"*We* Blacken Our Teeth with *Oko* to Make Them Firm": Teeth Blackening in Oceania

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Abstract: Teeth blackening is a form of body modification that was prevalent across parts of Melanesia and Micronesia. The near-permanent colouring of teeth was accomplished by applying plant-based substances combined with a unique kind of ingredient, namely, different soils (asphaltic, peat swamp, volcanic or manganese-containing). Teeth that had been culturally manipulated in a more or less ritualized fashion carried a wide range of associations, embodying local aesthetic criteria and mediating physical and, in particular, sexual maturity and attraction, as well as accomplishing social enhancements that came with maturation. Betel chewing was practised in a very similar region and, though it was distinct, intersected closely with teeth blackening. Subsequent to Western contact, missionary efforts succeeded in repressing teeth blackening effectively, and it disappeared rapidly across the whole area where it was once practised.

Keywords: body modification, teeth blackening, betel chewing, Oceania, Melanesia, Austronesian languages

Résumé : Le noircissement des dents est une forme de modification corporelle autrefois répandue dans certaines régions de la Mélanésie et de la Micronésie. La coloration quasi-permanente des dents s'effectuait par l'application de produits à base de plantes en association avec un ingrédient distinct, à savoir différents types de sol (asphalte, sol tourbeux, sol volcanique, ou sol contenant du manganèse). Les dents qui, de façon plus ou moins ritualisée, avaient fait l'objet de manipulations culturelles comportaient un large éventail d'associations : elles reflétaient les critères esthétiques locaux, médiatisaient la maturité physique—en particulier sexuelle—et l'attraction, et garantissaient l'élévation sociale liée à la maturation. La mastication de chique de bétel avait cours pratiquement dans la même région et, tout en s'en distinguant, coïncidait de très près avec le noircissement des dents. Suite au premier contact avec l'Occident, les efforts des missionnaires réprimèrent efficacement le noircissement des dents, conduisant à sa rapide disparition de la zone où il se pratiquait autrefois.

Mots-clés : Modification corporelle, Noircissement des dents, Mastication du bétel, Océanie, Mélanésie, Langues austronésiennes.

Introduction

> *We* blacken our teeth with *oko* to make them firm and we leave white teeth to babes who know not how to eat betel nut.
> [Ivens 1914:12]

These were the words of a yet un-Christianized elder from the Solomon Islands in the missionary play *Darkness and Dawn* by the Reverend Walter G. Ivens (1914). Even though a literal understanding might have been elusive, the lines conveyed a clear image to the audience it was supposed to educate about the challenges of the missionary work encountered in the "darkest of the Pacific Islands" (3).

In general, Western observers have long displayed an ambivalent fascination, mixed with aversion, toward the variety of bodily practices encountered in the Oceanic world. Such body ornamentations included nose plugs, earplugs, tattoos, scarification, penis gourds, and decorations with feathers, leaves and other natural objects or paint (see Strathern and Strathern 1971). However, compared to most of those adornments, which are visually more spectacular or are still practised, far less attention has been paid to the purposeful colouring of teeth. Particularly remarkable is the apparent dearth of a visual record of this practice. A century after Ivens' play the place of teeth blackening in the complex fabric of Oceanic cultures still remains poorly documented and contextualized.

Teeth blackening is a custom of significant time depth and is historically attested in many societies outside the Oceanic world (Zumbroich 2009, 2011). In Melanesia we owe the first notice of teeth blackening to the Spanish navigator Álvaro de Mendaña y Neira (1542–95), who discovered Santa Isabel Island as part of the "Islas Salomon" (Solomon Islands) in 1568. In his ethnocentric appraisal of the Indigenous population, he struck a tone that would become a familiar theme:

> The women are better looking than those of Peru but they disfigure themselves greatly by blackening their teeth, which they do on purpose, both men and women; the boys and girls are better looking and less ill-favoured, because their teeth are white. [Amherst and Thomson 1901:133–134]

Besides expressing disapproval, early observers provided few if any details about the process by which this black colouring of teeth was achieved. By the time in-depth ethnographic studies were pursued, extrinsic influences had often already led to a significant dilution or abandonment of this practice. In addition, betel chewing,[1] a far better-understood aspect of daily life in a wide swath of the Oceanic world, was known to gradually lead to red- or darkish brown–stained teeth. With betel chewing thought to be the incidental cause of darkened teeth, the relevance of a distinct teeth-blackening tradition in Oceania escaped the attention of some anthropologists altogether.[2]

This article is the first to broadly explore the extent and significance of the teeth-blackening traditions in Oceania, as part of a broader effort to bring attention to this lost and almost-forgotten practice. Here I appraise the material culture as well as explore different ascriptions that teeth blackening carried in cultural areas across Melanesia and Micronesia. Particular attention is given to the relationship between teeth blackening and betel chewing, as well as to potential insights into the history of the practice.

Solomon Islands

The geographical area in which teeth were blackened in Melanesia extended from some coastal regions of New Guinea (east of about 140 degrees longitude) along the island chains that comprise most of Melanesia as far as the Santa Cruz Islands (Figure 1). The practice was absent in Vanuatu, Fiji, New Caledonia and beyond. I will subsequently discuss pertinent features of the practice in different broad cultural regions, beginning here with the Solomon Islands.

When the German insect dealer Carl Ribbe explored the Solomon Islands for two years in the 1890s, he noted that most Indigenous people blackened their teeth with what he thought to be "charcoal" (1903:240). While he might not have been accurate about the dyeing agent, there is, indeed, evidence for the practice along the island chain, from the Shortland Islands through the New Georgia Islands and Santa Isabel into Malaita.

On the Solomons, for the most part, teeth blackening was practised informally by both men and women after puberty, sometimes as a lifelong daily practice.[3] Indeed, it was a widely held belief that blackening one's teeth served to preserve the teeth and strengthen the gums (e.g., Lawrence Foana'ota, pers. comm., e-mail, April 28, 2010; Ivens 1918:73, 1930:121).[4] Another motivation for teeth blackening was aesthetic: "the blacker, the better," as Ribbe observed on New Georgia (1903: 266). Cheke Holo speakers of Santa Isabel strove to have their teeth appear just like the shiny black finish of a black beetle (ke'I mimhigi, "teeth like black beetle"; White 1988:117). On South Malaita teeth blackening was seen by young men and women as a way "to give themselves airs," further elaborated by a Sa'a proverb mocking those who used an unfitting adornment as *nao si oko* (a widow who blackens her teeth; Ivens 1927:83).

With teeth blackening pursued as a regular and frequent practice, a supply of teeth blackener was kept at hand in special receptacles. Those were either made from an internode of bamboo (Malaita: Ivens 1926:347; Lichtenberk 2008:284; New Georgia, Marovo lagoon: Pitt-Rivers Museum, Oxford, object 1894.26.28.1) or carved from young coconuts (Shortland Island: Ribbe 1903:128, 131, fig. 40; Marovo lagoon: Pitt-Rivers Museum, Oxford, object 1895.22.103). The latter were intricately decorated, as is evident from a specimen collected by Gerald C. Wheeler on Simbo Island where he accompanied A. M. Hocart and W. H. R. Rivers in 1908 for a period of time on their anthropological expedition to the Solomons. This coconut container (*ñeiva*) for teeth blackener (*davala*) has fretwork as well as white ornamental markings in naturalistic designs (*pigapiñse*), probably in lime paint, and is now in the collection of the British Museum (Object Oc1927,0310.24; see also Lanyon-Orgill 1969:105, 112; Thomas 2014).

What was the substance stored in the teeth-blackener receptacles? Elsewhere across Southeast Asia, as far as Madagascar, teeth-blackening practices drew nearly exclusively on a broad palette of locally sourced botanicals.[5] Yet the samples of teeth blackener that Rivers collected during his expedition were specific earths. When Rivers had them analyzed upon his return, his geologist colleague in Cambridge, Alfred Harker, found, in addition to some amounts of iron, basaltic ash in one case and pyroxene-andesite in another. The latter was a characteristic geological feature of Simbo with its active volcano (Guppy 1887:44). Harker (1909) was perplexed by the soil's usage, noting that he could not "explain how it comes to be of use for the purpose of blackening the teeth." Apparently unknown to Harker, a plant ingredient was integral to completing the dyeing process.

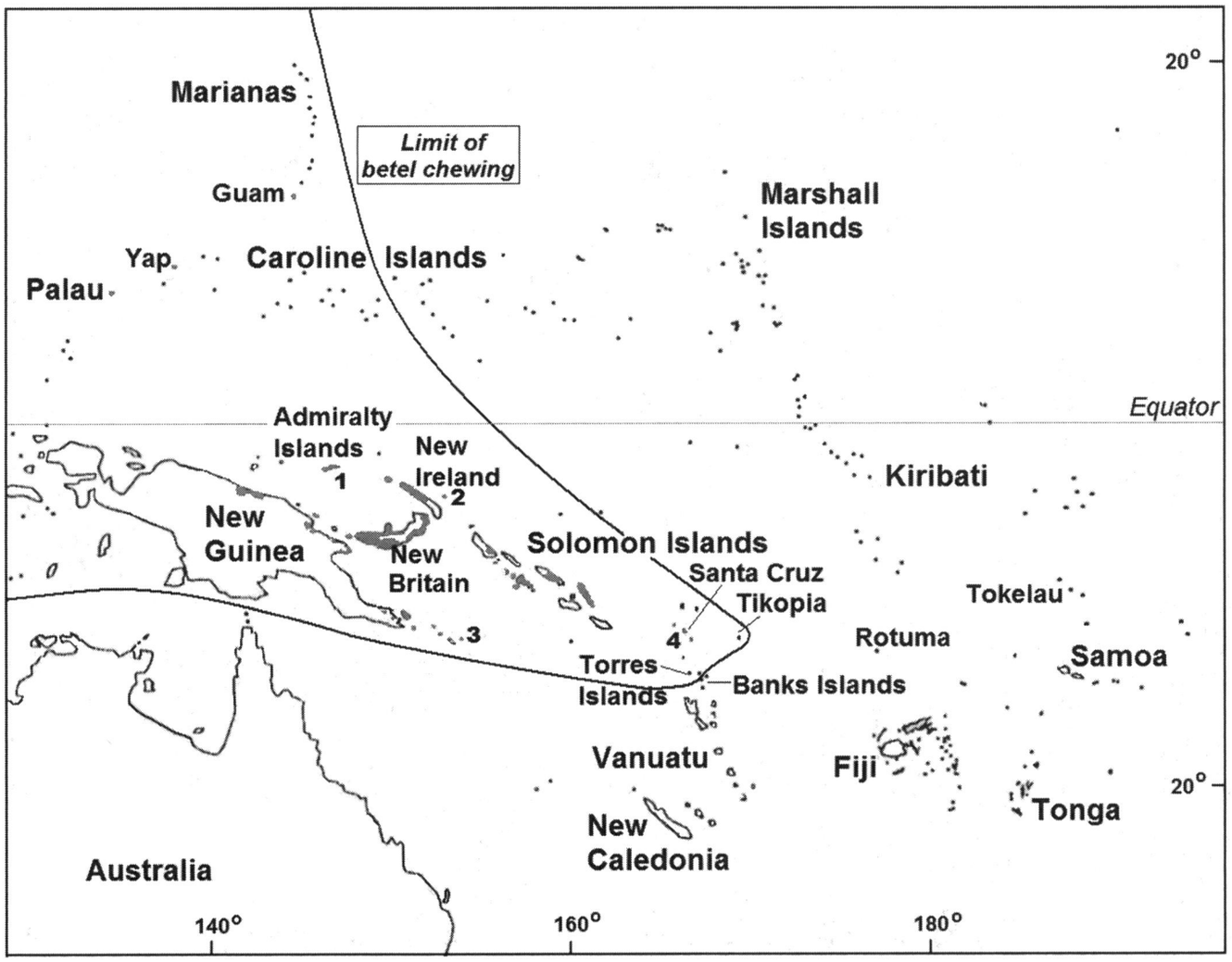

Figure 1: Map of Oceania showing the documented geographical distribution of teeth blackening, shaded in grey, and the limit of the region in which betel was chewed. Numbers indicate locations where betel chewing played a significant role in the intentional modification of teeth: (1) Manus Island, (2) Tanga Island, (3) Rossel Island and (4) Santa Cruz Islands.

On nearby New Georgia, for example, the leaves of the so-called tropical almond (*Terminalia catappa* L., Combretaceae) were part of teeth blackener (Waterhouse 1949:147). Together with the iron from the mineral source, its plant tannins would form ferric (Fe^{3+}) tannates or other organometallic complexes that acted as a black dye.

For the Lau of South Malaita, preparing *ogo* (teeth blackener) was an involved process that facilitated the interaction between phytochemicals and minerals, resulting in an effective dye. First, *fou oko* (the rock for teeth blackening), which contained some iron, was pounded in a clamshell. The leaves of *areko* (*Garuga floribunda* Decne., Burseraceae) or those of *akwasi* (*Rhus taitensis* Guil., Anacardiaceae) were heated, macerated and then combined with the mineral. Water was added, and then the mixture was wrapped in red dracaena leaves (*Dracaena* sp., Asparagaceae) and smoked for a while. Only then was the pigment ready to be applied and sucked on (Fox 1974:13, 21, 67; Ivens 1930:121). The teeth-blackening regime on Malaita also demonstrates how teeth blackening intersected with betel chewing. Sucking on the teeth-blackening mixture was regularly alternated with betel chewing when the procedure was first undertaken by adolescents until the desired colour was achieved. To'aba'ita speakers in far northern Malaita actually added *oko* (powdered mineral teeth blackener) to their betel quids to improve the taste and, presumably, the colouring, as well (Lichtenberk 2008:213).

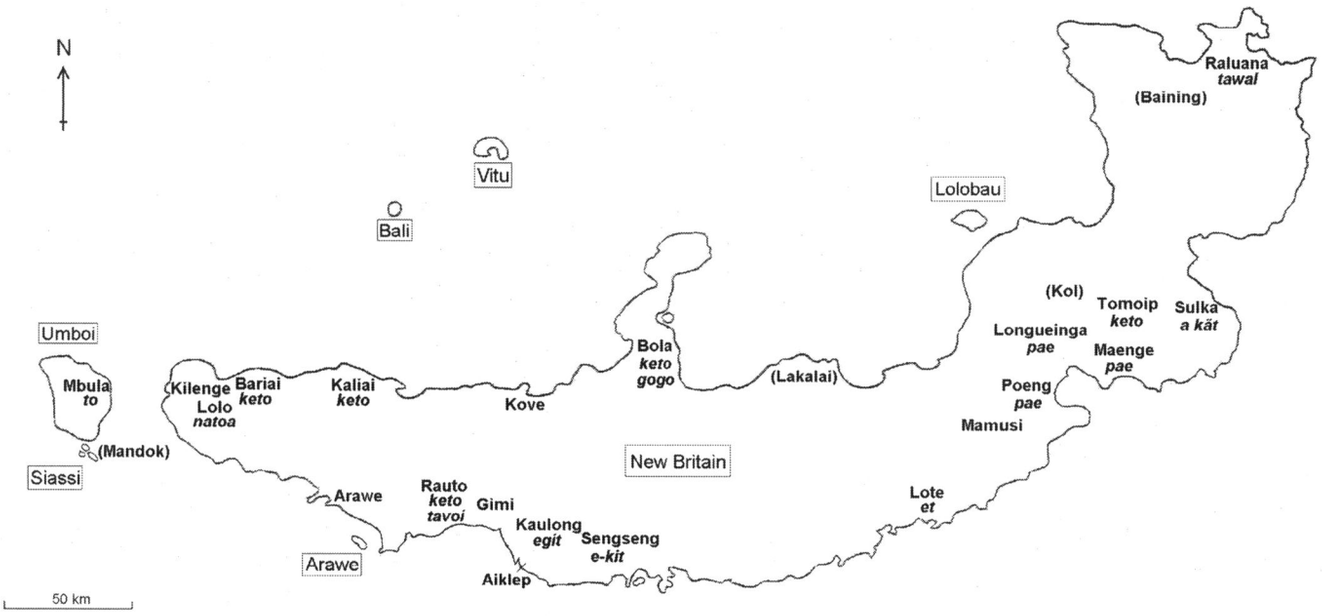

Figure 2: Map of New Britain and surrounding smaller islands (boxed labels) showing ethnolinguistic groups in bold that used to engage in teeth blackening. Forms referencing "teeth blackener/teeth blackening" are given in italics. Groups for which the record indicates that they did not engage in teeth blackening are shown in brackets.

New Britain

The relative informality with which teeth blackener was applied on the Solomon Islands contrasts with far more formalized performances enacted among many ethnolinguistic groups of New Britain (Figure 2). For an adolescent Sulka male of East New Britain, teeth blackening was an essential element of the ritual passage into adulthood. A designated initiator prepared the teeth blackener by mixing *a kät* (a mineral) with the sap scraped off the inner bark of the (unidentified) *girpil* tree. As the initiands were lying by the fire in the men's house, the blackening paste was applied directly to their teeth. With parts of their face protected, the adolescents had to lie as close to the heat as possible to ensure the adherence of the black paste, which was renewed numerous times. This procedure was supported by various magic procedures to ensure the success of the operation, such as magic threads tied to the initiands as well as spells and songs performed by the initiator and the community (Parkinson 1907:183–184; Rascher 1904:213).

Among the Kaulong and Sengseng on the southern coast of West New Britain, a mineral (*egit*) was chewed with slaked lime and then spread over a six-inch strip of an (unidentified) bark. Not unlike today's teeth-whitening strips, the bark was placed in the youth's mouth so that the egit would stay in contact with the buccal surfaces of his teeth. For a whole week the boy had to "sleep with egit," that is, lie on his back in his hamlet's main structure with no food and little but water to drink (Figure 3). After the adherence of the blackener had been tested by scraping the teeth with a curved boar's tusk, the boy would go on to the next phase, during which he spent a liminal period of a month or longer in the forest subjected to further food, behavioural and, especially, sexual restrictions. This ensured that the mineral became firmly affixed to the tooth enamel so as to last a lifetime. Finally, the young man received a new name with *-egit* as a suffix, which indicated his ability to fully participate in the life of his hamlet (Ann Chowning, telephone comm., October 24, 2009; Goodale 1995:121–123).

Previous ethnographers have indicated that a form of manganese was responsible for the black colour (see Goodale 1995:121). Among manganese compounds, specifically its oxides and hydroxides have been used as black pigments, especially its most stable oxide (MnO_2), which is primarily encountered as the mineral pyrolusite. Pyrolusite is a soft black and earthy mineral that will stain fingers if touched and has a long history of human use as a pigment.[6] Little information can be found about the occurrence of manganese in New Britain, but pyrolusite had been noted during early geological surveys of the Admiralty group (Thilenius 1900).

Further west along the New Britain coast, the Rauto teeth-blackening ritual was associated with a range of cultural concepts. White was the colour of anger and unfettered (sexual) aggression, and white teeth belonged

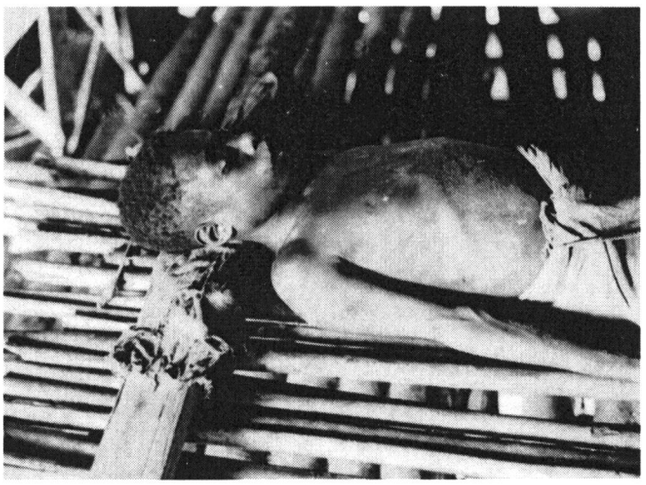

Figure 3A: A Sengseng boy lying in the men's house of his hamlet while *e-kit* (teeth blackener) is hardening on his teeth.

to the realm of inhuman, uncultured spirits (Maschio 1989:153, 1994:121). Hence, to rid oneself of white teeth meant not only to undergo a physical alteration but also to accept the social norms of Rauto society, especially those pertaining to male sexuality.[7] During the initial application of the blackener, *aurang* (ritual songs) were performed:

> The bark of the *eket* tree holds (the soil fast) ...
>
> The sap of the tree holds fast. The soil [*keto*] holds fast.
>
> The mixture bubbles; the boy's teeth glisten.
>
> [Maschio 1989]

The magic formulas of the songs and the magic power of *keto* (the teeth-blackening material) mediated the physical development, health and attractiveness of the initiates. In Rauto thought, physical growth was rooted in socially esteemed practices, but the reverse also could occur. Therefore, moral transgressions had the potential to turn teeth white again. Being able to display blackened teeth visibly asserted an individual's moral development through his physical development (Maschio 1989; 1994). Teeth blackening also played a transformative role for the Bariai and Lolo in northwestern New Britain. Here the practice was integrated into the much broader context of their primogeniture rituals, which lasted up to 20 years and served to prepare firstborns for their participation in society (Naomi McPherson, pers. comm., October 26, 2009; Scaletta 1985; Stewart 1989:80).

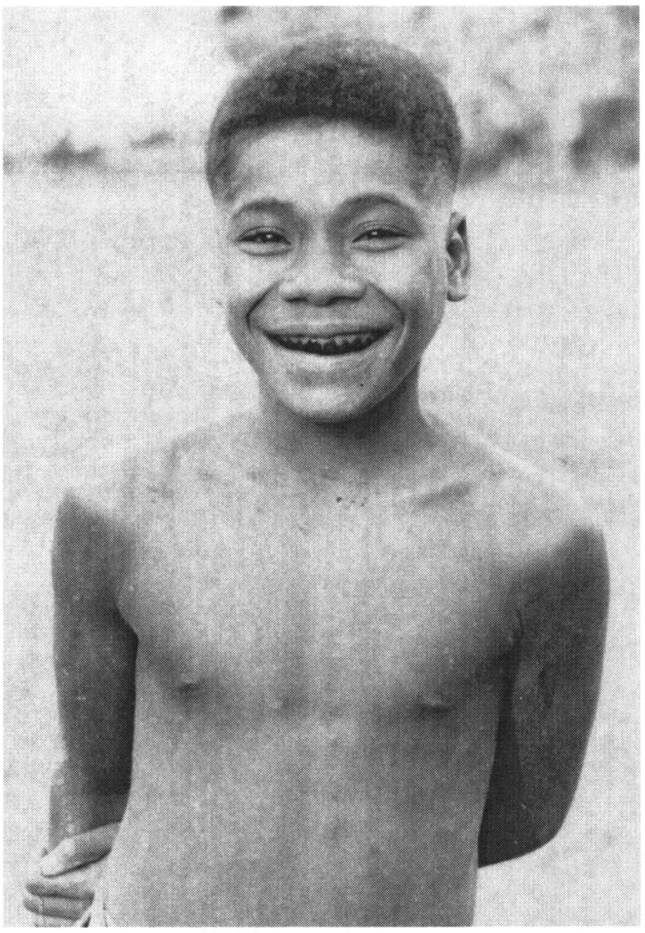

Figure 3B: A different Sengseng boy displays his recently blackened teeth. Usually, showing one's teeth was a display of aggression, and, especially in the company of one's in-laws, care was taken to cover the mouth when laughing (Goodale and Chowning 1996:164). The reluctance to display teeth, on New Britain as elsewhere, accounts for the lack of a visual record of teeth blackening in Oceania. These images were captured by Ann Chowning during her fieldwork in South New Britain in the early 1960s. © Ann Chowning.

While this discourse has stressed points of contact between different teeth-blackening practices, it is important to note that such associations were often unique. This is exemplified by the Maenge (South New Britain), who considered *pae* (the manganese earth) for teeth blackening, to have the same smell and taste as menstrual blood, while *pakalang* (the process of blackening) symbolically represented the sex act (M. Panoff 1968: 294). Blackener was applied to the teeth of young men as an "antitoxin" that would immunize them against the deleterious emanations of females that they would eventually experience as a consequence of sexual intercourse (Laade 1999:97; F. Panoff 1970:251).

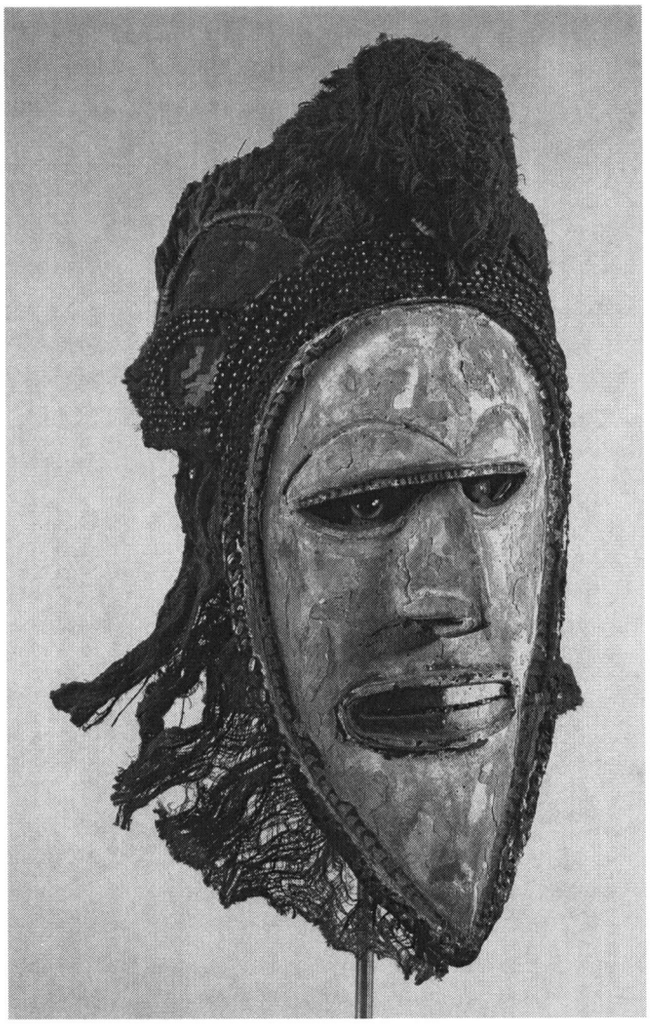

Figure 4: Helmet mask with patterned blackened teeth, ascribed to the inland Madak region of New Ireland, where it was likely used in the *kipang* artistic tradition. It was collected between 1860 and 1879 by representatives of the German trading firm Godeffroy. © Staatliche Kunstsammlungen Dresden (SKD), Museum für Völkerkunde Dresden (MVD), Kat-Nr. 7172.

New Ireland

In northern and central New Ireland, as well as neighbouring New Hanover Island, teeth blackening used to manifest in a unique fashion: men as well as women selectively stained certain quadrants of their teeth to create a pattern of black against white, either top versus bottom, left versus right or diagonal.[8] This was accomplished by colouring teeth selectively or scrubbing some of their teeth with pumice or sand to create the desired appearance. The range of blackening agents is poorly documented, though betel chewing definitely played a role. *Laban* (an earth containing manganese oxide) was employed to accentuate the mouth (and eyes), and it likely had a role in teeth blackening as well (Brown 1881:220; Duffield 1886:117; Finsch 1893:128, 136; Ray 1892:4).

The practice of teeth blackening is widely reflected in the diverse artistic traditions of New Ireland. While uniformly blackened teeth are ubiquitous on the masks that have been collected from the northern to central regions of the island, patterned blackening can also be detected in some of the objects (Figure 4; also, British Museum objects Oc1926,-.87, Oc1884,0728.24). In *malagan*, the funerary ritual that culminates in the production, revelation and eventual "death" of the effigies, blackened teeth on sculptures and masks can be thought of as referencing the funerary work that has been carried out. If blackened teeth serve here as an index of mourning, similar to the blackening of the hair of mourners (Küchler 2002; pers. comm., April 23, 2010), the possible significance of patterned teeth remains unresolved.

In an example from a different context, some of the female figures in decorations belonging to a women's taboo house from the Nalik-speaking region in East New Ireland have partially blackened teeth (Gunn and Peltier 2006:65–67). These unique panels depict, in an instructional fashion, various stages of the sexual development and pregnancy of women. This raises the possibility that teeth blackening in women related to certain stages of female reproductive life.

Trobriands (Massim)

In the Massim cultural region surrounding Milne Bay, teeth blackening was documented on the great majority of the islands as well as in some locations along the coastline. From island group to island group, the practices showed considerable variations; I focus here on the Trobriands.

The Australian assistant resident magistrate Raynor L. Bellamy, who provided the first ethnographic sketch of the local customs on the Trobriands, noted teeth blackening as an important rite of passage for girls at puberty (Seligman 1910:706). Malinowski's assessment some 20 years later was somewhat more ambivalent: on the one hand, to be "really attractive" teeth had to be blackened, but this was already no longer done by the majority of the Trobrianders (1929, vol. 2:299). Beyond the veil of these short ethnographic descriptions, the symbolism of teeth and their transformation through betel chewing and blackening played a significant role in many aspects of life on the Trobriands.

Trobrianders differentiated linguistically between *kudu* (teeth) that were merely stained red or dark from habitual betel chewing (*kudubua*, "betel-toothed") and

those that were intentionally blackened (*kudubwau*, "as black as heavy rain clouds").[9] Especially revealing was the term for the process of blackening, *gigilimutu* (*gigiremutu*), literally meaning "to laugh (*gigila*) with teeth like obsidian shards (*memutu/memetu*)" (Baldwin 1939; Senft 1986). It evoked not only the black colour and shiny, almost metallic reflectivity of the teeth but also their sharpness and ability to hold.

The triad of white, red and black is the most prominently displayed chromatic expression on the Trobriands, for example, on the splashboards and prowboards of their canoes (e.g., Campbell 2002; Tambiah 1968). These colours are broadly associated with life-cycle transitions in an organic progression from white through red to black with an eventual return to the whiteness of birth as the cycle repeats itself in the process of reincarnation. White represents newness and sexual purity with an accompanying sense of safety owing to a lack of "history," contamination and sexual ambition. With development and puberty comes redness, which is most obviously and persistently associated with the allure, desire and excitement of sexuality. Finally, with age the body becomes "blacker," reflecting increasing experience but also signs of decay (Campbell 2002:118–125). This chromatic development is paralleled in the transitions that white teeth undergo as they are coloured red and black through betel chewing and teeth blackening after puberty.

However, other parameters besides chromatic content define the message a colour conveys for Trobrianders. Black in particular can have ambiguous meanings, and its positive associations become more dominant if it is not dull but of the desired saturation to appear *kakata* (sharp) and *sigala* (glossy; Campbell 2002:114). Precisely these characteristics are emulated by the form *gigilimutu* (teeth like obsidian shards). The significance of a colour further depends on its chromatic environment, and black in a configuration with red becomes unambiguously attractive (Campbell 2002:114; Tambiah 1968:203–205). Therefore, a widow in ritual mourning with dirtied clothes and a body monochromatically blackened with wood ashes represented ugliness. Yet blackened teeth seen in a mouth reddened from betel chewing and between lips painted with red *talo*[10] conveyed a sense of beauty and, in fact, distinct sexual attractiveness to Trobrianders. This is illustrated in a myth where the hero's magical transformation into a youthful man with "beautiful black teeth shining between vermilion lips" helped him to gain the favour of women (Malinowski 1929, vol. 2:290). In fact, chewing the spicy *ulia* vine to display freshly blackened (*kudubwau*) teeth was for Trobrianders a prelude to clandestine sexual conquests, or *kudubwan* (Baldwin 1939:178).[11] This connection between blackened teeth and sexual activity or, more broadly, between mouth and womb is further illustrated by the fact that around the time when girls had their teeth blackened, their pubic hair was removed and replaced with black tattoos (Malinowski 1929, vol. 1:252).

However, to reduce the associations of teeth to the sexual realm would be understating their polysemic quality. The white teeth of those who did not yet chew betel were an obvious sign of youth and inexperience but, for women, could also have an explicitly negative attribution: *mulukwausi* (flying witches), the most malignant agents of witchcraft in the Massim region, were recognizable by their long, white, sharp teeth (Scoditti 1990:19, 127; Tambiah 1983:178–180). These witches posed particular danger in every stage of *kula* (ceremonial exchange) related activities, from canoe building to the travel at sea and the actual exchange process. Indeed, the kula exchange system abounded with mouth/teeth and chromatic metaphors, from the *kudula*, the little teeth on the shell valuables, to the colouring of shell necklaces (e.g., Campbell 1983). *Kudu* (tooth) was the name of the clinching gift that completed the cycle of transactions (Malinowski 1922:356). Among participants, white teeth might have hinted at witches, who interfered with male ambitions to achieve economic and political success (Campbell 2002:178–179), whereas blackened teeth, tough as obsidian shards, symbolized the experience, maturity and power required to successfully participate in kula transactions.

Manus, Tanga and Rossel Islands

While this study has stressed the existence of distinct teeth-blackening traditions relying on colouring agents other than areca nut with lime, there are isolated examples where betel chewing and teeth blackening truly coalesced. On Manus, the largest of the Admiralty Islands, there was an ample supply of manganese earth (laban), which found use as a body paint but apparently not as teeth blackener (Moseley 1877:395, 402). Instead, frequent betel chewing was harnessed to form an exaggerated dental decoration. The frontal teeth of the upper jaw were intentionally neither cleaned nor used for chewing so that, aided by the lime from the betel mixture, a thick, dark accretion of dental calculus formed that could be filed and shaped. Eventually, the black-stained deposits would protrude, even with a closed mouth, to cover part of the lower lips. This prominent display of what Western observers initially thought to be dark teeth (hence named *macrodontism*) was a sign of prestige reserved for the leadership (Miklouho-Maclay 1876, 1886; Thilenius 1903:122–123, 165, 195).

On the Tanga Islands northeast of New Ireland, too, it was desirable that areca nuts would "fasten" themselves to the teeth to create an unbroken thick black surface as an important attribute of male sexual attractiveness. Accomplishing this perfected appearance required the use of spells:

> O, betel-nut, sew them up tightly, sew up these interstices at the back of my teeth.
>
> Yea, and those at the front of my teeth.
>
> The women talk of me among themselves and all desire me as a lover,
>
> so black and so shining are my teeth.
>
> [Bell 1937–38:414]

Knowledge of such spells that could summon ancestors famed for their own black teeth was the privilege of social leaders. Consequently, the display of sparkling black teeth was a prerequisite for social prominence. The term *kulkul* (blackening [teeth]) metaphorically came to mean "placing someone in a leading position" (Bell 1977:47).

A final example comes from Rossel Island, on the far eastern border of the Massim region.[12] Here, too, the accumulation of blackish incrustations of *nyorro* (betel chewing residue) on the *nyo* (upper incisors) gave the appearance of a "continuous tooth" extending across the front when the prognathous mouth was exposed (Armstrong 1928:12, 219, 224; Bridge 1886:562; Haddon 1894:228). Again, developing such an exaggerated mouth was a privilege of the *limi* (chiefs) and their wives, and commoners had to be prevented from doing so. Nyorro became the most readily visual identifier of the chiefs, besides wearing nose sticks of greater length.

The mouth as a locus of power among the chiefly class on Rossel is pointed to by a series of associations that stretch from traditional feasting to exclusive access to resources. Anthropophagy associated with the chiefly class was thought to have been instituted long ago by *wonajö*, the supreme deity of the Rossel islanders (Armstrong 1928:112–114). Wonajö was also personally responsible for the creation of the higher values of graded *ndap* shell money, the ownership of which was a key prerogative of chiefship (60). In a culture otherwise largely devoid of painted decorations, the unique embellishments on canoes used to move this money consisted of "a series of oval marks, red in the centre, black at the edge. These designs represented ndap money or the mussel shell from which it used to be made" (29) but can also be seen as mirroring a betel-reddened mouth framed in prominent black teeth. This illustrates a symbolic connection between accentuated orality, ability to acquire resources and political power, all ultimately sanctioned by the supreme being wonajö.

These examples illustrate that, in several disparate locations across Melanesia, areca nut and lime featured in the ornamentation of teeth. Over time, this medium physically transformed the teeth and mouth in colour, size and uniformity, to metaphorically affirm different ideologies of power.

Micronesia

In Micronesia teeth blackening was restricted to the westernmost part of the region. The practice was noted by the first Spanish navigators reaching Guam in 1521 (Pigafetta 1969:61), and archaeological evidence dating to about the time of the Spanish conquest confirms that teeth blackening prevailed among Chamorro women (Leigh 1929:266–267). In the later part of the 17th century Jesuit missionaries provided a few details about Chamorro body ornamentation. They stressed that Chamorro women expended considerable time and effort on colouring their frontal teeth one by one with a plant-based preparation, because black teeth were considered an important attribute of female beauty. Careful reading suggests that the initial blackening might have occurred in a ritualized fashion, followed by an elaborate feast, and that blackened teeth served as a status symbol (Coomans 1997:9; Garcia 1683:197; Le Gobien 1700:48). Owing to the early conquest of the Marianas and the extended period of western domination, the practice disappeared before more details were recorded.

On the Palau Islands of the Western Carolines, teeth blackening (*meluíngel*, "to blacken teeth [*uíngel*]") shared many characteristics with the way it was practised in Melanesia. As a rite of passage for young men and women, it lasted five challenging days. A preparation of *deldalech* (asphaltic [bituminous] earth) combined with various plant extracts was applied to the teeth with strips of banana leaves (Keate 1789:314–315; Krämer 1926:32–33; Parmentier and Kopnina-Geyer 1996:80). On Yap Island, soil from *rungedu* (peat swamps) combined with the extract of leaves of high tannin content (e.g., *aberur* [*Sonneratia acida* L.f., Lythraceae] or *käll* [*Terminalia catappa*]) made up teeth blackener. Here the application was apparently restricted to girls and signified sexual maturity (Senfft 1903:53).

Trading Teeth Blackener

In Southeast Asia traditional teeth-blackening technologies relied almost exclusively on plant resources, which reflected the local ecology (Zumbroich 2009).

Teeth blackener rarely became the object of trade, since the required plants either would grow in backyard gardens, like the coconut palms whose husks were burned to collect the black residue, or could be collected in the wild in the vicinity of habitations. In Oceania the natural resources employed in the teeth-blackening process typically included both plant material and certain earths. Frequently, the latter were dug up from very specific locations and subsequently became the subject of exchange trade.

Along a considerable stretch of the northeastern New Guinean coastline from Karkar Island past Astrolabe Bay into the Rai coast, the black earth for teeth blackening (Gedaged tao) was sourced from a single spot on the beach near the village Sel south of Cape Wab to supply people of the coast and hinterland (Kunze 1897:8; Mager 1952:312). Tao originated from a location that carried significant cosmological associations. This locale not only provided the equally widely traded black mourning paint (Gedaged *mum*), needed to conceal the identity of the survivors from the departed soul, but was, in fact, close to the cave that housed *degazup panu*, the "village of departed souls" to which the deceased ultimately returned (Mager 1952:275). Perhaps blackened teeth, like a pierced septum, were thought of as a prerequisite for admission for a departed soul (Mager 1952:61).

Further along the coastline to the Huon Peninsula, black earth (Yabem *da*) was traded either from an inland location (Longaweng near Finschhafen) or from Umboi and Siassi Islands. These locales also supplied Tami Island, where the teeth-blackening technology of combining manganese earth with the sap of the root of *Terminalia catappa* was extended to the widely traded Tami bowls. Here it gave them their black base colour before further decorations with white or red were applied (Finsch 1893:59; Neuhauss 1911, vol. 1:325–326; Zahn and Streicher 1982:74). Besides *da* (this black earth), the Vitiaz Strait exchange network also provided a vibrant conduit for other earths for the decoration of body and artworks between New Guinea and New Britain (Freedman 1967:146, 158; Harding 1967:55). In southeastern New Britain, three inland sites provided manganese earth of different qualities and trade value. On competing trade routes this manganese earth, formed into loaves, supplied the Maenge, Poeng, Longueinga, Tomoip and Sulka as far as Wide Bay (Goodale 1995:121; M. Panoff 1969:13).

Active barter trading of teeth blackener can also be traced along the kula ring in the Massim region (except for in its northeastern extent). The inhabitants of the Amphlett Islands traded pots for their supply of teeth blackener from Dobu Islands (Fortune 1963:208). *Tari*, a tannin-rich deposit from a peat swamp of Basilaki Island in the Louisiades, was the sole agent of choice on Tubetube (Martha Macintyre, pers. comm., April 16, 2010; Seligman 1910:492). Likely the same product made its way as *taila* (Kilivila) to the Trobriands by way of Normanby Island. Rather than relying on the wide range of local mangrove trees, the Trobriand islanders also obtained *toivila*, the root of a specific, though unidentified, mangrove from the D'Entrecasteaux Islands (Austen 1945–46:20; Baldwin 1939:322; Malinowski 1922: 251). Because of their limited supply, these agents were considered items of secondary wealth besides shells; in fact, the Kilivila lexicon contained a separate form, *to-taila'* (=*toli-taila*; *toil*, "owner"), for a person in possession of teeth blackener (Baldwin 1939:354). Here, as elsewhere, the need to trade teeth blackener and its actual trade value contributed to the prestige that teeth blackening would carry.

The Austronesian Connection

Early Spanish Jesuit missionaries to Guam (Mariana Islands), who had previously been to the Philippines, were struck by some of the similarities between the Indigenous cultures. They singled out teeth blackening, together with the language and social organization, as indications that the Chamorros of Guam might have originated in the Philippines (Garcia 1683:196). As we know now, the Indigenous people of the Marianas, as well as many ethnolinguistic groups on the Philippines, belong to the same branch of the Austronesian language family. Across Southeast Asia as far west as Madagascar, an association between Austronesian speakers and teeth blackening is notable (Zumbroich 2009, 2012), raising the question of how the practice correlates with linguistic affiliations in the Oceanic region.

Teeth blackening was only rarely encountered among non-Austronesian speakers in Oceania. If so, it occurred in proximity to Austronesian speakers, with evidence of linguistic borrowing of the terminology for teeth blackening from Austronesian to Papuan languages. This is exemplified in East New Britain, where apparently none of the Papuan speakers on the Gazelle Peninsula ever engaged in the practice (e.g., the Baining; Jane Fajans, pers. comm., March 11, 2010). The Sulka, living along Wide Bay in East New Britain, stand linguistically in an intermediary position as they show contact-induced Oceanic features introduced to a language of Papuan roots (Reesink 2005:190). Extensive contacts during the Sulka's historical movements might explain how their elaborate teeth-blackening ritual came to be

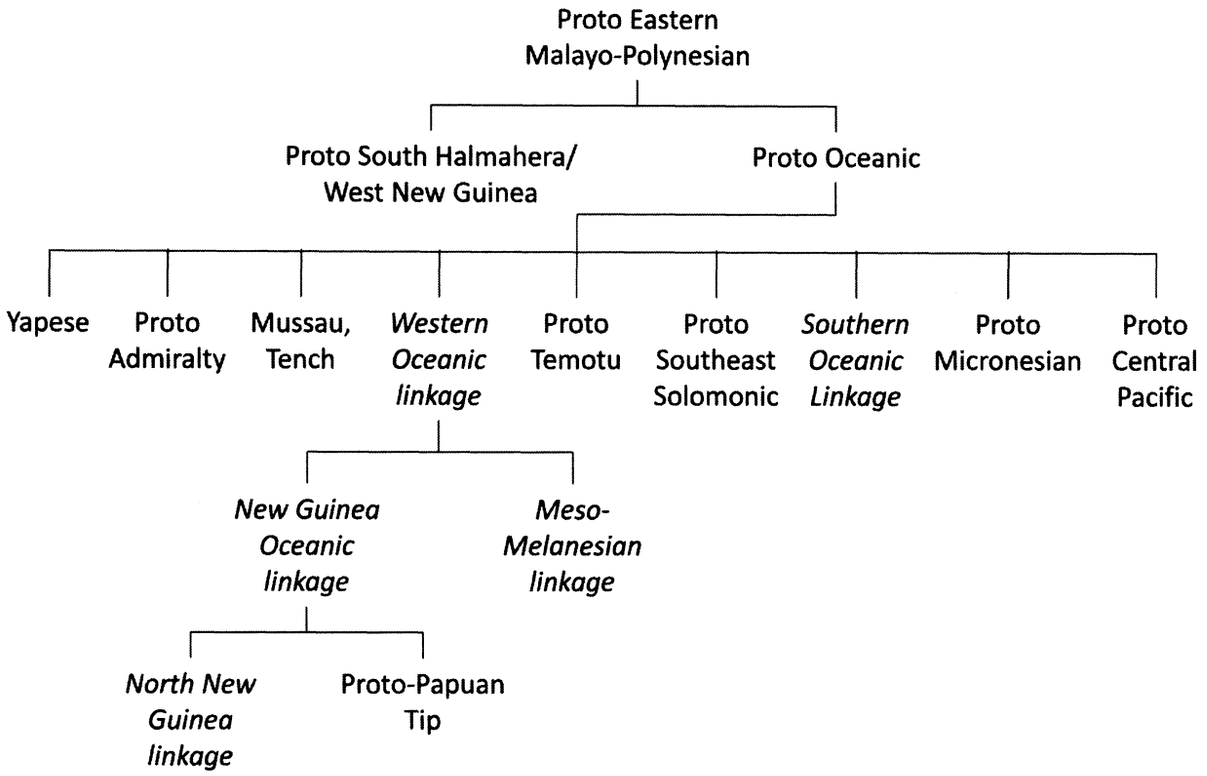

Figure 5: The diversification of Proto Eastern Malayo-Polynesian languages. Italics indicate a language group with no identifiable exclusively common ancestors (see Ross et al. 2011:6–14).

borrowed from a neighbouring Austronesian-speaking group.[13]

While in Southeast Asia the lack of linguistic evidence in the domain of teeth blackening allows limited historical inferences, sufficient data from Oceanic languages exist to permit some lexical reconstructions based on the comparative method (see Figure 5 for current assumptions about linguistic subgroupings).[14] For Malaita and some nearby islands, the terminology for the teeth-blackening material and process allows a reconstruction **ogo* "teeth blackener" to Proto Southeast Solomonic (SES).

Another potential reconstruction almost exclusively supported by languages from New Britain would be **keto*, with witnesses in the North New Guinea (NNG) linkage and Meso Melanesian (MM) linkage.

However, given the relative geographical proximity of the languages reflecting **keto*, as well as the vibrant exchange trade of teeth-blackening material on the island, diffusion (especially across the border of the NNG and MM clusters) rather than shared ancestry is more plausible.

The broadest and best-supported reconstruction is Proto Oceanic **tapal* (teeth blackener) with support from the Western Oceanic group (including Papuan Tip [PT]) as well as the Eastern Oceanic group, namely, SES[15].

In all of the reflexes of **tapal*, the glosses reference a mineral substance,[17] and this suggests that Proto Oceanic speakers in their putative homeland, the Bismarck archipelago, not only blackened their teeth but did so using a mineral component. The time of the breakup of

SES	Lau	*ogo*	"teeth-blackening process" (Ivens 1930:121)
SES	Sa'a	*oko*	"black (earth) pigment used for the teeth" (Ivens 1918:73)
SES	Are'are	*oko*	"tooth pigment; to blacken teeth" (Geerts 1970:78)
SES	Kwaio	*ogo*	"teeth blackening paste; to blacken teeth" (Keesing 1975:173)
SES	To'aba'ita	*oko*	"mineral for teeth blackening; person who had teeth blackened" (Lichtenberk 2008:213)
SES	Nggela	*onggo*	"paint from black earth; to blacken teeth" (Fox 1955:149)

NNG	Bariai	*keto*	"to blacken teeth" (Naomi McPherson, pers. comm., October 7, 2009)
NNG	Kaliai-Kove	*keto*	"teeth blackening material" (David Counts, pers. comm., October 6, 2009)
NNG	Rauto	*keto*	"teeth blackening material" (Maschio 1994:79)
NNG	Kaulong	*egit*	"manganese earth" (Goodale 1995:121)
NNG	Sengseng	*e-kit*	"manganese earth" (Chowning 1991:48)
NNG	Lote	*et*	"manganese earth" (Laade 1999:109)
NNG	Mbula	*to*	"black clay mixed w/ *tilizi* [*Terminalia catappa*]; sap for teeth blackening" (Bugenhagen and Bugenhagen 2007:527)
MM	Tomoip	*keto*	"manganese earth" (M. Panoff 1969:36)
MM	Bola	*keto*	"teeth blackener (of vegetal origin)" (Schumm and Kroll 1939:392)

Proto Oceanic around 3200 B.P. (Ross et al. 2011:12) sets a minimum time depth for the practice. Addressing teeth blackening in the language(s) ancestral to Proto Oceanic is hampered by the dearth of linguistic evidence on the practice, for example, among speakers of South Halmahera/West New Guinea languages (compare Table 1). Teeth blackening is attested in South Halmahera (e.g., for Sawai, Teljeur 1994:174), but few details on the methods used or the terminology have been transmitted, since the practice was widely suppressed with the introduction of Islam to the region. Ethnographic data are consistent with the hypothesis that teeth blackening was *not* an innovation of Proto Oceanic speakers but rather a practice shared among the speakers of Eastern Malayo-Polynesian languages.

The previous discussion has already illustrated how intimate the relationship between teeth blackening and betel chewing was across many cultures of Oceania. Teeth blackening intentionally enhanced the visual traces betel chewing would leave incidentally and, as such, amplified the diverse associations of maturity, sexual appeal and so on that betel chewing could carry. To elaborate on this connection between teeth blackening and betel chewing, it is instructive to compare the extent of their Oceanic distributions (see Figure 1). In Micronesia betel was traditionally chewed from the Marianas to Palau and into the Western Caroline Islands (Penzer 1927:307–308).[18] In Melanesia the Torres Islands, at the northern end of the Vanuatu group, represented the most southerly location where betel was chewed, whereas Tikopia was the most easterly island of betel chewers (Lichtenberk 1998:340–341; Penzer 1927:306–317). Within this area, betel chewing was nearly universal,[19] and biogeographical, linguistic and archaeological evidence solidly points toward a historical relationship to explain the distribution (Lichtenberk 1998; Zumbroich 2008).

Both betel chewing and teeth blackening appear to have been part of the cultural repertoire of Austronesian ("Pre-Oceanic")–speaking migrants as they moved eastward along the north coast of New Guinea into the Bismarck archipelago in the middle of the second millennium B.C.E. From here both practices spread further, with colonist communities as far as northern Vanuatu. Beyond this point, throughout much of Polynesia, the consumption of a different stimulant, namely, the root extract of kava (*Piper methysticum* G. Forst., Piperaceae), took the place of betel chewing.[20] If teeth blackening was abandoned as a common practice in the

NNG	Yabem	*da*	"black earth for teeth blackening" (Schellong 1891:165)
NNG	Takia	*tau*	"black earth for teeth blackening" (Kunze 1897:8)
NNG	Gedaged	*tao*	"black earth used to stain teeth black" (Mager 1952:312)[16]
MM	Tolai	*tawal*	"teeth blackening paste" (Parkinson 1907:140)
MM	Simbo	*davala*	"kind of earth to blacken teeth" (Lanyon-Orgill 1969:72)
MM	Roviana	*davala*	"blacken the teeth with a mixture of *Terminalia* leaf, oil, etc." (Waterhouse 1949:147)
PT	Dobu	*taana*	"earth to blacken teeth" (Lithgow 1977:77)
PT	Molima	*tavana*	"mineral substance for teeth blackening" (Chowning 1991:49)
SES	Sa'a	*taha*	"pigment for teeth blackening from stream rock" (Ivens 1926:347)

same region where kava supplanted betel chewing, then it was not for lack of suitable dyestuff but more likely because it had lost its cultural significance without the contextual support of betel chewing.

A Rapidly Vanishing Practice

Despite being widely distributed across Oceania and deeply integrated into Indigenous culture, the practice of teeth blackening disappeared so rapidly that it often barely left a trace in contemporary memory. Western contact and, more specifically, missionary influence can be cited as the primary cause for this development.

The play *Darkness and Dawn* by Reverend Ivens, quoted at the outset of this study, is replete with a dialectic of "black" versus "white," reflecting how the Christianization of Indigenous people was perceived as their literal and metaphorical transformation toward the "light." But with the Indigenous skin remaining unchangeably dark, it was only their teeth that could be brightened, as one of the Indigenous people arriving at the mission school recognizes: "Why my teeth will get as white as these white men's teeth" (Ivens 1914:16). In the eyes of Western missionaries, blackened teeth affirmed every prejudice against Indigenous people as dark, dirty and unkempt. However, there was a lot more to be found objectionable about teeth blackening: its effort to permanently change the human body as God had created it, the sexual overtones and the associated rituals and *singsings* (dance ceremonies) made it an outward sign of heathenism (Young 2011:116) that deserved to be repressed.

In line with efforts to curb other body ornamentations, such as face painting, teeth blackening was effectively abolished by forbidding the practice at missionary schools and by actively discouraging it elsewhere. These missionary efforts could be locally supported by direct orders from colonial administrators, who exerted pressure at the village level to abandon teeth blackening with all its associated rituals (e.g., the Kaulong; Drüppel 2009:11). Such external pressures were mostly directed at younger people and met with greater resistance from the older generation, who adhered to the practice.[21] Another factor contributing to the demise of the practice was increasing mobility, especially in the context of plantation labour, which became mandatory for young men in certain regions. It exposed those with blackened teeth to the mockery of other workers who no longer engaged in the practise or never had (e.g., the Sengseng; Chowning 1986:157).

Unlike other traditional activities (e.g., singsings) that could be selectively adapted to incorporate Christian messages, resulting in syncretic blends, teeth blackening was abandoned in its entirety. As adolescents failed to undergo the once-obligatory teeth-blackening rituals and the prestige value of blackening diminished, a new aesthetic preference for shiny white teeth was embodied. Some ingredients of teeth blackener were trade items, and a lack of demand would disrupt such trade so that, eventually, essential components of the teeth-blackening mixture would simply no longer be available. Not only did the younger generation fail to blacken their teeth, but those who had already had their teeth stained frequently tried to remove the colouring by scrubbing with steel wool or coral sand (Bell 1937–38:410; Chowning 1986:157).

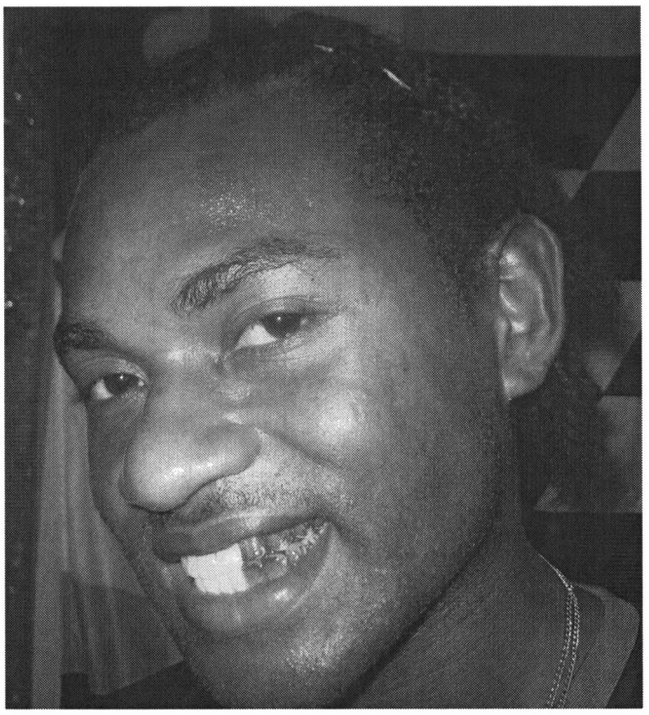

Figure 6: This teenager from Honiara (Guadalcanal) patterned his teeth by accumulating areca nut stains and then partially removing them with the husk of the seed. Since this form of decoration was forbidden in school, he had to keep it hidden as best as he could. Before choosing this pattern of colouration, he had experimented with various other ones. © Terry Brown, 2010.

There are examples of traditional body modifications, most notably tattoos, that have experienced a revival in recent years, both in their original cultural context and worldwide.[22] Is it possible that teeth blackening can experience a similar revival in some form, against an opposition that is no longer framed in religious dogma but also in hygienic, medical or aesthetic

arguments? Currently there are no signs of a revival of teeth blackening in Melanesia (or elsewhere), but there are localized examples of younger people who have again begun to use their teeth as a canvas out of a desire to express their individuality (e.g., in Dobu, Susanne Kühling, pers. comm., April 14, 2010; in Honiara, on Guadalcanal Island, Terry Brown, pers. comm., May 20, 2010; Figure 6).

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Notes

1 A typical betel quid is composed of slices of the seed ("betel nut") of the areca palm (*Areca catechu* L., Arecaceae) and slaked lime ($Ca(OH)_2$) wrapped in a betel leaf (*Piper betle* L., Piperaceae), though lack of a plant ingredient often led to substitutions on Oceanic islands.

2 For example, in a significant encyclopedia of Oceania: "I have never been able to discover whether any betel-chewing people explicitly considered black teeth to be desirable, aesthetically or otherwise" (Oliver 1989, vol. 2:306).

3 Quite possibly the transmitted accounts failed to capture other associations; for example, on Malaita the initial blackening of teeth appears to have been more ritualized (Bailit 1968:350; Ivens 1930:121).

4 There is some evidence that from a Western medical perspective teeth blackening might provide benefits for oral health (summarized in Zumbroich 2011).

5 In some cases a part of the plant was chewed or its sap squeezed out and applied; in other cases a twig or bark was heated and the expelled liquid applied with a finger. Only occasionally and in the more recent past, complex dye mixtures were compounded by adding metal salts to plant materials (Zumbroich 2009:384–389).

6 It is attested in the prehistoric cave paintings at Lascaux, France (15,000 B.C.E.), with further examples through the Greek and Roman period into the Renaissance (Eastaugh et al. 2004:255–258; Spring et al. 2003:100–101).

7 The ritual did not specifically cultivate a male gender identity, since girls, too, could undergo it. Also, note that female initiates were shown how to make their teeth glistening with lime and areca nut during the female puberty ritual (Maschio 1994:119–120).

8 Information about teeth blackening in South New Ireland and the surrounding smaller islands is lacking.

9 *Bwabwau* is one of the few basic colour terms in Kilivila and can signify other colours beyond black, such as blue or brown (Senft 1987:329).

10 Made from crushed areca nut with lime (Malinowski 1922:418).

11 Despite their similarity, *kudubwan* and *kudubwau* do not appear to be etymologically related.

12 A similar practice as described for Rossel likely prevailed on the Santa Cruz Islands (Goodenough 1876:346; Markham 1904, vol. 1:143), where betel chewing might have taken the place of teeth blackening as other agents were not available on the tiny atolls.

13 This argument does not preclude the possibility that teeth blackening also originated independently among people speaking non-Austronesian languages. For example, Rossel islanders at the far east of the Massim region speak Yele, a language isolate. Their way of betel chewing created an exaggerated image of blackened teeth without relying on the typical repertoire of teeth blackeners encountered across the rest of the Massim.

14 In light of the limited linguistic evidence, no data from Micronesia are included in the linguistic analysis.

15 Chowning (1991:49) suggested Proto Melanesian **ntapala* (teeth blackener of vegetal origin), which was amended to **tapal* (teeth blackener) by Ross et al. (1998:101).

16 While these plausible NNG reflexes might need further consideration, there is clear evidence from more than one Papuan language that reflexes of **tapal* were present in the NNG-speaking region (e.g., Bongu *taual*; "black earth used to stain teeth black"; Mager 1952:312).

17 Only Roviana *davala* is a potential exception, since Waterhouse's gloss does not list all ingredients of *davala*. However, elsewhere *Terminalia catappa* leaves were combined with earth for blackener, and around the Marovo lagoon on the eastern coast of New Georgia, *noti*, a clay from a river bank, was favoured to blacken teeth (Somerville 1897:375).

18 The expansion of betel chewing eastward into Pohnpei and as far as the Marshall Islands is a more recent development.

19 With the exception of parts of New Guinea, where the practice was regionally uneven, and some Micronesian and other atolls where the ingredients were difficult to cultivate.

20 The relationship between betel and kava in Melanesia is more complicated; see Lebot 1989; Lebot et al. 1992.

21 Consequently, when a young girl joined the mission, the old women in the village would warn her that no man would marry a girl with unblackened teeth (e.g., Panaeati; Willey 1902:726).

22 For example, on the revival of the Filipino tattoo art, see Lowe 2014.

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