

## 'Fish' and 'Non-Fish' in Lio and Nage: Folk-Intermediates and Folk-Generics in the Fish Classification of Two Eastern Indonesian Peoples

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**Abstract** Based on recent field research on Flores Island, this paper describes the classification of fish found among the Lio people. Formally, Lio fish taxonomy closely resembles that of the Nage of central Flores, discussed in a previous paper (Forth 2012), but differs insofar as several kinds of freshwater fish, all members of the Gobioidae, are subsumed in a named folk-intermediate taxon labeled *mbo*. Most attention is given to Lio names for folk-generics included in this intermediate. These correspond to the same species and genera included in a Nage folk-intermediate which, however, is unnamed. Moreover, Lio names for the component generics are clearly motivated by the same morphological and behavioral features as are reflected in Nage names for the same generics, yet the Lio names themselves are lexically quite different. These simultaneous classificatory similarities and nomenclatural differences are discussed with reference to the parts played by a common cultural heritage and natural discontinuity in the categorization of fish among these two ethno-linguistically related groups.

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### Introduction

In previous publications (Forth 2012, 2016), I described how the Nage people of Flores Island in eastern Indonesia classify fish. Occurring as a named life-form in Nage taxonomy, *ika* ('fish') reflects Proto-Austronesian \**Sikan* (Blust 2002:125). At the same time, Nage *ika* refers mostly to marine fish, creatures that are poorly known to this highland-dwelling people, and only implicitly does it incorporate five categories (or folk-generics, *sensu* Berlin 1992) of freshwater gobies—all members of the suborder Gobioidae—with which Nage are far more familiar. The present article explores a comparable ethno-ichthyological classification more recently investigated in the ethnolinguistically related but distinct Lio region of east central Flores, located some 120 to 150 km to the east of Nage territory.

A particular issue in Lio classification concerns how the Lio names denoting the five kinds of gobies correspond to Nage names for what are evidently the same species. Although Nage and Lio both belong to the Ngadha-Lio grouping of languages, the names

they apply to these fish are lexically quite different yet reveal a high degree of semantic correspondence, with mostly the same empirical features being employed to distinguish and designate the same ichthyological species or genera. Qualifying an overall similarity between Lio and Nage fish classification, an important folk taxonomic difference lies in the fact that only Lio expressly include these five generics as members of a named 'folk-intermediate' (*sensu* Berlin 1992), a variety of folk taxon exemplified by English 'bird-of-prey' and previously characterized as typically being unnamed (Forth 2016:31, 33–34). In this way, the present study draws attention to the folk-intermediate as an underexamined component of folk taxonomies and as a relatively neglected topic in theoretical work on folk biological knowledge. Also, concerning connections between classification and nomenclature, a close examination of similarities and differences between Lio and Nage fish taxa further contributes to an understanding of the folk-generic, especially regarding the relative influence of cultural and inherent perceptual factors (or 'natural discontinuity') in representing and naming generics,

categories that have usually been treated as the basic units of any system of folk taxonomy.

Obtained during three visits to Flores between 2014 and 2016, information of Lio fish classification was recorded in the districts of Mego and Paga, in the easternmost part of the Lio region, and derives mostly from conversations with Lio residents in the conjoined Mego settlements of Nua Lolo and Léke Ba'i and in the south coastal villages of Wara, Ma'u Lo'o, and Wolo Wiro. Principal informants included eight men who regularly engaged in fishing, or did so in their younger years. Ages ranged from 39 to 73; the mean age was 57.6 and the median was 59.5. Research was mostly conducted within the region in which a dialect identified as 'East Lio' is spoken (Suryati et al. 2013). According to the same source, Ma'u Lo'o and Wolo Wiro villagers should be speakers of 'Central Lio,' but this appears to affect neither the names nor the forms of classification of freshwater fish discussed here.

Combined with general, non-directive ethnographic conversations, more directive questioning about freshwater fish was conducted employing a combination of Lio and Bahasa Indonesia (the Indonesian national language) and partly took the form of free-listing, requesting people to list the Lio names of all fish and other aquatic creatures they knew that occurred in local rivers and streams. The same method was applied to sea fish. Once names were identified, I asked informants to describe the form, appearance, and habits of the creatures each designated. Information on both freshwater and marine fish was further obtained from observing specimens caught by fishermen. Photographs were taken of specimens as an aid to questioning and matching these to Linnean taxa. Considerable assistance in identifying species from photographs was kindly provided by Professor Akihisha Iwata, an ichthyologist at Kyoto University and an internationally recognized specialist in the suborder Gobioidae. Very little has been published on Flores freshwater fish. Just over twenty years ago, Kottelat (1994:422) stated that "we know nothing about the freshwater fish fauna" of Nusa Tenggara (the eastern Indonesian region which includes Flores), and there is no indication the situation has significantly changed since then.

### Lio, Nage, and Fish

In addition to speaking related languages, in terms of livelihood, indigenous social organization, and general

culture, Lio do not differ greatly from Nage. Like Nage, Lio are primarily cultivators, raisers of livestock, and sometime hunters. For present purposes, the most important difference is that the eastern Lio I worked with live closer to the sea, specifically the Sawu sea on Flores' south coast. Villagers in Nua Lolo and Léke Ba'i, the source of most of my information on fish, are moreover traditionally allied with the coastal village of Wara, located about four kilometers due south. Wara men spend most of their time engaged in maritime fishing, and during the twentieth century Nua Lolo and Léke Ba'i villagers also would seasonally participate in fishing expeditions—either going out in vessels or catching fry (recognized by Lio as the immature forms of gobies and other freshwater species) as they enter estuaries. In addition, Nua Lolo, Léke Ba'i and other inland Mego villages are situated close to the river Wajo (Kali Wajo), a major water course that empties into the Sawu Sea near Wara. To the present, villagers regularly catch fish, eels, and crustaceans in the Wajo, employing traditional traps, nets, and weirs and increasingly the environmentally harmful and dangerous method of shock-fishing with motor batteries (or, sometimes, small generators) and electric prods. Somewhat in contrast to Lio, Nage exploit freshwater fish less than they once did, and especially in central Nage (the region in which my ethnozoological studies have been concentrated) people claim the number of fish and other creatures available in local rivers and streams has significantly declined in recent years—in part due to the harmful modern technologies also employed in Lio (Forth 2012). But although fish numbers are now reduced, and their importance for subsistence has accordingly decreased, Nage are still knowledgeable about the various local categories I describe in this study.

Within the unique-beginner (*sensu* Berlin 1992) labeled *ana wa* ('animal'), Nage include *ika* (fish) as a named life-form. Lio *ika* has the same status, although for Lio, 'animal' in the most comprehensive sense is denominated by *binata*, an obvious adaptation of Malay *binatang* ('animal') (Arndt 1933; Forth 2004). Like its Nage cognate, as a life-form taxon Lio *ika* subsumes not just bony fish (Osteichthyes) but also sharks (*ika in*) and rays (*ika pari*)—both Chondrichthyes or cartilaginous fish—and sea mammals, including whales (*léla ngai*), dolphins (*lobu*), and dugongs (called *ruju*, *ika ruju*, or *ata ruju*). Also like Nage, Lio do not usually regard marine turtles (*kéra*) as *ika* (fish). I once recorded '*ika kéra*' as an item of observed speech, but subsequent enquiries revealed that this is not a regular

**Table 1** List of Lio freshwater fish generics identified as *Ika*.

Lio name	Linguistic notes and identification
<i>ka mbara ae</i>	Described as a ‘clear white’ fish. Arndt (1933) lists <i>ika mbara</i> simply as a ‘river fish’. The relevant meaning of <i>mbara</i> here may be ‘clear, transparent, translucent’; <i>ae</i> is ‘water’, ‘water course’ (cf. Nage <i>ika ae</i> , river fish, a synonym of <i>ika lowo</i> ).
<i>Ika mbulo</i>	A fish numerous in river estuaries. (Arndt, 1933, gives <i>mbulo</i> as ‘marine eel’ and <i>ana mbulo</i> as a ‘sea fish’).
<i>Ika ro</i>	<i>Ro</i> is ‘(to) sting, smart, be painful’. The fish is so named because being stuck by its sharp scales (or spines) is very painful. Lio described the fish as resembling a catfish and say it cannot be caught with a hook and line, unlike other river fish ( <i>ika</i> ).
<i>Ika seli watu</i>	The name means ‘slides, sticks between stones’. Described as a brownish fish, very similar to a milkfish (Indonesian ‘ikan bandeng’) <i>Chanos chanos</i> (see Figure 1A).
<i>Ika ka’i kapa</i>	The name translates as ‘thick-scaled fish, fish with thick scales’. Lio in Léke Ba’i described both this kind and the following as not occurring in local rivers but only at higher elevations, in deep pools of cold water.
<i>Ika éwa nawa</i>	<i>Éwa</i> , ‘fish’s tail’; <i>nawa</i> , ‘freckle, liver spot, birthmark’ (Arndt 1933). Lio describe the tail as speckled.

expression. And Lio *ika* also does not include eels (*nake*)<sup>1</sup>, freshwater and saltwater crustaceans (*kura*, *mongga*, *kojo*), or cephalopods (octopuses, *kubi*, and squids, *wenu*).

In both Nage and Lio classification, *ika* is polysemous, for in addition to denoting a life-form taxon, the term labels a less inclusive class of fish. Among Nage this class admits a further distinction of ‘sea fish’ (*ika mesi*, specifically marine bony fishes) and river fish (*ika lowo*), categories I have previously treated as folk-intermediates. The same distinction is recognized by Lio, who express it with the same terms. Moreover, contrasting to *ika* at the intermediate level in the classification of both groups are the several previously mentioned categories of freshwater gobies. Nage describe these as forming a distinct, albeit unnamed folk-intermediate that I have previously called the ‘*tebbu* cluster’, after its best-known member (Forth 2012, 2016:211–216), and in view of this contrast they regularly state that gobies are not *ika* (‘fish’).

Previously, I interpreted the Nage distinction not as referring to *ika* as a life-form (which includes sharks, whales, and dugongs as well as bony fish) but to *ika* as a folk-intermediate. In a remarkably similar way, Lio also say the Gobioidae are not ‘fish’ (*ika*), and whereas both groups commonly assert that *ika* are all creatures of the sea, like Nage they nevertheless recognize a number of folk-generics called *ika* which occur in freshwater (see Table 1). By all indications, among Lio as well the gobies are distinguished from *ika* specifically at the intermediate level and not from the entirety of ‘fish’ (*ika*). One support for this are the numerous times I recorded Lio as well as Nage

describing gobies as ‘fish’ (*ikan*) when speaking Bahasa Indonesia (see Forth 2012). Another is the general point that speakers of any language are often not conscious of, nor do they articulate, different contextual senses of single terms. In fact, the classificatory contrast between sea fish and freshwater fish—in these ethnographic instances represented solely by gobies—appears to be more widespread on Flores Island. For Manggarai, the language of western Flores, Verheijen (1967) glosses *ikang* (a cognate of Nage and Lio *ika*) as ‘(sea) fish’ (BI ‘ikan (laut)’). Similarly, a native speaker of Biting, a dialect of eastern Manggarai, informed me that *ikang* denotes only sea fish (including sharks) and some freshwater fish—apparently mostly recently introduced exotics (cf. Forth 2016:212, 214)—whereas other freshwater fish are not classified as *ikang*<sup>2</sup>.

It is by now sufficiently clear that Lio fish classification is, in most respects, formally similar to that of the Nage. But there is one important difference. Whereas the five Nage generics included in the ‘*tebbu* cluster’ do not compose a named intermediate, for the Lio they do, since all five, and another two kinds I was unable to identify, are classified as members of a folk-intermediate Lio named *mbo*. *Mbo* is clearly cognate with Nage *bo* in the name *ana bo*, a synonym of *ana tebbu*, the prototype of the five fish generics that compose the ‘*tebbu* cluster’<sup>3</sup>. In addition, Lio further employ *mbo* polysemously, to label one of the folk-generics included in intermediate *mbo* (see Table 2), and by all indications this is the same species Nage name *ana bo* or *ana tebbu*.

Lio recognize the same physical and behavioral differences between *mbo* and *ika* (or specifically

**Table 2** Folk-generics Lio identify as kinds of *mbo*.

Lio name	Identification, description, and linguistic notes
<i>Mbo boka janga</i> , or simply <i>mbo</i>	A freshwater goby <i>Sicyopterus</i> sp., Gobiidae, suborder Gobioidae. Arndt (1933, s.v. <i>boka</i> ) lists <i>boka janga</i> (transcribed <i>boka dzan'a</i> ) as 'twigs of Janga', the name of an unidentified plant or tree. Verheijen 1990 gives Lio (Detu Keli) <i>janga</i> as <i>Kleinhovia hospita</i> . If the identification is correct, then the name apparently refers to some resemblance between the form or coloration of the fish and the leaves or bark of the tree.
( <i>Mbo</i> ) <i>Mata taka</i>	Loach goby <i>Rhyacichthys aspro</i> , Rhyacichthyidae, suborder Gobioidae. Informants correctly describe the fish as attaching itself to rocks on stream bottoms. Possessing a flattened head and ventral mouth, the fish more specifically attaches itself to stones with its broadened pelvic and pectoral fins and head and snout (Larson 2011:55). The name refers to this behaviour. <i>Mata</i> is 'eye; node; central part (of something)'; <i>taka</i> , is 'to stick, adhere to' (Arndt 1933).
( <i>Mbo</i> ) <i>Kia ri'a</i>	Throat-spine gudgeon <i>Belobranchus belobranchus</i> , Eleotridae. Named after its relatively large head ( <i>kia</i> is 'head, cranium'; <i>ri'a</i> is 'big, large').
( <i>Mbo</i> ) <i>Kose ena</i>	<i>Awaous</i> sp., Godiidae; so named because the fish lives in sandy stream beds ( <i>ena</i> , 'sand'; <i>kose</i> , 'to fit closely, tightly into or between (two things)') (Arndt 1933). Lio informants glossed the name with Bahasa Indonesia 'masuk pasir', 'enters, goes into sand', and indeed, the shape of the snout is adapted to precisely this behaviour (Akihisha Iwata 2015, personal communication). Among the several kinds of <i>mbo</i> (gobies), Lio say only these can be caught with a hook and line, like eels and freshwater <i>ika</i> (fish), whereas all other <i>mbo</i> are caught with weirs and traps. The species is not certain. Monk et al. (1997) list three species for eastern Indonesia (Nusa Tenggara and Maluku): <i>Awaous grammepomus</i> , <i>A. personatus</i> , and <i>A. melacocephalus</i> , the Largesnout goby.
( <i>Mbo</i> ) <i>Kole kanda</i>	Unidentified, but may refer in part to females of <i>Belobranchus belobranchus</i> . Described as a 'stupid' fish, in the sense that it does not swim away when approached and is therefore easily caught. Informants interpreted the name as referring to this characteristic. One man equated <i>kanda</i> with BI 'kandang' (enclosure, corral); Arndt gives it as 'basket' or 'cage for chickens'. He also lists <i>kole</i> as 'to lay, set down (trans.)'. The sense, therefore, may well be that the fish stays in one spot, as though placed in a container.

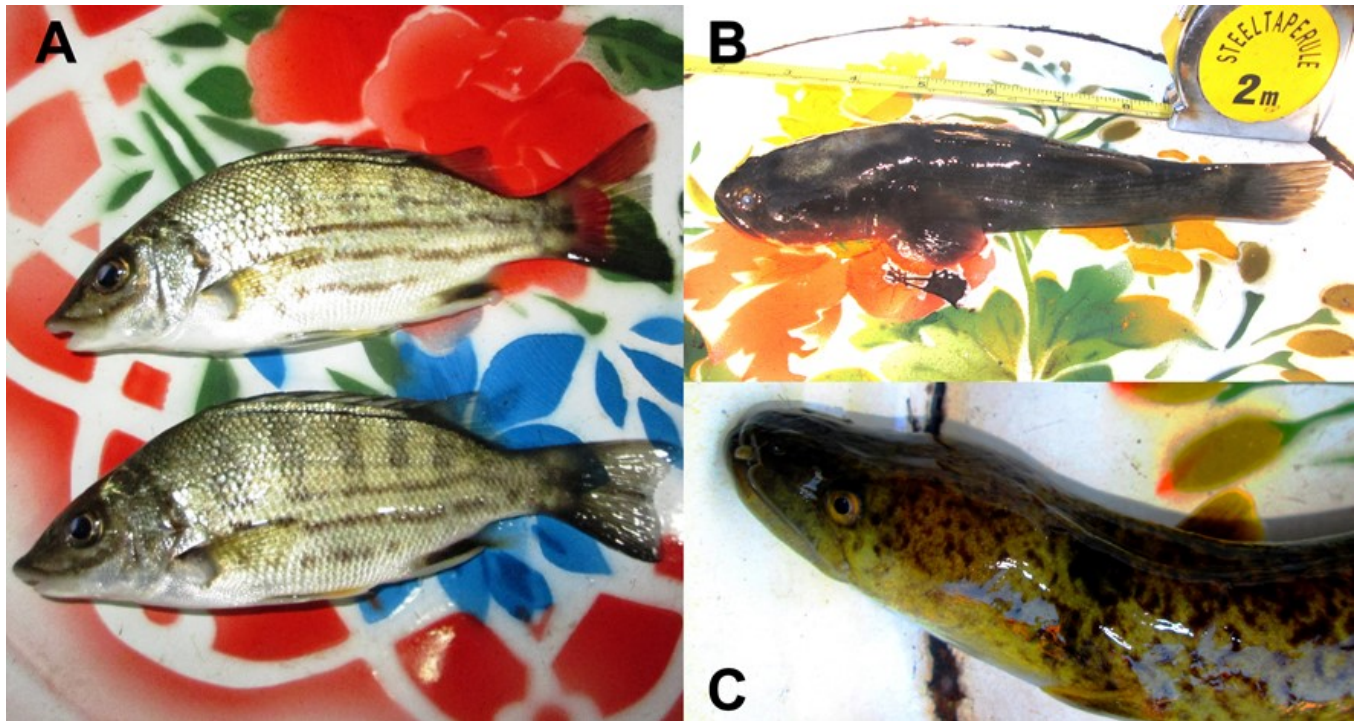
freshwater *ika*) as do Nage, in regard to body shape, swimming habits, and so on (Forth 2012, 2016:211). Also, as fish occurring in often fast-flowing rivers and streams, *mbo* are mostly caught with weirs and traps, whereas *ika* occurring in rivers are usually caught with hook and line. There are, however, exceptions to this, since Lio employ lines to catch one sort of *mbo* (specified as *kose ena*) while some *ika* occurring in rivers are also caught in traps. As I previously concluded for the Nage *tebbu* cluster (Forth 2012:27), therefore, the folk-intermediate Lio label as *mbo* is evidently a fully-formed taxon based on morphological and behavioural features rather than simply a utilitarian or other culturally specific 'special-purpose' category (see Berlin 1992:142–144). A list of the Lio *mbo* fish, with identifications and descriptions, is found in Table 2 (see also Figures 1 and 2); a list of freshwater *ika* distinguished by Lio appears in Table 1.

All the categories listed in Table 2 can be explicitly named as *mbo* (e.g., *mbo mata taka*) or alternatively by the specific name alone (e.g., *mata taka*). As indicated, all these names are straightforwardly descriptive of a morphological or behavioural

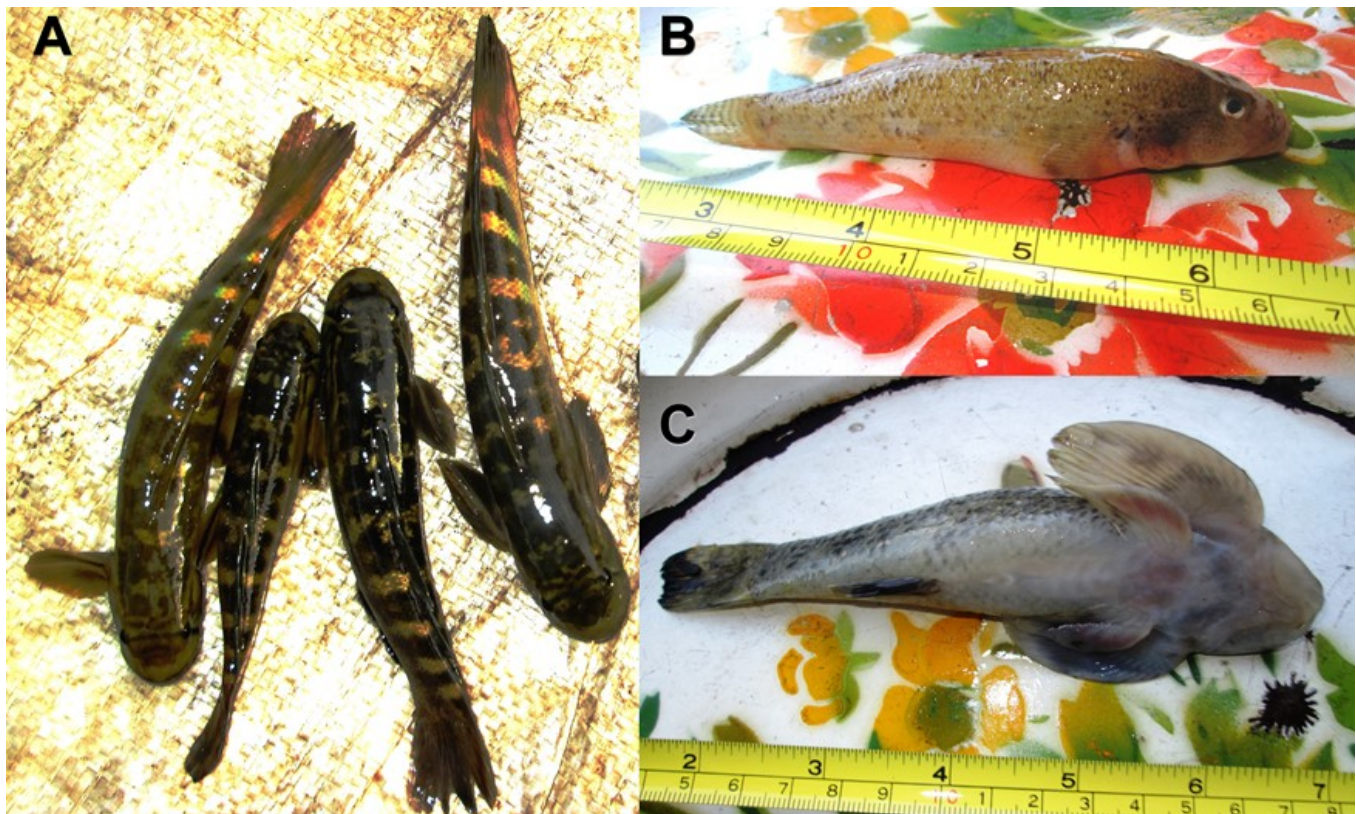
feature of the fish concerned. The same applies to the several categories of freshwater fish Lio identify as *ika*, which are listed in Table 1, although in these cases *ika* is a necessary component of each name. In addition to the five generics described in Table 2, all of which I was able to observe, informants mentioned two other kinds of *mbo*. One is *mbo bita*. *Bita* means 'mud', and indeed the fish is described as living in mud. The other is *mbo kéle te'a*, described as showing yellow (*te'a*) under the front fins (*kéle* is 'armpit'). Informants also described this fish as being 'stupid' and easy to catch, thus somewhat like *mbo kole kanda*.

Lio *mbo* has another use that requires attention. The several folk-generics included under *mbo* are among the aquatic creatures Lio collectively designate with the standard expression *kura mbo*. This term, however, does not denote a taxon but a utilitarian category comprising two animal names, a type of construction extremely common in the languages of central Flores (Forth 2016:140–148). Complementing *mbo* in this context, *kura*, 'prawn, crayfish' (cf. Nage *kuꞑꞑꞑ*), refers to several kinds of freshwater crustaceans. But, as Lio themselves recognize, the class of edible creatures labelled *kura mbo* incorporates





**Figure 1** A *Ika seli watu*, a freshwater fish (*Lio ika*); B *Mbo ki'a ri'a* (*Belobranthus belobranthus*); C *Nake* or *nake léro*, eel (*Anguilla* sp.) showing dark speckling on yellow ground color. Photos: Gregory Forth.



**Figure 2** A *Mbo* or *mbo janga* (*Sicyopterus* sp.); B *Mbo kose ena* (*Awaous* sp.); C *Mbo mata taka* (*Rhyacichthys aspro*) showing attachable ventral fins. Photos: Gregory Forth.



not only gobies and crustaceans called *kura* but equally includes eels (*nake*), which Lio classify as neither *mbo* nor *ika*, as well as freshwater crabs separately named as *mongga* and *kojo*. On the other hand, the category excludes riparian frogs, although these too are eaten. In this regard, Lio *kuza mbo* precisely corresponds to the Nage composite *kuza tebhu* (crustaceans [and] *tebhu* fish), a somewhat less common alternative to Nage *kuza tuna* (crustaceans [and] eels), which similarly denotes a utilitarian class comprising several kinds of edible freshwater creatures.

As mentioned, the categories of *mbo* fish described in Table 2 correspond to the five Nage generics identified as members of the covert folk-intermediate I call the ‘*tebhu* cluster’. Because Lio and Nage, though related, are different languages, it is not particularly surprising that the names the two groups give to these are quite different. But while the Nage and Lio names are lexically distinct, semantically they reveal a number of interesting correspondences. The details of these are summarized in Table 3.

To complete this overview of Lio fish fauna, more should be said about eels. Distinguished from both *mbo* and *ika*, several kinds of freshwater eels recognized by Lio are named together as *nake ae* or simply as *nake*. *Ae* is ‘water’. *Nake* is interesting, as the

term has the more general sense of ‘meat’; thus, *nake ae* might be glossed as ‘water meat’. But while this literal sense may suggest a special importance (or former importance) for eels in the Lio diet, its precise significance is uncertain. Also worth noting is the use of *nake* in the Ende region, to the west of Lio (thus intervening between Lio and Nage), as a general term for ‘bird’ (Forth 2006), and the use of cognates in Nage and Ngada as a term for ‘meat’ but without simultaneously denoting any particular kind of animal. Having the further meaning of ‘meat’, as the term for ‘eel’ Lio *nake* might be thought to possess a utilitarian flavour. However, this applies to the name rather than the taxon denoted, as is shown by the Lio identification of several kinds of eels (*nake*) with names that mostly refer to physical features of the living creatures, and it is further noteworthy that these descriptors all qualify *nake*, rather than *nake ae*. Named eel kinds are listed in Table 4. Partly in view of comparative evidence from Nage classification (Forth 2016:216–221), these several kinds can be taken as folk-specifics, with *nake* (or *nake ae*) then being interpreted as a folk-generic unaffiliated with any life-form.

### Discussion and Conclusion

Lio naming of the several goby generics under a single label, *mbo*, supports my previous interpretation (Forth

**Table 3** Lio and Nage Ichthyological and Nomenclatural equivalents. Note: These identifications supersede those given for Nage categories in Forth 2012.

Identification	Nage name	Gloss	Lio name	Gloss	Comments
<i>Sicyopterus</i> sp.	<i>Ana tebhu</i> or <i>ana bo</i>		<i>Mbo</i> (= <i>mbo</i> <i>boka janga</i> ; see Table 2)	Cognate with Nage <i>bo</i> (unanalyzable)	
<i>Rhyacichthys aspro</i>	<i>Kaka watu</i>	‘sticks to rocks’	<i>Mata taka</i>	‘adhering face’	
<i>Belobranchus belobranchus</i>	<i>Tebhu teke</i>	‘Gecko <i>tebhu</i> ’, or ‘gecko goby’, so named because of its large head, compara- ble to a gecko’s	<i>Kia ri’a</i>	‘large head’	<i>Teke</i> denotes large geckoes of the genus <i>Gekko</i> in both Nage and Lio
<i>Awaous</i> sp.	<i>Su lai</i>	‘penetrates, enters sand’	<i>Kose ena</i>	‘fits into, enters sand’	
Uncertain (may in part refer to females of <i>Belobranchus belobranchus</i> )	<i>Pusu</i>	‘heart; navel; centre’	<i>Kole kanda</i>	‘placed in a con- tainer, basket’	This equivalence is partly inferred by elimination. (Nage have no explanation for <i>pusu</i> as a fish name.)

**Table 4** Kinds of Eels (*Nake* or *Nake ae*).

Lio name	Linguistic notes, description, and identification
<i>Nake</i> or ' <i>nake biasa</i> '	(Bahasa Indonesia <i>biasa</i> , 'common') <i>Anguilla</i> sp., also specified as <i>nake léro</i> . <i>Léro</i> denotes a bright yellow. Accordingly, Lio describe this as a yellow eel with stripes, and also as aggressive (see Figure 1C).
<i>nake jai</i> (or <i>jaghi</i> )	Described as a dark-colored eel with long 'scales' or 'spines' on the back, found especially in the wet season when rivers are in flood. Transcribed as <i>jaghi</i> , the modifier may mean 'unpleasant tasting' (Arndt 1933, s.v. <i>jayi</i> ).
( <i>nake</i> ) <i>nggélú</i>	A light-colored eel. The sense of <i>nggélú</i> in this context is unclear.
( <i>nake</i> ) <i>lo léna</i>	A small eel described as possessing a 'hard body' and a rounded tail that looks very similar to the head, and as occurring in sand. <i>Lo</i> can mean 'trunk'; the sense of <i>léna</i> is unclear.
( <i>nake</i> ) <i>lawi lolo</i>	A flat-bodied eel, long, and with sharp teeth. Following Arndt (1933, s.v. <i>lawi</i> ), the name translates as 'sorghum leaf', and may therefore refer to the body shape. (This may be the same eel Nage call <i>hame</i> ; Forth 2016:216.)

2012) of 'the *tebbu* cluster' as a covert folk-intermediate in Nage classification. In both cases, the two folk taxa coincide with the scientific taxon Gobioidae (a suborder of the Perciformes). Moreover, this folk taxonomic concordance involves an identical distinction, within the life-form *ika*, between *mbo* and *ika*, the second term in this context denoting, like *mbo*, a less inclusive folk-intermediate. To be sure, the overall isomorphism of the two classifications contrasts with the designation, in the two languages, of fish-generics included in *mbo* and the Nage *tebbu* cluster by lexically quite different names. As shown, however, the names are in several cases semantically similar since in each instance they refer to the same morphological or behavioral features of the fish kinds they identify.

This coincidence raises a question. Can these semantic resemblances and coexistent lexical differences be explained by linguistic relatedness (accompanied by necessary divergence) between Lio and Nage? Or, do resemblance and divergence reflect other factors, more particularly some combination of a common perception of natural discontinuity among different members of the Gobioidae, on the one hand, and of a shared cultural heritage, on the other.

The evidence provides more support for the second interpretation. For if linguistic relatedness were sufficient to explain semantic resemblance between the Nage and Lio terms, one should expect the names to be more similar than they actually are. For example, whereas Lio call *Belobranchus belobranchus* 'large head' (see Table 3), Nage call the same fish 'Gecko goby', thus identically focusing on the fish's relatively large head, which they compare to that of

the lizard. But, partly because the same term (*teke*) denotes large geckoes (*Gekko* spp.) in both languages, there is no obvious reason why Lio, also, should not have named this fish by reference to the gecko. (Here it should be noted that herpetofauna of the Lio and Nage regions appear not to be significantly different.) To cite another example, Nage 'sticks to rocks' (*keka watu*) and Lio 'adhering face' (*mata taka*), both alluding to the same behavior and both denoting the Loach goby *Rhyacichthys aspro*, describe the same distinctive feature of this fish but in quite different ways. And they do so, moreover, even though the Lio name might equally have incorporated *watu* (the word for 'rock(s), stone(s)' in both languages), especially as Lio, too, speak of the species as 'adhering' to rocks. Like the presence in both languages of *teke*, *watu*, *mata*, and other identical terms besides, these differences further rule out loan translation (the process whereby speakers of one language adopt a term from another and render it employing their own lexicon<sup>4</sup>) as an explanation for simultaneous semantic resemblances and lexical distinctions between Lio and Nage fish terms. In fact, there is only one name which could suggest a loan translation, that of the fish Lio call *kose ena* and Nage call *su lai*, since both names approximately mean 'enters into sand,' referring to the species' characteristic habit of immersing itself into sand at the bottom of rivers and streams (see Table 3). However, in Nage, 'sand' is both *ena* (as it is in Lio) and *lai*, so had the name been adopted from Lio (*kose ena*) one would expect the fish to be called '*su ena*.' Contrariwise, *su* occurs with much the same meaning in both Lio and Nage, so had Lio adopted the term from Nage, '*su ena*' (rather than *su lai*) should be expected as the Nage name.



Before exploring the second, better supported interpretation of concurrent similarities and differences between the Nage and Lio names, it is useful to recall that all distinguish folk-generics. It is further relevant that such generics everywhere—in contrast to taxa at higher and lower levels of classification—constitute biological *gestalts*, meaning that “exemplars of the category come to mind as a picture of the entire plant or animal” (Berlin 1992:60; Hunn and Brown 2011:326). Thus, folk-generics compose the psychologically most salient and obviously distinct components of any fauna or flora. And insofar as perceiving something as a *gestalt* may be entailed in an apprehension of living things as possessing singular ‘essences’ (*sensu* Atran 1990), then folk-generics can be called the most ‘essential’ of taxa.

As well as the inherent discontinuity between the several associated fish kinds, this quality of the folk-generic contributes significantly to an explanation of why, taxonomically and nominally, Nage and Lio distinguish the same fish in similar ways. Yet perceptual factors are not sufficient to account for the semantic similarities among the lexically different names. For the character of these names additionally points to the common possession, by the two ethnolinguistically related but separate groups, of a fundamentally identical conception of the same ichthyological species and genera which, in each instance, involves a selective focus on the same empirical morphological and behavioral features. I should stress that the reference here is to names rather than taxa. Thus, the interpretation does not contradict the characterization of folk-generics as *gestalts*; rather the selectivity reflected in the names concerns not the entirety of a mental image but part of a process of representation, specifically that part which is concerned with nominally distinguishing folk-generics from similar but in some perceptible ways contrasting generics.

Rather than similar names *per se*, it is this common representation of the same or similar creatures found in Lio and Nage territory that reflects the shared heritage of the two peoples, and this heritage, moreover, is more broadly cultural rather than simply linguistic. Of course, culture is implicated also in straightforward differences between the two nomenclatures, for example between the Lio name *kole kanda* and the Nage name *pusu* (see Table 3), which designate if not the same species then at least members of the same suborder (Gobioidei). To what

extent cultural variation might account for the fact that the Nage *tebbu* cluster comprises just five intermediates whereas the Lio folk-intermediate labeled *mbo* includes two further fish kinds (*mbo bita* and *mbo kéle te'a*)—thus a difference less of naming than of classification—is difficult to say, as the classificatory difference may owe more to regional differences in the occurrence of particular ichthyofauna. Nevertheless, the present analysis has shown how a detailed study of folk classification among ethnolinguistically close yet sufficiently distant populations like Nage and Lio can more precisely reveal the operation of what we usually call ‘culture’, in relation to cognitive, linguistic, and zoological factors (or factors of perceptual salience; Hunn 1999:47–48), in the representation of folk-generic taxa, and the development of folk zoological taxonomies generally.

### Notes

<sup>1</sup>Interestingly, however, Ika can be used as an avoidance term when speaking of a wife’s mother whose name is Nake. Whereas Nake is a female personal name, Ika is not.

<sup>2</sup>The informant mentioned three examples, *lengor* or *lenger*, *peper*, and *senggilo* (a snakehead). *Lengor* may denote *Eliotris fuscus* (Verheijen 1967), one of the Gobioidei.

<sup>3</sup>As discussed elsewhere (Forth 2016:55, 250), Nage *ana* (child, person, member [of a collectivity]) occurs frequently in Nage names for folk-generics that comprise small animals and especially non-mammals. Lio do not conjoin *ana* and *mbo*, nor does *ana* so commonly occur in other Lio animal names. It is also worth stressing that, whereas Nage *ana bo* names a folk-generic, Lio *mbo* designates both a generic and a folk-intermediate.

<sup>4</sup>A familiar example of loan translation is English ‘worldview,’ derived from the semantically similar but lexically mostly different German ‘Weltanschauung.’

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### References Cited

Arndt, P. 1933. *Li'onesisch-Deutsches Wörterbuch*. Arnoldus-Druckerei, Ende, Flores, Indonesia.





- Atran, S. 1990. *Cognitive Foundations of Natural History*. Cambridge University Press, Cambridge, United Kingdom.
- Berlin, B. 1992. *Ethnobiological Classification: Principles of Categorization of Plants and Animals in Traditional Societies*. Princeton University Press, Princeton, NJ.
- Blust, R.A. 2002. The History of Faunal Terms in Austronesian Languages. *Oceanic Linguistics* 41:89–139.
- Forth, G. 2004. The Category of ‘Animal’ in Eastern Indonesia. *Journal of Ethnobiology* 24:51–73.
- Forth, G. 2006. Words for ‘Bird’ in Eastern Indonesia. *Journal of Ethnobiology* 26:177–207. DOI:10.2993/0278-0771(2006)26[177:WFBIEI] 2.0.CO;2.
- Forth, G. 2012. When is a Fish not a Fish: Questions raised by a Nage Life-form Category. *Ethnobiology Letters* 3:23–30. DOI:10.14237/ebl.3.2012.41.
- Forth, G. 2016. *Why the Porcupine is not a Bird: Explorations in the Folk Zoology of an Eastern Indonesian people*. Toronto University Press, Toronto, Canada.
- Hunn, E. S. 1999. Size as Limiting the Recognition of Biodiversity in Folkbiological Classifications: One of Four Factors governing the Cultural Recognition of Biological Taxa. In *Folkbiology*, edited by D. L. Median and S. Atran, pp. 47–69. MIT Press, Cambridge, MA, and London, United Kingdom.
- Hunn, E. S., and C. H. Brown. 2011. Linguistic Ethnobiology. In *Ethnobiology*, edited by E. N. Anderson, D. Pearsall, E. Hunn, and N. Turner, pp. 319–333. Wiley-Blackwell, Hoboken, NJ.
- Kottelat, M. 1994. ‘The Fishes of the Mahakan River, East Borneo: An Example of the Limitations of Zoogeographic Analysis and the Need for Extensive Fish Surveys in Indonesia’. *Tropical Biodiversity* 2:401–426.
- Larson, H. K. 2011. Systematics of the Rhyacichthyidae. In *The Biology of Gobies*, edited by R. A. Patzer, J. L. Van Tassell, M. Kovacic, and B. G. Kapoor, pp. 51–60. CRC Press, New York, NY.
- Monk, K., Y. de Fretes, and G. Reksodiharjo-Lilley. 1997. *The Ecology of Nusa Tenggara and Maluku*. The Ecology of Indonesia Series Volume V. Periplus Editions, Hong Kong, China.
- Suryati, M., and A. M. Mbeti, M. Lauder, and M. Dhanawaty. 2013. Phonological and Lexical Varieties of Lio Language in Flores, East Nusa Tenggara: A Study of Geographical Dialect. *e-Journal of Linguistics* 6:1–27.
- Verheijen, J. A. J. 1967. *Kamus Manggarai I: Manggarai-Indonesia*. Martinus Nijhoff, s-Gravenhage, Netherlands.
- Verheijen, J. A. J. 1990. *Dictionary of Plant Names in the Lesser Sunda Islands*. Pacific Linguistics Series D, 83. Department of Linguistics, Research School of Pacific Studies, Canberra, Australia.