Assessing Attrition of Terms of Traditional Culture among Kara Young Adult Native Speakers in Tanzania

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ABSTRACT: *This study assesses attrition of native lexicon among Kara young adult native speakers in the context of intensive borrowing of Swahili-L2 vocabulary by focusing on extent, type of indigenous knowledge vulnerable to attrition and observed factors for attrition. The study is qualitative using case study design and purposive sampling through administering multiple performance tasks. It involves 30 participants in two age categories, collecting oral data that is first transcribed and then organised in thematic chunks for analysis. Descriptions are also essential for illustrations. The finding reveals attrition in a wide range of native lexicon. This attrition is not total erasure but rather inaccessible lexical memory. Arithmetic, finger names, wind types, local tools, artefacts, and disappeared objects are the most attriting aspects of indigenous knowledge compared to kinship terms, body parts and immediate objects and concepts relevant to contemporary use. Swahili has much influence on Kara-L1spakers leading to infrequent use of Kara terms for some objects and concepts. This study recommends more research on attrition in native environment especially in intense contact areas.*

KEYWORDS: Attrition, Indigenous Knowledge, Middle-Aged and Old Adults, Native Lexicon, Young Adults

Introduction

Linguists have a common view that speakers of a particular language may lose some language skills or knowledge previously acquired due to disuse (De Leeuw, 2009; Cherciov, 2011, Alharthi, 2015). This disuse occurs after disconnection from the native speech community due to migration or child adoption, or a shift to another linguistic code (Killian, 2009). It may also result from bilingualism among non-migrants who have acquired L2-dominant language (Sebina, 2014; Utamwa, 2016 and Msuya, 2021). Therefore, L1 can be attrited in two contexts: L1 loss in L2 (migrants) and L1 loss in L1 context (non-migrants).This paper focuses on the second context that lacks attention in the literature and has limited findings (Sebina, 2014; Utamwa, 2016 and Msuya, 2021).

Literature indicates that L1 attrition is largely possible among children. Children attrition has aroused more impetus since the introduction of the language attrition field. Adult attrition lacks attention since studies on adult migrants focus on childhood history of potential attriters. A typical is Pallier et al. (2003) on eight adult Koreans adopted by families in France at age 3 to 8 years old. Through self-rating, participants admit losing proficiency in Koreans, unlike eight monolingual Koreans after disconnection from native community.

Interest in child attrition is because they can easily attrite than adults, and even studies on children attrition report severe attrition (see Ventureyra & Pallier, 2004). However, by reviewing literature on L1 attrition, Park (2018) challenges research on children's attrition on the ground that children lack pre-attainment in L1 at the onset of attrition. In this view, prototypical attrition assessment should involve adults. Although adults are more resilient to attrition compared to children (Bardovi-Herling & Stringer, 2010), assessing L1 attrition among young adults may yield good result especially at lexical level, the area more prone to attrition than any other facet of linguistics (Utamwa, 2016; Park, 2018).

This study focuses on the possibility and extent to which Kara young adults have attrited, the type of indigenous knowledge easily attrited and observed factors for attrition. This assessment covers a wide range of native lexicons, namely local appliances used in agriculture, fishing, rituals, food processing, utensils, and artefacts; wind types, kinship terms, domestic and wild animals, fish species, body parts and finger naming system. These aspects of the traditional culture characterise native speakers' indigenous knowledge. Thus, assessing lexical ability is imperative since its maintenance indicates a cohesive cultural society (Onditi, 2016). This is worth researching to give insights on conditions for maintenance of indigenous knowledge and the forces leading to its erosion. Data and findings in this study can be useful in multiple fields including language attrition, language and culture (lexical culture), vocabulary acquisition (education) etc. In linguistics, it helps to understand how minority indigenous languages are at a state of drastic or gradual change due to the influence of superior languages like English, Swahili, and French.

The available literature on lexical attrition and other areas of linguistic proficiency focus mainly on migrant contexts (see Schmid, 2002; De Leeuw, 2009; Cherciov, 2011; Alharthi, 2015). These studies are conducted mainly in Europe, America and Asia where there is high migration and child adoption rates. In native environment, especially in Africa, L1 attrition is assessed among schoolchildren in Swahili and English medium schools (Sebina, 2012; Utamwa, 2016 and Msuya, 2021). Assessing adult attrition bases solely on contexts of language shift especially in South Africa (Killian, 2009 and Sands et al., 2007). Therefore, literature on L1 lexical attrition in native environments among young adults is limited. This gap in knowledge is the focus of this paper.

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Theoretical framework

This study uses two theories, Cross-linguistic Influence Hypothesis (CLI) by Aneta Pavlenko (Pavlenko, 2004) and the Activation Threshold Hypothesis (ATH) by Michael Paradis (Paradis, 2004). CLI views attrition as a sociolinguistic phenomenon caused by increased influence of newly dominant language (L2), whose coexistence with L1 leads to grammatical conflicts (Bardovi-Harling & Stringer, 2010). It assumes that elements of L1 (e.g., lexicon) similar in function with L2's are replaced (Pavlenko, 2004; de Leeuw, 2009; Cherciov, 2011 and Opitz, 2011). It generally focuses on borrowing that replaces native lexicon. Contrary, ATH is a neuroscientific theory of bilingualism viewing attrition to be a result of failure in lexical accessibility. It proposes that an item is activated when sufficient amount of positive impulses (frequency of use) have reached it (Opitz, 2011, 37). Paradis (2004) comes up with 3 principles: 1) language disuse gradually leads to language loss 2) the most frequently used elements of L2 will tend to replace their (less used) L1 counterparts, and 3) comprehension will tend to be retained longer than production because self-activation requires lower threshold than comprehension. In the context of the current study, Principle 1 implies that replaced and obsolete vocabulary will consequently deteriorate in the native speaker's mind due to lack of recency and frequency of use (Schmid & Jarvis, 2014). Principle 2 implies that frequent use of Swahili-L2 vocabulary tends to replace Kara-L1 traditional vocabulary. Lastly, Principle 3 guides our methodological plan to assess attrition in productive skills than comprehension, in free conversational environment.

Generally, CLI experiments attrition as a sociolinguistic phenomenon resulting from the cross-linguistic influence of L2 to L1, and ATH assesses attrition as cognitive process. The latter is related to cognitive theories of forgetting whereby the acquired memory gets lost due to some factors, either pathological or non-pathological (Park, 2018). It assesses attrition as a process that affects the mental stability of linguistic knowledge. At lexical level, the potential attriter experiences reduced vocabulary due to forgetting or unsureness in lexical judgements, vocabulary retrieval difficulties and poor semantic identifications (Sands et al., 2007). According to Schmid (2002), we cannot solely view attrition as a sociolinguistic phenomenon among attriters but also as a process that happens in the participants' cognitive system. This deliberation helps to establish dimensional views about the phenomenon since attrition is multifaceted and interdisciplinary (Schmid, 2002; Bardovi-Harling & Stringer, 2010). In summary, we cannot only look at attrition as a cross-linguistic element but also a process that affects the linguistic knowledge of speakers, so we are sure of how attrition takes place.

Methodology

This section focuses on choices for data collection, analysis and presentation. It includes a study area, research approach and design, sample selection procedures and sample size, data collection methods, data capturing, data analysis strategies, validity and reliability.

This study took place in Ukara Island, Ukerewe District in Mwanza Region in Tanzania, the home of Kara ethnic language (Bradshaw & Odom, 2017). Studies report Ukara as densely populated (NBS, 2022; Bradshaw & Odom, 2017). Ukara is also characterised with high influx of people for business and fishing activities and Swahili as a lingua franca in both formal (education, media, and office) and informal settings. Therefore, high proximal interactions with Swahili speakers have brought new preferences in language use worth researching. This study used also introspection as an added advantage since one author is a native speaker; therefore, possible to interact with informants in the mother tongue instead of hiring a research assistant.

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The study employs a qualitative approach for in-depth interactions with native speakers in a natural setting through various oral performance tasks, all conducted in the mother tongue. However, during data analysis, the study uses descriptions for illustrations. This is a case study, snowballing few individuals to participate in various tasks like picture naming, verbal fluency tests and direct vocabulary elicitation. This study involves Kara young adult speakers between 18-39 years old and the control group consisting of Middle-aged and old adults (age-40+). We assume this group to live in the past before the onset of attrition and more interested in traditional culture including L1. The study draws conclusions by comparing results from the two age categories. Therefore, the sample of 30 participants, 16-target group and the 14-control group is preferable to engage in various performance tasks, by adapting Schmid's (2011) proposed sample of 15-30 participants in a comprehensive task-based study. The use of purposive sampling enables the study to recruit the right participants according to age category, education level, sex and sociolinguistic backgrounds, using the family as recruiting agency.

This study uses multiple methods of data collection for source triangulation. These include direct vocabulary elicitation, verbal fluency tests and picture naming tasks. In direct vocabulary tasks, no stimulus is used e.g. pictures (Sands et al., 2007). In this study, direct vocabulary elicitation consists of constructed tools in form of expressions administered orally. The method involves three subtasks namely, lexical judgement tool containing 55 expressions in the mother tongue and Swahili loanwords in bold type. Each participant has to judge the words and give correct forms. We subject the output to calculation of the percentage of correct items over a total number of items given and compare the result. The second subtask consists of 130 expressions covering a wide range of topics in traditional culture such as diseases, body impairments, climate and weather conditions, local arts and music, food processing and preservation, family relationships, processes and activities. This aims also at measuring vocabulary memory in ethno-geographical issues. Again, we obtain percentage by calculating the number of correct items over 130 sentences. The last subtask consists of 20 expressions meant to elicit kinship vocabulary. We read aloud the items for each participant to supply correct terms and calculate percentages for each score over 20.

The second task involves verbal fluency tests (VFT). This is an oral task used to measure vocabulary fluency among participants (Cherciov, 2011) i.e., ability to list items in a certain semantic category within a given time ranging from 60 to 120 seconds. VFT in the current study includes semantic categories namely, local tools/appliances and artefacts (C1), disappeared fish species (C2), basic numeracy, 1-10 (C3), wind types (C4) and complex numbers above 10 (C5). The production period is 60 seconds to avoid boredom. We compare performance across age groups. The aim is to measure difficulties in lexical recall as Sands et al., (2007) propose. The study uses a stopwatch and tape recorder to capture responses and identify speed and accuracy in vocabulary listing. The study calculates the percentage for correct items over time used. The last task is picture naming (PNT). Unlike direct vocabulary elicitation, PNT involves presentation of pictures or pointing to objects for participants to name as quickly as possible (Schmid, 2011, 141). The aim is to measure speed and accuracy in performance. This study uses pictures in a tablet, some downloaded from Google images while the local ones captured in the field through a smartphone, as well as physical objects like fingers and other body parts. These include subtasks like naming domestic and wild animals (D1), body parts (D2) and finger names (D3). To obtain the result, this study adopts Schmid's (2011, 141) procedure that, "You simply calculate the average reaction time (RT) of the correctly named items and the proportion of accurate responses for each individual."

The study uses a tape recorder to capture information about participants' performance. In some instances, a notebook is useful in capturing extra information. Transcription of oral data is the next resort to capture desired findings i.e., to obtain performance of each participants in terms of percentage, average and scores. During analysis, this study uses Six-Phases Thematic Analysis suggested by Braun & Clarke (2012). These are simple analytical steps namely, familiarising with data, generating initial codes, searching for themes, revising potential themes, defining and naming themes and producing report. Data coding is used for

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systematic presentation, cross-references and ethical considerations. We present the names of participants in codes like P1 to P30 for the same sake.

To ensure validity and reliability of the findings, this study uses multiple methods for triangulation i.e., comparing results. Comparison of performance between the two age groups helps also to sort out attriters from non-attriters. This study discriminates information related to lexical gap, synonymy and personality factors during analysis since they contravene actual attrition.

Results

This study discovers lexical attrition among young adults manifested in their performance in different comprehensive tasks as presented below.

Performance in direct vocabulary elicitation

This includes subtasks like lexical judgement, semantic identification and kinship terms. Each participant has to supply native vocabulary corresponding to expressions given. The result indicates good performance by middle-aged and old adults unlike young adults. For instance, performance in lexical judgement (A1) task indicates attrition among young adults below age 30; and some decline among middle-aged (especially 40-50 years old). Contrary, old adults show good performance in this task as shown in Table 1.

A1				A2		A3	
P	Age	Score/55	%	Score/130	%	Score/20	%
P1	25	26	47.2	73	56.1	19	95
P2	44	21	38.1	94	72.3	20	100
P3	70	31	56.3	118	90.7	20	100
P4	60	25	45.4	92	70.7	20	100
P5	50	25	45.4	90	69.2	20	100
P6	42	28	50.9	85	65.3	20	100
P7	50	33	60	91	70	20	100
P8	68	30	54.5	112	86.1	20	100
P9	65	43	78.1	114	87.6	20	100
P10	30	12	21.8	69	53.1	20	100
P11	25	11	20	60	46.1	20	100
P12	19	13	23.6	59	45.3	18	90
P13	65	47	85.4	125	96.1	20	100
P14	29	15	27.2	62	47.6	20	100
P15	18	9	16.3	52	40	19	95
P16	21	10	18.1	56	43.1	19	95
P17	31	9	16.3	49	37.6	20	100
P18	25	12	21.8	56	43.1	20	100
P19	18	10	18.1	61	46.9	18	90
P20	39	32	58.1	90	69.2	20	100
P21	20	16	29.1	61	46.9	19	95
P22	22	17	30.9	58	44.6	17	85
P23	57	41	74	110	84.6	20	100
P24	62	30	54.5	80	61.5	20	100
P25	23	23	41.8	79	60.7	20	100
P26	40	21	38.1	89	68.4	20	100
P27	33	14	25.4	36	27.6	18	90
P28	40	31	56.3	84	64.6	20	100
P29	50	17	30.9	78	60	18	90
P30	58	30	54.5	103	79.2	20	100

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Table 1. Performance in Direct Vocabulary Elicitation Tasks

Key:
P- Participant
A1- Lexical judgement task
A2- Semantic identification task
A3- Performance in Kinship terms

In A1, participants whose score is below 50% fail to distinguish Swahili loanwords and native vocabulary and even some who are able cannot supply equivalent vocabulary (e.g., P2, P26, P28 and P29). They sometimes supply Kerewe or Jita equivalent words unlike old adults, who ably discriminate native from loanwords and supply correct items. This finding implies that young adults have actually attrited in native lexicon. Given the answers after responses, they admit knowing the terms in the past. We can observe some struggles to retrieve the terms, some with success and others failure.

In A2, we present a tool of 130 expressions for them to supply the right terms. The finding is intriguing due to overlapping performance between the target and the control group. For instance, P20 (age -39) lists 90 (69.2%) correct items beyond P24 (age-62) with 80 (61.5%) over 130 items. However, the general performance indicates good performance by the control group and lower by the target group. As such, overhearing has enormous impact on either retention or attrition of the lexicon referring to Kara traditional culture. Thus, young adults living with old adults have promising performance compared to those living with middle-aged parents or family members. The former scores above 50% nearly similar with the control group (see P1, P20 and P25 in Table 1.1). This finding implies that even middle-aged participants seem to lack interest in traditional culture. This affects their use of Kara, which can interfere with both transmission to the young generation and vocabulary memory.

In A3, the study intends to find out possibility for attrition of native kinship terms in context of using Swahili kinship system. Although Kara and Swahili are Bantu languages, they differ largely in their kinship terms. However, some cognates show resemblance. This study reveals replacement but no attrition for both groups. All participants score above 80% and most participants who score 100% are the control group. However, the general result indicates slight difference in performance between the two groups. This implies that lexical replacement has turned into attrition. Some still use native kinship terms while others have replaced. The control group tend to retain the native lexicon in all instances. This implies that, kinship terms are the most resilient semantic category to attrition compared to other aspects of indigenous knowledge.

 Performance in verbal fluency tests (VFT*)*

These tasks intend to measure native speakers' vocabulary knowledge through listing orally. In this study, they include tools on local appliances and artefacts (C1), fish species (C2), basic numeracy 1-10 (C3), wind types(C4) and numbers beyond 10 (C5). The overall performance indicates that young adults have attrited as they face retrieval difficulties and cannot remember terms until mentioned. Sometimes, they totally fail to retrieve the lost items even after reminder. Performance in specific tasks indicates variations between the control and the target group (see Table 2 for the summary).

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Participant	Age	C1	C2	C3	C4	C5
P1	25	5	3	0	0	0
P2	44	10	6	10	4	8
P3	70	20	10	10	6	10
P4	60	21	8	10	4	10
P5	50	15	7	10	4	10
P6	42	14	5	10	4	10
P7	50	18	6	10	0	8
P8	38	12	6	0	0	4
P9	65	19	11	10	6	10
P10	30	15	4	0	2	2
P11	25	10	4	0	0	0
P12	19	8	3	0	2	0
P13	65	21	8	10	5	10
P14	29	9	4	10	3	2
P15	18	10	3	0	2	0
P16	21	13	3	0	2	2
P17	31	14	2	0	0	1
P18	25	10	3	0	0	2
P19	18	12	3	0	0	0
P20	39	13	4	10	6	10
P21	20	11	2	5	0	1
P22	22	11	4	0	0	0
P23	57	18	8	10	6	10
P24	62	19	7	10	3	2
P25	23	12	4	5	0	3
P26	40	14	6	10	6	0
P27	33	10	3	5	2	3
P28	40	15	5	10	2	5
P29	50	19	6	5	5	2
P30	58	21	6	10	2	3

Table 2. Performance in Verbal Fluency Tests

Key:
C1= listing local appliances and artefacts
C2= listing Disappeared fish species
C3= Counting basic numeracy 1-10
C4= listing Wind types
C5= Counting beyond 10

In C1, they are subjected to listing local tools such as utensils and those used in agriculture, fishing, animal husbandry, food processing, storage, and rituals within 60 seconds. Most of these items are no longer in use and some have disappeared in the environment. The result is variant across age groups. Except P10 (age-30), all young adults score below 15 items while the control group scores above 15 items. The highest score (21 items) is by an old adult while the lowest, 5 by a young adult. Thus, young adults have forgotten most of their native lexicon after replacement with Swahili terminology or obsolescence. Through interview with old adults, the study reveals the cease in using local appliances made up of iron, clay, leaves, woods and animal skins. They are now using modern tools and utensils. This finding implies that new technology has tremendous impact on the use of local tools, which go very far to attriting the lexicon. This attrition is an aspect of retrieval difficulties and not total erasure of lexical knowledge.

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In C2, participants are made to list fish species no longer existing in Lake Victoria surrounding this insular language. Young adults perform poorer than middle and old adults do. The lowest number listed by young adults is 2 items while the highest is 6 items. 15 out of 16 young adults are able to list below 4 items. Thus, average performance by young adults is 3.5 items over 60 seconds while the control group have 7 items over 60 seconds. This finding implies that, irrespective of disappearance, the control group retains the terms while the target group cannot. Although all of them admit hearing them in the past, young adults have forgotten. This means reactivation can recover the lost memory, but with limited possibility. Another variation is that young adults list existent fish species while the control group lists both disappeared and existent ones. This indicates that overhearing or overuse in the past ensures retention of vocabulary for disappeared fish species and other obsolete terms. The young adults miss this input. Their exposure to these lexical items is limited to hearing than viewing and using on daily basis. This suggests that a lexical item is better retained when its use involves more senses on top of frequency of use and recency.

In C3, participants have to count in the mother tongue from 1-10. This study reveals great difference in performance between the target and the control group. For example, out of 16 young adults, 11(93.8%) score zero (0); whereas, 5 (31.2%) count to only 5, except P14 age 29, who goes beyond five but mixes numbers 6, 7, 8 and 9. The control group retains this indigenous knowledge as all score 100%. However, the same score is earned by P20, age 39 due to being at the age margin and living with old adults. This implies that young adults have actually attrited in arithmetic due to intensive use of Swahili counting system since childhood. Likewise, in C5, when participants are given to count beyond ten, the young adults perform poorer than the control group. Average performance at group level indicates 7 (70%) correct items by the control group and 2.0 (20%) by the target group. Young adults' responses indicate that they only know counting in Swahili although they regularly hear their elders count in the mother tongue. Thus, arithmetic is another less resilient lexical knowledge in attrition. Adults always count in the mother tongue while young speakers use Swahili counting system, the situation that culminates to either retention by older adults and loss by young adults.

For C4, participants have to list names for wind types featuring Kara language. There are six major wind types namely, *bhuanga*, *mwicha*, *siaga*, *malimbe/mlimbe* (*ka* Mwanza & *ka* Nasa= from Mwanza and from Nasa), *mulungu* and *ngomashi/ngomachi*. Their classification depends on speed, direction and the season they occur. Performance in this task indicates decline in native lexicon. For instance, out of 14 control group, only 4 (29%) score 100% while 10 (71%) are not able to list the six items. The problem is worse among young adults i.e., out of 16, only 1(P20, age 39) lists all the six items. Seven young adults (50%) score zero. This implies that they have experienced decline in indigenous knowledge. However, this attrition is indicative of retrieval difficulties or loss of memory, recoverable through re-learning (unlike total erasure). Therefore, wind types is among the fast eroding lexical knowledge in Kara community.

Performance in picture naming tasks (PNT)

This includes three subtasks namely, naming wild and domestic animals (D1), Body parts (D2) and finger names (D3). In D1, participants have to name 22 pictures presented to them in pictorial form. Performance in D1 reveals variations across age groups as per Table 3.

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PARTICIPANT	AGE	RT[1]/MINUTES	SCORE/22	%
P1	25	5:05	11	50
P2	44	3:04	15	68.1
P3	70	2:05	22	100
P4	60	3:00	12	54.5
P5	50	4:30	17	77.2
P6	42	4:51	17	77.2
P7	50	3:15	15	68.1
P8	38	3:06	14	63.6
P9	65	3:20	20	100
P10	30	5:01	13	59
P11	25	6:03	11	50
P12	19	5:00	11	50
P13	65	4:09	21	95.4
P14	29	4:50	13	59
P15	18	6:08	12	54.5
P16	21	6:03	15	68.1
P17	31	5:06	15	68.1
P18	25	6:30	13	59
P19	18	6:04	13	59
P20	39	4:00	14	63.6
P21	20	6:09	13	59
P22	22	6:01	12	54.5
P23	57	4:20	17	77.2
P24	62	4:05	11	50
P25	23	6:03	11	50
P26	40	6:00	15	68.1
P27	33	6:07	13	59
P28	40	4:02	17	77.2
P29	50	4:00	12	54.5
P30	58	3:59	15	68.1

Table 3. Ability to Name Wild and Domestic Animals

The young adults spare more than 5 minutes to produce an average of 12.7 items while the control group spare average time below 5 minutes and can produce an average of 16.1 items. This implies that young adults have experienced reduced ability in naming animals. Both groups perform better in naming domestic, aquatic and wild animals still available in Ukara environment. This implies the role of immediacy in vocabulary retention. For wild animals that are non-existent in Ukara Island, performance shows variations. Young adults name some wild animals in L2 (Swahili) i.e., *sungura* (hare), *simba* (lion), *chui* (leopard), *twiga* (giraffe), *tembo* (elephant) but the correct names are *Nyakamye* (hare), *ndale* (lion), ndala(leopard), *ndwika* (giraffe), *mvofu* (elephant) etc. This implies that they have totally replaced L1 terminology for wild animals with Swahili equivalence. The control group retains the native lexicon for both domestic and wild

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[1] Stands for reaction time.

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animals. The finding implies that the terms denoting wild animals not existing in native environments can be easily attrited compared to those immediate to native speakers' environment.

For D2, they are given to name their body parts in guided mode by excluding private parts. The target number of items is 30. The finding indicates slight variation in performance between both age groups as per Table 4.

Participant	Age	RT/Minutes	Score/30	%
P1	25	3:07	30	100
P2	44	3:01	30	100
P3	70	3:05	30	100
P4	60	2:52	30	100
P5	50	3:23	30	100
P6	42	3:04	30	100
P7	50	2:32	30	100
P8	38	2:49	30	100
P9	65	2:44	30	100
P10	30	3:58	30	100
P11	25	3:55	27	90
P12	19	3:57	28	93.3
P13	65	2:46	30	100
P14	29	3:30	30	100
P15	18	3:59	29	96.6
P16	21	4:00	30	100
P17	31	3:55	30	100
P18	25	4:03	29	96.6
P19	18	4:01	27	90
P20	39	3:00	30	100
P21	20	3:02	30	100
P22	22	3:56	27	90
P23	57	3:00	30	100
P24	62	2:05	30	100
P25	23	3:25	30	100
P26	40	3:34	30	100
P27	33	3:39	30	100
P28	40	3:15	30	100
P29	50	2:56	30	100
P30	58	2:40	30	100

Table 4. Ability to Name Body Parts

Except 5 (16.7%) young adults, 25 (83.3%) participants score 100% implying that they retain native lexicon even after intensive use of Swahili. Therefore, body parts are more resilient to borrowing and ultimate attrition. However, performance in D3 shows variations in performance between young adults and older speakers as shown in Table 5.

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Participant	Age	RT/Seconds	Score/5	%
P1	25	37	0	0
P2	44	70	1	20
P3	70	50	5	100
P4	60	90	2	40
P5	50	65	1	20
P6	42	60	1	20
P7	50	70	2	40
P8	38	60	2	20
P9	65	40	5	100
P10	30	48	0	0
P11	25	50	0	0
P12	19	60	0	0
P13	65	45	5	100
P14	29	49	0	0
P15	18	42	0	0
P16	21	52	0	0
P17	31	43	0	0
P18	25	31	0	0
P19	18	39	0	0
P20	39	50	2	40
P21	20	35	0	0
P22	22	38	0	0
P23	57	40	0	0
P24	62	60	2	40
P25	23	44	0	0
P26	40	53	0	0
P27	33	41	0	0
P28	40	49	2	40
P29	50	40	2	40
P30	58	58	2	40

Table 5. Knowledge in Finger Naming system

In this task, they have to name fingers in either picture or physical as presented in the figure below. Only 3 out of 30 participants score 100%. These are above 60 years old. Reaction time (RT) is less decisive since there is overlapping time taken among good performers and those who failed. Attrition is mild among middle-aged and tenser among young adults. For instance, 1 out of 16 young adults scores 2 items (P20, Age-39). Fifteen (93.7%) score zero and admit total failure. This finding implies that finger naming is among the most vulnerable indigenous knowledge among Kara speakers. This is attrition resulting from obsolescence and not interference since they have not replaced with Swahili finger names.

Figure 1. Kara Finger Names

Source: https://kokoro-jp.com/culture/327/

Key:
1- *Likumu linene* (thumb)
2- *kasola masoro* (index finger)
3- *echa kati* (middle finger)
4- *chikole* (ring finger)
5-*kanyamboso* (pinky or little finger)

Discussion

The first objective of this study is to examine the possibility and extent to which young adults have attrited. The finding in this study reveals attrition among young adults in large areas of indigenous knowledge. The young generation have experienced reduced vocabulary in traditional culture compared the control group consisting of middle-aged and old adults. This attrition has affected their lexical retrieval abilities. This attrition is not a total erasure; given some cues (i.e., mentioning it), they can remember the terms. This is our observation during the sessions whereby young adults take a long lapse to remember the terms but, in most cases, they fail to supply correct items. This implies that re-learning is possible. Concurrently, Park (2018, 4) argue that language attrition takes place due to difficulty of access rather than complete erasure from the attriters' mind. Schmid & Jarvis (2014) reports similar findings on lack of accessibility as the best term to describe lexical attrition.

Park (op.cit.) associates attrition with the concept of "savings" common in psychology that, "Information from memory merely becomes inaccessible due to different factors and can be retrieved again in the presence of right cues". Thus, Kara young adults have not experienced rapid attrition recorded among children especially in migrant contexts (see Pallier et al., 2003). Their finding implies complete loss of L1 in migrant context. In non-migrant context, where attrition is caused by L2 (i.e., Swahili and English) rapid attrition is less indicative. In light of the Activation Threshold Hypothesis, Kara lexical attrition is an inability to access lexical items previously stored in the memory due to lack of frequency of use and recency. The use of Swahili-L2 items leads to low activation of the native lexicon due to disuse for a long time. Thus, Kara attrition is an aspect of retrieval failure, a theory common in psychology that forgotten language input is still available and not very erased from memory (Alharthi, 2015, p. 87).

The second objective of this paper is to analyse the types of indigenous knowledge easily attrited. The finding indicates that different indigenous knowledge (at lexical level) are attrited differently. For instance, finger-naming system, wind types, arithmetic, local tools and artefacts and other referents no longer existing in the environment such as wild animals are more vulnerable to attrition compared to kinship terms, body parts and existent objects. Other resilient lexical items in the corpus are co-existing synonyms, immediate objects and concepts still relevant in the contemporary society. Again, concepts overheard and more recent

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from the past are more retained than those rarely used. This also applies to objects and concepts used for a long time in the past.

This finding largely reflects previous studies. For instance, Msuya (2021) discovers a high degree of attrition among Chasu children in aspects such as kitchenware, houseware, domestic animals, people's occupations and people's emotions and movements. Slight different findings are reported by Utamwa (2016) among Gogo schoolchildren i.e., high degree of attrition in oral traditions (narrations), wild animals, animal sounds and traditional utensils and average performance in simple action verbs and body parts.

The last objective of this paper is to identify the factors leading to lexical attrition. The finding indicates Kara attrition resulting from cross-linguistic influence. However, in some instances, obsolescence has a bearing in attrition. Swahili presses much influence on Kara through intensive borrowing by replacing native lexicon. Utamwa (2016) and Msuya (2021) report similar findings whereby schoolchildren attrite in native proficiency due to the acquisition of Swahili. Lack of literacy in native language also causes attrition. Kara young adults lack the same in their mother tongue. This is among the predictor factor for attrition (Schmid & Jarvis, 2014). Although borrowing normally enriches the lexicon of the target language, in Kara it largely replaces native lexicon, affecting the memory of native speakers. In context of lexical enrichment, it is quite difficult to produce evidence of attrition since L2 loanwords fill the lexical gap and improves the existing concepts (Opitz, 2011; Moreno, 2015).

In light of ATH, Kara attrition results from the disuse of the native lexicon for a long time. Young adults have lost vocabulary items acquired in the past due to infrequent use and lack of recency (Schmid & Jarvis, 2014). Immediacy has also affected native lexicon. Concurrently, McGregor et al. (2018) report that speakers perform better in naming objects and organism immediate to their environment than those exotic to their daily physical environment. For example, in Kara community wild animals especially the big five (*ndale*-lion, *ndala*-leopard, *mvofu*- elephant, *nzabhi*- rhinoceros and *mboko*-buffalo) never existed in their geographical area. However, the terms entered the language through borrowing from Jita sister language spoken in Mara region. The names entered Kara through early contacts between Kara (Kara) and Jita speakers. Overhearing also amounts to either maintenance or loss of native lexicon (see Au et al., 2002). Kara young adults lack fluency in the disappearing fish species since they have never seen them. They only hear from elders; hence, less consolidated in long-term memory. For finger names, wind types, local tools/artefacts and arithmetic, they lack fluency due to loss of interest in traditional culture and technology after the influence of Swahili and modern technology. Therefore, this is an aspect of infrequent use, which leads to high activation threshold (inhibition). This inhibition results into lack of accessibility to particular lexical items.

Conclusions

The findings show that Kara young adults have attrited in the native lexicon. This attrition is not a total erasure of lexical knowledge but rather lack of accessibility manifested as difficulty in retrieval. Not all aspects of lexical knowledge have been attrited. Finger names, arithmetic, local tools and artefacts, less immediate animals, disappeared fish species and wind types are the most vulnerable elements of native lexicon when it comes to attrition. Kinship terms, body parts, immediate objects and concepts relevant to contemporary use are somewhat resilient to attrition. Swahili has pressed much influence on attrition in Kara due to massive borrowing and replacement of native lexicon, including loss of interest in traditional culture and technology. Both linguistic and non-linguistic factors have interplay to attrition (Cherciov, 2011). Again, attrition results from infrequent use of Kara original terms, which adversely affects lexical memory. Therefore, lexical attrition is possible among young adults in non-migrant context, even in the lexicon reflecting traditional culture. This study recommends therefore that, we should not always view

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attrition as an aspect of migration and child adoption since, due to increased proximal language contact, speakers of most African minority languages are likely to attrite natively especially at lexical level.

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