A Comprehensive Concordance between the *Ethnographic Atlas* and Murdock's Map of Ethnic Groups of the African Continent

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ABSTRACT:

We provide a concordance between ethnic groups shown in Murdock's map of African ethnicities and African ethnic groups included within the *Ethnographic Atlas*. Relying on homogenous cultural clusters and the representative ethnicity in each cluster identified by Murdock, we provide a concordance that is more comprehensive and complete than that from pre-existing methods.

Key words: Ethnographic data, ethnicity, mapping.

JEL classification: N47, N57, N97, O10.

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1. Introduction

A commonly used data source for scholars studying the causes and consequences of characteristics of pre-colonial societies within Africa is the *Ethnographic Atlas*. The source comprises 1,265 ethnic groups from around the world (and 506 from the African continent) and provides information on a range of characteristics of the groups including lineage practices, marriage customs, residence patterns, the structure of politics and governance, modes of subsistence, gender divisions of labor, etc. While the data are particularly rich, limited information is provided on the historical locations of each ethnic group. A single set of coordinates is provided, with the reported latitude and longitude rounded to the nearest decimal degree. Thus, in many cases, multiple ethnic groups share the coordinates.

For analysis within Africa, scholars often use a map provided by George Peter Murdock that maps the estimated traditional territory of ethnic groups during the early colonial period. The map is from Murdock (1959). It is common to combine the information from these two sources; namely the rich information on geographic location of groups from Murdock (1959) with ethnographic information on characteristics of groups in the *Ethnographic Atlas*. Unfortunately, the list of ethnic groups in the two sources is not consistent. The definitions of ethnic groups and the names used are not consistent. Therefore, each study that uses the two data sources must concord them. In general, the linking is less than perfect, causing a large share of ethnic groups to drop from the analysis. For example, in the seminal studies by Michalopoulos and Papaioannou (2013) and Michalopoulos and Papaioannou (2014), only 534 of the 826 mapped ethnic groups in Murdock (1959) can be matched to the *Ethnographic Atlas*. Our procedure is able to match all but 35 ethnic groups.

This study provides a near complete concordance between the two data sources. Unlike previous studies, we are able to provide a near-complete concordance between the two ethnic classifications. We are able to significantly improve upon existing concordances for two reasons. First, we rely on a more extensive set of resources than is typically used by scholars. Second, and more significantly, we exploit an aspect of the *Ethnographic Atlas*. That is, in the hardcopy version of the data set (Murdock, 1967a), all ethnic groups are classified into clusters deemed to be culturally homogenous. A complete list of the clusters is not included in the existing electronic version of the data and is only provided in (Murdock, 1967a). Within each cluster, one

ethnic group is listed as the group that is the most representative of the cluster. This provides information that can be exploited to create matches that, in the past, could not be made.

Berman, Couttenier and Girard (2020) follow an approach related to ours to match the Murdock Map data to the Afrobarometer. In their baseline analysis, they augment the matches from Nunn (2008) with matches made by using relationships noted in Murdock (1959) (matches we would classify as Text Matches), and matches using Ethnologue, the Joshua Project, and Wikipedia (matches we would classify as Alternative Source Matches). As a robustness check to their baseline match, the authors also rerun their analysis at the cluster level rather than the society level. The key distinction between this method and ours is that they do not make any new society-to-society matches using the clusters, rather, they aggregate their existing matches to the cluster level and rerun their analysis at the coarser level of geography. They do not use the same innovation that we do in matching societies to the representative society within a cluster, creating more society-to-society matches.

In the remainder of this document, we describe and explain the full details of our matching procedure. The final concordance is publicly available and posted on the authors webpages.

2. Matching Protocol

We use the following protocol to match each of the societies in the Murdock Map data to a society in the *Ethnographic Atlas* (EA) data. For each society, we follow this protocol in the order that it is written here, so that, for example, we make a direct match whenever possible, even if matching using a method farther down in the protocol would result in a different match. All matches are subject to the sanity checks presented in Section 2.E below. If a match is found to be false, we begin searching for a new match starting with the subsequent matching method.

A. Direct Matches

Whenever possible we match Murdock's Map of Ethnic groups to the EA directly, first by using the society's name (using variable v107 in the EA data) and then using alternative spellings provided in Murdock (1959). Using this method alone we are able to match 57.35% of groups.

B. Text Matches from Murdock (1959)

For the remaining societies we go through the entries in Murdock (1959) and match groups that are related to each other, recording the form of relationship noted by Murdock using the coding shown in Panel B of Table 1. This accounts for 7.39% of our matches.

C. Cluster Matches from Murdock (1966)

For 30.16% of societies we adopt a novel matching protocol based on Murdock's categorization of societies into clusters. Murdock describes these clusters as groups of societies "whose cultures are genetically closely related and hence merit at most but a single representative in any one world sample" (Murdock, 1967a, p. 3). The main criteria Murdock uses in creating his clusters is there be "at least 1,000 years of separation and divergent evolution" (Murdock, 1967a, p. 4). There are, of course, exceptions to this rule, and Murdock draws heavily on linguistic and ethnological evidence to classify societies (Murdock, 1967a, p. 4).

In summarizing the *Ethnographic Atlas*, Murdock states that when used for cross-cultural sampling, the EA should only include societies "whose cultures have been adequately described" in order to avoid drawing inference that would have been more complete or accurate had a society within the same cluster with more information been chosen (Murdock, 1967a, p. 5). However, depending on the research question, it is often sensible to include societies that are less well-known. To this end, we utilize a valuable feature of Murdock's cluster classification system: his identification of a primary society, or one that is "the most fully described and/or most representative in the cluster" (Murdock, 1966, p. 100).

Many societies that are described in Murdock (1959) are excluded from the EA data because Murdock found only "extremely scanty ethnographic descriptions or none at all" (Murdock, 1966, p. 100). However, many of these societies are still grouped into clusters and categorized as "other" societies in Murdock (1966). In order to link these societies to the EA data, we simply match them to the representative society of the cluster, the one that is "the most fully described and/or most representative in the cluster" (Murdock, 1966, p. 100). The representative society is the ethnic group that is listed in Murdock (1966) first in the list of groups in the cluster.

We differentiate between direct matches and those based on alternative spellings used in Murdock (1959). For matches based on alternative spellings, we follow a similar protocol to

the one described in Section 2.D, drawing from additional sources to confirm that the alternate spelling refers to the relevant group.

While in most cases this protocol is straightforward, there are some edge cases. For example, in several instances, a group in the Murdock Map data could plausibly be matched to two societies in the EA data. For example, "Ligbi, Degha (SE)" could be matched with either the Ligbi or Degha. These two societies are in different clusters, and so would be matched to different representative societies. In such cases, we match with society with the largest population as determined by Murdock (1959).

In addition to edge cases, we identify groups that are not represented in the Ethnographic Atlas using Murdock (1966). When a note for a group includes the phrase "EA: unrepresented" we code the group as NIEA (Not In Ethnographic Atlas). Murdock also notes that "In a few instances, usually where a source has not been readily available, a bibliographic reference is listed instead of the usual Ethnographic Atlas identification," and we also code these groups as NIEA. This accounts for 24 societies.

D. Alternative Source Matches

For societies in the Murdock Map data that do not appear in Murdock (1966) we rely on other databases with ethnographic information. For all sources listed below we search all alternative names listed in Murdock (1959).

Some societies do appear in Murdock (1966), but they are not in the "Other" category as described in Section 2.C. Rather than being listed in the "Other" category of a cluster, these societies are listed directly in the cluster but have a bibliographic reference instead of an EA ID number. Murdock notes that a reference is used in lieu of an EA number when "a source has not been readily available" to fully describe the society (Murdock, 1966, p. 100). For these cases, we use alternative sources to confirm a match. In other instances, an alternative source links the society back to the cluster, and we then use Murdock (1966) and match to the representative society in the cluster. A detailed description of each alternative source match can be found in Appendix A

a. Ethnology

The first source we check to make the remaining matches is the journal *Ethnology*, which Murdock founded in 1962. This source is particularly helpful because it is where updates and summaries of the Ethnographic Atlas are published, as well as many papers that rely on these data and which follow similar naming and clustering conventions. Many of these sources provide confirmation of alternative spellings and information about which groups are subgroups or supergroups of others. When we confirm that a group is a subgroup of a supergroup that is included in the EA data, we match the subgroup to the supergroup. Especially helpful for our purposes is the use of the same identifiers as the EA data, since this removes ambiguity about which society is being referenced given that some societies share the same name.[1]

In some cases, there are many results for a search of *Ethnology*. We always check the first ten results but do not read papers that are clearly not about Africa as indicated by the title or abstract. In such cases, we include the word "Africa" as a search term, in addition to the name of the society, and evaluate the first ten papers.

b. eHRAF World Cultures and the Ethnographic Survey of Africa

eHRAF World Cultures is a particularly useful database for our purposes not only because of its extensive coverage of cultures but also because it shows results at the paragraph level. This allows us to find information on relatively obscure societies since even if they are mentioned only once in a book or article, we are able to identify further information about their relationship to other groups.

In cases in which there are more than ten results in the relevant region, we search the first ten results and then impose a further restriction of only including results from the *Ethnographic Survey of Africa*, which is a series of studies, edited by Daryll Forde, where each volume covers a region of Africa and each chapter covers an ethnic group or set of related groups (see Forde, 1950–1977).

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[1]For example, the Masai are coded as Agj, which is region A, area within region j, EA number 2.

c. Ethnologue

Ethnologue is a database of every known living language and includes language trees and maps of where each language is spoken. Due to the overlap in ethnicity and language, Ethnologue is a valuable resource for this matching process. We rely on this source for identifying alternate spellings, and the language trees often clarify which societies are sub/supergroups of one another. Additionally, the maps allow us to confirm that the location is consistent with those in the EA and Murdock Map data, which is especially important when there are many potential matches.

d. The Joshua Project

The Joshua Project is an organization that provides information on groups whose members have "less than 2% evangelical and less than 5% professing Christian." The data they collect come from a variety of sources, including Ethnologue, census reports, the World Christian Database, and the Church Planting Progress Indicators. The Joshua Project is easily searchable and is often useful for validating alternative spellings and finding information on how less well-known groups relate to each other (i.e. if they are sub or supergroups).

### e. Murdock (1959), Murdock (1966), and Murdock Map

In many cases, it is extremely useful to return to the original source used to construct the Murdock Map data, Murdock (1959). In this book, Murdock has a short entry for each society, and these entries are grouped together based on geographic and ethnolinguistic proximity. Oftentimes, these groupings align very closely with the clusters in Murdock (1966).

For example, consider the KENGA in the Murdock Map data. In Murdock (1959), the KENGA are described in Chapter 17 on the Sudan Fringe, in a subsection titled "Bagirmi Province" along with nine other societies. In Murdock (1966), eight of these societies are listed in cluster 76. Bagirmi. To explore the plausibility of a cluster-based match, we map each of the societies in the cluster that also has an exact match in the Murdock Map data. We do the same for the cluster that includes the other society listed in the subsection "Bagirmi Province" but not in cluster 76. Bagirmi. If the match to any of the clusters makes sense based on this information, combined with the information from the sources listed above, we follow the protocol laid out in Section 2.C and match to the cluster's representative society.

E. Sanity Checks

In order to validate our matching system, we check each match whose centroids in the Murdock Map and EA data are more than 700km apart. To confirm that the match is correct, we rely on the sources outlined in Section 2.D. Many of the cases with centroids that are far apart are simply due to the fact that some of the clusters described in Section 2.C are spread out over a large area, and the representative society is not always the closest geographically to the society in the Murdock Map data.

Figure 1: Clusters
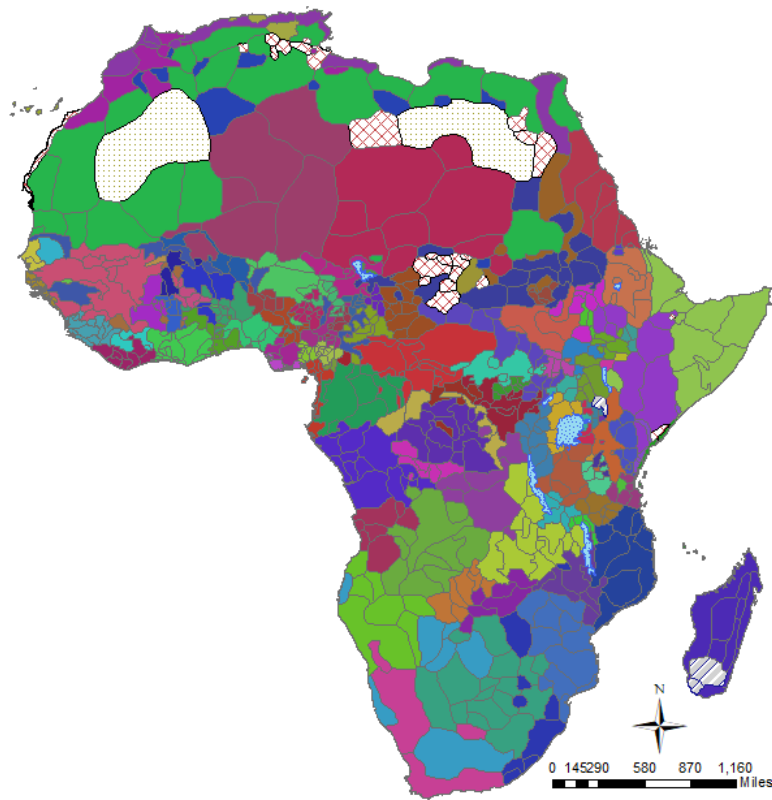
Note: This figure shows how the Murdock Map polygons align with the clusters from the EA data. The boundary lines represent the Murdock Map societies and each EA cluster is mapped in a unique color.

Table 1: Matches of Murdock Map to EA Data

MATCH CODE (1)	MATCH DESCRIPTION (2)	PERCENT OF MATCHES (3)
	Panel A: Direct Matches	
1	exact match	53.77%
2	exact match of alternate name	3.58%
	Panel B: Text Matches	
3	subgroup of EA group	0.62%
4	supergroup of EA group	0.00%
5	"with" EA group	1.73%
6	"contains elements" of EA group	0.12%
7	"strongly acculturated" with EA group	0.62%
8	"detached branch" of EA group	0.49%
9	speaks the language of EA group	0.25%
10	"like" EA group	0.00%
11	"strongly influenced" by EA group	0.12%
12	is "partially" EA group	0.00%
13	is a branch of EA group	0.25%
14	"embraces" EA group	0.62%
15	formerly subject to EA group	0.12%
16	largely assimilated to EA group	0.12%
17	conquered EA group	0.12%
18	subject to EA group	0.37%
19	linguisticly akin to EA group	0.12%
20	considerably mixed with EA group	0.37%
21	"kindred" with EA group	0.25%
22	"akin" to EA group	0.25%
23	"protector" of EA group	0.00%
24	"offshoot" of EA group	0.25%
25	once belonged to EA group	0.12%
26	location previously inhabited by EA group	0.12%
27	neighbors EA group	0.12%
28	"subjugated" EA group	0.12%
29	"mixed with and acculturated to" EA group	0.12%
	Panel C: Cluster Matches	
30	exact match	28.18%
31	exact match of alternate name	1.85%
	Panel D: Alternative Matches	
32	alternative sources	5.19%

Note: The table shows the match codes associated with each type of match. Panel A reports cases in which the name (or alternate name) for the society in the Murdock Map data matches the name in the Ethnographic Atlas data exactly, as described in Section A. Panel B reports cases in which a match is made based on the entry for the society in Murdock (1959), as described in Section B. Instances of match descriptions containing quotes denote matches that include the reverse case. For example, a match 6 could be "Map group contains elements of EA group" or "EA group contains elements of Map group." Panel C reports cases in which a society is matched to the EA data using the representative society in the cluster from Murdock (1966), as described in Section C. Panel D reports cases in which a society is matched using alternative sources, as described in Section D. For each group in the Murdock Map data we match the society using the methods in this table in the order in which they are listed so that, for example, a society with a direct match will always be matched using method 1 even if it could have been matched to a different society using method 30. All matches are subject to the sanity checks presented in Section E. If a match is found to be false, we begin searching for a new match starting with the subsequent matching method.

Figure 2: Match Categories
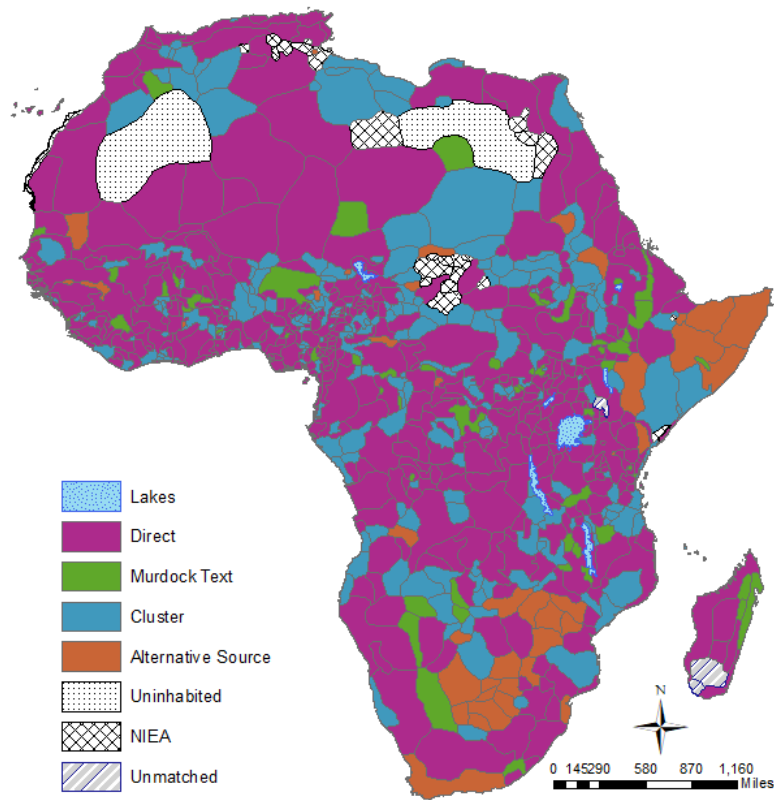
Note: This figure shows the method through which each of the groups in the Murdock Map data is matched to an EA ethnicity. "Direct" refers to matches in which the name (or alternate name) for the society in the Murdock Map data matches the name in the Ethnographic Atlas data exactly, as described in Section 2.A." Murdock Text" refers to cases in which a match is made based on the entry for the society in Murdock (1959), as described in Section 2.B. "Cluster" refers to cases in which a society is matched to the EA data using the representative society in the cluster from Murdock (1966), as described in Section 2.C. "Alternative Source" refers to cases in which a society is matched using alternative sources, as described in Section 2.D. "Uninhabited" refers to uninhabited areas as defined by the Murdock Map data. "NIEA" refers to societies that are not in the EA data as determined by the procedure determined by Murdock (1966), outlined in Section 2.C.

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Appendix A. Alternative Source Matches

This section provides an explanation of each of the matches that were made based on alternative sources. For each match, the Murdock Map group is listed first, followed by the EA group with which it is matched. See Section D for details on the protocol for this type of match.

Arusha – Masai

This match is made primarily using Hodgson (1999), which includes a quote from a Masai elder, stating:

> ... this woman [me] who is sitting here is an elaisungun [European], but although she is elaisungun, we don't know what kind of elaisungun she is. They have lots of tribes themselves – there are Americans, English, Indians, Boers. Similarly, if you look **within our Maasai, there are Arusha**, Sukuma, Chaga, and Meru. (p. 141)

This classification the Arusha as part of the Masai is consistent with (Murdock, 1966, p. 106). The Arusha are listed as part of cluster 93. Masai, but do not have an EA number and instead have a bibliographic reference. Further, the Arusha are described in the section titled "Masai Cluster" of (Murdock, 1959, p. 331).

Banza – Mbandja

This match is primarily based on Ethnology (1966a, p. 340), which includes the following entry for Mbandja: "Ai25: **Mbandja (Banza)**." Groups listed in parentheses are alternative names, so we match Banza to Mbandja.

Boran – Arusi

This match is made primarily using Murdock (1966), Murdock (1959) and Lewis (1974). We first link the Boran to the Galla cluster, and then to the Arusi. In Murdock (1959, p. 324) the Boran are described in Chapter 42, "Galla," the same chapter as the Arusi. In Murdock (1966, p. 106) the Boran are listed in cluster 97. Galla, whose representative society is Arusi. However, the Boran are not in the "Other" category and have a bibliographic reference rather than an EA ID number. Therefore, we confirm that the Boran are part of the Galla using Lewis (1974), who writes:

The Boran, of the Ethiopia-Kenya borderland are pastoralists whose social system some consider to be **archetypal Galla**, since they live in the area which was probably the Galla homeland before their expansion and because, rightly or wrongly, they are perceived of as maintaining **the closest thing to the 'original' Galla customs, spirit, and social structures**. (p. 151)

Additionally, Ethnologue confirms the close relationship between Boran and Arusi in that there is one language spoken by both groups, "Oromo, Borana-Arsi-Guji."[2] Thus we are confident in the relationship between the Boran and the Galla cluster and match the Boran with the representatitive society, the Arusi.

Cape Hottentot – Nama

This match is based primarily on Murdock (1966), Murdock (1959), and Ethnologue. In (Murdock, 1966, p. 100) the Cape Hottentot are listed in cluster 3. Hottentot, with the representative society Nama. However, the Cape Hottentot have a bibliographic reference rather than an EA ID number. (Murdock, 1959, pp. 53–54) describes both the Cape Hottentot and the Nama in chapter 9. "Bushmen and Their Kin." He notes that the Cape Hottentot are "now extinct," and writes that the Nama "are the only Hottentot group whose aboriginal culture survived long enough to be studied by anthropologists." Additionally, Ethnologue lists Cape Hottentot as an alternative name for the language Xiri and includes a tree showing that Xiri is a branch of Nama.

Dialonke – Yalunka

This match is primarily based on (Ethnology, 1968, p. 107), which includes the following entry for Yalunka: "Ag54: **Yalunka (Dialonke)**." Groups listed in parentheses are alternative names, so we match Dialonke to Yalunka.

Duaish – Zenaga

This match is based on (Ethnology, 1966b, p. 229), which confirms that the Duaish are a subgroup of the Zenaga. The entry for a Zenaga includes the comment, "Column 64: formerly AaB and still so today in **the Duaish subgroup**."

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[2]Arsi is an alternative name for Arusi and Borana is an alternate name for Boran listed in the (Murdock, 1959, p. 324).

Geri – Somali

This match is based primarily on Murdock (1959) and Lewis (1961). In Chapter 41. "Afar and Somali," Murdock writes that, "Agriculture provides the principal means of subsistence of the Geri, who may well represent the **original core of the Somali nation**" (p. 321). Additionally, (Lewis, 1961, p. 15) writes, "Daarod groups which are now strong clans or congeries of clans such as the Geri, the Marrehaan and the Harti, played a prominent part as did as the Habar Magaadle (Isaaq)," when describing the earliest written mention of the Somali clan and the armies which conquered parts of Ethiopia.

Hawiya – Somali

This match is based primarily on Lewis (1955). Lewis writes:

> The Somali proper, numbering well over a million and a half, are the predominantly nomadic pastoralists of northern Somaliland; their **most southerly representatives are the Hawiya** of Somalia and the trans-Juba Darod. These are numerically the most important divisions of the Somali. The Hawiya are collaterally descended with the Dir, a relatively small group, from a common ancestor, Irrir, brother of the ancestor of the pre-Hawiya. (p. 15)

(Lewis, 1955, p. 15) also includes a map and genealogy tree which confirm that the Hawiya are part of the Somali (Figure 3). This match is corroborated by the fact that the Hawiya are lited in Chapter 41 "Afar and Somali" of (Murdock, 1959, p. 320).

Figure 3: Genealogy and Map of the Somali from (Lewis, 1955, p. 15)
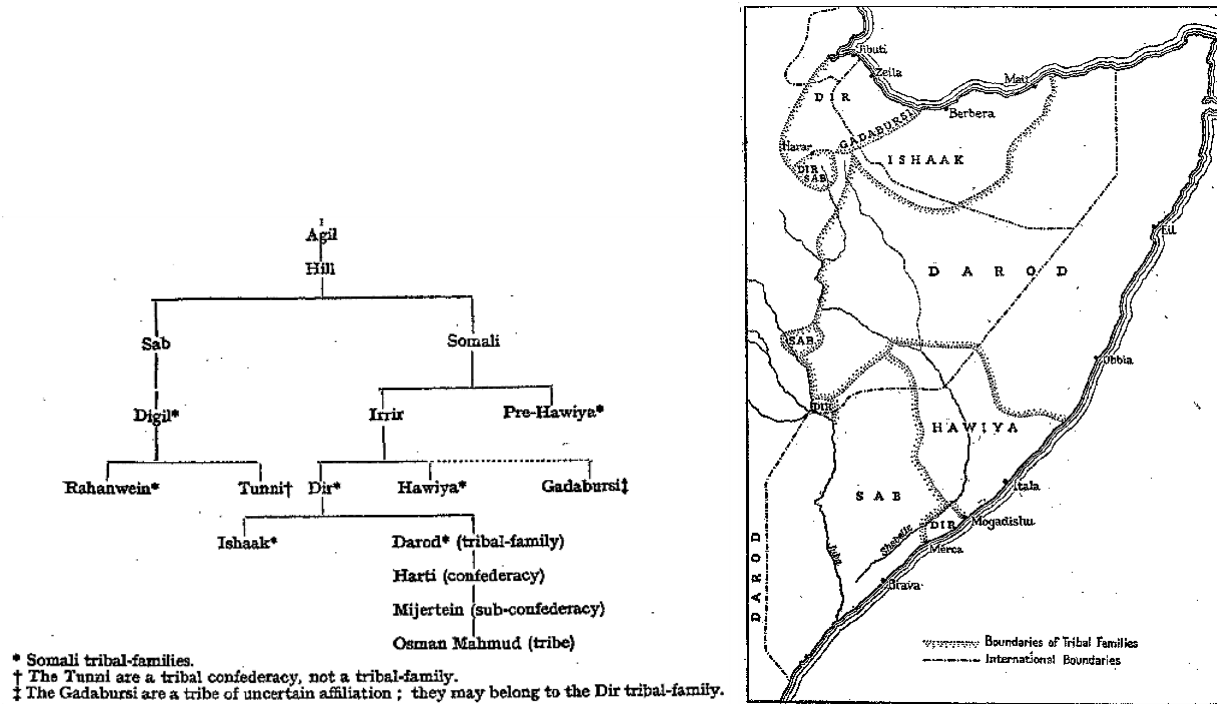
Hurutshe – Tswana

This match is primarily based on Kuper (1978), Murdock and Human Relations Area Files (1958), Ethnologue, and the Joshua Project. In his paper "Determinants of Form in in Seven Tswana Kinship Terminologies," (Kuper, 1978, p. 284) lists the "Hurutshe of Dinokane, Zeerust district" as people who replied to a questionnaire used as a source of data (p. 284). Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Hurutshe as a Tswana tribe. Ethnologue confirms that Sehurutshe is a dialect of Setswana and that "Standard **Setswana is based on the Sehurutshe dialect** and is nearly identical to it." The Joshua Project corroborates this evidence by naming the people group Tswana-Hurutshe.

Ishaak –Somali

This match is based primarily on Lewis (1955). Lewis writes:

> The Dir are generally considered the oldest of the Somali... The ancestor of the Dir
> is more important, however, in having given rise, through the intermarriage of his
> daughters with immigrant Arabs, to the large and important **Ishaak and Darod tribal-
> families**. Traditions of descent from eponymous Arabian ancestors are particularly

strong among the Ishaak and Darod, but are shared, in their own right, by the Hawiya and Dir. (p. 15)

(Lewis, 1955, p. 15) also includes a map and genealogy tree which confirm that the Hawiya are part of the Somali (Figure 3). This match is corroborated by the fact that the Ishaak are lited in Chapter 41 "Afar and Somali" of (Murdock, 1959, p. 320).

Karanga –Shona

This match is based primarily on Meekers (1993). Meekers writes that, "**The Shona ethnic cluster includes the Kalanga, Karanga**, Korekore, Manyika, Ndau, and Zezuru" (Meekers, 1993, p. 52). Further, Ethnologue confirms that Karanga is a dialect of Shona and in (Murdock, 1959, p. 375) the Karanga are described under the section heading "Shona Cluster."

Kenga – Bagirmi

This match is primarily based on Murdock (1966), Murdock (1959), and Ethnologue. The Kenga are described in the section "Bagirmi Province" of (Murdock, 1959, p. 136). Of the ten groups in this section, eight are included in cluster 76. Bagirmi in (Murdock, 1966, p. 105). Ethnologue confirms that Kenga is a branch of the Bagirmi language and the match aligns geographically across the Ethnologue, EA, and Murdock Map data.

Kgalagadi – Tswana

This match is based primarily on Murdock (1966) and Ethnology (1963). In (Murdock, 1966, p. 101), the Kgalagadi are listed in cluster 5. Sotho, but have a bibliographic reference in place of an EA ID number. The representative society of this cluster is the Tswana. (Ethnology, 1963, p. 252) notes that, "The Kgalagadi (Kalahari), on the basis of insufficient evidence, are **probably a deviant member of the Sotho type**." Further, Ethnologue includes a language tree showing the Kgalagadi language as a branch of Sotho-Tswana, the Joshua Project lists "Bantu, Sotho-Tswana" and the Kgalagadi's People Group, and (Murdock, 1959, p. 386) describes the Kgalagadi in chapter 51. "Sotho." Therefore, we are confident that the Kgalagadi belong to cluster 5. Sotho and match to the representative society, Tswana.

Kgatla – Tswana

This match is based primarily on Murdock (1967b), Suggs (1987), Kuper (1978), and Murdock and Human Relations Area Files (1958). In the entry for Tswana, (Murdock, 1967b, p. 116) writes, "**Tswana (Ab13), with special reference to the Kgatla**." Suggs (1987) is titlted "Female Status and Role Transition in the Twana Life Cycle," and the paper focuses almost exclusively on the Kgatla. He writes, "... this paper examines adult female status and role transition in terms of life-cycle progression among the Kgatla of Botswana" (p. 107). (Kuper, 1978, p. 241) writes, "The data used in this paper are drawn from **seven [Tswana] tribes: the (Kgafela) Kgatla**, the Kwena, Lete, Ngwaketse, Ngwato and Tlokwa, all of Botswana, and the (Tshidi) Rolong of the northern Cape." He also includes a figure (reprinted here as Figure 4) showing the "authoritative anthropological classification" of the tribes, which categorizes the Kgatla as Eastern Tswana (Kuper, 1978, p. 241). Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Kgatla as a Tswana tribe. Further, Kgatla is listed as a dialect of the Setswana language in Ethnologue, and the Joshua Project lists Kgatla as an alternate name for the Tswana-Hurutshe people group.

Figure 4: Classification of Tswana Tribes from (Kuper, 1978, p. 241)

Western Tswana: Rolong
Kwena (of Botswana)
Ngwaketse ⎫
Ngwato ⎭ off-shoots of the Kwena
Eastern Tswana: (a) Kgatla
Tlôkwa
(b) Lete

(Kuper, 1978, p. 241). "An authoritative anthropological classification orders our tribes as follows" **xx reprint permissions.**

Korekore – Shona

This match is based primarily on Meekers (1993). Meekers writes that, "**The Shona ethnic cluster includes the Kalanga, Karanga, Korekore**, Manyika, Ndau, and Zezuru" (Meekers, 1993, p. 52). Further, Ethnologue confirms that Korekore is a dialect of Shona, the Joshua Project lists Korekore as an alternate name for the Shona, and the Korekore are described under the section heading "Shona Cluster" in (Murdock, 1959, p. 375).

Kwena – Tswana

This match is primarily based on Kuper (1978) and Murdock and Human Relations Area Files (1958). (Kuper, 1978, p. 241) writes, "The data used in this paper are drawn from **seven [Tswana] tribes: the (Kgafela) Kgatla, the Kwena**, Lete, Ngwaketse, Ngwato and Tlokwa, all of Botswana, and the (Tshidi) Rolong of the northern Cape." He also includes a figure (reprinted here as Figure 4) showing the "authoritative anthropological classification" of the tribes, which categorizes the Kwena as Western Tswana (Kuper, 1978, p. 241). Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Kwena as a Tswana tribe.

Mahamid – Hasania

This match is based primarily on Murdock (1959), Murdock (1966), and the Joshua Project. The Mahamid are described in chapter 54. "Baggara" in (Murdock, 1959, p. 410). The Joshua Project lists "Baggara; Mahamid Baggara" as alternate names for the Mahamid. In (Murdock, 1966, p. 107) there is a cluster named Baggara (cluster 109) whose representative society is the Hasania. Based on the previous evidence we link the Mahamid to the Baggara cluster and match with the Hasania, the representative society.

Manyika – Shona

This match is based primarily on Meekers (1993). Meekers writes that, "**The Shona ethnic cluster includes the Kalanga, Karanga, Korekore, Manyika**, Ndau, and Zezuru" (Meekers, 1993, p. 52). Ethnologue confirms that Manyika is a dialect of Shona and includes the description, " A bit more divergent from Shona [sna] than the Karanga, Zezuru, and Korekore dialects. **Partially intelligible with Shona**." Further, the Joshua Project lists the Manyika's people cluster as "Bantu, Shona," and the Manyika are described under the section heading "Shona Cluster" in (Murdock, 1959, p. 375).

Matmata – Riffians

This match is based primarily on Murdock (1966), Coon (1931), and the Joshua Project. (Murdock, 1959, pp. 111–113) describes the Matmata in Chapter 15. "Berbers." However, in (Murdock, 1966, p. 107 - 108) the Berbers are divided into three clusters, Oasis Berbers (cluster 120), Mountain

Berbers (cluster 122), and Coastal Berbers (cluster 123). In order to determine the appropriate cluster, we rely on the Joshua project and Coon (1931). The Joshua project notes that the Matmata villages, "were traditionally fortified in strong **mountain areas**." In describing the geography of the kingdom of Nekor, Coon (1931) writes:

> On the east he places the country of the Zuagha, about five days' journey from Nekor and neighboring the Jerawa of el Hasan ibn Abi 'l Aish. Near by are the **Matmata, people of Kebanda**, the Marnissa of the White Hill, the Ghasaa, who inhabit Mt. Herek, and the Beni Urtedi of Kolwe Jara. (p. 31)

This geographic description is most consistent with the location of the societies in cluster 122. Mountain Berbers. We match with the Riffians, the cluster's representative society, leaving a flag in the uncertain variable since the evidence for this case could be stronger.

Mbere – Baya

This match is based primarily on Ethnologue and the Joshua Project. Ethnologue lists Mbere as a dialect of the language Gbaya, Northwest. This link between the Mbere and Baya is corroborated by the Joshua Project which lists "Gbaya; Gbea; Mbere Baya; Northwest Gbaya" as alternate names for the people group Baya, Gbaya in Central African Republic. The geographic data lines up across all of these sources, and we link the Mbere to the Baya.

Mijertein – Somali

This match is based primarily on Lewis (1955). In describing the Darod (a Somali tribal family), Lewis writes:

> The Kablalla are extremely numerous and in their segmentation comprise all the Darod confederacies, sub-confederacies and tribes with the sole exception of the Marehan mentioned above. They are divided into the Kombe-Harti and Kumade confederacies. The Kombe-Harti comprise the **Mijertein sub-confederacy**, and the Warsangeli, Dolbohanta and Deshishe tribes. The Mijertein have in the course of time absorbed other Harti tribes which have become incapable of a continued independent existence, and are an extremely closely integrated body. (p. 20)

(Lewis, 1955, p. 15) also includes a map and genealogy tree which confirm that the Mijertein are part of the Somali (Figure 3). This match is corroborated by the fact that the Migertein are lited in Chapter 41 "Afar and Somali" of (Murdock, 1959, p. 320).

Mober – Kanuri

This match is based primarily on Rosman (1966). (Murdock, 1959, pp. 136–137) describes the Mober under the section titled "Bornu Province" and lists "Mobber" as an alternative spelling. In describing the Kanuri, Rosman (1966) writes:

> The Kanuri have a word, jili , which means 'kind' or 'sort,' but can be used specifically for 'nation,' 'people,' or 'kin group.' A person's jili would first be given as Kanuri; he would then indicate **sub-groups of Kanuri–Kanuri proper, Budwai, Mobber**, Manga, Kwoyam etc. These sub-groups today speak dialects of Kanuri which are all mutually intelligible, and no other indigenous languages. They represent ethnic sub-groups who now share in the same larger culture, but who may have entered Bornu at different times, or may have become assimilated to Kanuri culture. (p. 92)

Further, (Murdock, 1966, p. 107) includes a cluster named Bornu (cluster 114.) whose representative society is Kanuri.

Ngwaketse – Tswana

This match is primarily based on Kuper (1978) and Murdock and Human Relations Area Files (1958). (Kuper, 1978, p. 241) writes, "The data used in this paper are drawn from **seven [Tswana] tribes: the (Kgafela) Kgatla, the Kwena, Lete, Ngwaketse**, Ngwato and Tlokwa, all of Botswana, and the (Tshidi) Rolong of the northern Cape." He also includes a figure (reprinted here as Figure 4) showing the "authoritative anthropological classification" of the tribes, which categorizes the Ngwaketse as Western Tswana (Kuper, 1978, p. 241). Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Ngwaketse as a Tswana tribe.

Ngwato – Tswana

This match is primarily based on Kuper (1978) and Murdock and Human Relations Area Files (1958). (Kuper, 1978, p. 241) writes, "The data used in this paper are drawn from **seven [Tswana]**
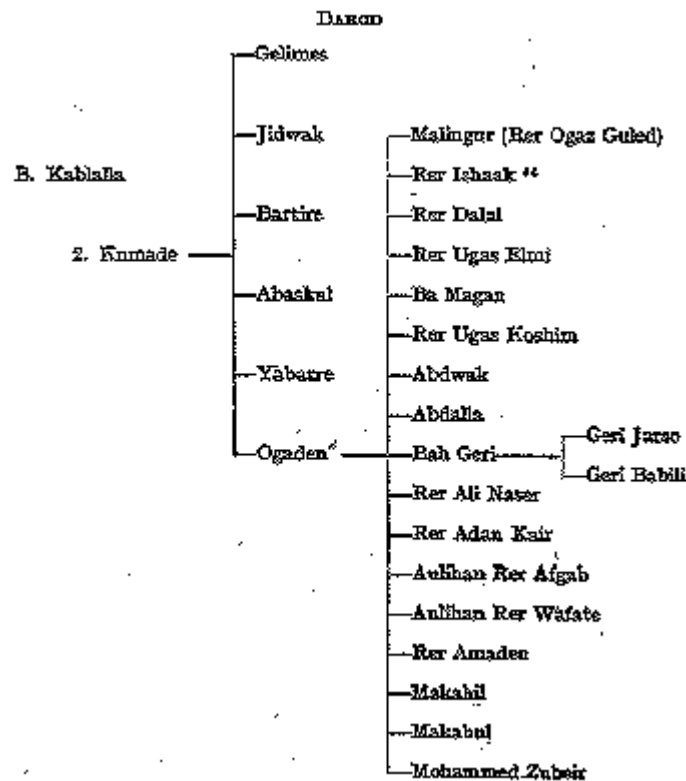
tribes: the (Kgafela) Kgatla, the Kwena, Lete, Ngwaketse, Ngwato and Tlokwa, all of Botswana,

and the (Tshidi) Rolong of the northern Cape." He also includes a figure (reprinted here as Figure

4) showing the "authoritative anthropological classification" of the tribes, which categorizes the

Ngwato as Western Tswana (Kuper, 1978, p. 241). Additionally, (Murdock and Human Relations

Area Files, 1958, p. 67) lists the Ngwato as a Tswana tribe.

Ogaden – Somali

This match is based primarily on Lewis (1955). In describing the Darod (a Somali tribal family),

Lewis writes:

> The tribes of **the Ogaden sub-confederacy**, who occupy the region of the same name,
>
> are principally pastoralist, although some jowari cultivation is done along the freshets
>
> and ephemeral streams which traverse this vast area. (p. 22)

Figure 5: Genealogy of the Darod (a Somali Tribal Family) from (Lewis, 1955, p. 22)

Note: This figure shows the genealogy of the Kumade, a part of the Darod (a Somali tribal family).

Rolong – Tswana

This match is primarily based on Kuper (1978) and **?**. (Kuper, 1978, p. 241) writes, "The data used in this paper are drawn from **seven [Tswana] tribes: the (Kgafela) Kgatla, the Kwena, Lete, Ng-waketse, Ngwato and Tlokwa, all of Botswana, and the (Tshidi) Rolong** of the northern Cape." He also includes a figure (reprinted here as Figure 4) showing the "authoritative anthropological classification" of the tribes, which categorizes the Rolong as Western Tswana (Kuper, 1978, p. 241). Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Rolong as a Tswana tribe.

Ronga – Thonga

This match is based primarily on Murdock and White (1969). The entry for Thonga or Bathonga in Murdock and White (1969) reads:

> 3. Thonga or Bathonga (AD4: 104) of Province 3 (Southeastern Bantu). Language: Niger-Congo (Bantoid). Economy: Cd. Organization: K, p. Focus: **The Ronga subtribe** around Lourenco Marques (25°50'S, 32°20'E) in 1895, at the beginning of Junod's missionary field work. HRAF: FT6 (a). Authority: Junod. (p. 354)

Sanye – Arusi

This match is primarily based on Murdock (1959) and Murdock (1966). (Murdock, 1959, p. 60) describes the Sanye in Chapter 10. "East African Hunters." He writes that the Sanye, "are subject to the Bararetta Galla, whose language they now speak and from whom they have recently adopted the rudiments of animal husbandry." Ordinarily we would use this quote to match the Sanye to the Baratta Galla and code this as a match 18, but the Bararetta Galla are not in the EA data and we are unable to match using this method. Instead, we find that in (Murdock, 1966, p. 106) the Bararetta are listed in the "Other" category of cluster 97. Galla. Thus, we link the Sanye to this cluster and match to the representative society, Arusi.

Shaikia – Hasania

This match is based primarily on MacMichael (1922), Murdock (1959), and Murdock (1966). (Murdock, 1959, pp. 410–411) describes the Shaikia in Chapter 54. "Baggara." There is a cluster

named Baggara (cluster 109) in (Murdock, 1966, p. 107). Of the 15 societies listed in this cluster, all are listed in the corresponding chapter of Murdock (1959). Further, in describing the Bedayria[3] (a society listed in the "Other" category in cluster 54. Baggara), (MacMichael, 1922, pp. 70–71) writes that, "... **the Bedayria are degraded offshoots of the once powerful Ga'aliin and Shaikia** of the riverain districts." He also includes a tree showing the relationship of the Sahikia to the Bedayria, as well as other societies in cluster 109. including the Rubat. Thus, we are confident that the Shaikia are related to cluster 109. Baggara and we link the Shaikia to the representative society, the Hasania.

Figure 6: Classification of the Bedayrai from (MacMichael, 1922, p. 71)
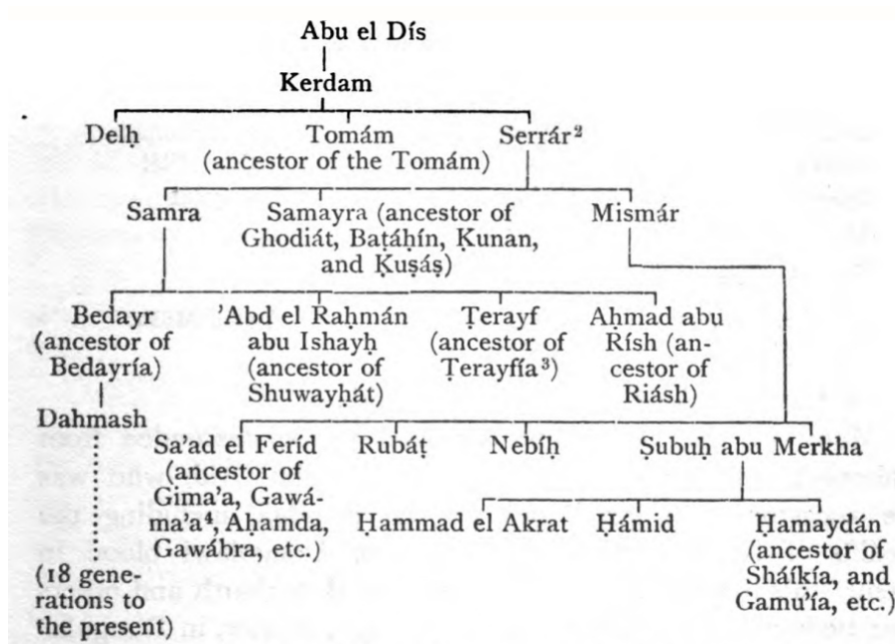
Shukria – Hasania

This match is based primarily on MacMichael (1922), Murdock (1959), and Murdock (1966). (Murdock, 1959, pp. 410–411) describes the Shaikia in Chapter 54. "Baggara." There is a cluster named Baggara (cluster 109) in (Murdock, 1966, p. 107). Of the 15 societies listed in this cluster, all are listed in the corresponding chapter of Murdock (1959). (MacMichael, 1922, p. 250) describes the Shukria in Part III, Chapter 2. "The Guhayna Group", writing, "The Shukria. From the generality of 'nisbas' it would seem that the **Shukria belong properly to the Guhayna**

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[3](Murdock, 1959, p. 410) lists Bedayria as an alternative spelling of Bederia. Bederia is the spelling used in (Murdock, 1966, p. 107).

group, although they have pretensions to be Kuraysh." While there is no match for Guhayna in Murdock's book or the Cross Cultural Sampling paper, the Ruffaa, a group in cluster 109. Baggara, appears in the MacMichael's list of primary Guhayna groups, reprinted here as Figure 7. Further, the Joshua Project lists "Baggara; Dubania" as alternate names for the Shukria. Thus we are confident of the relationship between the Shukria and cluster 109. Baggara and we match with the representative society "Hasania."

Figure 7: Cheif Guhayna from (MacMichael, 1922, p. 238)

RUFÁ'A (including ḴAWÁSMA, 'ABDULLÁB, etc.)
LAḤÁWIÍN
'AWÁMRA, KHAWÁLDA, etc.
SHUKRÍA
DÁR ḤÁMID
ZAYÁDÍA
BENI GERÁR   The "FEZÁRA"
BAZA'A
SHENÁBLA
MA'ÁLIA

Tawana – Tswana

This match is made primarily based on Kuper (1978) and **?**. In the appendix, Kuper lists the sources of data on Twswana kinship terms, writing:

> **Tawana** (Botswana)
>
> Badumetse Mokanto (I940): personal interrogation (genealogy)
>
> Gaorewe Modisang (I940): personal interrogation (genealogy)
>
> Makoko Wetshootsile (I940): personal interrogation (genealogy)
>
> Masale Molaakgosi (I940): personal interrogation (genealogy)
>
> Moshuga Moremi (I940): personal interrogation (genealogy)
>
> (p. 285)

Additionally the Tawana are described in chapter 51. "Sotho" of (Murdock, 1959, pp. 386–387), and Murdock notes that the Sotho include a "Tswana branch." The representative society of cluster 5. Sotho in (Murdock, 1966, p. 101) is Tswana. Further, the Joshua Project lists Tawana as a dialect of Setswana. Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Tawana as a Tswana tribe.

Tawara – Shona

This match is based primarily on Ethnolouge and the Joshua Project. Ethnologue includes a language tree showing the Tawara language as a branch of Shona. The Joshua Project entry for Tawara lists the people cluster as "Bantu, Shona." Further, in (Murdock, 1959, pp. 374–375) the Tawara are described in Chapter 49. "Shona and Thonga" under the section "Shona Cluster." Based on this evidence we match the Tawara with the Shona.

Tenda – Coniagui

This match is based primarily on Ethnology (1962) and Murdock (1966). (Murdock, 1966, p. 104) includes a cluster named Tenda, which has Coniagui as a representative society. The EA number for Coniagui is Ag8, which is consistent with the current version of the EA data. However, the entry for Tenda in (Ethnology, 1962, p. 538) is, "**Ag8: Tenda, with special reference to the Coniagui** (Awunlen, Koniagi). L: 13N, 13W. T: 1910. P: 18,000 (11,000 Coniagui) in 1945." Because these two societies have the same EA ID number and are closely related based on the cluster name and representative society, we match Tenda to Coniagui.

Tlhaping – Tswana

This match is based primarily on Murdock and Human Relations Area Files (1958) and Breutz (1959). (Murdock, 1959, pp. 386–387) describes the Thlaping in Chapter 51. "Sotho." (Murdock, 1966, p. 101) includes a cluster of the same name (cluster 5.), which has Tswana as the represenatitive society. Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Tlhaping as a Tswana tribe. In describing the Thlaping, Breutz (1959) writes:

> Large Tswana tribes all know about their earliest migrations, the baThaping do not. they therefore must have consisted of very early small isolated groups with no tradition and thus being similar to other early Sotho, maKgalagadi, Digoja etc... Another sign of earl contacts may be that the **Tlhaping dialect of Southern seTswana has many affinities to seKgalagadi which is a different languate in the Sotho-Tswana language group**. (p. 23)

The Sotho, Tswana, and Kgalagadi all appear in cluster 5. Sotho. The Joshua Project corroborates this evidence by naming the people group "Tswana-Thlaping" and Ethnologue lists "Tlahaping (Thlaping, Tlapi)" as a dialect of Setswana.

Tlharu – Tswana

This match is based primarily on Murdock and Human Relations Area Files (1958), (Murdock, 1959, pp. 386–387) describes the Thlaru in Chapter 51. "Sotho." (Murdock, 1966, p. 101) includes a cluster of the same name (cluster 5), which has Tswana as the represenatitive society. Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Tlharu as a Tswana tribe. Further, Ethnologue lists "Tlharo"[4] as a dialect of Setswana and the Joshua Project lists the name of the people group as "Tswana–Tlharu."

Tlokwa – Tswana

This match is primarily based on Kuper (1978) and **?**. (Kuper, 1978, p. 241) writes, "The data used in this paper are drawn from **seven [Tswana] tribes: the (Kgafela) Kgatla, the Kwena, Lete, Ngwaketse, Ngwato and Tlokwa**, all of Botswana, and the (Tshidi) Rolong of the northern Cape." He also includes a figure (reprinted here as Figure 4) showing the "authoritative anthropological classification" of the tribes, which categorizes the Tlokwa as Eastern Tswana (Kuper, 1978, p. 241). Additionally, (Murdock and Human Relations Area Files, 1958, p. 67) lists the Tlokwa as a Tswana tribe.

Tonga – Pl.Tonga

This match is based primarily on Murdock (1959) and Jaspan (1953). This match was originally unclear because the Tonga are divided into the Plateau (Ila) Tonga and Lakeshore Tonga in the EA data. The division of the two groups is described in terms of geography, with (Murdock, 1959, p. 365) writes that the Ila-Tonga are "on the middle of the Zambesi River." This is corroborated by Jaspan (1953), who writes:

> The Ila-Tonga-Lenje group of peoples inhabit the greater part of the country along the
>
> north bank of the Zambezi River, from Seheke to approximately 50 miles below its

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[4]This is a very likely alternate spelling since (Murdock, 1959, p. 387) lists 'Batlaro, Batlaru" as alternative spellings for Tlharu.

confluence with the Kafue River, and northward to the region of the Lukanga River and swamp. A small minority of the We or Valley Tonga live on the southern side of the Zambezi. (p. 17)

Jaspan's geographic description aligns with the polygon in the Murdock Map data, and we conclude that the Tonga in the Murdock Map data are the Plateau Tonga.

Warjawa – Katab

This match is based primarily on Gunn (1956) and Murdock (1966). We first use information from Gunn (1956) to link the Warjawa to cluster 68. Jos Plateau in (Murdock, 1966, p. 104), and then match the Warjawa with that cluster's representative society, the Katab. In describing this, Gunn writes:

> The problem of defining groups more comprehensive than the village has troubled investigators in many parts of Africa, and the groupings of peoples proposed here must be regarded as tentative. They have been reached empirically, beginning from a study of the Kurama of north-eastern Zaria and adjacent districts of Kano, Bauhi and Plateau Provinces. Cultural similarities were soon revealed with various neighboring peoples and followed up systematically. Such **links between communities led ultimately in the north to the tribes of the Ningi area, to include the Warjawa** and certain closely associated peoples of Bauchi and Kano Provinces who are linguistically unrelated to the Kurama; **in the south to the Katab** group of tribes defined by Meek, and beyond to peoples of somewhat doubtful affiliations, to judge from the literature such as the Kaninkon of Jema's Emirate; and ultimately to the Kadara. (p. vii)

There is considerable overlap between the societies described in Gunn (1956) and cluster 68. Jos Plateau (Murdock, 1966, p. 104), including the representative society, Katab. The Joshua Project corroborates this link, noting a link between the Warji (an alternate spelling of Warjawa) and the Butawa, another society in cluster 68. Jos Plateau, "**Warji are also geographically and politically related to the Butawa**." Further, a search of eHRAF for "Warjawa" yields no results, while a search for the alternate spelling "Warji" yields one result: Smith (1953). eHRAF lists the cultures covered in each document, and the associated culture here is Katab. Smith (1953) describes a custom among the Warji and the Jarawa, another group from cluster 68. Jos Plateua, writing:

Further (e.g. among the Rukuba and **Jarawa**) the abductor establishes his position as a co-husband by gifts to the girl's parents, and I was given to understand by the Anaguta, Rukuba, **Jarawa**, and Pe, that the children belonged in all cases to the actual father… The cicisbean character of the zaga is well illustrated by the custom among the **Warji** that as soon as the runaway wife conceives by the cicisbeo she must forthwith return to her husband." (p. 23)

Based on this collective evidence we link the Warjawa to cluster 68. Jos Plateau and match them to the representative society in that cluster, the Katab.

Wum – Bamileke

This match is made primarily based on Murdock (1966), Murdock (1959), Ethnologue, and the Joshua Project. We first link the Wum to cluster 39. Cameroon Highlands in (Murdock, 1966, p. 103), which has the Bamileke as the representative society. (Murdock, 1959, p. 239) describes the Wum in Chapter 30. "Cameroon Highlanders," the same section as the Bamileke. He lists Aghem as an alternative name for Wum. In the Joshua Project entry for Aghem in Cameroon, the people cluster is listed as "**Cameroon-Bamileke**." Thus, we are confident that the Wum are related both to the cluster and representative society, and match them with the Bamileke.

Zezuru – Shona

This match is based on Murdock (1967b). In his entry for the Shona, (Murdock, 1967b, p. 116) writes, "**Shona (Ab17), with special reference to the Zezuru**. L: 19S, 31E. T: 1920. P: 700,000 in 1931. B: II, 260. Comment – Column 12: St with uxorilocal residence a patterned alternative." Thus, we match the Zezuru to the Shona.