

The Geographic and Genetic Distribution of the Labial Flap¹

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Abstract

This paper documents the geographic and genetic distributions of the labial flap. The flap is an areal feature, concentrated in northcentral Africa, but it is also attested in southeastern Africa and Indonesia. It is found in three of the four major African language families, but it likely cannot be traced back to the proto language of any of these families. It is most widely attested in the Adamawa-Ubangi subgroup of Niger-Congo. We endeavored to obtain a complete sample of the languages in which the sound is attested in order to ensure the accuracy of our typological claims.

1. Introduction

The labial flap is a speech sound most commonly associated with the North Central Savanna region of Africa. The sound is attested in over sixty-five languages in Africa and one in Indonesia.

To date, the most complete articulatory descriptions of the sound available are Demolin and Teston (1996) for Mangbetu and Olson and Hajek (1999) for Mono, both languages found in the Democratic Republic of Congo. The articulation of the sound consists of two stages. First, the lower lip is retracted slowly into the mouth well behind the upper teeth. Second, the lower lip is brought forward rapidly striking the upper lip or upper teeth in passing.

Olson and Hajek draw attention to the fact that the sound has been incorporated into the phonological system of at least a dozen languages, including languages within the Mbum subgroup of Adamawan, the Banda and Sere subgroups of Ubangian, and the Eastern subgroup of Central Sudanic. Nevertheless, the International Phonetic Alphabet does not at present include a symbol for the labial flap.

In this paper, we discuss both the areal and genetic distributions of the sound. Our data derive from an extensive survey of the linguistics literature, as well as from the input of many field linguists.

The only previous cross-linguistic study of the labial flap is Greenberg (1983), who drew tentative conclusions based on a sample of 18 languages. He found the largest concentration of examples in Central Sudanic. However, our findings show that the largest concentration is in fact in Adamawa-Ubangi. This discrepancy is likely attributable to his restricted sample. Croft (1990: 19) points out that a *complete* sample is advisable for studying linguistic phenomena which are exhibited in a limited number of languages. In the present paper, we have attempted to obtain a nearly complete sample of the languages in which the labial flap is attested.

In section 2, we present the geographic distribution of the labial flap, including maps which show the three major areas where the sound is found. In section 3, we discuss the genetic distribution of the sound. In section 4, we list each language in which the sound is found and provide references for each language.

2. Geographic distribution

Figure 1 maps the languages in which the labial flap is attested. (The language represented by each code number is listed in table 1.) There are three distinct regions in which the sound is found. First, the largest region corresponds roughly to the savanna of North Central Africa and its immediate surroundings. The savanna is bounded to the north by the Sahara, to the south by the tropical rain forest, to the west by the Adamawa plateau, and to the east by the Upper Nile. Languages containing the sound penetrate to a certain extent into the western and southern borders, but it appears as if these borders have retarded the spread of the sound.

Second, the labial flap is attested sporadically in a few Bantu languages in southeastern Africa. Here, the sound is only attested in ideophones and does not appear to have been incorporated completely into the phonological system of the languages in which it appears.

One question which arises immediately is whether the sound arose independently in southeastern Africa or if its presence there is due to language spread from the north. The received view of the spread of the Bantu people is that they originated in the border region of present-day Cameroon and Nigeria and then migrated to the southeast to the areas where Bantu is now spoken. An hypothesis concerning these migrations is that at least one Bantu group traveled from west to east along the northern fringes of the tropical rain forest and then turned south once they reached eastern Africa (cf. Phillipson 1977, Heine 1979, Oliver 1979). Given this hypothesis, we can speculate that some Bantu speakers acquired the labial flap through contact during this migration and retained vestiges of it as they moved south away from the primary region where it is found.

Third, the labial flap is attested in the language Sika on the island of Flores in Indonesia (Donohue, to appear). Further research is necessary in order to verify that this sound is indeed the same as the one found in Africa. If this is the case, there is no evidence that the sound arose in Indonesia due to language contact or common genetic descent, but it is more reasonable to assume that it arose independently. This would also indicate that the sound is not a uniquely African feature.

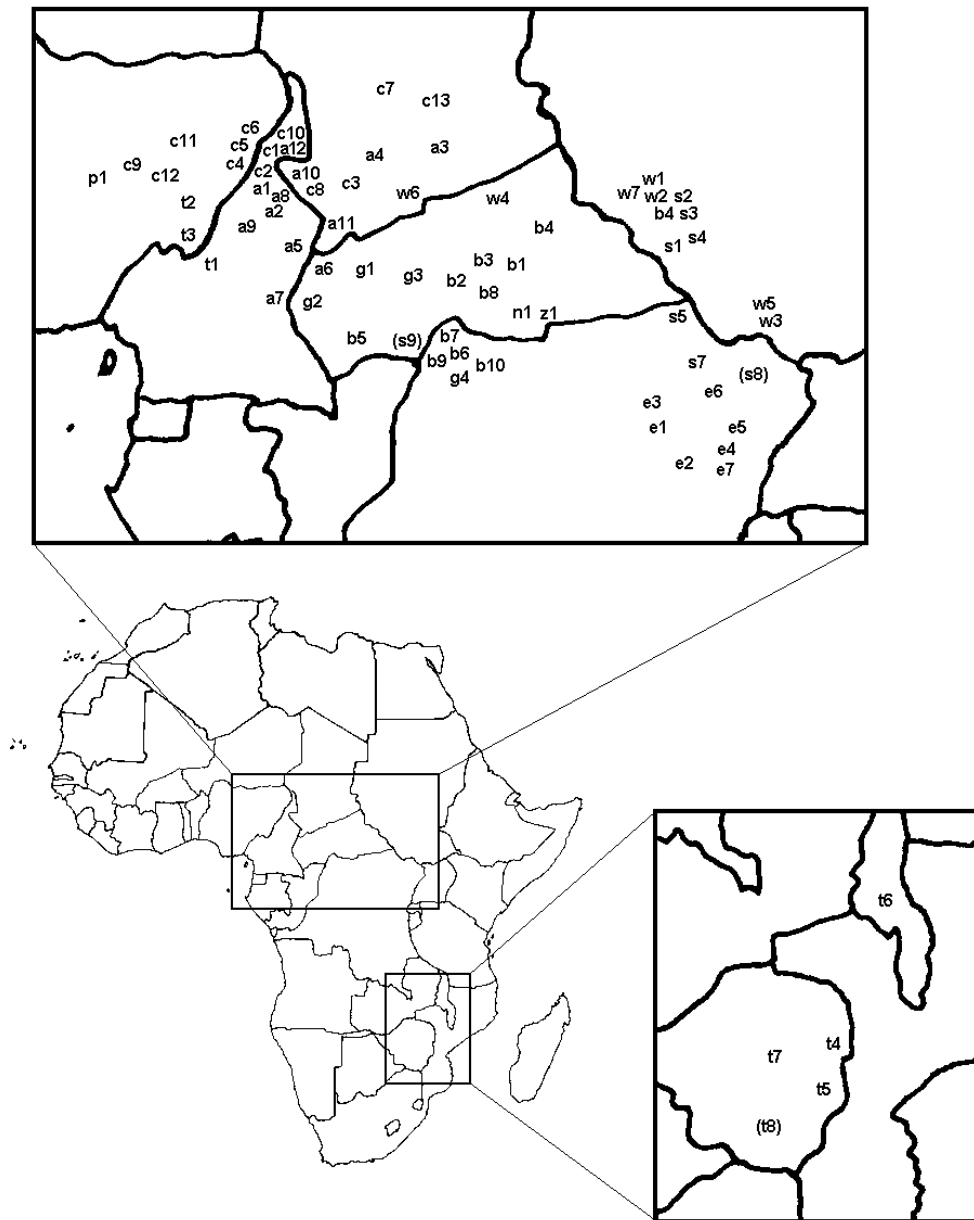


Figure 1: Geographic distribution of the labial flap. Data from Grimes (2000) and Moseley and Asher (1994). The languages are represented by the symbols shown in table 1.

3. Genetic distribution

The labial flap occurs in three of the four major language families in Africa—Niger-Congo, Nilo-Saharan, and Afro-Asiatic. In each family, it is not ubiquitous, but rather occurs only in certain subbranches. Presuming the major African family divisions are correct, then this is evidence that the sound cannot be traced back to the proto language of any of these major families. Rather, it is probable that the sound arose at a later date and then spread via contact into the different families.

In Niger-Congo, the sound is widely attested in the Adamawa-Ubangi subbranch. It is most common in the Banda and Sere-Ngbaka-Mba branches of Ubangi, as well as the Mbum-Day branch of Adamawa, and it is contrastive in many of these languages. Indeed, the labial flap is better attested in these three branches of Adamawa-Ubangi than anywhere else in our study.

The only Niger-Congo language outside of Adamawa-Ubangi in which Greenberg (1983) attested the sound was Shona, a Bantu language in the Benue-Congo subbranch of Niger-Congo. Our findings indicate that the sound is more widespread within Benue-Congo than indicated by Greenberg. It is attested in at least four southeastern African Bantu languages, in three Northern Bantoid languages of Nigeria and Cameroon, and in one Platoid language of Nigeria.

In Nilo-Saharan, the sound is found exclusively in the Central Sudanic subbranch. It is attested in both the East and West branches of Central Sudanic, but it appears to be most common in the East branch. It is contrastive in Mangbetu, but is only found in intervocalic position in that language.

In Afro-Asiatic, the labial flap is attested only in the Chadic subbranch. In all of these languages, it is rare and is attested mostly in ideophones.

As mentioned, the labial flap is best attested in Adamawa-Ubangi. This is true in three respects: (1) it is reported to occur in more languages in this group than in any other group, (2) the languages with the largest number of lexical items containing the sound are in this group, and (3) the sound is most clearly contrastive in this group. This observation directly counters the claim by Greenberg (1983) that the greatest concentration of examples is in Central Sudanic.

Table 1 lists the languages in which we have found evidence for the labial flap, along with their presently-accepted genetic affiliation. For each language, we give the language name as listed in Grimes (2000), and we include in parentheses the countries in which the language is spoken. Parentheses around a language code number indicate that the evidence for the existence of the labial flap in that language is questionable.

Table 1: Genetic affiliation of languages in which the labial flap is attested.

The underlined languages are ones in which the sound is phonemic.

Afro-Asiatic

Chadic

- c1. Bana (Cameroon)
- c2. Daba (Cameroon, Nigeria)
- c3. Gabri (Chad)
- c4. Gude (Nigeria, Cameroon)
- c5. Kamwe (Nigeria)
- c6. Marghi Central (Nigeria)
- c7. Mukulu (Chad)
- c8. Pevé (Chad, Cameroon)
- c9. Ron (Nigeria)
- c10. Mofu-Gudur (Cameroon)
- c11. Tera (Nigeria)
- c12. Yiwom (Nigeria)
- c13. Migaama (Chad)

Niger-Congo

Benue-Congo

Bantoid

Northern

- t1. Kwanja (Cameroon)
- t2. Samba Daka (Nigeria)
- t3. Tep (Nigeria)

Southern

- t4. Manyika (Zimb., Mozambique)
- t5. Ndau (Zimbabwe)
- t6. Nyanja (Malawi, *inter alia*)
- t7. Shona (Zimbabwe, *inter alia*)
- (t8). Kalanga (Zimbabwe, Botswana)

Platoid

- p1. Nungu (Nigeria)

Adamawa

- a1. South Fali (Cameroon)

Leko-Nimbari

- a2. Dii (Cameroon)

Mbum-Day

Bua

- a3. Gula Iro (Chad)
- a4. Niellim (Chad)

Mbum

- a5. Karang (Cameroon, Chad)
- a6. Kare (CAR, Cameroon)
- a7. Kuo (Chad, Cameroon)
- a8. Mambai (Cameroon, Chad)
- a9. Mbum (Cameroon, CAR)
- a10. Mundang (Chad, Cameroon)
- a11. Nzakmbay (Chad, Cameroon)
- a12. Tupuri (Cameroon, Chad)

Ubangi

Banda

Central Banda

- b1. Banda-Bambari (CAR)
- b2. Banda-Banda (CAR, Sudan)
- b3. Banda-Mbrès (CAR, Sudan)

- b4. Banda-Ndélé (Sudan, CAR)
- b5. Banda-Yangere (CAR)
- b6. Banda, Mid-Southern (CAR, DRC)
- b7. Banda, Togbo-Vara (DRC, CAR)
- b8. Banda, West Central (CAR, Sudan)
- b9. Ngbundu (DRC)
- b10. Mbandja (DRC, CAR, Congo)

Ngbandi

- n1. Kpatili (CAR)

Gbaya-Manza-Ngbaka

- g1. Gbaya-Bossangoa (CAR)
- g2. Gbaya, NW (CAR, *inter alia*)
- g3. Manza (CAR)
- g4. Ngbaka-Minagende (DRC, *inter alia*)

Sere-Ngbaka-Mba

Sere

- s1. Bai (Sudan)
- s2. Feroqe (Sudan)
- s3. Mangayat (Sudan)
- s4. Ndogo (Sudan)
- s5. Sere (DRC, CAR)
- s6. Tagbu (DRC)

Ngbaka-Mba

- s7. Bangba (DRC)
- (s8). Dongo (DRC)
- (s9). Ngbaka Ma'bo (CAR, *inter alia*)

Zande

- z1. Nzakara (CAR, DRC)

Nilo-Saharan

Central Sudanic

West

Kresh

- w1. Aja (Sudan)
- w2. Gbaya (Sudan)

Bongo-Bagirmi

- w3. Baka (Sudan, DRC)
- w4. Gula (CAR, Sudan)
- w5. Morokodo (Sudan)
- w6. Sar (Chad)
- w7. Yulu (Sudan, CAR, DRC)

East

Mangbetu

- e1. Asoa (DRC)
- e2. Lombi (DRC)
- e3. Mangbetu (DRC, Uganda)

Mangbutu-Efe

- e4. Efe (DRC)
- e5. Lese (DRC)
- e6. Mamvu (DRC)
- e7. Mvuba (DRC, Uganda)

Austronesian

Malayo-Polynesian

- m1. Sika (Indonesia)

4. Languages containing the labial flap

In this section we provide more detailed information on each language which contains the labial flap. We give the language name as listed in the *Ethnologue* (Grimes 2000), the *Ethnologue* code for the language in square brackets, the countries where the language is found in parentheses, and references for each language. We include the first known reference which mentions the labial flap in a given language, as well as references which contribute significant data. Also, we include in parentheses the name the author uses for the language or the particular dialect under consideration if it differs from the *Ethnologue* name. Each language listed is considered a mutually unintelligible speech variety by the *Ethnologue*.

4.1 Chadic languages

The labial flap is attested in thirteen Chadic languages. No evidence for contrast is given by any of the sources. The sound is found almost exclusively in ideophones, with most additional items being animal names. Several sources report the sound as being rare, with the most examples being cited in Bana, where it is attested in six words. It is usually found in intervocalic position.

- Bana* [BCW] (Cameroon). Hofmann (1990).
Daba [DAB] (Cameroon, Nigeria). Tadadjeu and Sadembouo (1979: 24) and Hartell (1993: 62–63, 70).
Gabri [GAB] (Chad). James Roberts (per. comm.).
Gude [GDE] (Nigeria, Cameroon). Mo Perrin (per. comm.).
Kamwe [HIG] (Nigeria). Mohrlang (1972: 23, 35, 42) (Nkafa dialect). Mohrlang refers to the sound as a labiodental “flapped fricative”.
Marghi Central [MAR] (Nigeria). Hoffman (1963), Ladefoged (1968: 18), Ladefoged (1971: 52), and Ladefoged (1982: 154–155).
Mukulu [MOZ] (Chad). Jungrathmayr (1990: 196) (Mokilko dialect).
Pevé [LME] (Chad, Cameroon). Venberg (1975).
Ron [CLA] (Nigeria). Phil Davison (per. comm.).
Mofu-Gudur [MIF] (Cameroon). Barreteau (1988).
Tera [TER] (Nigeria). Paul Newman (per. comm.) and Greenberg (1983).
Yiwom [GEK] (Nigeria). Jungrathmayr (1965: 172) (“Gerka”) and Greenberg (1983: 12) (“Gerka”).
Migaama [MMY] (Chad). Jungrathmayr and Adams (1992) and Semur (1997, cited by Bill Chesley, per. comm.).

4.2. Benue-Congo

4.2.1. *Bantoid*. The labial flap is found in three Northern Bantoid languages (Kwanja, Samba Daka, and Tep) in Cameroon and Nigeria and four Narrow Bantu languages in southeastern Africa. No evidence for contrast is given by any of the sources. It is found

almost exclusively in ideophones. Except for Shona, most sources give only one or two examples. None of the sources consider the sound to be phonemic.

Kwanja [KNP] (Cameroon). Weber and Weber (1987) and Blench (1993).

Samba Daka [CCG] (Nigeria). Boyd (1994: 47, 64, 154, 162) and Cloarec-Heiss (1998).

Tep (Nigeria). Bruce Connell (per. comm.). Grimes (1996) considers Tep to be a dialect of Mambila [MZK], but Connell considers Tep to be a separate language.

Manyika [MXC; Guthrie zone S] (Zimbabwe, Mozambique). Hannan (1974: 728).

Ndau [NDC; Guthrie zone S] (Zimbabwe). Doke (1931: 224).

Nyanja [NYJ; Guthrie zone N] (Malawi, Botswana, Mozambique, Tanzania, Zambia, Zimbabwe). Scott (1929: 590, 598).

Shona [SHD; Guthrie zone S] (Zimbabwe, Botswana, Malawi, Zambia). Doke (1931: 224) (Karanga, Zezuru, and Korekore dialects). See also Hannan (1974: 714) and Fortune (1962: 30).

Kalanga [KCK; Guthrie zone S] (Zimbabwe, Botswana). Doke (1931: 224) (Rozi dialect). Doke (1931: 14) notes that the Rozi people were scattered and that in many places they spoke the local language instead of Rozi (Doke did his field work in 1929). It is possible that this dialect is now extinct. Grimes (1996: 460) states, “Rozvi (Rozwi, Ruzwi, Chirozwi) speak Karanga dialect and do not have their own language. They are dispersed over many areas of the country.” Alternatively, it is possibly Lozi [LOZ].

4.2.2. *Platoid*. The labial flap is attested in one Platoid language.

Nungu [RIN] (Nigeria). Mary Ward, cited by Carten Peust (Linguist List posting 8.45) (“Rindre”, “Nungu”, “Wamba”).

4.3. *Adamawa*

The labial flap is attested in twelve Adamawa languages. It is most common in the Mbum-Day subgroup. Sources provide evidence for contrast in Karang and Mbum. In most languages, it occurs either in all grammatical categories or in more than one. It is well-attested in several languages. It is usually only found in word-initial position. Researchers consider it to be phonemic in Karang, Kare, Kuo, and Mbum.

South Fali [FAL] (Cameroon). Ennulat and Ennulat (1971) (“Fali de Ram”) and Cloarec-Heiss (1998) (“Fali”).

Dii [DUR] (Cameroon). Boyd (1974: 83) (“Dourou”), Bohnhoff (1982) (“Yag Dii” or “Duru”), Segerer (1995, cited by France Cloarec-Heiss, per. comm.) (“Duru”), and Cloarec-Heiss (1998) (“Duru”).

Gula Iro [GLJ] (Chad). Pairault (1969) (Pongaal dialect of “Kulaal”) and Cloarec-Heiss (1998) (“Kulaal”).

Niellim [NIE] (Chad). Diane Vanderkooi (per. comm.).

Karang [KZR] (Cameroon, Chad). Boyd (1974: 82–83) (“Ndó Mbàli”), Ubels and Ubels (1980), and Bob Ulfers (per. comm.).

Kare [KBN] (Central African Republic, Cameroon). Boyd (1974: 63, 67, 82–83) (“Kali”), Lim (1997), and Cloarec-Heiss (1998).

Kuo [KHO] (Chad, Cameroon). Boyd (1974:71) (“Ko”), James Roberts (per. comm.), and Marcia Bleeker (per. comm.).

Mambai [MCS] (Cameroon, Chad). Eguchi (1971, cited by Stefan Elders, per. comm.). He refers to the sound as a “*labio-dentale semivoyelle*”.

Mbum [MDD] (Cameroon, Central African Republic). Richardson (1957) (“Kapere” dialect), Hagège (1968, 1970) (West Mbum dialect), and Hino (1978) (in the town of Mbang-Mboum). Hagège (1968, 1970) refers to the sound as a stop, but later he refers to it as a vibrant (Hagège 1981).

Mundang [MUA] (Chad, Cameroon). Elders (2000) and James Roberts (per. comm.).

Nzakmbay [NZY] (Chad, Cameroon). Boyd (1974) (“Nják Mbái”) and James Roberts (per. comm.) (“Nzakambay”).

Tupuri [TUI] (Cameroon, Chad). Ruelland (1988: 106).

4.4. Ubangi

4.4.1. *Banda*. The labial flap is found in ten of the eleven Banda subgroups. The subgroup in which it is not attested is South Central Banda, which includes Langbashe (Cloarec-Heiss 1978: 17). Grimes (2000) generally treats each of these subgroups as a single language, and we have followed that convention here. Sources give evidence for contrast in Banda-Bambari, Banda-Ndélé, Mid-Southern Banda, and Mbandja. In most languages it is considered common, and it is attested in over twenty-five lexical items in Banda-Bambari, Banda-Banda, Banda-Mbrès, Mid-Southern Banda, Togbo-Vara Banda, West Central Banda, and Mbandja. Tisserant (1931) considers the flap a “fundamental sound” in Banda. In most languages it is attested in both word-initial and intervocalic positions.

Tisserant (1931) provides numerous examples of the labial flap. He reports no less than 33 examples of the sound which occur in the “*ensemble des dialectes, ou la majeure partie d’entre eux.*” (p. 10). Of these examples, the flap is in word-initial position in 15 of them and in word-medial position in 18. These examples are comprised of nouns, verbs, adverbs, and one adjective. He does not explicitly mention dialects in the Banda-Ndélé, Banda-Yangere, or Southwestern (Ngbundu) groups, so it is not clear if these 33 words are found in those subgroups. In addition to these 33 items, numerous additional items containing the flap were attested for individual dialects.

Banda-Bambari [LIY] (Central African Republic). Tisserant (1930, 1931) (Linda, Gbwende, Djoeto, Ngapu, and Ndokpwa dialects), Cloarec-Heiss (1967, 1978, 1986) (Linda dialect), and Moñino (1988) (Linda dialect).

Banda-Banda [BPD] (Central African Republic, Sudan). Tisserant (1931) (Banda-Banda, Belingo, Ndi, Gbaga, Mbi, and Buru dialects).

Banda-Mbrès [BQK] (Central African Republic, Sudan). Tisserant (1931) (Moruba, Wada, Mbele, and Sabanga dialects).

Banda-Ndélé [BFL]. (Sudan, Central African Republic). Sampson (1985) (Tangbago dialect) and Moñino (1988) (Ngao dialect).

Banda-Yangere [YAJ] (Central African Republic). Richardson (1957) and Moñino (1988).

Banda, Mid-Southern [BJO] (Central African Republic, D.R. Congo). Tisserant (1931) (Bongo, Wasa, Yakpwa, Mono, and Ngobu dialects), Cloarec-Heiss (1978) (Ngundu, Gobu, Kpagua, and Yakpa dialects), Olson (1996) (Mono and Gobu dialects), Olson and Schrag (1997) (Mono dialect), and Kamanda (1998) (Mono dialect).

Banda, Togbo-Vara [TOR] (D. R. Congo, Central African Republic). Cotel (1907: x) (Togbo dialect), Tisserant (1931) (Togbo and Vora dialects), Olson (1996) (Togbo dialect), and Moñino (1988) (Vara dialect).

Banda, West Central [BBP] (Central African Republic, Sudan). Tisserant (1931) (Dakpwa dialect), Santandrea (1965: 28) (Golo dialect), Cloarec-Heiss (1978) (Gbi dialect), and Moñino (1988) (Dakpa and Wojo dialects).

Ngbundu [NUU] (D. R. Congo). Cloarec-Heiss (1978).

Mbandja [ZMZ] (D. R. Congo, Central African Republic, Republic of Congo). Tisserant (1931), Tingbo (1978) (Balawo dialect), Cloarec-Heiss (1978), and Moñino (1988).

4.4.2. *Ngbandi.* The labial flap is attested in one Ngbandi language.

Kpatili [KYM] (Central African Republic). Boyd (1988: 38, 107, 119) (“Kpatiri”). Grimes (2000) considers Kpatili to be part of the Zande subgroup of Ubangi, but Boyd considers it to be closely related to Ngbandi.

4.4.3. *Gbaya-Manza-Ngbaka.* The labial flap is attested in four Gbaya-Manza-Ngbaka languages. Grand'Eury provides evidence for contrast in Ngbaka-Minagende, but she does not consider the sound to be phonemic since it only occurs in ideophones. In the language group, the sound occurs in ideophones and animal names. It is considered rare.

Gbaya-Bossangoa [GBP] (Central African Republic). Samarin (1966: 26) and Moñino (1995: 162–163).

Gbaya, Northwest [GYA] (Central African Republic, Cameroon, Republic of Congo, Nigeria). Moñino and Roulon (1972: 65) (Gbaya Kara 'Bodoe dialect), Noss (1981: 9) (Yaayuwee dialect), and Moñino (1995: 58).

Manza [MZV] (Central African Republic). Moñino (1995: 216) (“Manza de Mala”) and Cloarec-Heiss (1998) (“Manja”).

Ngbaka [NGA] (D. R. Congo, Central African Republic, Republic of Congo). Grand'Eury (1991: 99) (“Ngbaka-Minagende”) and Timothy Assama Mambo (per. comm.).

4.4.4. *Sere-Ngbaka-Mba.* The labial flap is found in at least seven Sere-Ngbaka-Mba languages. Sources provide evidence for contrast in Ndogo, and further research will likely show contrast in most if not all of the rest of the seven languages. It occurs in both nouns and verbs in all of the languages, in adjectives as well in Sere and Tagbu, and in all grammatical categories in Ndogo. It is attested in over 40 lexical items in Ndogo, in eight lexical items in Sere, and in four or five lexical items in Bai, Feroqe, Mangayat, and Tagbu. It occurs in both word-initial and word-medial position in Ndogo.

Bai [BDJ] (Sudan). Santandrea (1961: 13, 148ff) and Tucker and Bryan (1966: 92).

Bangba [BBE] (D. R. Congo). Boone (1995: 52).

Feroge [FER] (Sudan). Santandrea (1950: 21–30, 43–46).
Mangayat [MYJ] (Sudan). Santandrea (1950: 21–30, 43–46; 1961: 171).
Ndogo [NDZ] (Sudan). Tucker (1940: 65), Santandrea (1961: 13, 87, 148ff), Tucker and Bryan (1966: 90–107), Thelwall (1980: 80–81), Pozzati (1987), Constance Kutsch Lojenga (per. comm.), and Peter Rebigo and Wanda Pace (per. comm.).
Sere [SWF] (D. R. Congo, Central African Republic). Santandrea (1961:13, 148ff), Tucker and Bryan (1966: 86–107), and Thomas, Bouquiaux, and Cloarec-Heiss (1976: 166).
Tagbu [TBM] (D. R. Congo). Santandrea (1961: 13, 91, 148ff).
Dongo [DOO] (D. R. Congo). Pasch (1986: 179–180, 389) reports the phoneme /v/ in Dongo. Unfortunately, she does not describe the sound represented by this symbol, but given the geographical location, it is likely a labial flap.
Ngbaka Ma’bo [NBM] (Central African Republic, D. R. Congo, Republic of Congo). Richardson (1957: 91) reports a “flapped v” in Ngbaka-Ma’bo. However, Cloarec-Heiss (1998) states that this is erroneous.

4.4.5. *Zande*. The labial flap is attested in one Zande language.

Nzakara [NZK] (Central African Republic, D.R. Congo). Santandrea (1965: 28).

4.5. *Central Sudanic (West)*

The labial flap is found in seven West Central Sudanic languages. No evidence for contrast is given by the sources. The sound occurs mostly in nouns, and to a lesser extent in verbs. It is attested in five lexical items in Sar and Yulu, and in fewer lexical items in the remaining languages. Sources consider it to be phonemic in Gbaya and Baka, but the evidence for this is limited.

Aja [AJA] (Sudan). Cloarec-Heiss (1998).

Gbaya [KRS] (Sudan). Westermann and Ward (1933), Tucker (1940), Tucker and Bryan (1966: 63), and Brown (1991: 54, 63). (“Kreish”).

Baka [BDH] (Sudan, D.R. Congo). Tucker and Bryan (1966: 63, 78) and Parker (1985: 65–66).

Gula [KCM] (Central African Republic, Sudan). Santandrea (1970) (“Kara”) and Nougayrol (1999: 47).

Morokodo [MGC] (Sudan). Tucker and Bryan (1966: 63).

Sar [MWM] (Chad). Palayer (1970, 1992) and Fournier (1977: 39).

Yulu [YUL] (Sudan, Central African Republic, D.R. Congo). Santandrea (1970) (Yulu and Binga dialects).

4.6. *Central Sudanic (East)*

The labial flap is found in seven East Central Sudanic languages. Sources provide evidence for contrast in Mangbetu. It occurs in nouns, verbs, and numerals in Mangbetu, in nouns and verbs in Lese, and in nouns in Asua, Lombi, and Mamvu. It is most common in Mangbetu, but appears to be rare in the rest of the languages. It is usually found in word-medial position.

Asoa [ASV] (*D. R. Congo*). Tucker and Bryan (1966: 29) and Demolin (1988: 68).
Lombi [LMI] (*D. R. Congo*). Demolin (1988: 81, 83).
Mangbetu [MDJ] (*D. R. Congo, Uganda*). Tucker and Bryan (1966: 29), Larochette (1958) (Mangbetu and Meje dialects), Demolin (1988: 69, 81, 83) (Mangbetu and Makere dialects), McKee (1991) (Meje dialect), Demolin (1992), and Demolin and Teston (1996).
Efe [EFE] (*D. R. Congo*). Demolin and Teston (1996: 103).
Lese [LES] (*D. R. Congo*). Tucker and Bryan (1966: 35), Demolin and Teston (1996: 103), and Constance Kutsch Lojenga (per. comm.).
Mamvu [MDI] (*D. R. Congo*). Tucker and Bryan (1966: 29, 46).
Mvuba [MXH] (*D. R. Congo, Uganda*). Demolin (1988: 68).

4.7. Austronesian

The labial flap is attested in one Austronesian language.

Sika [SKI] (*Indonesia*). Donohue (to appear).

4.8. Other

There are other possible references to the labial flap in the literature, but more research is necessary to determine if the sound is in fact found in these languages.

Greenberg cites Tucker and Bryan (1966) as attesting a labial flap in Mundu [MUH] (*Sudan, D. R. Congo*), but we could not verify this claim.

Besides the languages mentioned above, Boyd (1974: 82–83) also lists Ngoumi, Touboro, and Pandjama as containing the labial flap. It is likely that these are all dialects of Karang.

Santandrea (1965: 28) reports a labiodental flap in the Gäbu dialect of Banda. It is unclear what the classification of the language is. He also mentions its existence in the Ngala dialect of Banda (p. 16). Again, it is unclear what the classification of this language is. The language is moribund.

Welmers (1973: 75) mentions a bilabial flap as an allophone of /b/ in Efik, but he does not describe the articulation. This sound patterns similarly to alveolar and velar “flaps”, which are allophones of /d/ and /g/, respectively.

5. Conclusion

In this paper, we have documented the geographic and genetic distributions of the labial flap. It is most well-attested, both in terms of number of languages and number of items in each language, in the Mbum-Day branch of Adamawa, and the Banda and Sere-Ngbaka-Mba branches of Ubangi.

The labial flap appears to have arisen independently in two geographically distant parts of the world—Africa and Indonesia. If this observation is substantiated by further research, then we have evidence that the labial flap should not be considered an historical accident, but rather that it should be properly viewed as a component of human language

which needs to be taken into account in the development of phonetic and phonological theory.

This paper also highlights the importance of obtaining an appropriate language sample in doing linguistic research. In considering linguistic phenomena found in a limited number of languages, the sample should be complete or nearly complete. In the case of the labial flap, a nearly complete sample led to a clear-cut conclusion regarding the center location of the phenomenon.

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