally made by the Etruscans. Later (17th C), caning began to be used to substitute costly upholstery fabric. The 19th century was particularly abundant in exotic vogues, and caning was widely used for Thonet chairs, Victorian extravagantly decorative wicker chairs etc. The beginning of the 20th century saw the emergence of the Lloyd loom technology of Kraft paper used to machine-produced textile for garden chairs. The use of woven furniture for hotels, restaurants and gardens dates from this time. The second half of the 20th C saw the rise of interest in rattan furniture as decorative characteristic pieces in residential interiors.

WOVEN FURNITURE: CLASSIFICATION BY FUNCTION, STRUCTURE, MATERIAL AND FORM-BUILDING

Woven furniture use today ranges from garden furniture, contract furniture for restaurants, resort hotels etc., to characteristic single residential furniture pieces, such as chaise longs, garden sofas, rocking chairs, swing/hanging chairs, children's chairs, coffee tables, book étagères, coat hangers, flower stands. The materials used differ widely: wicker furniture wholly made of rattan (structural poles and ‘skin’); metal or wood structure plus caned parts; or structure of rattan or wood plus Lloyd Loom woven panels; metal or wood structure plus other types of mesh (woven tubular knit, leather strips, polyethylene strips, felt, laser-cut leather, etc.). The techniques are widely used for other home textiles, such as rugs, wall decoration, lighting fixtures etc.

Woven furniture follows basically the rules of basket weaving; therefore some of the shapes thus produced have a definite likeness to that of a basket, or receptacle; here we can quote Palla Chair, Primavera Armchair, E10 Rattan Chair, etc. A creative manufacturer, such as Paola Lenti, uses the African basket-weaving coil technique in some of its new models (“Afra”). Woven chairs are characterized by metal/rattan/wood structure, and a structural weave, usually tight, with some exceptions. The pieces are sculptural and generally consist of one single part or a small number of parts, involve exclusive hand work, and have a great visual effect. Here we have found the following morphologic typologies: 1. “Closed Spherical Type”. This is closer to a container than a proper frame furniture structure, morphologically it forms closed volumes (Fig. 1, Table 7). Here belong other closed shapes, such as Moebius Strip, ovoid shapes etc. 2. “Open Basket Type” (Fig. 2, Table 3). 3. “Flower Basket Type” (Fig. 3). This is a conical type, typical for a basket container, with a very decorative effect and a clear narrowing under the seat and wide flaring backrest. 4. “Classical Roman Type” (Fig. 4, Table 4). Starting from a ‘basket’ type, these chairs feature characteristic half-round plan, ending in a round-shaped backrest with sloping armrests. This type was manufactured by Lloyd Loom in the USA and Britain. In its essence, this is a round chair with a woven surface and ‘skirt’ under the seat, and is typical for garden furniture use. 5. “Flying Carpet Type” (Fig. 5, Table 5). This type represents a woven metal frame bent in space so as to serve as a structure for both backrest, seat and legs. Classic example is a chaise-longue “809” by Mario Bonacina. Many chairs feature this concept of woven metal frames for their back-and-seat; here the form-building does not stem out from the weave or rattan pole shape; it is totally subjected to the metal structure. 6. “The Tubular Type” (Fig. 6, Table 3): This type is characterized by using hollow ‘tube’ shapes all along their length, in order to achieve the seating-cum-backrest surfaces. The ‘tube’ is also open in order to achieve a lighter look. An example is the Wicker Chair by Marc Newson. 7. „The Mesh Type”. Examples, such as Nautica hanging chair, Doeloe lounge chair, feature structures made only of rattan poles. Surfaces are built by thinner stems that are fixed near to each other; or by a mesh made out of such stems. With these two types, the volume is delineated by separate contours. This technique is used both in rattan material and in thin wooden parts.
WOVEN FURNITURE: CASE STUDIES

The Case Studies performed for this paper are summarized in the following 5 tables. The findings are systemized and organized following the above archetypal images; the weave is followed where possible. A consistent interest towards wicker was established in the period of the 1950-s and 1990-s as well as the first decade of the 21st century. A clearly defined diversification of form-building, of texture experiments of new weaves and materials is established in the last decade, which tendency can be visually followed in the summarizing tables.
DISCUSSION

The case studies have revealed a wide range of opportunities for designers wishing to use rattan both as a structural material or surface weave. Form-building potential was disclosed to evolve according to the ‘basket’ type, both open and closed, which brings us to any bulbous shape or its varieties. Next, mixed principles brings metal/wood/rattan structure with caned surfaces, leaving us with all possible surface variations, the oldest of which we called “Classic Roman Type”, consisting of an outside covering surface and a seat. Important versions are the ‘tubular’ type, the bird’s nest type, the ‘flying carpet’ type etc. Finally, we come to the “structural mesh type” which lacks surface weaving altogether, and leaves us with the structural skeleton woven into a large mesh. De-constructivist approach brings us to the “unfinished” type, which brings pieces closer to natural-looking objects, without, of course, being able to beat the look of the ‘bird’s nest’ type, which is clearly the best.

We can point out the following advantages: purely formally, the pieces are archetypal (the basket image being very strong), bringing characteristic texture and colour of the materials used (rattan, tubular knit, polyethylene, etc.), bringing ‘natural’ flavour and ‘crafty’, ‘handmade’ aroma to such an extent, that the pieces look exclusive. The disadvantage (especially having in mind the exclusivity) is clear: a very high price. Most of the pieces from our case study are exclusive both because they are ’signed’ by famous designers, by long hours of expert handwork and the natural material, by the label of the manufacturer, by their exoticism. Being very aware of the price policy of different parts of the world, yet we should acknowledge that this ancient basket-weaving skill brings about some of the best examples of design for garden purposes, public use and for the home.

| Types of rattan chairs according to morphology of design: Open Basket and Tubular type |
|----------------------------------------|------------------|---------------|------------------|---------------|
| Product Name, Materials                | Year of Design   | Author        | Manufacturer     |
| Primavera Armchair Rattan              | 1967             | Franco Albini  | Rattan 1980, Italy |
| Hanging Egg Chair                     | 1968             | Nana & Jorgen Ditzel | Skita Design, Denmark  |
| “In the air” Chair                    | 1968             | Kechris Tomita | Benecraft 2000, Italy  |
| Wicker Chair (Boca Lounge Chair)      | 1990             | Marc Newson   | Idex, Australia   |

The Primavera Armchair by Franco Albini and Francesco Dal Co is exactly like a flower basket. It received innovative use in the 1970s Rattan Chair by open-design from 1966. The chair is definitely a high decorative one, reminiscent of the Poisson Chair for Wagner and to other craft examples, because of the fan-shaped basket. The Primavera’s beauty, any look is achieved to its openwork diagonal structural mesh, mounting separate rattan baskets. Structurally, the seat is being carried by two large rattan loops, the crossing points are fixed by metal.
### Table 4

**Types of rattan chairs according to morphology of design: “Roman Type” and its versions**

<table>
<thead>
<tr>
<th>Picture</th>
<th>Classical Roman Type</th>
<th>Classic Roman Type</th>
<th>Classic Roman Type</th>
<th>Classic Roman Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name, Materials</td>
<td>Paper-wrapped high tensile wire</td>
<td>Canasta Series Aluminum frames, interweaving: white or bronze polyethylene</td>
<td>Foglia Chair Metal structure, rattan-core weaving</td>
<td>Ami Chair Stainless steel, expanded P1, handwoven chain tubular knit</td>
</tr>
<tr>
<td>Year of Design</td>
<td>1922</td>
<td>2007</td>
<td>1948</td>
<td>2008</td>
</tr>
<tr>
<td>Author</td>
<td>Lusty Lloyd-loom design</td>
<td>Patricia Urquiola</td>
<td>Giovanni Travasa</td>
<td>Francesco Rota</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Lusty Lloyd-loom, Great Britain</td>
<td>BB Italia, Italy</td>
<td>Vitra, Bologna, Italy</td>
<td>Paola Lenti, Italy</td>
</tr>
</tbody>
</table>

**Morphology of Design, Stylistic Features, Type of Weave, Construction and Details, Material or Material Mix, Analogues**

The shape of this chair is reminiscent of the ancient Roman women chairs as a type. It includes a round back, a home-made-shaped seat, the weave surface on all sides and under the seat to form a 'V'. This chair shape gives rise to many utilized and simplified versions reduced to a curved structural surface plus one seat, in modern design.

*Patricia Urquiola approached the outdoors starting from the theme of woven patterns-re-visioning and personalizing the concept with a traditional look in mind but giving it a decisively contemporary look without using too much nostalgic influence Vienna show.* The chair was inspired by 'Airline baskets' (distrakt.com). The structure is metallic, the weave is "The Vienna Cave", but over-exaggerated by the use of polyethylene strip. In the different places, Urquiola follows different types: the "Roman" type for the garden armoir chairs, the spherical type for the outdoor sofa.

The chair has two parts: seat plus sculptural curved "limones" part with long short front legs. Contour and legs are in metal. The weave is structural and tight. The high back brings a different character of the chair, although structurally it belongs to the "Roman Type", it has the look of a fan-shaped high-back traditional craft chair. The "Roman" type for the garden armoir chairs, the spherical type for the outdoor sofa. Fully finished in using tubular knit, this piece makes good use of the structural weave of the company’s "Chair"/knit tubular material. To soften the bumps, cushions are provided. This example proves that the woven pieces vary widely in materials. The mat material adds color and texture over the metal structure.

### Table 5

**Types of rattan chairs according to morphology of design: “Flying Carpet Type” and its versions**

<table>
<thead>
<tr>
<th>Picture</th>
<th>Flying Carpet Type</th>
<th>Flying Carpet Type</th>
<th>Flying Carpet Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name, Materials</td>
<td>Monza Chair The frame is made from metal and rattan</td>
<td>890 Chaise longue Internal steel frame, woven rattan core</td>
<td>Lounge Chair, Model P5 Tubular lacquered steel frame, woven wicker, S Chair Metal structure, cord or rattan; other materials</td>
</tr>
<tr>
<td>Author</td>
<td>O’Urfin and Lamosci</td>
<td>Mario Benacrea</td>
<td>Tito Agnoli</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Monza 1889, Italy</td>
<td>Benacrea 1889, Italy</td>
<td>Pleonente Bonacrea, Italy</td>
</tr>
</tbody>
</table>

**Morphology of Design, Stylistic Features, Type of Weave, Construction and Details, Material or Material Mix, Analogues**

This chair is a product of Mario Benacrea. The structure of the chair is composed of a steel frame covered with woven rattan fabric. The chair has a sculptural design, with a metal frame covered in a light polyethylene cord weave. The seat is supported by thick rattan weaves, clearly following the "Flying Carpet" style. This model by Tito Agnoli explores an idea of weaving furniture as a single frame, bent in space to provide backrest and seat, that originated in Bauhaus cantilever chairs. Typical for the 60s and 70s, this chair gave many versions with woven or less complex surface.

This chair is a product of Tito Agnoli. It is a metal structure, covered in a light polyethylene cord weave. The chair has a one-piece morphological structure, with a metal circular base. The individual feature is the stuffing, with a coiled wicker double wale of the chair. Air icons and minimalistic image.
Table 6

Types of rattan chairs according to Characteristic Weaves

<table>
<thead>
<tr>
<th>Unfinished Weave</th>
<th>African Basket Weave</th>
<th>Closed Shape, Open Weave</th>
<th>Openwork Mesh Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture</td>
<td>Picture</td>
<td>Picture</td>
<td>Picture</td>
</tr>
</tbody>
</table>

Product Name, Materials

Yoda Easy Chair Rattan, nylon, steel

Afro Chair Stainless steel structure, hand-woven upholstery with cord and Aquashell yarn

Balou, Lowwood and Sika olive, rattan, nylon, steel

Nastic, hanging chair Structures in pooled and tied natural rattan 32 mm diameter

Year of Design

2008

2016

2004

2014

Author

Kenneth Coboquesque

Francesco Rota

Kenneth Coboquesque

Alberto Sánchez (Nut Design)

Manufacturer

Kenneth Coboquesque, Philippines

Pedro Leal, Italy

Kenneth Coboquesque, Philippines

EXPOVIVA, Spain

Morphology of Design, Stylistic Features, Type of Weave, Construction and Details, Material or Material Mix, Analogues

The Yoda Easy Chair has the unfathomable effect: it reminds us of the deconstructed structural textile, where only the tarpaulin remains sticking out. The Yoda Easy Chair achieves a tall silhouette, thus giving a hierarchical meaning, a throne-like structure, that is, a really decorative. It makes a screen-like performance, when we use several chairs together, thus separating the spaces in front from the rest of the room. The weave is open, bringing a basket quality to this piece.

The clean and minimalistic form of this armchair is totally dictated by the technique, used by African women to weave their baskets. This is in fact the "soldered basket" technique where a thick cord or straw or seagrass is woven and sewn with yarn. The mono-thetic quality of the armchair does not distract the attention from the exotic woven.

In spite of the large size, this piece has a unique light quality due to the open weave and the fact that we can see through it. The piece is light and transparent, and is manufactured in two versions: indoor and outdoor, with different materials. All models by Coboquesque have the unmatchable visual quality of the different weaves used.

The open weave of this rattan chair relies totally on the decorative effect of the sinuous straws poles. This unusual movement of the hanging chair finds its visual effect in the way the two of the rattan poles, although weaving is present, the transparent poles also carry a "frame" of knitted yarn in its meandering forms.

Table 7

Types of rattan chairs according to morphology of design: “Closed Spherical Type” and its versions

<table>
<thead>
<tr>
<th>Closed Spherical Type</th>
<th>Closed 3D Shape</th>
<th>Closed Spherical Type</th>
<th>A Compound Configuration of Several Closed Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture</td>
<td>Picture</td>
<td>Picture</td>
<td>Picture</td>
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</tbody>
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Product Name, Materials

Puffa Chair Rattan

Sushi Decked Walnut-hayworth (Eucalyptusmassonii)

The Spaghetti set Natural Rattan, rattan

Doolich lounge chair

Year of Design

2000

2006

2010

Author

Giovanni Torosso

Barnavis Andrew Sibyttia

Barnavis Andrew Sibyttia

Abil Abidah

Manufacturer

BONACHIA LIBRI, Italy

PIE Studio Furniture (Project Import Export)

PIE Studio Furniture (Project Import Export)

Morphology of Design, Stylistic Features, Type of Weave, Construction and Details, Material or Material Mix, Analogues

In Italian “puffa” means “ball”. This type of closed containers resembles spherical shapes, although the sphere is distorted to resemble a seat. The weave is slightly tight and structured, although it is very probable that the structure incorporates metal elements.

Stylistic effect, many analogues, rounded shape and serving as poufs, and also made of different materials (e.g. tubular knoll).

Here, the type is a closed one with a structural light weave, the material used is water-hayworth (Eucalyptusmassonii), an aquatic floating plant known to cause great problems by being an invasive specie outside its native range. The simple spherical volume acquires a more complex three-dimensional typography, which reveals the latter in its recesses.

This one, although clearly “spherical” in type, has an overpowering “felt”, which could also be dubbed “bird’s nest”, giving the natural and exotic look of the product. Analogies is “Nudicale” by Kenneth Coboquesque.

Structural mesh type. “The design of ‘tuft’ from the 30s to the late 60s, a small car used in Italy for public transportation, was the starting point and some reference of ‘Doolich lounge chair’. The designer used armed rattan poles as a frame and backrest for the upholstered seating unit. Viewed from the front, the arm rest resemble the circular headlights of the traditional vehicle” (designers note). The weave consists of a structural core of rattan poles. An analogy is the Dorset Hanging Chair by Giovanni Torosso.
CONCLUSION

Apart from the obvious variety of shape, texture and material, we are of the opinion that there are still unexplored areas of craftsmanship bringing more sculptural potential into the hands of modern design, with a strong ethnic flavour. Woven furniture remains partly on the verge of two separate economic zones: the one of the mass-produced serial objects and the one of exclusive handwork mastery. As usual the contacts achieved between the two bring unexpected creativity of design works, of which we expect to see more in future.

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