Ikat from Timor and its outer islands: insular and interwoven

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4. ASYMMETRY – IN DEFIANCE OF IKAT'S TECHNICAL DIKTAT

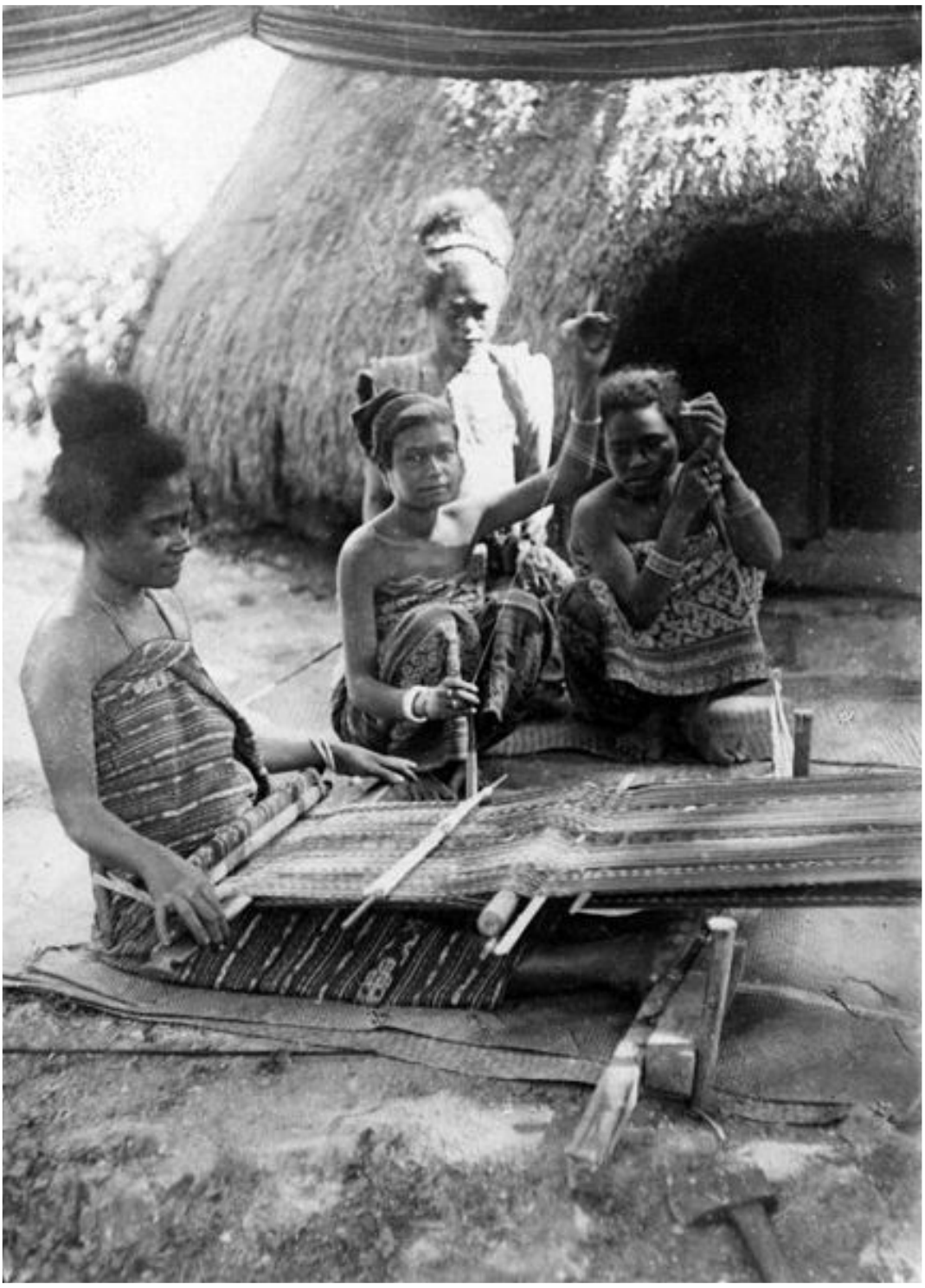


Fig. 188 Weaver in central Timor at her backstrap loom, photographed in the early 20th century. The width of the panels she weaves is limited by her arm span. Note the double warp bed. *Source:* Nationaal Museum van Wereldculturen, N° TM-10014467.

Asymmetry in ikat textiles, a phenomenon with low incidence but wide distribution in the region under study, forms an intriguing subject for investigation because (a) there exists an inherent collision between cosmological *desiderata* and technical mandates implicit in ikat's mode of manufacture; (b) its existence (unlike, for instance, Dongson influence on design), is not a matter of interpretation but demonstrable by incontrovertible visual evidence; and (c) it has been almost entirely ignored by previous researchers.[1]

While its expressions in the material culture may vary from one island to the next, the underlying cosmology is essentially identical across the studied region. At its core is a dualist concept of the universe and of social life: pairs of opposites that complement each other, to wit, the Upper World and the Lower World, Sun and Moon, light and dark, male and female, wife-givers and wife-takers (Blust 1980:238), hot and cool, young and old, good and evil, the two ends of a cloth (Jasper & Pirngadie 1912:224), the metal-textile dichotomy (Maxwell 1990:95; McIntosh 2019), local and brought in from abroad (de Jonge & van Dijk 1995:138) and trunk and tip (Waterson 2006:238). In all these cases two unequal manifestations combine to reach completion. Some relate to cosmology and divinity, others to human relationships and social organisation, yet others to the experience of material reality. In the latter case male-female differentiation appears to be predicated on how it feels: soft versus hard, which correlates with nursed from the soil (cotton) versus brought in from afar (metal).

Textiles come from the earth, they are the product of cultivation and creation by women, and they are soft to the touch. As a category textiles serve as a mental container for multiple types of qualities associated with aspects of womanhood, the core of which is fertility. On Alor in 1981 – introduced to local society by the elder Raja Ahmad Bala Nampira of Alor Besar in Kalabahi – the present author was shown several sets of bridewealth or *belis*. They were invariabley brought down from their storage in the *bikum*, a garret in the very top of the house's spired roof, a sacred retreat they shared with the spirits of the ancestors. Most *belis* sets shown contained ikat textiles only – no doubt a reflection of precipitously shared information on the visitor's interests. Some also comprised *moko*, bronze drums of indeterminate age (some perhaps dating to circa 1000 AD, but most probably to the 19th century), and elephant's teeth, *gading,* all with a reddish brown or golden patina. Raja Nampira mentioned that in the past bridewealth sets of wifetakers might also include *gading hidup* – lit. 'live ivory', a term used to refer to slaves in this context. These were seen as having a male attribute regardless of their gender (most commonly female), probably because they would have been imported, if only from another of the numerous language groups on the island.

[1] It should be noted that *bahasa* Indonesia does not have a word with ancient roots to denote asymmetry, relying on *asimetri* or *tak sama*, 'not the same'.

Which type of pairs[1] are given prominence varies from region to region, but the complementarity of elements with opposed values is a core concept throughout the Austronesian population of the eastern archipelago. Not to be equated with balancing, the essence of the quest for complementarity is harmony, the happiness that flows from union of the diverse.

> [C]omplementary pairs, are given conscious asymmetric valuation. Thus, for example, the east//west coordinates represent the path of the sun. In one common syllogism, the sun is said to come from the east, hence the east is to be regarded as greater than the west. In another syllogism, north, which is the term for left, and south, which is the term for right, are equated but 'power' is said to come from the south, hence the south is given 'greater' categorical weighting than the north (Fox 1973:356-358;1989:46). […] A similar logic is applied to the categories of above//below. These categories are linked to the east and west directionals. On Roti, to go east is to go 'upward' and to go west is to go 'downward' (Fox 2003:154).

Dualism has been widely noted and discussed, also specifically with regard to the eastern archipelago with which we are concerned here. Taylor & Aragon (1991:33), in their work on the art of Indonesia's outer islands, state that "although many kinds of even numbers [*sic*] and some partially symmetric designs can be found, norms about avoiding symmetry and even numbers are widely held". They also point out that "Indonesians eschewed absolute symmetry but, paradoxically, do this to achieve balance based on complementarity". Others, too, have similarly stressed the importance of duality and complementarity in Indonesian cosmology, as well as in social organisation.

> We may assume at present that this phratry dualism was in force, if not in all, at any rate in an extremely large part of Indonesia, even though it often escaped the attention of ethnographers. The phratries stand in a very special relationship to each other... The typical characteristics of this relationship are rivalry and antagonism, along with reciprocal aid and systematic cooperation. Usually one phratry is represented as masculine and superior, and the other as feminine and inferior. There is always a strong consciousness of their mutual dependence as the two complementary halves of the total community which is maintained by their exchange of marriage partners and their mutual cooperation (de Josselin de Jong 1977: 170).

Blust (1980) in his study on phratry dualism in the Proto-Malayo-Polynesian world builds on the work of P.E. de Josselin de Jong and F.A.E. van Wouden – likewise providing a vivid description of the often-tense complementarity of wife-takers and wife-givers, which permeates all aspects of life in the community. Given a weaver's ineludibly persistent awareness of the complementarity of unequal societal constituents, it is possible that she conceived of protecting the wearer by means of a cloth in which opposing elements were felicitously integrated, but any such cosmological inspiration is mere hypothetical. We do however, have concrete, empirical information on what weavers produced, and how. The

[1] The word for 'pair' in Indonesian, *pasang*, has the additional connotations of 'yoke', a firm connection between two elements, and marriage. *Pasang* belongs to the core Austronesian vocabulary, having a structural role as a numeral classifier, as in *sepasang hinggi,* 'a pair of *hinggi'*.

weavers of the region under study developed seven different ways to achieve symmetry, all of them laborious and technically taxing. (See Section 4.1 'Techniques to achieve asymmetry'.)

Ikat deviates from the cosmological *desideratum*: the overwhelming majority of ikat textiles from the region which Taylor & Aragon refer to (largely congruent with the region under study) is symmetric. Only a few communities, some topographically demarcated, others delineated by means of class, produce asymmetric ikat. The reason for this paucity of regions that produce asymmetric ikat is most likely pure pragmatism: symmetry is so much easier. As many of the cloths we study in this investigation belong to a privileged set – in the sense that outsiders collected them on account of their historical importance or evidence of superior craftsmanship – were made to serve as heirlooms, it is easy to forget that by far the greatest number of ikat textiles were made with pragmatic priorities, to wit those made purely as attire. Some of these were designed specifically for workaday use, and might for instance (see PC 211 and PC 166, Fig. 94), forgo the use of costly[1] morinda dye and rely solely on common indigo. Their design was always dictated by symmetry.

Asymmetry is a design luxury, a costly signal. It requires an almost arrogant decision to ignore, even contravene, ikat's basic properties. By deciding for asymmetry, strong weavers increased their workload, sometimes dramatically (upto 8-fold), and we shall find why this suited them perfectly.

Ikat's technical diktat

One of the first things noticed when picking up an ikat from the studied area is that, with few exceptions, it is made of two or three relatively narrow panels. This is the result of a technical, or rather human limitation: the width of the back-tension or backstrap looms that were and still are used on the islands. It is limited to the span of the weaver's spread-out arms, minus the length of the shuttle (typically measuring close to 30 cm/1 ft), which she needs to be able to fully withdraw from the warp – with another hand width or so to spare to facilitate work, and give it a bit of *schwung*. The smaller the weaver's physique, the narrower are her panels. This is just one, but perhaps the most elementary, aspect of herself as a human being that a dyer imparts to the weaving she creates, giving us a measure of her bodily proportions.[2]

Most warps for back-tension looms in the region under study do not exceed a width of 60 cm/2 ft, and many are no wider than 30 cm/1 ft. This implies that in order to create a sizeable cloth, two or more panels need to be joined together along their selvedges. Fortunately, unlike other textile decorating techniques such as batik, *songket* and *prada*,

[1] Morinda yielding bushes are hard to grow and harvest; dye does not adhere without mordanting.

[2] Other aspects tell us more about this specific weaver. Microscopy for instance shows with how much determination she beat in the weft, either forcing the warp to curve tightly around it, or letting it pass over and under it more loosely. Such difference is in part culturally determined. Certain regions weave more tightly than others. Within regions there may also occur a substantial variation, see Section 2.4 'Weave varieties per region'.

warp ikat makes it relatively easy to replicate a panel. A weaver merely multiplies the number of warp yarns that are tied off at one time, and after the dyeing she separates the warp into a corresponding number of identical skeins. The multiplication factors observed run from two to sixteen for standard Sumbanese men's wraps that are made in pairs. Ironically, then, the weaver's technical limitations give her the collateral advantage of a labour saving device.

So, for instance, if the weaver intends to do very fine drawing, just 2 yarns wide (the finest observed) with merely 2-fold replication, she would tie off four yarns for any individual set of strokes along the warp. If ikating a section in 4-yarn strokes with a 4-fold repeat (e.g. in a Timorese blanket such as the one shown below in Fig. 189), she would place her ties on 16 yarns. If drawing with 8-yarn strokes in an 8-fold repeat (e.g. in *hondu kappit*, the most common East Sumbanese construction, always produced in pairs), she would place ties on 2 x 8 x 8 = 128 yarns at a time. Most common in the region under study are 4-fold and 8-fold replications.

Fig. 189 A symmetric two-panel men's blanket from the Oecusse semi-exclave of East Timor. Asymmetry is popular here (hence often an indicator of production in Oecusse rather than in surrounding parts of West Timor) but not canonical. The axis of the cloth, the section that ran across the warp beam at the weaver's feet, has not been ikated. The basic ikated motif here constitutes one quarter of the finished cloth. *Source:* PC 002.

In most of the ikat-weaving regions two panels are felt to suffice; typically sewn together in such a way that one mirrors the other, producing perfect symmetry. However, three-panel cloths are also quite common. Most of these three panel cloths consist of two identical panels flanking a third panel that is either plain or symmetric, so that reflectional symmetry of the whole textile is achieved. In some regions of Timor (Insana, northern Amanutan, and small localities scattered across the Belu area) symmetric two-panel men's wraps are occasionally or predominantly made to seem to consist of three panels. In cloths of this type

the two identical panels are arranged so that their widest ikated bands are close to the sides, often only a hand width from the outer selvedges, while the narrower ikated stripes are closer to the seam. Sewn together they produce a cloth with a dark midsection which is plain or adorned with a few longitudinal stripes, and a visually tripartite aspect (see Fig. 190). This may be an archaic type, a legacy of the Melu ethnic group that was displaced by the Tetum in the 14th century (Yeager & Jacobson 2002:92).

Fig. 190 A visually tripartite men's blanket, *beti naik*, from Insana (West Timor), 1920-1940, that actually consists of just two panels. *Source:* PC 095.

On a small number of islands, e.g. on Lembata, weavers compete in the number of panels used for their ceremonial/bridewealth sarongs, which can be 1 m taller (see PC 316) than the average woman from the area, and when worn have to be doubled over so as not to completely hide the wearer. Whereas most sarongs on the island are made of three panels, the esteemed *kewatek nai telo*, some consist of four; the Swiss collector and author Georges Breguet collected an example with five panels.[1]

However, increasing size by adding panels to the common number apparently was 'not done' *in casu* men's cloth, as we do not observe it anywhere in the region under study. The number of panels that composed the cloth a man slung over his shoulders to go into town appears to have been ruled by a firm canon everywhere in the studied area.

[1] Georges Breguet, pers. comm., 2015.

Replication – the source of symmetry

While a large part of the respect for ikat weavers in their communities derives from the prodigious amount of time and energy expended on their work, labour-saving methods have been used on most islands, usually involving the replication of motifs. Many cloths – such as the men's blankets made on Timor, Sumba, and Borneo, most of the sarongs of Savu and Kisar and many of those of Timor – consist of two identical panels sewn together along one of their selvedges.

Replication may not have been originally inspired by the ambition to save labour, although that is invariably its consequence. For further economy, panels may be both longitudinally and axially symmetric. Prime examples are Timorese men's wraps which consist of four identical ikated areas (e.g. PC 258) and Sumbanese *hinggi*, which typically consist of eight repeats. This implies that only one-fourth, respectively one-eighth of the whole design needs to be ikated – although on bundles of warp yarns four, respectively eight times as thick and unwieldy. The weaver saves on knotting, but pays for it in complexity, because when the dyeing is done the warp bundles need to be carefully separated and sorted. Such cloths often, particularly on Timor, have a plain band in the middle where the warp ran over the far beam, but expert weavers, such as those of Sumba and Covalima (East Timor), first ikat the often highly ornate midsection, then readjust the warp and place bindings on the rest.

Basic ikated motif

There does not appear to exist an Indonesian term for these replicated visual elements. In the literature they are often referred to as 'repeats'. Darrell McKnight proposes 'basic ikated motif ' (BIM), a term the present author endorses on account of its clarity.[1] The BIM is not always easy to identify, as many ikat cloths have motifs that are repeated multiple times but are all tied individually. Paradoxically, it is an advantage when the cloths we study are made by less-than-expert weavers, as any tying error repeatedly shows up in the cloth, instantly revealing the number of times that the BIM was replicated. The better we understand this process, the more likely we are to visually grasp the complex patterning created by means of multiple repeats.

The repeats are realised by folding the bed of warp yarns into a package with a number of layers, as one does when cutting out paper dolls. The binding of warp sections across multiple bundles of yarn, done on a tying frame, has the same replicating effect as when cutting out bits from a folded piece of paper with scissors; a single action creates the pattern across all the layers. The most strenuous part only comes after all of the tying and dyeing: when the layers of yarns have to be unfolded back into separate skeins for each repeat. Mounting all these onto the loom in exactly the right order is painstaking – and not getting them in exactly the right order, or not properly aligned, is one of a weaver's chief defects,

[1] Darrell McKnight, pers. comm., 2014. For a detailed explanation hereof, see ten Hoopen 2018:47-49.

and probably the most common. Miep Spée, the author of a thorough but unfortunately unpublished study on the ikat from Savu reports:

> When dealing with an ikated band with an asymmetric motif, it is crucial to keep in mind what the top and bottom are. If a band is mounted the wrong way, one says "kettu la da day", "the motif walks on its head". In olden days such a weaving could not be worn, as it would bring on misfortune (Spée 1983:70) [translation PtH].

Asymmetry by preference – rare but widely distributed

In certain island regions the technical advantages of symmetry are ignored because tradition prescribes asymmetric design – a choice, decision, canon, that has several ramifications, and is clearly considered auspicious in a number of areas. Asymmetry is an odd phenomenon, that does not come into being *ex nihilo*. While all symmetric motifs are constructed by means of combining asymmetric basic shapes or primitives (Buckley 2012:7), symmetry forms the basis for asymmetry; it is a pre-condition for its existence. Asymmetry exist only by reference, in the deviation.

There is precious little literature on this intriguing subject. Maxwell's reference work on Southeast Asian textiles (1990) does not address it, nor did Jasper & Pirngadie (1912) or Adams (1969), although the latter in particular might have been expected to do so, as we shall see below. Yeager & Jacobson (2002:167) fleetingly refer to the occurrence of unequally sized panels in Oecusse, the East Timorese semi-exclave that geographically forms part of western Timor. Fox (2008:48) mentions the Savunese-style field division as characteristic of Ndao versus Roti, but does not elaborate. Hunt Kahlenberg (1977:99) mentions asymmetry versus symmetry as characteristic for Ndao, respectively Roti. Duggan (2001:39, *passim*) queried weavers on Savu who informed her that the asymmetry of men's cloth (one panel wider than the other) reflected the division of the island's society into two moieties, Hubi Ae and Hubi Iki, which she translates as Greater Blossom and Lesser Blossom.[1] These have grown – more properly 'created', arising as they did from a conscious communal decision to create them, one by one – seven, respectively three 'seeds', *wini,* that orally transmit lengthy genealogies, have their own ritual house, *tegida,* and their own reserved patterns. The terms 'Greater' and 'Lesser' are said not to imply a hierchical difference (Duggan 2013:8), but the disparity in the sizes of the panels allotted to them in the lay-out of the men's cloths (Duggan 2001:54) does suggest a difference in ranking. The larger panel, also called 'older brother', stands for Hubi Ae, the *hubi* with the most *wini*. In the Savunese sarongs we see no such discrepancy: the panels of which they are composed are of equal size. They are differentiated by means of the colour of the seam, the sewn-together selvedges: blue for Hubi Iki, red for Hubi Ae.

Spée (1983:46) relates the asymmetry to the significance of odd numbers on Savu. In

[1] Spee, who studied Savunese ikat design in 1982-1983 on a grant from the Dutch Prins Bernard Fonds, was taught by her mentor, Marie Addi Bireloedji, the wife of Savu's *Bupati* (Regent), that the correct translation for *hubi* is not the commonly adopted 'blossom', but 'stalk' – specifically a stem that carries fruit, such as lontar, bananas or *pinang* nuts (Spée 1983:100).

this island's ancient religion, Jingi Tiu (a bastardisation of the Portuguese *gentio*, meaning 'heathen', 'pagan'), God is One, but conceived of as a trinity composed of Deo, Kenuhe and Dohe Leo – the Lord, Evil and the Observer. Dohe Leo gave the Savunese people nine commandments that help them to remain one coherent whole. Hence one, three and nine (three multiplied by three, which stands for the totality) are the most important numbers. At a marriage or a funeral each guest may only give one textile, and the total number of cloths the deceased is buried with must be odd. The number three rules many ceremonies, including, after conversion, those of a Christian nature. During baptism, a child is raised in the air three times; when someone dies three kicks open the wall of the house; the dead is given three taps on the head. Before entering a holy site, three chunks of dried coconut are thrown away, the ovens in which lontar juice is boiled are rebuilt every three years, etc. The islanders speak of Savu as *heo udu heo kerogo*, meaning nine male clans and nine altars. All houses stand on an odd number of poles. Moreover, all male cloths have an odd number of ikated bands – hence the asymmetry (Spée 1983:46, 47). Among the Tobelo on Halmahera, in the northern Moluccas, asymmetry is a fundamental design principle for the building of dwellings, although on different grounds.[1]

The present investigation shows that avoidance of symmetry, witnessed across the region under study in a scattered distribution, played a role of significance in ikat design, but only in certain weaving areas. As for underlying principles: no single, unifying corps of beliefs and customs could be identified. On Savu asymmetry symbolizes divine trinity; in northern Halmahera it was inspired by avoidance of congruity with the human body; in most regions it appears to have been an expression of the tendency, inspired by dualist cosmology, to pair unequal, complementary elements. This investigation has also revealed how little we yet know about the motives informing asymmetry in the studied region, which suggests the need for a dedicated study – not limited to textiles, but encompassing all spheres of the material culture, to see if unifying motives can be identified.

Asymmetry – largely a male attribute

Curiously, asymmetry is used on both sarongs and on men's cloths, but prescribed only for men's cloths. There are only two exceptions that the present author is aware of: the *ba'a boba* ceremonial sarongs of the Sahu on Halmahera and the Tanimbarese sarongs for the dead (see PC 262, Fig. 215, which van Vuuren thinks could be an example hereof[2]). Other Tanimbarese asymmetric sarongs do exist, but these are so designed not for symbolic, *adat*-prescribed reasons, but for a purely practical reason related to ostentation: to create sarongs

[1] "The house can fulfil its protective function only if its proportions are not equal to those of the human body. The 'skeleton' of the house must never be constructed so that it manifests the same symmetry as the human skeleton. That is why the rule of thumb has it that a good house be 'given more weight' to one side. This implies that the roof beam is not placed right over the middle of the room. [...] This asymmetry expresses the difference between the protectors, to wit the house and the ancestors, and the protected, the current occupants" (Platenkamp 1990:17).

[2] Marianne van Vuuren, pers. comm., 2017.

with a *pagi-soré*, morning-afternoon, design (see Fig. 215). Because one half differs from the other, it can be worn with either half visible and the other folded over, so that it appears as if the owner has two different sarongs.

The asymmetry prescribed for men's shawls is of a completely different order, and in most cases adhered to strictly. We find it on Savu and its off-shore islet Raijua; on Ndao, the islet off Roti, originally peopled by immigrants from Savu; on Timor in the regions Insana and Amanuban (West Timor) and the Oecusse semi-exclave, which saw substantial immigration from Savu before 1700 (Yeager & Jacobson 2002:164), and with a peculiar unique technique in the Suai-Loro region of East Timor (e.g. PC 327, Fig. 194); on Sumba in men's wraps of the nobility; as well as on Kisar, on antique cloths in the 'archaic style' (ten Hoopen 2018:462). Outside the region under study we find it in nearly all *kain kebat*, skirts, and in many *pua,* blankets, made in Sarawak and Kalimantan.

The evidence for a role of Savu in the dissemination of asymmetry as the standard for men's cloth is mounting, although how it came to influence far away Kisar is a matter of conjecture. Perhaps it was transferred to Kisar during the colonial period through trade between the mestizos, a.k.a. Topasses, of Oecusse, a formerly Portuguese semi-exclave in West Timor (then often referred to as Ambenu), and the outward-looking mestizos of Kisar.

In a few cases the asymmetry is subtle, requiring close observation to even notice.[1] In other cases, the asymmetry is immediately noticeable (see PC 008, Fig. 197 and PC 308, Fig. 213). In East Sumba, weavers at the highest courts developed designs which were less symmetric than they appeared, with hidden keys revealing the vast amount of extra work required to create them. Such cloths were only made for the nobility, placed in the *adat* house in order to protect it through their presence,[2] and often taken to the grave with their deceased owners.

[1] As on PC 245 from Amanuban (West Timor), a detailed and meticulously ikated cloth which has three columns of motifs on the left versus four on the right (see Fig. 199).
[2] Kinga Lauren, pers. comm., 2019.

4.1 TECHNIQUES TO ACHIEVE ASYMMETRY

In this investigation, seven distinct ways to achieve asymmetry were encountered:

1. warp shifting (moving part of the warp to another panel);
2. simulated warp shifting (seam imitated in ikat);
3. pattern compression (reducing yarn spacing);
4. creating different panels (reducing or eliminating replication);
5. transposing part of the warp bed (turning over part of the warp);
6. reverse mounting of panels (contrary to the way that would produce symmetry);
7. asymmetry of content (motif when mirrored becomes entirely different, illusion).

Within this context the term 'longitudinal symmetry' is applied to designate symmetry about an axis that runs along the length of the warp, while 'axial symmetry' is reserved for symmetry about an axis that crosses the warp in the middle – which in many regions is truly axial indeed, in the sense that at that midpoint of its length the warp was wrapped around a bar, an axis, at the feet of the weaver (see Fig. 191).

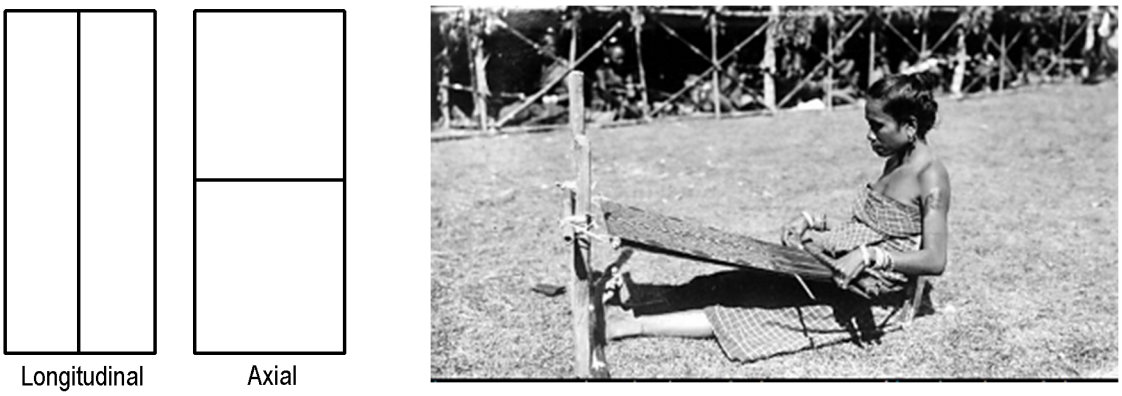


Fig. 191 Longitudinal and axial symmetry as used in this study (left). The term axial reflects the physical reality of an axis, the backstrap loom's warp beam, at or over the weaver's feet around which the warp was looped. The maximum length of the cloth is determined by the weaver's back strength (Duggan 2001:34). By varying the tension on the warp the weaver can opt to create a weave type in which the weft is nearly completely hidden from view (the warp-faced weave most common in the region under study), or a looser weave which shows more of the weft. *Source:* Nationaal Museum van Wereldculturen, N° TM-10014465.

1. Warp shifting

The simplest way to achieve asymmetry in ikat is to simply transpose a number of warp threads after the dyeing – typically a set containing a complete pattern – from one panel to the other, so that one becomes wider at the expense of the other. This method is routine for all men's shawls made on Savu and its off-shore daughter Raijua. It was also encountered on a few antique noblemen's shawls from Ndao and Kisar, on a single early 20th-century breast cloth made in the Tanimbar Islands and in two men's wraps from West Timor.

2. Simulated warp shifting

This method was encountered only once, on a Savunese *hi'i,* a type of shawl that normally consists of two panels of unequal width (see Warp shifting, above) sewn together by their selvedges. In the course of this investigation, which during its final stages involved frequent interchanges with the Indonesian expert Kinga Lauren (see Section 4.2 'Sought complexity: asymmetry as proof of mastery'), the latter showed the present author a *hi'i* made of a single panel with a simulated seam: a range of white dashes created by means of supplementary warp that to any cursory observer – or rather any observer not keenly searching for unusual details – will look like a stitched seam. This 'seam' is placed circa 5 cm to the side of the longitudinal axis, stressing its asymmetry. Apparently, this method to achieve asymmetry is rare. Kinga Lauren, who in his long career has handled thousands of Savunese ikat textiles, never encountered a simulated seam before, although he was the first to admit that he may have overlooked other examples.

Fig. 192 A Savunese shawl, *hi'i,* with a simulated *beka,* seam, inserted in order to make it appear as if the cloth were made of two different panels. This allows it to be used in funeral ceremonies (Duggan 2001:54). The row of dashes imitating stitching was created with supplementary warp. *Source:* Collection Kinga Lauren.

3. Pattern compression

This technique is rare, found only once on Roti, a few times on Timor (Insana, Amanuban, the Oecusse semi-exclave and Covalima), and four times on Sumba.[1] On the latter it was found, for instance, on one very old, exceptionally large cloth with royal motifs in blue only, and on two that already had the highest class of design, with two paired complications – the pattern compression adding a third level of difficulty. In this technique to achieve asymmetry, the drawing on one of two panels, or on one or more of its constituent ikated bands is compressed. As the patterns are essentially the same, just a little 'fatter' on one side and 'slimmer' on the other, the effect takes close observation to be noticed. It helps to be looking for it – as competitive weavers must have done in each other's work.

The existence of this technique was first discovered on a Roti noblemen's shawl in the Anja Philippart collection (see Fig. 218) – immediately noticed in fact as the slimming amounted to 23 per cent. Scrutiny of the Reference Set yielded a few more examples, some with greater yet less immediately noticeable pattern compression, some with far lower degrees of compression causing very subtle pattern changes.

The following two methods to achieve pattern compression were encountered:

Method 1: Selectively reducing warp spacing as expressed in yarns per cm (observed on ikat from Roti, Timor and Sumba, leading to pattern compression of 5 to 40 per cent). The technique is an editing of interstitial spaces between the warp yarns similar to compacted kerning in typography.

Method 2: Creating a different second warp individually drawn with more compressed patterning. This was observed only twice, on Sumba *hinggi* of the highest class.

Both methods are conspicuously (for cognoscenti) labour-intensive, although Method 2 is by far the more time-consuming. Manufacturing ikat textiles cloths of such complexity was discontinued not long after 1900.

Method 1 was observed on a circa 1950 men's wrap from Insana (West Timor), a region known for its finely drawn deep indigo ikat (see PC 086, Figs. 193, 212); on a Rotinese

[1] Sumba expert Georges Breguet on 31-8-2020 posted on Facebook an early 20th-century East Sumbanese cloth for a nobleman, noting that it had an anomaly, to wit, one panel 6 cm wider than the other. Breguet suggested that the two panels might have been woven by different women. This invited a dozen comments from three other experts. They ascribed the width difference to disparity in pressure on the backstrap, caused either by a single weaver not maintaining constant pressure, or indeed by the weaving task having been shared. One expert explained that when the backstrap tension is slackened, the warp will widen as the weft is beaten in, which is correct; but such widening can only be marginal. Even though the difference amounted to no less than 6 cm, almost the hand width of a weaver, only one expert, Aja Bordeville, considered the possibility that the difference might be intentional for *adat* reasons. No one else took up this suggestion. It is hard to see how one could come up with gross warp-tension errors as an 'explanation' for such striking asymmetry instead of seeing it as the unusual refinement it is, but it does underscore the obscurity into which ancient high-level techniques have receded. In the course of this investigation pattern compression was found exclusively on textiles, such as the one shown by Breguet, that on account of their complexity of design can only be deemed extraordinary.

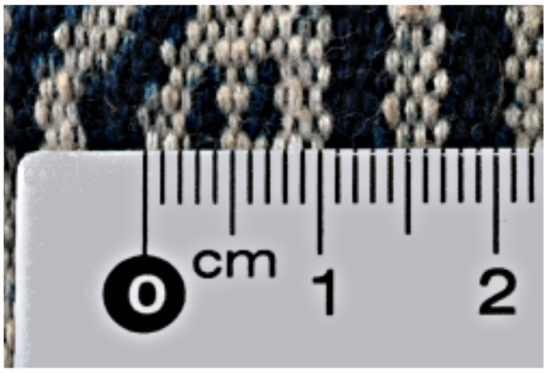
nobleman's shawl from the same period (see Fig. 218); and on a ceremonial men's wrap from Suai-Loro, East Timor (see PC 327, Fig. 194). The latter serves us well as an example. The intricately decorated midfield at first sight appears symmetric, clearly a sought illusion. Over the full length of the cloth, the motifs in the longitudinal bands, while ostensibly identical, are just a little narrower on one panel than on the other. It was not immediately obvious how this effect was achieved. First the number of warp yarns in the strokes – the constituent rectangles that build the motifs – were counted. The result disappointed as much as it provided clarity: the strokes on both sides comprised the same number of warp yarns (to wit, six twin yarns), presenting an enigma. If the strokes making up the motifs consisted of the same number of yarns, how could they be narrower on one side than on the other?

A tailor's thread counter with magnification factor 30 revealed that on the 'wide' side of the textile, 1 cm width of cloth was composed of 10 twin warp yarns; on the compressed side, however, 14 warp yards had been fitted into that same 1 cm. The warp spacing was 'simply' reduced so that 40 per cent more warp went into 1 cm of width. The effect imparts the cloth great visual tension. Given the dominant cosmology of the region under study, central to which is the combining of two opposites, it produced a work of art of great inner balance which transcends ikat's technical diktat of replication and showcased the mastery of the weaver. This cloth most have contributed mightily to the deference with which she was treated at the community's gatherings; if she already had prominent seating, it would show all and sundry it was hers by right.

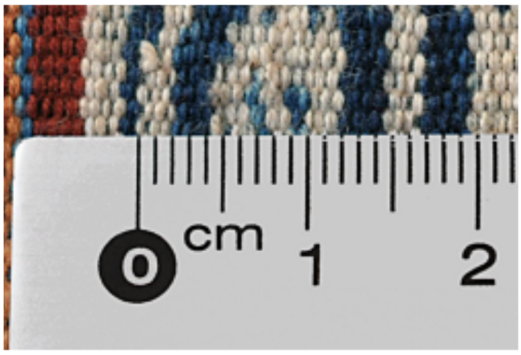
PC 086 (see Figs. 193, 212), the high-contrast Insana men's wrap with intertwining patterns, was similarly investigated (for further details, see below), and turned out to have the same 40 per cent compression ratio as the antique Suai-Lora wrap from the ruler's household. To recall: the Roti lafa from Nemberala in the Anja Philippart collection (see Fig. 218), marked as royal by its yellow touches) had 14 yarns per cm on one panel, 18 yarns per cm on the other, causing a pattern compression of 23 per cent. Such ratios are quite substantial.

As to how such heavily reduced spacing of the warp was achieved: most likely the weaver wetted her hand and rubbed it over the chosen section of the warp on the warp beam – both the one at her breast and the one by her feet – and probably utilising both hands, packing the yarns tightly together. This must have further complicated weaving, as the tight warp packing puts stress on the weft, which will need to be rammed in with extra force if the same weft count per cm is to be no maintained for both panels – which is the case in both our examples. The main difficulty, from the weaver's point of view, would have been to avoid skewing because putting more force on one side than on the other naturally causes skewing. The fact this was avoided says much as to the women's mastery of their craft.

A demonstration of pattern compression on the men's wrap from Insana (see Fig. 193) and the one from Suai-Loro refered to above (see Fig. 194) is given below.

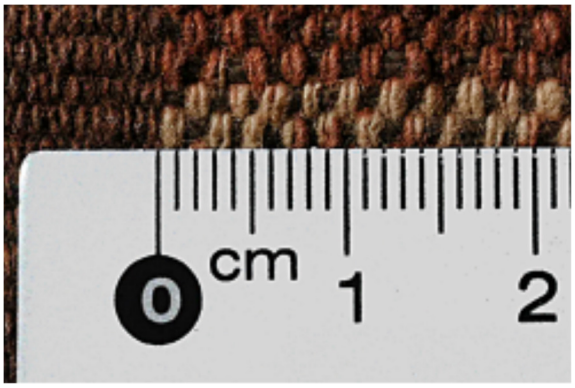


In one panel of a circa 1950 men's wrap from Insana, the one with the wider bands of ikat, the chief motif is woven with 19 warp yarns per cm of width. The distance between warp yarns and weft yarns is roughly equal. Source PC 086.

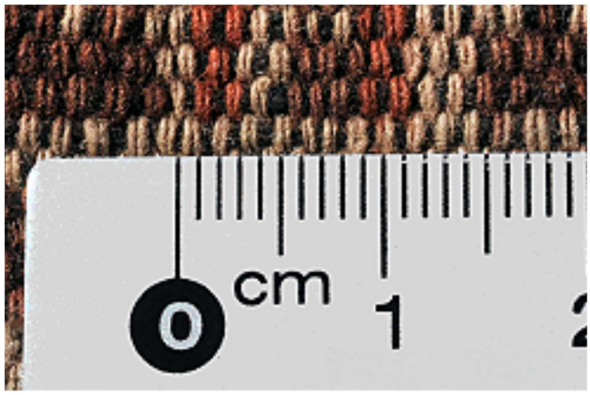


In the panel with the narrower ikated bands, the chief motif has 25-27 warp yarns per cm of width. The warp yarns are so closely positioned the weft is almost invisible. This reduced spacing compresses the width of the motif by circa 27 per cent. *Source:* PC 086.

Fig. 193 Example of pattern compression by means of warp packing from Insana (West Timor).



In the narrower of the two panels of an early 20th-century panel men's wrap from Suai-Loro (East Timor), and in all but the wider panel bar, a band one hand wide, the motif was drawn with 10 warp yarns per cm of width. The distance between warp yarns and weft yarns is roughly equal. *Source:* PC 327.



In a one hand wide band close to the selvedge of the wider panel the drawing was done with 15 warp yarns per cm of width. This reduced spacing compresses the width of the motif by circa 33 per cent, the visual effect of which is quite dramatic. *Source:* PC 327.

Fig. 194 Example of pattern compression by means of warp packing from Suai-Loro (East Timor).

Method 2 Ikating a panel or band separately would have created two such bands, whereas in many ikat weaving regions only one was needed and surely, the women were not going to throw ikated warp away. So, they ikated two separate bands or panels, both on a double warp, ending up with four in total, for a twinset of asymmetric wraps. This is assumed to have been general practice in the region under study wherever Method 2 asymmetry was practiced. It certainly was on Sumba and in the past on Savu as well (Duggan 2013:12), and it is proven for an antique men's wrap from Kisar (see PC 200, Fig. 202) which is known to have a twin.[1]

One apex cloth from East Sumba, manufactured at the court of Kanatang (PC 319, see Figs. 195, 219, 249) shows a way to achieve asymmetry not encountered elsewhere. It has the rare combination of two complications, *hondu walla* and *hondu kihhil*, described below (see Section 4.2 'Sought complexity: asymmetry as proof of mastery'), but in a display of virtuosity so immoderate that it may well betray a touch of superciliousness, yet another type of asymmetry was added as a further complication. The cloth is made of very fine hand-spun yarn, woven tightly at 40 yarns per cm, and evenly spaced. While the asymmetry is not immediately obvious (again, probably noticeable only for those who look for it actively), measuring some details makes the pattern compression show itself incontrovertibly. The rump lengths of the horses were chosen as the first subject for measurement because they are solid dark blocks, clearly demarcated.

Fig. 195 shows the widely divergent degrees of pattern compression in PC 319. There is no regularity whatever, proving that there was no panel replication: across the full width of the cloth the motifs are all different. Other details too, such as the thickness of the sceptre, show minute but measurable variation.

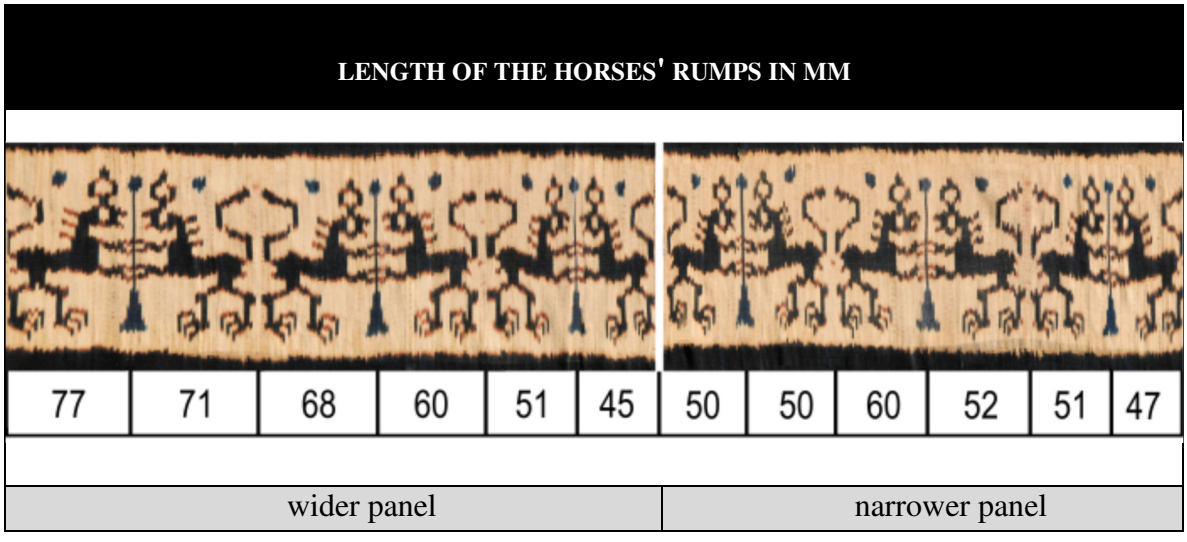


Fig. 195 Analysis of the varying degrees of Method 2 pattern compression on a single apex Sumbanese *hinggi* in *hondu kihhil walla* construction (PC 319, see also Figs. 219, 249).

[1] Its twin is part of the Darrell McKnight collection. Both cloths originate from an early Dutch collection.

A horse's leg can be 9 yarns wide, but also 11, a long sceptre-like shape is 3 or 5 yarns wide, the thickest part of a horse's tail 7 or 10 yarns. So, the two panels were individually ikated with various degrees of pattern compression, every part of it separately drawn. A brilliant design – and a ton of work, but with enough slaves in the house, would that need to be an obstacle?[1]

4. Dissimilar panels

Impressive and therefore competitive, is to create a truly different design for each of the two panels. This method was practiced on Timor in parts of Amanuban and Insana, as well as in the Ngada region (Flores). While the latter lies to the west of the region on which this study focussed it should be mentioned here because a few of the earliest surviving examples of its antique *kain kuda* (shawls for nobleman of the class that can afford a feast involving buffalo slaughter) were also made with dissimilar panels (see PC 116, created with the 2Wp1Wf weave type, which is very uncommon on Flores, but the most common weave type on Timor). Creation of asymmetry by means of ikating dissimilar panels appears to be the preferred, more meritorious design style for men's wraps in the semi-exclave of Oecusse. When studying PC 169, a 1925-1950 men's wrap from Oecusse, we expect to see axial symmetry per panel – as observed on many Timorese ikat men's cloths, the plain axis being the part of the warp running across the far loom beam that was not ikated. However, the two panels here are similar but clearly different, with no replication.

On Timor and most nearby islands ikat production is always done on doubled over warps. As weaving techniques have remained largely unchanged over thousands of years and endless roaming (Buckley 2017:308) this suggests that such asymmetric wraps were made in pairs, because the weaver would first have made one panel – with a circular warp that produces two identical copies – and then the other panel in the same way; ending up with four panels, which could then be sewn into two wraps.

On the Tanimbar Islands, the format for the highest ranking *adat* sarongs was asymmetric. The weavers created such sarongs by mounting their ikat work symmetrically in an asymmetric field that sometimes suggested a false number of panels (see PC 262, Fig.

[1] The use of the term 'slave' has become politically sensitive, but with regard to Sumba any other term would be an unjustified euphemism. Slavery on Sumba was not just pervasive in the 19th and early 20th centuries when most superior ikat was made, but persists even in the present time Barokah (2016), cast as a religious issue by the *maramba*, the slave-owning class – who as Dumont (1966) would have predicted claim the institution as a vital part of the traditional Marapu cult. As a class the *maramba* label slaves *ata* (merely a generic term for human being) and speak of them as *anakeda kura uma*, 'children of the house' (Forshee 2001:87). Hoskins witnessed the transfer of a human being in the course of funeral proceedings: "a slave girl transferred to 'wipe away the tears'" and speaks of "hereditary slave[s], delicately referred to as 'people inside the house' (*tou uma dalo*) [a term Hoskins rejects as a euphemism, tH] who are not descendants of the lineage but possessions attached to the founders" (Hoskins 2004:93). These make up more than half of the population (*ibid.*:96). Prestations required of enslaved individuals can include those of a sexual nature, including procreation.

215). On Palu'e, off Flores, the most technically accomplished antique sarongs (see PC 305, Fig. 211) had completely different motifs in the main ikated bands. Several of the earliest and best executed ikat bridewealth sarongs from Ili Ape on Lembata (a very small set) are asymmetric (see PC 115, Fig. 209), a fact which is not mentioned by Barnes and Hunt Kahlenberg (2010:347) although the specimen they show is distinctly asymmetric.[1]

Dissimilar panels may be created by means of selective pattern compression in combination with another element producing asymmetry. PC 086 (see Figs. 193, 212) at first sight appears to be symmetric, but once the eye has found rest in the lively, interlacing lines, it turns out that the ikated bands are of quite different widths. We may then also find the key that signals to connoisseurs (read: other women of high class residing in the region) that something out of the ordinary is going on in this cloth. The key is tiny: there are seven red accent strips running the length of the warp. All of these are bordered with tiny curves on either side, alternating their left-right orientation, but always placed in opposition – except at the second band from the right, where they are all turned in the same direction. How precisely the differerent widths of the four main ikated bands was achieved can be established only by counting all warp yarns in the respective bands.

During this investigation proof was found that creating asymmetry by means of ikating two entirely different panels was also done in East Sumba – although only six examples with zero replication were found. Five of these are royal cloths with a *hondu kihhil walla* or construction that carry an additional key (the name of which is not known) which proves that they were made in *hondu tanpa replikasi*: the two constituent panels are different, if only in one tiny detail, sneakily hidden. No replication along any axis took place. (See Section 4.2, under the heading 'Ten construction classes for East Sumbanese *hinggi'*, and Figs. 222, 253-256).[2] The sixth example was made as a diplomatic gift.

5. Transposition of part of the warp bed

In a specimen from Oecusse, which most curators would probably appreciate on account of its visual presence, originality and charming spontaneity, asymmetry was achieved by flipping one-half of the warp over the median, the undecorated middle of the warp (see PC 292, Fig. 204). Unless this weaver was uniquely clever and, inspired by *khayal* (an Arabic and Persian term that entered *bahasa* Indonesia and has a range of connotations associated with imagination, fantasy, creativity), allowed herself a spontaneous creation, this was once an established practice – presumably highly regarded for its sought complexity.

In another specimen from Oecusse, asymmetry was achieved by means of an opposite method. Timorese men's wraps are typically constructed so that two panels carrying the

[1] Perhaps it was not mentioned because the phenomenon is easy to overlook. The present author long overlooked the asymmetry in two specimens in the Reference Set, discovering it only after Kinga Lauren showed him an example from his collection that had a puzzling deviation from the expected symmetry.

[2] To better understand the process of asymmetric construction, the present author suggests to occasionally study the full-page figures of *hinggi* in *hondu kihhil walla* and *hondu dasar kihhil walla* briefly and try to find abnormalities, before jumping to the visual analysis.

main ikated motifs are sewn together in such a way that they mirror each other. However, in one early example kept at the Leiden Nationaal Museum van Wereldculturen, N° RV-2769-8 (see Fig. 205), they were put together facing the same way, creating an odd, immediately apparent asymmetry. Again, no other example with such construction was ever encountered. It is perhaps odd here to speak of transposition of part the warp bed, as the normal method requires flipping the warp over its longitudinal axis, whereas this example is remarkable exactly because no such flipping took place. As it is the opposite of normal practice, it arguably belongs in this category along with the cloth where the warp was flipped over its median.

Transposition of the warp bed was observed nowhere else in the studied area except in East Sumba where it is used in combination with another complication in an almost supercilious exhibition of mathematical perfection. Reversing a panel in a standard East Sumbanese *hinggi* has no effect as the bottoms and tops of the panels mirror each other. But in those with a *hondu kihhil* construction the warp is not replicated over the median: top and bottom are ikated individually. Thus, to successfully reverse a panel in *hondu kihhil* requires that the designs of top and bottom are mathematically identical – all motifs exactly equidistant from the median – otherwise when one of the two panels is reversed the patterns do not match up. Because *hinggi* are circa 2.5 m long such precision is hard to achieve. The sequel to this work, *Noble Virtuosity: Hidden Keys in Sumba Ikat* (ten Hoopen 2022) shows examples of *kihhil hinggi* in which the weaver hid small visual devices, secret keys, which to the initiated revealed that panel reversal had been pulled off successfully. In one of these (PC 369), said visual device consists of two small motifs which, humourously, are intentionally misaligned: tied into the warp a few centimeters away from the median, so they do not match up in a reversal. It is they who alert us to how impressively precise all the other elements are aligned.

A related method was adopted by a weaver on Roti, although how exactly she achieved it still is a mystery. While other Rotinese men's cloths, *lafa*, in the Reference Set are symmetric along the longitudinal seam, in one example from the Darrell McKnight collection (see Fig. 206) one-third of the midfield was flipped along the longitudinal axis. To make the effect even more striking, and immediately apparent, the midsection carries a strange bar of diagonal dashes, resembling fishbones. On one-third of the cloth these run counter to the rest so that the transposition is inescapable, in fact rather jarring. To further enhance this effect the one deviant panel was not mounted in the middle but on one of the sides, giving the cloth a strange, almost aggressive tension. Working with a program for digital image manipulation the present author has cut the photograph into ribbons and veryfied that indeed this scenario of a triplicated section is practicable. How the weaver actually managed to do this (the warp being circular) could not be figured out, not even with the assistance of Darrell McKnight who is known for his keen eye for detail and knowledge of weaving techniques.

Because they were not encountered elsewhere in the Indonesian archipelago such transpositions of part of the warp bed may have been established practice only in a small

region, a possibly substantial, but probably narrowly defined populace: one village, one clan. It is presumed then to have been a proprietary, signature style for this one community, a hallmark. Such technical idiosyncrasies, strictly local, are found also elsewhere in the region under study, e.g. the twill-like weaving of the Leti Islands (see PC 110, PC 195). Such lone extant examples are more likely to represent the final surviving expressions of a style or technique that has disappeared – gone out of fashion – rather an individual invention.

6. Reverse mounting of panels

An antique high-class sarong that must probably be attributed to Sermata, although it may have been made on Babar or on Sermata (see PC 267, Fig. 214) represents a special case. Here a conscious choice was made to create a difference between two panels that normally in this region would have been identical. One of the two panels was used in contrary direction, so that ikated bands which would normally have been on the extremities moved to the middle of the cloth. To stress the asymmetry, bands with secondary decoration were added to one panel only.

7. Asymmetry of perception

A motif which when reversed represents something entirely different was encountered on a late colonial sarong from Savu (see PC 012, Fig. 220). The bottom of the sarong is decorated with a floral arrangement in a vase with birds perched on either side, an often-used motif of European inspiration. When in the upper part of the sarong the motif is reversed, the expected result of joining two identical panels together at their selvedges, the same motif has turned into a cartoonish human figure with bulging eyes and swaying arms, similar to the ones observed on early cloths from the Minahasa (northern Sulawesi) such as a pre-1910 specimen in the Nationaal Museum van Wereldculturen (N° TM-48-13), but never before observed on Savu. No other instances of asymmetry of perception were encountered.

Asymmetry invites production of pairs of twins

A core aspect of dealing with asymmetry, especially for weavers from the area we are investigating, all of whom are familiar with working in doubled warp beds, is that you are used to doing everything in pairs. So, if you make two different panels, you make them in pairs. Hence you create two identical blankets, both existing of two non-identical panels. This is what logic would dictate.

However, the supposed effect of this logic has never been studied. Simply because there was no reason to study it. No one ever came across such a complete pair, until a few years ago. But we know of one thanks to the world's *kain ikat* network which provides a constant trickle of information around the globe. In 2015 the author and McKnight independently of each other acquired identical men's cloths from Kisar stemming from an old Dutch collection. They are asymmetric, and have beautiful detailing of complex designs

in a warm rust-brown colour (see PC 200, Fig. 202). The cloths are clearly quite old: the cotton yarn became brittle and has the marked irregularity of gauge typical for the 19th and very early 20th century. One day perhaps they can be shown together.

The design of these blankets at first glance appears symmetric, but actually it is decidedly asymmetric. One of the two panels is one-and-a-half times wider than the other, with the central band that carries the main ikated motif entirely on the wider of the two. Miraculously, Darrell McKnight and I became aware of the existence of each other's Kisarese cloths, proving to both owners' surprise that, presumably as with many men's shoulder cloths from Timor's Oecusse semi-exclave, they were made in identical pairs.

This joint choice for the production of asymmetric twins – a technical, hence fundamental matter – suggests a sharing of concepts and technology. How this came about is an open question. It may simply have been the result of affinity followed by emulation. However, it is perhaps more probable that the mestizo weavers of Kisar, whose subsistence was precarious, at the end of the 19th century or very early 20th century took on ikat weaving for mestizos in Pante Macassar, the trading port Oecusse, which at that time was much more prosperous than any town on Kisar had ever been.

As asymmetric design on Sumba is treated in a separate chapter, the only examples from Sumba in the below overview are those required to illustrate a specific technique to achieve asymmetry.

A call passed on

A major difficulty in studying advanced ikat techniques such as pattern compression, is that in most regions the knowledge about them has disappeared. One of the author's chief sources on the ikat of Sumba, Kinga Lauren, states unequivocally: "The knowledge has died with the old weavers. There is no one alive anymore who knows about these old complex techniques. A few people may still remember the names for certain complicated designs, but they are mostly bandied about without knowledge of the techniques required to achieve them."[1] Querying educated old and young *maramba,* Sumbanese nobles, via internet platforms confirms this general ignorance. When given a chance by postings in an internet group, they generally fail to recognize significant keys that reveal higher levels of complexity. So, we are without gurus. All we can do now to resolve the puzzles they pose, is to subject them to close-reading, on the macro level and on the micro level, making an inventory of their motifs, measuring them, and analysing the data. Nothing must be taken for granted, as too many aspects of these cloths have been taken for granted far too long.

A cloth that looks symmetric may hide its asymmetry cleverly. By measuring such high level textiles, yarn for yarn if need be, the present research project has yielded deeper levels of complexity than previously noticed. A number of these apex weavers displayed extraordinary intelligence and great skill in the construction of illusions.

[1] Kinga Lauren, pers. comm., 2018.

It bears repeating that Adams (1969) systematically started composing an inventory of the ikat of one region, East Sumba. She studied 300 examples in detail, analyzing and inventorying their imagery in an examplary manner, and called for more technical research, ideally involving microscopy, thus providing great stimulus to the present investigation. However, Adams overlooked the examples of asymmetry in her sample of 300 museum pieces[1] and called them biaxially symmetric categorically, which much have contributed to every scholar since overlooking them as well.

Adam's call for technical research is commendable: when studying Indonesian textiles, the technical, mechanical aspects should not be ignored, but pursued avidly, with state-of-the-art technology. Its material substance holds a textile's esssence, and speaks volumes as to the master dyer-*cum*-master weaver who shaped it.

[1] This fact is all the more intriguing given the substantial overlap (174 specimens) between Adams's sample (300 specimens) and the present author's Reference Set.

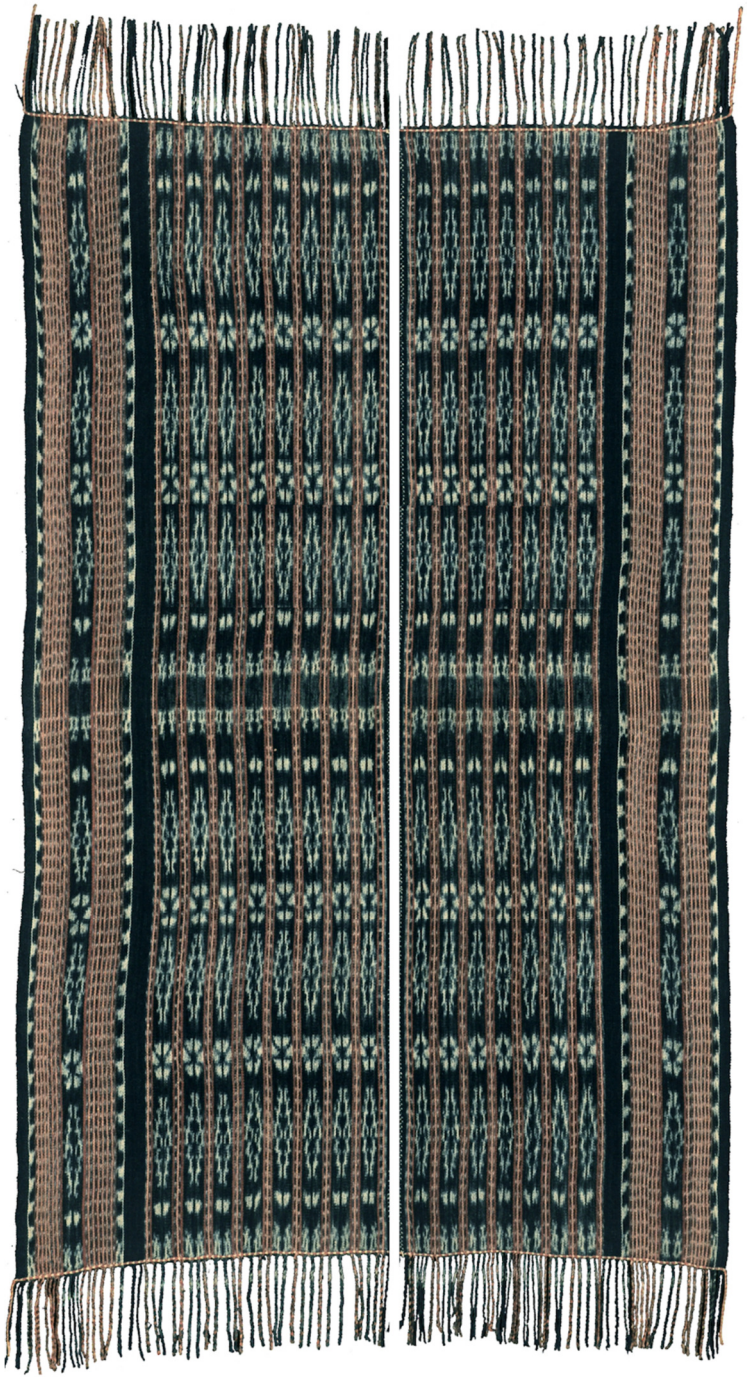


Fig. 196 Example of warp shifting from Raijua.

Origin: Raijua.
Period: 1930-1950.
Yarn: Cotton, hand-spun, medium.
Size: 86 x 136 cm (2' 9" x 4' 5").
Panels: 2.

Design: *Hi'i wo hepi* of the category *henguru pidu*, implying that it has seventeen bands of main ikated motif, the second highest class - the classification system running from five to nineteen. Light indigo field covered with the *wo hepi* pattern (elongated and crenellated lozenges) in bluish white and numerous narrow mauve stripes.

Comment: Note the asymmetry, which is prescribed for this type of cloth, Not counting the borders, the left part of the midfield has eight columns of *wo hepi*, the right part only seven.

Literature: Very similar to a *hi'i* with fifteen bands (*wo henguru lemi*) in Duggan (2013:85 bottom). Similar to wrap depicted in Khan Majlis (1991:231) but with different colouration, with blue here instead of rust-red. See also Fraser-Lu 1989:200.

Source: PC 117.

Fig. 197 Example of warp shifting from Ndao.

Origin: Ndao.
Period: 1920-1940.
Yarn: Cotton, hand-spun, coarse
Panels: 2.
Size: 88 x 159 cm (2' 10" x 5' 2").

Design: Longitudinal bands in indigo, mauve. Strikingly asymmetric – which is characteristic for Ndao, where Savunese influences on weaving are strong – at least as strong as those from neighbouring Roti.

Comment: Early 20th-century cloth from Ndao. The asymmetric 'Savunese-style' field division is a Ndao characteristic, as is the truncating of motifs. Like PC 006 the cloth has a dark mauve overall tonality, the result of the weaver having given equal weight to indigo and morinda.

Literature: For a similar men's shawl from the same period identified as "Ndao (?)", see Khan Majlis (1991b: Fig. 177). While not noticeably asymmetric, it is similar in patterning. See Fox (1990b: Fig. 7) for a Ndao *selimut* that is also asymmetric, albeit less patently so. It is also similar to a pre-1861 Roti cloth in the Nationaal Museum van Wereldculturen, N° RV 16-261, and a specimen in the Art Institute of Chicago, Bakwin Collection, N° 2002.953, see Mayer Thurman & Khan Majlis (2007:88). On the Savunese style field division as characteristic of Ndao versus Roti see Fox (1980b:48).

Source: PC 008.

Fig. 198 Example of warp shifting from Ndao.

Origin: Ndao.
Period: 1900-1925.
Yarn: Cotton, hand-spun, medium.
Panels: 2.
Size: 85 x 169 cm (2' 9" x 5' 6").

Design: Lafa, shawl, of a design called *hua ana langi*, which is reserved for the nobility. Numerous ikated bands and stripes in parallel, in the direction of the warp. The four widest show human figures with pinched waist and raised hands, similar to that of Dewi Sri motifs of Bali and Nusa Penida (see Figs. 80, 81), and the unidentified human figures of Kisar (see Figs. 61, 68, 69), Luang (see Fig. 71, 261see), Romang (see Fig. 70) and Babar (see Fig. 72). The hands show three fingers, as do most of the human figures on the South Moluccan islands. The sixteen blocks of anthropomorphic figures are all set off with rows of inward pointing triangles, like inverted *tumpal* finials. Asymmetric design: of the three morinda red stripes in the midfield, two are on one panel, one on the other.

Comment: Tight ikat and saturated colours make for clear drawing in sharp contrast. The asymmetric 'Savunese-style' field division is a Ndao hallmark as is the deep burgundy red. Tightly twisted fringes. From an old Dutch collection.

Literature: Near identical to a pre-1938 Ndao *lafa* from the Helbig collection (see Khan Majlis 1991a: Fig. 237). Very similar to a circa 1920 *lafa* in the Krefeld Textile Museum (Khan Majlis 1991b: Fig. 177), although somewhat smaller and with four wider rather than six narrower main ikated bands. On the Savunese style field division as characteristic of Ndao versus Roti, see Fox 1980b:48.

Source: PC 290.

Fig. 199 Example of warp shifting from Timor.

Origin: Amanuban, West Timor.
Period: 1930-1950.
Yarn: Double-ply commercial cotton.
Panels: 4.
Size: 154 x 260 cm (5' 0" x 8' 6").

Design: Stacked and interlocking humanoid figures, shaped to make them froglike, 'frogmen': the *katak* (frog) motif, which represents the life cycle of generations. The large figures, probably representing ancestors, appear to give birth to the smaller figures nestled underneath. The smaller figures in the two central bands are slightly larger than those above and below them. Unusual is the asymmetry, which occurs in Amanuban, but rarely: three columns of motifs on the left versus four on the right. Most of the drawing was done in strokes merely two threads wide.

Comment: Large blanket with striking design. The indigo dyeing was done in two stages, producing pale and darker blue. The pinkish red shows bleeding both longitudinally and laterally, suggesting an unstable dye, possibly synthetic. Excellent ikating has produced crisp drawing, and a distinctive sense of refinement. Clearly the work of a master weaver. Ex-collection August Flick.

Literature: The heads of the figures are very similar to those on PC 244, which Cinatti (1987:97) identifies as crocodiles - on Timor generally regarded as belonging in the people's ancestral chain as proto-ancestors. Curiously, the style of the headdress, with the inward curl which recalls the *pilu saluf* headdress of a *meo* warrior, is very similar to that on some Sarawak *pua kumbu*, e.g. PC 037 and PC 123, suggesting that this is an archaic motif with a formerly wide distribution (see ten Hoopen 2018:110). In Uab Meto (Atoni) *pilu* means 'small textile', *saluf* means 'to hang', 'hanging' (Pierre Dugard, pers. comm., 2020).

Source: PC 245.

Fig. 200 Example of warp shifting from Timor.

Origin: Waenopu (eastern part of West Timor, Belu Regency).
Period: 1930-1940.
Yarn: Cotton, hand-spun, coarse.
Panels: 2.
Size: 101 x 189 cm (3' 3" x 6' 2").

Design: The asymmetry here is subtle and easy to overlook, although other weavers from the region no doubt would notice it immediately. The asymmetry is achieved both by warp shifting and palette changes. The seam does not run in the centre of the striped midsection (*i.e.* the middle of the middle stripe), but between the fourth and fifth ikated stripes from the left, so that four stripes are positioned on the left panel, three on the right panel. The stripes on the two panels are also slightly different in colour: those on the left are a pale lilac, those on the right tend towards purple. The narrow ikated stripes that border the central section have a similar difference of palette, those on the right being a little darker than those on the left.

Apart from its asymmetry – which is not common in the area – this is a typical example of the Belu style. Scores of narrow ikated stripes (overall tone: soft pink) flank two bands with geometrical design in white on indigo, called *leunkah*, a variation on the *kaif* motif, which stands for connection with the ancestors.

Comment: The design suggests three-panel construction, although it is made of only two – a common feature in the area. The finest ikated patterns are only two yarns wide, implying that (since the two panels were made at the same time, with the warp web folded over in the middle, creating four basic ikated motifs) the ikating was done on 8-yarn skeins, which places this weaving among the most finely crafted ikat anywhere in the archipelago, surpassed only by ikat made on Borneo, some of which was executed in 6-yarn skeins (see Ketungau *kain kebat* PC 300). Ex-collection Verra Darwiko.

Literature: Very similar to a *tais mane* from Manulea, Malaka Tengah, depicted in Yeager & Jacobson 2002: Plate 229, except that their example is symmetric. For a *leunkah* motif on a Belu style *tais mane* from Manulea, see *ibid.:* Fig. 168.

Source: PC 120.

Fig. 201 Example of warp shifting from Timor.

Origin: Maubesi, a village between Insana and Kefamenanu (West Timor).
Period: 1935-1950.
Yarn: Cotton, hand-spun, medium.
Panels: 2.
Size: 105 x 198 cm (3' 5" x 6' 5").

Design: Narrow bands of red and indigo, the widest depicting stylised salt water crocodiles. Note the asymmetry of the overall design: of the three red stripes running through the middle of the cloth, one is on the left panel, two on the right panel. This manner of achieving asymmetry (shifting part of the warp from one panel to the other) is sometimes called the 'Savunese style' (Fox 1980b:48), and seen also on Ndao, the islet off Roti. Asymmetry also occurs in the relatively nearby Oecusse semi-exclave, but in a way less reminiscent of Savu, where shawls are made with numerous narrow bands running in parallel.

Comment: Strong crocodile motif, expressive of the toponym – *besi* meaning crocodile in the local Uab Meto (Atoni) language. The subtle asymmetry of the overall design is uncommon in the area. No signs of wear, perfect condition, but the skatol smell of decomposing indigo indicates a fairly advanced age.

Literature: Specific provenance (based on the striping pattern and the crocodile/*besi* motif) provided by trader and Timor-expert Julie Emery. Cf. Yeager & Jacobson (2002: Fig. 128n and others).

Source: PC 132.

Fig. 202 Example of warp shifting from Kisar.

Origin: Kisar, South Moluccas, probably made by one of the last mestizo weavers on the island.
Period: 19th or early 20th century.
Yarn: Cotton, hand-spun, medium
Panels: 2.
Size: 118 x 203 cm (3' 10" x 6' 7").

Design: This cloth could have been made of two identical panels; in which case the seam would have run right in the middle of the finely drawn main motif. The choice to shift part of the warp from one panel to the other preserved the drawing and also produced asymmetry – a *desideratum* as it is symbolic of the Austronesian dualist cosmology. This is based on the complementarity of unequal pairs (Fox 1989) as here, where two different panels make one whole cloth. The triangular shape with paddle-like projections may well represent the rigging of a boat, a motif investigated above (see Section 3.4.5 'The-triangle-with-projections'). It also contains the eight-pointed star that is shared with Lembata, Timor, Savu and several other islands, and the scalene triangles that on Tanimbar are called 'flags'. The third motif from top and bottom resembles the *kaif* motif on Timor *beti* PC 002. The strange rust-brown tonality may have resulted from dyeing with sappan.

Comment: The cloth is one of a pair; its twin being in the Darrell McKnight collection. The discovery of the twin is a minor miracle, which proves that some Kisar cloths (like East Sumbanese *hinggi*) were made in pairs, a fact not previously known.

Literature: Similar in overall lay-out and colouration, with dominant rust-red, to a Kisar men's shawl from around 1920, see Khan Majlis 1991b: Fig. 197. Rather similar to a *selimut* in the Museum Maluku, the Hague, OB10076, which has the same tonality, is also asymmetric, but has two main ikated bands, one on each panel.

Source: PC 200

Fig. 203 Example of warp shifting from Tanimbar.

Origin: Tanimbar archipelago, unidentified island.
Period: First quarter 20th century.
Yarn: Cotton, hand-spun, medium.
Panels: 2.
Size: 101 x 137 cm (3' 3" x 4' 5").

Design: There is a remarkable asymmetry. The seven ecru snakes decorating the midfield are unevenly divided: three on one panel, four on the other. The principal motif is probably anthropomorphic, a combination of male and female figures. Marianne van Vuuren (pers. comm., 2017) suggests that the two dots at the head of one type represent a woman's comb, whereas the four dots at the head of the other type likely represent the male's convoluted hairdo. The narrow stripes are all decorated with snake motifs.

Comment: Probably a lady's ceremonial breast cloth, *shal*. The quality of the ikat work is at the zenith of the Tanimbar group's bell curve. Asymmetry is rarely used on Tanimbar and it is not known if it has any specific significance beyond the Austronesian preference for parts that complement each other by their difference.

Literature: Similar to an undated shoulder cloth from Selaru in the Roemer- und Pelizaeus-Museum, Hildesheim, Germany (see Khan Majlis 1991a: Fig. 321). Note the identical division of the field but more elaborate patterning in the specimen shown here. It is also similar to PC 265 (*ibid.:* Fig. 320). For more information on the motifs in use, see van Vuuren (2004: Fig. 99, 114, as well as p. 141).

Source: PC 204.

Fig. 204 Example of transposition from Oecusse or Amanuban.

Origin:	Oecusse (East Timor), the semi-exclave located in West-Timor, or Amanuban (West Timor). Atoni people.
Period:	1950 or before.
Yarn:	Hand-spun cotton for ikated areas, accent stripes in commercial cotton.
Panels:	2.
Size:	83 x 180 cm (2' 8" x 5' 10").

Design: The weaver has chosen a simple yet decidedly uncommon method to achieve the asymmetry. She simply flipped one of the two identical warp skeins created in parallel over its horizontal axis. The main motifs are the traditional Atoni *katak* (lit. 'frog'), an anthropomorph made to look very much like a zoomorph which is generally taken to stand for the individual in his or her line of ancestry. The head may be depicted, as in this piece, or merely suggested.

Comment: Asymmetry is occasionally found in Amanuban and slightly more favoured in Oecusse (more so than in nearby parts of West Timor). The cloth's origin could not be ascertained with certainty. The late Rosalia E.M. Soares (pers. comm., 2019) identified Desa Cunha, Oecusse, as its probable origin. Khan Majlis (see below) ascribes a similar cloth to Amanuban.

Literature: A near identical men's wrap is identified as Amanuban (Khan Majlis 1984: Fig. 457). After reproduction and manipulation of Khan Majlis's image it could be established that asymmetry was likewise achieved by flipping part of the warp over its horizontal axis. The main motif is very similar to that on two other examples identified as Amanuban, both symmetric; one dated circa 1900 (ibid.: Fig. 456) and one in Yeager & Jacobson (2002: Fig. 45i). But the motif is also found in Oecusse, e.g. in Taiboko (*ibid.:* Fig. 45j), and in several other parts of Timor peopled by Atoni.

Source: PC 292.

Fig. 205 Example of transposition from Oecusse.

Origin: Oecusse, the East-Timorese semi-exclave in West-Timor. Atoni people.
Period: Early 20th century.
Yarn: Presumed hand-spun.
Panels: 2.

Design: Whereas men's wraps from western Timor typically consist of two or three panels, the two carrying the main motif mirroring each other, here the weaver has chosen to place the warps with motifs facing in the same direction. No similar example of this way to achieve asymmetry was observed during this investigation.

Comment: The description on the website of the Nationaal Museum van Wereldculturen (accessed 12-03-2020) is odd. Under 'What' it states 'East Timor' and under 'Where' it gives 'West Timor'. This leads to the conclusion that this cloth is indeed (as its asymmetry would cause one to suspect) from the part of East Timor located in West Timor.

Source: Nationaal Museum van Wereldculturen, N° RV-2769-8.

Fig. 206 Example of pattern transposition from Roti.

Period: 1940s or earlier.
Yarn: Presumably hand-spun.
Panels: 1.

Design: This *lafa*, shawl, has a commoners' pattern, but as is evidenced by specific other commoners' shawls, weavers who did not belong to the nobility often produced ikat cloths that were at least equal in quality to those made by noble ladies, and on occasion (e.g. PC 003) had a level of intricacy and perfection of execution not often seen in the higher class cloths. Here we see the product of a weaver from the commoners' class who decided to flaunt her advanced abilities by producing a single panel *lafa* with a transposed section of patterning. A digital reconfiguration (see below) shows that the effect was not achieved 'simply' by transposition of a section of the warp: the *patola*-inspired midfield pattern does fit exactly, surprisingly, but the lozenges and *tumpal* do not – which can hardly be other than intentional. The conclusion is that the effect and the elements disproving warp transposition were ikated in, requiring a firm mental grip on the design elements and how they fit together.

Comment: The way the weaver chose to display her virtuosity was rather blatant (the fishbone-like pattern in the midsection, partly reversed is quite jarring) and one wonders if she was criticized for it, as on many of the islands sumptuary rules restrained displays of wealth and ability by commoners. A display of wealth this cloth certainly is, as the weaver expended extra time and energy on producing it. This is a textbook example of Thorstein Veblen's 'conspicuous leisure' (Veblen [1899] 1934: Ch. III), and, if she could ill afford it, of 'pecuniary emulation' (*ibid.* Ch. II).

Source: Collection Darrell McKnight.

Fig. 207 Example of transposition from Timor.

Origin: Fafinesu, Insana, Timor.

Beti meo (warrior's wrap).

Period: 1920s.
Yarn: Hand-spun cotton.
Panels: 2.

Design: This *beti* at first glance resembles an ordinary Insana men's wrap, made of two panels ikated at the same time, but whereas normally the two panels are identical, mirroring each other, in this case one of the two main ikated bands in one of the two panels (the second band from the top) is reversed, creating asymmetry.

Comment: This type of cloth is the hallmark of *desa* Fafinesu, home of a *meo* warriors clan – so described by James Izacc Bill Key Kase, member of a high-class clan from nearby Amanatun (pers. comm., 2019).

It seems fitting that this type of cloth, *beti meo,* which shows a contrarian, defiant spirit (Insana men's wraps are normally symmetric) and demands extra work to create the asymmetry, is the mark of a clan formerly renowned for its aggressive stance.

Source: Collection Kinga Lauren.

Fig. 208 Example of incidental asymmetry from Savu.

Origin: Savu.
Period: Circa 1930.
Origin: Seba, identified on the basis of *boda* as the exclusive motif, and the number of *dini*, seven.
Yarn: Cotton, hand-spun, fine.
Size: 78 x 178 cm (2' 6" x 5' 10").
Panels: 1.

Design: Hi'i wo hepi, huri wo pidu. The field is decorated with thirteen ikated bands: seven wider bands, *huri*, separated by six narrower ones, all decorated with *boda* motifs executed in white on indigo. Two of the narrower bands, to wit, numbers two and four from the right, stand out as they are executed in a much darker indigo. The two outer *huri* are flanked by pinkish bands, *dini*, with seven fine stripes running in parallel, separated by six pinstripes of only two threads wide. This cloth is a *wo hepi* as only two colours were used and is also a *huri wo pidu* because it has seven main bands.

Comment: This finely made *selimut* confronts us with a paradox. The type is commonly made of two panels, and asymmetric, one wider than the other. The kind of asymmetry seen here - using colour variation on a single panel cloth - "might tell us about a little drama" (Duggan, pers. comm., 2014). It suggests that something happened which destroyed ikated yarns for two of the six narrower bands. They had to be replaced, and the weaver resorted to skeins of warp yarns in a darker tone, perhaps borrowed. However, that this *hi'*i consists of a single panel only, rather than the common two, was certainly planned. The quality of the ikat in the *huri* shows the hand of a master weaver. The finest patterns, in the *dini*, are just two threads wide. The cloth is very soft, and shows intensive usage by being a little thin in parts - but not to the extent of forming holes. From an early Dutch collection.

Source: PC 175.

Fig. 209 Example of dissimilar panels from Lembata.

Origin: Ili Ape (Lembata).
Period: Late 19th to early 20th century.
Yarn: Cotton, hand-spun, medium.
Panels: 2.
Size: 68.5 x 151 cm (2' 2" x 4' 11").

Design: Kewatek nai rua, two panel sarong, of the type *watek ohing* (Barnes & Hunt Kahlenberg (2010:347) with nine ikated bands, carrying geometrical patterns in maroon, morinda red, ecru, and sienna. The asymmetry is subtle, largely limited to narrow strips along the seam that connects the panels by their selvages. The asymmetry may have been achieved by ikating a narrow strip separately and adding it to the warp of one of the two panels, or by ikating entirely different panels, in that case presumably in pairs. Because the bottom part of the sarong is 4 cm taller than the top, the former scenario appears feasible, but numerous small differences between the two fields (e.g. the unequal lengths of the hound's tooth ribbons bordering the widest ikated bands) preclude this. The example published by Barnes and Hunt Kahlenberg (*ibid.*) is likewise asymmetric: the bottom panel carries one more ikated band and is about 6 cm taller than the top one. Although the asymmetry has non-trivial technical ramifications, in the extensive description it is not mentioned, giving the impression that it was not noticed. An explanation may be that Barnes's original primary focus (1988) was on the ikat textiles of Lamalera, a whalers' village peopled by relatively late arrivals on the island; also Lamaholot, but culturally distinct. Two consulted experts involved in ikat revival on Lembata appeared never to have noticed asymmetry on the island and had no idea how or why asymmetric textiles might have been made.

Comment: The straight vertical alignment is a prerequisite for its use as bridewealth between families of standing.

Literature: Very similar to two panel sarong, likewise with nine main ikated bands identified as *watek ohing* in Barnes & Hunt Kahlenberg (2010:347); to 19th C. *kewatek* in Granucci (2005: Fig. 109); as well as to PC 131, which is also asymmetric.

Source: PC 115.

Fig. 210 Example of dissimilar panels from Sumba.

Design: The asymmetry on this 1910-1930 *hinggi* from Kambera is of a subtle and mysterious kind, and even harder to achieve than other cloths with pattern compression: the right panel of this *hinggi* is 15 per cent narrower than the left, but the compression factor is not consistent across the panels. When we study the lettering (which spells out LEO R.M., presumably the name of the wearer, and a mirrored version), we find that (a) the L closest to the seam is 30 yarns wide on one panel and 42 yarns wide on the other and (b) the sceptre-like motif in the panel with the narrower L is substantially wider than the one on the other panel. The numerous other such tiny discrepancies prove that the panels were ikated separately, while simulating replication. This is highly unusual and manifests a weaver's attitude into which one could easily read humorous arrogance.

Comment: An antique *hinggi* made for a nobleman, witness the *patola ratu motif* in the midsection, *kundu duku,* which is the prerogative of ruling families, and the use, however sparing, of overdyeing with morinda (largely faded away). The deer motifs underline this noble aspect, as the deer hunt was always reserved for the nobles. The lettering is unusual – the very fact that the weaver knew the alphabet again suggests high rank, as literacy among women was limited in colonial days. This cloth is probably talismanic, infused with protective powers through its association with the long-established colonial power. The hidden, laboriously achieved, asymmetry as well as the very low specific weight of 200 g/m^2 underline that it was made at a high court. (C.f. Fig. 214.)

Literature: No similar piece known – except its twin, apparently treated with less care by its previous owners, and now held in a private Dutch collection.

Source: PC 228.

Fig. 211 Example of dissimilar panels from Palu'e.

Origin:	Palu'e (Flores's off-shore island), Kéli domain, or allied Ndéo.
Period:	19th to early 20th century.
Yarn:	Combination of hand-spun yarn and machine-made thread.
Panels:	2.
Size:	60 x 170 cm (1' 11" x 5' 6").

Design: This type of *tama* or *dhama* is called *wua wéla*. It is a typical example of Palu'e traditional sarongs, the basic design of which has remained constant since at least the last quarter of the 19th century, in terms of (a) the banded structure, (b) the type of motifs, some of them *patola*-inspired, and (c) the characteristic drawing technique by means of stippling. Less typical is that, while the banded lay-out is symmetric, the main ikat bands are wholly different. The reason for this asymmetric construction has yet to be investigated. Stefan Danerek is working with weavers on the island, and has urged them to attempt to replicate this cloth – which they found "very difficult" (pers. comm., 2019), highlighting the decline in technical ability. Vischer (1994: 256) confirms that Palu'e cloths from around 1900 show a remarkable continuity with those produced at present - although the use of natural dyes has practically disappeared. As morinda is not grown on this dry island, the red dyes used here (as on all or nearly all Palu'e sarongs from the period) is probably synthetic; the yellow dye appears to be natural. The indigo, venerated by Paluans, is deeply saturated, almost black. The solid bands at the extremities both contain a circa 2.5 cm band with less dense, almost gauze-like weaving.

Literature: Similar to a *tama* depicted in Leigh-Theisen & Mittersakschmöller (1995: Abb 154) dated merely as '20th century' but probably early, which is also asymmetric, but far less noticeably so; a 1970s Palu'e sarong in Barnes & Hunt Kahlenberg (2010: Plate 82); one in the National Gallery of Australia, N° 86.1921; and one in Vischer (1994: Fig. 12-14). See also the photograph of Palu'e dancers wearing *tama* (*ibid.:* Fig. 12-10) and similar details (*ibid.:* Fig. 12-18). The main motifs, an angular version of *jilamprang* drawn in stippled lines, are very similar to those on PC 209, a presumed 19th-century Palu'e *tama*.

Source: PC 305 (see also Figs. 24, 25).

Fig. 212 Example of dissimilar panels by pattern compression and other means from West Timor.

Origin: Insana (West Timor).
Period: Circa 1950.
Yarn: Fine hand-spun cotton in all ikated bands and stripes; commercial cotton in the accent stripes.
Panels: 2.
Size: 111 x 206 cm (3' 7" x 6' 9").

Design: Here we see a section of the *beti*, men's wrap, across its full width. While the two panels are equally wide, the cloth is not symmetric: the widest ikated band on the right panel is 66 mm wide, the one the left is 50 mm, *i.e.* ~25 per cent narrower. The second widest ikated band on the right panel is 66 mm, the one on the left merely 50 mm, *i.e.* ~15 per cent narrower. This was achieved by means of tighter warp packing on the left panel (see Fig. 193). A hidden key (here indicated by the small arrow at the top of the cloth) signals that something out of the ordinary was created in this cloth: the ranges of little arches along the red stripes are all opposed – except on the right-hand side (see arrow), where they face in the same direction. As the overall ikating is very precise, this is unlikely to be an error, and presumably aims to accentuate the asymmetry.

Why we see this type of asymmetry here in Insana is an enigma. One possible clue is that Insana is relatively close to the Oecusse semi-exclave where asymmetry on men's wraps is more common, probably as a result of Savunese influences.

Source: PC 086.

Fig. 213 Example of dissimilar panels from Kisar, South Moluccas.

Origin:	Kisar, South Moluccas, probably made by Kisarese mestizos.
Period:	Early 20th century.
Yarn:	Cotton, hand-spun, medium, both single and double-ply
Panels:	2.
Size:	156 x 189 cm (5' 1" x 6' 2").

Design: The asymmetry was achieved in an odd way. The panels are equally wide, but the one on the right *seems* wider, containing seven identical narrow ikated bands, whereas in fact two of those are on the left panel, joining three different narrow ikated bands.

The boldness of the motifs is striking. One of these is the characteristic boxed-in eight-pointed star often seen on Kisar (and on other islands in the wider region). The decoration of the star's central square is very similar to that on another antique Kisar shawl (see PC 200, Fig. 202). The other motif may represent the double-headed eagle of the Maria Theresia Thaler, also a common feature on Kisar cloths, but may equally have been inspired by the patterns of antique Bentenan cloths from northern Sulawesi. The ikat areas were done in double-ply cotton, very loosely twined, the plain areas in untwined yarn. This cloth is unusually large – the largest Moluccan shawl encountered – and very heavy: 1010 gr. The warm overall tonality was reinforced by the use of morinda-red weft. This feature, apart from the generous size, is a further indication of the importance this cloth had for the weaver, as morinda is both harder to get and more difficult to prepare than indigo.

Comment: An example of the 'archaic style' (ten Hoopen: 2018:462). The cloth has the same rust-brown tonality as PC 200, referred to above (see Fig. 202).

Source: PC 308.

Above: The true aspect of the sarong.
Below: Reconstruction showing how the sarong would have looked without the reversal of the panels - the choice for asymmetry.

Fig. 214 Example of dissimilar panels from Sermata (South Moluccas).

Origin: Sermata (South Moluccas).
Period: 19th century.
Yarn: Cotton, hand-spun, medium.
Technique: Warp ikat, discontinuous supplementary weft and *nassa* shell appliqué.
Panels: 2.
Size: 64 x 130 cm (2' 1" x 4' 3"),

Design: Clearly intentional asymmetry from a region where symmetry is the norm. The overall design is similar to that of Tanimbarese *tais matin* or *bakan mnanat*, the highest-ranking sarong type. The honeycomb belongs to the Tanimbar vernacular, although this boxed variant is more common on Babar. Intriguingly, the two panels have been joined, not so as to mirror each other, but in the same direction. Bands with triangles in discontinuous supplementary weft were added to the bottom panel. On Tanimbar these are marks of high rank. That this specimen is not a one-off deviation from the region's standards is proven by the existence of a very close cognate, acquired by Hunt Kahlenberg which Barnes & Hunt Kahlenberg ascribed to Tanimbar. The present author has argued it originates from Sermata (Barnes & Hunt Kahlenberg 2010:364, 365; ten Hoopen 2018:509). The bottom image shows a reconstruction of the panels in a more common arrangement, highlighting the intentional nature of the asymmetry.

Comment: Ceremonial sarong of archaic appearance. Most of the *nassa* shells on the top panel were attached on the inside of the cloth (hence invisible in this photograph), making clear it was intended to be worn with the top rolled over. Given the stylistic resemblances to Babar it is most likely that the cloth originates from Sermata, which lies closer to Babar than to Tanimbar. According to Marianne van Vuuren (pers. comm., 2017) women in Sermata often ordered ikat made on other islands. In such cases we consider the receiving culture as the provenance. Ex-collection J.B. Lüth.

Literature: The honeycomb motif is similar to that in Van Vuuren (2009: Figs. 70, 79) and to a motif on half of a 1913 Babar sarong from Marsela (Khan Majlis 1984: Fig. 561). It is also similar to a motif on the Leti sarong PC 195 and the Leti shawl PC 238 when one closes the loops and compacts the shapes. The way the band with the main motif is bordered by snaking bands recalls Babar sarong PC 288. A variant of this motif occurs in Lautém (East Timor).

Source: PC 267.

Fig. 215 Example of dissimilar panels from Tanimbar, South Moluccas.

Origin: Yamdena (?), Tanimbar.
Period: Early 20th century.
Yarn: Cotton, hand-spun, coarse.
Panels: 2.
Size: 65 x 122 cm (2' 1" x 4' 0").

Design: A *pagi-soré* (lit. 'morning-evening') sarong, which unlike most Tanimbar sarongs is non-symmetric. It could be worn with either half visible and the other folded over, so that it would appear as if the owner had two different sarongs. Note that the ikated bands and the plain bands towards the extremities are identical. The asymmetry is caused only by a change in the midfield – which is more typically striped all over.

This appears to be a transitional piece emulating in cotton the 19th century *bakan* made in lontar fibre, which tended to have the same palette. The main motif appears to be the so-called 'flag' in various forms.

Comment: The locally most highly rated type of sarong. According to van Vuuren: "Old *pusaka* sarongs are always of this type." Although at first glance one would expect a three-panel construction, it is actually made of two panels, with the seam running below the middle, above the ribbed section. This may be a sarong for the dead - which would explain the paucity of cognates (Marianne van Vuuren, pers. comm., 2016). Ex-collection J.B. Lüth.

Literature: Akin to a circa 1900 *tais* in the Museum of New South Wales, Sydney, N° 193.2005, which resembles the upper part of this specimen more than its lower part. It is similar also to a *bakan* depicted in van Vuuren (2009: Fig. 53) and a pre-1926 Yamdena sarong in the Nationaal Museum van Wereldculturen, N° TM-329-4, albeit with asymmetric rather than symmetric lay-out. Motifs and palette are similar to those of a sarong for the dead (van Vuuren 2009: Fig. 14).

Source: PC 262.

Fig. 216 Example of dissimilar panels from Tanimbar, Moluccas.

Origin: Probably from Sera or Larat island.
Period: 1950 or before.
Yarn: Cotton, hand-spun, coarse.
Panels: 2.
Size: 124 x 135 cm (4' 0" x 4' 5").

Design: An intriguing piece because, unlike most Tanimbar sarongs, it is not symmetric. It may be a *pagi-soré* sarong (see caption Fig. 196), with intentionally different top and bottom sections. The asymmetry may also have been unplanned. Perhaps the weaver ran out of red/brown yarn and had to switch to white for the part that here ended up on top, and then decided to create something unusual (Van Vuuren, pers. comm., 2016). The two widest ikated bands carry double lizard motifs flanked on either side by double fish motifs. The second widest ikated bands carry the same motif, in single version. The weaver ikated eight narrow bands with fish motifs flanking a lizard motif. These were then distributed across the cloth to create two wide bands with a double row of motifs, set in a plain indigo field, one on each panel, and four narrower ikated bands that bring rhythm to the composition. Given the coarseness of the patterning a provenance from one of the smaller islands is most likely.

Comment: If both bottom and top panel were in the same colour and joined flipped, it would have been a *tais matin/bakan mnanat*. However, it may also have been made as a sarong for the dead. The only sarong for the dead that Van Vuuren ever came across had a red bottom panel (Van Vuuren, pers. comm., 2016). Ex-collection J.B. Lüth.

Literature: Documentation of lizard motif in van Vuuren (2009:128, Fig. 57); fish motif (*ibid.* 134, Figs. 3, 138, 138a).

Source: PC 264.

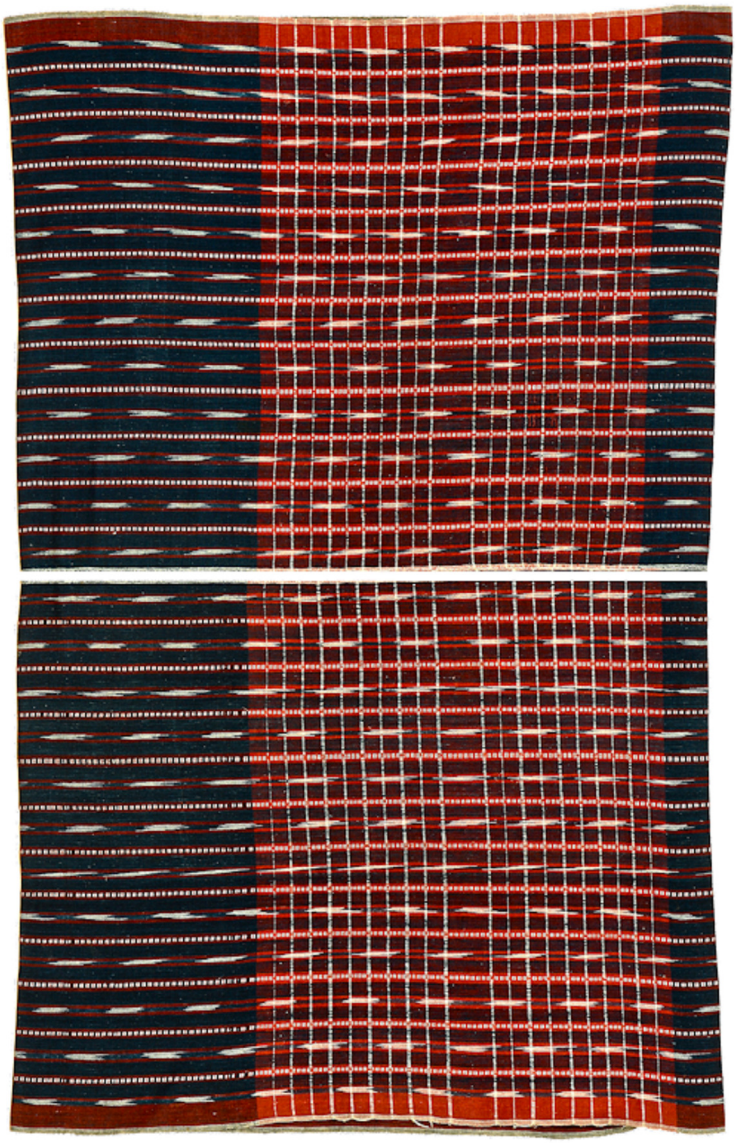


Fig. 217 Example of dissimilar panels from Halmahera (Moluccas).

Origin: Halmahera, Sahu people.
Period: Early 20th century.
Yarn: Cotton, hand-spun, fine.
Technique: Warp ikat in medium cotton
and supplementary weft.
Panels: 2.
Size: 75 x 115 cm (2' 5" x 3' 9").

Design: The misalignment of the two panels of this *ba'a boba,* ceremonial sarong – which on other examples of the very rare type is more marked – is intentional. According to Visser, see below, the Sahu believe that proper alignment would invite serious misfortune. The warp dashes, created by warp pulling on ikated indigo blocks, are archaic, similar to those found in the textiles of Aceh, Batak, Pasemah, Bengkulu, Minangkabau, Ili Mandiri, Solor and Lembata.

Comment: Sarong used for harvest festival. Ikats similar to these used to be made on the small island of Buton, off Sulawesi. The cloths were adopted by the Sahu people of western Halmahera for ceremonial use. As they were agriculturists who supplied the court of Ternate, and also served Ternate's higher classes in other capacities, such cloths may well have been given them as payment.

Literature: Depicted in Khan Majlis (1991: Fig. 323), conservatively dated '1st half 20th c.'. For a similar piece dated 'around 1900' see Khan Majlis (1984: Abb. 757). A similar piece is held in the Nationaal Museum van Wereldculturen, N° WM-25603. It has more marked asymmetry but is probably from Seram (see Maxwell 2003:290). Niggemeier (1952:3881 and *passim*) is the only early source on these textiles. For excellent information on the use and agency of *ba'a boba* see Visser (1989:87–88).

Source: PC 260.

Fig. 218 Example of pattern compression from Roti.

Origin: Nemberala, Roti.
Period: 1945-1960.
Yarn: Cotton, hand-spun, medium.
Panels: 2.
Size: 76 x 159 cm (2' 5" x 5' 2").

Design: Patola-like motif in the midfield, but borders without the more common elongated triangles. Executed in two shades of morinda red, two shades of indigo, yellow and green - created by brief overdyeing of yellow with indigo. Very unusual is that the cloth is asymmetric to the core: one panel is far wider than the other, the ikated areas measuring 30 cm versus 39 cm wide. Even within one panel of this *lafa* there is asymmetry: the eight-pointed stars are of unequal width.

The design of both panels is essentially the same, but on the right-hand side everything has slimmed down by means of denser warp packing. This effect was also observed, although in a less drastic form on the Sumba *hinggi* PC 319 (see Figs. 195, 219, 249), which is already of the highest class in terms of complexity. The method is described above in Section. 4.1 'Techniques to achieve asymmetry', under 'Pattern compression, Method 1'. The fringes are decorated with red and green yarn. Both the drawing style and the presence of yellow and tiny patches of green point to creation in Nemberala (western Roti).

Comment: The reason for the asymmetric design is an enigma. Perhaps it was made for a husband from neighbouring Ndao or nearby Savu, where asymmetry is the rule for all shawls. A more likely reason, against the background of ikat as female competition activity, is that it represents sought complexity. The piece is in unused state, with its fringes not yet corded.

Literature: No Roti cloth with similarly asymmetric pattern was encountered in the literature. Stylistically it is very similar to a *lafa* from Nemberala (Nebrala) in Granucci (2005: Fig. 112), which also has yellow touches.

Source: Collection Anja Philippart.

Fig. 219 Example of pattern compression from Sumba.

Origin: Kambera, East Sumba.
Period: Late 19th to early 20th century.
Yarn: Cotton, hand-spun, very fine.
Panels: 2.
Size: 110 x 258 cm (3' 7" x 8' 5").

Design: This Sumbanese men's wrap of the highest class of complexity, *hondu kihhil walla asimetris* (described below in Section 4.2.2 'Sought complexity: asymmetry as proof of mastery'), has the added complexity of pattern compression. The two panels look alike, but the panel on the right is markedly narrower than the one on the left. This pattern compression method is described in detail in Section. 4.1 'Techniques to achieve asymmetry', under 'Pattern compression, Method 2'. Its essence is the creation of an entirely different panel with more narrowly drawn motifs. The refined, highly detailed, drawing recalls that of the Basel example (see Fig. 240).

Comment: Only one other *hinggi* was encountered with the additional complication of Method 2 pattern compression (see Fig. 234). The few other cloths encountered with asymmetry by means of pattern compression used the simpler Method 1 (warp packing).

Source: PC 319 (see also Figs. 195, 249).

Fig. 220 Example of aspect asymmetry from Savu.

Origin: Savu.
Period: 1925-1945.
Yarn: Cotton, hand-spun, fine, and commercial thread, both double-ply.
Technique: Warp ikat supplementary weft
Panels: 2.
Size: 53 x 154 cm (1' 8" x 5' 0")-

Design: The pattern on this *ei*, sarong, contains a visual device, an illusion: the smaller motifs in the widest ikated bands are reversible. In the lower part of the sarong it appears to be a typical example of a Savunese sarong with motifs inspired by European needlework patterns: vases with floral arrangements, small birds perched on either side. But in the upper part of the sarong, flipped vertically, it turns into an anthropomorphic figure with bulging eyes and a 'Martian' aspect such as seen on early Minahasa ikat (see Fig. 104). The rake-shaped tails of the birds have turned into feet with toes, explicitly rendered, as on Timor.

Comment: A textbook example of competitive ikat. It stands out not just by its clever visual trickery, but also by its sharp, unusually angular drawing type, which is not often seen on Savu. The use of a hand-spun yarn and commercial thread for different section is unusual, too (see Fig. 23).

Source: PC 012.

4.2 SOUGHT COMPLEXITY: ASYMMETRY AS PROOF OF MASTERY[1]

In East Sumba weavers adhere to a clear canon for two-panel men's wraps, *hinggi*: all but a small minority are both longitudinally and axially symmetric, and made in pairs. The two panels of which they consist themselves are also longitudinally symmetric, reducing the number of bindings that need to be placed by a factor eight. Top and bottom are mirror images of one another. When folded over in the middle, the motifs appear upright on both sides. Whether this is a collateral advantage of working with doubled-over warps or whether sartorial considerations lay at the root of the phenomenon is not known, but the former is suspected.

Around 1970 a small number of market-oriented weavers, possibly inspired by western dealers, adopted a type of patterning often called *pagi-soré* ('morning-afternoon'), inspired by Javanese batik. One half is entirely different from the other: e.g. dragons on top, and horses or deer at the bottom. This design concept doubles the weaver's creative liberty, but obviously also doubles the required number of bindings: between 10,000 and 12,000 for the most intricate designs. The *pagi-soré hinggi* came in vogue, albeit in a minor way, among top-level East Sumbanese weavers in the later 1970s and 1980s (Adams & Forshee 1999:47). Some of the more ambitious products from that period (e.g. PC 017) constitute a class of modern masterpieces. It appears that the format was dropped by the late 1980s, or at least employed much less frequently, probably because the redoubled effort was not rewarded by much higher market prices. The first draft of *Ikat Textiles of the Indonesian Archipelago* (ten Hoopen 2018) contained the sentence "Early *pagi-soré hinggi* are rumoured to exist but we have not seen proof." In fact there was a measure of proof to the contrary.

Marie Jeanne Adams in her exhaustive research of 300 *hinggi* in early established European museum collections does not mention a single occurrence of the *pagi-soré hinggi* type.[2] A week after the above line was typed, an early 20th-century *hinggi* surfaced at an online auction – on the photograph represented folded over, as is routinely done with axially symmetric cloths. On physical expection after arrival the section of the cloth that was hidden in the photograph turned out to be quite distinct from the depicted half (see PC 222, Fig. 242). When this cloth was shown to the Sumba expert Jill Forshee, co-author of *Decorative Arts of Sumba* with Marie Jeanne Adams *et al.* (1999), she recounted to have heard of such early *pagi-soré hinggi* during her research on the island, and that weavers called them *searah (*a contraction of *satu arah*, meaning 'one way'), presumably because the warp is not doubled over but worked on over its full length.[3]

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[1] I am indebted to Pak Kinga Lauren, a leading Bali-based textile dealer, for one of the discoveries on which this chapter is predicated and for sharing the relevant technical terms.

[2] Adams (1969:79) does mention a primitive version of asymmetry: before the patterning of the warp, one half of its length is pre-dyed indigo, the other half morinda, or 'rust' to respect Adam's terminology – apparently without further change to the design.

[3] Jill Forshee, pers. comm., 2015.

It was clear that such *hinggi searah*, on account of the doubling of the number of bindings, must have been highly meritorious, and could only have been undertaken in a household with much spare time or plenty of slaves (Adams 1969:89). In this particular example the chosen motifs themselves also support high social ranking: one side is dominated by six skull trees, the other by three skull trees laden with 'young fruit' – *i.e.* heads yet to be taken; an eloquent incitement to go headhunting. The midsection of this cloth, the *hundu dukuh*, intended to grace the gentleman's shoulders, is enriched with an intricate *patola*-inspired motif called *patola ratu* that in the past was reserved for the nobility. It is "regarded as being equivalent to the spotted skin of python" (Khan Majlis 1991a:232), an artistic link with West Sumba, where nearly all men's wraps are decorated with patterns that emulate python skin. In a considered appreciation of this particular cloth wilful asymmetry came to mind; a blatant transgression of the limits that constrain others, combined with royalty and headhunting – specifically a goad for more of it. It is a cloth with creative daring consciously made to assert superiority.

An understanding of the social atmosphere in which high level Sumbanese ikat was produced, requires awareness of the centrality of headhunting in Sumbanese society. The *andung*, the skull tree stood prominently in the middle of the village, because it "represents the death of the enemy and therefore the security of the village. For the Sumbanese, it was also the centre of religion and necessary for the unfolding of the seasons, the coming of rain, and the fertility of the land Adams & Forshee (1999:29)". The death of one was required for the other's prosperity – a type of social relationship which does not just define 'competition', but represents its very epitome.

Much has been written about the role of *hinggi* in Sumba's ceremonial life and their symbolic charge in the context of the Marapu religion, among others by frequent visitor to the island and intimate of its kings Georges Breguet (2019, 2017 and 2006), so we can consider the subject covered and focus on the work at hand, the study of *hinggi*'s design and construction and related technical aspects.

In the present work we will refer to Sumbanese forms of wilful asymmetry as 'complications', adopting a term from horology, the study of clockworks, which indicates a function, such as a moonphase indicator, not part of, nor derivable from, a standard implementation, and adds considerable mechanical complexity. As with the complications in ikat, they are not noticed or seen as special by the uninitiated, but add to a piece's ranking in the eyes of connoisseurs. This still holds among all members of the East Sumbanese aristocracy with whom the present author has been in contact, either directly or through the offices of Kinga Lauren who is familiar with a great number of them (see Goetz 2021, which could not have been made without Kinga Lauren's introductions to the many

members of the aristocracy depicted).[1]

Complications have the effect of elevating the wearer, and most certainly the weaver who invented it, above the masses – one of the core social functions of fine textiles in the region under study:

> Other methods of putting one's pecuniary standing in evidence serve their end effectually, and other methods are in vogue always and everywhere; but expenditure on dress has this advantage over most other methods, that our apparel is always in evidence and affords an indication of our pecuniary standing to all observers at the first glance (Veblen 1934 [1899]:167).

Ten construction classes for East Sumbanese *hinggi*

As far as could be ascertained in this study, East Sumbanese *hinggi* were[2] constructed in ten different *hondu*, construction types or classes, in ascending order of complexity. Nine of these carry hidden keys that reveal a higher degree of complexity than is immediately apparent – and were not previously described in the literature, presumably because the hidden keys were not noticed. Indications were encountered that an eleventh, more basic construction was used in the (perhaps distant) past.

Obviously, the terminology that we need to describe the different construction classes is not available in the literature either, so before we attempt to construct a system of classification a brief introduction is in order. The most fundamental term is *hondu*¸ an East Sumbanese word meaning 'to tie', which is best understood as equivalent to 'construction type'.[3] We may differentiate construction types by the number of replications it calls for: from a likely archaic 16 and the common 8 down to zero. Assuming a positive valuation of labour invested, the diverse *hondu*'s ranking is in the inverse order: the smaller the number of replications, the more labour-intensive is a cloth's production, and the higher its rank.

Two other regional terms (either identical or near identical in the various dialects) that

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[1] Several of these noblemen, a select group with an interest in textiles rather than the more common politics, were aware of the existence of *hihhil* and *walla* constructions, although not of their combination; with the exception of *hinggi*, predominantly modern, with Ramayana motifs borrowed from the Hindu repertoire. Some of these have a large continuous drawing over two panels, from top to bottom, and are instantly recognizable as entirely free from replication. In interchanges none of the Sumbanese connoisseurs ever mentioned *hondu kihhil walla* or complications beyond it, such as pattern compression. The present author and Kinga Lauren made a pact not to share higher level *hondu* through social media while the investigation was ongoing, but sometimes the latter admitted to having been *nakal*, naughty, and posted one anyway – always 'raw', without comment. None of the experts commented on the hidden keys when confronted with *hinggi* that carried them. Towards the end of the investigation the present author also transgressed, posting a *hondu kihhil walla*, PC 351 (Facebook Ethnic Textiles Community, 1-8-2020, see also Fig. 252), to check what the experts would notice and, admittedly, also as thrill-seeking from the safety of one's study. One Sumbanese nobleman pointed out the *walla* key¸ but overlooked the *kihhil*.

[2] The past tense is used here, as after circa 1930 all except one construction type (the least challenging) ceased to be used – bar a period in the third quarter of the 20th century when another type, requiring twice as much work, was briefly revived for the tourist market, only to recede into obscurity again for lack of sustained commercial success.

[3] All terms used in East Sumba relating to construction types were translated by Kinga Lauren (pers. comm. 2020).

are used throughout this chapter require proper understanding with regard to their technical consequences. The first term, *kihhil*, is equivalent to the Indonesian *terus,* 'the whole way, no stopping', which in this context means 'going the full length of the warp', *i.e.* beyond the boundary of the cloth's axis. In technical terms it translates to 'one fewer replication per panel along the horizontal axis'. The second term is *walla*, which means 'wide open', and in this context means 'spanning the width of the panel or panel segment', *i.e.* not folded along the warp's length. In technical terms it stands for 'one fewer replication per panel or panel segment along the longitudinal axis'. Both entail a doubling of the work load. Combining the two quadruples it. Such pairings are rare, and the likelihood of one occurring is oddly skewed. In circa 80 per cent of all cloths designed with a *hondu kihhil* construction, *hondu walla* is found as well. But only about 5 per cent of all *hinggi* with a *walla* construction show *kihhil*, too.

To appreciate the difference between the various classes, a basic knowledge of *hinggi* construction is essential – and a realisation that their creation is very similar to visual programming, with elongated pixels, bars, resulting from bindings on the warp. These large men's wraps, on average 260 cm (circa 8.5 ft) long, always (with extremely rare exceptions) consist of two panels that are on average 62,5 cm (circa 2 ft) wide, and are sewn together by their selvedges to create cloths of circa 3.25 m^2. The weaver works with a circular warp, consisting of two layers, and, with few exceptions, produces four panels at the same time. These are commonly both axially and longitudinally symmetric. But the focus here is on *hinggi* that are not common.

The lower-class consist of *hinggi* made with labour-saving 8-fold replication. It is used for circa 95 per cent of all East Sumbanese men's wraps. One of the constructions in this class, the most common *hondu* by far, is the *hondu kappit* (see Fig. 228). The term *kappit* (originally from Rende) translates as 'to combine, to collect, to gather'.[1] It relates to the folding of the warp, and is essentially generic, as all ikat in the region under study bar the most exceptional requires folding of the warp bed to produce replications. *Hondu kappi*t (aka *hondu upu, hondu yopul*) is the design, or from the weavers' perspective the construction, used for the great majority of all East Sumbanese men's wraps. The literature does not describe any other type, although other types are occasionally depicted, none of them named.

One design that is even less labour-intensive, with 16-fold replication, may have existed in the past and been abandoned long ago. We encounter what appears to be its imprint on designs still used in the first half of the 20th century, but have no proof that it was ever practiced. Perhaps because it was a very basic design, not suitable for heirlooms, hence not preserved. It may be apophasis to discuss constructions with no certified extant examples, but it is not merely rhetorical. A valid reason to pay attention to this construction in an overview of Sumbanese design structures, is that it may be fundamental. We could

[1] Umbu Makambumbu, pers. comm., 2020.

call it *hondu dasar* (*dasar* meaning 'basic', 'fundamental'). Its design concept, a stretched grid consisting of 16 elongated rectangles, is congruent with the fundamental structure of two types of *hinggi*. In the majority of specimens the gridlines are emphasized by the placement of mirroring motifs, e.g. the wings of *karihu* (see Fig. 221), lions mounting in opposition, or deer alternately facing each other and facing away (see Figs. 224, 225).

But in the circa two dozen specimens studied the grid is never biaxially symmetric. There is always a clever or amusing small element proving that the *hinggi* was not constructed in *hondu dasar*. In effect, we know *hondu dasar* solely through its negation: weavers demonstrating through hidden keys that, even though their designs may look like 'cheap' 16-fold replication, they were actually applying 8-fold replication, which takes twice as much work. Said keys are tiny visual elements which ostensibly were included in the design solely to disprove that the weaver worked in *hondu dasar*. This suggests that the *dasar* contruction is not merely hypothetical and was actually used in the past. One does not demonstratively disassociate oneself from something that does not exist – and does not have value associations.

The reason to abandon *hondu dasar* may have been physical. It would have required tying bindings on very thick bundles of warp yarns – especially because *hinggi* are made in pairs. If a weaver wanted to draw a motif in 8-yarn strokes with 16-fold replication, she would have to place her ties on 2 x 8 x 16 = 256 yarns at the same time. When she drew part of a motif in 16-yarn wide strokes, the bundle would swell up to a barely manageble 512 yarns. To prevent dye seepage, and the resulting creation of blurry drawings, she would have needed to apply extreme digital force during the tying. Perhaps weavers liked the grid, but found it was simply not doable. Maybe 8-fold replication, in one of its forms, was the maximum attainable. Or the reason for *hondu dasar*'s dissappearance was aesthetic. Perhaps this most basic construction, with drawing that must have been blurry, was common in the past, but in families of some standing was regarded as folksy, when not plebeian. Perhaps it was rejected as too basic by later, more ambitious generations of weavers striving for clearer drawing and willing to pay the price.

All three of the surviving variants of *hondu dasar* are rare. The first we may term *hondu dasar kihhil* because it employs a visual device (of the same type as that found in the middle-class *hondu kihhil*) which proves that it was made with one fewer replication along the horizontal axis. The key is placed in the axial band, *kundu duku*. Only three occurrences were encountered, all in Group C of the Physical Database (see Fig. 223). The second we may term *hondu dasar walla* because it uses a type of key which proves that there was one fewer replication along the longitudinal axis. In terms of the workload it is identical to *hondu kappit*, yet is felt to represent a separate class, as the intent clearly is to masquerade as a basic 16-fold *hondu dasar* – just a few small motifs playfully betraying the doubling of the work load (see Figs. 224-226). Half a dozen occurrences were encountered, all in Group C of the Physical Database.

Hondu dasar kihhil walla was the very last one to be discovered. After encountering several *hinggi* in *hondu dasar walla* and three in *hondu dasar kihhil* the author had been

expecting – or rather hoping – to find an example in which the two complications were combined. It would be a cloth with middle class, 4-fold replication. But after no example showed up for months it was given up as merely theoretical. Still I encouraged Kinga Lauren to keep sending snapshots of *hinggi* that appeared to have 16-fold replication, and one day he sent a picture that looked promising (see Fig. 227). Once the *hinggi* was rephotographed in high resolution, including closeups of salient sections, all doubts evaporated: this cloth was made to look like it was constructed with 16-fold replication, but actually was made with 4-fold replication. This represents a quadrupling of the workload in comparison with the possibly specious, but more likely archaic *hondu dasar*, and an indubitable doubling of the labour required for a standard *hinggi* in 8-fold replication.

The *dasar*-based constructions with hidden *kihhil* and *walla* keys acquaint us with a phenomenon that becomes more prominent in the higher classes: weavers of the 19th- and early 20th-century occasionally pretended to produce on a lower level than they actually did, playfully hiding the exponentiation of their workload – and in doing so posed an intellectual challenge to their peers: "See if you can find out my true worth as a weaver."

The middle-class is composed of four construction types with 4-fold replication, to wit *hondu walla, hondu kihhil*, *hondu kihhil asimetris* and *hondu dasar kihhil walla*. In *hondu walla* (see Figs. 229, 230) the panels have no longitudinal symmetry, *i.e.* if one were to draw a line down the middle along a panel's length, the design left of the line is different from the design to the right of it. In most cases the absence of symmetry is immediately apparent, but in a few it is hidden and revealed only by a small visual device. In *hondu kihhil* (see Figs. 221, 231-233) the design above the horizontal axis is different from the part below. Here the reverse is the rule: only in rare cases is a *hondu kihhil* construction immediately apparent; it is typically carefully concealed and revealed only by one or more hidden keys. In *hondu dasar kihhil walla* (see Fig. 227) the weaver based her design on the grid for 16-fold replication, and hid both *walla* and a *kihhil* keys to conceal a quadrupling of the workload *vis-à-vis* such a construction.

The choice for a *kihhil* or *walla* construction is highly consequential for the cloth's 'programming'. In the second, non-replicated, part of a panel everything but the key would be identical to the first part, but mirrored. The East Sumbanese weavers of the nobility were technically and creatively superlative, but many other weavers in the region under study also manifested an advanced ability to conceive and accurately execute algorithms for the creation of mirroring patterns, braided, chained and nesting motifs, and field covering arrays.

Arrays of narrow, elongated patterns form the constituent elements of *hinggi* in the *hondu dasar kihhil walla* construction, which graphically suggests 16-fold replication, whereas in fact it is made with merely 4-fold replication. The single encountered example, dating from the 1940s, proves this in a manner that is original and elegant, employing a combination of one *kihhil* and multiple *walla* keys. It may well have been made by one of the last weavers still knowledgeable about such hidden visual devices. None have been observed in Sumbanese men's wraps made in later decades.

The upper class comprises labour-intensive constructions with merely 2-fold replication. All except one are of the type *hondu kihhil walla* which pairs *hondu kihhil* with *hondu walla¸* typically in a manner that requires expert knowledge to discover (see Figs. 235-256). This class was limited to the nobility, and stopped being produced circa 1935. In five cases *hondu kihhil walla* was found to have been combined with yet another technical complication, to wit pattern compression. This design technique produces asymmetry at a kind of meta-level, not achieved by further reduction of the number of replications (it has 2-fold replication, as does the 'normal' *hondu kihhil walla* construction) but by manipulation of the warp during the weaving or individual drawing of the constituent panels. In terms of technical complexitiy this class, which we might call *hondu kihhil walla asimetris*, ranks above *hondu kihhil walla*.

Pattern compression was found to be have been achieved in two different ways, described above (see Section 4.1.3). Method 1 pattern compression is achieved by variation in the density of warp-packing, which requires additional manipulation of the yarn on the loom, but nothing extremely laborious (see Figs. 246-249, 255). Method 2 pattern compression is achieved by individual drawing of the two constituent panels, which is far more time-consuming. Only a single example of *hondu kihhil walla* with Method 2 pattern compression was encountered (PC 319, see Figs. 249, 219, 195). However, Method 2 was also encountered on material with an even more drastically disguised degree of excellence. This construction type, which we shall call *hondu kappit asimetris*, is likewise represented by just a single encountered specimen (see PC 228, Figs. 210, 234). It *simulates* the standard *hondu kappit* but, as a thread count revealed, the two panels were drawn individually, with ostensibly identical designs deceptively executed in different line-widths.

Such uniqueness makes one wonder if this was one weaver's surprising creative invention, adopted as her personal style, or just a 'crazy' one-off. Or is it a lone survivor (along with its twin[1]) of a construction type that was lost over time? Other weavers might have seen it as a challenging construction, with a strong element of surprise – an aspect that deserves a brief appreciation, given below, as well as in Ch. 5, 'Ikat in its social context' under the heading 'Ikating as a performance', but even this demanding *hondu* is not the supreme construction class.

The apex construction class, which could be called *hondu tanpa replikasi*, has zero[2] replications. It requires 8 x as much as lower class constructions, and twice as much work again as the noble *hondu kihhil walla* and *hondu kappit asimetris*. With rare exceptions, in classes above the *hondu dasar* template and *hondu kappit* the extra investment in time is not flaunted to the general public but instead carefully hidden – revealed to cognoscenti

[1] The twin was auctioned by De Zwaan in Amsterdam on 16-6-2020 as part of a lot. It appeared to have had an even tougher life.

[2] Only five examples were found in the Reference Set, which includes substantial museum collections. Three were found in Group A, one in Group C of the Physical Database. Now that this highest level of complexity is known, a few more examples are likely to be discovered. The most likely path to finding them is to look for additional keys in *hinggi* already classified as *hondu kihhil walla.*

only by means of hidden keys; tiny, ingeniously created visual devices, some (see PC 333, Fig. 253) no larger than the tip of a tea leaf.

Simulation of tripartite construction

A remarkable feature of some of the cloths of the two highest construction classes, is the simulation of a tripartite or even sexpartite construction, neither of which was ever practiced. The simulations can be quite elaborate and suggestive, utilising not just three pairs of motifs along the length of the warp – typically with animals placed in opposition on either side of the spurious dividing line so as to stress it – but also tiny details that almost force the eye to divide the cloth in three longitudinal sections. A prime example form the strategically placed black triangles in the end borders of PC 187 (see Fig. 243).

Taylor & Aragon explain (1991:33) that tripartite division of a design may reflect a tripartite cosmology with an upper, middle and lower world, which may correspond with a three tier societal division in nobles, commoners and slaves – such as indeed we find on Sumba, where the classed are termed *maramba*, *kabisu* and *ata* respectively. Remarkably, the simulation of tripartite construction was encountered only on cloths made at royal or noble courts. The reason that such simulation was not encountered on commoners' cloths (cloths lacking distinct upper-class markers) may be that this class did not particularly care to stress the tripartite division of society. Another reason may be that allusions to it were considered improper for all but the nobility.

OVERVIEW OF CONSTRUCTION CLASSES

0. *Hondu dasar* (primordial or perhaps merely conceptual)	16-fold replication
1. *Hondu dasar kihhil,* no axial symmetry	8-fold replication
2. *Hondu dasar walla,* basic, no longitudinal symmetry	8-fold replication
3. *Hondu kappit*, standard construction, biaxial symmetry	8-fold replication
4. *Hondu dasar kihhil walla,* simulated symmetry	4-fold replication
5. *Hondu walla*, no longitudinal symmetry, patent or hidden	4-fold replication
6. Hondu kihhil, no axial symmetry, typically hidden	4-fold replication
7. *Hondu kappit asimetris,* mimics standard construction	2-fold replication
8. *Hondu kihhil walla*, no symmetry, typically hidden	2-fold replication
9. *Hondu kihhil walla asimetris,* adds pattern compression	2-fold replication
10. *Hondu tanpa replikasi,* typically well hidden	0 replication

All of the above classes except *hondu kappit* and *hondu kihhil* (the latter was known, but only from 1970s and 1980s specimens made for the tourist market) were discovered during the present investigation. Note that *hondu dasar* is not included in the numbered listing, as proof that it was ever used other than as a design template has yet to be encountered. Although the present research was exhaustive and based on a substantial sample, given the creative ingenuity of the East Sumbanese weavers it brought to light, it is conceivable that future research may yet yield one or two more construction types of extreme rarity.

Much credit is owed to Kinga Lauren, who first served as a catalyst by discovering a *hondu kihhil walla* construction in a *hinggi* shown him by the present author, and in later stages as a purveyor of numerous photographs of *hinggi* in which he had either discovered hidden keys, or in which the present author suspected their presence, marking the cloths as worthy of further investigation. Without our frequent exchanges, I would almost certainly have failed to discover some of the rarer construction classes.

Thanks to a combination of dedicated sleuthing and strokes of luck, I managed to compensate Kinga Lauren for his contributions by discovering visual devices in his textiles that he himself had overlooked – hidden keys which made them more interesting and more rare – and we aim to continue our fruitful collaboration in further research. The first result will be the publication in 2022 of *Noble Virtuosity: Hidden Keys in Sumba Ikat* by Museum and Art Gallery, the University of Hong Kong.

Fig. 221 Left: A butterfly-shaped *karihu* motif with hidden *kihhil* keys in an early 20th-century *hinggi* from Kanatang. According to Yudi Umbu Rawambakum (staff member of Dinas Kebudayaan dan Pariwisata in Waingapu, pers. comm., 2021) the *karihu* represents the ovaries. Except in the case of *pagi-soré* wraps *kihhil* keys were nearly always hidden in the *kundu duku*, the band on the cloth's axis. Most weavers create their own unique keys – by all appearances in a spirit of flow *sensu* Csikszentmihalyi (1990), with a palpable delight in deception. *Karihu* is the only motif suitable for hiding *kihhil* keys that is rather widely shared. Here, the mind is tricked into seeing a regular alternation of white and red dots along the wings' edges, identical above and below the axis, whereas in fact the bottom of both wings contains a red-white-white-red string. As only four out of 130 dots were swapped, affecting just 3 per cent of the pattern (less than 0.002 per cent of the entire cloth), the untrained mind does not register it. Some *karihu* motifs are 'innocuous', but they are always to be approached with alacrity, as it is a tricksters' favourite. The apex weavers' game was creating illusions, a play on the mind's programmed expectations.

Right, top and bottom: Minute differences were observed between visual elements in mirroring positions far from the *kundu duku*, in the ikated bands closest to the extremities. In this selection, a narrow forked motif, the lengths of the tines clearly do not match. This can only result from bindings of slightly divergent lengths; not from one and the same. This proves incontrovertibly that the whole cloth is axially asymmetric – not just not just the midsection. The same test performed on other *hondu kihhil* cloths yielded similar confirmations that no axial replication of any part of the two panels took place.

The royal status of this particular cloth is underscored by the fact that it is a true *lima varna* [five colour] *hinggi*: the clearly demarcated yellow touches were ikated or created with *ndata*, not daubed in after the weaving. *Source:* PC 322.

The central role of the *kundu duku* – a sceptical review

In all but a few cases *hondu walla* is immediately obvious, as the drawing on the individual panels is not longitudinally symmetric. There may be three large deer for instance, two facing one way and a third the other way. The reverse is true for cloths with a *kihhil* construction. In all but two examples in the Reference Set (a *hinggi* held in the Yale University Art Gallery, N° ILE2006.4.381 (see Fig. 238), and PC 222 (see Fig. 242), its presence is difficult to notice. The latter has a *pagi-soré* design, with top and bottom that are entirely different, hence is not mysterious about the doubling of the workload. The present author is aware of a few other unpublished specimens. While *hinggi* with such design equal *hondu kihhil* in terms of working hours, they are conceptually different and perhaps best seen as representing a small class of their own, with few survivors. The type is barely represented in public institutions, but known to survive in a few private collections. Recently, at The Hague's Venduehuis der Notarissen, they have been publicly exposed as extraordinary by a bidding war at auction which had many people alerted.[1]

When studying *hinggi* with a non-obvious *kihhil* construction such as *pagi-soré*, whether or not in combination with *hondu walla*, our focus needs to be on the *kundu duku,* the central part of the cloth. This is the part which, when the *hinggi* is worn as an upper body wrap, covers the nobleman's shoulders. It is full of significance and commonly has a patterning that sets it apart from the rest of the cloth, be it a band of *patola*-inspired *patolu ratu* motifs or proprietary motifs, used by the family for many generations – and may contain keys hiding its complexity. Because in the present research, bar PC 364 (see Fig. 254) and a single specimen encountered in Group C of the Physical Database, *hondu kihhil* keys have been found exclusively in the *kundu duku*, typically a relatively narrow band, four to seven hands wide (although some are much wider, and a few merely a hand wide or even less), sceptics may wonder if these keys truly signify the absence of axial symmetry.

One such sceptic was Kinga Lauren in the early 1970s, a leading Bali-based textile dealer, when he just began trading, at age fifteen. He queried Tamu Rambu (Princess) Yuliana and Tamu Rambu Anamotur in Rende as well as other renowned old weavers from the nobility residing in Kaliuda, Kanatang and Kapunduk – and stayed in touch with most of them as long as they lived. They all stated that once they tied a single *kihhil* key into the warp, they were committed to a *hondu kihhil* construction and never replicated any part of the warp above or below it. They categorically declared that this was 'not done' – without making clear if it was against the *adat* or beneath their dignity. If the present author reads the spirit of these royal weavers right, probably it was mostly the latter. This meshes with the experience of Barnes on Lembata: weavers were not at all interested in short-cuts. "It is the quick results one gets which were precisely what most of my friends found unsuitable (Barnes, 1989:30)". A detailed study of the *hinggi* with *hondu kihhil* construction in the Reference Set bears the princely weavers out: all contain small differences that cannot have

[1] A finely executed, deeply saturated *pagi-soré hinggi* presented by Vendhuehuis der Notarissen on 29-08-2020 as Lot 672, estimated at €600 - €900, was hammered down at €17,000.

been caused just by misalignment or different degrees of yarn stretching.

Still, the hypothetical possibility that short-cuts were occasionally used needs to be addressed, if only because it is rumoured. Three sources within the East Sumbanese nobility who insist on anonymity to prevent family quarrels, stated that misinformation is bandied about by distant relatives who are courted by some westerners. They enjoy prestige (and sales opportunities) because they can claim authority on account of their descent, but lack actual knowledge about the techniques used by their grandmothers and great-grandmothers. Obviously, short-cuts would be more likely to be found in a cloth of relatively low overall quality such as the one basic example in the Yale University Art Gallery (see Fig. 239), than in a refined cloth which in other respects manifests a commitment to excellence. They are also more likely to be found in relatively recent *hinggi* than in early specimens.

But to persist with acid testing the *kihhil* concept as presented here (if only to debunk alternative theories): could the weaver not have created a *kundu duku* without axial replication somewhere on the tying frame, then shifted that warp section up so it rounded the far beam of the frame, next ikating the rest of the cloth with the usual replication? This would certainly be feasible. It would require advanced dexterity, but still involve far less work than tying another half of a panel, leave alone a whole panel. Next spot-check *hinggi* like, for instance, PC 073 (see Fig. 233). Could the dyer not have just changed a few bindings on the axial band to modify one half of the sceptres crossing the axis? Could she not, just before a short indigo bath, have removed the bindings on two of the eight slanted S-shapes and simply replicated the rest as she would have done with a *hondu kappit* cloth?

Here again, the material itself has the strongest arguments. Macro photographs were taken from mirroring sections of three *hinggi* with *hondu kihhil* construction, selections that lay well outside the *kundu duku*. If they had been created by replication, these sections would have to be identical or nearly so (allowing for some misalignment and slightly different degrees of yarn stretching), but they were not. All showed small, but significant differences that could not have resulted from the above-mentioned errors – irrefutable proof that top and bottom half of the cloths had indeed been ikated separatedly, along with their respective *kundu duku* sections hiding the *kihhil* keys.

Apart from the material proof, the scenario of a separately ikated axially asymmetric *kundu duku* seguing into a replication process for the rest of the cloth is also unlikely on psychological grounds. Most of all in the case of those *hinggi* that in multiple respects show technical or design-technical sophistication. At this level of dyeing – or any art form – the creator's selfrespect tends to preclude taking shortcuts. Even in the case of the hypothetical weaver with less selfrespect than eagerness for social climbing: what if she were found out? The royal courts of Kanatang, Rende, Praliu and Kapunduk in the 19th and early 20th century were not huge places where a woman could practice her art in obscurity. In essence they were just villages with relatively cramped quarters. Female family members no doubt were well apprised of each other's works in progress. Should any weaver suddenly produce a *hinggi tanpa replikasi* with a single, easy to fake key as the only element setting it apart

from a 'normal' *hondu kihhil walla*, would she not become the court's laughingstock and degrade herself for life?

> A "low-quality" signaler who attempts to fake a high-quality signal will deplete whatever resources that he may have available, leaving the signaler in such a vulnerable position that the strategy will prove to be counterproductive (McAndrew 2019:2).

More likely therefore is that in East Sumba – as elsewhere in the region under study – difficulty was not evaded but indeed actively sought.

Also actively sought, hunted for even, was surprise.[1] There is an obvious parallel between the women's attempt to surprise (inherently an act of domination), and the raiding style suitable for headhunting – which likewise was often predicated on surprise, laying traps (McWilliam 1996:134). "The usual practice was to ambush an enemy party (Downs 1977:120)". Another parallel is in the occurrence of a peak experience *sensu* Maslow (1964): the crowning moment when suddenly her secret keys are discovered in public, and all around are in awe. A third match is in the exploit's careful timing. Like a headhunter before a foray, the dyer develops a sly plan, a 'visual ambush', executes it with her staff in the same strict secrecy in which headhunters prepare their attacks, and then chooses a suitable occasion for its revelation.

Why do we overlook those hidden keys?

A full understanding of what the East Sumbanese high-class weavers were doing requires a brief excursion into the field of perceptual psychology. It is a cliché, but largely incorrect, to say that we see what we want to see. A first correction is to realize that we only see what we are allowed to see. The mind's main function is not that of provider but as arbiter of information. The brain decides what is important to act on, and what can be ignored. How efficient these decisions are is a factor of the individual's intelligence. One of the key components of intelligence, vital for survival, is the ability to extrapolate. It is vital because we cannot allow into consciousness all the data that come in through the senses.

> The brain doesn't want to be overloaded with everything the eye is detecting. It is only interested in information relevant to the scene it is attempting to build up, as well as monitoring this scene in case anything of significance changes. This visual data that finally reached the brain helps to create a hypothesis about the world outside. In turn, the brain now directs the eyes to move and collect new data that will help to confirm that hypothesis or resolves ambiguities. […] Vision therefore involves a constant movement between the generation and resolution of doubt. But this means that a great deal of what we "see" must already be present in the brain in the form of assumptions based on what we have already learned about the world [read 'the design'] and the way it works. Indeed, what we see is not so much what lies in front of us but what has been created out of memory and the visual strategies of the brain (Peat 2002:94-95).

Under the constant barrage of visual input that we undergo, a triage needs to be made,

[1] Assuming that the weavers did not devise hidden keys only in order to go around and explain them.

whereby priority is given to signals that affect survival. As a result of this triage we constantly make inferences based on incomplete evidence, creating meaningful patterns out of a mix of consistent data and what programmers call 'garbage': data sets with erroneously placed or missing bits. Which is why we largely see what we *expect* to see (Gombrich [1960] 1977:171). As the present author can testify from experience, when looking at a tropical bush we need to see just a few square centimetres of a scaly, reticulated surface to conclude that a python is hiding within – whence, herpetologists aside, we skip further investigation and initiate action. The brain makes assumptions about how patterns flow and cohere and attempts closure. When it receives visual data from a hedge, it does not register all the specifics of the foliage, but instantly concludes: "This is a hedge". When equipped with relevant erudition it will also attempt a botanic determination, but it does not go into more detail. It is constantly ready to 'fill in the blanks', which is why it overlooks any animals hidden in that hedge, as well as the keys that Sumbanese ladies of royal class hid in plain sight in their ikat textiles with illusions.

Gombrich argues: "I suspect there is no class of people better able to bring about such phantom perceptions than conjurerers" ([1960] 1977:172). This remark induced the present author to query the celebrated conjurer-*cum*-illusionist, Paul Philippart, about the psychology of illusion. My chief aims were (a) to get a professional's explanation for techniques that were understood intuitively, based on an analysis of the most deceptive designs; and (b) to verify if 'taking' people by means of illusions has an element of domination. "Creating illusions is dominant conduct per definition. I am domineering in the sense that I outwit the audience, which submissively undergoes the magic process. I control that process by determining what the audience is looking at. A fundamental technique [also applied in ikat textiles from East Sumba with hidden keys, PtH], is 'misdirection': focusing the audience's attention on things that are irrelevant, while downplaying moves that *are* important".[1] This precisely describes what the weaver was doing in Kinga Lauren's *hinggi hondu tanpa replikasi* (see Fig. 222). The quadrupeds with no heads and double tails are so odd that no one notices what is happening in the unexciting midfield with its innocuous-looking array of small motifs.

This may be a good occasion to caution all who wish to further study East Sumbanese textiles which cleverly avoid asymmetry, not to over-anthropologize the phenomenon.

> Art from non-Western cultures is not essentially different from our own, in that it is produced by individual, talented, imaginative artists, who ought to be accorded the same degree of recognition as Western artists, rather than being viewed as either 'instinctive' children of nature, spontaneously expressing their primitive urges, or, alternatively, as slavish exponents of some rigid 'tribal' style (Gell 1998:1).

We should certainly be aware of cosmological and social notions that influence the material culture of the islands in the region under study, but in this specific case, our understanding

[1] Paul Philippart, pers. comm, 2020.

may be well served if we also pay attention to an aspect that is less frequently refered to in ethnographic studies of artisanry, to wit fun. When we observe the playfulness on display in the *hinggi* with hidden keys, it is hard not to sense the glee that the smart weavers experienced while developing their deceitful designs, and the state of flow in which they were creating their textiles. As Csikszentmihalyi reminds us, flow (a state typically attained only by the highly proficient, trained for at least ten years), contains an element of ecstasy, of standing outside the normal, of "existence temporarily suspended".[1] Thus these *hinggi*, whose design fundamentals originally probably were informed by cosmological concepts, over time may well have transcended these and become mostly fun displays of creative prowess with little if any deeper significance.

[1] Mihaly Csikszentmihalyi, TED Talk, February 2004.

Fig. 222 Example of the very highest class, *hondu tanpa replikasi*, made in the 1930s in Janga Mangu (Kambera) by Rambu Dai Ataluda, daughter of the second wife of Umbu Diki Dongga, a commoner, yet Sumba's wealthiest man. This cloth was posted in the Facebook Ethnic Textiles Community on 29-5-2020, and discussed by a few experts. The strange animals without heads were remarked upon, but no one commented on the midfield, shown above – quite remarkable, given that the midfield as a whole constitutes one huge *kihhil* key. One serious look makes clear that it cannot have been created by folding the warp over its axis. But the *hinggi* was deliberately designed so as to prevent such clear-headed visual analysis.

Two techniques were paired to achieve a sublime deception: (a) the neat arrangement of small elements into an ordered array which created an illusion of the type described by Gombrich's 'etc. principle'. It makes the mind generalize, forming an image predicated on a hastily gathered subset of all offered visual data, forgoing mental processing of details; (b) red herrings were placed. Given the level of craftiness on display here, the headless animals no doubt were inserted for the express purpose of focusing the observer's mind on them – so that a more consequential element, the enormous *kihhil* key and the tiny additional keys hidden within it will be overlooked, hidden in plain sight. Illusionists and conjurers rely on such tricks continually, and call them 'misdirection'.

The *walla* keys are hidden in the sets of vertically aligned white dashes. These are not identical on either side of the two panels' vertical axes – *vide* the keys marked in white. This establishes *walla:* no replication over the panels' longitudinal axes, and marks this *hinggi* as a *hondu kihhil walla*. But yet another key was hidden in the *kihhil* key to prove that the two panels are ever so slightly different – *vide* the keys marked in yellow: a single versus a twin column of dashes. That makes this cloth a *hondu tanpa replikasi.* No replication at all; twice as much work as the hallowed and rare *hondu kihhil wall*a, eight times as much as a common *hondu kappit*. With this refined, highly intelligent *hinggi* Rambu Dai Ataluda reminds us that she was the eldest daughter of one of Sumba's greatest weavers (Wielenga 1928:47).

Source: Collection Kinga Lauren.

Philippart: “When you create illusions you ambush the audience. It is an assault on the senses. The essence of the assault is to make it appear that all is normal – untill it isn’t.” This laying of an ambush, while carefully orchestrating a first impression of normalcy, exactly matches what the East Sumbanese royal weavers did when they wove illusions into their high class designs; and what their men or forefathers did in the night of a well-planned headhunting expedition, on the edge of a village noiselessly approached – until it is time to roar.

This extrapolation of meaning out of partial data is the cerebral function which allows the creation of illusions. Generally content with assumptions that we achieve by inductive reasoning, we project our expectations onto the visual field. Gombrich states: "I believe that this illusion is assisted by what might be called the ‘etc. principle,’ the assumption we tend to make that to see a few members of a series is to see them all” ([1960] 1977:184). It is almost as if Gombrich was familiar with ikat design of East Sumba, as his oft-cited ‘etc. principle’ describes exactly what its weavers were practicing: toying with the viewers’ brains’ programming, tripping up engrained expectations of regular repetition and perfect mirroring. They did this with great élan, and displays of creative virtuosity, patently informed by at least a basic insight into human brains’ mental processing of retinal information.

The weavers’ mind games fit the highly competitive Sumbanase environment, infused by the ancient headhunting ethos – which persisted long after the practice itself was discontinued (Hoskins 1996c:246) – one aspect of which was the hunger to prove dominance. So at least was overactive headhunting regarded by less assertive, more flightprone neighbours; the relationship between the Iban and other Ibanic peoples remaining the most eloquent example (Heppell 1975:4). Duping someone is an act of assertion, a mild form of aggression even: it establishes mental power of one over the other.

These rich, playful 19th- and early 20th-century weavers at the Sumbanese royal courts outsmarted academic researchers (an audience they can never have expected) for a century. It is ironic that as a result of precisely this cleverness, the aspect of intelligence and creative genius in these weavers’ handiwork has remained hidden – this to the detriment of our understanding of, and respect for, the women of East Sumba. International recognition of their virtuosity will come too late for these 19th- and early 20th-weavers, but it can still be a source of regional pride and perhaps aspiration for the younger generation. Today they may exult: “Look, this is what our great-grandmothers were capable of.”

In the overview below, the basic ikated motif – the pattern which is replicated – is shown in colour, replications in greyscale.

Fig. 223 Example of *hondu dasar kihhil,* with 8-fold replication.

Keys: Kihhil, hidden.

This rare example, made in Kanatang in the 1940s, caused the discovery of the construction class *hondu dasar kihhil* – the existence of which had been suspected, as it is a logical step up from the most basic class. After the construction's discovery it was subsequently found in two other *hinggi* in the Reference Set that had originally been classed as *hondu dasar*. The design element that triggered this discovery was the fruit bat, *kelelawar* or *kalong*, a key which the present author had previously encountered in high-class cloths with axial asymmetry (*kihhil* construction, see Figs. 236, 241). For the cloth to be axially symmetric, the fruit bats would need two heads, one looking up, the other down.

This type of *hinggi*¸ ikated in indigo only, is called *kawuru.* It is the only type that commoners, *kabihu,* were allowed to create, but was also used by the nobility, who would often inject a design-technical refinement to make it surpass the commoners' *hinggi*. This specimen stands out by good control of saturation yielding a three-tone design with a deeply saturated field and extraordinary fluidity of drawing. The touches of pale indigo are quite faint, almost ephemeral. Technically it is on a par with the work from villages in Amanuban (West Timor) such as Niki-Niki, Pusu and Lekat, with arrays of small motifs covering the entire cloth, such as PC 112 with 8-fold replication (see Fig. 7) and PC 005 with 12-fold replication.

Weavers' perspective: A fun way to create an 8-fold replication: make it look like *hondu dasar* but add the *kihhil key* on the cloth's axis which promotes it to the level of a standard *hondu kappit.*

Source: Collection Kinga Lauren.

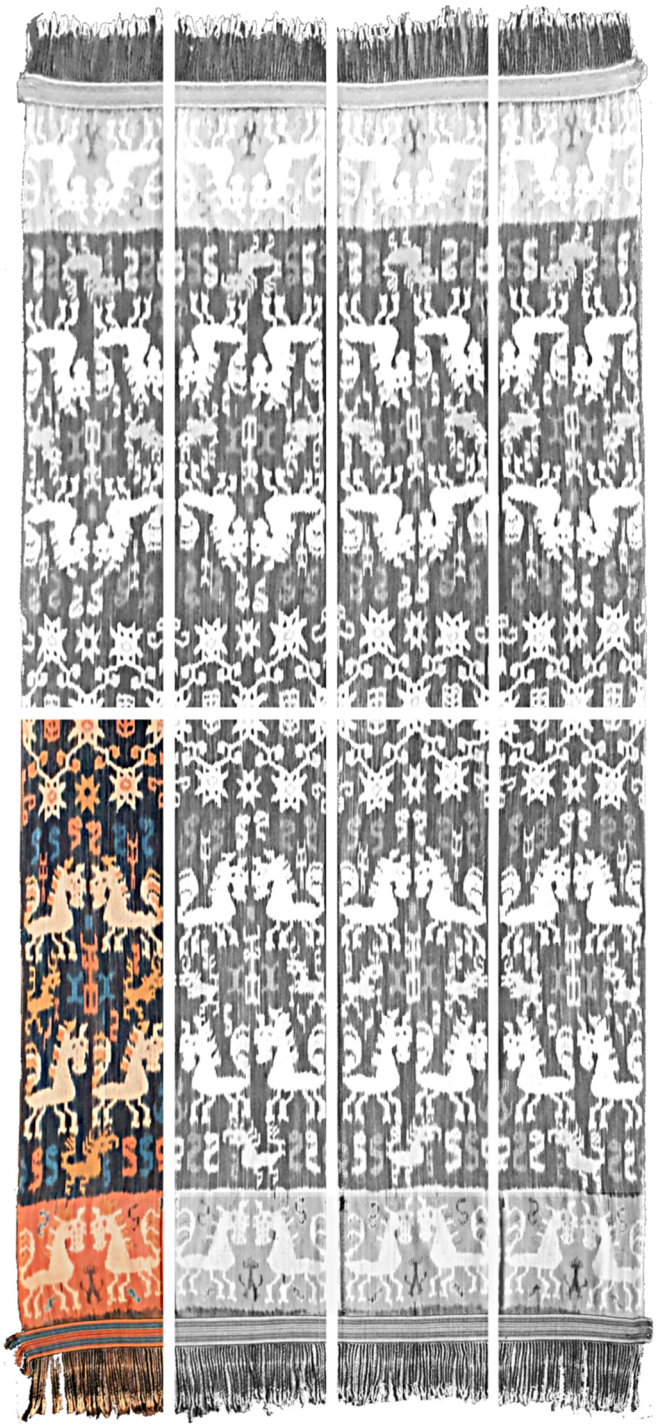


Fig. 224 Example of *hondu dasar walla,* with 8-fold replication.

Keys: walla, quasi apparent.

After discovering the *hondu dasar kihhil* class, the present author asked Kinga Lauren to show cloths in Group C of the Reference Set that appeared to have 16-fold replication, because the existence of a matching class with *walla* keys was suspected. Eventually five *hondu dasar walla* cloths were found in the large set – including the present one, made in Kanatang during or before the 1930s, with an easily overlooked transposition of the main motif and two additional smaller keys.

It could be argued that *hondu dasar walla* is not a separate class, just an atypical form of *hondu kappit¸* which likewise relies on 8-fold replication based on the same grid, but as the weaver used visual devices similar to those on other *hinggi* with a *walla* construction, it seems logical to recognize it as a refinement of *hondu dasar*, with multiple hidden keys revealing its true nature – and assuring its promotion to the level of 8-fold replication.

Studying the basic ikated motif (here rendered in colour), we first notice that there are six large horses. Few people will immediately notice that, other than on the rows above and below, the horses on the middle row are not shown in opposition. Nor perhaps that the two small bounding animals in red (presumably stags) are running in the same, rather than in opposite directions, and that a red cockatoo just above the lowest band with horses occupies a central position, precluding replication along the longitudinal axis. In what appears to be pure joy in the visual game, the weaver placed yet another key in the bottom row: the snakes by the horses' necks are red versus blue.

Weavers' perspective: An interesting manner to design a *hinggi* with an 8-fold replication. Make it appear like a basic, array-based *hondu dasar,* but add multiple *walla* keys that are easily overlooked – precisely because arrays make the mind expect continuous repetition.

Source: Collection Kinga Lauren.

Fig. 225 Example of *hondu dasar walla*, with 8-fold replication.

This specimen stands out by its extremely small *walla* keys. On both sides of the horizontal axis, decorated with *karihu* motifs, are shown rows of 16 large and 16 small stags. The keys are hidden in the minute hooves of the smaller deer. All carry a red spot – except one in each opposing pair. Not only are these keys easy to overlook, they are very hard to find even when searching for them intently. They would not have been encountered if the present author had not been fully convinced that keys must be hidden somewhere and spent a long time looking for them.

Source: Collection Kinga Lauren.

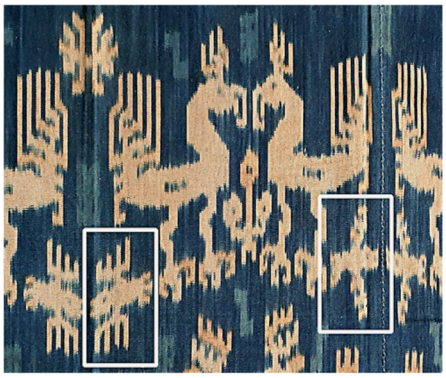
The 0.5 x 1 cm keys in this 149 x 265 cm *hinggi* are the tiniest ever encountered, each representing a surface of circa 0,00125 per cent [*sic*] of the total surface area.

Fig. 226 Example of *hondu dasar walla*, with 8-fold replication.

Keys: Walla hidden.

By comparison with the previous *hinggi* (see Fig. 225), the keys in this 16-element *kawuru* (indigo only) *hinggi* are blatantly obvious, though many might miss them. The small flying birds above the tail tips in each of the pairs of facing stags are not the same shape.

Source: Collection Kinga Lauren.



Weaver's perspective: The women who created this cloth distanced herself from *hondu dasar* playfully by letting different birds fly on either side of the *dasar* grid lines, making clear that there was no 16-fold replication.

Fig. 227 Example of *hondu dasar kihhil walla,* with 4-fold replication.

Keys: Kihhil and *walla*, both hidden, on the cloth's axis, and easily overlooked because of the high contrast which draws the eye to the large patterns in light colour which stand out against the dark background. Additional *walla* keys, barely visible, are distributed over the panels.

The weaver of this 1930s *hinggi* from Kanatang placed not just *kihhil* keys on the cloth's axis, but *walla* keys as well, which is very unusual (see also PC 364, Fig. 254). A second set of tiny *walla* keys was placed between the horses' legs. All the small blue fillers in between the animals, almost receding into the dark background, are *walla* keys as well. They prove that the band shown in colour was the basic ikat motif, and that this band did not itself result from replication – as the multiple opposing animal motifs deceitfully suggest.

Weavers' perspective: A very original, way to create a *hinggi* with 4-fold replication. Nearly all weavers who want to move up a class from *hondu kappit* choose a *hondu kihhil* or *hondu walla* construction. A nice touch is that the *kihhil* and the *walla* key have been placed so close together – which makes it even harder to recognize what is going on.

Source: Collection Kinga Lauren.

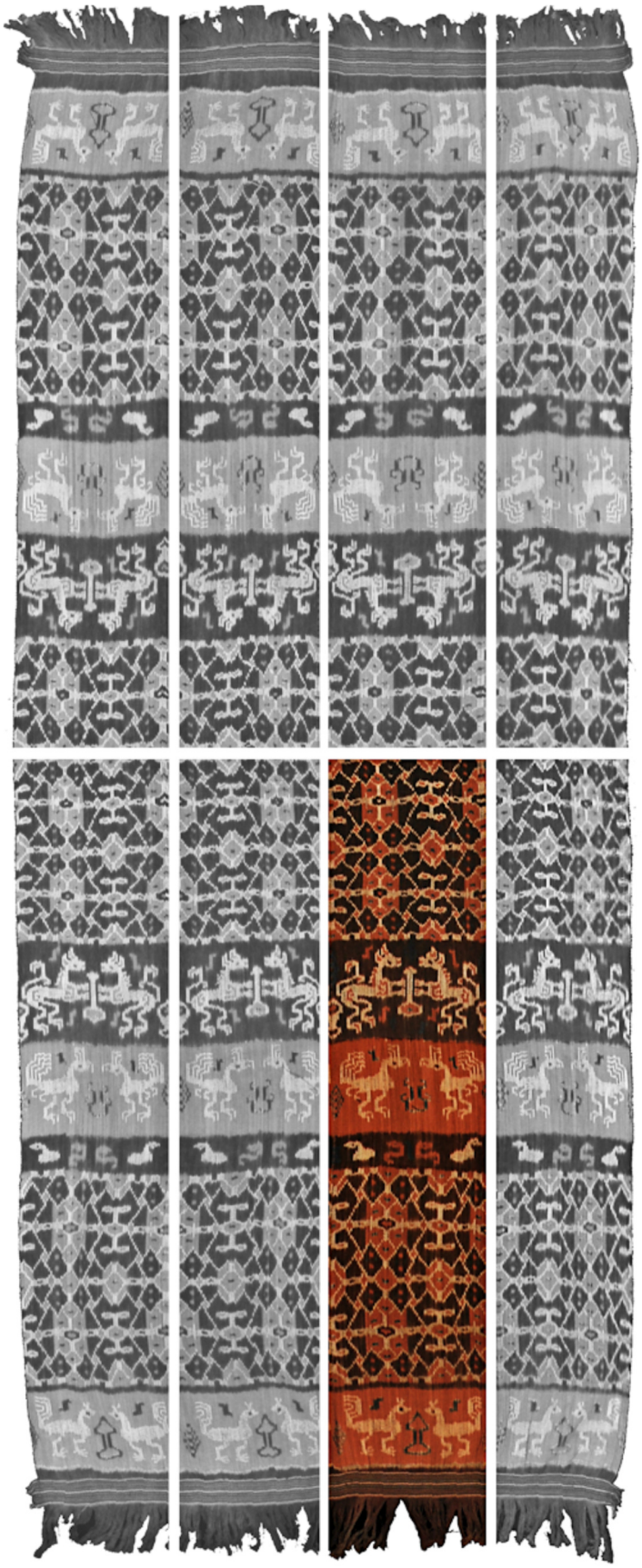


Fig. 228 Example of *hondu kappit*, standard construction, with 8-fold replication.

The standard construction of a typical East Sumban *hinggi* has eight repeats of the basic ikated motif. This construction, by far the most common type, is called *hondu kappit*. Probably close to 95 per cent of all Sumbanese *hinggi* have been made using this construction, perhaps even more. The percentage in the Reference Set is estimated to be closer to 80 per cent, but it must be taken into account that the Reference Set consists of specimens that were selected for collection either by museum curators or serious private collectors, and contains an over-average percentage of examples with higher level constructions such as *hondu kihhil, hondu walla* and *hondu kihhil walla*. Most of the drawing in this cloth from Kambera or Rende with 8-fold replication (made as one of a pair) was done in fine 4-yarn strokes, implying that the bindings were placed on skeins of 2 x 4 x 8 = 64 warp threads.

We can tell that it is not a *hondu dasar* because, unlike the bands with lions and those with fowl, the sections of *patola ratu* in the widest ikated bands are not longitudinally symmetric.

Weavers' perspective: a serious work of a woman of skill and taste.

Source: PC 027.

Fig. 229 Example of *hondu walla,* with 4-fold replication.

Keys: None, *hondu walla* is evident.

An East Sumbanese *hinggi* with the other of the two types of 'complications', a way of tying called *hondu walla.* It also has only a 4-fold replication, representing a quadrupled workload vis-à-vis a standard *hinggi*.

The two panels, stitched together along their selvedges, which would normally be both constructed with internal longitudinal symmetry, here are asymmetric. This requires twice as many binding as a standard *hondu kappit* construction.

This cloth surprises us with visual trickery: the skull-trees, one-and-a-half per panel, could easily be achieved by means of a triple repeat (unusual as a factor 3 would have been on Sumba). So could the row of six roosters or chickens. But the keys, the blue patches in the fish-like motifs placed between the horses are not of equal size, ruling out the hypothetical possibility of a (very un-Sumbanese) triple repeat per panel. This confirms it is *hondu walla*, with four repeats – rather than an unheard of and hence unnamed design with six repeats.

Weavers' perspective: An ambitious piece with a subtle key from a weaver of a noble family. Given the prominence of the skull tree, probably related to Raja Rende.

Source: PC 160.

Fig. 230 Example of *hondu walla*, with 4-fold replication.

Keys: *Hondu walla* – hidden.

An early 20th century East Sumbanese *hinggi* with a *hondu walla* construction that is not immediately apparent. The key is given in the feline creatures that look back over their heads. To create a symmetric panel, the animals would all need to have been bicephalic.

This rare, historically important cloth of a type that was not found by Adams (1969) during her investigation into 300 *hinggi* sampled from renowned European museum collections, shows work being done on the communal cult house, *rumah adat* (ten Hoopen 2018:283). Adams did mention the existence of a specimen in the Dutch Luijendijk collection. Later Adams published a *hinggi* with similar scenes (1974: Plate 6), photographed in the Kambera district. An early 20th-century *hinggi* likewise showing *rumah adat* under construction but with very different tonality is held at the Musée Barbier-Mueller in Geneva, N° 3615-N, see Breguet (2017:157). Collectively they appear to be the only four known examples.

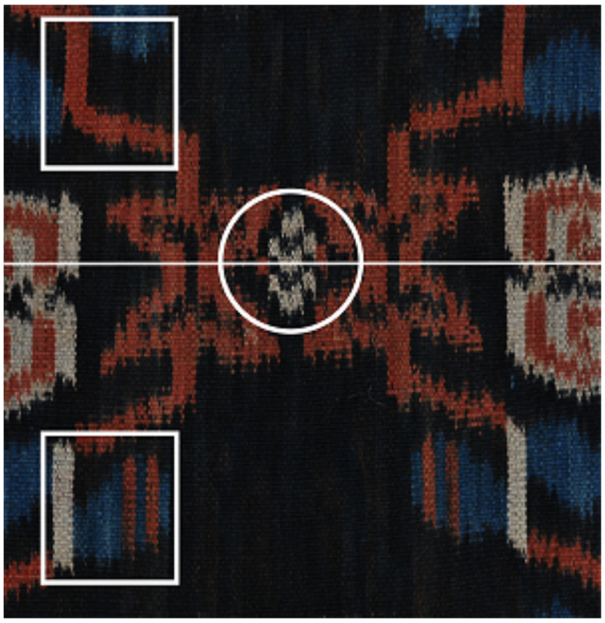
Weavers' perspective: An ambitious piece from a weaver of a noble family, with rare content.

Source: PC 194.

Fig. 231 Example of *hondu kihhil,* with 4-fold replication.

Keys: There are two sets of *kihhil* keys in this *hinggi* from Group A, both minute – and overlooked by its owner for decades. One is the smallest that has been encountered. It consists of no more than two stacked V-shapes crowned with a dot, placed on the cloth's axis (see detail directly below).

Made at the court of either Pau or Petawang in the 1940s or 1950s, this *hinggi* clearly was intended for in-context use, not for the market. The tiny *kihhil* keys are so difficult to spot that only a narrow in-group of cognoscenti would have noted them and realized the amount of work that was expended on this cloth – quite the reverse of what typifies a commercial product. The weaver belonged to the last generation which still made *hinggi* of this class. The chief motif represents Dutch Queen Wilhelmina, a popular visual element with associations of (colonial) power. The type of lozenge in the *patola*-like midfield, *kundu duku*, is a Pau hallmark.



The largest keys are the white, blue, and red bars found below, but not above the horizontal axis, which occur twice on each panel. The two lozenges with stacked V-shapes, are superfluous in a sense, as the larger set suffices. We can only guess why the weaver added them in. Perhaps she enjoyed a devious pleasure in knowing that they were likely to be overlooked even by some of her most sophisticated and observant peers. To provide a sense of proportion: the area shown in close-up above measures 14.5 x 14.5 cm, which represents a mere 1-140th part of the entire cloth.

Weavers' perspective: An elegant, confidently styled *hondu kihhil* with tight drawing. Relatively young, but still made by the old standards. The elusive *kihhil* keys are very clever, and almost arrogant in their subtlety.

Source: PC 072.

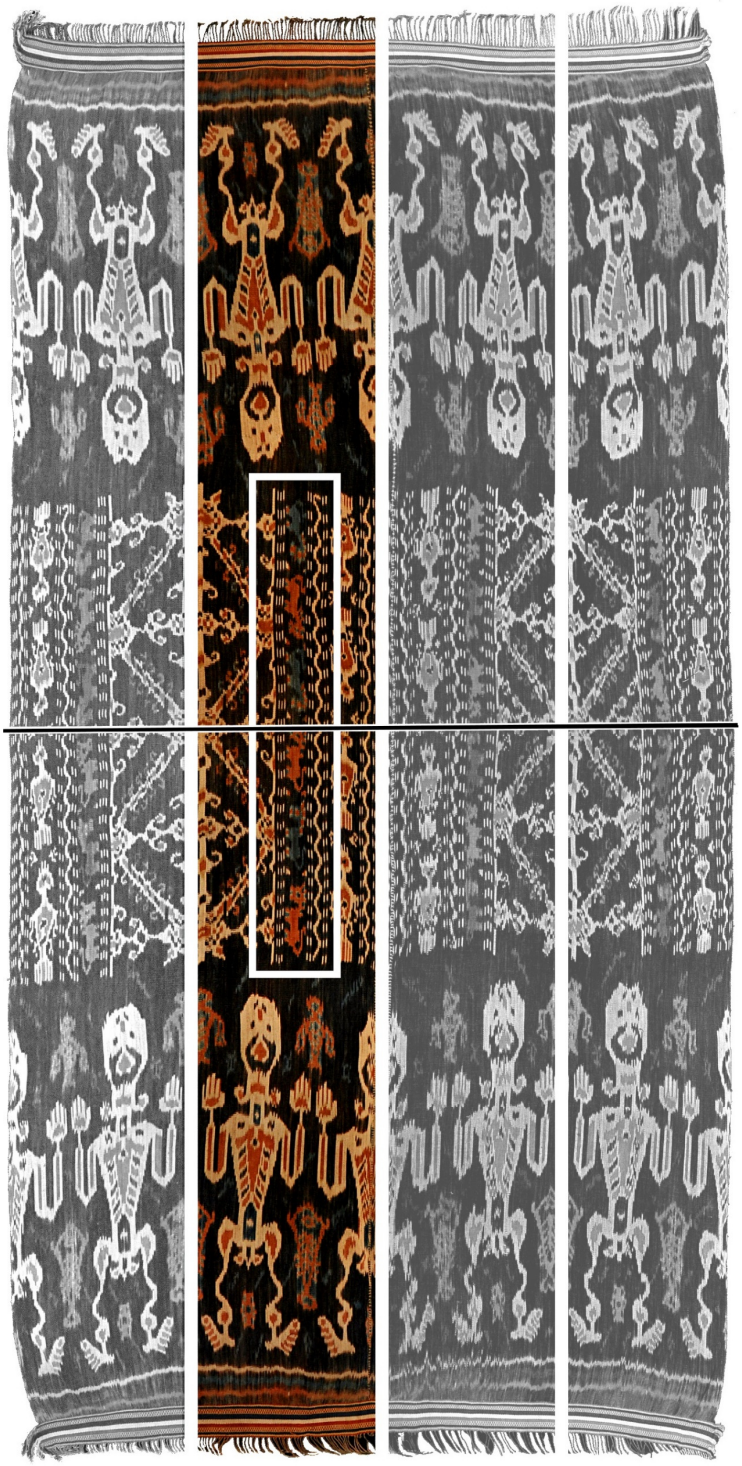


Fig. 232 Example of *hondu kihhil,* with 4-fold replication.

Keys: Hondu kihhil – hidden.

This early 19th-century East Sumbanese *hinggi* hails from either Kanatang or Kapunduk. It includes one of the two basic types of 'complications', *hondu kihhil*: the upper and lower segments of the basic ikated motif are not identical.

The key to *hondu kihhil* was cleverly hidden – as nearly always in the midsection. Here it is found in the alternating blue and red feline figures running in the direction of the warp. One's mind is inclined to accept the alternation of colour because it is so 'normal'. However, it is not normal because it cannot be achieved without ikating the full length of the warp. This implies that the cloth is made with just 4 repeats of the basic ikated motif – a doubling of the work vis-à-vis the standard *hondu kappit*.

Sceptical appraisal: The feline animals show no appreciable bleeding of red and indigo dye, precluding daubing of the colour after the weaving. Numerous minor differences between the top and bottom halves, e.g. in the figure's legs and testicles, also support *hondu kihhil* construction. I

Weavers' perspective: This is curious mixture between a construction which suggests a high court and other aspects (e.g. the use of quadruple warp, resulting in relatively shoddy detailing) which suggest manufacture for the trade.

Source: PC 015.

Oddly, the weaver has found it incumbent upon herself to include keys which disprove [*sic*] *hondu walla* construction. Minute red markings in a very fine line (marked with rectangular boxes), are identical on either side of the longitudinal axis, removing any lingering doubt that both panels were replicated along the longitudinal axis.

Fig. 233 Example of *hondu kihhil,* with 4-fold replication.

Keys: Hondu kihhil – hidden.

A circa 1940 Sumbanese *hinggi* in *hondu kihhil* design, revealed by tiny keys in the midsection which only experts would notice; at Sumbanese courts, essentially all other women.

One set of keys, easily overlooked, consists of the slanted S-shapes in the band on the cloth's axis. Of the two such shapes above the axis one is blue, those below are both white. Other keys are the sceptre-like forms crossing the axis in the middle of each basic ikated motif. These are not axially symmetric.

Sceptics who claim that in *hondu kihhil* only the midsection was ikated without replication are proven wrong by legion small differences in opposing, quasi-mirroring motifs, e.g. the queen's faces.

Weavers' perspective: An ambitious piece created by a weaver from a noble family.

Source: PC 073.

Fig. 234 Example of *hondu kappit asimetris* with *simulated* simplicity and hidden asymmetry, 2-fold replication.

Keys: Hidden under a veneer of pattern compression.

Origin: East Sumba.
Period: Late 19th - to early 20th-cenctury.
Yarn: Cotton, hand-spun, very fine.
Panels: 2.
Size: 97 x 255 cm (3' 2" x 8' 4").

Design: At first glance, the construction of this 19th- to early 20th-century *hinggi* of unidentified origin resembles a basic *hondu kappit* with 8-fold replication, but its longitudinal asymmetry makes clear that far more work was involved. Even most of those who may notice the asymmetry are likely to be fooled, as the pattern compression was not created 'simply' by varying the warp packing. The thread count per cm is identical on both panels (*i.e.* the warp has the same spacing), yet on one panel the drawings are more compact than on the other. This implies that they are truly different drawings. Moreover, the right panel is 15 per cent narrower than the left, but the compression factor is not consistent across the panels. When studying the lettering (LEO R.M. and a mirrored version, presumably the wearer's name), we find that the L closest to the seam is 30 yarns wide on one panel and 42 yarns wide on the other, while the sceptre-like motif in the panel with the narrower L is much wider than the one with the broader L. These and many other discrepancies prove incontestably that the panels were ikated separately, while manifesting a conceit into which one could easily read humorous arrogance – simulating a more basic construction. See also Fig. 210 and Section. 4.1 'Techniques to achieve asymmetry', under 'Pattern compression, Method 2'.

Comment: This antique *hinggi* was woven for a nobleman, with numerous high-class signals, including the *patola ratu* motif in the *kundu duku*, the midsection, and the deer motifs. The weaver did her utmost to make us overlook her trickery, and her investment of time, on a par with *hondu kihhil walla*. The very fact that she mastered the alphabet is another indication of high rank, as female literacy was very limited in colonial days.

Literature: No similar piece known.

Source: PC 228.

Hidden keys reveal high status double asymmetry

The author would have loved to have reached the next level in his analysis of asymmetry and sought complication on Sumba by means of a thorough investigation. The reality, as explained below, is that a major discovery was made *for* him – albeit with his help. Six months later he could revanche himself with the discovery of a yet higher level of complexity, producing *hinggi* without any replication; as well as the discovery of pattern compression: techniques to achieve asymmetry by subtly varying motif's proportions or drawing separate versions that look the same but are not. Keys were recognized which proved that the construction of some *hinggi* in *hondu kihhil* had involved a challenging panel reversal. These sequential discoveries and other minor ones proved that East Sumbanese weavers operated at a level of ingenuity beyond what was known so far, and showed off their virtuosity in asymmetry revealed only by *kunci disembunyikan*.

The series of discoveries began in 2018 when Group A of the Physical Database was expanded with an antique Sumba *hinggi* of royal size yet of very light weight, and remarkable elegance of design (see PC 299, Fig. 241). On 20 March 2019, the cloth was posted on the Facebook 'Textile Lovers' group which focuses on textiles from insular Southeast Asia, and instantly commented on by Kinga Lauren, aforementioned. *Pak* Kinga expressed utter astonishment on seeing the cloth. He pointed out that it showed not just *hondu walla*, immediately apparent, but also *hondu kihhil* – betrayed by a tiny detail, easily overlooked. In other words, the cloth was made by pairing the two complications, producing a complication squared. He stated that in his entire life he had never encountered even one *hinggi* likewise pairing *hunda kihhil* with *hunda walla*.[1]

This, *nota bene*, was stated by a dealer originally from Sumba. Thousands of Sumbanese *hinggi* had passed through his hands during four decades of trading practice. The present author had seen and handled hundreds. Discovering the existence of *hinggi* with the *hondu kihhil walla* construction ignited an instant passion: to know more about this phenomenon and find more examples. This interest manifested itself in a dedicated hunt for keys in all *hinggi* available for inspection: (a) a subset of Group A of the Physical Database consisting solely of Sumba men's wraps, a total of 35 specimens; (b) a similar subset of Group B of the Physical Database, comprising 250 specimens; and a subset of the Virtual Database. The combination of these two sets essentially created a new database, which we shall refer to as the Hinggi Database, containing circa 600 specimens. The results of this inventory are given below.

It turned out that we were exploring *terra incognita* – not just unseen, but indeed unheard of. It also became clear that these design tricks with hidden keys contained an element of assertiveness, of *keberanian*, which gave our attempts to decode them a martial and almost heroic quality: we were dealing with a group of highly intelligent women who, it seemed, had been out to deceive us, and we were finding them out – at least a number of

[1] This Facebook comment was deleted shortly afterwards in order to keep this discovery *sub rosa* until the present thesis would be published.

them. But how many of these witty ladies had outsmarted us, as they had all foreign investigators and presumably all but the most erudite Sumbanese of their times?

Kinga Lauren is adamant that *hinggi* of *hondu kihhil walla* construction may only have been produced in the leading royal households such as that of Kanatang, Rende, Kapunduk and Praliu, where women had the time (and the slaves) required for such immensely time-consuming production.[1] Also, that they were never made for use, only for deposit in the *rumah adat*. Lauren declared that he knew of no one alive on Sumba who might have knowledge of the *hondu kihhil walla* construction. Delicate probing of other Sumbanese sources and foreign experts (worded so as not to provide them with information beyond what they already knew) bears him out: none of them appeared to be aware of it, nor of the phenomenon of hidden keys. This matches the general state of the art in the early 21st century as summarized by one of Forshee's field sources:

> There is no one living now that can make cloth like we had in the past. That is lost now. Even the old women are nearly gone. The ones who could do that. We don't see that kind of cloth in Sumba now. Some might be in the ground, some might be with foreigners far from here, but we can't see it now (Forshee 2001:46).

The scholarly realm was no richer in information. Such asymmetry with optical illusions in Sumbanese royal *hinggi* is not mentioned in any classic research into Indonesian textile, e.g. Monni (Marie Jeanne) Adams's *Classic and Eccentric Elements in East Sumba Textiles* (1972). Mattiebelle Gittinger's *Splendid Symbols* (1979: Fig. 119) does depict an example of the paired complication *hondu kihhil walla*, but without pointing out its uncommon nature.[2]

Acute alertness to illusions leads to further discoveries

Discovering the visual trickery that high-level weavers employed brought about an acute alertness apropos the design of East Sumbanese ikat, which may be summarized in the credo which informed the present author's further research: 'do not assume anything'. This heightened attentiveness to possible deviations from what might be expected in late 2019 led to the discovery by the present author of yet another level of asymmetric complexity, the complete absence of replication – an almost snobbish form of creative deception that effectively hid a high level of complexity by mimicking a simpler construction.

Group A of the Physical Database was expanded with a *hinggi* that, on the basis of digital images, had already been identified as *hondu kihhil walla* (see PC 333, Fig. 253). When the cloth was opened up and the details were studied, a minute divergence was noticed from what appeared to be a regular pattern. The central band, which ran across the two constituent panels and held the keys that proved the absence of axial symmetry (*hondu*

[1] Kinga Lauren, pers. comm., 2019.

[2] The *hinggi* in question, among the very finest in this high class, is kept at the Museum der Kulturen (Basel). For an analysis of its construction and the keys that reveal its design complications, see the caption to Fig. 240.

kihhil), contained tiny red dashes which evinced that both panels were entirely different, and that there was no replication whatever. As there is no established name for this construction type, we will hereafter refer to it as *hondu tanpa replikasi,* 'construction without replication'.

This detection of yet another level of complication had the same effect as the original discovery: a further honing of the investigation and a renewed examination of all available specimens. The effort led to the discovery by the author of what we shall refer to as *lungsin ketat*, an entirely unrelated technique to achieve asymmetry. Its mechanism consists of pattern compression by means of warp packing: motifs or parts of motifs are narrowed by a reduction in the spacing of warp yarns. This may affect an entire panel, e.g. an example in Group C of the Physical Database (see Fig. 248) or just selected parts of the warp (see PC 327, Fig. 194). In one specific case we should speak not of compression, but rather of fluctuation, as the weaver playfully varied the spacing of a substantial part of the warp across its entire length, creating a wavy patterning never observed elsewhere in the region under study (see PC 218, Fig. 255).

'Paired complications' in major collections

The Hinggi Database (n = circa 600) includes (a) over half (174 out of 300) of the set studied by Marie Jeanne Adams (Adams 1969:197); (b) circa 100 specimens from the Reference Set found in the literature and in online presentations of public collections other than those studied by Adams; (c) circa 250 specimens in Group C of the Physical Database investigated by the owner under the guidance of the present author; (d) circa 50 in other private collections; and (e) 35 in Group A of the Physical Database. Analysis yielded a small number of *hinggi* that combine the two complications: 28 in all, or 4.5 per cent.

Given the age and the very high average quality of the Sumba textiles in the renowned collections kept at the Nationaal Museum van Wereldculturen[1] in Leiden, the number of examples of paired complications found, numbering five in total, is surprisingly low. No examples of *hondu tanpa replikasi* were encountered in any of the Dutch museum collections, and just a single example of what appears to be *hondu kihhil walla asimetris*.[2]

Group A of the Physical Database, which at the time of the first scan comprised 28 *hinggi* from East Sumba, originally yielded seven hits, or 25 per cent. This rather high ratio most likely results from the way it was assembled: nearly all came from old Dutch

[1] The Nationaal Museum van Wereldculturen integrates the collections of the Amsterdam Tropenmuseum, the Leiden Museum voor Volkenkunde, the Rotterdam Museum voor Volkenkunde (including holds the world's oldest Sumba collection) and the Delft Nusantara Museum. It holds 2629 textiles identified as ikat.

[2] It is likely that a number of specimens were overlooked. Unfortunately 140 of the specimens in the Rotterdam Wereldmuseum and 51 in the Nusantara collection (most of which were donated to the Jakarta Museum Nasional Indonesia, the Nationaal Museum van Wereldculturen and the Amsterdam Rijksmuseum after the town of Delft decided to no longer fund the Museum Nusantara) could not be properly investigated because *hondu kihhil* keys might have been used out of frame: only half of the cloth (usually even a little less than half) was photographed; a curatorial choice, based on an apparent assumption of axial symmetry which now perhaps is due a revision.

collections, presumably in large part collected *in situ* by colonial civil servants in whose graces it was good to dwell. Once the *hondu kihhil walla* phenomenon was discovered, focused attention turned up a few more specimens that otherwise would almost certainly have been overlooked, as they have been by all, so far. Another four *hinggi* with *hondu kihhil walla* construction as well as yet another complication could be added to Group A of the Physical Database bringing the sample size of Sumba *hinggi* to 36 and the ratio of cloths with multiple complications to 30 per cent. Kinga Lauren, the aforementioned dealer *cum*-collector from Bali, scanned his entire stock of circa 250 *hinggi* and found six, or 2.5 per cent. The Yale University Art Gallery, with just six old *hinggi* in its collection has three *hondu kihhil walla*, *i.e.* 50 per cent – none of them identified in terms of their complications.

How this ratio of masterpieces to humble-yet-grand textiles came to favour Yale with a fifty-fifty score is a matter of conjecture, but money seems to be the key. The Yale textiles were assembled by the wealthy collectors and dealers Robert Holmgren and Anita Spertus who sold to all the major museums in the world, and had money to spend. When they came to Sumba to buy, it would be known that one could get a fortune, at least in local terms, but only for pieces of extraordinary quality.

The specimens in the Dutch and German museums were largely acquired by missionaries, civil servants, ethnographers on buying trips for museums, and private collectors who gifted or bequeathed their collections – most of them not intent on making money out of the transaction. Itie van Hout, former textile curator at the Amsterdam Tropenmuseum remarks about one of the museum's constituent precursors, Zoölogisch Genootschap Natura Artis Magistra: “Major acquisitions by Artis consisted of donations from physicists, biologists and geologists who visited the Overseas Territories for their research.” Elsewhere van Hout also mentions entrepreneurs, artists, clergymen and military personnel (van Hout 2017:95, 101, 105). Still, there are some fabulous early Sumba pieces in those old collections; just not *yang istimewa*, at least not in any quantitity.

We should not overlook that the studied Hinggi Database contains a bias. For as a whole it already represents a high grade category: textiles deemed desirable by museums and serious collectors, those considered ‘best of kind’. As noted above, paired asymmetry was found on 4.5 per cent of the investigated Hinggi Database[1]. However, because of its select composition, we cannot assume that its ratio of *hondu kihhil walla* to standard construction is representative for the region. Paired asymmetry probably graced a far smaller percentage of all the presentable men’s wraps made in East Sumba – perhaps no more than one-tenth of the 4,5 per cent found in the Hinggi Database, *i.e.* 0.45 per cent, or even less.

It should be noted that many museum collections did not yield a single example of *hondu kihhil walla*. The Metropolitan Museum of Art (New York), the Textile Museum

[1] While all of the accessible cloths in the mentioned collections were investigated, it is not claimed that all occurrences were spotted, as the keys can be tiny and were clearly made to be overlooked.

(Washington), the Victoria and Albert Museum (London) and even the National Gallery of Australia (Canberra) with its excellent collection appear to have not a single one between them.[1] The reason for their extreme paucity, as both Kinga Lauren and Georges Breguet stressed, [2] is that kings were always buried under the highest quality *hinggi* available in their courts' stores. As the *hondu kihhil walla* cloths always made out a tiny fraction of the total of *hinggi* in the family, it is hardly surprising that so few have escaped burial. Undoubtedly, a few more specimens will now be found, as curators and collectors scan their assemblages. Even so, a few may never be discovered, as the keys can be so tiny, and so cunning.

Inventory of *hinggi* with *hondu kihhil walla* encountered[3]

1. Nationaal Museum van Wereldculturen, pre-1891, N° RV-858-16 (Fig. 247).
2. Nationaal Museum van Wereldculturen, pre-1925, N° RV-2074-2 (Fig. 235).
3. Nationaal Museum van Wereldculturen, 1890-1910, N° WM-25320 (near identical to PC 218, Fig. 255).
4. Nationaal Museum van Wereldculturen, late 19th to early 20th century (Adams & Forshee (1999:76-77; RV-number not provided).
5. Nationaal Museum van Wereldculturen, late 19th to early 20th century (Adams & Forshee 1999:84, left; RV-number not provided).
6. British Museum, 19th century, N° As1949,09.1.4
7. Yale University Art Gallery, circa 1915, N° IL171455-001 (Fig. 237).
8. Yale University Art Gallery, circa 1915, N° ILE2006.4.381 (Fig. 238).
9. Yale University Art Gallery, circa 1915, N° ILE2012.30.95 (Fig. 239).
10. Deutsches Textilmuseum, Krefeld, 20th century, N° 16627. (Fig. 236).
11. Museum der Kulturen, Basel, made in Kanatang, 1940s, N° IIc 8696 (Fig. 240).
12. Kinga Lauren collection, made in Rende, circa 1930 (Fig. 244).
13. Kinga Lauren collection, made in Pau, early 20th century (Fig. 245).
14. Kinga Lauren collection, made in Kanatang in the 1930s (Fig. 246).
15. Kinga Lauren collection, made in Kanatang, in the 1930s (Fig. 248).
16. Kinga Lauren collection, made in Janga Mangu, in the 1930s (Fig. 222).
17. Francesco Capello collection (McIntosh 2019, Fig. 7.7).
18. Physical Database, made in Kanatang, circa 1930, PC 222 (Fig. 242).
19. Physical Database, probably made in Kapunduk, circa 1930, PC 187 (Fig. 243).

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[1] The few *hinggi* kept at the London Victoria and Albert Museum could barely be inspected on account of the minute, low-resolution and largely partial images in the on-line catalogue.

[2] Kinga Lauren and Georges Breguet, pers. comm., 2018.

[3] This list includes all variations, including those without any replication, and those with additional pattern compression.

[4] The description on the British Museum's website (accessed on 12-5-2020) includes the following statement: "Motifs symmetric about horizontal centre line (as warp ikat patterns tied simultaneously)". It follows academic tradition regarding Sumba *hinggi* in its casual presumption of axial symmetry. We also read: "Probably the best in the collection" and "Information from Dr Gerling's Indisch Institut [*sic*], Amsterdam."

20. Physical Database, probably made in Kanatang, circa 1930, PC 188 (Fig. 250).
21. Physical Database, made in Kanatang, early 20th century, PC 299 (Fig. 241).
22. Physical Database, made in Kambera, 19th century, PC 319 (Fig. 249).
23. Physical Database, made in Kapunduk, late 19th to early 20th century, PC 193 (Fig. 256).
24. Physical Database, made in Kambera, late 19th to early 20th century, PC 218 (Fig. 255). This piece's twin (PC 219) was not included in the tally as it was created in parallel in the course of a single production.
25. Physical Database, probably made in Kanatang, early 20th century, PC 333 (Fig. 253).
26. Physical Database, made in Kanatang, late 19th to early 20th century, PC 350 (Fig. 251).
27. Physical Database, made in Kanatang or Rende, late 19th to early 20th century, PC 351 (Fig. 252).
28. Physical Database, made in Kambera, Melolo or Mangili, probably 1930-1940, PC 364 (Fig. 254).

Many high ranking *hinggi* do have a *patola ratu* midfield – a complex design in which a key could easily be hidden and would be difficult to find. However, in the course of the inspection of the nearly 600 *hinggi* in the Hinggi Database, which required dedicated sleuthing to find keys that might give away a complication, just a single example was found where keys were hidden in the *patola ratu* section (PC 350, Fig. 251). This could readily be explained by the very complexity just mentioned. Another explanation might be that the *patola ratu* motif, the prerogative of the nobility, was so highly revered that weavers were reticent to play games with it.

Another aspect of the design complications should be noted: because there were fewer replications, the skeins the dyer worked with contained fewer yarns, which produced a more tightly drawn design. This results from a technical characteristic of this type of compression-resist: when one places bindings on for instance 128 yarns at the same time (e.g. a *hinggi* pair in *hondu kappit* with 8-fold replication drawn in 8-yarn strokes), it is technically impossible to make them tight enough to eliminate all seepage into the yarns beyond the intended length. Capillary action will suck the dye further into the yarn at both ends of the bindings. When instead the weaver opts for *hondu kihhil walla* with just two repeats, a motif drawn in the same 8-yarn strokes is made using bindings on skeins one-fourth as thick. This makes an immense difference in terms of precision: 32 yarns can easily be compressed with enough force to eliminate all but the most minute capillary seepage, limiting it to perhaps one-tenth of a millimeter. Even designs with a single complication, *hondu kihhil* or *hondu walla*, which involve four repeats, at the same 8-yarn stroke-width require bindings on 64 yarns, allowing much tighter drawing than any *hondu kappit*.

Beyond the double asymmetry, yet another level of complication was discovered: optical illusion, as occurs in the Museum der Kulturen example (Fig. 240), the one in the Deutsches Textilmuseum (Fig. 216) as well as in PC 187 (see Fig. 243), PC 350 (see Fig.

251) and PC 242, where several design elements invite the eyes to divide each panel in three. At first sight the tripartite division appears to work out (odd and un-Sumbanese as three would have been as a factor) but in all but the latter specimen on close inspection one tiny detail – which we might see as a negative key, an explicit negation – voids this possibility. Clearly the weaver tried to throw the examiner off the trail of what she was really doing, and then surprise her – or him[1]. This meshes with the competitive aspect of weaving in the highest social class as investigated in Ch. 5 under the heading 'Ikating as a Performance' (see below).

[1] We may safely assume that all high-class women belonged to the 'vetting committee', but how many Sumbanese noblemen would have been cognizant of the visual devices hidden in the cloths they wore? Their number is impossible to ascertain as there is no literature on the subject and no living member of the generation that produced such cloths with multiple complications. However, Geirnaert-Martin provided one crucial indication that Sumbanese men may well have been aware of the import of what they were wearing. When discussing the men's wraps, *hanggi*, of West Sumba with male informants from the Kodi region, she reports: "After some time men would take pleasure in explaining their esoteric meaning, while commenting that women knew little about their significance indeed (1992:124)".

Fig. 235 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla is apparent, *kihhil* hidden.

The *hondu walla* in this pre-1925 specimen is immediately apparent. The *hondu kihhil* key is given away in the rows of dots on the cloth's axis, which are blue on one side, red on the other. The catalogue entry states erroneously that: "The warp is entirely ikated in two symmetrically executed halves; in the middle a narrow transverse band with white dots and stars arranged into diamonds on a red background."

Weavers' perspective: An ambitious, clever, and time-consuming piece such as can only have been made at one of the highest courts.

Source: Nationaal Museum van Wereldculturen, N° RV-2074-2.

Fig. 236 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla is apparent, *kihhil* hidden.

The *hondu walla* is immediately apparent from the three stags and three fruit bats per panel half. The *hondu kihhil* is elegantly hidden in the heads of the fruit bats, *kelelawar*. For the cloth to have axial symmetry, they would need to have had two beaks pointing in opposite directions. Exactly the same key is used on PC 299, shown below (see Fig. 241). There is also a strong overall design similarity between the two cloths, although in terms of stylistic mastery the two are not on a par: this example has a folksier rendering of the deer, with no attempt to rise above figuration.

Weavers' perspective: This highly ambitious, clever, and time-consuming piece can only have been made at one of the highest courts.

Source: A *hinggi* dated as '20. Jh.', probably dateable to the early 20th century, in the Deutsches Textilmuseum (Krefeld), N° 16627, depicted in Khan Majlis (1991: Fig. 162).

Fig. 237 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: W*alla* is apparent, *kihhil* hidden.

The *hondu walla* is immediately apparent. The main keys to identifying the *hondu kihhil* construction are tiny, merely 5x5 cm: two lying S-shapes per panel in the borders around the central field. Flipping them over the transverse axis does not work. A further small hint is that the dots below and above them are a different colour, red versus blue.

The intricate, stylistically refined, drawing was executed with great precision. Its complexity helps to hide the keys. Kinga Lauren, when shown this cloth, compared placing such minute keys in the middle of an elaborate design to the planting of a few daisies in a busy garden. Who is going to notice them? (Kinga Lauren, pers. comm., 2020.) Small wonder that this masterpiece's true excellence serially escaped discovery by its curators.

Weavers' perspective: A highly ambitious, clever, and time-consuming piece which can only have been made at one of the highest courts.

Source: Magnificent example from the O.J. Nieuwenhuis collection kept at the Yale University Art Gallery, and dated circa 1915, N° IL171455-001.

Fig. 238 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Kihhil and *walla* are both immediately apparent, the *kihhil* construction revealed by fact that the bottom half has two bands with horses, the top half just one.

Whereas typically at least one of the two complications in an East Sumbanese *hinggi* is given away by a key that is not immediately spotted, in this specimen both *hondu walla* and *hondu kihhil* are immediately apparent. The drawing is complex and visually attractive, the execution good but not at a par with IL171455-001 (see Fig. 237). Multiple damages and patches, pronounced fading of the colours.

Weavers' perspective: A highly ambitious and time-consuming piece such as can only have been made at one of Sumba's highest courts. Artistically rich but not very playful.

Source: Yale University Art Gallery, dated circa 1915, N° ILE2006.4.381.

Fig. 239 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla is apparent, *kihhil* hidden.

A mediocre example with rather stiff drawing, somewhat damaged. The *hondu walla* is readily observed in the six rows of three horses per panel. The *hondu kihhil* key is in the rows of fishes on the cloth's axis. Maybe this weaver wished to show a mastery that she did not quite possess (yet)?

Weavers' perspective: This ambitious, time-consuming piece is likely to have been created in a noble family, yet it does not have the sophistication of the very highest courts. The drawing is stiff and it has easily observed keys. Is it a young weaver's first attempt to produce a cloth at this level of complexity?

Source: Yale University Art Gallery, dated circa 1915, N° ILE2012.30.95.

Even without the additional keys, such as the small shrimp, the three-winged creatures on the cloth's axial band suffice to indicate its high class: they cannot have been created by replication along the horizontal axis (*hondu kihhil*). Moreover, their placement in the design (one and a half on each panel) precludes replication along the panels' vertical axis (*hondu walla*).

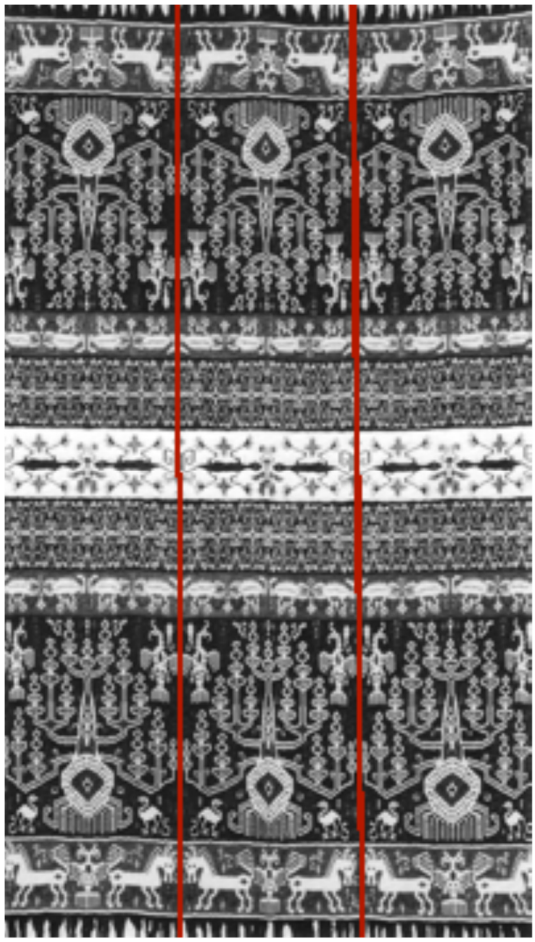


Fig. 240 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla and *kihhil* – both hidden.

Exceedingly fine example from Kanatang, East Sumba. Dated 1949, although this may indicate the year of acquisition rather than the year in which it was created, which may well be two or three decades earlier.

This example was previously shown in Gittinger (1979:160, Fig. 119), with the complete story of its provenance (collected by Alfred Bühler in Kanatang where it was commissioned for the marriage of a wealthy Chinese merchant's daughter) but without mention of its subtly arranged double asymmetry.

Here again we see a playfully deceptive suggestion of tripartite construction – as if the cloth had been constructed out of three identical panels. But this is merely visual *divertimento*: actual 3-fold replication on Sumba is unheard of.

The keys to *hondu kihhil* and *hondu walla* are both given in the band with a white background on the cloth's axis. *Hondu walla* is also shown, in a more directly noticeable manner, in the bands with horses at the extremities. The latter also include double-headed eagles (two per panel), which presumably have connotations of power and wealth, as all occurrences of this heraldic motif were found on *hinggi* marked as high class by their degree of design complexity.

Weavers' perspective: The pinnacle of sophistication, *istimewa.*

Source: Museum der Kulturen, Basel, N° IIc 8696. Photograph by Peter Horner.

This very specimen led to the discovery of the existence of *hondu kihhil walla* by the author's Sumbanese associate Kinga Lauren. The author had shared a photograph of it casually, not having noticed anything unusual about the flying creatures' necks, placed exactly on the supposed 'axis of symmetry' – proving it absent.

Fig. 241 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla is apparent, *kihhil* hidden

An early 20th-Sumbanese *hinggi* made at the court of Kanatang which pairs the two basic design complications *hondu walla* and *hondu kihhil*. This implies that there is only one replication in the whole cloth, rather than eight as in the most common construction and the two variants of *hondu dasar*.

The *hondu walla* is immediately apparent from the main ikated motif: the stags number three per panel, hence could not possibly have been created by replication along the panels' longitudinal axes. The *hondu kihhil* construction is cleverly hidden, given away only by a tiny detail: the heads of the fruit bats, *kelelawar*. For this cloth to have axial symmetry, these mammals would need to have had two beaks, pointing in opposite directions.

This cloth stands out not just by its clever design and precise execution, but also by its royal proportions (170 x 250 cm / 5' 6" x 8' 2"), about one-and-a-half times the average size of a *hinggi*. Such generous proportions are correlated with high quality: the present author never encountered an exceptionally large early *hinggi* that was not also of excellent quality.

If it had not been for one small detail this *hinggi* could been made with six repeats (three per panel) rather than two, a tremendous savings on the workload. However, the blue shapes between the fruit bats, which are too dissimilar to have been produced by replication, rule out this hypothetical shortcut.

Similar to a specimen in the Deutsches Textilmuseum (Krefeld), shown above (see Fig. 236), which uses the same *hondu kihhil* key, but a folksier rendering of the *walla* keys, to wit, the groupings of three stags, which in this specimen are elegantly stylized. The fruit bat key is also used on the only *hondu dasar kihhil* encountered (see Fig. 223).

Weavers' perspective: The pinnacle of sophistication, *istimewa.*

Source: PC 299

Fig. 242 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Because of the *pagi-soré* design, aka, *searah* or *satu arah* (one direction) with entirely different top and bottom, the *kihhil* factor is immediately apparent. The *walla* keys are easy to find in the bands with horses closest to the extremities. For replication along the panels' vertical axis, the middle horses on each panel would have had to have two heads, one facing left, the other right. Other, smaller, details serve as secondary walla keys.

This early 20th-century *hinggi* from East Sumba pairs the two complications, but in an unusual manner whereby nothing is hidden.

The trickery here, as in several other high-class *hinggi* (e.g. PC 187, Fig. 243), is the suggestion of a tripartite construction per panel – which was never practiced (and numerous minute differences in the parallel sections preclude). The skull trees above and below, the horses, the feline creatures, the smaller motifs as well as the central bar with nine *patola ratu* motifs (4½ per panel) would all have matched a construction with 3-fold replication, *i.e.* a *hinggi* made of three identical panels joined at the selvedges.

Weavers' perspective: This very labour-intensive *hinggi* may only have been made at a high court. Surprising is the weaver's choice to make both keys apparent, while still adding a subtle *hondu kihhil* key in the two bands that traverse the *patola ratu* midfield, to wit the fish-like motifs (almost certainly depicting Bobbit seaworms). The latter all point in the same direction, rather than in opposite directions as they would have done in the case of replication along the horizontal axis.

Source: PC 222.

Fig. 243 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla is apparent, *kihhil* hidden

This uncommonly large, probably early 20th-century Sumba *hinggi* was executed with great mastery. Here again we see visual trickery at work: at first glance, the cloth seems to have been made with three repeats of panels decorated with two shrimp at top and bottom, and a midfield with *habak* motifs. This midfield is also divided in three by means of a vertical line-up comprising slightly dissimilar motifs that break the row of habak (see inset lower left). Small black triangles in the strips bordering the fishes deviously reinforce the suggestion of tripartite construction.

At closer inspection, the *hondu walla* soon becomes apparent; the *hondu kihhil* is elegantly hidden: between the *habak* motifs on the cloth's axis we see two shapes resembling the cross section of a roof which are not axially symmetric. Two halves are found on the selvedges.

Weavers' perspective: The pinnacle of sophistication, *istimewa.*

Source: PC 187.

There are several *kihhil key*s. The most easily discovered are found on the horizontal axis (shown twice in their entirety and twice half, right on the selvedges). They are elegant and cleverly deceptive, easily overlooked because multiple identical motifs are placed in the rows just above and below the axis, all properly mirrored as one would expect in a cloth with axial replication. There are several other smaller keys: e.g. red cones on one side versus blue dashes on the other, and blue fishes that are pointing in the same direction instead of opposing each other.

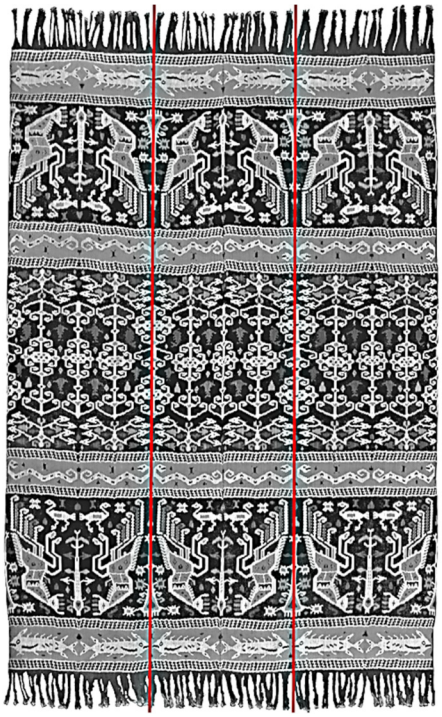


Fig. 244 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Kihhil and *walla*, both hidden

A *hinggi* from Rende (East Sumba) created circa 1930 that pairs the two complications. Both keys are tiny and cleverly hidden.

The *kihhil* key is in the face-like motif: one side has a red 'mouth,' the other nothing. The *walla* key is very close: the arrows on the left and right halves of the panels do not mirror each other. This placement is remarkable. Usually (if we can use this term when dealing with such a small sample), the *walla* keys are hidden anywhere but in the axial band.

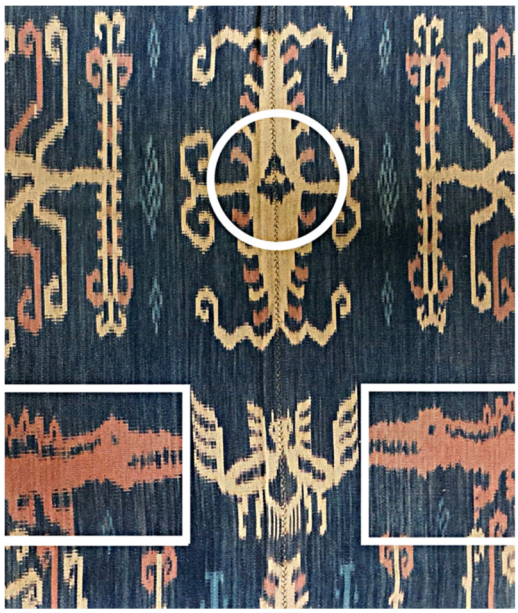
Weavers' perspective: A very ambitious cloth with minute, cleverly hidden keys, the mark of a high court. The *walla* keys are of a type that are normally used to show *kihhil*, a playful aberration.

Source: Collection Kinga Lauren.

Fig. 245 Example of *hondu kihhil walla*, with 2-fold replication.

Keys: Walla is apparent, *kihhil* hidden

This early 20th-century *hinggi* from Pau (East Sumba) pairs the two complications. The *walla* key is immediately apparent: the red crocodiles each span the entire width of the panel, and thus cannot have been created by means of replication along the panel's longitudinal axis. The fact that they are so immediately apparent may be a form of misdirection, intended to make one search for an equally unsophisticated *kihhil* key, thus almost guaranteeing that it will be overlooked. The actual *kihhil* key – not, as we see more often, a set of identical devices but a single minute motif – consists of the tiny bell shape in the central motif of the axial band, which by its nature is not symmetric along the horizontal axis. The *kihhil* key's surface area comprises just a minute fraction of the cloth, but says much about its true construction class.



Weavers' perspective: An ambitious and sophisticated cloth with one set of keys that is easy to spot and a single very clever one. It is amusing that the weaver made the *walla* keys so big and obvious. It appears that she intended to make people search for *kihhil* keys that are equally blatant – sending them off into the visual wilderness. Sowing confusion is one of our advanced techniques for hiding keys.

Source: Collection Kinga Lauren.

Fig. 246 Example of *hondu kihhil walla asimetris*, with 2-fold replication and pattern compression.

Keys: Walla apparent*, kihhil* hidden, but multiple, all over the midfield.

This *hinggi* from Kanatang, probably made in the 1930s, pairs the two complications, with the addition of pattern compression: the right panel is circa 5 per cent wider than the left. The key to *hondu walla* (the trio of horses in the exterior horizontal bands), is relatively large and easily spotted. The *hondu kihhil* is given away by a whole collection of keys, all located in the midfield: numerous visual elements which are not identical above and below the horizontal axis. They are either not the same colour, or not the same shape, e.g. star-like motif versus little *mamuli*.

With its playful inventions this example supersedes the established *kihhil* concept by providing not one or two keys, but a field full of them. Because it is not hard to spot the first two, the eye is invited to search for more. Such an entertaining visual device was not encountered on any other cloths in the Reference Set.

Weavers' perspective: A superb, perhaps unique example of ikat art from East Sumba.

Source: Collection Kinga Lauren.

Fig. 247 Example of *hondu kihhil walla asimetris*, with 2-fold replication and (minimal) pattern compression.

Keys: Kihhil and walla, both hidden.

The *hondu walla* in this *hinggi* is betrayed by the number of human figures per panel: three-and-a-half. The keys to the *hondu kihhil* lie not only in the row of motifs on the cloth's axis but also in the colours of the dots above and below them, which indicate the warp was not doubled over. While the design is rich and visually arresting, the effect of the paired complications is marred by merely moderate precision of execution – surprising given the ambitious pairing of two complications, and the addition of (minimal) pattern compression. The right panel is circa five per cent wider than the left panel.

Weavers' perspective: An ambitious, clever, and time-consuming piece such as can only have been made at one of the highest courts, but technically flawed. Perhaps a younger weaver's first attempt to produce a *hinggi* at this level.

Source: Example dated 'before 1891' kept at the Nationaal Museum van Wereldculturen, N° RV-858-16.

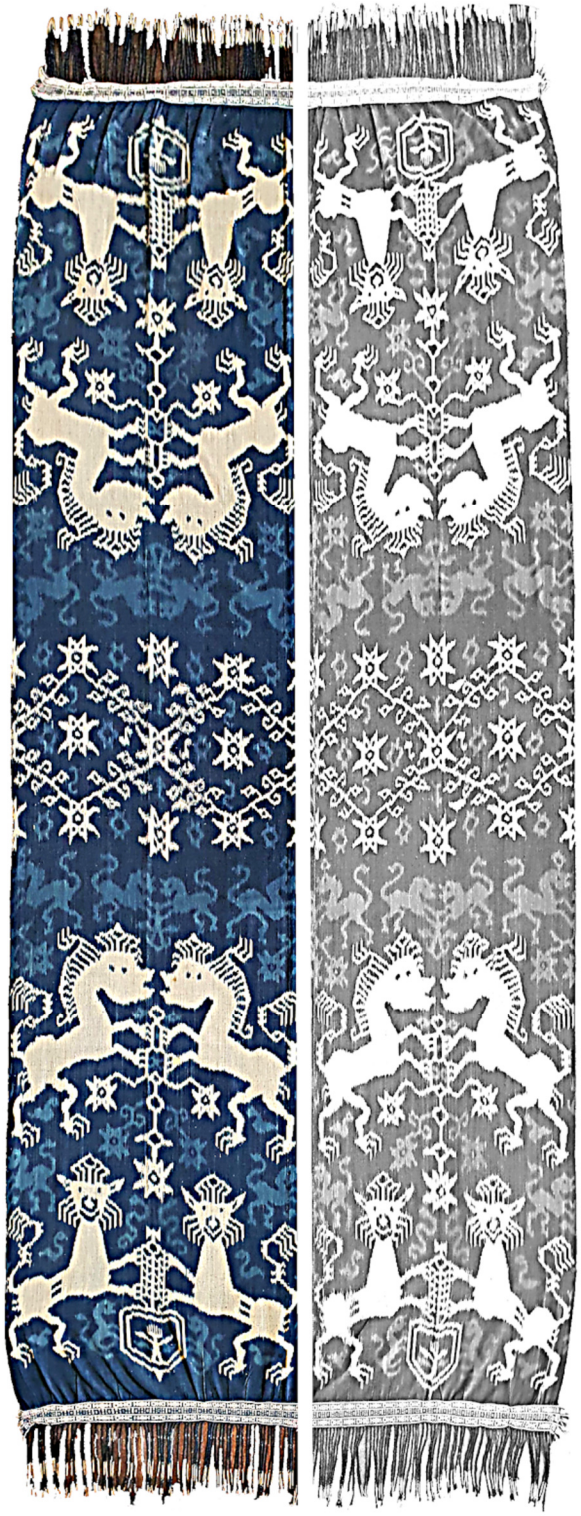
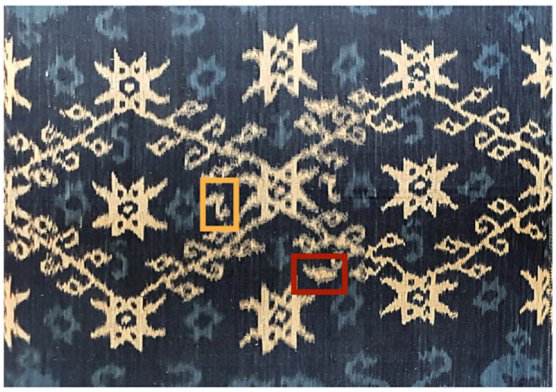


Fig. 248 Example of *hondu kihhil walla asimetris*, with 2-fold replication and pattern compression.

Keys: Walla and *kihhil,* both hidden. Additional asymmetry of the pattern compression type.

While *hinggi* executed solely in indigo were the only type allowed to commoners, noble families also produced it, just more rarely – and then typically in a way that made them stand out anyway. One of the ways to make the 'humble' *kawuru hinggi* stand out it is by a well-balanced tonality. Another is to add complexity. In this case the weaver chose a *hondu kihhil walla* construction with the added difficulty of pattern compression: the right-hand panel is 12 per cent narrower than the left-hand panel. This compression was achieved by means of warp packing, *lungsin ketat*. The combination of *hondu kihhil walla* with pattern compression was encountered on only four other *hinggi* (see Figs. 246, 247, 249, 255).

This high class *hinggi* from Kanatang in East Sumba was made circa 1930. The *kihhil* keys (one marked in yellow, see the detail below), two in either panel, show that there is no axial symmetry. The *walla* keys (one marked in red on the detail below), also two on either panel, show that there is no longitudinal symmetry within the panels either. Jointly, the keys reveal that this cloth was made with 2-fold replication only.



Weavers' perspective: While executed solely in indigo and with relatively simple drawing, this *hinggi kihhil walla* is close to the pinnacle of sophistication on account of its added pattern compression.

Source: Collection Kinga Lauren.

Fig. 249 Example of *hondu kihhil walla asimetris*, without any replication.

Keys: Walla and *kihhil,* both hidden. The *walla* key (see below) is found in the colours of the fowl: one red and two blue, versus one blue and two red. Additional asymmetry of the pattern compression type, which was noted during a careful study of the patterning, was confirmed by measurement.

This high class *hinggi* from Kambera in East Sumba was made in the late 19th or early 20th century. It is one of only two examples encountered which pairs the *kihhil* and *walla* complications and exceeds the level by adding pattern compression. For an elaborate analysis of this method as manifested in this cloth see Fig. 176 and Section. 4.1 'Techniques to achieve asymmetry', under 'Pattern compression, Method 2' – the essence of which is the creation of two panels that are similar but with drawing that is more compact on one panel than on the other. In this specimen the right panel is 10 per cent narrower than the left one. The effect is so subtle that even a trained eye may fail to notice it for a long time. In terms of competition this cloth must be counted among the most complicated of Sumbanese ikat textiles.

Weavers' perspective: The pinnacle of sophistication, *istimewa.*

Source: PC 319 (see also Figs. 195, 219).

The key to *hondu kihhil* (see above) is *licik,* 'cunning', with the positive connotation of 'smart'. It can be found in the clouds of dots surrounding the butterfly-like *karihu* motifs in the axial bar: the dots in the lowest part can not have been produced by replicating those in the uppermost part because they are in slightly different positions.

Fig. 250 Example of *hondu tanpa replikasi*, without any replication.

Keys: Walla is apparent, *kihhil* hidden.

This East Sumbanese *hinggi* was made at the court of either Kanatang or Kapunduk, at the latest in the early 20th century, but according to Kinga Lauren more likely in the 19th century because all the motifs appear in their most classical rendering. Stags form the main motif (be it not as elegantly portrayed as on PC 299, Fig. 241). The *hondu walla* key is immediately apparent in the three stags per panel half and in the parallel rows of small horses, again three per panel. For good measure, the shrimp depicted on the two bands next to the axial band are slightly different. Note also the tiny keys tucked in between the shrimp and the octopuses – a hint that there are things to unlock not encountered on any other example of this construction class, nor in fact on any other Sumba *hinggi*. The set of keys, through their placement on the field, constitute an additional set of *walla* keys. These prove that there was no replication along the panel's longitudinal axis.

The *hondu kihhil* key is hidden in the row of *habak* motifs on the cloth's axis: smaller and larger fish-like shapes (both probably representing the fearsome Bobbit sea worm, *Eunice aphroditois*, aka sand striker, a common Sumbanese power symbol). Those above and below the cloth's horizontal axis are dissimilar.

Additionally, we see an excrescence resembling a semi-concealed sand striker 'glued' to the right-hand side of the second *habak* from the left. Such an excrescence does not appear anywhere else in the design. Apart from confirming the *kihhil* construction, it also proves that there was no replication of any part of the design. This is a unique design device, not seen in any other Sumbanese cloth. It draws attention to itself by its utter originality. The visual trickery relies on diverting a viewer's eyes to the core shapes of the six large *habak* motifs, a series which emphasizes regularity, not aberration, so as to overlook the visual games played in between them. A textbook case of what conjurers call misdirection.

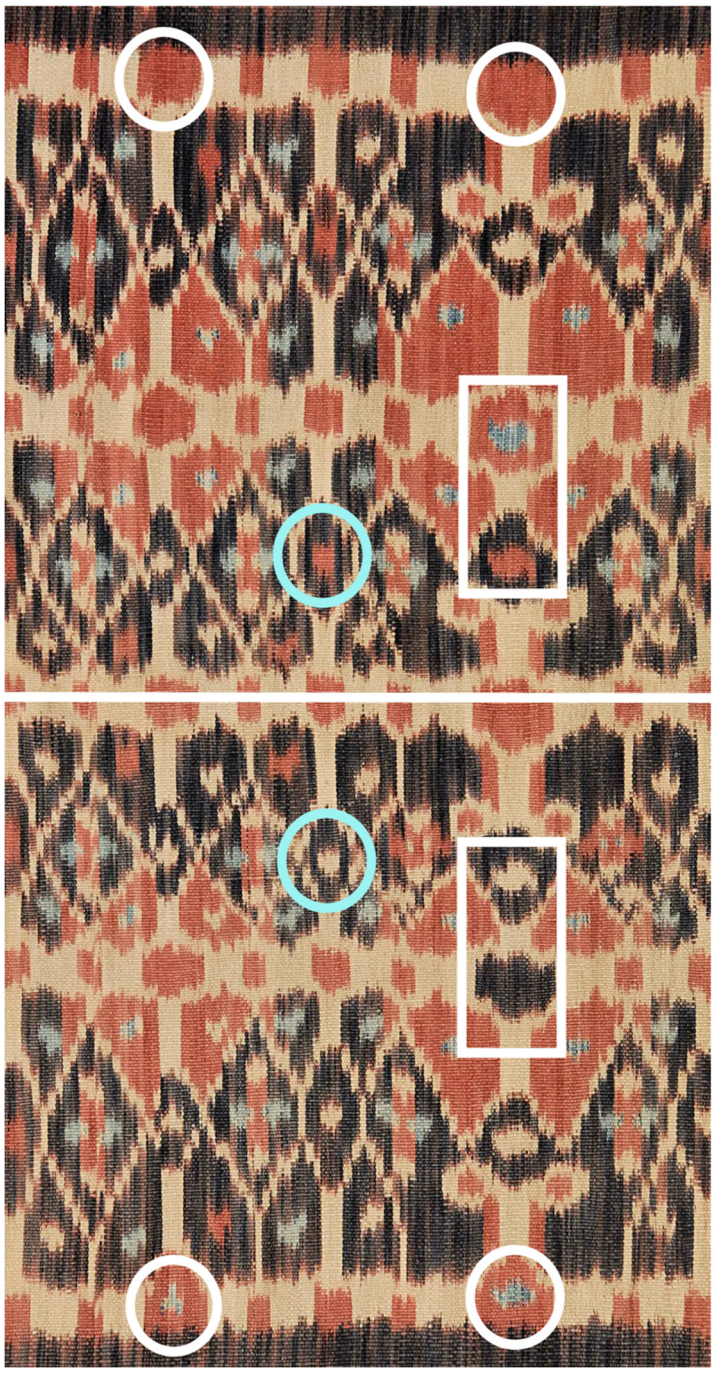
Weavers' perspective: Istimewa, a cloth at the pinnacle of East Sumbanese ikat.

Source: PC 188.

Fig. 251 Example of *hondu kihhil walla.*

Keys: Walla apparent, *kihhil* hidden.

This *hinggi* was made at the court of Kanatang in the early 20th or the late 19th century. The three horses and three cockatoos (the latter a Kanatang hallmark) in the top and bottom of each panel instantly make obvious that the cloth's two constituent panels were not created by means of replication along their longitudinal axis. The *kihhil* keys were hidden in a surprising manner, explained below. As in several other *hondu kihhil walla hinggi* there is a potent, but spurious, suggestion of tripartite construction.



Except in the case of *pagi-soré* designs with entirely different top and bottom halves (see PC 222, Fig. 242), *kihhil* keys are nearly always hidden in the wide central band, the *kundu duku,* which often contains one or two bands with a *patola ratu* motif – a complex design which should be ideal for hiding tiny variations to a regular pattern. Curiously, though, this is the only example encountered where the *kihhil* keys were hidden in the *patola ratu* pattern.

Three distinct sets of *kihhil* keys were encountered. The most readily noticeable are those indicated by the rectangular markings.The other two, marked with circles, are likely to be noticed only through dedicated searching. Because hiding keys in the *patola ratu* pattern is very unusual, those in the present *hinggi* may well have been overlooked even by observers (such as the weaver's peers) who are alert to the visual tricks that apex weavers in East Sumba resorted to. Given the complexity of the *patola ratu* pattern, which here takes up the entire *kundu duku,* it is possible – in fact rather likely – that one or more additional sets of keys were overlooked.

Weavers' perspective: A classic, refined *hinggi* with subtly placed *kihhil* keys, made of extremely fine hand-spun yarn.

Source: PC 350.

Fig. 252 Example of *hondu kihhil walla.*

Keys: Walla apparent. The three monkeys in the top and bottom of each panel declare incontrovertibly that the panels were not created by means of replications along the longitudinal axis. *Kihhil* hidden – multiple keys are distributed all over the midfield. The most unusual *kihhil* keys were hidden in the lateral borders of the midfield. Note: the two detail images below are not to scale.

This *hinggi* was made in the late 19th or early 20th century. The midfield is typical for the court of Rende, whereas the palette is that of Kanatang, which suggests intermarriage.

Left: The midfield, which emulates Vohra Gaji Bhat *patola,* was used to hide a veritable collection of *kihhil* keys – not all of which could be marked to prevent clutter. The motifs in the white rectangles show the white vertical line jutting downward in the lower of the two. If this were simply the result of misalignment of the warp threads, that would have caused misalignment (over a distance corresponding to five weft threads) across all motifs on this white line, which is not the case. The rounded triangle in the white circle is seven weft threads short of symmetry. The motif in the pink rectangle is not close to symmetric. The blue dots in the small white circles below the cloth's axis are all placed toward the bottom of the black lozenges they decorate, those above the axis are centrally placed. The rows of dots in the diagonal rectangles have a different red-black sequence.

Right: The *kihhil* key in the lateral borders forms an excellent illustration of Gombrich's 'etc. principle' ([1960] 1977:184). The mind will register the long strip of alternating triangular shapes and conclude 'that is just a border'; no need to pay further attention. This blocks the perception that it does not mirror along the axis.

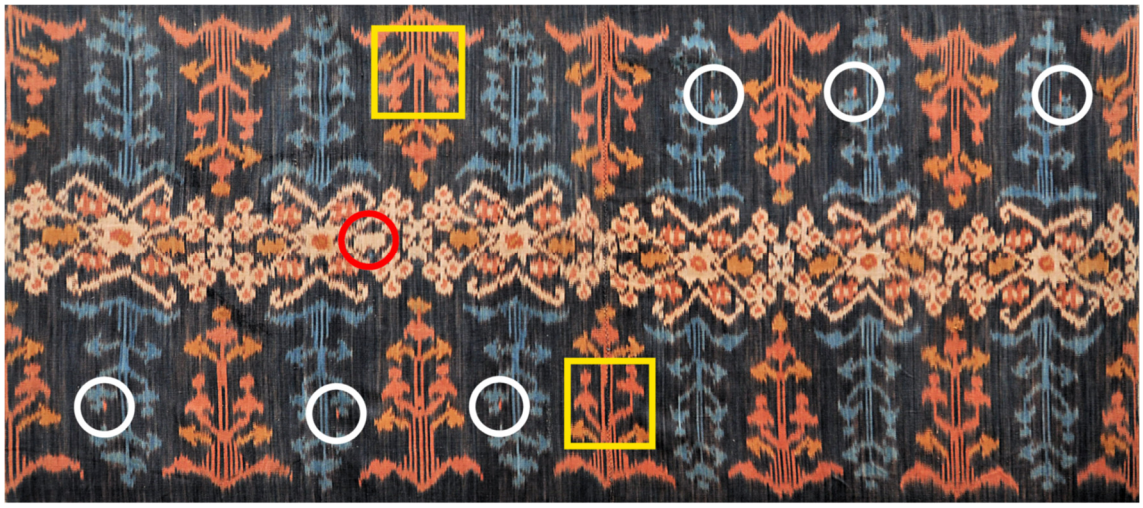
Weavers' perspective: A very playful *hinggi* with a plethora of *kihhil* keys.

Source: PC 351.

Fig. 253 Example of *hondu tanpa replikasi*, without any replication.

Keys: Walla apparent*, kihhil* hidden. The groups of three deer instantly establish that no folding of the warp along its length took place. A 'fifth colour', yellow, applied with a brush after the weaving, served to create a hidden key which to the semi-informed would 'prove' that there was no replication at all. In fact, this was proven by other, far more elusive keys: mere dots, ikated in red (circled).

A prime example of costly signalling, this *hinggi* was probably made in Kanatang (East Sumba) in the late 19th or early 20th century. It pairs the two complications *hondu kihhil* and *hondu walla* – and exceeds this superior level by avoiding all replication and applying secondary decoration in yellow, the reserved colour of royalty, in a special way. The yellow dye has bled in all directions, not just along the warp, hence must have been daubed in on the woven cloth rather than on the warp during the weaving, and daubed on this liberally on purpose, so no one could miss it – thus setting the audience up to be tripped. On the cloth's axis we notice a string of twelve small lozenges, all of them yellow – except one, left the natural ecru of the cotton. Because it is so obvious that the yellow was daubed in, any keys made in this colour are spurious. Since there is no logic in having a key that proves nothing, the dyer probably added it to the design as a deed of misdirection; to sow confusion about what level she was actually working at – an extremely high level. In her audacity the dyer tricks the audience into thinking she is cutting corners – the better to stun at the moment of ultimate discovery of the level, to wit zero replication. Magicians and illusionists call this a 'sucker trick'. "First you do a fumble, present the wrong card. Instantly the audience's expectations are much reduced, which powerfully enhances the glory at the ultimate moment [of discovery, successful execution, PtH]." (Paul Philippart, pers. comm., 2020). Seen as illusionist performance: the daubed in yellow makes the work look clumsy, so few peers will give the cloth a second look – leave alone stare it like foxes to find out what is actually going on. But one will find out, and then all will know.



The *kihhil* key, as usual, is in the central band, the *kundu duku*: the *jilamprang*-like motifs show no axial symmetry. The keys revealing that no replication at all took place were also hidden in this band. Bordering the axial band are bands with red and blue tree-of-life-like motifs. On the left panel the blue trees below the axis carry tiny red dashes, those on the right do not. On the right panel, their position is reversed. A sceptic might wonder if this effect could not have been achieved simply by flipping one panel along the axis. However, there are too many slightly differing elements for this scenario to be feasible (e.g. the details marked in yellow, showing a different branching above and below the axis). This suggests that, not only is this truly a *hinggi* with zero replication, it is one which mischievously invites attempts at deflation.

Weavers' perspective: *Istimewa*, a cloth at the pinnacle of East Sumbanese ikat. One more step up from the already extreme level of the *hondu kihhil walla.* Almost no one can afford this amount of labour. Most Sumbanese women probably never got to see one of these, although the existence of *searah hinggi* (*hondu kihhil*) was rumoured (Jill Forshee, pers. comm. 2015).

Source: PC 333.

Fig. 254 Example of *hondu tanpa replikasi*, without any replication.

Keys: Kihhil and *walla*, both hidden in the band on the horizontal axis called *kundu duku*. Two of the sixteen most obvious *kihhil* keys are marked in white, minor additional keys were left unmarked. The yellow marking on the left, placed right on the panel's longitudinal axis, indicates a *walla* key: of the four curled globules, the two on the right are connected to the central lozenge with thin lines, while those on the left are not. The yellow rectangle on the right marks a motif that appears identical, but is not: here all the four globules are connected to the central lozenge, evincing that there was no replication at all, and that the two panels were ikated individually.

This *hinggi* is remarkable not just for its high class design, but also for its history, provided by the source. As background information provided by sellers can easily get polluted by the desire to make an item more interesting, it is relevant to consider that the information a) was provided after the seller already parted with the cloth and had no more commercial incentives, and b) that it perfectly matches the cloth's design. This *hinggi* was said to have been made in commission for the Dutch colonial government, to be gifted to a member of the British aristocracy. It therefore deviates from what would have been made for the local nobles. Apart from tiny fowl, snakes and other zoomorphic fillers, the only motifs in this *hinggi* are rampant lions, derived from the Dutch coat of arms. There are no traditional Sumbanese motifs. In consequence, the cloth would not be suitable for funerals and other *adat* use on Sumba. On the other hand, this choice of design makes it eminently suitable as a diplomatic gift as it is highly charged with heraldic symbols representing the donating party's power. Outside the axial band, wherever one looks, one is reminded of this power, as there are hardly any other decorative elements.

After the diplomatic recipient passed away the cloth came into the hands of a collector in Jakarta named Petter, about whom nothing else could be found out. After he passed away around 2020, the cloth was acquired by an antique-trading family on Sumba. It was added to Group A of the Reference Set because it seemed a fine example of a *hinggi* in *kihhil* construction – revealed by the keys marked in white, which could be spotted on the blurred photographs provided. It was only after the *hinggi* arrived in Europe that the *walla* key marked in yellow was discovered; not by the present author, but by his spouse, who also remarked that it occurred on just one of the two constituent panels, making clear that it is not 'just' a *hondu kihhil walla*, but a *hondu tanpa replikasi*. Given the *mores* of diplomacy, we may presume that the cloth's exceptional construction was explicitly communicated to the recipient – though this information apparently did not survive him.

The patterning of the midsection, *kundu duku*, was inspired by a *patola* of the Vohra Bhat design. According to local experts the design combines style elements of Kambera and Melolo, but may also have been commissioned in Mangili. The cloth has no cross-woven border, *kabakil*, but instead corded fringes.

Source: PC 364.

Fig. 255 Example of *hondu tanpa replikasi*, without any replication.

Mischievously, the weaver created two horizontal dark stripes by leaving a slightly wider interval between the lozenges than elsewhere. This accentuates a band on the median which suggests axial symmetry, but she also hid two tiny keys here evincing that no replication along the cloth's axis took place. The lozenges have four small dots, which are all blue, except in two lozenges right on the axis (the second ones from the selvedges). These have three blue dots and one red one, proving that there was no axial replication (*hondu kihhil*).

The width of the lozenges was measured in mm across the width of the cloth. Left panel: 54, 64, 73, 66, 72, 63, 62, 63. Right panel: 57, 64, 68, 70, 69, 67, 68, 60. No pattern is discernible.

Keys: Kihhil cleverly hidden in a band which suggests axial symmetry. No specific *walla* key, but minute differences in the width of design elements over the entire field, which jointly preclude replication along the panels' longitudinal axis.

This 19th- or early 20th-century royal *hinggi* made in Kambera (East Sumba), is a *lima varna,* 'five colour', specimen executed in two shades of indigo, red and yellow on the natural ecru of the cotton. The yellow was added in with *ndatta* – dyeing selected sections of yarn during the weaving with a small brush.

This cloth manifests its nature as an ikat *tanpa replikasi* in several ways. The first is the slightly wavy appearance of the pattern, particularly in parts of the cloth closest to the seam. The most technical proof of the absence of replication is measurement. The widths of the bands with lozenges (given below), were determined at a random distance from the fringed extremities, from the selvedges inwards toward the seam. No regularity whatever was found, proving that (a) there was no replication within the panels (*hondu walla*) and (b) the panels are not identical either.

As if this was not enough to establish her supremacy, the weaver also deployed Method 1 pattern compression: the yarn count varies, seemingly at random, between 20 and 36 yarns per cm, an astonishingly wide range. This causes the design to have a wavy effect in a wide band close to the seam. As the result of the absence of regularity one panel is a random 3 cm wider than the other.

Taken all together, the various visual devices employed in this cloth mark it as belonging to the ultimate category of ikat production on the island. Its twin (PC 219) also survived, and was found in the same old Dutch collection.

Literature: The only truly similar *hinggi* encountered (independent scholar Gary Gartenberg, pers. comm., 2020) is one dated 1890-1910, part of the unique early Sumba collection in the Rotterdam Museum voor Volkenkunde, now held in the Nationaal Museum van Wereldculturen, N° WM-25320. Here also pattern compression appears to have been used, although not in the same wavy fashion. Somewhat similar are two late 19th- or early 20th-century *hinggi* in the same collection. One hails from North Sumba, presumably Kanatang (Adams, Forshee, *et. al.* 1999:131), the other from an unspecified region (*ibid.*:118-119). Both have been made in the common, far less labour-intensive *hondu kappit* with 8-fold replication.

Source: PC 218.

Above: A detail of the axial band showing a *kihhil key.*
Below: A detail of a central area close to the seam shows minute differences proving that there was no replication.

Fig. 256 Example of *hondu tanpa replikasi*, without any replication.

This royal *hinggi* was made in Kapunduk in the 19th or early 20th century. The uncommon restraint of the design marks it as high class. The *kihhil* keys are tiny: white versus blue dots in just four motifs alongside the cloth's axis. Specific *walla* keys could not be discovered, but there are legion miniscule differences between the left and right halves of the two panels (see image below), proving the absence of internal replication (*hondu walla* construction).

Minute differences between the left and right panels (see photo left, below) identify this cloth as an example of *hondu walla tanpa replikasi,* the very highest construction class. An early to mid-20th-century *hinggi* in the Metropolitan Museum of Art, N° 1988.104.58, looks similar but is not of the same class, as it has no *walla* design. Whether or not it is a *hondu kihhil* design could not be ascertained as only about one third of the cloth is shown in the online catalogue. A *hinggi* in the collection of the National Gallery of Australia, N° NGA 2000.990, has a similar field, but because of the low image resolution on the museum's website its construction class could not be ascertained.

Source: PC 193.

4.3 INCIDENTAL ASYMMETRY - INTENTIONAL OR ACCIDENTAL

The asymmetry that we observe may not always have been intentional. One shawl from Savu (PC 175, see Fig. 208) is almost shockingly asymmetric, as the result of the replacement of two sections of the warp by warp yarns with smaller motifs in a much darker palette. Perhaps part of the warp was damaged by fire or gnawing mice, and the weaver decided the replace it with part of the warp intended for another shawl. Such accidental asymmetry is not truly worth studying as it does not represent an aesthetic preference or conviction about the effect that asymmetric design has on the wearer's life. It is not part of the culture. What *is* part of the culture, is that the Savunese weaver, who displays great technical mastery in her detailing of the motifs, apparently did not feel that changing the pattern drastically would make the cloth unpresentable.

Another example is a Rotinese shawl, *lafa*, from the village of Nemberala (see Fig. 218) which consists of two panels that are of distinctly unequal width: discounting the plain borders one panel is three quarters the width of the other. The designs of the two panels are essentially the same, but the narrower one looks squeezed. Thread counting of the warp yielded an equal count for the two panels. A tailor's threadcounter, however, revealed that the yarns on one of the two had simply been packed much closer together. This procedure resulted in two panels decorated with the same traditional pattern, yet substantially different. We can only guess at the circumstances and motivations which caused the weaver to make this eccentric choice. Was she a Rotinese married to a man from neighbouring Ndao, where asymmetry is prescribed? Or a Ndaose married to a Rotinese who decided to weave him a shawl in the style of his village, but would not risk him walking around with a symmetric *lafa*?[1]

[1] This occurrence of incidental asymmetry on Roti is not reflected in the map showing the distribution of asymmetry as this single example does not represent an aspect of Rotinese culture, but rather a deviation from it.

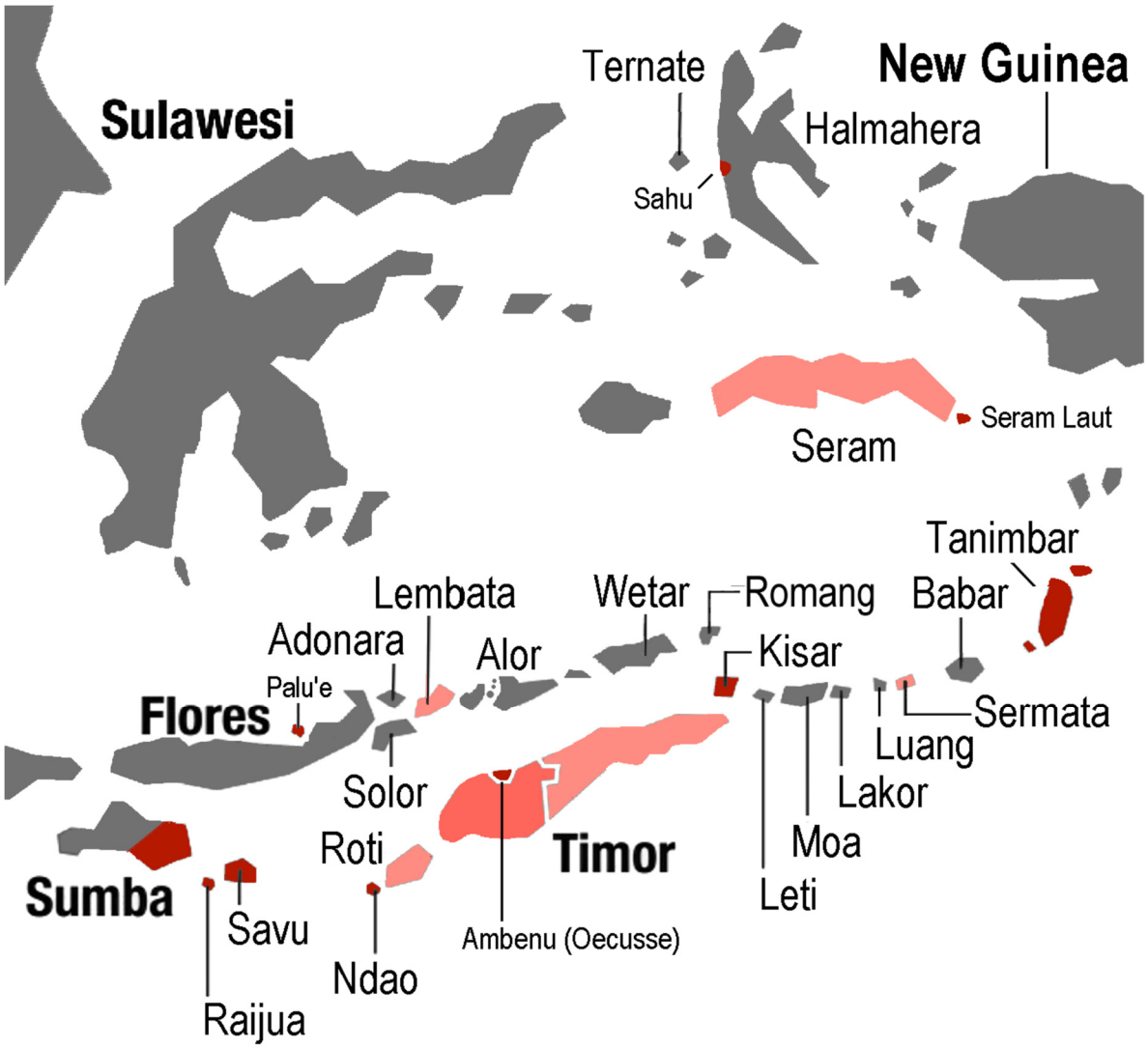


Fig. 257 Map showing the distribution of asymmetric design in the eastern Indonesian archipelago. In the areas indicated in red asymmetry is either prescribed or (relatively) common. In the lighter tinted islands asymmetry occurs, but is less common, or appears to have been more common in the past. Timor was given an intermediate tonality. Asymmetry is not rare on Timor, but far from common and only found in a few regions, particularly those close to the East Timorese semi-exclave Oecusse.

In summary, asymmetry is either preferred or fairly common in a number of regions on and around Timor. On Timor itself it is found fairly frequently in the Oecusse semi-exclave (East Timor) and more rarely in Covalima (East Timor) and Amanuban (West Timor). On Savu, Raijua and Ndao asymmetry is prescribed for all shawls. Asymmetry is also found on Kisar, albeit there limited to antique wraps woven by the mestizo populace, and occasionally in other parts of the Moluccas. On Lembata it is encountered in the early ceremonial sarongs of only one community, Ili Ape, In East Sumba it was found to be more common than was previously assumed, but practiced only at the highest courts.

Asymmetry is achieved in seven different ways:

1. Warp shifting, moving warp threads from one panel to another, typically a complete design band.
2. Simulation of the above. A single example encountered.
3. Pattern compression, either by closer packing of the warp or drawing with different line-widths. Three examples encountered.
4. Dissimilar panels, ikated separately, which typically leads to the creation of twin textiles.
5. Transposition of part(s) of the warp bed, most often along its (often plain, undecorated) axis, but also, in rare cases, longitudinally.
6. Reverse mounting of panels: sewing them together so that, in contravention to custom, they do not mirror each other.
7. Asymmetry of perception: devising a pattern that looks different when seen one way than upside down. A single example encountered.

Achieving asymmetry in ikat is difficult, and requires additional investments of time. But in an impressive manifestation of cleverness and persistence the best weavers in the region under study regularly or occasionally overcame ikat's 'natural' symmetry and achieved what appears to have been an important dualist *desideratum*, to wit the unification of two unequal components. Given ikat textiles' prominent role in bridal exchanges – themselves leading to the physical merging of male and female – it appears likely that the unequal parts of the asymmetric cloths represented the island communities' two distinct but equivalent (or at least interdependent) strands of humanity, to wit wife-givers and wife-takers.

The present study revealed that asymmetry in ikat is encountered nearly exclusively in men's cloths and cloths worn mostly, though not always excluvisely by men. Where it is not *de rigueur*, as on Savu, Raijua and Ndao, asymmetry is encountered principally in cloths of the highest class in their respective island regions, and often attended by other manifestations of virtuosity. Not clear is whether men particularly appreciated, and perhaps even insisted on, asymmetry, or if women decided that it was best for them.

The most surprising finding was that in East Sumba some weavers of the highest social class, *maramba* (nobility), devised designs with hidden asymmetry. These mimic standard designs of the region that are both axially and longitudinally symmetric. They reveal their true nature as cloths of the highest order (requiring a multiple of the standard workload) by means of cleverly designed visual keys that presumably few people other than weavers of similar design ability and their immediate circle would notice. This finding, which upends existing literature on Sumba, reveals the highly competitive spirit of the royal weavers, likely nurtured by the island's headhunting ethic. Such ikat textiles with extreme levels of creative ingenuity constituted costly signalling, as they could only be made at the highest courts where enslaved individuals could be relied on to perform the vast amount of additional labour. They stopped being made around 1925, and knowledge about them must have died out with the generation of weavers that produced them.