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# Cross-Linguistic Metonymies in Human Limb Nomenclature

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CROSS-LINGUISTIC METONYMIES IN HUMAN LIMB NOMENCLATURE

by

Kelsie Pattillo

A Dissertation Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

in Linguistics

at

The University of Wisconsin-Milwaukee

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## ABSTRACT

### CROSS-LINGUISTIC METONYMIES IN HUMAN LIMB NOMENCLATURE

by

Kelsie Pattillo

The University of Wisconsin-Milwaukee, 2014  
Under the Supervision of Professor Garry W. Davis

This dissertation is a cross-linguistic lexical study of metonymic change in human limb nomenclature. The data analyzed for this study make up both synchronic and diachronic databases. The synchronic data come from a sample of 153 non-Indo-European languages from 66 language families and are balanced for genetic and areal influence. The diachronic data are made up of a large collection of Indo-European etymologies. By comparing the metonymic patterns found in the Indo-European historical data with the synchronic cross-linguistic data, this dissertation explores to what extent the patterns of change found in Indo-European are cross-linguistic tendencies.

In addition to showing how etymological data from one language family can help identify cross-linguistic tendencies, this dissertation also supports the claim that semantic change is regular, predictable and unidirectional. This serves as a framework for identifying cross-linguistic lexical tendencies. Along with its contributions to the theoretical discussion of regularity in lexical change, this dissertation proposes three universal tendencies and a substantial amount of lexical data that is useful for future cross-linguistic studies.

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## LIST OF ABBREVIATIONS

AD/Rs	Addressee/Readers
Afr	Africa
ANG	Australia-New Guinea
ART	journal article
DICT	dictionary
ERG	ergative case
Eura	Europe and Asia
GEN	genitive case
IDS	Intercontinental Dictionary Series
INDF	Indefinite
INF	Informant
LS	Language Sciences 28
NAm	North America
NOM	nominative case
PIE	Proto Indo-European
PM	phonemic
PN	phonetic
POSS	possessive marker
OR	orthographic
rel	relative
SAM	South America
SP/Ws	Speaker/writers
WOLD	World Loanword Database
1st	first person
~	polysemy
>	direction of change

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## Chapter 1

### Introduction

This dissertation is a cross-linguistic study of metonymic change in body part nomenclature. It focuses on the ways that languages develop terms to name regions of the upper and lower limbs. The research questions focus on how languages name the limbs and their parts, the role metonymy plays in naming these parts, and to what extent the historical development of body part terminology is subject to cross-linguistic tendencies.

Specifically, this dissertation attempts to answer the following research questions, as shown in (1) below.

- (1)
  - a. What kinds of metonymy occur in human limb nomenclature across languages?
  - b. What is the distribution of human limb metonymies across languages?
  - c. To what extent is the development of metonymic human limb terms similar across languages?
  - d. To what extent are metonymic changes in human limb nomenclature regular and unidirectional?

Question (1a) above seeks to describe the types of metonymy across languages and question (1b) asks about the distribution of these types of metonymies across languages. Questions (1c-d) are about diachronic change. (1c) looks at particular metonymic changes and (1d) seeks to describe the general characteristics of such changes. The term ‘regular’ in question (1d) refers to frequency. Regular changes follow patterns that occur repeatedly across languages, whereas irregular changes are infrequent and do not follow easily identifiable patterns. Additionally, the term ‘unidirectional’ in question (1d) refers to metonymic changes that occur from one to another in the same order but not the other way around. For example, in the metonymy PART FOR WHOLE meanings change from

referring to a part to referring to a whole, but not the other way around. Although the reverse metonymy, WHOLE FOR PART also exists as an active metonymy across languages, the question of unidirectionality seeks to find out whether languages name human limbs with unidirectional (such as PART FOR WHOLE only) or bidirectional (such as both PART FOR WHOLE and WHOLE FOR PART) metonymies.

In order to answer these questions, I propose testing the hypothesis given in (2) below by using data from both an Indo-European historical sample and a large cross-linguistic sample.

- (2) The types of metonymic patterns for naming the upper and lower human limbs found in Indo-European historical data are widespread in the world's languages.

By widespread, I make a hypothesis regarding the frequency of the occurrence of metonymic patterns. I expect the patterns that occur frequently in the Indo-European data to also occur frequently cross-linguistically. Because the term widespread is subjective, I define it as an occurrence that is found in at least three geographic areas and in many language families.

The data make up two sets of language samples. The first language sample consists of Indo-European historical data which show how the Indo-European languages have developed body part terms. These data heavily focus on etymologies to identify major patterns of metonymic change. The second language sample comes from 153 non-Indo-European languages. This sample is genetically- and areally- balanced and includes morphological data for limb terms. By hypothesizing that the metonymic patterns of change that occur in the Indo-European historical data will also occur in the cross-linguistic data, this dissertation aims to provide a framework for identifying cross-linguistic lexical tendencies. In addition to its contributions to the theoretical discussion

of regularity in lexical change, it also provides a substantial amount of data that is useful for future cross-linguistic studies.

The focus on human body part nomenclature is not unique to this dissertation. Human body parts are the focus of many linguistic studies ranging from perception to grammaticalization. Every speaker of a language has a body and every language has terms to refer to body parts. It is through the body that speakers of a language experience the world. For these reasons, body parts have played an important role in cross-linguistic studies. Body parts provide an ideal lexical framework because they are universal to the human experience. Thus they are frequently used in cross-linguistic lexical studies including topics such as hierarchies in which the presence of one body part term indicates the presence of another, point of reference explaining what specific areas are included in a body part term, metaphor, or correlations between culture and naming practices.

Most cross-linguistic lexical studies focus on a subset of body parts and/or the grammatical characteristics of their expression. For example, there have been studies that focus on the internal organs, the hands compared to the arms, alienability, body parts that are most commonly extended to express spatial and temporal deixis as well as those most commonly extended via metaphor. Such cross-linguistic studies may include a large sample of the world's languages or focus on a sample limited to one geographic area or language family.

This study focuses on pathways of change in the terms for upper and lower limbs of the human body. It uses metonymy as an explanation for pathways of change by first identifying patterns in historical Indo-European limb nomenclature and then comparing these patterns with cross-linguistic data. I hypothesize that the same types of metonymic

pathways of change that exist in the Indo-European historical data are widespread in the cross-linguistic data. The background for this hypothesis is explained in chapter 2.

In addition to Indo-European historical data, this study includes a sample of 153 languages which are balanced for both geographic area and language family. The language data come from five geographic areas as defined by Dryer (1989): North America, South America, Australia-New Guinea, Africa and Eurasia, and at least 30 languages from each geographic area are represented in this study. While the historical data are limited to Indo-European, the cross-linguistic data sample includes languages from 66 different language families. None of the 153 languages in the cross-linguistic data sample come from the Indo-European family. The selection of languages and collection of data are explained in chapter 4.

This dissertation is divided into 8 chapters. Following this introduction, chapter 2 focuses on the background of this study. In this chapter I summarize the relevant literature that pertains to this study. This includes studies on body parts, especially those pertaining to the upper and lower limbs, lexical typology and metonymy and metaphor.

Chapter 3 focuses on the theoretical framework of metonymic change. Sweetser (1990) and Traugott & Dasher (2002) serve as a foundation to this framework. This chapter includes definitions and examples of metonymy, and lexical and semantic change. It also explains how metonymic change is regular and predictable. The majority of examples in this chapter include body part terminology.

In chapter 4, I explain the sampling methods and data collection I use for this study. In addition to explaining how I selected the languages for my cross-linguistic sample, I also explain my data collection methods for Indo-European historical data, the



reasoning for comparing historical data with cross-linguistic data, and my reasons for selecting the Indo-European language family for my historical data. This chapter also includes information about inherent biases of this study and how my methodology attempts to minimize them.

Chapter 5 focuses on the pathways of change found in the Indo-European historical data. The data come from etymologies and are grouped according to the pattern of change displayed in the etymology. The major sources for the etymological data are Porkorny (1959) and Walde (1973). After identifying and describing the major patterns of change in the Indo-European family in this chapter, I look for similar patterns in the data from the cross-linguistic sample in chapter 6. I describe the patterns that occur in the cross-linguistic sample and analyze their distributions according to language family and geographic area.

Next, I present an analysis of the patterns demonstrated in both samples of my data in chapter 7. I focus on how the patterns demonstrated in the Indo-European language sample and the cross-linguistic sample compare and explain the results as they relate to my hypothesis. In comparing the results of both data sets, I analyze to what extent the data support my hypothesis that the pathways of change in the Indo-European historical data are the same as some of those in the cross-linguistic data.

Finally, in chapter 8, I summarize the main conclusions of the findings in my data. In doing so, I propose cross-linguistic generalizations as supported by my data and describe directions for future research both within linguistics and the subfield of crosslinguistic typology, henceforth referred to as typology.

## Chapter 2

### Theoretical Framework

This chapter presents the theoretical background and framework for this dissertation including research assumptions, definitions of terminology and a description of the theoretical framework for my approach to semantic change.

I begin by explaining the notion of cross-linguistic generalizations in section 1. In that section, I discuss the implications of my dissertation for linguistic typology. I then explain the observations that have given rise to my study, the research question that has come out of these observations and the hypothesis I make to test the research question. After that, I describe the potential answers to these research questions and their logically possible types.

Next, in section 2, I define semantic change, explain how my project contributes to understanding it, and provide examples of semantic change that have occurred in English.

In section 3 I explain how regular patterns exist within semantic change and why it is reasonable to believe that such patterns exist in limb nomenclature across the world's languages.

In section 4, I give a general overview of Sweetser (1990) and Traugott & Dasher's (2002) work. Both contribute substantially to the theoretical framework of this dissertation. I then extend the theories introduced by Sweetser and Traugott & Dasher into my own work and clarify my approach to historical and cross-linguistic data in

section 5. In section 6, I define, exemplify and explain metonymy and how I look for it in my research. Finally, in section 7, I summarize my main points.

## 2.1 Cross-linguistic generalizations

Language typological research traditionally aims to compare a large set of languages in order to make claims about the nature of language. Such claims not only help describe the essentials and diversity of languages, but also help in the ongoing task within the social sciences and humanities to understand human cognition and the human experience. Most generally, the central task of language typology is to determine the distribution of grammatical features among the languages of the world. More specifically, typologists are interested in similarities among languages that are not due to genetic or areal relationships. All typological studies contribute to understanding the diversity of languages and the patterns that underlie this diversity.

It is possible to formulate hypotheses about language universals based on a single language, but testing these hypotheses requires cross-linguistic work. The research presented in this dissertation stems from the observation that a number of languages name the human limbs according to certain patterns, such as the word for ‘finger’ being used for ‘toe.’ In comparing languages, I discovered that English and other Germanic languages are unique in having separate terms for ‘finger’ and ‘toe’ that not only do not share morphemes but are two unrelated morphemes. With a historical background of English, it became clear that the word *toe* derives from a term meaning ‘digit,’ which once only referred to the ‘finger.’ This term then became polysemous, as modern English *digit* demonstrates, referring to both ‘finger’ and ‘toe.’ Eventually, the original meaning

was lost and the meaning ‘toe’ remained. This pattern of semantic change is common in the Germanic branch of Indo-European languages, but not in the other branches.

Explaining how this change happened leads to a larger observation, namely that Indo-European languages use metonymies to name the human limbs. This leads to the following existential statement:

- (1) Some languages of the world use metonymies to name body parts.

Although it is interesting in itself that a word for one thing came to be used to refer to something else, this observation leads to questions concerning the universal properties of language. The following question summarizes the essential question of this dissertation:

- (2) What is the cross-linguistic distribution of lexical body-part metonymies?

To answer this question, I start with identifying the metonymies involved in the naming of the upper and lower human limbs in Indo-European languages and form the following hypothesis:

- (3) The same types of metonymic patterns for naming the upper and lower human limbs found in Indo-European historical data are widespread in the world’s languages.

Identifying body-part metonymies in the Indo-European languages includes using data from their historical stages. The historical data are important because they provide more detailed information regarding language change than the modern forms alone can show. As demonstrated by the English *finger* and *toe* example above, the pattern of extension only becomes clear when historical data are used. I then compare the patterns that exist in the Indo-European historical data with genetically- and areally-balanced cross-linguistic data.

In testing the hypothesis that the metonymies in the Indo-European historical data occur across the world's languages, it is not enough to show that the languages in my cross-linguistic database do or do not behave the same way as in historical forms of Indo-European languages. Although data supporting or failing to support this hypothesis is interesting, it does not make a substantial contribution to the field of typology unless it also allows us to make more specific cross-linguistic generalizations. It is necessary to draw cross-linguistic generalizations regarding semantic change and metonymy in the analysis of my data. Since lexical typology is an often neglected branch of linguistic research, it is my hope that this dissertation will stimulate a wider discussion of lexical typology.

Describing the cross-linguistic distribution of human limb metonymies as posed in the research question in (2) above can result in four possible basic answer schemata.

First, I may find that in all languages in my cross-linguistic sample, the same metonymies in the Indo-European historical data occur. This finding would result in a statement like in (4) below, which is commonly referred to in the literature as an unrestricted universal:

(4) Statement Type I:

In all languages (in my sample), metonymy M occurs.

Second, I may find that not all languages in my cross-linguistic sample have these metonymies but all languages within a well-defined subset of my sample do. This scenario would allow for the statement type in (5) below, which is labeled in the literature

as a restricted or implicational universal. The terms restricted and implicational universals are synonymous.

- (5) Statement Type II:  
In all languages (in my sample), if they have characteristic C, metonymy M occurs.

In addition to differing in terms of restriction, cross-linguistic statements also can differ in terms of their modality. Are they stated as fully valid or only statistically valid? Both statement types I and II discussed above can have absolute and statistical varieties, which provide statement types III and IV which may be the findings from my cross-linguistic data. Statement type III is known as an unrestricted statistical universal and statement type IV is known as a restricted (implicational) universal.

- (6) Statement Type III:  
“In most (or 60 etc. percent of the) languages (in my sample), metonymy M occurs.”
- (7) Statement Type IV:  
In most (or 60 etc. percent of the) languages (in my sample), if they have characteristic C, metonymy M occurs.

Now that it is clear what types of cross-linguistic generalizations may come from this data, I turn to how this dissertation further contributes to lexical typological research by focusing on semantic change in the next section.

## 2.2 Semantic change

Words commonly change meaning over time. Thus it is not entirely surprising that the meaning of English *toe* could change from ‘finger’ to mean ‘digit’ and then to mean ‘toe.’ Not all words in a language mean exactly the same thing that they did in earlier forms of the language. Shifts in word meaning are examples of semantic change. Like other forms of linguistic change, semantic change may happen quickly, such as

within a generation, or over a long period of time, such as three or four generations. As I aim to show with my Indo-European historical data, body parts undergo semantic change in a similar way. The changes follow patterns which I refer to as pathways of semantic change.

In this dissertation, I look for patterns of semantic change using both diachronic and synchronic data and hypothesize that the same types of patterns will exist in both types of data. The diachronic data come from Indo-European languages and the synchronic data come from my cross-linguistic sample controlled for areal and genetic influence. In order to test whether diachronic and synchronic data support a cross-linguistic tendency for human limb terminology to change in the same way, I make a number of assumptions described below.

### 2.3 Regularity, patterns and pathways of change

Following the claims made in Sweetser (1990) and Traugott & Dasher (2002), I argue that semantic change is regular. I understand regularity in semantic change to mean that it follows predictable patterns and is not a result of a sporadic occurrence. I have chosen Sweetser and Traugott & Dasher as the basis for my theoretical framework because they use both etymological and cross-linguistic data to show patterns of lexical extensions. Both types of data reveal lexical patterns that occur across time and languages. Sweetster and Traugott & Dasher explain why this is so in a simple, testable claim that is easily applicable to lexical typology.

Given etymologies, or word histories, of a group of related lexemes, it is possible to identify patterns for semantic change. Additionally, these same patterns can be

observed in snapshots of a language spoken at any single time in its history. For example, the English word *foot* is polysemous, meaning both ‘the supporting base at the end of a leg’ and a ‘unit of measurement made up of twelve inches.’ The reoccurrence of the same lexemes for both body part terms and units of measurement demonstrates a pattern in which languages extend body part terms to units of measurement. In exploring the widespread occurrence of such patterns, I hypothesize that groups of semantically related lexemes will tend to follow the same pathways of change over time. Like Sweetser (1990) and Traugott & Dasher (2002), I do not assume that these patterns of semantic change are absolute. In other words, they do not determine the path of change a particular lexeme will take in a given language. To clarify, a tendency for semantic change will reveal reoccurring patterns, but not all lexemes within a given semantic domain will undergo semantic change. Likewise, not all lexemes within a given domain that do undergo semantic change will change exactly the same way. Some lexemes may fall out of usage while others do not. Some lexemes will continue to change over time whereas others may not. Therefore, in considering the typology of semantic change, it is important to recognize the difference between what is possible and what actually occurs. Just because a lexeme is able to undergo a change (possibility), there is nothing forcing it to do so (occurrence). For clarity, I recap these options below in Table 2.1, in which ~ stands for polysemy, and > stands for direction of change.



Type of Change	In Prose
(a) $A > A \sim B > B$	Meaning A becomes polysemous with meaning B, then falls out of usage and only meaning B (the newer meaning) remains.
(b) $A > A \sim B > A$	Meaning A becomes polysemous with meaning B, but then B falls out of usage and only meaning A (the original meaning) remains.
(c) $A > A \sim B$	Meaning A becomes polysemous with meaning B and both forms remain.
(d) A	Meaning A does not change.

Table 2.1 Types of semantic change

In considering Sweetser (1990) and Traugott & Dasher's (2002) claims, I hypothesize that when semantic change occurs, it is regular, predictable, and can be demonstrated throughout the history of a given language as well as cross-linguistically. As Traugott & Dasher (2002: 1) state, such patterns of semantic change are prototypical and probable tendencies. Furthermore, Sweetser (1990: 9) claims that a) when words acquire new senses, the process is systematic, not random, and b) this is shown in the historical data of related words in languages from the same language family (p. 9). Because words acquire new senses systematically, I expect to find cross-linguistic patterns in the naming of the human limbs.

It is reasonable to believe that languages use the same patterns in human limb nomenclature. As others have noted, it is common to extend the term for hand to arm and foot to leg across the world's languages (Buck 1949, Witkowski and Brown 1985). It is widely accepted that this pattern appears across the world's languages, yet the explanations as to why this is so vary. I aim to explain this pattern and others in terms of historical development through cross-linguistic metonymic patterns. In order to do so, I look for systematic regularities both synchronically with data from across the world's

languages and diachronically with data from Indo-European historical data. I explain the selection and collection of this data later in chapter 4. Here I focus on why this data should enable us to identify regularities in the pathways of change in human limb nomenclature.

#### 2.4 Overview of Sweetser (1990) and Traugott & Dasher (2002)

Two important contributions to our understanding of patterns in semantic change are Sweetser (1990) and Traugott & Dasher (2002). Both contributions describe semantic change as regular and unidirectional, meaning pathways of change occur in one direction. Although the theoretical basis differs between the two works, both Sweetser's cognitively based and Traugott & Dasher's pragmatic theory are complementary. Although their explanations vary as to why these regularities in semantic change occur differ, both Sweetser and Traugott & Dasher agree that it is necessary to identify patterns through a large sample of lexemes from one or more languages throughout the history of the language. Neither work explicitly defines what it means for a change to be regular and predictable but both indicate that regular and predictable change occurs. As I understand these terms, regular and predictable changes are frequent changes that follow identifiable patterns.

What follows are brief overviews of the major claims in both Sweetser (1990) and Traugott & Dasher's (2002) work. I then explain how I use these two approaches to identify patterns in my own data. Last, I state my assumptions and define terminology as I will use it in the rest of this study.

### 2.4.1 Overview of Sweetser's framework

Sweetser's (1990) work developed from a discrepancy in semantic theory between form and meaning. She states that formal feature-based semantic analysis accounts for relationships between form and meaning, but it cannot explain the repeated occurrence of semantic change found diachronically in a large language sample. She promotes a cognitive-based semantic analysis to both describe and explain observed meaning patterns found in historical developments of groups of related words across Indo-European languages and their historic forms. Sweetser's (1990: 1) cognitive approach claims:

- a) The basis for natural-language semantics emerges from every-day human experience.
- b) Polysemy, lexical semantic change and pragmatic ambiguity are related in that one form is used for more than one function.

As Sweetser (1990: 9) notes, historical shifts of meaning occur via an intervening stage of polysemy. With historical evidence, we can observe that meaning changes by first extending its application (one form is used for more than one function). Languages may lose the original function in favor for the second, keep both functions, or lose the new function and favor the first. An explanation of this is given in Table 2.1 above and is repeated in (8) below in which A represents the original function and B represents the new function. In each of these extensions, there is a period in which meaning A and meaning B occur together.

- (8)
- (a)  $A > A \sim B > B$
  - (b)  $A > A \sim B$
  - (c)  $A > A \sim B > A$
  - (d) (A)

Continuing the finger and toe examples from earlier in this chapter, extensions (8a-c) could appear in languages in the following ways. Extension (8a) would extend the term ‘finger’ to also mean ‘toe,’ as shown in form as  $A > A \sim B$ . Then, the meaning ‘finger’ would be lost, and only the meaning ‘toe’ would remain, as shown by  $A \sim B > B$ . Next, extension (8b) would only include extending the term meaning ‘finger’ to also mean ‘toe.’ In this extension, the term would remain polysemous. Last, extensions of the type (8c) would extend the term meaning ‘finger’ to also mean ‘toe,’ but then later lose the newer meaning ‘toe’ and only retain the meaning ‘finger.’ This is shown by  $A \sim B > A$ . (8d) does not show polysemy, thus it appears above in parentheses.

Sweetser promotes the use of a cognitive-semantic study of polysemy structure because it demonstrates patterns and motivation for the patterns in groupings of meanings that once seemed random. Furthermore, she identifies metaphor as a motivating force behind these changes (p. 21).

Finally, Sweetser’s work implies the necessity to test the application of this cognitive-based semantic analysis to historic forms of groups of related words in non-Indo-European languages. This approach to semantic analysis should explain patterns of meaning-change demonstrated in cross-linguistic accounts of polysemy in lexical meaning and meaning-change demonstrated in historical forms.

#### 2.4.2 Overview of Traugott & Dasher’s framework

Traugott & Dasher (2002) propose a pragmatically-based explanation for regularity in semantic change. By combining historical pragmatics and semantics, they claim semantic change occurs as a result of negotiated meaning between speaker/writers

(SP/Ws) and Addressee/Readers (AD/Rs). SP/Ws are those who produce an utterance and AD/Rs are the intended receivers of an utterance. As Traugott & Dasher explain, linguistic change originates in language use, not within language on its own. Traugott & Dasher, like Sweetser (1990), account for predictable patterns of change undergone by individual lexemes cross-linguistically (p. 3). Grammaticalization, which is a process in which languages bleach meanings and reduce lexemes to grammatical functions, provides the majority of known cases, such as modality or spatial deixis (see Heine and Kuteva 2002 and Heine, Claudi and Hünemeyer 1991). Regularities of linguistic change are highly predictable when considering a large sample rather than a lexeme in isolation. Traugott & Dasher claim this holds both cross-linguistically and when considering one language.

Traugott & Dasher use pragmatic implicatures in their approach to explaining semantic change. Rather than a case in which new meanings suddenly appear in a language, Traugott & Dasher believe there is a historical path of language use from one meaning to semantic polysemy via invited inferences and pragmatic polysemy. Thus, when new meanings develop, they differ slightly from earlier meanings and develop first as pragmatic polysemies rather than semantic polysemies. Old and new meanings typically co-exist at the same time. Again, Traugott & Dasher make this claim on the basis that natural languages exist because people speak them, thus change occurs through language use (p. 11, 280).

In their approach to semantic change, Traugott & Dasher also look at homonymy, metaphor and metonymy. They believe that real homonymy is not as common as speakers of a language might say. Even when there is no clear semantic relationship

between the meanings of a phonological string for SP/Ws, historical evidence may show one. For this reason, historical linguists must utilize dictionaries and grammars that have detailed notes about the meaning and usage of items. Traugott & Dasher state that there is negative evidence for homonymy when SP/Ws stop using a meaning at a certain period in time. Another factor for consideration is the restriction of a meaning to a particular register. This highlights their claims above that old and new meanings typically co-exist and also explains why speakers may not be aware of some meanings of a given lexeme.

Prior research in semantic change also points to metaphor and metonymy as mechanisms for change. Traugott & Dasher state that both exploit pragmatic meaning and both enrich meaning. They believe that metonymy is probably more basic to language and cognition than metaphor, which had more attention than metonymy in the literature until recently. Traugott & Dasher imply that metaphor and metonymy alone are not enough to cause change; rather, SP/Ws utilize meanings in a metonymically based process to communicate beliefs, attitudes and the like (31). This can be seen in subjectification and intersubjectification, with subjectification being the main mechanism of semantic change (90, 279).

Given the summaries of Sweetser (1990) and Traugott & Dasher's (2002) work above, I now turn to how I use these theories to form my own theoretical background for this dissertation.

## 2.5 Approaching historical and cross-linguistic data

I use Sweetser (1990) and Traugott & Dasher (2002) for theoretical claims regarding the existence of regular and predictable patterns in semantic change. Sweetser's data do not include metonymy and Traugott & Dasher's data focus on semantic change contextualized across sentence boundaries. As I am looking at metonymies in limb nomenclature that does not occur between sentence boundaries but rather from historical and lexical sources such as grammars and dictionaries, neither Sweetser's nor Traugott & Dasher's approaches are fully applicable to this study. Nevertheless, they provide interesting claims that can partially be applied to this study. Moreover, I am not aware of other theories of semantic change that would better apply to this study, therefore I focus on the claims from Sweetser and Traugott & Dasher that can apply to my study and do not attempt to make claims about a cognitive or pragmatic approach to semantic change.

As explained above, both Sweetser (1990) and Traugott & Dasher (2002) claim semantic change is regular and predictable. It is not absolute, but can be found across languages and throughout their histories. I take this to mean that semantic change follows patterns that are frequent and use this as a theoretical basis for my hypothesis that frequent patterns of semantic change in Indo-European limb terms are also frequent patterns in limb terms outside of Indo-European languages. The patterns of semantic change are unidirectional. That is, in a given type of change, such as in the metonymy PART FOR WHOLE, lexemes will extend mostly in the direction from a part of a whole to a whole and rarely the converse. With this in mind, I also hypothesize that the types of metonymies found within human limb nomenclature follow the same direction of change and that this change is unidirectional.

Furthermore, both Sweetser (1990) and Traugott & Dasher (2002) promote the use of historical sources, such as grammars and dictionaries, to collect data for identifying patterns. They equally claim that the same patterns of semantic change should occur in diachronic historical sources in one language or a group of related languages. As demonstrated by Heine and Kuteva (2002), the same types of grammaticalization occur across the world's languages. Therefore, it is a reasonable assumption that similar patterns are not restricted to cases of grammaticalization, and thus include other cases of semantic change, such as metaphor and metonymy, which I define and explain below.

For a cross-linguistic study of semantic change it is interesting whether the same patterns found in a group of historically related languages also hold in a group of languages that are historically unrelated and controlled for areal contact. As Sweetser (1990: 9) claims, “certain semantic changes occur over and over again throughout the course of Indo-European and independently in different branches across an area of thousands of miles and a time depth of thousands of years.” I predict that the same patterns in Indo-European historical data will hold in cross-linguistic data concerning the extension of the upper and lower limbs of the human body. Furthermore, I predict that these patterns will not be due to language contact or historical relations among languages. If the types of patterns hold within at least three of the geographic areas and within many of the 153 languages in my database, then I will conclude that these patterns are cross-linguistic tendencies. This does not imply that the patterns of semantic change will be limited to those demonstrated in Indo-European languages, but only that the patterns observed in Indo-European will not be limited to Indo-European languages. Additionally, cross-linguistic data controlled for by language family and areal contact may reveal



patterns of semantic change that do not occur in Indo-European languages. Last, in using the term cross-linguistic tendencies, I mean that the patterns are due to the nature of language rather than contact. It does not imply that these patterns are absolute. Thus, no languages must utilize these patterns of change.

In considering the mechanisms of semantic change and the anticipated sources of patterns in semantic change that may or may not occur in both my historical and cross-linguistic data, metaphor and metonymy are both promising candidates. Sweetser's (1990) work focuses on metaphor, whereas Traugott & Dasher (2002) also discuss metonymy as an equally major mechanism for semantic change. As the literature since Sweetser's work has shown, metaphor and metonymy are closely related and interact with each other. Both extend meaning by taking a concept and applying it to something else. They differ in that metaphor operates between domains (such as HUMANS and ANIMALS) and metonymy operates within a single given domain (such as HUMANS) or domain matrix (such as HUMAN BEING).

Referring back to the literature concerning body parts and typology, both metaphor and metonymy have inspired countless cross-linguistic studies. One reoccurring claim in both the cross-linguistic and Indo-European historical literature is the tendency for hand to be extended to also mean arm, and foot to also be extended to also mean leg. Buck (1949) lists numerous tendencies in the development of body part words, but he does not explain why such patterns exist. Likewise, Buck's work does not attempt to explore a relationship among the patterns he mentions. With closer inspection, we can see that Buck's observed patterns in the extension of hand to arm, foot to leg, or palm to hand involve the metonymy PART FOR WHOLE and possibly other metonymies too. Moreover,

Buck's work indicates a number of patterns in semantic change in body part terms that can be explained with metonymy. Using Buck's patterns as a starting point, I focus on metonymic patterns in my data. This is not to say that there are no metaphoric patterns in the data, or that they should they be dismissed. Rather I primarily focus on metonymy in the data.

## 2.6 Metonymy

For the purposes of this study, I define metonymy as the extension of one meaning onto another within the same conceptual domain. In these extensions, the CONCEPTUAL SOURCE (henceforth source) and the CONCEPTUAL TARGET (henceforth target) already share features, whereas in metaphor a feature of the source is mapped on to the target. In brief, a metonymy extends something, such as an object or a person, to another related point of reference. For example, *Hollywood* is not only a place but it also can refer to the movie industry. Likewise, *Ottawa* is Canada's capital city and it also refers to the Canadian government. *Iron* is a material that can be used in making weights and in addition to referring to the material itself, it also refers to lifting weights for exercise, as exemplified in the phrase "pumping iron". Each of these examples demonstrates an extension from one sense to another. These senses are related and their extensions occur within a single domain. Furthermore, these sources share a feature with their target without mapping new features to the targets. A capital city is the place for government, therefore *Ottawa* relates to government both as the capital city and as a way of referring to the Canadian government. The same process can be seen with the two senses of *Hollywood* described above. Thus the notion *She made her debut in Hollywood*

could be true both if the debut physically take place within the Hollywood boundaries or only in the movie industry without ever having been to Hollywood.

Often examples of metonymies are limited to PART FOR WHOLE, but many other types of metonymies also exist. There is no master list of metonymies that occur in the world's languages; rather, metonymic patterns receive names based on how they extend or refer to things, commonly following the pattern CONCEPTUAL SOURCE to CONCEPTUAL TARGET. In general, names for metonymic extensions often refer to things or people by something already associated with the person or thing. These associations include but are not limited to parts, objects, places, qualities or other attributes. In this dissertation, I name metonymies based on the patterns of extension they utilize. I use common names for these patterns as they exist elsewhere in the literature when available, such as PART FOR WHOLE, ACTION FOR PLACE, or PART FOR PROXIMATE PART. Whenever I discuss specific metonymies as they appear in my data, I define them and give examples of the mode of extension and references they utilize. For simplicity's sake, I use the metonymy PART FOR WHOLE for my examples in this chapter.

Because metonymies use the same types of extension to refer to a place, person thing, and so forth via an attribute associated with it, it is possible to test for metonymic universals. For example, the metonymy PART FOR WHOLE, extends the application of part of something to refer to the whole object, such as identifying someone as the *blond* to mean the person with blond hair. Testing for PART FOR WHOLE in the world's languages does not imply that all languages will have a strong tendency to use hair color as a means of referring to individuals, but only that languages will extend part of something to represent the whole object. Thus there are examples of PART FOR WHOLE throughout

English and these are not limited to people. Other examples include expressions such as *nice wheels* in which *wheels* refer to car, *college* which can refer to universities (which are made up of many colleges), or *champagne* which refers to both a sparkling wine from a specific region of France (a metonymic extension) and any type of sparkling wine. As I am testing for cross-linguistic tendencies in metonymic patterns in the naming of human limbs, I look for the same types of patterns within my data, not just the same pattern tokens. Specifically, the metonymy PART FOR WHOLE may show up in limb nomenclature via the same lexeme or stem appearing in pairs such as hand-arm, foot-leg, finger-hand, toe-foot, toenail-foot, elbow-joint, arm-limb and so forth. I do not believe that all languages in my sample will utilize the metonymy PART FOR WHOLE in each of the pairs above. In fact, I do not believe that any languages will do so in each of these pairs. Instead, I predict that the metonymy PART FOR WHOLE, among others, will appear in many of the languages in my sample and these languages will not be restricted to a particular language family or geographic area. Furthermore, I look for examples of reoccurring metonymies in the world's languages in cases of extensions which can appear in word pairs such as hand-arm, and so on as listed above.

As described above, I believe metonymies are cross-linguistic tendencies if they occur in a variety of language families and geographic areas. If a given metonymy is restricted to one geographic area or language family, then I believe it results from language contact or genetic inheritance. For example, the English expressions *pinkie* and *little finger* both refer to the outer-most finger on either hand. *Pinkie* is more common in the United States and, according to the Oxford English Dictionary (2012), has other senses meaning something small, little or insignificant, which are rare. This demonstrates

a metonymic process whereby an attribute of the outermost finger, its size, has become the name for the object, *pinkie*. This same process can be seen in the German term *Kleinfinger* [small finger]. If this pattern is restricted to finger names in Germanic or Indo-European languages, it does not demonstrate a cross-linguistic tendency. If the pattern of naming fingers according to their size is restricted to languages of Europe and Asia, it also does not demonstrate a cross-linguistic tendency, but it does make a strong case for metonymic borrowings among languages with areal contact. However, if languages from most geographic areas and/or language families demonstrate this pattern, it makes a strong case for a universal language tendency. I discuss the notions of geographic area and language family with my research methods in more detail in chapter 4. Next, I explain how I use Traugott & Dasher's (2002) and Sweetser's (1990) theories described above with historical data to explain how metonymic patterns come to be used in human limb nomenclature.

The cross-linguistic data I have collected for this dissertation demonstrate metonymic processes as modes of semantic change. Languages do not suddenly have lexemes that refer to multiple things. The role of speaker and hearer play a role in semantic change as those who speak the language extend lexemes to refer to a wider range of related things. There are cases in my cross-linguistic data which show the same stem for multiple body parts and demonstrate a historical process whereby a metonymic extension resulted in the name of a body part. English finger and toe names are an example of this, in which the terms *index finger*, *pointer finger*, *middle finger*, *ring finger* and *little finger* all share the stem *finger*. English speakers can also refer to individual toes using the same compounding structure to produce names such as the *index toe* and so

forth through the metaphor PART FOR ANALOGOUS PART which extends terms to objects that look alike. The history of this extension is transparent in these names in that the terms used to refer to fingers in English extended to the toes. Specifically, the *index* or *pointer finger* is named so because of the action this particular finger does. The English term *index* comes from Latin, with the stem \*dic meaning ‘to point.’ This finger is able to point, but the corresponding toe is not able to do so, demonstrating metaphor because the a feature from the source (the index finger) is mapped onto the target (the second toe). This example also highlights the notion of unidirectionality, which Sweetser (1990) and Traugott & Dasher (2002) claim is an attribute of both metaphor and metonymy. I believe that the cases of metonymy in my data will also demonstrate unidirectional semantic changes. Unidirectionality may not be transparent in many of the lexemes in my cross-linguistic data, but the diachronic changes in the Indo-European historical data will clearly demonstrate unidirectional semantic changes. That is to say, in cases where Indo-European cognates meaning both ‘hand’ and ‘arm’ occur, I can find cases in which ‘hand’ is the older meaning as well as believe it is so due to the metonymy PART FOR WHOLE and not vice versa. Likewise, entries in etymological dictionaries and the like that show ‘hand’ as an older meaning than ‘arm’ also provide examples of intervening stages of polysemy as Sweetser (1990) claims exist across languages. Both my cross-linguistic and my historical Indo-European data provide examples of polysemies of the type A ~ B; however, only my historical data demonstrates clear cases of semantic change of the type A > A~B > B. Sweetser (1990) explicitly indicates the need for more cross-linguistic research on semantic change in non-Indo-European languages. This study helps fill the

gap in research by using Indo-European historical data as a means to tentatively identify patterns cross-linguistically in languages that have at best limited historical descriptions.

Next, in order to identify candidates for metonymic patterns within the Indo-European historical data, I select cases that occur in more than one branch of Indo-European languages. For example, in the case of PART FOR WHOLE, the term ‘hand’ also means ‘arm’ in both the Celtic and the Slavic branches of the Indo-European family. This parallel development makes the metonymy PART FOR WHOLE a prime candidate to test for universality if the historical data shows that the Celtic and Slavic terms for ‘arm’ originally meant ‘hand.’ This can be shown by either an older form within Celtic or Slavic that means ‘hand,’ a form that means ‘hand’ in either language branch that is restricted to a particular register or dialect, or cognates meaning ‘hand’ in other branches of Indo-European.

## 2.7 Summary

I have outlined the theoretical background of my dissertation in the sections above by describing how my research fits within typology as a whole and, more specifically, within lexical typology. By focusing on pathways of semantic change in human limb nomenclature, I aim to show how metonymy works both synchronically and diachronically in my language data. Following the work of Sweetser (1990) and Traugott & Dasher (2002), I also hypothesize that semantic change is regular and unidirectional. With these assumptions, I look for cases of metonymy both within historical Indo-European languages and a large cross-linguistic sample, assuming that the two samples of language data complement each other in studying pathways of semantic change.

Specifically, I focus on metonymy as a mode of extension and vehicle of semantic change that languages employ and aim to contribute to the discussion of metonymy as a cross-linguistic process.

In the following chapter, I review relevant research in cross-linguistic studies concerning body parts, metonymy and semantic change. Then, in chapter 4, I explain my methodology for collecting data.



### Chapter 3

#### Literature Review

The present chapter describes how this dissertation relates to prior research by reviewing previous studies on metonymy and body parts in linguistic typology. In addition to providing a summary of past research, this chapter also identifies gaps in the literature and explains how this study fills those gaps.

There are a considerable amount of studies on body-part nomenclature and extensions in the literature. These studies focus on topics such as body partitioning, body parts as inalienable objects (Chappell & McGregor 1996), metaphorical expressions using the body (Sharifan, Dirven, Yu and Niemeier 2008), cross-linguistic borrowability of body parts (Haspelmath & Tadmor 2010), and the role of body parts in grammaticalization (Campbell, Kaufman and Smith-Stark 1986, henceforth Campbell *et al.*, Suutari 2006, König 1999, Bator 2008, Petruck 1995, Persson 2005, Levy 2004, MacKay 1999, MacLaury 1989). Most of these studies report selecting the semantic domain of body parts for their cross-linguistic studies due to the fact that every speaker of a language has a body, and it is believed that every language has a way to talk about the body. It is through the body that language-speakers experience the world and speakers use terms for the body to refer to objects in the world around them. Likewise, terms for body parts are readily available as they appear in word lists, grammars and dictionaries with high frequency. Rather than provide a comprehensive overview of the major studies pertaining to the topics listed above, I have chosen to focus on cross-linguistic studies that pertain to the limbs and to metonymy. Furthermore, I only describe the studies which I see as essential background to understanding the work of this dissertation as a whole.

The following sections of this chapter focus on cross-linguistic studies of metonymy, limb nomenclature, semantic change, historical data and gaps in the literature. Section 1 provides a brief overview of literature surrounding metonymy and explains why this literature also frequently includes information about metaphor. In section 2, there is a general overview of major studies that result in cross-linguistic statements regarding terms for body parts associated with the limbs. Section 3 describes previous cross-linguistic studies that focus on etymological data to identify patterns of semantic change in body part terms. Next, in section 4, some of the gaps in the literature are explained and there is information about how this dissertation aims to fill some of those gaps. Finally, in section 5, there is a brief summary of this chapter.

### 3.1 Cross-linguistic studies of metonymy

A large proportion of the literature surrounding metonymy also includes discussions of metaphor. As studies such as Barcelona (2000), Dirven & Pörings (2002), and Goossens (1995) show, metonymy and metaphor overlap. Volumes such as Barcelona (2000) explain how metonymy and metaphor interact, along with discussing the theoretical issues that arise from their interaction. Croft (2002) states that the role of domain is significant in most metonymies and that it is central to metaphor. In general, metonymies operate within a domain whereas metaphors operate across domains; but this generalization, too, is not uncontroversial. Because the two are intertwined, it is difficult to discuss cross-linguistic studies of metonymy without also mentioning metaphor. Especially in regards to body parts, metaphor has received more attention than metonymy in the cross-linguistic literature, and in many cases metonymy is only discussed when discussions of metaphor are also included (Peña Cervel 2001, Maalej & Yu 2011,

Pongweni 2008, Sharifan, Dirven, Yu & Neimeier 2008). Cross-linguistic studies of the limbs show that languages use body parts associated with the limbs in forming both metaphoric and metonymic extension. Brown (2001), Brown & Witkowski (1981) and Campbell *et al.* (1986) explain body part nomenclature in terms of metaphor, whereas the findings discussed in Brown (2005a, 2005b) and Hilpert (2007) focus on metonymy. I describe each of these studies in more detail in the following section.

### 3.2 Cross-linguistic studies of the limbs

Cross-linguistic studies that have analyzed limb terminology have generally focused on the naming of the fingers, hands, arms, legs and feet (Brown 2005a, 2005b). Brown and Witkowski (1985) and Brown (2001) write of widespread extensions to the limbs. These include people or kinship extensions to finger and toe terms, and small creatures, such as mice, to refer to muscles. Brown (2001) also notes that the English word *muscle* derives from the Latin *mus* ‘mouse.’ Furthermore, Brown (2001) attributes these extensions to natural classes. For example, languages that use people terms to refer to the fingers commonly designate the thumb as the ‘mother of the hand’ and the other fingers are the ‘children of the hand,’ indicating a difference between the thumb and other fingers. There are more examples of this in Brown and Witkowski (1981), in which people terms are widely found in languages spoken in North and South America. Brown (2001) also writes, “Few things in the physical world, other than small creatures such as mice, rabbits, frogs, and lizards, have enough in common with muscular body parts to enter into reasonable figurative labels for them” (p. 1184). He does not elaborate on what constitutes a reasonable figurative label.

In addition to summarizing extensions within the body domain, Brown (1999, 2001) writes about lexical acculturation, which “refers to how languages lexically adjust to new objects or concepts encountered as a result of contact.” According to Brown (2001), lexical acculturation is a source of “much lexical regularity across languages” (p. 1184). Although Haspelmath and Tadmor’s (2010) work clearly exemplifies a cross-linguistic resistance to borrow terms for body parts, Brown’s work (1999, 2001) indicates that cross-linguistic contact may result in calques that use metaphors, as described above in regards to small creatures and people terms. Smith-Stark (1982) and Campbell *et al.* (1986) attribute areal contact among languages in Meso-America for the high frequency of cross-linguistic calques. Some of the calques given in Campbell *et al.* (1986) pertaining to the limbs are shown below in Table 3.1.

Reference	Calque
knee	head of leg
wrist	neck of hand
calf	excrement/belly of leg
finger	child of hand
branch	arm (of tree)
thumb	mother of hand

Table 3.1 Body part calques in Meso-American languages

Although there are many studies regarding body parts terms and extensions in language, there are no cross-linguistic studies that analyze both the upper and lower limbs as opposed to other body parts. Campbell *et al.*’s (1986) work indicates that reoccurring metaphorical references to parts of the body within a geographic location supports areal contact, but it does not look at the distribution of metaphorical references in the world’s languages. Furthermore, Brown (2001) shows that people terms are commonly used to refer to individual fingers or toes, but he does not discuss how people terms outside the

kinship domain contribute to naming patterns. Brown also does not discuss the frequency or distribution of these terms.

As the discussion above shows, we know that there is a wide distribution of languages that commonly extend body parts to other objects, including other body parts. Languages also frequently use metaphor to name body parts with objects outside of the body-part domain. The frequency of these patterns suggests that there are also regular metonymic changes in body part nomenclature.

Perhaps the most commonly discussed metonymic pattern in body part nomenclature is PART TO WHOLE. The literature surrounding this topic usually points to cases of polysemy as instances of semantic change whereby parts are extended to refer to a larger unit. Witkowski and Brown (1985) found widespread polysemy in their sample of languages between the terms for the pairs hand/arm and foot/leg. They attributed the high frequency of these polysemies to lexical change whereby languages extend terms from salient body parts onto less salient body parts. Their work demonstrates the metonymy PART FOR WHOLE in that they claim terms meaning ‘hand’ are extended to mean ‘arm,’ and ‘foot’ to mean ‘leg.’ Witkowski and Brown (1985) write that the reverse also occasionally occurs, but there is a very strong tendency for the change to happen in the direction of part to whole. They do not include specific examples of this in their work. In addition to changes from hand to arm and from foot to leg, there are other examples of polysemy in the limbs. Brown (2005a) found 72 out of 593 languages use the same term for finger and hand. In addition to finger and hand polysemy, he also found 228 out of 617 languages exemplify hand and arm polysemy (2005b).

In contrast to cases of PART FOR WHOLE metonymy, Hilpert (2007) examines body part terms in a language sample of 76 languages to identify metonymic changes whereby one metonymy leads to another. He calls this type of pattern ‘chained metonymies.’ Examples include extending the meaning for the term ‘eye’ to also mean ‘see’ or ‘look,’ which can then change to also mean ‘know.’ Hilpert’s data comes from dictionaries, thus his observations are based on derivation and polysemy, not on etymologies that provide detailed information about the history of the terms in question for each language in his sample. Hilpert identifies many metonymies in this study, but only a few pertain to the limbs.

Hilpert’s (2007) cross-linguistic sample shows many cases for chained metonymies. His data show that terms for some body parts, such as ‘ear’ or ‘eye,’ are more likely to be used in a chained metonymy than others, such as ‘arm.’ The body parts that Hilpert examines which are also associated with the limbs are those meaning ‘arm,’ ‘finger,’ ‘foot’ and ‘hand.’ Of these terms, he finds “the body parts *arm*, *finger*, *foot*, and *hand* are frequently extended onto lexical meanings that denote actions involving them. Such extensions include hand > help, finger > point, and foot > step. Hilpert states that these mappings do not tend to be further extended. By contrast, the body parts *mouth* and *tongue* serve as sources for several chained metonymies (87-88).”

To summarize thus far, it is clear from the literature that terms for body parts play a large role in metonymic patterns cross-linguistically. Additionally, these patterns represent a wide distribution of metonymies. Past studies also show that large language samples of body part terminology reveal metonymic patterns through cases of polysemy and derivation. Although it is not stated in the summaries above, it is reasonable to

believe that large language samples of the types used by Brown (2005a, 2005b), Witkowski and Brown (1985) and Hilpert (2007) will demonstrate more cross-linguistic patterns when the data includes morphological glosses than when they only include lexemes and translations. Likewise, the data collected for studies such as Brown (2005a, 2005b), Witkowski and Brown (1985) and Hilpert (2007) came from grammars and dictionaries. Many have criticized lexical studies that rely on such sources because they have inherent biases. Dictionaries do not include all semantic senses of a term or explain in detail the distribution of the exact segment of the body that speakers refer to by using a particular body part term. Although there are comprehensive studies that do provide very detailed information about body part terms, the relation among body parts reflected in a language, and the physical borerlines between body parts are available (Enfield, N., A. Majid & M. van Staden 2006, henceforth Enfield *et al.*), such studies, as a whole, are only available for a small handful of languages. Therefore, it is impossible to collect such comprehensive data for a large language sample balanced both geographically and genetically. Rather than focus on these biases, it is perhaps more productive to point out that these studies make claims about semantic change without consulting historical data available in etymological dictionaries.

Naturally, the same biases exist for the availability of etymological dictionaries for the world's languages as in detailed ethnoanatomies that include cognitive information such as where the term meaning 'arm' starts and ends such as those in Enfield *et al.* (2006). Nevertheless, there are studies concerning body part terminology such as Wilkins (1981, 1996) that do compare patterns of semantic change with data from language families with etymological dictionaries. Despite the limited number of

etymological sources for the world's languages, cross-linguistic studies that compare etymologies also reveal patterns. Knowing these patterns adds greater applicability to the claims made in cross-linguistic lexical studies such as those demonstrated by Brown (2005a, 2005b), Witkowski and Brown (1985) and Hilpert (2007).

### 3.3 Cross-linguistic historical studies concerning parts of the body

Within the Indo-European language family, Buck (1949) is arguably the most comprehensive collection of observations regarding patterns of semantic changes. Buck lists Indo-European synonyms by semantic field and includes summaries of patterns that occur in lexical formation and semantic change for entries in each semantic field. Buck's work is unique in that it includes historical etymological data with each comparative word list for entries in each semantic field. Other collections of comparative word lists do not tend to do this. Perhaps the best reasons for Buck's popularity are not only its reliance on previous collections of etymologies from Indo-European languages, but also the fact that these etymologies have generally been agreed upon for over a century. Buck's list of synonyms associated with the limbs include terms for the arm, leg, shoulder, knee, hand, foot, elbow, finger, toe and thumb.

Although the usefulness of Buck (1949) is not to be understated, collections of comparative word lists and etymologies from other language families have also made it possible to conduct cross-linguistic studies of historical change concerning limb nomenclature. Wilkins (1981) examines patterns of semantic change terms for 41 body parts using data collected from etymological dictionaries and synonyms. Wilkins' data predominately come from Burrow and Emeneau (1961), Guthrie (1967-70), Buck (1949)



and Benedict (1972) and form a large database for semantic changes in body part nomenclature in the Dravidian, Indo-European, Bantu and Tibeto-Burman language families. Wilkins (1981) also includes data from Austonesian, Papuan, and North American languages, as it was available to him. Wilkins (1996) summarizes his 1981 findings and restates five of the natural tendencies his data demonstrate for semantic change. These tendencies are restated in (1) below.

- (1)
  - i. It is a natural tendency for a term for a visible person-part to shift to refer to the visible whole of which it is a part, but the reverse change is not natural (e.g. 'navel' → 'belly' → 'trunk' → 'body' → 'person').
  - ii. It is a natural tendency for a person-part term to shift to refer to a spatially contiguous person part within the same whole (e.g. 'belly' ⇔ 'chest'; 'skull' ⇔ 'brain').
  - iii. Where the waist provides a midline, it is a natural tendency for terms referring to parts of the upper body to shift to refer to parts of the lower body and vice versa (e.g. 'elbow' ⇔ 'knee'; 'vulva' → 'clitoris'; 'anus' → 'mouth').
  - iv. It is a natural tendency for the term for an animal part to shift to refer to a person part (e.g. 'snout' → 'nose'; 'beak' → 'face').
  - v. It is a natural tendency for a term for a verbal action involving the use of a particular person part to shift to refer to that person part (e.g. 'walk' → 'leg'; 'hold' → 'hand').

(273-274)

Tendencies iii. and iv. are metaphorical extensions in that they demonstrate changes between domains, and tendencies i., ii. and v. are metonymic. Wilkins' (1996) data provided more instances of metonymy than metaphor in body part nomenclature. As I use both Buck (1949) and the etymological sources Buck used to compile his dictionary of synonyms, I expect that my Indo-European historical data will reveal similar findings to those described in Wilkins (1981, 1996). Therefore I believe that my data will also provide more instances of metonymy than metaphor in body part nomenclature.

Wilkins' (1981, 1996) findings are relevant for both typological and comparative historical research. As Wilkins (1981, 1996) indicates, identifying patterns of semantic change reveals tendencies that can help linguists in typological research identify cases of semantic change as well as indicate what sorts of terms to include in word lists for comparative reconstructions.

Wilkins' (1981) list of body parts examined left out terms for 'wrist,' 'ankle' and units associated with the hands and feet, such as 'palm,' 'sole' and 'heel.' Although Wilkins (1981) briefly discusses 'palm' and 'sole,' these terms are generally not available in his data sources. Because Wilkins' (1981, 1996) data came from collections of etymologies and synonyms by family and not individual languages, etymological data on these terms were most likely unavailable. Furthermore, the summaries and synonyms listed in Buck (1949) do not provide specific etymologies for each Indo-European language term listed, and thus it is difficult to trace how many times specific patterns occur.

Wilkins (1981) only took one example of each semantic change into account from each language family to avoid genetic and areal biases. In doing so, he missed data that exemplify different stages of these changes. For example, in the type of change Wilkins (1996) provides in tendency i. a chained metonymy occurs. The entire shift from 'navel' to 'person' may not occur in every language, but changes from one term to another without a chained metonymy may occur in multiple languages. Such information is important for large language samples in cross-linguistic research because it identifies more terms that may display cases of polysemy. Since it is generally agreed that

polysemy is a stage of semantic change, etymological data that will help identify polysemy in large language samples should not be readily dismissed.

### 3.4 Gaps in the research

As I have shown above, cross-linguistic studies regarding body part nomenclature reveal patterns shared by languages across geographic areas and language families. Such findings provide insight into human cognition and our typical construal of human anatomy and its interaction with the world. Although such insight may be small, its contribution should not be overlooked. For this reason, it is important to identify the areas that these studies have left open for future research and explain how this dissertation fills some of these remaining gaps.

First, there are no studies on body part nomenclature that identify cross-linguistic tendencies with data from both a comprehensive collection of etymologies and a large areally- and genetically-balanced cross-linguistic sample. Although studies provide insight on lexical and semantic change with data from both types of samples, this dissertation is unique in that it uses both in one study to identify cross-linguistic tendencies regarding limb nomenclature. This provides a comprehensive resource for body part terms for linguists interested in a wider range of research topics, including but not limited to typological, contact and historical linguistic research. It also allows for the observation of more types of linguistic tendencies than other studies have provided and additionally provides a large sample of data by which to further explore the theoretical claims supported by Sweetser (1990) and Traugott & Dasher (2002).

Next, studies that result in the identification of cross-linguistic tendencies involving body parts associated with the limbs do not discuss processes involved in naming the wrist or ankle. Terms for both areas of the body are included in this study. Additionally, the data in this dissertation include most terms associated with the limbs according to their availability. By including a wider variety of terms associated with the limbs, the data used in this dissertation may provide more cases of metonymic change as well as provide more insight into the distribution of such types of change. This not only allows for the discussion of more metonymies but may also strengthen the cross-linguistic tendencies previous research has suggested.

Last, by including a larger sample of Indo-European etymologies than those provided by Buck (1949), this dissertation provides more examples of semantic change within the Indo-European languages. This includes data from dialects that show instances of semantic change that do not occur in standard varieties, such as polysemy between the terms for ‘foot’ and ‘calf’ in some German dialects. Including a larger sample of Indo-European etymologies allows for the identification of more patterns than those described in Buck (1949) and therefore also Wilkins (1981, 1996).

### 3.5 Summary

This chapter provided an overview of cross-linguistic literature of metonymy, metaphor and historical change demonstrated in body part terms. The literature review is not comprehensive, but instead focuses on studies that identify cross-linguistic tendencies pertaining to body parts and, more specifically, the limbs. This chapter also identified gaps in the literature and explained how this dissertation adds to linguistic knowledge regarding semantic change in body part nomenclature. Specifically, its databases are the

first to include both large samples of etymological data and areally- and genetically-balanced cross-linguistic data for terms associated with the limbs. These large databases will potentially identify a wider spectrum of cross-linguistic tendencies than those observed in the other studies discussed in this chapter as well as support previous claims regarding limb nomenclature.

The following chapter focuses on data collection methods for both the Indo-European historical data and the cross-linguistic data. It also includes information about the databases where this information is stored.

## Chapter 4

### Methods

This chapter primarily describes the methods I use to test to what extent the metonymic patterns occurring in Indo-European historical data are a cross-linguistic tendency. In section 1, I explain how I use data to test my hypothesis. I provide examples of metonymic patterns I expect to find in the data and exemplify what types of data would support or fail to support my hypothesis. Next, in section 2, I list the body part terms I am investigating to test my hypothesis. I include justification for selecting some terms and not others. In section 3, I explain how I collected Indo-European historical data and my approach to analyzing the data for metonymic patterns. Sections 4-7 include detailed information regarding the biases, coding, sampling method and sources for the cross-linguistic data, and section 8 concerns how I store the data for use. Finally, I summarize the chapter in section 9.

#### 4.1 Testing the hypothesis

The focus of this dissertation is to test to what extent the metonymic pathways of change in Indo-European historical data are a cross-linguistic tendency. This hypothesis is restated in (1) below:

- (1) The metonymic patterns for naming the upper and lower human limbs found in Indo-European historical data are widespread in the world's languages.

As explained in chapter 1, the term widespread refers to frequency. More specifically, I define it as an occurrence that is found in at least three geographic areas and in many language families. Although the term 'many' is also somewhat vague, I use it because each geographic area for which the world's languages are classified varies in the number

of language families it has. Because Traugott & Dasher (2002) show that metonymy in semantic domains other than limbs are common across languages, it is reasonable to believe that metonymy in the limb nomenclature is also common.

In order to compare Indo-European languages with non-Indo-European languages from across the world, I have constructed two sets of data. The first dataset consists of etymologies for the body parts in question from Indo-European languages. The second dataset consists of lexical entries from non-Indo-European languages, which I have controlled for areal and historical influence. These lexical entries also contain morphemic glosses and other relevant comments, such as synonymy or register use, when available. I explain the Indo-European historical dataset in greater detail in section 3 and the cross-linguistic data in sections 4-7. These datasets provide the resources to compare metonymic patterns cross-linguistically and thus test my hypothesis.

After first identifying metonymic patterns in the Indo-European historical data, I search for the same patterns in the cross-linguistic database. For example, Buck (1949) states the tendency for Indo-European languages to extend the term for hand to arm as well as foot to leg. These extensions exemplify the metonymy PART FOR WHOLE. After identifying PART FOR WHOLE metonymies in the Indo-European historical data, I search for similar cases in the cross-linguistic data whereby the same lexeme is used for both ‘hand’ and ‘arm,’ ‘foot’ and ‘leg,’ ‘calf’ and ‘leg,’ ‘thigh’ and ‘leg’ and the like.

Lexemes contribute a substantial amount of data for testing this hypothesis, but bound morphemes also play a major role in testing the hypothesis. This is because some languages may not use the same lexeme for two body parts, but may use the same

morpheme indicating a PART FOR WHOLE metonymy. For example, if in a language the term for ‘arm’ contains the term for ‘hand’ and not the other way around, it may demonstrate PART FOR WHOLE. In testing metonymies other than PART FOR WHOLE, such as ACTION FOR PLACE, morphemic glosses will play a crucial role. Not every lexeme in the database has a morphemic gloss; therefore I will test metonymies that depend on a morphemic analysis with a subgroup of the lexemes in the database. In other words, if the notion ‘bend’ in limb nomenclature is common in the Indo-European historical data, but only appears in a small subset of the cross-linguistic data, it may be partially due to limited morphemic glosses, and not truly a rare cross-linguistic tendency. For this reason, it is important to consider all of the cases of a given metonymy within the context of how many lexemes are available to test the data. Just because the language sample for this study includes 153 languages, there may not be 153 testable cases available for each lexeme to test each metonymy. Nevertheless, the results will still indicate whether there are cross-linguistic tendencies in the metonymic naming of the upper and lower limbs.

In order to determine whether a shared metonymy is due to areal contact, genetic relationship or cross-linguistic language tendency, I consider the distribution of each metonymy in the data. If the data exemplify a metonymy across geographic areas and language families, then I safely conclude that the metonymy is a cross-linguistic language tendency. If a metonymy is limited to one or two geographic areas and/or a small subset of language families, then the pattern may be due to contact and not a cross-linguistic tendency. For example, if the metonymy PART FOR WHOLE is widespread in limb nomenclature across the languages of Europe and Asia but not in the languages of South America or North America, it indicates that there is not a cross-linguistic tendency to use



the metonymy PART FOR WHOLE in naming the limbs, but that languages in contact with each other share common metonymies for body parts. The same case could be made for metonymies being much more common in a small handful of language families but not others. On the other hand, if the metonymy PART FOR WHOLE is widespread in limb nomenclature across the languages of Europe, Asia, South American and North America, then there is a strong indication for a cross-linguistic tendency.

It may also very well be the case that metonymies exist cross-linguistically in the database but do not occur in the Indo-European historical data. Although these metonymies are equally interesting, they do not directly help support or fail to support the hypothesis for this dissertation. Therefore, rather than analyze any potential cases of this nature, I discuss them in chapter 7 as indications for future research. I now turn to my data collection methods.

## 4.2 Selecting body part terms

As discussed in section 2 of the literature review, there is more than one way to define body parts. This study focuses on the upper and lower limbs, but it has limits. First, the cross-linguistic terms analyzed in this study are: arm, hand, wrist, finger, thumb, elbow, leg, thigh, calf, foot, ankle, toe, and knee. I have selected these terms because they are commonly included in body part descriptions within the linguistic and anthropological literature. Additionally, there is a degree of symmetry between the terms for the upper and lower limbs. For both limbs, there is a term for the limb (arm/leg), two joints (elbow/knee and wrist/ankle), the digits (finger/toe) and the outermost regions (hand/foot). Including these pairs allows for more pattern identification.

Other terms commonly listed in the literature but not included in this study are fingernail and toenail. Although interesting, I excluded these terms from my data collection so that I could concentrate on other parts of the limbs in more detail. In general, the term for fingernail and toenail follow similar naming patterns of the finger and toe and often include the meaning ‘claw.’ I did not collect information of parts of the foot, such as the ball, heel, Achilles tendon, or arch, as these terms are often not included in the literature. The term ‘limb’ is not commonly listed, but ‘digit’ is. Although ‘limb’ and ‘digit’ are not listed as basic terms above, I include them in the cross-linguistic database whenever listings of these terms were both available and pertinent to this study.

#### 4.3 Collecting Indo-European historical data

As this study compares historical data from one language family with data from my own cross-linguistic database, it is necessary to justify my selection of Indo-European as the source for historical data and explain how it contributes to this study without creating a Eurocentric study. Any cross-linguistic study attempting to make generalizations of tendencies undoubtedly should include data from a wide variety of languages. As I will show in the following sections, I have carefully selected languages for a sample that equally represents the geographic areas and language families of the world’s languages. Because this dissertation is concerned with pathways of metonymic change across languages, it is necessary to have a starting point for historical linguistic data. Despite ample resources for cross-linguistic data, the historical linguistic data available for the world’s languages is not equal. Some language families are widely controversial among the linguists who work on them and others are generally undisputedly accepted as coming from one historic source language. Historical linguistic

data vary drastically across language family for a litany of reasons. These include but are not limited to little linguistic descriptive knowledge for some areas of the world, the erroneous opinion across time and cultures that some languages are primitive, a lack of historic written documents, and a limited number of trained linguists able to describe historical processes in lesser described languages. Rather than attempt to find patterns within historical linguistic data from a large sample of the world's languages, I use Indo-European languages as a starting point.

Although it would be possible to first look for common metonymies in the cross-linguistic data and then compare them to metonymies in Indo-European historical data, I have chosen to take the reverse approach. I believe that looking at the historic data first allows me to properly identify metonymic changes that may not be as obvious in the cross-linguistic data. For example, if the same lexeme is used for 'arm' and 'hand,' it is not clear in which direction the extension occurred. It is possible that 'arm' is an older term in the language and it has been extended to 'hand' rather than 'finger' extending to 'hand.' Etymologies trace the direction of change, providing evidence for or against a unidirectional metonymic change. Choosing to analyze the cross-linguistic data after identifying metonymies in the Indo-European historical data allows me to be more efficient in my analysis and have a more easily tested hypothesis.

The Indo-European languages are heavily documented, readily accessible, well known among linguists and the proposed etymologies and proto-forms have had ample time for scrutiny of proposed changes and cognates. Because linguists have examined Indo-European historical data for more than 200 years, we know much more about Indo-European developments than any other language family. This makes Indo-European

etymological data as reliable a source of lexical change as can be found. Therefore, ignoring Indo-European data for this project would be counter-productive because without including it, it would be difficult indeed to undertake the current study. The patterns within the Indo-European historical data provide an efficient search for patterns within the cross-linguistic data as well as a reliable source for identifying potential patterns. Patterns that exist in both the Indo-European historical data and the cross-linguistic data may provide convincing insights for future historical reconstructions for work on other language families without predetermining biased outcomes for such work. With this explanation, I now turn to how I approached collecting Indo-European historical data.

The Indo-European historical data used in this dissertation primarily come from etymological dictionaries; namely Pokorny (1959) and Walde (1973). Using Buck (1949) as a base, I looked at common patterns in Indo-European synonyms. For example, Buck writes about the common occurrence of hand extending to arm and foot extending to leg. Both of these examples use the metonymy PART FOR WHOLE. Likewise, Buck notes the common occurrence of the shoulder or the upper arm extending to the word for ‘arm,’ which exemplifies the metonymy PART FOR PROXIMATE PART. Buck does not include terms or patterns for ‘wrist,’ ‘ankle,’ ‘thigh,’ ‘calf’ or names for individual fingers other than the thumb. It is worth mentioning that although the Proto Indo-European terms listed in Pokorny (1959) and Walde (1973) are reconstructed, the patterns that their etymologies show demonstrate important semantic changes throughout the history of the Indo-European languages. Because there are numerous historical written sources for the Indo-European languages, there are clear cases of synonymy and semantic change within

a single Indo-European language throughout a given language's written history. These cases appear in etymological dictionaries including Pokorny (1959) and Walde (1973), showing that each etymology is more than just a phonemically reconstructed term.

By using Pokorny (1959) and Walde (1973), I found etymologies for the terms listed above in section 2 across Indo-European languages and recorded them. I cross-checked these etymologies with data from more recent etymologies, when appropriate. Next, I grouped the etymologies together according to the patterns I saw in the data and matched the pattern with a metonymy. I identified patterns such as using verbs to name parts of the limbs, using one part of a limb to name the whole limb, or extending terms notating a part of the upper limb to the lower limbs.

After grouping these patterns, I looked for cases in which more than one branch of the Indo-European family used the same naming strategy. This appeared in two types. The first type is demonstrated by a shared common root within some branches of the Indo-European family which systematically extended to the same parts of the body. The second type, which is much more common than the first, includes reconstructed PIE roots which change in the same ways to denote parts of the body. Both types demonstrate systematic pathways of change across the Indo-European family. Cases in which three or more branches of the Indo-European family utilized the same pathway of change are likely cases exemplifying cross-linguistic tendencies; therefore those provide the metonymies I look for in my cross-linguistic data.

Having justified my decision to use Indo-European historical data as a source for identifying potential cross-linguistic pathways of metonymic change, I next explain

certain biases in my data collection methods that may or may not influence my research findings.

#### 4.4 Research biases

When conducting any cross-linguistic study, researchers must make explicit decisions regarding which languages to include in a sample and which to exclude. Either option can lead to biases in the study, yet the research question itself strongly contributes to the formation of any language sample. As this study uses a sample of the world's languages instead of every known language currently spoken or extinct, it too has biases. This problem is inherent to all cross-linguistic studies attempting to identify universal patterns and tendencies, and is not unique to this study. Nevertheless, it is necessary to state the factors that may contribute to biases alongside the research methods specific to this study.

In an attempt to limit the biases that genetic and areal contact may cause, this study considers the geographic location and genetic background for each language included in the database. The data sample includes 153 languages from 67 different language families. For a complete listing of the languages included in this study with their language family and geographic area, see appendix A. Summaries of the language sample appear in tables in section 6 of this chapter.

In addition to the decisions regarding genetic and areal contact, the languages included in this sample come from a variety of sources in order to ensure a reasonably accurate portrayal of the world's languages. The constraints of available resources, time and language barriers also contribute to the biases in this study, yet they are inherent to

all cross-linguistic studies. No study seeking to find cross-linguistic language tendencies can include all languages ever spoken, currently spoken or yet to be spoken, thus all cross-linguistic studies can only include a sample of the world's languages. With this in mind, I now turn to how I have chosen to code the languages in my sample before explaining my cross-linguistic sampling methods and the make-up of my language sample.

#### 4.5 Language coding

This study primarily uses *Ethnologue* (Lewis 2009) as an authoritative source of known languages currently spoken in the world. Therefore all references to language families, their names, and the number of languages belonging to each family come from *Ethnologue*'s classifications. The individual language names that appear in this study come from the sources of their data. In most cases, the language names used in the data are the same as the names that appear in *Ethnologue*, but this is not always the case. The geographic location for each language is in accordance with Dryer's (1989) sampling methods, which are explained in detail in the next section.

#### 4.6 Language sampling

There is a wide range of language sampling methods available for cross-linguistic research, but not all of them are favored. In general, language sampling methods attempt to include a wide range of languages because it is impossible to include all of the world's languages in a cross-linguistic study. Because languages may have structural similarities due to areal contact or historical development from a common ancestral language, language sampling methods usually take both geographic location and language family

into consideration. Doing so helps rule out areal and historical factors as the cause to linguistic diversity. Sampling methods often differ in how they group related languages. Some methods group languages according to physical distance between where languages are spoken. Other methods might consider the amount of time that has passed since genetically related languages were a single ancestral language. In this study, I follow the specification of Dryer's (1989) sampling methods for reasons explained in section 6.2 below. For a detailed overview of other sampling methods, see Bakker (2011).

#### 4.6.1 Linguistic areas

Dryer (1989) divides the world's languages into five geographic regions: North America (NAm), South America (SAm), Australia- New Guinea (ANG), Africa (Afr), and Europe/Asia (Eura). These geographic areas appear in full throughout the text of the dissertation and in abbreviated form in charts and tables. Dryer refers to each of these regions as *linguistic areas* and groups the Austronesian language family with the linguistic area Europe/Asia. Of the 153 languages included in the language sample, there are at least 30 languages for each linguistic area. The number of languages included in the sample per linguistic area is shown below in Table 4.1.

<b>Linguistic Area</b>	<b>Number of Languages</b>
NAm	32
SAm	30
ANG	31
Afr	30
Eura	30
<b>Total</b>	153

Table 4.1 Number of languages for each linguistic area



#### 4.6.2 Language Families

Dryer (1989) refers to groups of languages related by a historical ancestral language *genera*. In this study, I group genetically related languages by language family. This study includes languages from 67 different language families, which represent the world's distribution of language families. *Ethnologue* (Lewis 2009) cites 128 known language families. This number includes constructed languages, creoles, pidgins, language isolates and unclassified languages. Of these subgroups, only language isolates are included in the language sample used in this study, leaving 124 possible language families for this study. Fabricated languages, such as Klingon, are not included in this study for obvious reasons, namely that they have not yet undergone processes of historical development. Creoles and pidgins would be very interesting in terms of pathways of historical change, but I have opted to exclude them from this study and save them for future research as an arbitrary decision. As Bakker (2011: 116-117) states, linguistics should include language isolates in cross-linguistic language samples when data is available, and they are included in this study.

In short, the only reason that a particular language family is not represented in this language sample is that I do not have access to the information I need in order to include it in this study. The language sample used in this study includes all language families consisting of more than 32 languages. These language families have accessible data for the specifications of this study. The remaining language families not included in my language sample are excluded due to either a lack of reliable information and data for my study or not enough information to answer all of my research questions. For example, *Ethnologue* (2009) lists 20 languages for the Lakes Plain language family. All of these

languages are spoken in Indonesia/ Papua New Guinea and all of the languages have fewer than 1,000 speakers. The majority of the languages in the Lakes Plain family have fewer than 500 speakers. It would be ideal to include these languages in my sample, and although the language family consists of a fair number of languages, the limited number of speakers of these languages has resulted in fewer descriptions of the languages. This, in turn, has resulted in a lack of data for this study, although this is not always the case with smaller language families. For example, *Ethnologue* (2009) lists 17 languages for the Mixe-Zoque language family and there is a lot of information about body part naming and extensions within this language family (Hollenbach 1995, Brugman 1983). Despite the number of excellent studies regarding body part names and extensions for Mixe-Zoque languages, these studies do not include information about the naming of the limbs as a group: they exemplify extensions in general. Although this is problematic for the data base in this study, it does not provide a problem for the analysis. Therefore, information about languages such as Mixe-Zoque may appear in my analysis even if they do not appear in my database.

Naturally, not all language families consisting of fewer than 32 languages are excluded from this study. Of the 66 language families included in my data set, more than half consist of fewer than 32 languages. Again, if information regarding limb nomenclature was available for a language within a smaller language family, I included it in my database.

The language families included in this study are shown by geographic area in Tables 4.2 through 4.6. Within each table, the language families are listed alphabetically with numerical information comparing the number of languages from each language

family included in this study with the total number of languages in each language family. Finally, there is also a percentage listed of the two compared. In the case of language isolates, the word isolate appears instead of a percentage.

When viewing the languages included in this study, it is best to consider the sample size as a representation of the population size for each language family along with the number of language families as a whole. For example, the cross-linguistic database in this study includes 17 Niger-Congo languages and only 1 Hmong-Mien language. This number seems disproportionate, but when percentages are compared, only 1% of all Niger-Congo languages are included in this sample whereas 3% of Hmong-Mien languages are included. Likewise, percentages by themselves are misleading because this study includes languages from very small language families and isolates.

<b>Language Family</b>	<b>Number of Languages in Study</b>	<b>Number of Languages in Family</b>	<b>Percent</b>
<b>Afro-Asiatic</b>	7	374	2%
<b>Khoisan</b>	1	27	4%
<b>Niger-Congo</b>	17	1532	1%
<b>Nilo-Saharan</b>	4	205	2%

Table 4.2 Sample of Language Families from Africa

As shown in Table 4.2 above, this study includes 4 language families from a possible 4 from Africa. The percentage from each family ranges from 1-4 percent and each language family from Africa is relatively equally represented.

<b>Language Family</b>	<b>Number of Languages in Study</b>	<b>Number of Languages in Family</b>	<b>Percent</b>
<b>Australian</b>	7	264	2%
<b>Border</b>	1	15	6%
<b>Central Solomons</b>	2	4	50%
<b>Maybrat</b>	1	1	Isolate
<b>North Bougainville</b>	1	4	25%
<b>Sepik</b>	1	56	2%
<b>Torricelli</b>	1	56	2%
<b>Trans-New Guinea</b>	15	477	3%
<b>West Papuan</b>	1	23	4%
<b>Yele-West New Britain</b>	1	3	33%

Table 4.3 Sample of Language Families from Australia- New Guinea

As shown in Table 4.3 above, the language sample in this study includes 11 language families from Australia-New Guinea of a possible 33. The sample for Australia-New Guinea includes one language isolate and three language families composed of fewer than 4 languages. As the size of each language family greatly varies, so do the representative percentages. The percentage for each Australia-New Guinea language family in this sample ranges from 2-50 percent. The inclusion of smaller language families makes the sample seem skewed, but when the smaller language families are not considered, the percentages range from 2-6 percent. Therefore, each language from Australia- New Guinea included in this language sample is relatively equally represented.

<b>Language Family</b>	<b>Number of Languages in Study</b>	<b>Number of Languages in Family</b>	<b>Percent</b>
<b>Alacalufan</b>	1	2	50%
<b>Araucanian</b>	1	2	50%
<b>Arawakan</b>	3	59	5%
<b>Aymaran</b>	1	3	33%
<b>Barbacoan</b>	1	7	14%
<b>Carib</b>	3	31	33%
<b>Cayuvava</b>	1	1	Isolate
<b>Chibchan</b>	1	21	5%
<b>Choco</b>	1	12	8%
<b>Chon</b>	1	2	50%
<b>Jivaroan</b>	1	4	25%
<b>Macro-Ge</b>	1	32	3%
<b>Maku</b>	1	6	16%
<b>Mascoian</b>	1	5	20%
<b>Mataco-Guaicuru</b>	1	12	8%
<b>Panoan</b>	1	28	4%
<b>Peba-Yaguan</b>	1	2	50%
<b>Quechuan</b>	1	46	2%
<b>Tacanan</b>	2	6	33%
<b>Tucanoan</b>	1	25	4%
<b>Tupi</b>	2	76	3%
<b>Uru-Chipaya</b>	1	2	50%
<b>Zamucoan</b>	1	2	50%

Table 4.4 Sample of Language Families from South America

The sample from South America shown in Table 4.4 above includes 23 of 41 possible language families from South America. Like the languages from Australia- New Guinea, the number of languages in South America's language families also vary greatly. The percentages in Table 4.4 above range from 1-50 percent. The sample of South American languages includes one language isolate and when the smaller language families are excluded, the percentages range from 1 to 8 percent.

<b>Language Family</b>	<b>Number of Languages in Study</b>	<b>Number of Languages in Family</b>	<b>Percent</b>
<b>Algic</b>	4	44	9%
<b>Eskimo-Aleut</b>	1	11	10%
<b>Hokan</b>	1	23	4%
<b>Iroquoian</b>	3	9	33%
<b>Mayan</b>	2	69	3%
<b>Muskogean</b>	2	6	33%
<b>Na-Dene</b>	3	46	7%
<b>Oto-Manguean</b>	3	177	1%
<b>Penutian</b>	1	33	3%
<b>Salishan</b>	2	26	8%
<b>Seri</b>	1	1	Isolate
<b>Siouan</b>	1	17	6%
<b>Totonac</b>	1	12	8%
<b>Uto-Aztecan</b>	5	61	8%
<b>Yuki</b>	1	2	50%
<b>Zuni</b>	1	1	Isolate

Table 4.5 Sample of Language Families from North America

As represented in Table 4.5 above, 15 of a possible 26 language families from North America are included in this sample. Of them, the percentages range from 1-50 percent. The sample includes two language isolates and when the smaller language families are excluded, the percentages range from 1-10 percent.

Language Family	Number of Languages in Study	Number of Languages in Family	Percent
<b>Austro-Asiatic</b>	3	169	2%
<b>Austronesian</b>	7	1257	0.50%
<b>Dravidian</b>	2	85	2%
<b>Hmong-Mien</b>	1	38	3%
<b>Japonic</b>	1	12	8%
<b>Korean</b>	1	1	Isolate
<b>North Caucasian</b>	2	34	6%
<b>Sino-Tibetan</b>	3	449	0.6%
<b>Tai-Kadai</b>	2	94	2%
<b>Uralic</b>	3	37	8%
<b>Yasin-Burushaski</b>	1	1	Isolate
<b>Yeniseian</b>	1	2	50%

Table 4.6 Sample of Languages from Europe and Asia

The sample of European and Asian language families, as shown in Table 4.6 above, includes 14 of 18 possible families. The percentages range from 0.40-50 percent and the sample includes two language isolates. When the smaller language families are excluded, the percentages range from 0.40 to 8 percent.

Austronesian and Sino-Tibetan languages make up less than 1 percent of the total languages from their respective families. There are multiple reasons for this. The first and most important reason is due to quality. There is more detailed information widely available for other languages within the linguistic area Europe and Asia than Austronesian and Sino-Tibetan. Next, there is an issue of quantity. Adding more Austronesian and Sino-Tibetan languages to the sample would result in a disproportionate number of languages across the linguistic area. In order to keep the

sample size from each linguistic area relatively the same, I have chosen not to add more data from Austronesian and Sino-Tibetan as including more languages from either of these families would necessitate replacing a language from a different language family within the Europe and Asia linguistic area. Furthermore, when considering Austronesian data for this study, many of the Austronesian languages name the limbs with the same patterns whereas languages in other language families show more variety, thus such a replacement is not desirable.

#### 4.7 Cross-linguistic data sources

By limiting the data to roughly 150 languages, I am able to discriminate data sources and focus on detailed language-specific descriptions of body part terms, when available. Because the language sample must come from as many language families as possible and all five geographic areas, most of the data used in this study comes from dictionaries, grammars and wordlists; however, as a whole, the data come from a diverse number of sources. The data also come from native speakers and language-specific papers that discuss body parts. These sources include the ten languages thoroughly described in Enfield, Majid, and van Staden (2006), and ethnoanatomies. When selecting grammars and dictionaries as data sources, I discriminated as best I could in favor of those that included listings with morphemic glosses. The World Loanword Database (Haspelmath & Tadmor, 2009) and Intercontinental Dictionary Series (Comrie, 2012) maintained by the Max Planck Institute for Evolutionary Anthropology were excellent sources for this type of data. Furthermore, when no morphemic glosses were available, I looked for morphemes within the body part terms under other listings within the dictionary. For example, if two or more body part listings shared an orthographically or



phonemically similar segment, I checked to see if it was listed separately in hopes of identifying a morpheme. The type of data source for each language is listed in the database, which is described in section 3.7. A full list of sources for database terms appears in Appendix C.

Wordlists organized by semantic domain often provide details regarding which parts of the body a term refers to. This information is very helpful when comparing body part terms across languages because the parts of a limb in a given translation such as ‘hand’ is language specific (see Enfield *et al.* 2006). On the other hand, wordlists organized by semantic domain often make it difficult to trace the historical development of terms, whereas dictionaries organized by sound segments might provide more information of this type. For example, if one looked up the English word *hand* in a common dictionary, the phonemically related forms *to hand*, *handle*, *handy* and *handsome* could be present. These lexemes, though sorted for different semantic domains, could have derived from the same historic root. Such historically related terms often do not appear in wordlists organized by semantic domain. Moreover, they are often times no longer semantically related for speakers of a language. For these reasons, including data from a variety of sources ensures more types of information which contribute to the research questions for this study.

#### 4.8 The database

Working with such a large amount of data for a project of this size necessitates a section detailing how the data are stored for easy access and use. My data are stored in an electronic relational database in two main sections; metadata and data. The metadata

include information about each lexeme; namely, the language it comes from, the language family it belongs to and the geographic area in which the language is predominantly spoken. The remaining data includes lexemes, morphemic glosses, translations, comments and semantic fields. By linking lexemes to a semantic field, I am able to include lexemes for ‘thigh’ or ‘heel’ alongside lexemes for ‘leg’ or ‘foot.’ Thus if a given language does not have a general term for ‘leg’ but has a word meaning a leg-like thing, such as ‘thigh’ or ‘calf,’ I can still analyze it with other lexemes semantically similar to legs.

Each piece of data is identified by a primary key and linked to a single language, as is the norm for relational databases. Using a relational database allows me to quickly search for data, such as cases in which the same lexeme and/or morpheme occurs in both ‘hand’ and ‘leg’ in each of the languages in my sample. This allows me to efficiently search the cross-linguistic data for the same metonymic patterns that occur in the Indo-European historical data. Relational databases also eliminate redundancy in data and produce reports that are much more legible than data stored in a flat spreadsheet. All of the data that are stored in the database appear in the appendices and are listed by semantic domain in appendix B. Within each semantic domain, I have sorted the data alphabetically by language name according to geographic area. Thus to find the data for a given language in the appendix, one must first look for it by semantic domain, then geographic area, then language name.

#### 4.9 Summary

In this chapter I outlined my decisions for data collecting and how these decisions help me approach testing my hypothesis concerning the existence of cross-linguistic tendencies for metonymic pathways of change in the naming of the upper and lower human limbs. First, I detailed how I intend to analyze my data to test my hypothesis. Specifically, I identify patterns in Indo-European historical data and test for them in my cross-linguistic data. I then explained the research biases that are inevitable in any cross-linguistic study and how my research methods may contribute to such biases. Further, I explained how I selected languages for my historical data sample as well as my cross-linguist language sample. I showed that the latter is balanced for both geographic area and genetic influences. I also discussed the sources for my data and how I have selected to store my data for current and future analysis.

With a thorough understanding of how I collected and intend to interpret my data, I now begin to analyze the data. In the next chapter, I identify the metonymic patterns that exist in the Indo-European historical data and evaluate which patterns are most likely to appear in the cross-linguistic data. Then, in chapter 6, I analyze the cross-linguistic data for the same metonymies.

## Chapter 5

### Indo-European Historical Data

This chapter shows the types of metonymic extensions found in terms associated with the limbs in Indo-European languages. The extensions discussed in this chapter come from etymologies collected from etymological dictionaries such as Pokorny (1959) and Walde (1973).

Section 1 lists the types of extensions found in Indo-European languages, such as the term meaning ‘foot’ extended to mean ‘leg.’ This section answers the questions “which extensions occur?” and “in which branches do these extensions occur?” Section 1 provides an overview of the etymologies that indicate a metonymic extension. These extensions are discussed in greater detail in sections 2 through 6 and are grouped by metonymy. Sections 2 through 5 are each dedicated to a major metonymic pattern whereas section 6 is devoted to describing remaining examples of metonymic change that do not fit into the other four major patterns. In each section, the metonymic patterns are described in detail with etymologies from each language that displays the pattern. Finally, the findings are summarized in section 7 with a list of cross-linguistic tendencies demonstrated within the Indo-European languages.

#### 5.1 Types of Extensions

Etymologies from Indo-European languages show a substantial number of semantic extensions involving terms for the limbs. Because the goal of this dissertation is to find patterns that show the pathways of change across languages, the focus here is on the types of extensions that occur in the Indo-European languages. For this reason, I do

not list every etymology from every Indo-European language involving terms for the limbs. Instead, I list the types of extensions that occur by body part associated with the limbs. For example, I list patterns of extensions such as a term meaning ‘foot’ to mean ‘leg,’ but not every etymology from every Indo-European language in all of its historical stages that involves the term meaning ‘foot.’

Human limbs and their parts tend to follow four basic patterns in the Indo-European languages. These are PART FOR WHOLE, ACTION FOR PLACE, PART FOR PROXIMATE PART and PART FOR ANALOGOUS PART. There are three basic relations involved in these four patterns: inclusion, proximity, and similarity. Both PART FOR WHOLE and ACTION FOR PLACE involve notions of paronymy in that a part is included in something else. In PART FOR WHOLE, the part is included in the whole. In ACTION FOR PLACE, the part is included in the action. Although PART FOR PROXIMATE PART also has the term ‘part’ in its name, it is has to do with a relation of proximity or adjacency between two parts, not one part’s inclusion or involvement in another. Finally, PART FOR ANALOGOUS PART has to do with similarity and in limb nomenclature it refers to the extension of terms for upper limb parts to lower limb parts.

Each of the patterns named above is described in detail in sections 5.2-5.5 of this chapter. These patterns are widely distributed across the Indo-European family. In addition, other extensions that play a smaller role in the naming of limb terms are discussed in section 6. These include metonymies that focus on the shape, position or cultural significance of regions of the limbs and generally describe how the fingers are named. In each of the remaining sections of this chapter, the individual languages and

branches of the Indo-European family that demonstrate these patterns are described in full detail along with etymological data for the different types of changes.

## 5.2 PART FOR WHOLE

Indo-European languages show a tendency to name body parts associated with the limbs using the metonymy PART FOR WHOLE. In this metonymy, body parts are extended to refer to a larger unit of the body with which they are associated. For example, a term meaning ‘palm’ is extended to also mean ‘hand’ because the palm is seen as a salient area of the hand. Cases of this metonymy often include a stage of polysemy, in which a term is extended to mean two body parts, such as in a term meaning both ‘palm’ and ‘hand.’ Sometimes the Indo-European languages may maintain both meanings, as in (1a) below, and other times a language may continue to shift the meaning of a term until the original meaning is lost, as in (1b) below.

(1) a. ‘palm’ > ‘palm, hand’

(2) b. ‘palm’ > ‘palm, hand’ > ‘hand’

The Indo-European data show occurrences of the metonymy PART FOR WHOLE in five branches of the Indo-European family: Indo-Aryan, Balto-Slavic, Celtic, Italic and Germanic. The Indo-European languages frequently use this metonymy to name limb parts and they use the metonymy PART FOR WHOLE to name body parts associated with both the upper and lower limbs with equal frequency. Table 5.1 below provides a summary of the examples of PART FOR WHOLE in the Indo-European languages. This table shows the body parts involved in PART FOR WHOLE metonymy in the Indo-European

languages along with the languages and branches of the Indo-European family that use this metonymy in naming the limbs. The reconstructed Proto-Indo-European, henceforth abbreviated PIE, forms and meanings are also included.

Semantic Change	Branches and Languages	PIE Reconstruction
<b>nail &gt; foot</b>	Indo-Aryan: Sanskrit; Balto-slavic: Old Prussian, Russian	* <i>onogh-</i> ‘nail on finger and toe, claw’
<b>foot &gt; leg</b>	Balto-slavic: Russian Celtic: Irish	* <i>onogh-</i> ‘nail on finger and toe, claw’ * <i>kok̑sā</i> ‘term for body parts’
<b>lower leg &gt; leg</b>	Italic: Latin	* <i>k̑rus</i> ‘lower leg, leg’
<b>palm &gt; hand</b>	Celtic: Irish	* <i>pel̑mā</i> ‘palm’
<b>hand &gt; arm</b>	Celtic: Irish; Balto-slavic: Lithuanian, Latvian, Russian	* <i>pel̑mā</i> ‘palm’ * <i>urenk</i> ‘bend’
<b>bone &gt; leg</b>	Indo-Aryan: Sanskrit; Italic: Latin; Germanic: German	* <i>ost(h)</i> ‘bone’ * <i>baina</i> ‘bone’

Table 5.1 Metonymic change PART FOR WHOLE in Indo-European body part terms

Beginning with the change in meaning from foot to leg, both the Balto-Slavic and Celtic branches of the Indo-European family display clear cases of semantic change whereby the foot is extended to refer to the leg as a whole including the foot via a period of polysemy. This change shows PART FOR WHOLE metonymy in that speakers use the same term to refer to both the foot and the leg. In the Celtic branch, the term *cos* referred to only the foot in Old Irish but in Modern Irish, *cos* refers to both the foot and the leg. Likewise, Slavic language speakers use the term *noga* or its cognate to mean both ‘foot’ and ‘leg.’ In Slavic languages such as modern Russian, *noga* refers to both the foot and the leg. In both Old Bulgarian and Old Prussian, the cognate forms for *noga* refer to the foot and not the leg. Thus there is a clear pathway of extension from foot to leg.

Although the general term for the lower limb in Slavic and Celtic languages has clearly developed from a term which first meant foot, the meaning ‘foot’ is not the

beginning of the story for the Slavic term *noga*. Russian *noga* is cognate with a term meaning ‘finger- or toe nail’ in many other Indo-European languages, such as German, Sanskrit, Latin and Greek. None of these languages show a single form with polysemous meanings, but their forms provide a more detailed story. The relationship between Sanskrit *án'ghri* ‘foot’ and *nakhára* ‘nail, claw’ shows a possible development from ‘nail’ to ‘foot’ in that the two terms derive from the same root, reconstructed as PIE *\*onogh-* ‘finger- and toe nail,’ ‘claw.’ Alone this example may not appear entirely convincing, but when considered with its cognates, Lithuanian *nagá* ‘hoof’ and Latin *ungula* ‘claw, hoof,’ the development from nail to foot and not nail to hand becomes clear, in that hooves are semantically more similar to feet than hands. To a lesser extent, the same could be said of the relationship between claws and feet as compared to claws and hands.

Although the extension of Slavic foot to leg undoubtedly demonstrates the metonymy PART FOR WHOLE, the extension from nail to foot is not as clear in the etymological data. None of the etymologies collected for this study show a polysemous term meaning both ‘hoof’ and ‘foot’ in an Indo-European language. Because feet and hooves serve the same general function, namely moving a body from one place to another, it could be argued that there is motivation for speakers to extend a term meaning ‘hoof’ to also mean ‘foot.’ Although this is a plausible explanation, it is not clear in the etymological data that this is what occurred. Nevertheless, it is the general consensus that the Slavic cognates to Russian *noga* ‘foot, leg’ developed from the reconstructed Proto-Indo-European root *\*onogh-* meaning ‘nail,’ ‘claw’; thereby supplying another example of the metonymy PART FOR WHOLE.



Let us next turn to the extension lower leg to leg. The Latin term *crūs* translates to English as both ‘leg’ and ‘lower leg.’ Although the term is polysemous, the etymologies do not provide an older form in which Latin *crūs* meant only ‘leg’ or ‘lower leg’ and it is not clear which meaning is older. Latin *crūs* is believed to be cognate with Armenian *srun-k* ‘shin,’ ‘calf,’ but the PIE reconstruction *\*k̑rus* is also polysemous, translating as both ‘leg’ and ‘lower leg.’ Because there is not a clear change in the etymological data from ‘lower leg’ to ‘leg’ or the converse, it is not certain how this polysemy developed. At best, we can postulate that ‘lower leg’ was the original meaning using the claim that PART FOR WHOLE metonymy is far more common in body part terminology than WHOLE FOR PART metonymy (Brown & Witkowski 1985, Wilkins 1981). Additionally, there are no examples of WHOLE FOR PART metonymy in the etymological data collected for this study. These tendencies make a semantic shift from leg to lower leg less likely.

There is strong etymological data for PART FOR WHOLE metonymy in the naming of the upper limbs. The first extension is from hand to arm, as demonstrated by hand/arm polysemy in Modern Irish *lamh*, Lithuanian *rankà*, Latvian *ruoka*, and Russian *ruká*. All four terms originally meant ‘hand’ and now are used to refer to the upper limb including the hand. The Balto-Slavic terms above have been traced back to one source meaning ‘hand,’ but Modern Irish *lamh* ‘hand, arm’ comes from an Indo-European term meaning ‘palm.’ In addition to being cognate with the English term *palm*, Irish *lamh* is also cognate with the term meaning ‘palm’ in Greek, Latin, and Anglo Saxon as well as Sanskrit *pāni* ‘hand’ and Avestic *pərəna* ‘cupped hand.’ These etymologies provide data that show a clear shift from hand to arm as well as from palm to hand. The Albanian term *dorë* ‘hand’ is also cognate with the Greek term for ‘palm’ or ‘handspan,’ the Old Irish

term for ‘fist’ or ‘hand’ and Latvian ‘fist.’ Although there is not a case of palm/hand polysemy in these etymologies, the development of Albanian *dorë* ‘hand’ could also be due to PART FOR WHOLE metonymy.

The final example of PART FOR WHOLE metonymy involving limb nomenclature in the Indo-European historical data is the extensions of the term for bone to also mean leg. This development occurs in both the reconstructed PIE root *\*ost(h)-* ‘bone’ and in Proto Germanic *\*baina-* ‘bone.’ Proto Indo-European *\*ost(h)-* shows the development from bone to leg in Sanskrit and Latin. Both Sanskrit *ásti* and Latin *os* are polysemous, meaning both ‘bone’ and ‘leg.’ Additionally, Avestic *asča-* is also polysemous, meaning both ‘shin’ and ‘calf,’ but differs from *ast* ‘bone.’ Cognates to PIE *\*ost(h)-* meaning ‘bone’ appear in Greek, Albanian, Hittite, Armenian and Cymrian. Cognates in the Celtic branch are uncertain, with Old Irish *asil* ‘limb’ possibly developing from PIE *\*ost(h)*. To summarize, PIE *\*ost(h)* shows bone/leg polysemy in two branches of the Indo-European family. The large number of cognate forms in other Indo-European languages meaning ‘bone’ and not ‘leg’ indicate that ‘bone’ is an older meaning than ‘leg.’ This claim is supported by the fact that only Avestic shows a cognate form that translates to part of the leg. Although Pokorny writes that it is questionable (1959) whether its occurrence in Old Irish *asil* ‘limb’ is indeed cognate with PIE *\*ost(h)-*, it too supports the claim regarding the directionality of the extension from bone to leg.

Next, the Germanic branch of the Indo-European family also shows two examples of an extension from bone to leg. The first is Proto Germanic *\*baina* ‘bone’ from which modern German *bein* ‘leg’ developed. The meaning ‘bone’ is retained in English, Danish, Swedish and Anglo-Saxon cognates but was extended to mean ‘leg’ in German. German

retains the meaning of ‘bone’ in *Gebein* ‘skeleton’ as well as in compound terms such as *Schlüsselbein* ‘collar bone,’ *Fischbein* ‘whale bone’ and *Elfenbein* ‘ivory.’ The German extension from bone to leg is seen as early as in Old High German, in which the term for bone had been extended to mean ‘lower leg.’ According to Kluge (1989: 71), the extension of bone to leg was not standard across all dialects in the middle ages. Dialects spoken in Swabia and the Rhine regions extended the term *Fuß* ‘foot’ to refer to the lower leg and a similar PART FOR WHOLE extension also occurred in the Westphalian dialect.

The English term *leg* has also had a similar series of extensions from meaning ‘bone’ to its current use in referring to the entire lower limb. As seen in Old Norse, *leggr* meant both ‘bone’ and ‘lower leg.’ It was also used in compounds to refer to both the upper and lower limbs, as demonstrated by Old Norse *armleggr*, *handleggr* ‘arm’ and *fōtleggr* ‘calf.’

To summarize, PART FOR WHOLE metonymy is very clear in the development from foot to leg in Slavic and Celtic. Both branches of the Indo-European family demonstrate foot/leg polysemy in the modern forms of their languages with the term meaning ‘foot’ as the older meaning. Russian *noga* ‘foot, leg’ and its Slavic cognates are thought to have developed from Indo-European *\*onogh-* ‘nail,’ in which case the PART FOR WHOLE metonymy would have first extended nail to foot, then foot to leg. There are also strong cases for the extension from hand to arm in Slavic, Balto-Slavic and Celtic languages. In the case of Irish *lamh* ‘hand, arm’ and its Celtic cognates, *lamh* originally referred to the hand and is cognate with the term meaning ‘palm’ in Anglo-Saxon, Latin and Greek. Hand extended to also mean arm in Slavic and Balto-Slavic languages, and it is believed

that the Indo-European term for palm first extended to refer to the hand and then also the arm in the Celtic languages. It is possible that the Latin term for ‘leg’ also developed via PART FOR WHOLE metonymy from an original meaning of ‘lower leg’ but this is not clear as there are no examples in the etymological data in which Latin *crūs* originally only referred to the lower leg and not the leg as a whole. Finally, there are also strong cases for the extension of bone to leg in the Italic, Indo-Aryan and Germanic branches of the Indo-European family. The etymological data indicate that PART FOR WHOLE metonymy is an active pathway of semantic change in naming the limbs in Indo-European languages. Additionally, the data supply background information in looking for PART FOR WHOLE metonymies in non-Indo-European languages. Although the extension from hand to arm and from foot to leg is reported to be widely distributed across the world’s languages, the relationships between terms meaning ‘bone’ and ‘leg,’ ‘thigh’ or ‘calf’ and ‘leg,’ ‘palm’ and ‘arm’ and the like remain merely probable candidates for a cross-linguistic tendency for PART FOR WHOLE metonymy in limb nomenclature.

### 5.3 PART FOR PROXIMATE PART

The next metonymy shown in the Indo-European historical data is a tendency to extend the term for one region of the limbs to an adjacent region, such as extending the term for shoulder to also refer to the upper arm. I refer to this metonymy as PART FOR PROXIMATE PART. In some ways, PART FOR PROXIMATE PART looks like PART FOR WHOLE in that body parts from the same area of the body are involved in naming parts of the limbs. PART FOR PROXIMATE PART differs from PART FOR WHOLE in that the metonymic relationship between the older meaning and the newer meaning is due to adjacency or proximity rather than a part standing for a whole. In PART FOR PROXIMATE PART

metonymy, the extension of one term to an adjacent area of the body does not entail that one region is part of another. Instead, this metonymy shows a relationship due to the physical location on the body regardless of function. Some examples of PART FOR PROXIMATE PART metonymy in the Indo-European languages include an extension from upper arm to shoulder, and from elbow to underarm.

PART FOR PROXIMATE PART metonymy occurs in the data from four branches of the Indo-European family: Indo-Aryan, Hellenic, Germanic and Balto-Slavic. When PART FOR PROXIMATE PART metonymy occurs in the Indo-European family, each language seems to show different directions of change. At first glance, these changes seem unsystematic in that the same changes do not occur across languages. For example, the extension of a term meaning ‘upper arm’ to also mean ‘shoulder’ may appear in one language, but a closely related language might show polysemy in a cognate term for ‘arm’ and ‘forearm.’ Rather than look at each change individually, it is more useful to approach this group of etymologies after taking note that each change shows a relationship due to adjacency between two regions of the limbs. This shows a regular, systematic semantic change for which PART FOR PROXIMATE PART metonymy seems like the best way to describe this group of changes.

Cases of PART FOR PROXIMATE PART metonymy in the upper limbs appear in the PIE roots *\*deus-* ‘arm’ and *\*bhāghús* ‘elbow, underarm.’ Starting with PIE *\*deus-* ‘arm,’ Avestic *daaš* ‘upper arm, shoulder’ is polysemous. When compared with modern Farsi *dōs* ‘shoulder’ a change in meaning from upper arm to shoulder becomes clear. Likewise, polysemy in Sanskrit *doṣṇáh* ‘forearm, arm’ indicates a similar change; however, the directionality of the change is not as clear. The term for elbow is cognate in all Indo-

European languages, but in a handful of them, cognate forms show PART FOR PROXIMATE PART metonymy as actively involved in naming the upper limb. Thus PIE *\*bhāghús* ‘elbow’ and ‘underarm’ appears as arm/underarm polysemy in Sanskrit, elbow/underarm polysemy in Greek, and shoulder/arm polysemy in Anglo-Saxon and Old Icelandic.

The same type of patterns appear in the naming of the lower limb as well in both PIE *\*geis* ‘hollow of the knee, thigh’ and Proto Germanic *\*skanka* ‘thigh.’ PIE *\*geis* is cognate to Lithuanian *kiš-kà* ‘hollow of the knee, shank, tendon between the calf and knee’ and Latvian *ciska* ‘thigh muscle, shank, hip, tendon in knee joint.’ It is interesting that the Lithuanian and Latvian terms refer to a variety of regions in the lower limbs but not as a term to refer to the lower limb in general. This further exemplifies the contrast between the metonymies PART FOR PROXIMATE PART and PART FOR WHOLE while demonstrating how a language may choose to show relationship between adjacent body parts. Additionally, cognates to Proto Germanic *\*skanka* show a considerable amount of polysemy within the Germanic branch of the Indo-European family. According to Kluge (1989: 629), examples include thigh/shin polysemy in Norwegian, and thigh/hip polysemy in Middle High German. These polysemies help explain why the Anglo-Saxon cognate came to mean ‘lower leg’ but the cognate form in Tirolian dialect means ‘thigh.’

PART FOR PROXIMATE PART metonymy explains the pathway languages take to change meaning from one region of the body to an adjacent region, and why such a wide variety of semantically related terms appear across languages and dialects of the same language family. Although there are only a handful of examples of PART FOR PROXIMATE PART metonymy across the Indo-European family in the development of terms that refer to the limbs, the variety of how this metonymy manifests itself in the Indo-European

family indicates that other languages using the same metonymy may also show a wide variety. Thus, when analyzing the cross-linguistic data for PART FOR PROXIMATE PART metonymy, it will be crucial to search for cases of polysemy in pairs such as shoulder/arm, thigh/leg and the like.

#### 5.4 ACTION FOR PLACE

A third major type of metonymy at work in the Indo-European historical data is ACTION FOR PLACE. In this metonymy, body parts are named for the actions they perform, such as bending, twisting, or grabbing. ACTION FOR PLACE is commonly used in the naming of the joints, such as the elbow, ankle or wrist. It is also used in naming the limbs in general. This metonymy occurs in the data of six branches of the Indo-European family: Indo-Aryan, Balto-Slavic, Hellenic, Italic, Celtic and Germanic. In each of the etymologies discussed in this section, terms for regions of the upper and lower limbs have developed from actions. For example, the joints bend and thus many of the terms for different joints across the Indo-European family have developed from terms used to describe bending. In each etymology, there is unidirectionality in the extension of terms for an action to a body part associated with that action.

There are an overwhelming number of Proto Indo-European reconstructions meaning ‘bend.’ Although they are translated as ‘bend’ or something similar, the reconstructions show groups of related words that are semantically related to the notion of bending. At first, it might seem implausible that Proto Indo-European would have had such a large number of words meaning ‘bend,’ but each etymology shows a different type of bending. For example, bending from side to side is different than being bending out of place. Bending is also similar to turning, wrapping, binding, wiggling, arching, and so on.

Although many objects bend, not everything bends in the same way. As the notion of bending has many senses, it is not surprising that different branches of the Indo-European family would vary in the sense used for naming the limbs. Instead, what is interesting is that so many different senses of bending have been used by speakers across the branches of Indo-European to name parts of the limbs. Because there are such a large number of body part terms that come from verbs meaning ‘to bend,’ I have summarized them in Table 5.2 below and provide a general overview of the patterns these etymologies display.

PIE Reconstruction	Indo-European cognates related to bending	Indo-European cognates used in naming the body
<b>*(s)kel-</b> ‘bend, lean against, curve’	Old High German, Modern High German, Anglo Saxon ‘crooked’; Old Icelandic ‘slanted’; Albanian ‘lame’	Greek ‘thigh’; ‘rear foot, hip’; ‘limb’; ‘hollow of knee, ankle’; Old Prussian ‘hip’; ‘heel’; Lithuanian ‘hip’; ‘ankle’; Proto Slavic ‘hip,’ Late Old Church Slavic ‘knee’; Bulgarian ‘hip, upper leg’; Latin ‘heel’
<b>*ank-</b> ‘bend’	Sanskrit ‘bend, arch,’ English ‘angle’; Greek ‘bow’;	Greek ‘elbow’; Sanskrit ‘limb’; ‘finger, toe’; Old High German ‘neck, thigh, bone canal’; Old Nordic ‘ankle, heel,’ Old High German, Middle High German, Middle Low German, Old Friesian, Modern German, Anglo-Saxon, English, Old Nordic ‘ankle’
<b>*uāť-</b> ‘arch, bend’	Latin ‘bent in’; Proto Germanic ‘arch, bend’	Latin ‘to have crooked feet’; ‘bent/buckled legs’; Proto Germanic ‘calf, knee joint’; Old Icelandic ‘muscle, especially thick muscle on arm or leg’; Old High German, Middle High German, Modern German, Old Swedish, Middle Low German ‘calf’; Middle Dutch ‘knee joint, hollow of knee’
<b>*elei-</b> ‘bend’	Sanskrit ‘bent’; Old Irish ‘corner’	Greek ‘elbow’; Latin ‘elbow bone, whole arm’; Middle Irish ‘elbow’; Sanskrit ‘part of leg above the



		knee'; Armenian 'shin, leg'; Lithuanian, Latvian 'ell'; Old Prussian 'ell, underarm'; 'elbow'; Old Bulgarian, Russian 'ell'
<b>*<i>lek</i> 'bend, wind, jump, fidget'</b>	Greek 'with feet kicked out,' Galician 'bend'; Middle High German, Modern German 'kick behind, hop'	Sanskrit 'foot joint in hoofed animals'; Old Icelandic 'lower leg, bone,' 'arm'; 'calf'; Old Icelandic, Old Swedish, Anglo-Saxon 'thick flesh of calf, thigh and buttocks'
<b>*<i>ureik</i> 'turn, wrap, bind'</b>	Avestic 'turn, rotate'; Greek 'bent, curved'; Middle Low German 'bent, twisted'; Old Icelandic 'bend, move'; Middle High German 'turn from side to side'; English, Norwegian 'wiggle'; Old Prussian, Lithuanian, Latvian 'bind'	Middle High German 'band, ankle, knot'; 'neck'; Dutch 'joint'; Middle Low German, Anglo-Saxon, Old Swedish, Old Icelandic 'ankle'; Middle High German 'wrist, ankle'; Old High German 'calf, knee'; Lithuanian 'ankle'; English 'wrist'
<b>*<i>kuerp</i>- 'turn'</b>	Old Nordic 'turn, sweep, disappear'; Anglo-Saxon 'turn, travel, change'; Old High German 'turn, return, be busy'; Tocharian 'turn towards, go'	Greek 'wrist'
<b>*<i>kuel</i> 'turn, move around, *<i>kuol-so</i>- 'neck'</b>	Sanskrit 'turn, wander'; Greek 'be in motion'; Albanian 'turn, weave, bring'; 'bend, curve'; Latin 'cultivate, occupy'; Old Irish 'wagon'; Old Icelandic, Old Prussian 'wheel'; Latvian 'two-wheeled cart'; Tocharian 'bring'	Sanskrit 'foot, leg'; Latin 'neck, yoke'; Gothic, Old Icelandic, Old Saxon, Anglo Saxon, Modern German 'neck'; Proto Balto-Slavic, Lithuanian, Latvian, Old Church Slavic, Russian 'knee'; Slovenian 'joint, limb'

Table 5.2 Indo-European cognates related to the notion of bending

In general, the notion of bending is an active source for the metonymy ACTION FOR PLACE in Indo-European language limb terminology. Most terms for the joints, specifically the ankle, wrist, elbow and knee, developed from terms which first referred to an act of bending. Modern forms of the Indo-European languages maintain this type of

historical development in word pairs such as English *wrist* and *writhe*, or *ankle* and *angle*. In other cases, the historical development via ACTION FOR PLACE metonymy is retained in the morphology, such as in German *elbogen* ‘elbow,’ in which *el* refers to part of the arm (the ell), and *bogen* refers to bending.

The set of etymologies summarized in Table 5.2 above are also interesting because they show an interaction of metonymies. Each etymology demonstrates ACTION FOR PLACE, but some also show other metonymies, such as PART FOR PROXIMATE PART, at work. For example, PIE *\*(s)kel-* ‘bend, lean against, curve’ developed into terms for many different regions of the lower limbs.

Additionally, this set of etymologies shows development of terms for body parts other than the limbs. The extensions above commonly refer to muscles which are primarily associated with the limbs, but are not limited to muscles on the limbs. This shows another pathway of change in that speakers extending terms from one set of muscles to another do so because they are conceptually related for the speakers themselves. Moreover, these etymologies show that speakers name body parts according to their physical actions and not just their appearance. This explains a semantic relationship between cognate forms such as German *Hals* ‘neck,’ Latin *collum* ‘neck, yoke,’ Russian *koleno* ‘knee’ and Latvian *celis* ‘knee.’

Although the notion of bending is widespread as a source for ACTION FOR PLACE metonymy in the Indo-European body part terminology, there are many other examples of limb terms developing from the words for the actions they perform. The remainder of this section describes examples of ACTION FOR PLACE metonymy not related to bending.

The following examples include extensions from terms for grabbing, pointing, limping and pulling. Although these extensions are not as widespread as the extension of bending across the Indo-European languages; their extensions follow the pattern of extending an action to the body part which performs the action.

The first example regards the naming of the hand in four branches of the Indo-European family. The term for hand in the Indo-Aryan, Hellenic, Italic and Germanic branches of the Indo-European family derive from verbs meaning ‘to grab.’ The Greek term for hand shares the same root as the Greek verb meaning ‘to hand over, plight’ or ‘give my hand to something.’ Pokorney (Walde 1973) also lists Latin *manus* ‘hand’ and Old Icelandic *mund* ‘hand’ and Anglo-Saxon *mund* ‘hand, protection, paternalism’ as belonging to the same set of cognates. The fact that Greek has terms sharing this same root is important because it clearly shows a development from an action involving the hands to the naming of the hands. This shows a clear relationship both semantically and phonologically to the Avestic cognate *gava* ‘hand’ as well as cognates in the Balto-Slavic branches which describe actions associated with the hands. There is an obvious semantic and phonological relationship between Old Prussian *poguanai* ‘to receive something,’ Lithuanian *gáuti* ‘to receive, acquire,’ Latvian *gūnu* ‘catch, snatch,’ and Old Church Slavic *po-gymati* ‘to feel something.’ By grouping these terms with the Greek and Avestic terms meaning ‘hand,’ Pokorny (1959) shows that there was an extension from the notion of grabbing to the naming of the hands.

Although the terms stem from different PIE roots, the same extension occurred in the development of the modern Germanic term for hand. Kluge (1989) and the Oxford English Dictionary (2012) trace the English term *hand* to an Old English term meaning

‘to seize, attack.’ Its cognate in Old Norse meant ‘to grasp’ while the Gothic cognate *hinþan* meant ‘to seize, the grasper.’ As is clear in Gothic *hinþan*, the term for hand developed via the metonymy ACTION FOR PLACE from a verb meaning ‘to grasp.’ Gothic then applied this to the hand, by calling it *handus* ‘the grasper.’ As seen in modern forms of the Germanic languages, the same extension occurred in developing the term *hand* and its cognates from verbs meaning ‘to seize’ or ‘to grasp.’

Next, the metonymy ACTION FOR PLACE explains the development of the term for finger and toe in the Hellenic, Italic, and Germanic branches of the Indo-European family. English *toe* and *digit* are cognate with Greek *daktulos* and Latin *digitus* ‘finger, toe.’ These terms derive from PIE forms meaning ‘to point.’ The meaning ‘to point’ is retained in Sanskrit, Avestic, Greek, Latin, Gothic and Anglo-Saxon and thus it is clear that the meaning ‘digit’ derives from a root meaning ‘to point.’ Just as the term for hand in Greek and the Germanic branch developed from an extension of a verb meaning ‘to grasp,’ the term *digit* and its cognates meaning ‘finger’ and ‘toe’ in Latin and Greek developed from a verb meaning ‘to point.’ The finger is the body part used in pointing, thus it became known as ‘the pointer’ and this extended to refer to both the finger and the toe.

Having examined ACTION FOR PLACE extensions in terminology predominantly referring to the upper limbs, let us now consider another example of ACTION FOR PLACE metonymy involved in the naming of the lower limbs. Pokorny (1959) traces the source for Germanic terms referring to the lower leg to PIE *\*(s)keng* ‘to limp, to slope.’ The meaning ‘to limp’ is spread across the Indo-European family in languages such as Sanskrit, Greek and Old Icelandic. Within the Germanic branch, there has been an

extension from the meaning ‘limp’ to refer to regions of the leg. The meaning ‘limp’ is retained in some Swedish dialects, but in other forms of the Germanic languages, cognates to Germanic *\*skanka-* and PIE *\*(s)keng-* show up in Norwegian *skank* ‘thigh, shin,’ Anglo-Saxon *scanca* ‘lower leg,’ Middle Low German *schenke* ‘thigh’ and in some modern German dialects, *hanke* ‘thigh, hip.’ These forms show a general extension within the Germanic branch from ‘to limp’ to ‘region of the leg.’

Another example of ACTION FOR PLACE occurs in the Germanic branch of the Indo-European data. The English term wrist and its cognates derive from an older form meaning ‘to turn.’ The extension from an action to a body part term remains clear in cognates denoting action such as English writhe or wiggle, German *wriggen* ‘to scull’ and Dutch *wrikken* ‘to rock, shake’ (Duden 1997: 596) and cognates denoting limb parts, such as English wrist, Swedish *vrst* ‘wrist’ Old Frisian *handwirst* ‘wrist’ and *fötwirst* ‘ankle’ and modern standard German *Rist* ‘wrist, ankle.’

Up to this point, all of the etymologies discussed refer to meanings still retained in modern forms of the Indo-European languages. One of the greatest advantages to using etymological dictionaries as sources for historical change is that entries also show forms and meanings that have been lost over time. The final example of ACTION FOR PLACE metonymy discussed in this chapter is such an example. The other forms discussed up to this point were traced by looking at etymologies for modern forms of body parts. In analyzing the etymologies for such modern forms, more cases of ACTION FOR PLACE metonymy were apparent in the data. Although modern Irish *cos* ‘foot, leg’ shows polysemy in how it names the foot and leg, older forms of the Celtic languages show another term meaning ‘foot.’ Old Irish *traig* and its cognate forms in Old Cornish, Middle

Cornish, and Breton originally meant ‘foot’ but through a process of metaphor, the modern forms no longer refer to a body part. Pokorny (1959) writes that the meaning ‘foot’ came from a PIE cognate *\*trāgh-* meaning ‘to pull, move’ or ‘run.’ Cognates to Old Irish *traig* are seen in Latin *trahō* ‘pull’ and Serbian *traġ* ‘foot print.’ Old Irish *traig* and its cognate forms in the other Celtic languages may seem like a mere detail in terms of demonstrating the distribution of ACTION FOR PLACE metonymy in the Indo-European languages, but it is important because it shows that languages continue to use metonymies and metaphors to change the meaning of terms. Moreover, looking at modern forms and meanings to discover patterns of metonymy often leads to the discovery of older terms that demonstrate the same patterns.

## 5.5 PART FOR ANALOGOUS PART

The last major pattern of change in the Indo-European historical data is the extension of terms from the upper limb to refer to something in the lower limbs. This pattern occurs in the data for all branches of the Indo-European family and is due to similarity between body parts. In the following examples, the similarity is generally due to body parts looking alike. I refer to this type of extension as PART FOR ANALOGOUS PART but as I describe below, the extension of terms from the upper to the lower limb also involves other metaphor. The extension from the upper to the lower limb is far more common than from the lower to the upper. There are limited cases in which a term for the lower body has been extended to refer to part of the upper body, as demonstrated in the English term *heel of the hand*, which refers to the part of the palm closest to the wrist. Such examples are very rare.

When there is a polysemous form that refers to a region associated with both the upper and lower limb, it becomes associated with only the lower limb whenever a semantic change occurs. Sometimes it is clear that another term is introduced to refer to the region in the upper limb only and the original form is no longer polysemous. Table 5.3, adapted from Sweetser (1990), demonstrates this pattern.

Stage 1	Stage 2	Stage 3
Form A refers to a region in both the upper and lower limb	Form B is introduced and refers to a region in the upper limb only	Form A loses its association with the upper limb and refers to the a region in the lower limb only

Table 5.3 Loss of upper and lower limb polysemy over time

Not every polysemous form in the etymology that refers to both the upper and lower limb goes through all three stages as described in Table 5.3 above. Some forms remain polysemous whereas others do not. Using the comparative method, it is clear that polysemous forms change from stage 1 to stage 3, but it is not always clear that stage 2 occurred. This is because the comparative method does not show the introduction of new forms. On the other hand, data from cognate forms in other related languages may show polysemous tendencies. For example, a term meaning ‘toe’ that is not related to the term meaning ‘finger’ is rare in the world’s languages. When looking at the English term *toe* in isolation, it is not obvious that an earlier form also referred to the finger, but when cognates are included, the polysemous history become clear. It is also likely that before stage 1 occurs, languages have already extended a term making it polysemous. For example, the original word for finger (PIE ‘point’) extended to also refer to the toe and replaced whatever was in use prior to that. Then the new word for ‘finger’ arrived to yield the current distribution of digit terms. Because people generally do not point with

their toes, it is safe to believe that the PIE term meaning ‘point’ first only referred to the fingers and not the toes. Thus it is important to consider etymological data both in a given language as well as within a language family as a whole. Let us now turn to the data which show the shift from the upper to the lower limb.

The Germanic languages have unrelated terms for the digits on the upper and lower limbs. When considered in isolation, this observation is not all that interesting; but when compared to other languages it becomes apparent that the Germanic branch is the only group of Indo-European languages which differentiates between the digits on the upper and lower limbs with unrelated terms. Just as the English term *digit* is ambiguous to a unit on the upper or lower limb, Greek *daktulos*, Latin *digitus*, Spanish *dedo*, Russian *palets* and the Irish terms *méar* and *ladhar*, which are both used for the upper and lower limbs, refer to the five partitions at the ends of the limbs regardless of their position on the upper or lower limb. When necessary, Indo-European languages differentiate between the digits on the upper limb and those on the lower limb with compounds to designate the foot or leg in their terms meaning ‘toe.’ Thus terms such as Irish *méar coise* [digit foot/leg] or Spanish *dedo del pie* [digit GEN foot] can be used to avoid ambiguity, as needed. This observation leads to questioning why the Germanic branch of the Indo-European family is different.

The English term *toe* and its Germanic cognates derive from the same source and Latin *digitus* and Greek *daktulus*. In earlier forms of the Germanic languages, the cognate for *toe* presumably referred to the digits on both the upper and lower limbs, just as the cognate forms in Latin and Greek still do. The etymology of English *toe* started with an earlier form of the word meaning ‘to point’ or ‘to indicate.’ As human toes are neither



physically capable of pointing nor indicating, it is clear that these actions were first applied to the fingers, via the metonymy ACTION FOR PLACE, then extended to also refer to the toes. Over time, a term meaning ‘to grasp’ or ‘grab’ also came to be used to refer to the fingers in the Germanic languages, eventually developing into a proto-form for modern Germanic *finger* and its cognates. Thus a chain of extensions resulted in the three stages described in Table 5.3 above. The proto-form of *toe* applied to the fingers, then the fingers and toes, and then just the toes. A similar chain of shifts has happened with other terms associated with the limbs as well.

The historical development of the English term *calf* also belongs to a set of etymologies that show a stage in which a term could refer to regions in both the upper and lower limbs, but is now reserved for referring to only the lower limb. English *calf* and Old Nordic *kalfi* ‘calf’ are cognate with a term that appears in some dialects of modern German *kalb* ‘muscle.’ These terms are also related to Anglo-Saxon *clyppan* ‘hug,’ from which English *clasp* derived. At first glance, it may seem that these terms are semantically unrelated, but when considered with cognates from other Indo-European languages, the history becomes clearer. Pokorny (1959) pairs the Germanic cognates in question with Lithuanian *glėbiu* or *glebti* ‘to clasp (with the arms)’ as well as with Gallician *\*galbo-* ‘swelling, calf, arm.’ Both Gallician *\*galbo-* and modern German diacelt *kalb* ‘muscle’ cognate provide cases in which one term refers to areas of both the upper and lower limb. Namely, the muscular regions of both the upper and lower limb are the parts of the limb that swell when flexed. The muscles also flex when hugging or clasping an object, thus there is a semantic relationship through ACTION FOR PLACE metonymy that the act of clasping or hugging is extended to the muscles in the upper and

lower limbs. Just as in the case of English *toe*, the meaning of the term is narrowed to only refer to a region of the lower limb, as in English *calf*.

Another example of an extension from the upper to the lower limb occurred in the Germanic term for the wrist. In Old English, Middle Low German, and Middle Dutch, wrist and its cognates referred to the joint in the upper limb. In Old Frisian, the cognate to wrist appeared in compounds such as *handwirst* ‘wrist’ and *fötwirst* ‘ankle.’ Likewise, in modern standard German *Rist* is polysemous and means both ‘wrist’ and ‘ankle.’

As the etymologies described thus far in this section show, the directionality of a term for the lower limb from a term for the upper limb is clear due to the extension PART FOR ANALOGOUS PART. The following examples further not only show that this phenomenon is frequent in the Indo-European data, but that the extension of terms from the upper to the lower limbs suggests this type of change is not only due to metonymy. The next set of etymologies shows extensions that involve the metaphors ANIMALS ARE HUMAN and HUMANS ARE ANIMALS as active processes in forming a pathway of change for terminology for the upper limb to refer to the lower limb.

In section 2 above, the etymology of the Slavic term for foot and leg shows the metonymy PART FOR WHOLE. The direction of change from PIE *\*onogh-* ‘finger and toe nail’ to Russian *noga* ‘foot, leg’ also shows a shift from the upper to the lower limbs. As cognates to PIE *\*onogh-* in the Celtic, Germanic, Italic, Balto-Slavic and Hellenic show, the original term referred to both the finger and toe nails. The extension of the cognate forms in Latin and Latvian to also mean ‘hoof’ shows how Slavic *noga* became associated with only the lower limb. Just as English retains the terms *digit* and *toe* which

derive from the same Indo-European root, Russian also has two terms that are cognate with PIE *\*onogh-*. Russian *nogá* refers to the foot and lower leg, but *nógotʔ* refers to both the finger and toe nail.

Walde (1973: 488) indicates another example of extending a term from the upper to the lower limb as seen in the Bulgarian term *krak* ‘leg, foot.’ In this case, leg/foot polysemy derives from a term meaning ‘arm.’ Both the Sanskrit and Albanian cognates to Bulgarian *krak* retain meanings that refer to the upper limb. Sanskrit *kiṣku* ‘forearm’ and Albanian *krakë* ‘upper arm, shoulder, wing,’ show why the proto-form of this term has been reconstructed to mean ‘arm’ in PIE. Before PIE *\*kr(o)k-sko* became Bulgarian *krak*, it was used to refer to both the upper human limb and pig limbs. Lithuanian *kārka* ‘pig foot, pig foreleg’ shows an extension from the upper human limb to the forelimb of pigs. Proto-Slavic *\*korka* ‘pig foot’ and Russian cognate *ókorok* ‘ham’ show that a similar change also occurred in the Slavic branch. Similar to the etymology of Russian *nogá* ‘foot, leg’ described above, Bulgarian *krak* ‘foot, leg’ has also come to refer to the lower limb after an association with animals. The history of both terms reveals a pattern in which a term referring to a human is extended to refer to an animal, and then extended again to refer to a different part of a human. This interplay explains one cause of regular, reoccurring extensions of terms for a region of the upper limb to the lower limb.

It is necessary to state that not all cases of cognate forms across the Indo-European family referring to both the upper and lower limbs have gone through an extension from the upper to the lower limb. The terms for elbow in the Italic, Hellenic, Germanic, Celtic and Balto-Slavic languages are cognate forms that derive from PIE

\**elei-* ‘bend.’ Just as the English developed the terms *finger* and *toe* through ACTION FOR PLACE metonymy, most of the Indo-European languages used the action of bending to name the elbow. Cognates in Sanskrit and Armenian refer to regions in the lower limb rather than the upper. For example, Sanskrit *āñi-h* ‘part of leg above the knee’ is similar in function to the elbow, thus it is tempting to believe that an extension from the upper to the lower limb occurred within the Indo-Iranian and Armenian branches of the Indo-European family. Although the Sanskrit and Armenian terms refer to regions of the lower limb, there is no data in the etymologies of Sanskrit *āñi-h* ‘part of leg above the knee’ and Armenian *olok* ‘leg, shin’ that show a period in time in which forms of these terms referred to regions of both the upper and lower limbs. Because of this, we must believe that the Sanskrit and Armenian cognates to PIE \**elei-* ‘bend’ developed from the metonymy ACTION FOR PLACE without an additional shift from the upper to the lower limb.

The examples of PART FOR ANALOGOUS PART given above demonstrate that this major pattern of change more closely resembles a metaphorical extension than a metonymic one. The etymologies described above show how both metonymies and metaphors trigger this extension, but the general pattern seems to map a feature of the upper limb onto the lower limb. For example, toes are not typically used for grabbing and the calves are typically not used for clasping. Rather than refer to PART FOR ANALOGOUS PART as a metonymy, it more closely resembles a metaphor.

## 5.6 Minor extensions

The metonymies discussed thus far play a major role in the naming of parts of the limbs. They are major in the sense that they occur in multiple branches of the Indo-European family and are used to name multiple parts of the limbs. For example, the metonymy ACTION FOR PLACE occurs in the Indo-Iranian, Hellenic, Italic, Germanic, Balto-Slavic, and Celtic branches, and speakers used it to refer to body parts including the elbows, wrists, knees, ankles, fingers, toes, hands and feet. Although not as widespread as the metonymies discussed above, the Indo-European historical data also show examples of other metonymies active in the naming of individual fingers. These other metonymies only refer to a small set of limb parts and are not widely used across the Indo-European languages. Because of the smaller role they play in the naming of limb parts, I refer to this group of metonymies as minor metonymies.

The first set of minor metonymies is active in naming individual fingers. The name of each individual finger varies between the branches of the Indo-European family. As my data does not include the name of each finger from each of the different Indo-European branches, I describe the metonymic processes that resulted in finger names in just a few of the Indo-European languages.

The easiest cross-linguistic finger name data to collect are terms for the thumb. As Buck (1949) observes, many of the words meaning ‘thumb’ are based on size or shape (240). In some languages, the term for thumb is a mono-morphemic term, such as English *thumb*, and in others, the term is multi-morphemic and can be glossed as ‘large finger’ and the like. Within the Germanic branch, the term for thumb is mono-morphemic but historically developed from PIE *\*tēu-* ‘to swell.’ Thus *thumb* and its Germanic cognates derive from historical forms that would have meant ‘the swollen (finger).’ In Latin, the

term *pollex* ‘thumb’ is cognate with *pollēre* ‘be strong,’ in which the term for thumb could have developed from ‘the strong (finger).’ In comparison, the Russian and Greek terms for thumb both translate as ‘the big finger.’

Similarly, the small finger is also commonly named for its size across Indo-European languages. Although the thumb is usually referred to as the “big finger,” in Irish the finger with a morphemic gloss of [big finger] is used for the ‘middle finger’ rather than the thumb. In general, Irish dialects vary greatly in how they name the fingers, thus Irish terms serve as a great source for minor metonymic pathways of change in naming the body. The Irish dialects actively use size as a metonymic mechanism to name the fingers. Other examples include *púntán* ‘index finger, short stout person, round heavy stone’ and *méar fada* [long digit] ‘middle finger.’

The morphemic translations for other individual finger names vary widely across the Indo-European family. In some cases, the terms refer to position, such as English *middle finger* or cultural significance, such as English *ring finger*. In other cases, the terms are metaphoric, such as Irish *brath-adóir* [betrayal] ‘index finger,’ *mac an droma* [son of the back] ‘ring finger.’ For the most part, the terms for individual toes are named the same as for individual fingers, with the exception being a difference between terms for the thumb and big toe. When these terms differ in the Indo-European languages, my data indicate that the toe is referred to by its size.

Clearly, languages vary in how they name each of the fingers. The Indo-European languages use both metonymy and metaphor to name the individual fingers and there is a

much wider variance in which metonymies and metaphors languages use to name the fingers than in naming other body parts.

## 5.7 Summary

This chapter has shown etymological data for the major and minor metonymies used in Indo-European languages for naming parts of the limbs. The major metonymies in limb nomenclature in the Indo-European family are PART FOR WHOLE, PLACE FOR PROXIMATE PLACE, ACTION FOR PLACE and the extension of terms from the upper to the lower limbs. The major metonymies appear across most of the branches of the Indo-European family and are widely distributed across body parts. These patterns and their distribution are summarized below.

First, the metonymy PART FOR WHOLE is most commonly used in the naming of the arms and legs and it appears in five branches of the Indo-European family. Because of its widespread occurrence throughout the family, I expect this metonymy to also be a cross-linguistic tendency. In the Indo-European family, languages tend to extend terms for the foot, nail, and bone to form a term for the leg, and terms for the hand and palm to form a term for the arm. To test for the distribution of PART FOR WHOLE metonymy in the cross-linguistic data discussed in chapter 6, I will look for cases of polysemy between terms for the feet and legs, the hands and arms, and morphemic glosses of ‘bone,’ ‘nail,’ ‘palm’ and the like.

Next, the metonymy PART FOR PROXIMATE PART is most commonly used in the naming of parts of the arms and legs, such as the forearm, upper arm, shoulder, calf, thigh, shin, lower leg and hip. This metonymy occurs in four branches of the Indo-

European family and occurs with much less frequency than the metonymy PART FOR WHOLE. Therefore I suspect that it will occur much less frequently than PART FOR WHOLE in the cross-linguistic data. To test for the distribution of PART FOR PROXIMATE PART metonymy in the cross-linguistic data, I will look for cases of polysemy between terms for parts of the arms and legs, respectively. I will also look for cases of shared morphemes between the same set of body parts.

The metonymy ACTION FOR PLACE is most commonly used in the naming of the joints, such as the elbow, wrist, ankle, and knee in the Indo-European historical data. This metonymy occurs frequently in seven branches of the Indo-European family. Because my cross-linguistic data do not include terms such as *bend* or *grab*, testing for cases of ACTION FOR PLACE polysemy in the cross-linguistic data is not possible. Instead, the distribution of ACTION FOR PLACE in the cross-linguistic data is searchable by a morpheme by morpheme gloss of the source word or words that include an action, such as ‘bend,’ ‘grab’ or ‘step.’ Therefore I will analyze body part terms for their morphemic glosses in looking for the distribution of ACTION FOR PLACE in terms for the limbs in the cross-linguistic data. I expect that the metonymy ACTION FOR PLACE will not occur as frequently in the cross-linguistic data as PART FOR WHOLE because the cross-linguistic data does not include terms such and *bend* or *grasp*.

Next, the metaphor PART FOR ANALOGOUS PART extends terms for the upper limbs to the lower limb. It is very common across the Indo-European languages and appears in the data of every branch of the Indo-European family. This high frequency is especially true for terms for the toes, but also appears in other terms for the lower limbs, and I expect it to also be widespread in the cross-linguistic data. In order to find the distribution



of this extension in the cross-linguistic data, I will look for cases of polysemy between body parts on the upper and lower limbs as well as cases in which languages use a morpheme from the upper limb term to name a part of the lower limb.

Finally, because the metonymic and metaphoric processes involved in naming the individual fingers vary greatly across the Indo-European languages, I expect that this will also be true in the cross-linguistic data. Along with size, shape and position, I expect that there will be other metonymic and metaphoric processes involved in naming the fingers across the non-Indo-European languages that are not present in the Indo-European historical data discussed in this chapter.

## Chapter 6

### Cross-linguistic metonymies

This chapter shows the distribution of metonymies involved in the naming of the upper and lower limbs in the cross-linguistic data. The metonymies discussed in this chapter have been selected based on the findings of metonymic extensions in the Indo-European historical data discussed in the previous chapter. These include PART FOR WHOLE, PART FOR PROXIMATE PART, ACTION FOR PLACE, PART FOR ANALOGOUS PART, and other minor extensions shown in the data.

For each metonymy in question, the cross-linguistic data are analyzed for polysemy and patterns in morphemic glossing. Occurrences of each metonymy are grouped according to pattern, such as occurrences of hand/arm polysemy and foot/leg polysemy as types of PART FOR WHOLE metonymy. Then each metonymy's distribution is analyzed in terms of geographic area and language family to determine how widespread the metonymic extensions are used to name regions of the upper and lower limbs. From this it is possible to discuss the type of cross-linguistic tendencies that exist cross-linguistically in limb nomenclature.

The following sections of this chapter are divided by types of extension. Following the same order as in chapter 5, in which the metonymic extensions within the Indo-European historical data were discussed, the occurrence of the metonymy PART FOR WHOLE is discussed in section 1, PART FOR PROXIMATE PART is discussed in section 2, ACTION FOR PLACE is discussed in section 3, PART FOR ANALOGOUS PART is discussed in

section 4, and minor metonymic patterns are discussed in section 5. Last, in section 6, there is a summary of the findings.

## 6.1 PART FOR WHOLE

As explained in chapter 5, PART FOR WHOLE metonymies are extensions in which languages extend body part terms to refer to a larger unit of the body with which the term is associated. Examples of PART FOR WHOLE metonymic extensions in the Indo-European historical data include palm > hand, hand > arm, foot > leg, nail > foot, bone > leg, and lower leg > leg. In order to find occurrences of PART FOR WHOLE metonymy in the cross-linguistic data, I consider polysemy in the terms for body parts associated with the upper and lower limbs. This is consistent with the claim that all semantic change occurs through a period of polysemy (Sweetser 1990). Therefore, cases of polysemy in the cross-linguistic data can be viewed as a type of extension. In many cases, the directionality of the extensions is not obvious in the naming of body parts. When two body parts are polysemous, such as Cheke Holo (Austronesian) *khame* ‘hand, arm,’ it is believed that the direction of the extension is from hand to arm due to prior findings of the cross-linguistic tendency for PART FOR WHOLE rather than WHOLE FOR PART in body part nomenclature (Witkowski & Brown 1985; Wilkins 1996). Likewise, poly-morphemic forms can also show a direction of extension, even when no etymological information is available. For example, in comparing Finnish (Uralic) *käsi* ‘hand’ and *käsivarsi* ‘arm,’ it is clear that the term meaning ‘hand’ has been extended to form the term for ‘arm.’ This also demonstrates PART FOR WHOLE metonymic extension.

The metonymy PART FOR WHOLE is most common cross-linguistically in extensions from the hand to the arm and from the foot to the leg. In the data from 153 languages, 69 languages demonstrate hand/arm polysemy and 67 languages demonstrate foot/leg polysemy. Other types of polysemy indicating a PART FOR WHOLE metonymy include extensions from the thigh to the leg, the hand to the forearm including the hand, the forearm to the arm including the forearm, the foot to the lower leg including the foot, the knee to the leg including the knee, the sole to the foot (including the sole), the lower leg to the entire leg, and the heel to the foot/leg. Table 6.1 below shows the distribution for each PART FOR WHOLE extension. Along with the listing of the exact extension, Table 6.1 includes the number of languages and language families demonstrating each extension.

<b>Extension</b>	<b>Number of languages in which the extension occurred</b>	<b>Number of language families in which the extension occurred</b>	<b>Geographic areas in which the extension occurred</b>
hand > arm	69	35	ANG, SAm, NAm, Afr, Eura
foot > leg	67	34	ANG, SAm, NAm, Afr, Eura
thigh > leg	6	3	ANG, SAm, NAm
hand > forearm	1	1	NAm
forearm > arm	3	2	SAm, Afr
foot > lower leg	3	2	SAm, Afr
knee > leg	1	1	SAm
sole > foot	1	1	Afr
lower leg > leg	1	1	ANG
heel > foot/leg	1	1	ANG

Table 6.1 Distribution of PART FOR WHOLE in cross-linguistic limb terms

Clearly, PART FOR WHOLE metonymic extensions are most common in deriving terms for the leg and arm. Likewise, PART FOR WHOLE extensions occur in all five

geographic areas and across a large number of language families. This distribution shows that there is a strong cross-linguistic tendency to extend terms for body part terms to name larger units with which they are associated.

Although the other occurrences of PART FOR WHOLE metonymy in the naming of the limbs only contribute a small fraction of the total occurrences of PART FOR WHOLE, the variety of types of PART FOR WHOLE extensions shows that this metonymy is not limited to hand > arm and foot > leg extensions. The cross-linguistic data do not show occurrences of extensions of the type bone > leg or shoulder > arm. These extensions likely also occur in the languages of the world, but as terms for shoulder and bone are not included in the cross-linguistic data for this study, it is not possible to comment on the distribution of bone > leg and shoulder > arm within the metonymy PART FOR WHOLE.

Because PART FOR WHOLE metonymy is overwhelmingly more common in hand > arm and foot > leg extensions, it is worth looking at the cross-linguistic distribution of these two metonymies in more detail than given above. Both extensions are widespread. Tables 6.2 and 6.3 below show the number of occurrences of PART FOR WHOLE extensions by geographic area. Within each geographic area, the number of languages and language families displaying PART FOR WHOLE extension is listed. Likewise, the number of occurrences of polysemous forms and the number of occurrences of extensions as shown within the morphology are also included in the tables.

<b>Geographic Area</b>	<b>Number of languages</b>	<b>Number of language families</b>	<b>Cases of polysemy</b>	<b>Cases of extension as evidenced by the morphology</b>
ANG	18	7	17	1
SAm	10	10	4	6
NAm	10	10	9	1
Afr	17	3	16	1
Eura	14	9	12	2

Table 6.2 Distribution of hand > arm extensions in the cross-linguistic data

The majority of hand > arm extensions in the data are polysemous forms. Except for the geographic area South America, there are few cases of extension from hand to arm in which the term meaning ‘hand’ is used in the base for the term meaning ‘arm.’ South America differs in that there are more extensions of the terms meaning ‘hand’ as a morpheme within the term for arm than occurrences of polysemy in which the term for hand and arm is the same.

As demonstrated in Table 6.2 above, hand > arm extensions are common across language families in each of the five geographic areas. Within the geographic areas Africa and Eurasia, hand > arm extensions are present in 75% of the possible language families. Hand > arm extensions are less represented across language families in the other geographic areas. Specifically, this type of extension occurs in 62.5% of the language families of North America, 50% of the language families of Australia-New Guinea and 43.5% of the language families of South America.

<b>Geographic Area</b>	<b>Number of languages</b>	<b>Number of language families</b>	<b>Cases of polysemy</b>	<b>Cases of extension as evidenced by the morphology</b>
ANG	19	9	15	4
SAm	4	4	4	0
NAm	10	9	10	0
Afr	17	4	17	0
Eura	17	8	16	1

Table 6.3 Distribution of foot > leg extensions in the cross-linguistic data

In comparison to hand > arm extensions, foot > leg extensions have roughly the same distribution. The geographic area South America varies the most between the two, with hand > arm extensions being much more common than foot > leg extensions. This highlights the fact that there are different types of PART FOR WHOLE extensions in body part nomenclature across languages, and that these specific types vary among languages, language families and geographic areas. Although they are not represented in Table 6.2 above, South American languages use other types of PART FOR WHOLE extensions in naming the limbs. As listed in Table 6.1, six languages extend the term for thigh to refer to the leg. Four of the languages demonstrating this extension are spoken in South America and they represent four different language families. Furthermore, two other South American languages from two other families use the PART FOR WHOLE extensions foot > lower leg and knee > leg. This shows that although it is not common for South American languages to use the extension foot > leg, it is nevertheless just as common for them to use PART FOR WHOLE in naming the lower limb as in naming the upper limb as in other geographic areas.

In summary, PART FOR WHOLE metonymic extensions in limb nomenclature are common across the world's languages. These extensions occur in each geographic area

and occur in a large number of language families and can therefore be called widespread. The most common types of PART FOR WHOLE extensions are hand > arm and foot > leg, but languages extend other body parts to refer to the arm and leg as well, such as terms for the thigh or the forearm. The data does not include terms for the shoulder or bone, but it is very likely that languages also use terms for these body parts to name larger units of the upper and lower limbs as well.

## 6.2 PART FOR PROXIMATE PART

Now that it has been shown that there is a cross-linguistic tendency to name parts of the limbs using PART FOR WHOLE metonymic extensions, I turn to the next metonymy demonstrated in the Indo-European historical data, PART FOR PROXIMATE PART. As defined in chapter 5, PART FOR PROXIMATE PART metonymy extends terms due to the physical location on the body regardless of function. Examples from the Indo-European historical data include upper arm > shoulder, and thigh > calf. To look for occurrences of PART FOR PROXIMATE PART metonymic extensions in the cross-linguistic data, I consider cases of polysemy and shared morphemes between limb parts located within close physical proximity.

Table 6.4 below shows the cross-linguistic occurrences of PART FOR PROXIMATE PART metonymy in limb nomenclature. Along with the listing of the polysemy, Table 6.4 includes the number of languages and language families demonstrating each extension.



<b>Polysemy</b>	<b>Number of languages in which the extension occurred</b>	<b>Number of language families in which the extension occurred</b>	<b>Geographic areas in which the extension occurred</b>
Thigh ~ hip	7	7	Afr, Eura, NAm
Thigh ~ buttock	1	1	Afr
Thigh ~ knee	1	1	Afr
Forearm ~ wrist	2	2	ANG, SAm
Shoulder ~ upper arm	1	1	Afr
Hand ~ wrist	4	4	SAm, NAm, Afr, Eura
Foot ~ ankle	1	1	Eura

Table 6.4 Distribution of PART FOR PROXIMATE PART in cross-linguistic limb terms

As shown in Table 6.4 above, there are few occurrences of PART FOR PROXIMATE PART metonymy in the cross-linguistic data. The metonymy does exist in limb nomenclature in each geographic area, but it occurs infrequently. The data also do not indicate a direction of extension. For example, although there are seven languages which have thigh ~ hip polysemy, it is not clear whether the term originally referred to the thigh or to the hip. It is possible that either term was original. As the Indo-European data show, in cases of thigh ~ hip polysemy, the term extends from the thigh to the hip. It is not clear whether this is a unidirectional change as there are only a few occurrences of such an extension in the Indo-European data.

In general, the cross-linguistic data analyzed in this chapter indicate that the world's languages name parts of the limbs using PART FOR PROXIMATE PART metonymic extensions with much less frequency than the other metonymies examined in this dissertation. This is not surprising, as PART FOR PROXIMATE PART also appears less frequently than the other metonymies found in the Indo-European historical data. This

type of extension occurs in all five geographic areas, but it does not occur in many languages. For this reason, it does not meet the criteria for being called widespread.

### 6.3 ACTION FOR PLACE

Metonymic extensions caused by ACTION FOR PLACE are common in the Indo-European historical data. As previously defined, ACTION FOR PLACE metonymies extend terms for actions to body parts associated with them. For example, a body part that bends may come to be called a “bender” or body parts involved in walking may come to be called “walkers.” In Indo-European, common extensions came from roots meaning ‘to bend,’ ‘twist,’ ‘turn,’ ‘grasp,’ ‘point,’ and ‘limp.’ By using morphemic glosses when they are available, I analyze all of the terms in the cross-linguistic data for occurrences of ACTION FOR PLACE metonymic extensions. Body part terms deriving their names from this metonymy are most common in the joints in the Indo-European family; therefore I especially focus on terms for the elbow, wrist, knee and ankle in the cross-linguistic data.

The cross-linguistic data show 11 clear cases in which the morphemic glosses show that body part terms developed from an extension of a term for an action. These extensions appear in Table 6.5 below.

Geogr. area	Language	Family	Lexeme	Morphemic gloss	English translation
<b>ANG</b>	Kyaka Enga	Trans-New Guinea	kingi yanda ipingi	[finger that pulls the bowstring]	‘right forefinger’
<b>SAm</b>	Kali’na	Carib	apoli enali	[arm-POSS-fold]	‘elbow’
	Otomi	Oto-Manguean	dot’uwa	[fold leg]	‘calf’
	Quechua	Quechuan	kukuču	[ bent over like something]	‘elbow’
<b>NAm</b>	Couerd’Alene	Salishan	s-c’úʔ-šən	[the part of the leg that kicks]	‘foot’
	Delaware	Algie	enda siak <sup>ws</sup> sita	[where my foot splits]	‘ankle’
	Q’eqchi’	Mayan	ru’ujuq’r-u’uj uq’	[3ERG-point/nose hand]	‘finger’
<b>Afr</b>	Emai	Niger-Congo	uguobo	[nominalizing prefix.bend.hand]	‘elbow’
	Gourma	Niger-Congo	pan-sagi-ma	[thigh-rubs]	‘inner thigh’
<b>Eura</b>	Japanese	Japonic	fukura-hagi	[swell-shin]	‘calf’
	Ket	Yeniseian	ulgit ul-git	[arm-bend]	‘elbow’

Table 6.5 ACTION FOR PLACE extensions in the cross-linguistic data

As shown in Table 6.5 above, ACTION FOR PLACE extensions occur across all five geographic areas, but there are limited occurrences of this metonymic extension in the cross-linguistic data. This shows that languages use this metonymy to name parts of the upper and lower limbs. Although there are a limited number of occurrences of ACTION FOR PLACE extensions in the data, this does not necessarily indicate that ACTION FOR PLACE extensions are uncommon in limb nomenclature. Not all limb terms in the database have morphemic glosses, and some morphemic glosses are uncertain, such as Kyaka Enga (Trans- New Guinea) *kingi pambu* [hand pump?] ‘thumb.’ The question mark in the morphemic gloss shows uncertainty of the meaning ‘pump’ and appears in the morphemic gloss provided in the source for the Kyaka Enga data (Draper & Draper

2002). Likewise, it is not clear from this data whether pump is used as a verb or a noun. Due to the uncertainty, such occurrences in the data are not included in the data presented in Table 6.5 above.

The Indo-European historical data suggests the highest frequency of ACTION FOR PLACE metonymic extensions in terms for the joints. In analyzing the morphemic glosses for cross-linguistic joint terms, three patterns emerge. The first pattern is ACTION FOR PLACE which is described above. The other two patterns are the cross-linguistic tendencies to name the joints with either a morpheme meaning ‘joint’ or ‘neck.’ The high frequency of morphemes meaning ‘joint’ and ‘neck’ across languages in naming body parts such as the elbow, wrist, ankle and knee is interesting because it shows that languages see a relationship between body parts that turn or bend, or join other body parts together. This pattern can be interpreted as an example of metaphor, in that they involve an analogy, but it is not entirely clear whether this is an inter- or intradomain analogy. It is also not clear if the features of bending or narrowness have been mapped onto the limbs from the neck or joints. Because both the source and the target of these extensions include narrow body parts that bend, I include them here as examples of metonymy. The distribution of morphemes meaning ‘joint’ is shown in Table 6.6 and the distribution of morphemes meaning ‘neck’ is shown in Table 6.7.

Geogr. area	Language	Family	Lexeme	Morphemic gloss	English translation
<b>A-NG</b>	Anindilyakwa	Australian	amwirgina	[small.joint]	'wrist, finger, toe'
	Makalero	Trans-New Guinea	tana-pu'i	[hand-joint]	'wrist'
<b>SAm</b>	Mapundungun	Araucanian	troy kuwü	[joint hand]	'wrist'
	Selknam	Chon	čín k-p'ax	[hand-joint]	'wrist'
			hal-yeʔn k-p'ax	[foot-joint]	'ankle'
	Imbabura Quechua	Quechuan	rigra muku	[brazo joint]	'elbow'
			maki muku	[hand joint]	'wrist'
<b>Nam</b>	Q'eqchi'	Mayan	kux oq	[joint leg]	'ankle'
	Salish	Salishan	p'əsq'wa'sačiʔ	[arm joint]	'wrist'
<b>Afr</b>	Swahili	Niger-Congo	fundo la mguu	[joint of foot]	'ankle'
	Nubian	Nilo-Saharan	eddin burdurti	[hand-? joint]	'wrist'
	Gourma	Niger-Congo	ni-bian-tugi-li	[arm/hand-divides-joint]	'wrist joint'
			nu-tugi-li	[arm/hand-joint]	'wrist joint'
<b>Eura</b>	Chantyal	Sino-Tibetan	goli aŋla	[bullet joint]	'ankle'
	Jahai	Austro-Asiatic	kri~l (cyas)	[(hand) joint]	'wrist'
	Lao	Tai-Kadai	kho`o`5 mu`u`2	[hand joint]	'wrist'
	Thai	Tai-Kadai	khôṁmæu	[joint-hand]	'wrist'
			khôṁtháaw	[joint-foot]	'ankle'
	White Hmong	Hmong-Mien	yas npab	[joint-arm]	'elbow'
			yas taw	[joint-foot]	'ankle'

Table 6.6 Distribution of morphemes meaning 'joint' in limb terms

Morphemes meaning 'joint' occur in 15 languages spread across all five geographic areas. Eurasian languages make up a third of all occurrences. It is also common to use the same morpheme meaning 'joint' to name more than one limb part within a given language. This shows a relationship between body parts that move in similar ways.

Geogr. area	Language	Family	Lexeme	Morphemic gloss	English translation
<b>A-NG</b>	Kyaka Enga	Trans- New Guinea	kimbu mange 'big toe'	[leg neck]	'toe'
			kingi mange	[arm neck/stem]	'thumb'
<b>SAm</b>	Wichi	Mataco-Guaicuru	totkwew'u	[POSS.INDF-hand+neck]	'wrist'
<b>Nam</b>	Chalcatongo Mixtec	Oto-Manguean	sũkũ ndaʔa	[neck hand/arm]	'wrist'
	Chatino Zacatepec	Oto-Manguean	ynĩ yaʔ-	[neck hand]	'wrist'
	Misantla Totonac	Totonac	maka-piš-nĩ	[hand.rel-neck.rel-NOM]	'wrist'
	Nahuatl	Uto-Aztecan	i-mec-keč-saliwiyān	[neck of the leg/foot]	'ankle'
	Q'eqchi'	Mayan	kux uq'm	[neck hand]	'wrist'
	Zinacantan	Mayan	nuk' ʔokol	[neck foot]	'ankle'
<b>Afr</b>	Hausa	Afro-Asiatic	wúyān hānnūu	[neck-GEN hand]	'wrist'
	Kanuri	Nilo-Saharan	dáwú múskòbè	[neck hand-of]	'wrist'
	Yoruba	Niger-Congo	o.run-o.wo'	[neck hand]	'wrist'
<b>Eura</b>	Japanese	Japonic	tekubi	[hand neck]	'wrist'
	Korean	Korean	pal mok	[arm neck]	'forearm'
			son mok	[hand neck]	'wrist'
			bal mokx	[foot neck]	'ankle'
	Malagasy	Austronesian	hatotānana	['neck' + 'hand']	'wrist'
	Vietnamese	Austro-Asiatic	cổ tay	[neck hand]	'wrist'
			cổ chân	[neck leg]	'ankle'
	White Hmong	Hmong-Mien	dab-teg	[neck-hand]	'wrist'
			dab-taws	[neck-foot]	'ankle'

Table 6.7 Distribution of morphemes meaning 'neck' in limb terms

Morphemes meaning 'neck' occur in limb terms in 16 languages spread across all five geographic areas. Using a morpheme meaning 'neck' to name parts of the limbs occurs most frequently in North American and Eurasian languages. The wrist is the most common limb part to be named with a morpheme meaning 'neck,' but morphemes meaning 'neck' also appear in the terms for the ankle, forearm and digits. Additionally,

the Indo-European historical data reveal an extension from bend > neck in the Italic and Germanic branches which is cognate with terms meaning ‘knee,’ ‘joint’ and ‘limb’ in the Slavic branch.

Without etymologies for morphemes meaning ‘joint’ or ‘neck’ in the cross-linguistic data, the terms in Tables 6.6 and 6.7 there is no evidence to justify considering these patterns examples of ACTION FOR PLACE extensions. Nevertheless, they do show that languages are cross-linguistically sensitive to the physical function of body parts and that this plays a role in naming parts of the limbs.

In summary, the metonymy ACTION FOR PLACE occurs in the naming of the limbs in a variety of language families spread across all five geographic areas. Following the criteria set in chapter one, ACTION FOR PLACE metonymy can also be considered widespread. Although it meets the criteria for being widespread, the occurrence of this type of metonymic extension is limited in the cross-linguistic data and is most common in terms for areas of the limbs that bend. Although there are few clear examples of ACTION FOR PLACE metonymic extensions in the cross-linguistic data, the examples that do appear are similar to the historical changes present in the Indo-European languages explained in chapter 5.

#### 6.4 PART FOR ANALOGOUS PART

It is common in the Indo-European languages to develop terms for parts of the lower limbs by extended terms for the upper limbs. As explained in the previous chapter, this type of extension is most common in the naming of the digits within the Indo-European languages and exemplifies metaphor. Although there are cases of terms

designating part of the lower limbs extending to parts of the upper limbs in the Indo-European historical data, it is rare, and the same minority tendencies occur in the cross-linguistic data.

Table 6.8 below shows the distribution for each upper to lower limb extension. Along with the listing of the exact extension, Table 6.8 includes the number of languages and language families demonstrating each extension. Some extensions, such as palm > ankle and elbow > leg further exemplify the metaphorical properties of this extension as the relation between source and target is not as easily identifiable as the with finger > toe or wrist > ankle.

<b>Extension</b>	<b>Number of languages in which the extension occurred</b>	<b>Number of language families in which the extension occurred</b>	<b>Geographic areas in which the extension occurred</b>
finger > toe	48	31	ANG, SAm, NAm, Afr, Eura
palm > ankle	1	1	NAm
wrist > ankle	6	5	SAm, Afr, Eura
wrist > knee	1	1	Afr
elbow > ankle	1	1	Afr
elbow > leg	1	1	Eura
elbow > knee	4	4	ANG, SAm, Eura

Table 6.8 Distribution of upper > lower limb extensions in cross-linguistic limb terms

Cross-linguistically, languages most commonly extend terms from the upper to the lower limbs in naming the digits. Of the 138 languages in the cross-linguistic sample for which there is data on toe nomenclature, 35 show finger ~ toe polysemy as exemplified in (1) below.

- (1) Lavukaleve (Central Solomons)  
*soka*  
 ‘finger, toe’

Terrill (2006)



Likewise, 15 languages name the toes by extending the term meaning ‘finger’ and affixing another morpheme, such as ‘foot.’ This pattern is exemplified in (2) below.

(2) Mapudungun (Araucanian) Lucía, Fraguas & Mellico (2009)

a. *changüll*  
‘finger’

b. *changüll namun*  
finger foot  
‘toe’

The distribution of both finger ~ toe polysemy such as the Lavukaleve example in (1) above and finger > toe morphemic extensions are shown in Table 6.9 below. As with PART FOR WHOLE extensions, it is believed that occurrences of polysemy indicate an extension. Because extensions from the lower to the upper limbs are very rare, it is a reasonable hypothesis that finger ~ toe polysemous forms exemplify an extension of the finger to the toe. Although this hypothesis cannot be tested without etymological data, there is no evidence in the data to suggest the converse and theories of polysemy, such as those described in Sweetser (1990) and Traugott & Dasher (2002) state polysemies occur due to extension.

Geographic Area	Number of languages	Number of language families	Cases of polysemy	Cases of extension as evidenced by the morphology
ANG	7	5	7	0
SAm	10	10	5	5
NAm	6	5	5	1
Afr	11	3	9	2
Eura	14	8	7	7

Table 6.9 Distribution of finger > toe extensions in the cross-linguistic data

Grouping finger ~ toe polysemous forms with finger > toe morphemic extensions, there are 48 languages evenly distributed across all five geographic areas that name the toes by extending the term meaning finger. The remaining languages in the cross-linguistic sample most often use the same patterns for naming the fingers and toes, but these patterns do not exemplify an extension because the terms do not indicate a historical change. The examples in (3) below show this common pattern.

- |     |   |             |
|-----|---|-------------|
| (3) | Kuuk Thayore (Australian)               | Gaby (2006) |
|     | a. yuur-wuurr<br>hand-digit<br>'finger' |             |
|     | b. thamr-wuurr<br>foot-digit<br>'toe'   |             |

There are also ten languages that name the fingers and toes with terms that do not seem to be morphologically related. These include Finnish, Auhi, Limba, Tarifiyt Berber, Zulu, Mohawk, Seri, Yuki, Zuni and Tsimshian. In these languages it may be the case that the term for toe originally meant finger, as in the case of English *toe* described in chapter 5. Without etymological data, it is not clear that this holds in non-Indo-European languages.

Next, the cross-linguistic data also shows finger > toe extensions in the names of individual fingers and toes. This is also the case in the Indo-European data. Although the sources used to collect the cross-linguistic data typically do not list terms for individual toes, there are a few examples in the cross-linguistic data. The data that do occur in the cross-linguistic sample indicate that languages name individual toes with the same terms as individual fingers. An example of this type of polysemy appears in (4a) below. When polysemy does not occur, languages generally extend the names of individual fingers to

the corresponding toes and add a morpheme that marks the lower limb, such as ‘foot.’

This is demonstrated in (4b) below.

- |     |                                  |                    |
|-----|----------------------------------|--------------------|
| (4) | a. Guugu Yimdhirr (Pama-Nyungan) | Haviland (1974)    |
|     | <i>ngagin</i>                    |                    |
|     | ‘little finger, little toe’      |                    |
|     | b. Tlingit (Na-Dene)             | Comrie (2012)      |
|     | - <i>gooš</i>                    | - <i>xʷus-gooš</i> |
|     |                                  | foot thumb         |
|     | ‘thumb’                          | ‘big toe’          |

All occurrences of individual toe names in the cross-linguistic data show an extension from the upper to the lower limb. This is the same tendency demonstrated in the Indo-European historical data, and it indicates that languages extend the names of the fingers to the toes and not the other way around.

Although they occur most frequently in the data, finger > toe extensions are not the only terms for body parts that languages extend from the upper to the lower limbs. Languages in at least three different geographic areas also extend terms for the wrist and elbow to the lower limbs. In the case of elbow > knee extensions, all forms in the cross-linguistic data are polysemous. The remaining extensions from the upper to the lower limbs are mostly morphemic extensions, but there are a few cases of polysemy as well.

As shown in the Indo-European etymologies, the extension of a term for the lower limb to a part of the upper limb are extremely rare. This also holds in the cross-linguistic data. This extension occurs four times in the cross-linguistic data and each occurrence is shown in (5) below. These four occurrences are distributed across four language families in three geographic areas. In each occurrence, the lower limb term is extended to the

upper body and a morpheme is added. In examples (5b), (5c) and (5d), the upper limb term also includes a morpheme meaning ‘hand.’

- |     |   |  |
|-----|---|--|
| (5) | a. Tuscarora (Iroquoian)<br>uhsúʔkweh (-hsuʔku-)<br>‘toe’                     | Rudes (1974)<br>uhsúʔkweh wiyuh (-hsuʔku- -iyu-)<br>‘finger’ |
|     | b. Waurá (Arawakan)<br>-wana-tipulu<br>hand-heel<br>‘elbow’                   | Comrie (2012)  |
|     | c. Chalcatongo Mixtec (Oto-Manguean)<br>šĩřĩ ndáʔa<br>leg hand/arm<br>‘wrist’ | Brugman (1983)   |
|     | d. Hausa (Afro-Asiatic)<br>gwíiwàř hánnúu<br>knee-GEN hand<br>‘wrist’         | Awagana & Wolff (2009)                                       |

To summarize, the cross-linguistic data show that languages commonly use the metaphor PART FOR ANALOGOUS PART to extend terms from the upper limbs to name parts of the lower limbs. This tendency is consistent with the generalizations found in the Indo-European historical data discussed previously in chapter 5. This type of extension occurs in all five geographic areas, but it is less common in North American languages than elsewhere. It occurs most frequently in the languages of South America, Africa and Eurasia and meets the criteria for being widespread.

## 6.5 Minor extensions

The remaining terms in the cross-linguistic data that show metonymic and metaphoric extensions tend to name parts of the limbs by their size or location. As in the Indo-European data discussed in chapter 5, the majority of these minor metonymies are

found in the naming of the digits. In addition to size or location, languages also commonly extend terms from other body parts to the limbs. The extension of the term ‘neck’ is discussed above in section 6.3, but ‘neck’ is only one of many body parts that are extended to the naming of the upper and lower limbs. Other common extensions in naming the limbs include morphemes meaning ‘head,’ ‘nose,’ and ‘eye.’ These types of extensions are exemplified in (6) below. Likewise, body parts named for size and location are exemplified below in (7) and (8), respectively. Languages most commonly extend size to limb parts in naming the digits.

- |     |                          |                     |
|-----|--------------------------|---------------------|
| (6) | a. Cayapa (Barbacoan)    | Comrie (2012)       |
|     | ne-'mišu                 |                     |
|     | foot-head                |                     |
|     | ‘toe’                    |                     |
|     | b. Takia (Austronesian)  | Ross (2009)         |
|     | bani-n ŋdu-n             |                     |
|     | hand nose                |                     |
|     | ‘wrist’                  |                     |
|     | c. Kanuri (Nilo-Saharan) | Löhr & Wolff (2009) |
|     | <i>shîm shîbè</i>        |                     |
|     | eye foot                 |                     |
|     | ‘ankle’                  |                     |

The data indicate no definite patterns in which names for parts of the limbs derive from body parts associated with the head. The body parts that some languages name with the head are not consistent across languages. For example, Hungarian (Uralic) names the foot with the morphemic gloss [leg head] whereas in Haida (Na-Dene), the morphemic gloss [leg head] refers to the knee.

Next, the cross-linguistic data show that languages tend to use size to name the digits. This is also common in the Indo-European languages, as discussed previously in

chapter 5. The constructions in (7a) – (7c) exemplify how languages use size in the same way to name the digits.

- |     |   |  |
|-----|---|--|
| (7) | <p>a. Gourma (Niger-Congo)<br/> <i>bo-bi-li</i><br/>         arm/hand small<br/>         ‘finger’</p> <p>b. Savosavo (Central Solomon)<br/> <i>ngai ririkina</i><br/>         big digit<br/>         ‘thumb’</p> <p>c. Uyghur (Altaic)<br/> <i>chimchalaq barmaq</i><br/>         small.one finger<br/>         ‘little finger’</p> | <p>Swanson (1977)</p> <p>Wegener (2006)</p> <p>Yakup, P.C.</p> |
|-----|---|--|

The fingers often are named with a morpheme meaning ‘small,’ whereas the thumb and big toe are often named as the ‘big digit.’ Interestingly, morphemes meaning ‘large’ or ‘big’ are always applied to the thumb and not the middle finger, even though the middle finger is larger than the thumb in terms of length.

Morpheme extensions for location to parts of the upper and lower limbs also occur in the data, but less frequently than size morphemes. In contrast, languages use morphemes related to location for a wider variety of limb parts than morphemes related to size. A few examples are shown in (8) below.

- |     |   |   |
|-----|---|---|
| (8) | <p>a. Emai (Niger-Congo)<br/> <i>ukpemoe</i><br/>         section between nodes.leg<br/>         ‘ankle’</p> <p>b. Waiwai (Carib)<br/> <i>oy-amo-y-ereta-ri</i><br/>         1st-hand-close connection-middle-POSS<br/>         ‘my palm’</p> | <p>Schaefer &amp; Egbokhare (1991)</p> <p>Comrie (2012)</p> |
|-----|---|---|

- |                                       |                           |
|---------------------------------------|---------------------------|
| c. Coeur d'Alene (Salishan)           | Palmer & Nicodemus (1985) |
| <i>s-cin-čem-cán-šən</i>              |                           |
| the surface below the edge of the leg |                           |
| ‘ankle’                               |                           |
| d. Mbum (Niger-Congo)                 | Hino (1978)               |
| <i>sárándôk</i>                       |                           |
| end of + hand                         |                           |
| ‘little finger’                       |                           |

Examples (8a) - (8d) demonstrate the diversity of limb parts languages name with metonymic extensions involving location. Both parts of the upper and lower limbs are named with location metonymies and languages name a variety of limb parts with this type of extension, including but not limited to the ankle, crotch, calf, digits, palm, sole and armpit. Although there are not a large number of occurrences of this type of metonymy in the cross-linguistic data, the data demonstrate that this type of metonymic extension occurs across all five geographic areas and across language families.

In summary, the cross-linguistic data show other minor metonymies at work in the naming of limb parts. These include extending terms for size, location and non-limb body parts to the upper and lower limbs. These minor metonymies are most frequent in the naming of the digits, but languages also use them to name other limb parts.

## 6.6 Summary

This chapter has compared the metonymies demonstrated in the Indo-European historical data to those in the cross-linguistic data. All four of the major metonymies found in the Indo-European data also exist in the cross-linguistic data, but some metonymic extensions occur with more frequency in limb parts than others.

As in the Indo-European data, PART FOR WHOLE extensions are also very common in the cross-linguistic data and occur in at least one third of the languages included in the cross-linguistic study. These extensions occur most frequently in extending the term for foot to leg and the term for hand to arm. Other PART FOR WHOLE extensions demonstrated in the data include the extensions thigh > leg and forearm > arm. PART FOR WHOLE extensions occur across all five geographic areas and in a large number of language families. The data discussed in this chapter indicate that there is a strong cross-linguistic tendency to name limb parts with PART FOR WHOLE extensions.

Next, the cross-linguistic data show only 17 occurrences of PART FOR PROXIMATE PART extensions. Although the extensions do occur in each of the five geographic areas, the infrequency of occurrences does not indicate a strong cross-linguistic tendency to name parts of the upper and lower limbs with PART FOR PROXIMATE PART extensions. This type of extension is also the least frequent of the metonymies found in the Indo-European historical data.

Cross-linguistically, ACTION FOR PLACE extensions are most common in the naming of the joints and calf. ACTION FOR PLACE extensions are frequent in the Indo-European data, but the cross-linguistic data only show 11 clear cases of this type of extension. The limited number of ACTION FOR PLACE extensions may be due to a limited number of morphemic glosses in the cross-linguistic data. When considered with limb terms named with 'neck' or 'joint' in their morphemic glosses, it is clear that cross-linguistically, languages use similar patterns to name the parts of the limbs that turn or bend. Although there are only a small handful of clear examples of ACTION FOR PLACE



extensions in the cross-linguistic data, the occurrences are similar to the ACTION FOR PLACE extensions demonstrated in the Indo-European data.

Next, as in the Indo-European data, languages use the metaphor PART FOR ANALOGOUS PART to extend terms for upper limb parts to lower limb parts cross-linguistically. This type of extension also occurs in roughly one third of the cross-linguistic data and it is most frequent in the naming of the digits. Not only do languages extend the term for finger to toe, languages in each geographic area and across language families also use the same naming strategies to refer to individual fingers as individual toes. It is also common for languages to extend the terms for the wrist and the elbow to the lower limbs. As in Indo-European, it is very rare in the cross-linguistic data for languages to extend terms from lower limb parts to name upper limb parts.

Finally, the cross-linguistic data also show examples of other metonymies at work in limb part nomenclature. These remaining metonymies are most frequently found in names for the digits, and include extending terms for size, location and non-limb body parts to upper and lower limb parts. This is similar to the Indo-European data as well.

Now that it is clear how the cross-linguistic data compare to the Indo-European historical data, I move on to discuss the meaning of these findings. In the next chapter, I explain how the patterns found in both the Indo-European and cross-linguistic data contribute to my hypothesis that the pathways of change in the Indo-European languages demonstrate cross-linguistic tendencies.

## Chapter 7

### Discussion

This chapter explains how the patterns shown in the Indo-European historical data and the cross-linguistic data contribute to the general understanding of the cross-linguistic behavior of lexical metonymic extensions. Specifically, it contextualizes the results given in chapters 5 and 6 within the hypothesis and research questions introduced in chapters 1 and 2 of this dissertation.

This dissertation set out to conduct a cross-linguistic lexical study that would answer the research questions outlined in (1) below.

- (1) a. To what extent is the development of human limb terms cross-linguistic?
- b. How does metonymy play a role in limb nomenclature across languages?
- c. What is the cross-linguistic distribution of body-part metonymies?
- d. To what extent do metonymic extensions in limb terms support the claims that semantic change is regular and unidirectional?

These questions are based on the theoretical premises that metonymy is a cross-linguistic process and is exemplified in lexical units. Furthermore, lexical metonymic extensions are a type of semantic change; therefore, according to the theoretical claims made by Sweetser (1990) and Traugott & Dasher (2002), they are regular and unidirectional. In order to add to the theoretical discussion regarding semantic change by investigating the research questions posed in chapters 1 and 2 and repeated in (1) above, this dissertation tests the hypothesis repeated in (2) below.

- (2) The metonymic patterns for naming the upper and lower human limbs found in Indo-European historical data are widespread in the world's languages.

The remainder of this chapter is divided into 4 sections. Section 1 discusses the metonymic patterns shown in the Indo-European historical data and the cross-linguistic data in respect to the hypothesis and research questions outlined above. It also contains a list and discussion of cross-linguistic generalizations that can be drawn from the data samples. In section 2, I discuss how these findings contribute to the theoretical knowledge of lexical metonymy and lexical typology as explained in chapter 2. Next, section 3 is devoted to the limitations of this dissertation. This includes discussing how the selection of languages and terms used in this study might influence the findings discussed in this chapter. Finally, section 4 specifies other contributions this dissertation makes to our understanding of lexical typology.

### 7.1 Cross-linguistic generalizations

The data discussed in chapters 5 and 6 show that the metonymic extensions shown in the Indo-European historical data are not limited to the Indo-European family. More specifically, languages tend to use the same types of metonymies to name human limb parts.

The Indo-European historical data reveal strong tendencies to use the metonymic extensions PART FOR WHOLE and ACTION FOR PLACE in naming the limbs. The Indo-European data also show a strong tendency to extend terms for upper limb parts to the lower limbs. Next, the Indo-European data also show a tendency to use the metonymy PLACE FOR PROXIMATE PART in naming limb parts, but this specific metonymy occurs less frequently than the other metonymic extensions already mentioned. Last, the Indo-European data show a number of minor metonymies most frequently used in naming the

digits. These minor metonymies vary by language and branch within the Indo-European family, and tend to focus on characteristics such as size, shape and location.

The cross-linguistic data reveal similar results. The metonymic extension PART FOR WHOLE and the extension of upper limb part terms to the formation of lower limb part terms occur with high frequency across language families and geographic areas, showing that there is a strong cross-linguistic tendency to use both types of extensions in naming limb parts. The metonymy ACTION FOR PLACE occurs far less frequently in the cross-linguistic data than in the Indo-European historical data. Although there is a substantial difference in the occurrence of this particular metonymy in the two language samples, the Indo-European historical data includes data that more clearly show this type of metonymic extension, whereas missing morphemic glosses in the cross-linguistic data might influence the number of measurable occurrences of this metonymy. Nevertheless, there is a difference in the distribution of ACTION FOR PLACE between the two data samples. In contrast, the metonymy PLACE FOR PROXIMATE PLACE is rare in the cross-linguistic data, which corresponds to the low frequency of this type of metonymic extension displayed in the Indo-European historical data. Next, as in the Indo-European data, there are a number of other minor metonymies at work in the world's languages, showing that although metonymic extensions are a cross-linguistic process in limb nomenclature, they are not absolute. As in Indo-European, languages use the minor metonymies to name many different limb parts, but the greatest variety most frequently occurs in the naming of the digits.

The data findings show a cross-linguistic tendency to use metonymic extension to name human limb parts. Although the general patterns found in the Indo-European

historical data also occur in the cross-linguistic data, they do not support the hypothesis as currently stated in (3) below:

- (3) The types of metonymic patterns for naming the upper and lower human limbs found in Indo-European historical data are widespread in the world's languages.

The hypothesis is flawed in that it entails all of the metonymic patterns in human limb nomenclature are widespread cross-linguistically, but only three of the four major patterns of extension found in the Indo-European data meet the criteria of being widespread cross-linguistically. Likewise, PART FOR ANALOGOUS PART exemplifies a metaphor, not a metonymy, thus 'metonymic patterns' in the hypothesis excludes an explanation for this very frequent pattern. In addition to the major metonymies, the Indo-European historical data also reveal minor metonymies which are neither widespread in the Indo-European languages nor in the cross-linguistic data. Furthermore, there is a difference in the distribution of each specific metonymy accounted for in the Indo-European historical data and the cross-linguistic data. The largest difference occurs in the distribution of the metonymy ACTION FOR PLACE. Although the metonymy PLACE FOR PROXIMATE PLACE is less frequent in the Indo-European historical data than the other metonymies discussed, it is more common in the Indo-European data than in the cross-linguistic data. For these reasons, the data do not support the claim made in the hypothesis and it is necessary to modify the hypothesis. The modified hypothesis appears in (3) below.

- (3) The types of patterns of extensions for naming the upper and lower human limbs found in Indo-European languages also occur cross-linguistically across the world's languages.

This modified hypothesis supports the claim that metonymy is a cross-linguistic process and that limb terms demonstrate this cross-linguistic process. Furthermore, the modified hypothesis allows for differences in frequency and distribution of metonymic patterns cross-linguistically as well as cases of metaphor. In addition to this modified hypothesis, cross-linguistic generalizations supported by the data samples also contribute to the understanding of cross-linguistic metonymies and the nature of body part nomenclature. The data suggest three cross-linguistic generalizations, listed in (4) below. These generalizations include both unrestricted statistical statements 1, 2, and 2a and restricted statistical statements 2b and 3.

(4) Cross-linguistic generalizations

1. In most languages, metonymic extensions have named at least one limb part.
2. In most languages, terms for upper limb parts have been extended to terms for lower limb parts.
  - 2a. In most languages, the word meaning ‘toe’ developed from a term meaning ‘finger.’
  - 2b. With the exception of the thumb and the big toe, all languages name individual toes with the same pattern that appears in individual finger names.
3. In most languages, if PART FOR WHOLE metonymy occurs in the naming of the leg, it also occurs in the naming of the arm.

In general, the findings of this dissertation imply that metonymy is a cross-linguistic tendency which is actively involved in the naming of the human limbs. Metonymy varies in its distribution in limb terms across languages. There do not seem to be constraints which determine how a language might extend metonymies to specific limb parts. Instead, the data show that languages not only have the option to use metonymic extensions to name the limbs, but they systematically use the same

metonymic patterns in these extensions. Languages also commonly use the same metonymic extensions to refer to the same parts of the limbs.

## 7.2 Theoretical contributions and discussion

The results of this dissertation support the theoretical claims outlined in chapter 2. Namely, the results show a cross-linguistic tendency to use the same metonymies to name parts of the human limbs. The results reveal patterns that are due neither to language contact, as they occur across all five geographic areas, nor are they due to genetic relationships among languages, as the patterns occur across language families. This demonstrates a regular, systematic set of lexical tendencies that occurs across the world's languages.

As tendencies, these patterns of metonymic extension are non-absolute, but as Traugott & Dasher (2002) explain, they are prototypical and probable tendencies. This entails that as a cross-linguistic tendency, there is widespread frequency to use the same types of metonymic extensions across language families and geographic areas. This supports the claims made by Sweetser (1990) and Traugott & Dasher (2002) believed in this dissertation that when semantic change occurs, it is regular, predictable and can be demonstrated both throughout the history of a given language and cross-linguistically. Furthermore, the data collected for this dissertation support regularity and predictability in metonymic extension as an example of semantic change. This is especially seen in the frequency of both the metonymy PART FOR WHOLE and the metonymic extension of upper limb part terms to lower limb parts.

Additionally, the metonymic extensions explained in section 2 above are unidirectional changes. For example, the data show that languages extend terms associated with a part to a whole and not the other way around. Likewise, languages extend terms from the upper limbs to the lower limbs with far higher frequency than from the lower limbs to the upper limbs, but none of the data show terms which were extended from the upper to the lower limb and then extended back to the upper limb. Such an example would be if a language started referring to the fingers as *foot fingers of the hand*. The fact that no languages in the data do this supports the theoretical notion of unidirectionality. Both the Indo-European historical data and the cross-linguistic data samples collected for this dissertation support unidirectionality. The Indo-European historical data clearly show unidirectionality in how each term is extended over large periods of time in multiple branches of the Indo-European family. Likewise, the cross-linguistic data further support unidirectionality in compounded terms. For example, terms such as Uyghur *putbarmaq* [foot finger] ‘toe’ show that the term *barmaq* meaning ‘finger’ has been extended to the toe and not the other way around.

Next, the two data samples collected and analyzed in this dissertation show that both synchronic and diachronic data demonstrate regularity in metonymic extension. This is in agreement with the claims I made based on Sweetser (1990) and Traugott & Dasher’s (2002) work. The Indo-European historical data show that it is possible to identify patterns of semantic change within the etymologies of a group of related lexemes. Likewise, the cross-linguistic data show that the same types of patterns are observable at any single time in a group of languages’ history. Furthermore, these results show how etymological data from one or more language families can help identify and



explain cross-linguistic patterns. Without etymological data, it would be difficult to know the direction of change in the case of lexical polysemy. For example, the Indo-European historical data clearly show unidirectionality from PART TO WHOLE in the extension of terms such as those meaning nail, foot or bone to mean leg, and hand or palm to mean arm, whereas the current polysemy of hand ~ arm terms in both Slavic and Celtic languages do not show the direction of change.

Last, the results further exemplify that cross-linguistic tendencies extend to the lexicon of the world's languages and are not restricted to grammar. Within the field of lexical typology, the findings explained in chapters 5 and 6 extend the knowledge of regularity in lexical extensions in body part nomenclature. These findings expand the understanding of the cross-linguistic distribution of metonymy, showing that cross-linguistic patterns involving body part nomenclature are not limited to grammaticalization and metaphor.

### 7.3 Limitations

Next, it is important to recognize the limitations of this study and discuss how these limitations might influence the findings. In general, the limitations to this research fall into two categories; limitations inherent from each individual data source and limitations inherent to any cross-linguistic language sample. I begin this section highlighting the limitations inherent from each individual data source, and then discuss the limitations inherent to cross-linguistic language samples.

The data samples available in the appendices of this dissertation provide a comprehensive and accessible collection of limb terminology and extensions. Although

the data come from an areally- and genetically-balanced sample of languages, the lexemes, morphemic glosses and translations reproduced in the database provide only a small snapshot of how the world's languages refer to the upper and lower human limbs. The data do not include every term for each limb part used by speakers of each language within the sample. It is likely that speakers of each language included in the cross-linguistic sample use more lexemes to refer to the limbs than what is available in the database or in any single source for any given language. Within this context, the results of this dissertation are limited to the data available for each language at the time of attestation; the source(s) selected for each language, and are subject to any errors that exist in those sources.

Likewise, this dissertation relies heavily on etymological data from Indo-European languages. It would have been possible to use other language families or a small sample of language families to identify major patterns of metonymic extensions, but doing so would have included less reliable data in this study. As explained in chapter 4, linguists have occupied themselves with heavily documenting the etymologies of Indo-European languages for more than two centuries. Due to the time and number of philologists researching Indo-European historical data, our general knowledge of Indo-European is vast and less controversial than in other language families. Despite the reasons given in chapter 4 to use Indo-European historical data, these data also have limits.

First, there are patterns in the cross-linguistic data that are not prominent in the Indo-European historical data. For example, many languages name individual fingers based on kinship terms. In such systems, the thumb is called something like the hand-

father and the other fingers are the hand-children. Individually, the hand-children receive names such as first-hand-child, second-hand-child, and so forth. Because patterns such as the one just described does not appear in the Indo-European data, they are not included in the analysis of the data but do receive attention in the next section regarding suggestions for future research.

Next, in addition to any errors that could obscure my data, identifying morphemic glosses in limb terms for terms meaning ‘turn,’ ‘grasp’ or the like in cross-linguistic data is complicated. At best, limb terms can be analyzed for compositionality in hopes of identifying terms with morphemic structures such as [do x in means of turning bending] to mean a limb part such as ‘elbow.’ In some cases my data shows this information, but more often than not it was not available and it is possible that I have missed some cases of this type because I could not recognize that strategy or the original meaning from what was available. Another contributing factor to the complication of morpheme identification is the number of words meaning ‘bend’ or ‘grasp’ in a given language. For example, in English, ‘bend’ is semantically similar to ‘rotate,’ ‘writhe,’ ‘wend,’ ‘curve,’ ‘bow,’ ‘twist,’ ‘turn,’ ‘fold,’ ‘hinge,’ ‘wind,’ ‘coil’ and so forth. This information is not available in most sources of data and more often than not, the compilers of the data may not have been aware of these possibilities. Furthermore, semantic bleaching, erosion, frozen, or otherwise reanalyzed morphemes may exist in the data. Speakers may not be aware of them, such as the historical relationship between English ‘wrist’ and ‘writhe.’ This is especially difficult when unrecognizable morphemes become mono-morphemic, remaining as lexical components in words that have become etymologically opaque. Additionally, speakers also reanalyze unintelligible sequences creating folk etymologies.

These factors demonstrate that it would be impossible to vouch for all potential shortcomings in poorly documented non-Indo-European data.

Additionally, the patterns that do exist in the Indo-European historical data could also be due to a genetic influence and not exemplify cross-linguistic tendencies; however, the cross-linguistic data show that there are indeed cross-linguistic tendencies in metonymic extensions in limb nomenclature. When examined together, the Indo-European historical data and the cross-linguistic data show that both PART FOR WHOLE and extending upper limb part terms to lower limb parts occur with high frequency across languages and geographic areas. ACTION FOR PLACE is less frequent in the cross-linguistic data than in the Indo-European data, and it is possible that the high frequency of this specific metonymy in Indo-European is due to a genetic influence rather than a strong cross-linguistic tendency. Nevertheless, identifying the pattern in the Indo-European historical data also helped identify it in the cross-linguistic data. Even though there are limited occurrences of ACTION FOR PLACE extensions in the cross-linguistic data, they easily could have been overlooked had they not first been identified in the Indo-European data.

All cross-linguistic studies are limited by the impossibility of the task to find linguistic universals. For each cross-linguistic tendency supported by data, regardless of its nature as an absolute or non-absolute tendency, claims are limited to the data available. Compiling an areally- and genetically-balanced language sample inherently excludes some languages in order to include others. The data collection in this dissertation attempts to be as representative of the world's languages as possible, but is limited by time constraints and accessible resources. Likewise, as a sample of the world's

languages, it is inevitable that more languages have been left out of the sample than included. In some cases, compiling a balanced language sample resulted in a lack of morphemic glosses and information for some limb parts. For this reason, the results discussed in this chapter and elsewhere are limited to the data that was available at the time of data collection.

Additionally, many languages and language families have more than one name, and not all linguists agree on the genetic classification of languages. In order to stay consistent, I classified the data in this dissertation as it is given in the *Ethnologue* (Lewis 2009), as it is both the most comprehensive source of language classification and easily accessible. One advantage to using an areally- and genetically-balanced language sample is that it limits disputes of what counts as a language or dialect because it includes a proportionate number of languages from language families spoken in each geographic area. Despite this advantage, the data used in this dissertation could be subject to classification errors. Any errors, if they do exist, do not outweigh the current contributions the data provide to understanding limb nomenclature and metonymic extensions.

#### 7.4 Contributions to lexical typology

This section attempts to highlight some of the contributions the findings of this dissertation make to our understanding of lexical typology. There have been many cross-linguistic studies on pronouns, numerals, color terms, cooking terms, words for eating and drinking, and spatial terms, including Berlin and Kay (1969), Haspelmath, Dryer, Gil and Comrie (2005), Koptjevskaja-Tamm (2008) and van der Auwera (2012). This study

not only adds to our general understanding of linguistic typology but it also contributes a large amount of cross-linguistic lexical data that can be used for future lexical studies. By making the data from this dissertation available to others, it provides a valuable resource for future cross-linguistic lexical studies as it greatly reduces the time needed to build future databases. This contribution is substantial because such data was not readily available in previous cross-linguistic lexical studies related to body parts that used data with large language samples.

The findings of this dissertation contextualize many previous claims regarding cross-linguistic tendencies in body part nomenclature. By showing how lexical patterns exemplify metonymic extensions in limb part terms, the findings from this dissertation explain why others such as Buck (1949), Brown (2005a, 2005b), Brown and Witkowski (1985) and Wilkins (1981, 1996) have repeatedly found tendencies to extend the term meaning ‘hand’ to also mean ‘arm’ and ‘foot’ to also mean ‘leg.’ Without the theoretical framework adopted in this dissertation, however, the connection between such patterns is not clear. These extensions appear across languages because they are examples of cross-linguistic metonymies. By showing that metonymy is an active cross-linguistic process in naming human body parts, patterns such as extending ‘hand’ to also mean ‘arm’ are no longer unique but shown as an example of a wider process that characterizes human language.

Beyond contributing to the knowledge of cross-linguistic tendencies appearing in body part nomenclature, this dissertation helps explain why the same types of lexical pattern tokens occur across languages. People experience the world around them and make associations. Speakers extend terms to show these associations, which are reflected

in language. Although this can be culturally specific, the tendency to extend terms via their associations is cross-linguistic. As I hope to have shown, by its very nature metonymies show semantic change. Including metonymy in lexical typological studies not only contextualizes specific lexical patterns within a larger lexical process, it also provides a bridge between synchronic and diachronic data which otherwise might not be considered together.

## Chapter 8

### Conclusion

This dissertation aims to identify cross-linguistic tendencies of metonymic change in body part nomenclature. It specifically focuses on terms for the upper and lower human limbs. The data collected for this dissertation comprise two samples. The first sample consists of etymological data for human limb parts from the Indo-European language family. The second sample consists of lexical and morphological data for human limb part terms from 153 non-Indo-European languages from 66 language families balanced for both genetic and areal influence.

The remaining sections of this dissertation suggest implications for future research and summarize the findings.

#### 8.1 Implications for future research

The cross-linguistic database available in Appendix B provides a considerable amount of information which may aid future cross-linguistic lexical research. In general, the data is useful to anyone interested in cross-linguistic terms for body parts. It can also be useful to those researching lexical, grammatical, metonymic, and metaphoric extensions beyond what was described in this dissertation. In the remainder of this section, I focus on how the findings in this study might be expanded upon.

The current form of the cross-linguistic database suggests lexical patterns not discussed in this dissertation. As shown in the data available in Appendix B, there are many terms in the database that indicate metaphorical extensions. Some of the metaphorical patterns include extending plant, kinship, or animal part terms to human



limb parts. This information is potentially useful for cross-linguistic studies on the pathways of change involving metaphor. Additionally the relations between neck and wrist or ankle, and between the upper and lower limbs also leave a great amount of work to be done on the interactions between metaphor and metonymy. Within the realm of body part nomenclature, the cross-linguistic data indicate that there is more to be said of digit and joint nomenclature than addressed in the research questions of this dissertation.

Next, the findings indicate that expanding the current cross-linguistic database to include terms for more body parts, including the hip, shoulder, nail, palm, and parts of the feet from each language, if available, would provide further examples of the types of cross-linguistic metonymies shown in the data. The findings also indicate that it would be fruitful to collect terms for ‘head,’ ‘neck,’ and ‘bone’ to further examine the distribution of the metonymies observed in this dissertation. Terms for limb parts often include morphemes meaning ‘neck’ or ‘head,’ but it is not clear from the data if this is due to only metonymy or metaphor, or a combination of the two. Adding terms for ‘head,’ ‘neck,’ and ‘bone’ to the data could provide more insight into this. Likewise, other languages could be added to the database to further contribute to the insight gained from this dissertation.

The findings of this dissertation should also be cross-referenced with etymological data from other language families. Wilkins’ (1981, 1996) findings imply that similar metonymic extensions to those discussed in this dissertation are observable in Sino-Tibetan, Bantu and Dravidian languages. It would also be worthwhile to analyze etymological data from other language families to identify other patterns of metonymic extensions and then continue to search the cross-linguistic database for such patterns.

In addition to adding to the database for this study, there is also a need to find reasons for the cross-linguistic metonymic patterns in this study. For example, there are differences in the frequencies of each metonymy, languages prefer to extend terms from the upper limbs to the lower limbs but not the other way around, and languages differentiate individual fingers more than individual toes. Although this dissertation has described and laid out data for these patterns, it has not given reasons why these particular frequency reasons occur. Therefore another implication for future research exists for explaining these frequency patterns. Likewise, along with frequency, these patterns could also be analyzed in terms of complexity. Both syntagmatic complexity and paradigmatic complexity would be good starting points for exploring and explaining these patterns. Both frequency and complexity patterns could be analyzed independently or combined as a correlational tendency. Specifically, frequency and complexity likely play important roles in why languages use both metonymy and metaphor to extend terms from the upper limbs to the lower limbs.

## 8.2 Summary

The main findings of this dissertation support current claims to semantic change and metonymic extension. The data collected and analyzed in this study result in an adjusted hypothesis, repeated in (1) below.

- (1) The patterns of extension for naming the upper and lower human limbs found in Indo-European languages also occur cross-linguistically across the world's languages.

The data also support three cross-linguistic generalizations, repeated in (2) below.

Generalizations 1, 2 and 2b are unrestricted statistical statements and 2b and 3 are restricted statistical statements.

- (2)
1. In most languages, metonymic extensions have named at least one limb part.
  2. In most languages, terms for upper limb parts have been extended to terms for lower limb parts.
    - 2a. In most languages, the word meaning ‘toe’ developed from a term meaning ‘finger.’
    - 2b. With the exception of the thumb and the big toe, all languages name individual toes with the same pattern that appears in individual finger names.
  3. In most languages, if PART FOR WHOLE metonymy occurs in the naming of the leg, it also occurs in the naming of the arm.

More generally, the data suggest that examining large sources of etymological data for related lexical items within a single language family can lead to the identification of cross-linguistic lexical tendencies. Furthermore, the data support the claims made by Sweetser (1990) and Traugott & Dasher (2002) adopted in this dissertation that semantic change is regular, predictable and unidirectional.

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## Appendix A. List of languages by geographic area and language family

<i>Geographic Area</i>	<i>Language Family</i>	<i>Language</i>	<i>Source</i>	<i>Notation</i>
ANG	Australian	Anindilyakwa	ART	
ANG	Australian	Bagandji	DICT	PM
ANG	Australian	Gurindji	WOLD	
ANG	Australian	Kuuk Thayoore	LS	
ANG	Australian	Njébbana	ART	
ANG	Australian	Nyulnyul	ART	
ANG	Border	Amanab	DICT	PM
ANG	Central Solomons	Lavukaleve	LS	
ANG	Central Solomons	Savosavo	LS	
ANG	isolate of West Papuan Phylum	Maybrat	DICT	PM
ANG	North Bougainville	Rotokas	DICT	OR
ANG	Pama- Nyungan	Guugu Yimidhirr	ART	
ANG	Papuan	Kuman	DICT	OR
ANG	Sepik	Abau	DICT	PM
ANG	Torricelli	Gnau	ART	
ANG	Trans-New Guinea	Abui	DICT	
ANG	Trans-New Guinea	Baruya	DICT	PM
ANG	Trans-New Guinea	Binandere	DICT	
ANG	Trans-New Guinea	Bunak	ART	
ANG	Trans-New Guinea	Fore	DICT	
ANG	Trans-New Guinea	Girawa	DICT	
ANG	Trans-New Guinea	Hua	DICT	OR
ANG	Trans-New Guinea	Kewa	DICT	
ANG	Trans-New Guinea	Kosena	DICT	

<b>ANG</b>	Trans-New Guinea	Kyaka Enga	DICT	OR
<b>ANG</b>	Trans-New Guinea	Makalero	DICT	PM
<b>ANG</b>	Trans-New Guinea	Mian	DICT	
<b>ANG</b>	Trans-New Guinea	Oksapmin	DICT	
<b>ANG</b>	Trans-New Guinea	Orokolo	DICT	OR
<b>ANG</b>	West Papuan	Tidore	WOLD	
<b>ANG</b>	Yele-West New Britain	Yélf Dnye	LS	
<b>Afr</b>	Afro-Asiatic	Arabic	INF	PM
<b>Afr</b>	Afro-Asiatic	Gawwada	WOLD	
<b>Afr</b>	Afro-Asiatic	Hausa	WOLD	
<b>Afr</b>	Afro-Asiatic	Iraqw	WOLD	
<b>Afr</b>	Afro-Asiatic	Oromo	DICT	"Phonolical"/ Latin orthography
<b>Afr</b>	Afro-Asiatic	Somali	DICT	OR
<b>Afr</b>	Afro-Asiatic	Tarifiyt Berber	WOLD	
<b>Afr</b>	Khoisan	San (G/wi, G//ana)	DICT	PM
<b>Afr</b>	Niger-Congo	Aushi	DICT	
<b>Afr</b>	Niger-Congo	Buli	DICT	
<b>Afr</b>	Niger-Congo	Efik	DICT	
<b>Afr</b>	Niger-Congo	Emai	ART	
<b>Afr</b>	Niger-Congo	Gourma	Book	
<b>Afr</b>	Niger-Congo	Icibemba	DICT	
<b>Afr</b>	Niger-Congo	Limba	DICT	
<b>Afr</b>	Niger-Congo	Mbum	DICT	
<b>Afr</b>	Niger-Congo	Nkore-Kiga	DICT	
<b>Afr</b>	Niger-Congo	Pangwa	DICT	PM
<b>Afr</b>	Niger-Congo	Pulaar	DICT	
<b>Afr</b>	Niger-Congo	Shona	DICT	
<b>Afr</b>	Niger-Congo	Swahili	WOLD	
<b>Afr</b>	Niger-Congo	Tonga	DICT	
<b>Afr</b>	Niger-Congo	Yao	DICT	
<b>Afr</b>	Niger-Congo	Yoruba	DICT	
<b>Afr</b>	Niger-Congo	Zulu	DICT	
<b>Afr</b>	Nilo-Saharan	Ghulfan	IDS	PM

<b>Afr</b>	Nilo-Saharan	Kanuri	WOLD	
<b>Afr</b>	Nilo-Saharan	Luo	DICT	OR
<b>Afr</b>	Nilo-Saharan	Nubian	DICT	OR
<b>Afr</b>	Nilo-Saharan	Shilluk	DICT	OR
<b>Eura</b>	Altaic	Orogen	WOLD	
<b>Eura</b>	Altaic	Uyghur	INF	PM
<b>Eura</b>	Altaic (turkic)	Sakha	WOLD	
<b>Eura</b>	Andamanese	Great Andamanese	ART	PM
<b>Eura</b>	Austro-Asiatic	Ceq Wong	WOLD	
<b>Eura</b>	Austro-Asiatic	Jahai	LS	
<b>Eura</b>	Austro-Asiatic	Vietnamese	WOLD	
<b>Eura</b>	Austronesian	Cheke Holo	DICT	OR
<b>Eura</b>	Austronesian	Dobu	ART	
<b>Eura</b>	Austronesian	Indonesian	WOLD	
<b>Eura</b>	Austronesian	Loniu	DICT	PM
<b>Eura</b>	Austronesian	Malagasy	WOLD	
<b>Eura</b>	Austronesian	Samoan	DICT	
<b>Eura</b>	Austronesian	Takia	WOLD	
<b>Eura</b>	Dravidian	Malayalam	DICT	PM
<b>Eura</b>	Hmong-Mien	White Hmong	WOLD	
<b>Eura</b>	Isolate	Yasin-Burushaski	DICT	
<b>Eura</b>	Japanese	Japanese	INF	PM
<b>Eura</b>	Korean	Korean	INF	
<b>Eura</b>	North Caucasian	Archi	WOLD	
<b>Eura</b>	North Caucasian	Bezhta	WOLD	
<b>Eura</b>	Sino-Tibetan	Chantyal	DICT	PM
<b>Eura</b>	Sino-Tibetan	Chinese	INF	
<b>Eura</b>	Sino-Tibetan	Manange	WOLD	
<b>Eura</b>	Tai-Kadai	Lao	LS	
<b>Eura</b>	Tai-Kadai	Thai	INF	
<b>Eura</b>	Uralic	Finnish	DICT	

<b>Eura</b>	Uralic	Hungarian	INF	OR
<b>Eura</b>	Uralic	Kildin Saami	WOLD	
<b>Eura</b>	Yeniseian	Ket	WOLD	
<b>NAm</b>	Algic	Blackfoot	DICT	
<b>NAm</b>	Algic	Delaware	ART	
<b>NAm</b>	Algic	Innu	ART	
<b>NAm</b>	Algic	Ojibwe	DICT	
<b>NAm</b>	Eskimo-Aleut	Yup'ik	DICT	OR
<b>NAm</b>	Hokan	Karok	IDS	PM
<b>NAm</b>	Iroquoian	Cayuga	DICT	OR
<b>NAm</b>	Iroquoian	Mohawk	DICT	OR
<b>NAm</b>	Iroquoian	Tuscarora	DICT	PM
<b>NAm</b>	Isolate	Seri	IDS	PM
<b>NAm</b>	Isolate	Zuni	IDS	PM
<b>NAm</b>	Mayan	Q'eqchi'	WOLD	
<b>NAm</b>	Mayan	Zinacantan	WOLD	
<b>NAm</b>	Muskogean	Chickasaw	DICT	OR
<b>NAm</b>	Muskogean	Koasati	DICT	OR (Kimball 1991)
<b>NAm</b>	Na-Dene	Haida	IDS	PM
<b>NAm</b>	Na-Dene	Navajo	DICT	
<b>NAm</b>	Na-Dene	Tlingit	IDS	PM
<b>NAm</b>	Oto-Manguean	Chalcatongo Mixtec	DICT	PM
<b>NAm</b>	Oto-Manguean	Chatino Zacatepec	IDS	PM
<b>NAm</b>	Oto-Manguean	Otomi	WOLD	
<b>NAm</b>	Penutian	Tsimshian	IDS	PM
<b>NAm</b>	Salishan	Coeur d'Alene	ART	
<b>NAm</b>	Salishan	Salish	DICT	PM
<b>NAm</b>	Siouan	Biloxi	DICT	
<b>NAm</b>	Totonac	Misantla Totonac	DICT	
<b>NAm</b>	Uto-Aztecan	Comanche	DICT	OR
<b>NAm</b>	Uto-Aztecan	Hopi	ART	
<b>NAm</b>	Uto-Aztecan	Nahuatl	IDS	PM
<b>NAm</b>	Uto-Aztecan	Southern Paiute	DICT	PM
<b>NAm</b>	Uto-Aztecan	Yaqui	WOLD	
<b>NAm</b>	Yuki	Yuki	DICT	PN, PM (mixed)

				orthography in source)
<b>SAm</b>	Alacalufan	Qawasqar	IDS	PM
<b>SAm</b>	Araucanian	Mapudungun	WOLD	
<b>SAm</b>	Arawakan	Goajiro/ Wayuu	IDS	PM
<b>SAm</b>	Arawakan	Wapishana	IDS	PM
<b>SAm</b>	Arawakan	Waurá	IDS	PM
<b>SAm</b>	Aymaran	Aymara	IDS	
<b>SAm</b>	Barbacoan	Cayapa	IDS	PM
<b>SAm</b>	Carib	Kali'na	WOLD	
<b>SAm</b>	Carib	Tiriyó	LS	
<b>SAm</b>	Carib	Waiwai	IDS	PM
<b>SAm</b>	Chibchan	Muisca	IDS	PM
<b>SAm</b>	Choco	Embera	IDS	PM
<b>SAm</b>	Chon	Selknam	IDS	PM
<b>SAm</b>	Isolate	Cayuvava	IDS	PM
<b>SAm</b>	Jivaroan	Aguaruna	IDS	PM
<b>SAm</b>	Macro-Ge	Kaingáng	IDS	PM
<b>SAm</b>	Maku	Hup	WOLD	
<b>SAm</b>	Mascoian	Lengua	IDS	PM
<b>SAm</b>	Mataco- Guaicuru	Wichi	WOLD	
<b>SAm</b>	Panoan	Shipibo- Conibo	IDS	PM
<b>SAm</b>	Peba- Yaguan	Yagua	IDS	PM
<b>SAm</b>	Quechuan	Quechua	ART	
<b>SAm</b>	Tacanan	Araona	IDS	PM
<b>SAm</b>	Tacanan	Ese Ejja	IDS	PM
<b>SAm</b>	Tucanoan	Tuyaca	IDS	PM
<b>SAm</b>	Tupi	Guarani	IDS	
<b>SAm</b>	Tupi	Mundurukú	IDS	PM
<b>SAm</b>	Uru-Chipaya	Chipaya	IDS	PM
<b>SAm</b>	Yanomam	Yanomámi	IDS	PM
<b>SAm</b>	Zamucoan	Ayoreo	IDS	PM

Appendix B. List of lexemes, morphemic glosses<sup>1</sup>, translations and comments by language

<i>Semantic Field</i>	<i>Language Name</i>	<i>Lexeme</i>	<i>Morphemic Gloss</i>	<i>Translation</i>
<b>ankle</b>	Aguaruna	wanus		'ankle'
<b>ankle</b>	Anandilyakwa	amwirgina	[small.joint]	'ankle'
<b>ankle</b>	Anandilyakwa	angwirnta		'ankle'
<b>ankle</b>	Arabic	kaḥil		'ankle'
<b>ankle</b>	Araona	tomihaha		'ankle'
<b>ankle</b>	Archi	c'am		'ankle'
<b>ankle</b>	Aymara	kayu muḳu		'ankle'
<b>ankle</b>	Ayoreo	'giidogoro		'ankle'
<b>ankle</b>	Bagandji	gīlī		'ankle'
<b>ankle</b>	Bayura	naba'janga		'ankle'
<b>ankle</b>	Bezhta	q'ātālō		'ankle'
<b>ankle</b>	Biloxi	sponi		'ankle'
<b>ankle</b>	Biloxi	sponi ahudi		'ankle bone'
<b>ankle</b>	Binandere	tai akuma		'ankle bone'
<b>ankle</b>	Cayuga	ketsia:ohó'kw'ake h		'ankle'
<b>ankle</b>	Ceq Wong	kten can	[meaning unkown 'foot']	'ankle'
<b>ankle</b>	Chalcatongo Mixtec	siʔi xaʔa	[leg foot]	'ankle'
<b>ankle</b>	Chalcatongo Mixtec	kisi		'ankle, pot, kettle'
<b>ankle</b>	Chantyal	goli aṅla	[bullet joint]	'ankle'
<b>ankle</b>	Chatino, Zacatepec	sluʔ kiyaʔ-		'ankle'
<b>ankle</b>	Cheke Holo	biobiño gahe		'ankle'
<b>ankle</b>	Cheke Holo	phupuku khuma		'ankle'
<b>ankle</b>	Chickasaw	iyyimosak		'ankle'
<b>ankle</b>	Chinese	jiao3wan4zi	[foot-wrist/joint- NOMINAL.SUFFIX ]	'ankle'
<b>ankle</b>	Coeur d'Alene	s-cin-čem-cán-šan	[the surface below the edge of the leg]	'ankle'
<b>ankle</b>	Comanche	miihtsi		'ankle'
<b>ankle</b>	Delaware	enda siak <sup>w</sup> sita	[where my foot splits]	'ankle'
<b>ankle</b>	Efik	Itön~ubök		'ankle'

<sup>1</sup> Morphemic glosses appear as given in the source text. See the original sources for clarification of gloss abbreviations.

ankle	Emai	ukpemoe	[sectionbetween nodes.leg]	'ankle'
ankle	Embera	hě'rũ-koro'go	[foot-snail]	'ankle'
ankle	Ese Ejja	e-kibo		'ankle'
ankle	Ese Ejja	e-xioxi-kokaxi		'ankle'
ankle	Finnish	nilkka		'ankle'
ankle	Fore	narégané		'my ankle'
ankle	Gawwada	qurcumcimitte		'ankle'
ankle	Ghulfan	kot nuanu		'ankle'
ankle	Ghulfan	kwe nuani	[mother foot]	'ankle'
ankle	Ghulfan	kot nénŋ		'ankle'
ankle	Ghulfan	kwe nɪnɲán	[little foot]	'ankle'
ankle	Girawa	rukuruk		'ankle'
ankle	Girawa	isi äruk		'ankle'
ankle	Gourma	ta-tugi-li	[leg/foot-joint]	'ankle'
ankle	Gourma	kpa-gin-li	[bump-?]	'ankle'
ankle	Great Andamanese	tʰoroŋo	[1sg=CL7.POSS=an kle]	'my ankle'
ankle	Guarani	pi-ɲuã		'ankle'
ankle	Gurindiji	tari		'ankle'
ankle	Guugu Yimidhirr	nugal		'ankle'
ankle	Guugu Yimidhirr	dhunggan		'ankle bone'
ankle	Haida	st'aḵ'áŋii		'ankle'
ankle	Hausa	díddígèe		'ankle, heel'
ankle	Hopi	sisiyiqöyi		'ankle'
ankle	Hopi	kükfüpha		'ankle'
ankle	Hopi	küktöpaq		'ankle'
ankle	Hungarian	boka		'ankle'
ankle	Hup	j'ib kākā'w	[foot ankle.area]	'ankle'
ankle	Hup	kabāç	[ankle bump]	'ankle'
ankle	Icibemba	ín kólókosó		'ankle'
ankle	Icibemba	úlu kónkoníkaakuulu	[elbow.?)	'ankle'
ankle	Indonesian	mata kaki		'ankle'
ankle	Iraqw	kundóo ya'ee	[wrist:of leg]	'ankle'
ankle	Jahai	kmkə~m		'ankle'
ankle	Japanese	ashikubi	[leg-neck]	'ankle'
ankle	Japanese	kurubushi		'ankle'
ankle	Kaingáng	pěŋ nən		'ankle'
ankle	Kali'na	pupu sikilili	[foot little end]	'ankle'
ankle	Kanuri	shîm shîbè	[eye foot-of]	'ankle'



ankle	Karok	násak		'ankle'
ankle	Ket	kĩ's		'ankle'
ankle	Kewa	aa galo		'ankle'
ankle	Kewa	aa kebo		'ankle'
ankle	Kildin Saami	kuemmer'		'ankle'
ankle	Koasati	iyyitolokkó		'ankle, ankle bone'
ankle	Korean	bal mokx	[foot neck]	'ankle'
ankle	Kosena	a-isaum-ba		'his ankle'
ankle	Kuman	kati-goke		'ankle'
ankle	Kuuk Thayore	thamr-rathr	[foot-RATHR]	'ankle'
ankle	Luala Enga	kimbu lenge	[foot eye]	'ankle'
ankle	Lao	tum1 mo`o`ng4		'ankle'
ankle	Lavukaleve	kakamu		'inside ankle bone'
ankle	Lavukaleve	komolu		'outside ankle bone'
ankle	Lengua	ik-yitetakla - minik		'ankle'
ankle	Loniu	kolučukaka		'ankle joint'
ankle	Luo	ombong'		'ankle, hoof'
ankle	Malagasy	kitro kèly	[hoof small]	'ankle'
ankle	Manange	3pale koto	[leg/foot-ankle]	'ankle'
ankle	Mapundungun	pallipalli		'ankle'
ankle	Mbum	kórókvòk		'ankle'
ankle	Mbum	kòrkàvòk		'ankle bone'
ankle	Mian	mokök		'ankle'
ankle	Mohawk	-hsinekoʔt-		'ankle'
ankle	Muisca	iomquyn		'ankle'
ankle	Nahuatl	i-mec-keč-saliwiyān	[neck of the leg/foot]	'ankle'
ankle	Navajo	akétsíín		'ankle'
ankle	Navajo	kétsíín		'ankle'
ankle	Nkore-Kige	akakongoi jo		'ankle'
ankle	Nubian	kuged		'ankle'
ankle	Nyulnyul	milg		'ankle'
ankle	Nyulnyul	ninggaal		'ankle'
ankle	Ojibwe	bikwaakoganaan		'my ankle'
ankle	Orokolo	loa ove		'ankle'
ankle	Oroqen	ayu:kan		'ankle'
ankle	Otomi	bots'undo'yo wa	[bone foot]	'ankle'
ankle	Pangwa	ixisexesexe		'ankle'
ankle	Pulaar	fedeendukoyngal		'ankle'
ankle	Qawasqar	k <sup>h</sup> at-k <sup>h</sup> ar		'ankle'

<b>ankle</b>	Qawasqar	akolapa		'ankle, wrist'
<b>ankle</b>	Q'eqchi'	kux oq	[joint leg]	'ankle'
<b>ankle</b>	Q'eqchi'	xmap oq	[x-map oq [3ERG-palm foot]]	'ankle'
<b>ankle</b>	Quechua	čaki muqu	[knee-to-toe hill]	'ankle'
<b>ankle</b>	Rotokas	arioisi		'ankle'
<b>ankle</b>	Sakha	berbe:key		'ankle'
<b>ankle</b>	Salish	sp'əsq'wšád		'ankle'
<b>ankle</b>	Samoan	tapuvae		'ankle'
<b>ankle</b>	San (G/wi, G//ana)	guru		'ankle'
<b>ankle</b>	San (G/wi, G//ana)	g!uru		'ankle'
<b>ankle</b>	Selknam	hal-yeʔn k-p'ax	[foot-joint]	'ankle'
<b>ankle</b>	Seri	-yak <sup>w</sup> x		'ankle'
<b>ankle</b>	Shilluk	otweŋo		'ankle bone'
<b>ankle</b>	Shipibo-Conibo	taɪ patōko		'ankle'
<b>ankle</b>	Shona	ziso regumbo		'ankle'
<b>ankle</b>	Somali	canqow		'ankle'
<b>ankle</b>	Southern Paiute	-wi'ahta-		'ankle'
<b>ankle</b>	Southern Paiute	taŋ <sup>w</sup> i'ahta-		'ankle'
<b>ankle</b>	Swahili	kifundo cha mguu		'ankle'
<b>ankle</b>	Swahili	fundo la mguu	[joint of foot]	'ankle'
<b>ankle</b>	Swahili	kiwiko cha mguu	[wrist of foot]	'ankle'
<b>ankle</b>	Tarifiyt Berber	taššəft		'ankle'
<b>ankle</b>	Thai	khôtháaw	[joint-foot]	'ankle'
<b>ankle</b>	Tidore	doga-doga		'ankle'
<b>ankle</b>	Tidore	yohu ma-doga	[leg/foot INAL-NOM.break]	'ankle'
<b>ankle</b>	Tidore	yohu ma-ngoco	[leg/foot INAL-NOM-ankle]	'ankle'
<b>ankle</b>	Tiriyó	manini		'ankle'
<b>ankle</b>	Tlingit	-šutóox <sup>?</sup>		'ankle'
<b>ankle</b>	Tonga	ingo		'a joint, ankle'
<b>ankle</b>	Tsimshian	hamhom		'ankle'
<b>ankle</b>	Tsimshian	xo'aʔasi		'ankle'
<b>ankle</b>	Tuscarora	učahskwireg		'ankle'
<b>ankle</b>	Tuscarora	ukwèreh(- čahskwir-) (- kwer-)		'ankle'
<b>ankle</b>	Tuyaca	ã'yã-kobea		'ankle'
<b>ankle</b>	Uyghur	oŋuq		'ankle bone, ankle'
<b>ankle</b>	Vietnamese	cổ chân	[neck leg]	'ankle'

<b>ankle</b>	Waiwai	o-hrak-nu	[1st-ankle/heel-poss]	'my ankle, heel'
<b>ankle</b>	Wapishana	-ʔbaruriʔi		'ankle'
<b>ankle</b>	Waurá	-tʰalãa-tapa	[ankle-foot.shaped]	'ankle'
<b>ankle</b>	White Hmong	dab-taws	[neck-foot]	'ankle'
<b>ankle</b>	White Hmong	yas taw	[joint-foot]	'ankle'
<b>ankle</b>	Wichi	tokasup'a		'ankle'
<b>ankle</b>	Yagua	numutu (hu)wiči		'ankle'
<b>ankle</b>	Yagua	numutu riwyasi		'ankle'
<b>ankle</b>	Yanomámi	pei wayamopi		'ankle'
<b>ankle</b>	Yao	malleolus		'ankle'
<b>ankle</b>	Yao	cisukusuku		'ankle'
<b>ankle</b>	Yaqui	tero'okim		'ankle'
<b>ankle</b>	Yasin-Burushaski	búmbalten		'ankle'
<b>ankle</b>	Yélf Dnye	yi nd:oo de	[foot/leg cowry dual]	'ankle'
<b>ankle</b>	Yoruba	ko'ko'e.se'		'ankle'
<b>ankle</b>	Yuki	tó-kum		'ankle'
<b>ankle</b>	Yup'ik	cingilleq		'ankle'
<b>ankle</b>	Yup'ik	qamangaq		'ankle bone'
<b>ankle</b>	Zinacantan	nuk' 7okol	[neck foot]	'ankle'
<b>ankle</b>	Zulu	iqakala		'ankle'
<b>ankle</b>	Zuni	moʔleyakkʷi-		'ankle'
<b>arm</b>	Abau	irowp		'arm'
<b>arm</b>	Abui	na-táng	[my arm/hand]	'arm/hand'
<b>arm</b>	Aguaruna	kuntu		'arm'
<b>arm</b>	Amanab	rikag		'forearm'
<b>arm</b>	Amanab	nehembug		'upper arm'
<b>arm</b>	Amanab	ohumbug		'side of shoulder'
<b>arm</b>	Anandilyakwa	ayarmwirra		'upper arm'
<b>arm</b>	Anandilyakwa	ayarrka		'lower arm'
<b>arm</b>	Arabic	ḏiraʕ		'arm'
<b>arm</b>	Araona	ebai		'arm'
<b>arm</b>	Archi	χol		'arm'
<b>arm</b>	Aushi	ukuvoka (ama-)		'arm'
<b>arm</b>	Aymara	ampara		'arm'
<b>arm</b>	Ayoreo	ma'nero		'arm'
<b>arm</b>	Ayoreo	ma'nero		'arm'
<b>arm</b>	Ayoreo	ma'nekaai		'forearm'
<b>arm</b>	Bagandji	mangu		'lower arm'
<b>arm</b>	Bagandji	duḏi		'upper arm'
<b>arm</b>	Bagandji	waṅgara		'arm near

				shoulder'
arm	Bagandji	wanji		'upper arm'
arm	Bagandji	wanji		'wing'
arm	Bayura	ata		'arm'
arm	Bezhta	bico		'arm'
arm	Biloxi	asaḥj		'arm'
arm	Binandere	ingo		'arm'
arm	Binandere	ipo		'arm'
arm	Binandere	ipa tutu		'upper arm'
arm	Blackfoot	mo'tsis		'arm/hand'
arm	Buli	nisiri		'arm'
arm	Bunak	kabas		'arm'
arm	Cayapa	tʷaapa		'arm/hand'
arm	Cayapa	'pehpe		'arm'
arm	Cayuga	khneṭshá'keh		'arm'
arm	Cayuvava	jaβe ~ jaβ-		'arm'
arm	Chalcatongo Mixtec	ndaʔa		'arm, hand, leaf'
arm	Chalcatongo Mixtec	ndaʔa žūnũ	[hand/arm stick/tree/wood]	'tree branch'
arm	Chalcatongo Mixtec	ndaʔa žóʔo	[hand/arm root/bent/twisted/ rope/cord]	'dry corn plant, fodder, hay'
arm	Chantyal	pakhura		'upper arm, biceps'
arm	Chantyal	pwāja		'forearm'
arm	Chantyal	ya		'whole arm plus hand'
arm	Chantyal	dayne ya		'right arm'
arm	Chantyal	dewre ya		'left arm'
arm	Chantyal	thyaw ya	[ʔ arm]	'generosity'
arm	Chatino, Zacatepec	skū-		'arm'
arm	Cheke Holo	khame		'arm'
arm	Chickasaw	ilbak		'arm'
arm	Chickasaw	ilbak api'		'forearm'
arm	Chinese	ge l bei		'arm'
arm	Chinese	ge l bo		'arm'
arm	Chipaya	kɣar wič'u		'arm'
arm	Coeur d'Alene	s-čeg <sup>w</sup> -ixən	[the arm extension]	'arm'
arm	Coeur d'Alene	s-cin-č'em-ixən	[the surface under the arm]	'armpit, below the shoulder'
arm	Coeur d'Alene	-ixən		'arm, wing'
arm	Coeur d'Alene	s-t-čih-ičt		'right

				arm/hand'
<b>arm</b>	Comanche	ahna		'side of chest, underarm, armpit'
<b>arm</b>	Comanche	pũra		'arm'
<b>arm</b>	Delaware	təlamʌŋʌn		'shoulder, upper arm'
<b>arm</b>	Delaware	naxk		'forearm, hand'
<b>arm</b>	Dobu	nimabila		'forearm'
<b>arm</b>	Efik	ubök		'arm'
<b>arm</b>	Emai	óbo		'arm'
<b>arm</b>	Emai	ábo		'arm'
<b>arm</b>	Emai	orobo	[tree.arm]	'forearm'
<b>arm</b>	Embera	hiu'a		'arm'
<b>arm</b>	Ese Ejja	e-(y)aa		'arm, branch'
<b>arm</b>	Finnish	käsivarsi		'arm'
<b>arm</b>	Fore	narané		'my arm/hand'
<b>arm</b>	Fore	nayané		'my arm/hand'
<b>arm</b>	Fore	naya 'pasáne		'my upper arm'
<b>arm</b>	Fore	ayané		'arm, front wheel'
<b>arm</b>	Fore	arané		'arm, front wheel'
<b>arm</b>	Gawwada	hargō		'arm'
<b>arm</b>	Ghulfan	ónṭu		'arm'
<b>arm</b>	Ghulfan	onṭé		'arm'
<b>arm</b>	Girawa	ipi		'arm'
<b>arm</b>	Girawa	apnokou		'forearm, lower leg'
<b>arm</b>	Gnau	bigep		'arm'
<b>arm</b>	Gnau	wulwa'at		'arm, front wheel'
<b>arm</b>	Gnau	wulwa'at		'animal and human forelimb'
<b>arm</b>	Goajiro/ Wayuu	ta-tina		'arm, wing, branch and span'
<b>arm</b>	Gourma	no		'arm/hand'
<b>arm</b>	Gourma	nu		'arm/hand'
<b>arm</b>	Gourma	boagu		'shoulder, upper arm'
<b>arm</b>	Gourma	biagu		'shoulder, upper arm'

<b>arm</b>	Gourma	nu-bia-gu		'upper arm, lower arm minus hand and shoulder'
<b>arm</b>	Gourma	nu-kpa-lo	[arm/hand-stake]	'top arm muscle, biceps'
<b>arm</b>	Gourma	nu-kpa-puo-li	[arm/hand-stake-drive]	'large forearm muscle'
<b>arm</b>	Great Andamanese	t <sup>h</sup> erbala	[1sg=CL2.POSS=arms]	'my arms'
<b>arm</b>	Great Andamanese	t <sup>h</sup> erk <sup>h</sup> it	[1sg=CL2.POSS=biceps]	'my biceps'
<b>arm</b>	Great Andamanese	t <sup>h</sup> ertɔŋ	[1sg=CL2.POSS=brach]	'my forearm'
<b>arm</b>	Great Andamanese	ɛr- ~ er-	[CL2.POSS]	'pertains to the head, face, arms and bones'
<b>arm</b>	Great Andamanese	uŋ- ~ oŋ-	[CL3.POSS]	'pertaining to the hand or arm'
<b>arm</b>	Guarani	ĩva		'arm'
<b>arm</b>	Gurindji	wartarn		'arm'
<b>arm</b>	Guugu Yimidhirr	ngaaguul		'arm'
<b>arm</b>	Guugu Yimidhirr	marda		'forearm'
<b>arm</b>	Haida	xyáay		'arm'
<b>arm</b>	Haida	xyáay k <sup>h</sup> áw		'biceps'
<b>arm</b>	Haida	sol-goost		'right arm'
<b>arm</b>	Haida	slan-goost		'left arm'
<b>arm</b>	Haida	hie-kwul		'arm above elbow'
<b>arm</b>	Haida	hea-kow		'arm below elbow'
<b>arm</b>	Hausa	hánnúu		'arm'
<b>arm</b>	Hopi	má:ʔa		'arm'
<b>arm</b>	Hua	()za'		'arm'
<b>arm</b>	Hungarian	kar		'arm'
<b>arm</b>	Hup	muműy		'arm'
<b>arm</b>	Icibemba	úku bókó		'arm'
<b>arm</b>	Icibemba	bombwe		'biceps'
<b>arm</b>	Indonesian	lengan		'arm'

arm	Innu	ushpitun		'arm'
arm	Iraqw	dawa		'arm'
arm	Jahai	bliŋ		'upper arm'
arm	Jahai	prber		'lower arm'
arm	Japanese	ude		'arm'
arm	Kaingáng	nĩŋnɔ		'arm'
arm	Kaingáng	pě		'arm'
arm	Kali'na	-apoli		'arm'
arm	Kanuri	múskò		'arm'
arm	Karok	ʔátrāx		'arm'
arm	Ket	uuul		'arm'
arm	Kewa	ki		'arm'
arm	Kildin Saami	kīdt		'arm'
arm	Koasati	isakbá		'arm'
arm	Korean	pal		'arm'
arm	Korean	pal mok	[arm neck]	'forearm'
arm	Kosena	a-yanava-ma		'his forearm'
arm	Kosena	a-yaam-ba		'his arm'
arm	Kosena	a-yanamaq-a		'his arm muscle'
arm	Kuman	a-yaambaq-a		'his lower forearm'
arm	Kuuk Thayore	punth		'arm'
arm	Luala Enga	kingi		'arm, hand, finger'
arm	Luala Enga	sukuli		'upper arm'
arm	Luala Enga	parapu		'forearm'
arm	Luala Enga	sukuli minju		'biceps muscle'
arm	Luala Enga	kingi kimbupe	[arms and legs]	'body'
arm	Luala Enga	kingi yongope	[arms and body]	'body'
arm	Lao	khe`e`n3		'arm'
arm	Lavukaleve	tau		'limb'
arm	Lengua	-ektoŋ		'arm, branch'
arm	Limba	kuḃeki ko		'arm'
arm	Limba	kuḃegi		'arm'
arm	Loniu	nime		'arm/hand'
arm	Luo	bat		'arm, branch'
arm	Luo	bede		'arm, branch'
arm	Luo	bade		'arm, branch'
arm	Makalero	fah		'arm'
arm	Makalero	tana		'arm'
arm	Makalero	tana-torok		'lower arm'
arm	Malagasy	sàndry		'arm'

arm	Malayalam	kai		'hand/arm'
arm	Manange	l ja		'arm'
arm	Mapundungun	lipang		'arm'
arm	Maybrat	-atem		'arm'
arm	Mbum	ndôk		'upper arm'
arm	Mbum	mààndôk		'upper arm'
arm	Mian	baan		'arm'
arm	Mian	ban		'forearm'
arm	Misantla Totonac	paq-ni		'arm'
arm	Mohawk	-nvtsh		'arm'
arm	Muisca	pquaca		'arm'
arm	Mundurukú	i-ba		'arm'
arm	Nahuatl	i-ahkol		'arm'
arm	Nahuatl	i-ma-y		'arm'
arm	Nahuatl	i-maka-yo		'arm'
arm	Navajo	agaan		'arm'
arm	Njébbana	wánba		'arm'
arm	Njébbana	marnakkúrrkka		'lower arm'
arm	Njébbana	marnakkúrrkka 'arm (lower), wing'		'wing'
arm	Nkore-Kige	omukono		'arm, forearm'
arm	Nubian	keffa		'arm'
arm	Nyulnyul	-marl		'arm, hand, upper arm'
arm	Ojibwe	ninik		'my arm'
arm	Oksapmin	tuwət		'upper arm'
arm	Oksapmin	bes		'lower arm'
arm	Orokolo	mai parae		'forearm'
arm	Orokolo	mai		'arm, hand, foreleg (of animals), sleeve, handle shaft'
arm	Oromo	(h)arka		'arm/hand'
arm	Orogen	ŋa:la		'arm'
arm	Otomi	ye		'arm'
arm	Pangwa	ilivoxo- amavoxo		'arm'
arm	Pulaar	jungo		'arm, hand, forearm'
arm	Qawasqar	terwa-ḵʰar		'arm'
arm	Q'eqchi'	tel		'arm'
arm	Quechua	maki		'arm'



arm	Quechua	lañum		'upper arm'
arm	Rotokas	taviraoto		'arm'
arm	Sakha	ili:		'arm'
arm	Salish	ləq'láxəd		'upper arm'
arm	Samoan	ogalima		'arm'
arm	Samoan	lima		'arm'
arm	San (G/wi, G//ana)	ᵀoa		'arm, handle, shaft'
arm	San (G/wi, G//ana)	gᵀoma		'forearm'
arm	San (G/wi, G//ana)	ᵀansha		'upper arm'
arm	Savosavo	kakau		'arm'
arm	Selknam	şel		'arm'
arm	Selknam	ahwr		'upper part of arm'
arm	Selknam	mar		'lower part of arm'
arm	Seri	-ša'ʔōχ <sup>w</sup>		'upper arm'
arm	Seri	-ak <sup>ws</sup>		'arm, hand, finger'
arm	Seri	-yæpχ		'arm'
arm	Seri	-slīk		'left arm'
arm	Shilluk	bat		'arm'
arm	Shipibo-Conibo	po-yā		'arm'
arm	Shona	ruoko		'arm'
arm	Shona	taga		'arm's length as measurement'
arm	Shona	honokono		'forearm'
arm	Shona	mukono		'forearm'
arm	Shona	chisasa		'biceps'
arm	Shona	tondondo		'biceps'
arm	Somali	gacan		'arm'
arm	Southern Paiute	aṇapu pita		'arm'
arm	Southern Paiute	-ca'hkui-		'forearm'
arm	Swahili	mkono		'arm'
arm	Takia	to-		'arm'
arm	Tarifiyt Berber	yīř		'arm'
arm	Tarifiyt Berber	fus		'arm'
arm	Thai	khǎen		'arm'
arm	Thai	phaahǎa		'arm'
arm	Tidore	gia		'arm'
arm	Tiriyó	apë		'lower arm,

				arm'
arm	Tlingit	-ǰigei		'arm'
arm	Tlingit	-čgei		'forearm'
arm	Tlingit	-xeek		'upper arm'
arm	Tonga	ku-boko		'an arm'
arm	Tsimshian	hač'aʔan'on		'arm'
arm	Tsimshian	t'mgay		'arm'
arm	Tuscarora	uněčheh (-nečh-)		'arm'
arm	Tuscarora	unuhskwíʔθreh		'bicep'
arm	Tuyaca	wā'bō		'arm'
arm	Uyghur	bilek		'arm'
arm	Vietnamese	tay		'arm'
arm	Waiwai	Ø-aΦo-ri	[3rd-arm-poss]	'arm, wing'
arm	Wapishana	-anu'ba		'arm'
arm	Waurá	-wana		'arm, branch'
arm	White Hmong	caj-npab		'arm'
arm	White Hmong	tes		'arm'
arm	Wichi	totkwey	tot-kwe-y [POSS.INDF- hand/arm-PL]	'arm'
arm	Yagua	hase		'lower arm'
arm	Yagua	n(u)čã		'upper arm'
arm	Yanomámi	pei poko		'arm, branch'
arm	Yao	mkono		'arm'
arm	Yaqui	mamam		'arm'
arm	Yasin-Burushaski	-sák		'arm'
arm	Yasin-Burushaski	gírkis		'bicep, upper arm, mouse, rat'
arm	Yélfí Dnye	ke^e^		'arm'
arm	Yélfí Dnye	ˈn:uu kn:a^a^	[wing base]	'upper arm and shoulder'
arm	Yoruba	apá		'arm'
arm	Yuki	šul ɥas	[body arm]	'upper arm'
arm	Yup'ik	talliḡ		'arm'
arm	Yup'ik	tunermig		'under arm'
arm	Yup'ik	nukaruaq		'upper arm bone'
arm	Yup'ik	cekpik		'biceps'
arm	Yup'ik	cikpik		'biceps'
arm	Yup'ik	kayanguruaq		'biceps'
arm	Zinacantan	k'obol		'arm'
arm	Zulu	umkhono		'arm, forearm'

<b>arm</b>	Zulu	ingalo		'arm'
<b>arm</b>	Zuni	ʔasi-		'arm'
<b>elbow</b>	Abui	na-tang he-ya	[3II.AL-mother	'elbow'
<b>elbow</b>	Aguaruna	čig'kun		'elbow'
<b>elbow</b>	Amanab	arigeg		'elbow'
<b>elbow</b>	Anandilyakwa	arnta		'elbow'
<b>elbow</b>	Arabic	ḥaʒib		'elbow'
<b>elbow</b>	Araona	baco		'elbow'
<b>elbow</b>	Aymara	muxlʼi		'elbow'
<b>elbow</b>	Ayoreo	uka'do		'elbow'
<b>elbow</b>	Bagandji	gubu		'elbow'
<b>elbow</b>	Bayura	a'dahaala		'elbow'
<b>elbow</b>	Bezhta	hāyo		'elbow'
<b>elbow</b>	Biloxi	įstodi		'elbow'
<b>elbow</b>	Binandere	umbugo		'elbow'
<b>elbow</b>	Blackfoot	mohkinsstis		'elbow'
<b>elbow</b>	Buli	ninkung		'elbow'
<b>elbow</b>	Cayapa	'tʼaka'šušu		'elbow'
<b>elbow</b>	Cayuga	khyuhsá'keh		'elbow'
<b>elbow</b>	Cayuvava	daroto		'elbow'
<b>elbow</b>	Cayuvava	rotæ		'elbow'
<b>elbow</b>	Cayuvava	'awōse		'elbow, 'knee, or a joint that bends'
<b>elbow</b>	Ceq Wong	knñŋ		'elbow'
<b>elbow</b>	Chalcatongo Mixtec	(súú) xitì ndaʔa	[body ? hand/arm]	'elbow'
<b>elbow</b>	Chantyal	kwina		'elbow'
<b>elbow</b>	Chantyal	kwina-ye fiar		'elbow bone'
<b>elbow</b>	Chatino, Zacatepec	skuʔ		'elbow'
<b>elbow</b>	Chatino, Zacatepec	skuʔ yaʔ-		'elbow'
<b>elbow</b>	Cheke Holo	phupuku khamé		'elbow'
<b>elbow</b>	Cheke Holo	ḡloḡlomno khamé		'elbow joint'
<b>elbow</b>	Chickasaw	ilbak inkofi'		'elbow'
<b>elbow</b>	Chinese	ge1bo zhou3r	[arm - shoulder blade/arm - elbow - NOMINAL.SUFF]	'elbow'
<b>elbow</b>	Chinese	zhou3		'elbow'
<b>elbow</b>	Chipaya	kʰuxɕ		'elbow'
<b>elbow</b>	Comanche	kiipu		'elbow'
<b>elbow</b>	Delaware	wiskon		'elbow'
<b>elbow</b>	Dobu	nimatutu		'elbow'

<b>elbow</b>	Efik	ëkun~i		'elbow'
<b>elbow</b>	Efik	öquön~ö		'elbow'
<b>elbow</b>	Efik	nuk		'elbow'
<b>elbow</b>	Emai	uguobo	[nominalizing prefix.bend.hand]	'elbow'
<b>elbow</b>	Embera	äbika'ka		'elbow'
<b>elbow</b>	Ese Ejja	e-äšo		'elbow'
<b>elbow</b>	Finnish	kyynärpää		'elbow'
<b>elbow</b>	Fore	naya nkáone		'my wrist, elbow, knuckle, carpus'
<b>elbow</b>	Fore	narínkaone		'my wrist, elbow, knuckle, carpus'
<b>elbow</b>	Fore	náinkaone		'my wrist, elbow, knuckle, carpus'
<b>elbow</b>	Fore	nayaru óne		'my wrist, elbow, knuckle, carpus'
<b>elbow</b>	Ghulfan	kíp		'elbow'
<b>elbow</b>	Ghulfan	kíbé		'elbow'
<b>elbow</b>	Girawa	aikor		'my elbow'
<b>elbow</b>	Girawa	aikou		'my elbow'
<b>elbow</b>	Gnau	patewise		'elbow'
<b>elbow</b>	Goajiro/ Wayuu	ta-sata'á		'elbow'
<b>elbow</b>	Gourma	nu-kpan-dun-li	[arm/hand-spear-?]	'elbow'
<b>elbow</b>	Gourma	nu-luaŋ-gu	[arm/hand depression]	'elbow depression'
<b>elbow</b>	Guarani	ĩiva-ᵐga		'elbow'
<b>elbow</b>	Guarani	t-epivaᵐga		'elbow'
<b>elbow</b>	Gurindiji	nungkuru		'elbow'
<b>elbow</b>	Gurindiji	jukuputu		'elbow'
<b>elbow</b>	Gurindiji	pulkuputu		'elbow'
<b>elbow</b>	Gurindiji	juutu		'elbow'
<b>elbow</b>	Haida	xikʷusíi		'elbow'
<b>elbow</b>	Hausa	gwíiwàĩ hánnúu	[knee-GEN hand]	'elbow'
<b>elbow</b>	Hopi	čövi		'elbow'
<b>elbow</b>	Hua	()za' kupa'a		'elbow, wrist,

				knuckle'
elbow	Hua	()za' nupa		'crook of elbow'
elbow	Hungarian	könyök		'elbow'
elbow	Hup	buyj'óg		'elbow'
elbow	Icibemba	ulu kónkoní		'point of elbow'
elbow	Indonesian	siku		'elbow'
elbow	Innu	utushkun		'elbow'
elbow	Iraqw	gongooxi		'elbow'
elbow	Jahai	kayo~ŋ		'elbow'
elbow	Japanese	hiji		'elbow'
elbow	Kaingáng	pě̃n kanun		'elbow'
elbow	Kali'na	apoli enali	[arm-POSS fold]	'elbow'
elbow	Kanuri	njùró-mí njùró-mí	[ elbow-son-of]	'elbow'
elbow	Karok	ʔišβirik		'elbow'
elbow	Ket	ulgit ul-git	[arm-bend?]	'elbow'
elbow	Kewa	kinalu		'elbow'
elbow	Kewa	kinyalu		'elbow'
elbow	Kildin Saami	kar'nel'		'elbow'
elbow	Koasati	cokosakbá		'elbow'
elbow	Koasati	icoksakbá		'elbow'
elbow	Korean	pal kum chi		'elbow'
elbow	Kosena	a-yan um-ba		'his elbow'
elbow	Kuman	ogi-goko		'elbow'
elbow	Kuuk Thayore	punt		'elbow'
elbow	Luala Enga	kingi kikunaiya		'elbow'
elbow	Luala Enga	kikunaia		'elbow, bend'
elbow	Lao	khe`e`n3 so`o`ok5	[elbow arm]	'elbow'
elbow	Lao	so`o`k5		'elbow'
elbow	Lavukaleve	runai		'elbow'
elbow	Limba	kuyulu ko		'elbow'
elbow	Loniu	kolučunime		'elbow'
elbow	Luo	okumbo		'elbow'
elbow	Makalero	tana-pu'i		'elbow'
elbow	Makalero	tana-ti'u		'elbow'
elbow	Malagasy	kìho		'elbow'
elbow	Mapundungun	choñoy		'elbow'
elbow	Maybrat	-atem kotof		'elbow'
elbow	Mbum	kòkòr ndòk		'elbow'
elbow	Mbum	kòr ndòk		'elbow'
elbow	Mian	het dafab	[elbow summit]	'elbow'
elbow	Misantla	min-paq-çan		'your elbow'

	Totonac			
<b>elbow</b>	Muisca	chispqua		'elbow'
<b>elbow</b>	Nahuatl	i-molik		'elbow'
<b>elbow</b>	Njébbana	bárnka		'elbow'
<b>elbow</b>	Nkore-Kige	enkokora		'elbow'
<b>elbow</b>	Nubian	eddin kurti		'elbow'
<b>elbow</b>	Nyulnyul	-yalangkun		'elbow'
<b>elbow</b>	Nyulnyul	ngurrngk		'elbow joint, kneecap'
<b>elbow</b>	Ojibwe	nindooskwan		'my elbow'
<b>elbow</b>	Oksapmin	amun		'elbow'
<b>elbow</b>	Orokolo	mai ari		'elbow'
<b>elbow</b>	Orogen	itʃen (1)		'elbow'
<b>elbow</b>	Otomi	yuni (1)		'elbow'
<b>elbow</b>	Pangwa	ixisuxulunu		'elbow'
<b>elbow</b>	Qawasqar	apaay		'elbow'
<b>elbow</b>	Q'eqchi'	ch'uukum		'elbow'
<b>elbow</b>	Quechua	kukuču	[bent over.like something]	'elbow'
<b>elbow</b>	Rotokas	apekuto		'elbow'
<b>elbow</b>	Sakha	toŋoloχ		'elbow'
<b>elbow</b>	Sakha	toŋonoχ		'elbow'
<b>elbow</b>	Salish	stəbəlāxəd		'elbow'
<b>elbow</b>	Salish	qʷəxʷəlāxəd		'elbow'
<b>elbow</b>	Samoan	tulilima		'elbow'
<b>elbow</b>	San (G/wi, G//ana)	!kobi		'elbow'
<b>elbow</b>	Savosavo	bulikaku		'elbow'
<b>elbow</b>	Selknam	t'eyštr		'elbow'
<b>elbow</b>	Seri	-akʷs i'mašxix	[arm 3.POS.-NOMZR.-shocking]	'elbow'
<b>elbow</b>	Shilluk	tyel		'elbow'
<b>elbow</b>	Shipibo-Conibo	pōtōko		'elbow'
<b>elbow</b>	Shona	gokora		'elbow'
<b>elbow</b>	Shona	gonokono		'elbow'
<b>elbow</b>	Shona	-gwinya		'elbow, be strong/ energetic'
<b>elbow</b>	Somali	suxul		'elbow'
<b>elbow</b>	Southern Paiute	kiihpı		'elbow joint'
<b>elbow</b>	Swahili	kiko		'elbow'
<b>elbow</b>	Swahili	kisugudi		'elbow'
<b>elbow</b>	Takia	skru-		'elbow'
<b>elbow</b>	Tarifit Berber	ṭaymā'ṭ (n) uyīr	[corner of arm]	'elbow'

<b>elbow</b>	Thai	sòk		'elbow'
<b>elbow</b>	Tidore	buku-buku		'elbow'
<b>elbow</b>	Tiriyó	apeː ritiːkɪ		'elbow'
<b>elbow</b>	Tlingit	-tʰeey		'elbow'
<b>elbow</b>	Tlingit	-tʰeey šú		'elbow'
<b>elbow</b>	Tonga	kakokola		'elbow'
<b>elbow</b>	Tsimshian	maʔon		'elbow'
<b>elbow</b>	Tsimshian	sganis		'elbow, chamber pot, bed pan'
<b>elbow</b>	Tuscarora	min-paq-čan		'your elbow'
<b>elbow</b>	Tuyaca	wã'bõ-kobea		'elbow'
<b>elbow</b>	Uyghur	dzejnek		'elbow'
<b>elbow</b>	Vietnamese	khuyũ tay	[elbow arm]	'elbow'
<b>elbow</b>	Waiwai	oy-aΦoresi-ri	[1st-elbow-poss]	'my elbow'
<b>elbow</b>	Wapishana	-pʰutʰuri		'elbow'
<b>elbow</b>	Waurá	-wana-tipulu	[hand-heel]	'elbow'
<b>elbow</b>	White Hmong	yas npab	[joint-arm]	'elbow'
<b>elbow</b>	Wichi	tokatu		'elbow'
<b>elbow</b>	Yagua	disi		'elbow'
<b>elbow</b>	Yagua	hase riwyasi		'elbow'
<b>elbow</b>	Yanomámi	pei ešānāmopi		'elbow'
<b>elbow</b>	Yao	cisukusuku		'elbow'
<b>elbow</b>	Yao	cisijino		'elbow'
<b>elbow</b>	Yao	sinjno		'elbow'
<b>elbow</b>	Yaqui	techom		'elbow'
<b>elbow</b>	Yasin-Burushaski	-sésen		'elbow'
<b>elbow</b>	Yélf Dnye	keːeː doːpoː	[arm cover]	'elbow'
<b>elbow</b>	Yuki	mičalam~mičalo m		'elbow'
<b>elbow</b>	Yup'ik	ikusek		'elbow'
<b>elbow</b>	Yup'ik	cingun		'elbow'
<b>elbow</b>	Zinacantan	shuk'omil		'elbow'
<b>elbow</b>	Zulu	indololwane		'elbow'
<b>elbow</b>	Zuni	mokči-		'elbow'
<b>finger</b>	Abau	yorney		'finger'
<b>finger</b>	Abui	paka, natang paka	[fruit of my hand]	'finger'
<b>finger</b>	Aguaruna	caham 'uwi-g		'finger'
<b>finger</b>	Anandilyakwa	amwirgina	[small.joint]	'finger'
<b>finger</b>	Arabic	usʰbuʃ		'finger'
<b>finger</b>	Araona	me-aca		'finger'
<b>finger</b>	Archi	gon		'finger'

<b>finger</b>	Aushi	umunwe (imi-)		'finger'
<b>finger</b>	Aymara	luk'ana		'finger'
<b>finger</b>	Ayoreo	ma'ne		'finger'
<b>finger</b>	Bagandji	marā		'hand, fingers'
<b>finger</b>	Bayura	asai		'finger'
<b>finger</b>	Bayura	a'jawinya		'finger'
<b>finger</b>	Bayura	a'gininna		'finger bones'
<b>finger</b>	Bayura	parihannya		'finger of dead'
<b>finger</b>	Bezhta	zoł'o		'finger, toe'
<b>finger</b>	Biloxi	cakowusi		'finger'
<b>finger</b>	Biloxi	cakahudi		'space between knuckles'
<b>finger</b>	Binandere	singu		'finger'
<b>finger</b>	Blackfoot	mookitsis		'finger'
<b>finger</b>	Buli	nandub		'finger, toe'
<b>finger</b>	Bunak	dōn		'finger'
<b>finger</b>	Cayapa	t'a-'mišu	[hand-head]	'finger'
<b>finger</b>	Cayuga	ketsi'ohtá'keh		'finger'
<b>finger</b>	Cayuvava	ki-ru		'finger'
<b>finger</b>	Ceq Wong	wɔŋ cas	[offspring hand]	'finger'
<b>finger</b>	Chalcatongo Mixtec	šini ndáʔa	[head hand/arm]	'finger'
<b>finger</b>	Chantyal	əŋŋula		'digit'
<b>finger</b>	Chatino, Zacatepec	lo yaʔ-		'finger'
<b>finger</b>	Chatino, Zacatepec	šjī-		'finger'
<b>finger</b>	Cheke Holo	pəkɛʔɛnime		'finger'
<b>finger</b>	Cheke Holo	pəkɛʔi		'finger'
<b>finger</b>	Chickasaw	ilbak-oshi'		'finger'
<b>finger</b>	Chinese	shou3zhi3	[hand-finger]	'finger'
<b>finger</b>	Chipaya	lok'ana		'finger'
<b>finger</b>	Comanche	masuwuhkiʔ		'fingers (including the thumb)'
<b>finger</b>	Delaware	enda siakʷəlenj	[where my hand splits]	'finger'
<b>finger</b>	Dobu	nimamatagigi		'finger'
<b>finger</b>	Efik	nuenubök		'finger'
<b>finger</b>	Ese Ejja	e-me-sisi		'finger'
<b>finger</b>	Finnish	sormi		'finger'
<b>finger</b>	Fore	naya nkamawé		'my fingers'
<b>finger</b>	Fore	nayabáwé		'my fingers, my toes'



<b>finger</b>	Gawwada	ǵuʃakko		'finger, toe, claw'
<b>finger</b>	Ghulfan	ɔʃi nuánu / ɔʃi nuan	[little hand]	'finger'
<b>finger</b>	Girawa	ipou auk		refers to 'middle and ring fingers together as a unit'
<b>finger</b>	Gnau	biget		'human finger'
<b>finger</b>	Gnau	galbien		'digit (of hand or foot)'
<b>finger</b>	Goajiro/Wayuu	ta-hapi-řa		'finger'
<b>finger</b>	Gourma	nu-bi-li		'finger'
<b>finger</b>	Gourma	na-bi-li		'finger'
<b>finger</b>	Gourma	bo-bi-li	[arm/hand small]	'finger'
<b>finger</b>	Great Andamanese	tʰuŋka:ra	[1sg=CL3.POSS=nails]	'my nails'
<b>finger</b>	Great Andamanese	tʰuŋkenap	[1sg=CL3.POSS=finger]	'my finger'
<b>finger</b>	Guarani	kuã		'finger'
<b>finger</b>	Gurindiji	wartarn nanta	[hand offspring]	'finger'
<b>finger</b>	Guugu Yimidhirr	guluurr		'thumb, fingers'
<b>finger</b>	Haida	stlakʷáŋii		'finger'
<b>finger</b>	Hausa	yátsàa		'finger'
<b>finger</b>	Hopi	maláci		'finger'
<b>finger</b>	Hungarian	ujj		'finger'
<b>finger</b>	Hup	cöb		'finger'
<b>finger</b>	Icibemba	umu nwe		'finger'
<b>finger</b>	Indonesian	jari		'finger'
<b>finger</b>	Iraqw	diitsa		'finger'
<b>finger</b>	Jahai	kayi~ʔ		'finger'
<b>finger</b>	Jahai	jariʔ		'finger'
<b>finger</b>	Japanese	yubi		'finger'
<b>finger</b>	Kaingáng	nĩŋɛ Φɛy		'finger'
<b>finger</b>	Kali'na	aina sikilili	[hand little end-POSS]	'finger'
<b>finger</b>	Kanuri	ngùlòndó		'finger'
<b>finger</b>	Karok	tík		'finger'
<b>finger</b>	Ket	təʔq		'finger,' toe, digit'
<b>finger</b>	Kewa	rikini		'finger'

<b>finger</b>	Kewa	rikili		'finger'
<b>finger</b>	Kildin Saami	ciehp		'finger'
<b>finger</b>	Koasati	ilbocó:si		'finger'
<b>finger</b>	Korean	son ka rak	[hand strand/strings]	'finger'
<b>finger</b>	Kosena	a-yanana-ma		'his fingers'
<b>finger</b>	Kuman	ogu-mogo		'finger'
<b>finger</b>	Kuuk Thayore	yuur-wuurr	[hand-digit]	'finger'
<b>finger</b>	Luala Enga	kingi		'finger'
<b>finger</b>	Lao	khe`e`n3		'finger'
<b>finger</b>	Lavukaleve	soka		'digit'
<b>finger</b>	Lengua	-aphehik		'finger, toe, claw'
<b>finger</b>	Limba	kutinkeli ko		'finger'
<b>finger</b>	Loniu	pøke		'finger'
<b>finger</b>	Luo	lithlwedo		'finger'
<b>finger</b>	Makalero	tana-raka	[arm-digit]	'finger'
<b>finger</b>	Malagasy	rantsantàna	[branch + hand]	'finger'
<b>finger</b>	Mapundungun	changüll		'finger'
<b>finger</b>	Maybrat	-atem krem	[hand-finger]	'finger'
<b>finger</b>	Maybrat	krem		'finger'
<b>finger</b>	Mbum	gûnndôk	[child+hand]	'finger, digit'
<b>finger</b>	Manange	1ja 3ti	[hand-finger]	'finger'
<b>finger</b>	Misantla Totonac	kin-maka=slał	[1Pos-finger]	'my finger'
<b>finger</b>	Mohawk	-snuhs-		'finger'
<b>finger</b>	Muisca	ytyquyn		'finger'
<b>finger</b>	Mundurukú	i-bi		'finger'
<b>finger</b>	Nahuatl	i-ma-h-pil		'finger'
<b>finger</b>	Navajo	álázhozh		'finger'
<b>finger</b>	Navajo	áládinibiní		'finger'
<b>finger</b>	Navajo	ála		'finger'
<b>finger</b>	Njébbana	kúdja		'hand, finger, foot, toe, tracks, base (of a tree)'
<b>finger</b>	Nkore-Kige	orukumu		'finger'
<b>finger</b>	Nubian	sarbē		'finger'
<b>finger</b>	Nyulnyul	-marrangk		'finger'
<b>finger</b>	Ojibwe	ninininjiins		'my finger'
<b>finger</b>	Oksapmin	ŋgiβəl		`finger, digit, toe'
<b>finger</b>	Orokolo	mai lekoka		'finger'
<b>finger</b>	Oromo	k'uba		'finger'
<b>finger</b>	Oromo	k'ubicoo		'finger, toe'

<b>finger</b>	Oroqen	upaka:n		'finger'
<b>finger</b>	Oroqen	ʃarbakta		`finger, toe, claw`
<b>finger</b>	Otomi	nsa'ñe		'finger'
<b>finger</b>	Pangwa	ixixonji		'finger'
<b>finger</b>	Pulaar	fedeendu		'finger'
<b>finger</b>	Pulaar	sappordu		'forefinger'
<b>finger</b>	Qawasqar	arksen		'finger'
<b>finger</b>	Q'eqchi'	ru'uj uq' r-u'uj uq'	[3ERG-point/nose hand]	'finger'
<b>finger</b>	Quechua	ruiru		'finger'
<b>finger</b>	Rotokas	sipareo		'finger'
<b>finger</b>	Rotokas	piiro		'finger'
<b>finger</b>	Rotokas	sipareokoara		`fingers'
<b>finger</b>	Sakha	tarbaχ		'finger'
<b>finger</b>	Salish	sdeχalqsači?		'finger'
<b>finger</b>	Samoa	tama'ilima		'finger'
<b>finger</b>	San (G/wi, G//ana)	tseulowa	[hand baby]	'finger'
<b>finger</b>	San (G/wi, G//ana)	!koe		'finger joint'
<b>finger</b>	Savosavo	rikina		'finger'
<b>finger</b>	Selknam	tèr		'finger'
<b>finger</b>	Seri	-anoł		'finger'
<b>finger</b>	Shilluk	lwedo		'finger'
<b>finger</b>	Shipibo-Conibo	mi-toti		'finger'
<b>finger</b>	Shipibo-Conibo	mi-βi		'finger'
<b>finger</b>	Shona	mumwe		'finger, toe'
<b>finger</b>	Shona	munwe		'finger, toe'
<b>finger</b>	Shona	chigun'we		'finger, thumb'
<b>finger</b>	Somali	far		'finger'
<b>finger</b>	Southern Paiute	-šru-		'finger, toe'
<b>finger</b>	Southern Paiute	šɪŋ <sup>w</sup> i- 'te		'count of fingers'
<b>finger</b>	Swahili	kidole (cha mkono)	[finger of hand]	'finger'
<b>finger</b>	Takia	krɛ-		'digit'
<b>finger</b>	Tarifit Berber	ḍ'ad'		'finger'
<b>finger</b>	Thai	níw		'finger'
<b>finger</b>	Thai	níw muu		'finger'
<b>finger</b>	Tidore	gia ma-raga	[arm/hand POS-digit]	'finger'
<b>finger</b>	Tiriyó	enja jakí'i	[hand-small.ones]	'finger'
<b>finger</b>	Tlingit	-tl'eeḱ		'finger'

<b>finger</b>	Tlingit	-tl'eik		'finger'
<b>finger</b>	Tonga	munwe		'finger'
<b>finger</b>	Tsimshian	hadzeyx,		'finger'
<b>finger</b>	Tsimshian	k'aciweelt		'finger'
<b>finger</b>	Tsimshian	ɕ'awaal		'finger'
<b>finger</b>	Tuscarora	uhsúkweh wiyuh (-hsuʔku- -iyu-)		'finger'
<b>finger</b>	Tuyaca	wābō-'sũã		'finger'
<b>finger</b>	Uyghur	barmaq		'finger'
<b>finger</b>	Vietnamese	ngón tay	[finger hand]	'finger'
<b>finger</b>	Waiwai	oy-amo-y-ara-n	[1st-hand-close connection-slat- poss]	'my finger'
<b>finger</b>	Wapishana	-k <sup>h</sup> aʔi šiu		'finger'
<b>finger</b>	Waurá	-kapi-tiwi	[hand-head]	'finger'
<b>finger</b>	White Hmong	ntiv tes	[digit hand]	'finger'
<b>finger</b>	Wichi	tofwefw		'finger'
<b>finger</b>	Yagua	hanã		'finger'
<b>finger</b>	Yanomámi	pei imihena		'finger'
<b>finger</b>	Yao	cala		'finger'
<b>finger</b>	Yaqui	pusiam		'finger'
<b>finger</b>	Yasin- Burushaski	-meş		'finger'
<b>finger</b>	Yélf Dnye	ke'e^ pya^a^ dmi	[arm woman bundle]	'finger'
<b>finger</b>	Yuki	miṭas		'finger'
<b>finger</b>	Yup'ik	cugaraq		'finger, toe, digit'
<b>finger</b>	Yup'ik	ipik		'finger, limb of quadruped or insect'
<b>finger</b>	Yup'ik	yuarraq		'digit, finger, toe'
<b>finger</b>	Zinacantan	bik'tal k'obol	[little hand]	'finger'
<b>finger</b>	Zinacantan	ni7 k'obol		'finger'
<b>finger</b>	Zulu	umunwe (imi-)		'finger'
<b>finger</b>	Zuni	ʔasi pilto-		'finger'
<b>foot</b>	Abau	sune		'foot'
<b>foot</b>	Abui	netokung	[1sg.AL-leg=see]	'foot'
<b>foot</b>	Aguaruna	dawi		'foot'
<b>foot</b>	Anandilyakwa	alhika		'foot'
<b>foot</b>	Arabic	qadēm		'foot'
<b>foot</b>	Araona	waci		'foot'
<b>foot</b>	Archi	aq		'leg/foot'
<b>foot</b>	Aushi	ulukasa (ama-)		'foot'

<b>foot</b>	Aymara	kayu		'foot'
<b>foot</b>	Ayoreo	'giidaai		'foot'
<b>foot</b>	Bagandji	dina		'foot, footprint'
<b>foot</b>	Bayura	sivila		'foot, footprint'
<b>foot</b>	Bayura	daahunna		'heel of foot'
<b>foot</b>	Bezhta	halo		'foot'
<b>foot</b>	Biloxi	isi		'foot'
<b>foot</b>	Biloxi	isi axohi		'big toe'
<b>foot</b>	Biloxi	isi mayini		'sole of foot'
<b>foot</b>	Biloxi	spudaxi		'instep'
<b>foot</b>	Biloxi	stuti		'heel of foot'
<b>foot</b>	Binandere	tai		'foot'
<b>foot</b>	Blackfoot	mohkat		'leg/foot'
<b>foot</b>	Buli	nang		'foot'
<b>foot</b>	Bunak	gidi'tane		'foot'
<b>foot</b>	Cayapa	neepa		'foot'
<b>foot</b>	Cayapa	'ne-ʔ-'ahka		'sole of foot'
<b>foot</b>	Cayapa	'ne-'mil'a'		'foot of animal or furniture'
<b>foot</b>	Cayuga	kahsít'akeh		'foot'
<b>foot</b>	Cayuga	kratá'keh		'heel'
<b>foot</b>	Cayuga	krakwáhtakɔ:		'sole'
<b>foot</b>	Cayuga	krakwáht'akeh		'ball of foot'
<b>foot</b>	Cayuvava	he		'foot'
<b>foot</b>	Cayuvava	a-hæ-i		'foot'
<b>foot</b>	Cayuvava	ta-he		'my foot'
<b>foot</b>	Ceq Wong	can		'foot'
<b>foot</b>	Chalcatongo Mixtec	xaʔà		'foot'
<b>foot</b>	Chalcatongo Mixtec	xáʔá		'on foot, standing'
<b>foot</b>	Chantyal	khutte		'foot'
<b>foot</b>	Chantyal	khut̚te		'foot'
<b>foot</b>	Chantyal	pəyətə		'sole of foot'
<b>foot</b>	Chantyal	p̥hale		'leg below knee (including foot)'
<b>foot</b>	Chantyal	phal		'footprint'
<b>foot</b>	Chatino, Zacatepec	kiyaʔ-		'foot'
<b>foot</b>	Cheke Holo	gahe		'foot'
<b>foot</b>	Chickasaw	ishtaahikki'ya		'foot'
<b>foot</b>	Chickasaw	iyyi'		'foot'

<b>foot</b>	Chinese	jiao3 (3)		'leg/foot'
<b>foot</b>	Chipaya	k̥oxč̥a		'foot'
<b>foot</b>	Coeur d'Alene	s-c'úʔ-šən	[the part of the leg that kicks]	'foot'
<b>foot</b>	Comanche	naape		'foot, lower leg'
<b>foot</b>	Comanche	tahpáana		'sole of foot'
<b>foot</b>	Comanche	tapikoʔ		'heel of foot'
<b>foot</b>	Delaware	sit		'foot'
<b>foot</b>	Efik	uküt		'foot'
<b>foot</b>	Emai	oe		'leg/foot'
<b>foot</b>	Emai	awe		'leg/foot'
<b>foot</b>	Embera	hẽ'rũ		'foot'
<b>foot</b>	Ese Ejja	e-hioxi		'foot'
<b>foot</b>	Ese Ejja	exioxi		'foot'
<b>foot</b>	Ese Ejja	e-xioxi-kokaxi		'heel'
<b>foot</b>	Ese Ejja	e-xioxi-kixaxa		'heel'
<b>foot</b>	Finnish	jalka		'foot'
<b>foot</b>	Fore	nagisáwé		'my leg/foot'
<b>foot</b>	Fore	nagisá		'my heel'
<b>foot</b>	Gawwada	lukte		'leg, foot, heel'
<b>foot</b>	Ghulfan	ku:t		'foot'
<b>foot</b>	Ghulfan	kwe		'foot'
<b>foot</b>	Girawa	isi		'my leg/foot'
<b>foot</b>	Gnau	wambep		'foot'
<b>foot</b>	Goajiro/ Wayuu	to-uui		'foot'
<b>foot</b>	Goajiro/ Wayuu	hi-ineʔe to-uui		'heel'
<b>foot</b>	Goajiro/ Wayuu	to-uui-čikanain		'footprint'
<b>foot</b>	Gourma	gan-taa-li	[left-leg/foot]	'left foot'
<b>foot</b>	Gourma	ta-jen-tindi-li	[leg/foot-end-?]	'heel'
<b>foot</b>	Gourma	tan-ta-tindi-li	[stone-leg/foot]	'heel'
<b>foot</b>	Gourma	ta-tan-li	[leg/foot-stone]	'sole'
<b>foot</b>	Gourma	ta-tugu	[leg.foot belly]	'arch'
<b>foot</b>	Gourma	taali		'leg/foot'
<b>foot</b>	Gourma	cendo		'top of foot tendons, "walkers"'
<b>foot</b>	Gourma	ta-faa-gu	[leg/foot-leaf]	'foot'
<b>foot</b>	Gourma	ta-jen-faa-gu	[leg/foot-end-leaf]	'foot'
<b>foot</b>	Gourma	jien-taa-li	[right-leg/foot]	'right foot'
<b>foot</b>	Great	tʰomɔtɔmikh̥u	[1sg=CL7.POSS=leg]	'my sole'

	Andamanese		-CL7.POSS=center]	
<b>foot</b>	Great Andamanese	tʰomɔtɔtarəɖole	[1sg=CL7=leg-CL6=ball]	'my heel'
<b>foot</b>	Guarani	pi		'foot'
<b>foot</b>	Gurindiji	jamana		'foot'
<b>foot</b>	Guugu Yimidhirr	dhamal		'foot'
<b>foot</b>	Guugu Yimidhirr	nhuru		'heel'
<b>foot</b>	Guugu Yimidhirr	dhamal (wawuga)		'sole of foot'
<b>foot</b>	Haida	st'áay		'foot'
<b>foot</b>	Hausa	káfāa		'foot'
<b>foot</b>	Hopi	kükü		'foot'
<b>foot</b>	Hua	gia'		'leg/foot'
<b>foot</b>	Hungarian	lábfej	[leg-head]	'foot'
<b>foot</b>	Hup	j'ɪb		'foot'
<b>foot</b>	Icibemba	ulu kasa		'footprint, sole of foot'
<b>foot</b>	Icibemba	ici sele		'foot of elephant'
<b>foot</b>	Indonesian	kaki		'foot'
<b>foot</b>	Innu	ushit		'foot'
<b>foot</b>	Innu	ututan		'heel'
<b>foot</b>	Iraqw	ya'ee		'foot'
<b>foot</b>	Jahai	can		'foot'
<b>foot</b>	Japanese	ashi		'foot'
<b>foot</b>	Kaingáng	-pě̃n		'foot'
<b>foot</b>	Kali'na	-pupulu		'foot'
<b>foot</b>	Kanuri	shî		'foot'
<b>foot</b>	Karok	fɪθih		'foot'
<b>foot</b>	Ket	kĩ's		'foot, leg, ankle'
<b>foot</b>	Kewa	aa		'foot'
<b>foot</b>	Kildin Saami	jüll'k		'leg/foot'
<b>foot</b>	Koasati	iyyí		'foot'
<b>foot</b>	Korean	bal		'foot'
<b>foot</b>	Korean	bal kum chi		'heel'
<b>foot</b>	Kosena	a-isami-ma		'his foot'
<b>foot</b>	Kosena	a-isarum-ba		'his foot'
<b>foot</b>	Kuuk Thayore	thamr		'foot'
<b>foot</b>	Luala Enga	kimbu		'leg/foot'
<b>foot</b>	Lao	khe`e`n3		'foot'
<b>foot</b>	Lavukaleve	fe		'foot, sole'

<b>foot</b>	Lengua	-minik		'foot'
<b>foot</b>	Limba	kutai ko		'leg, foot, paw'
<b>foot</b>	Loniu	kaka		'leg/foot'
<b>foot</b>	Loniu	čotəkaka		'heel'
<b>foot</b>	Luo	tielo		'foot'
<b>foot</b>	Makalero	ia		'foot'
<b>foot</b>	Malagasy	tòngotra		'foot, paw, post'
<b>foot</b>	Malayalam	pa:ḍəm		'foot'
<b>foot</b>	Manange	ʒpale		'foot'
<b>foot</b>	Mapundungun	ṇamun		'foot'
<b>foot</b>	Maybrat	ao		'foot'
<b>foot</b>	Mbum	vòk		'leg/foot'
<b>foot</b>	Mbum	ndiṇvòk		'heel'
<b>foot</b>	Mian	skīl		'foot'
<b>foot</b>	Misantla Totonac	tuhu-ḷat		'foot'
<b>foot</b>	Mohawk	-hsiʔt-		'foot'
<b>foot</b>	Muisca	quihicha		'foot'
<b>foot</b>	Mundurukú	sui		'foot'
<b>foot</b>	Mundurukú	-i		'foot'
<b>foot</b>	Nahuatl	i-mecʷ		'foot'
<b>foot</b>	Navajo	akee		'foot'
<b>foot</b>	Navajo	ké		'foot'
<b>foot</b>	Njébbana	kúdja		'hand, finger, foot, toe, tracks, base (of a tree)'
<b>foot</b>	Nkore-Kige	ekigyere		'foot'
<b>foot</b>	Nkore-Kige	eiganja		'sole'
<b>foot</b>	Nubian	ōj		'leg/foot'
<b>foot</b>	Nubian	iskidmōn		'sole'
<b>foot</b>	Nyulnyul	-imbarl		'foot'
<b>foot</b>	Ojibwe	ninzid		'my foot'
<b>foot</b>	Oksapmin	toŋ		'foot'
<b>foot</b>	Orokolo	loa		'foot, step, leg, hind leg of animals, pace, footprint, (of buildings) piles, posts, chair legs'
<b>foot</b>	Oromo	miila		'leg/foot'
<b>foot</b>	Orogen	algan		'foot'



<b>foot</b>	Otomi	wa (1)		'foot'
<b>foot</b>	Pangwa	ulwayo		'foot'
<b>foot</b>	Pangwa	ixisoko		'heel'
<b>foot</b>	Pulaar	yaɓɓirde		'foot, sole'
<b>foot</b>	Pulaar	holsere		'hoof, foot of an animal, cow or ox'
<b>foot</b>	Pulaar	yaɓɓitde		'take off, remove one's foot'
<b>foot</b>	Pulaar	yaɓɓude		'tread, walk'
<b>foot</b>	Pulaar	yaɓɓande		'footstep'
<b>foot</b>	Qawasqar	kʰat		'foot'
<b>foot</b>	Q'eqchi'	oq		'foot'
<b>foot</b>	Quechua	čaki		'foot'
<b>foot</b>	Quechua	čaki pampa	[foot field]	'sole'
<b>foot</b>	Rotokas	tasiua		'foot'
<b>foot</b>	Rotokas	tasipa		'foot'
<b>foot</b>	Sakha	ataχ		'foot'
<b>foot</b>	Sakha	ulluŋaχ		'foot'
<b>foot</b>	Salish	jəsəd		'foot'
<b>foot</b>	Samoa	vae		'foot'
<b>foot</b>	San (G/wi, G//ana)	ng(!)are		'leg/foot'
<b>foot</b>	San (G/wi, G//ana)	dam		'heel'
<b>foot</b>	San (G/wi, G//ana)	!am		'achilles' tendon'
<b>foot</b>	San (G/wi, G//ana)	n!areshi!kó		'plantar arch'
<b>foot</b>	Savosavo	nato		'foot'
<b>foot</b>	Selknam	hal-ye?		'foot'
<b>foot</b>	Seri	-toā		'foot'
<b>foot</b>	Seri	-monx		'foot'
<b>foot</b>	Shilluk	tyelo		'foot'
<b>foot</b>	Shipibo-Conibo	tai		'foot'
<b>foot</b>	Somali	cag		'foot'
<b>foot</b>	Southern Paiute	nampa-		'foot'
<b>foot</b>	Swahili	mguu		'foot'
<b>foot</b>	Takia	ŋe-		'foot'
<b>foot</b>	Tarifit Berber	ḏ'ā (1)		'foot'
<b>foot</b>	Thai	chəəŋ		'foot'
<b>foot</b>	Thai	tháaw (1)		'foot'
<b>foot</b>	Thai	bàat		'foot'

<b>foot</b>	Thai	baathaa		'foot'
<b>foot</b>	Thai	tiin		'foot'
<b>foot</b>	Thai	tháaw (1)		'foot'
<b>foot</b>	Tidore	yohu		'foot'
<b>foot</b>	Tiriyó	pupu		'foot'
<b>foot</b>	Tlingit	-x'oos		'foot'
<b>foot</b>	Tonga	ku-ulu		'leg/foot'
<b>foot</b>	Tonga	kasindi		'the heel'
<b>foot</b>	Tonga	cituta		'a foot'
<b>foot</b>	Tsimshian	asii		'foot'
<b>foot</b>	Tsimshian	gasasi		'foot'
<b>foot</b>	Tsimshian	gasisii		'foot'
<b>foot</b>	Tuscarora	úhseh (-ahs-)		'foot'
<b>foot</b>	Tuyaca	di'po		'foot'
<b>foot</b>	Uyghur	put		'foot, lower limb'
<b>foot</b>	Uyghur	ayaq		'foot'
<b>foot</b>	Uyghur	tapan		'sole of foot'
<b>foot</b>	Waiwai	o-hta-ri	[1st-foot- poss]	'my foot'
<b>foot</b>	Wapishana	-k <sup>h</sup> i'di'ba		'foot'
<b>foot</b>	Waurá	ki-capa		'foot'
<b>foot</b>	White Hmong	ko-taw		'foot'
<b>foot</b>	Wichi	topach'u		'foot'
<b>foot</b>	Yagua	numutu		'foot'
<b>foot</b>	Yanomámi	pei mamiki		'foot'
<b>foot</b>	Yao	cala		'foot'
<b>foot</b>	Yaqui	wokim		'foot'
<b>foot</b>	Yasin-Burushaski	húṭis		'foot'
<b>foot</b>	Yasin-Burushaski	-húṭisum		'foot'
<b>foot</b>	Yélf Dnye	yi		'foot'
<b>foot</b>	Yoruba	e, se'		'foot'
<b>foot</b>	Yuki	mepan		'foot'
<b>foot</b>	Yuki	mipan		'foot'
<b>foot</b>	Yuki	m'pun		'foot'
<b>foot</b>	Yup'ik	it'gaq		'foot'
<b>foot</b>	Yup'ik	tukullek		'foot'
<b>foot</b>	Zinacantan	ʔokol		'foot'
<b>foot</b>	Zulu	unyawo		'foot'
<b>foot</b>	Zuni	wek <sup>w</sup> i-		'foot'
<b>hand</b>	Abau	iha		'hand'
<b>hand</b>	Abau	sune-iha	[leg-hand]	'hand'

<b>hand</b>	Abau	maki pampa		'palm'
<b>hand</b>	Abui	na-táng	[hand field]	'my arm/hand'
<b>hand</b>	Aguaruna	uwi-h		'hand'
<b>hand</b>	Amanab	ninga		'hand'
<b>hand</b>	Anandilyakwa	ngwiyang		'hand'
<b>hand</b>	Arabic	jad		'hand'
<b>hand</b>	Araona	e-me		'hand'
<b>hand</b>	Araona	mebaha		'heel of the hand'
<b>hand</b>	Archi	kul		'hand'
<b>hand</b>	Aushi	icisansa (ifi-)		'hand'
<b>hand</b>	Aymara	ampara		'hand'
<b>hand</b>	Ayoreo	ma'naay		'hand'
<b>hand</b>	Bagandji	maṛa		'hand, fingers'
<b>hand</b>	Bayura	ata		'hand'
<b>hand</b>	Bayura	araraala		'hand'
<b>hand</b>	Bezhta	kō		'hand'
<b>hand</b>	Biloxi	cake		'hand'
<b>hand</b>	Biloxi	cakptaxe		'hand'
<b>hand</b>	Biloxi	cakeyati	[heart of palm]	'hand'
<b>hand</b>	Biloxi	caktapi		'back of hand'
<b>hand</b>	Binandere	ipa		'hand'
<b>hand</b>	Binandere	ingo		'hand'
<b>hand</b>	Binandere	be		'hand'
<b>hand</b>	Binandere	anda		'hand'
<b>hand</b>	Blackfoot	mo'tsis		'hand'
<b>hand</b>	Buli	nisiri		'hand'
<b>hand</b>	Bunak	ne'hutu'don		'hand'
<b>hand</b>	Cayapa	't'aapa		'hand'
<b>hand</b>	Cayuga	kehs'óht'akeh		'hand'
<b>hand</b>	Cayuvava	ru		'hand, hoof, finger, limb'
<b>hand</b>	Cayuvava	'da-ru		'hand'
<b>hand</b>	Cayuvava	-pa-ru		'hand'
<b>hand</b>	Ceq Wong	cas		'hand'
<b>hand</b>	Chalcatongo Mixtec	ndaʔa		'arm, hand, leaf'
<b>hand</b>	Chalcatongo Mixtec	ndaʔa žúkú	[hand/arm forest/hill/mountain]	'twig'
<b>hand</b>	Chalcatongo Mixtec	šiki		'fist'
<b>hand</b>	Chalcatongo Mixtec	ndaʔa sáni	[hand/arm always?]	'left hand'
<b>hand</b>	Chalcatongo	ndaʔa súrdú		'left hand'

	Mixtec			
<b>hand</b>	Chalcatongo Mixtec	ndaʔa báʔa	[hand/arm good]	'right hand'
<b>hand</b>	Chantyal	gfussa		'fist'
<b>hand</b>	Chantyal	ya		'whole arm plus hand'
<b>hand</b>	Chantyal	ya		'cubit'
<b>hand</b>	Chantyal	byatta		'hand span'
<b>hand</b>	Chatino, Zacatepec	yaʔ-		'hand'
<b>hand</b>	Cheke Holo	khame		'hand'
<b>hand</b>	Chickasaw	ilbak		'hand'
<b>hand</b>	Chickasaw	alhfa'bi		'hand'
<b>hand</b>	Chinese	shou3		'hand'
<b>hand</b>	Chipaya	ḵxara		'hand'
<b>hand</b>	Coeur d'Alene	s-c'íʔ-ičt		'hand'
<b>hand</b>	Coeur d'Alene	s-čit-č'em-íčən'- ičt		'surface of the back of the hand'
<b>hand</b>	Comanche	moʔo moʔo		'hand'
<b>hand</b>	Comanche	makwe		'hand'
<b>hand</b>	Comanche	mapaana		'hand'
<b>hand</b>	Comanche	mapuhu		'hand'
<b>hand</b>	Delaware	naxk		'hand'
<b>hand</b>	Delaware	ələnɟ		'hand'
<b>hand</b>	Dobu	nima		'hand'
<b>hand</b>	Efik	ubök		'hand'
<b>hand</b>	Emai	óbo		'hand'
<b>hand</b>	Emai	ábo		'hand'
<b>hand</b>	Embera	hiu'a		'hand'
<b>hand</b>	Embera	hu'a		'hand'
<b>hand</b>	Embera	hu'a		'hand'
<b>hand</b>	Ese Ejja	e-me		'hand'
<b>hand</b>	Ese Ejja	e-me-xoto		'hand'
<b>hand</b>	Finnish	käsi		'hand'
<b>hand</b>	Fore	nayané		'hand'
<b>hand</b>	Fore	narané		'hand'
<b>hand</b>	Gawwada	hargō		'hand'
<b>hand</b>	Ghulfan	ɔʃí		'hand'
<b>hand</b>	Girawa	ipi		'hand'
<b>hand</b>	Girawa	ipouwauk		'hand'
<b>hand</b>	Gnau	bigep		'hand/arm'
<b>hand</b>	Goajiro/ Wayuu	ta-hapi		'hand'

<b>hand</b>	Goajiro/ Wayuu	ta-haa-paʔa		'hand'
<b>hand</b>	Gourma	nu		'hand'
<b>hand</b>	Gourma	no		'hand'
<b>hand</b>	Gourma	jienu		'right arm/hand, north'
<b>hand</b>	Gourma	ganu		'left arm, south'
<b>hand</b>	Gourma	dianu		'hand lines'
<b>hand</b>	Gourma	nu-ku-li	[arm/hand-hoe]	'fist'
<b>hand</b>	Gourma	ni-taa-li	[arm/hand-foot]	'palm'
<b>hand</b>	Gourma	nu-puo-gu	[arm/hand- stomache]	'palm'
<b>hand</b>	Great Andamanese	tʰɔŋkɔɾɔ	[1sg=CL3.POSS= hand]	'my palm/hand'
<b>hand</b>	Great Andamanese	tʰɔŋkɔɾɔtotbɔ	[1sg=CL3hand- CL4=back]	'my backside of palm'
<b>hand</b>	Guarani	po		'hand'
<b>hand</b>	Gurindiji	wartarn		'hand'
<b>hand</b>	Guugu Yimidhirr	mara		'hand'
<b>hand</b>	Haida	stláay		'hand'
<b>hand</b>	Hausa	hánnúu		'hand'
<b>hand</b>	Hopi	má:ʔa		'hand'
<b>hand</b>	Hua	()za'		'hand'
<b>hand</b>	Hungarian	kéz		'hand'
<b>hand</b>	Hup	dʔapũ'h		'hand'
<b>hand</b>	Icibemba	ici sansa		'hand'
<b>hand</b>	Icibemba	úlu pi		'palm of hand'
<b>hand</b>	Icibemba	ici kunkuti		'hand, amputated person without fingers, leafless branch'
<b>hand</b>	Icibemba	úku só		'left hand, left hand side'
<b>hand</b>	Icibemba	ici piko		'left hand, left hand side'
<b>hand</b>	Icibemba	úku lyó		'right hand'
<b>hand</b>	Icibemba	í kófi		'fist'
<b>hand</b>	Icibemba	ín kónya		'fist'
<b>hand</b>	Icibemba	ukuuma ín kónya		'punch'

<b>hand</b>	Indonesian	tangan		'hand'
<b>hand</b>	Innu	utitshi		'hand'
<b>hand</b>	Iraqw	dawa		'hand'
<b>hand</b>	Jahai	cyas		'hand'
<b>hand</b>	Japanese	te		'hand'
<b>hand</b>	Kaingáng	nĩŋɛ		'hand'
<b>hand</b>	Kali'na	-ainali		'hand'
<b>hand</b>	Kanuri	múskò		'hand'
<b>hand</b>	Karok	tík		'hand'
<b>hand</b>	Ket	laŋat		'hand'
<b>hand</b>	Kewa	ki		'hand'
<b>hand</b>	Kildin Saami	kīdt		'hand'
<b>hand</b>	Koasati	ittipasáhlin		'hand'
<b>hand</b>	Koasati	pasáhlin		'to shake hands with someone'
<b>hand</b>	Koasati	yamiphilká		'fist'
<b>hand</b>	Koasati	yamíkan		'to make a fist (twice or more times... there is a infix morpheme /p/ that means one time)
<b>hand</b>	Koasati	afabó		'to be left handed' (contains morpheme for 'left')
<b>hand</b>	Koasati	ilkanó		'to be right handed' ('right side,' always possessed)
<b>hand</b>	Korean	son		'hand'
<b>hand</b>	Kosena	a-yanuram-ba		'hand, fist'
<b>hand</b>	Kosena	a-yanurapaq-a		'his strong hand' (right)
<b>hand</b>	Kosena	a-yanepaq-a		'his weak hand' (left)
<b>hand</b>	Kuman	ogu-		'hand'
<b>hand</b>	Kuman	ogino koglo		'five'
<b>hand</b>	Kuman	ogu-sura		'palm of hand'
<b>hand</b>	Kuuk Thayore	yuur		'hand'
<b>hand</b>	Luala Enga	kingi		'hand'

<b>hand</b>	Lao	khe`e`n3		'hand'
<b>hand</b>	Lavukaleve	fea		'hand'
<b>hand</b>	Lengua	-mik		'hand'
<b>hand</b>	Limba	hulongo		'hand'
<b>hand</b>	Limba	hulongo hotomi		'right hand, south'
<b>hand</b>	Limba	hulongo hopagada		'left hand, north'
<b>hand</b>	Limba	buftari wo		'fist'
<b>hand</b>	Loniu	nime		'hand'
<b>hand</b>	Loniu	palanime		'fist'
<b>hand</b>	Luo	lwedo		'hand'
<b>hand</b>	Luo	adhong'		'hand'
<b>hand</b>	Makalero	tana		'hand'
<b>hand</b>	Malagasy	tànana		'hand'
<b>hand</b>	Malayalam	kai		'hand/arm'
<b>hand</b>	Malayalam	kaijə		'hand'
<b>hand</b>	Manange	lja		'hand'
<b>hand</b>	Mapundungun	kuwü		'hand'
<b>hand</b>	Maybrat	-atem		'hand'
<b>hand</b>	Mbum	ndôk		'hand/arm'
<b>hand</b>	Mbum	lândôk		'palm'
<b>hand</b>	Mbum	fôlndôk		'fist'
<b>hand</b>	Mian	kwěil		'hand'
<b>hand</b>	Misantla Totonac	maka-lät		'hand'
<b>hand</b>	Mohawk	-snuhs-		'hand, finger'
<b>hand</b>	Mohawk	a?nya		used in compound with the word for 'warm' to form 'glove'
<b>hand</b>	Muisca	yta		'hand'
<b>hand</b>	Mundurukú	i-bi-nĩ?a		'hand'
<b>hand</b>	Mundurukú	-bĩ-rĩ-?a		'hand'
<b>hand</b>	Nahuatl	i-ma-y		'hand'
<b>hand</b>	Nahuatl	-maa ~ mah		'hand'
<b>hand</b>	Navajo	ála		'hand'
<b>hand</b>	Navajo	álák'ee		'area of hand, palm'
<b>hand</b>	Njébbana	kúdja		'hand, finger, foot, toe, tracks, base (of a tree)'

<b>hand</b>	Njébbana	n-báymala		'left-handed, left'
<b>hand</b>	Njébbana	ma-ndakabbirda		'right handed'
<b>hand</b>	Nkore-Kige	engaro		'hand'
<b>hand</b>	Nubian	eddi		'hand'
<b>hand</b>	Nyulnyul	-marl		'arm, hand, upper arm'
<b>hand</b>	Ojibwe	nininj		'my hand, my fingers'
<b>hand</b>	Ojibwe	nagaakininj		'my palm'
<b>hand</b>	Ojibwe	animikoninj		'back of hand'
<b>hand</b>	Ojibwe	nindanimikoninj		'my back of hand'
<b>hand</b>	Oksapmin	xan		'hand/arm'
<b>hand</b>	Orokolo	mai		'hand'
<b>hand</b>	Oromo	(h)arka		'hand'
<b>hand</b>	Oromo	kottee		'(human) hand'
<b>hand</b>	Oromo	barruu		'palm'
<b>hand</b>	Oroqen	ŋa:la		'hand'
<b>hand</b>	Otomi	'ye		'hand'
<b>hand</b>	Pangwa	ilivoxo lyang'iki		'left hand'
<b>hand</b>	Pangwa	ilivoxo lyandyoma		'right hand'
<b>hand</b>	Pangwa	ilikanja		'palm'
<b>hand</b>	Pulaar	jungo		'hand'
<b>hand</b>	Pulaar	jungo nano		'left hand, left'
<b>hand</b>	Pulaar	nanal		'left hand, left'
<b>hand</b>	Pulaar	jungo ñaamo		'right hand'
<b>hand</b>	Pulaar	newre		'palm'
<b>hand</b>	Qawasqar	terwa		'hand, forearm'
<b>hand</b>	Q'eqchi'	uq'm		'hand'
<b>hand</b>	Quechua	maki		'hand'
<b>hand</b>	Quechua	maki pampa	[hand field]	'palm'
<b>hand</b>	Rotokas	vuvuko		'hand'
<b>hand</b>	Rotokas	vavae		'hand'
<b>hand</b>	Sakha	ili:		'hand'
<b>hand</b>	Salish	ači?		'hand, lower arm'
<b>hand</b>	Samoan	tu'u atu		'hand'
<b>hand</b>	Samoan	tu'u mai		'hand'
<b>hand</b>	San (G/wi, G//ana)	tseu		'hand'
<b>hand</b>	Savosavo	kakau		'hand'
<b>hand</b>	Selknam	čin		'hand'



<b>hand</b>	Seri	-anoł		'hand'
<b>hand</b>	Shilluk	cino		'hand'
<b>hand</b>	Shilluk	aluto		'fist'
<b>hand</b>	Shipibo-Conibo	mi-kĩ		'hand'
<b>hand</b>	Shona	ruoko		'arm/hand'
<b>hand</b>	Shona	canza		'flat hand'
<b>hand</b>	Shona	zanza		'handfull'
<b>hand</b>	Somali	gacan		'hand'
<b>hand</b>	Southern Paiute	ma-		'hand'
<b>hand</b>	Southern Paiute	mo'o-		'hand'
<b>hand</b>	Southern Paiute	mapaca-		'masturbator'
<b>hand</b>	Southern Paiute	mapa-		'jerk back the hand'
<b>hand</b>	Southern Paiute	to-		'with the fist'
<b>hand</b>	Southern Paiute	-ma-šm̥w̥i		'ten'
<b>hand</b>	Swahili	mkono		'hand'
<b>hand</b>	Takia	bani-		'hand'
<b>hand</b>	Tarifit Berber	fus		'hand'
<b>hand</b>	Thai	m̥u		'hand'
<b>hand</b>	Thai	hàt		'hand'
<b>hand</b>	Thai	kɔ̀n		'hand'
<b>hand</b>	Thai	day		'hand'
<b>hand</b>	Tidore	gia		'hand'
<b>hand</b>	Tiriyó	enja		'hand'
<b>hand</b>	Tlingit	-jín		'hand'
<b>hand</b>	Tlingit	-jikóol		'hand'
<b>hand</b>	Tlingit	-čkóol		'back of hand'
<b>hand</b>	Tlingit	-jiwán		'back of hand'
<b>hand</b>	Tlingit	-čwán		'outside of hand'
<b>hand</b>	Tonga	ijan̥za		'the hand'
<b>hand</b>	Tonga	lu-lyo		'the right hand'
<b>hand</b>	Tonga	lumwezi		'the left hand'
<b>hand</b>	Tonga	itansyi		'a hand, palm of hand'
<b>hand</b>	Tonga	itunku		'the closed fist'
<b>hand</b>	Tonga	inyindi		'the clenched fist, blow'
<b>hand</b>	Tonga	cituku		'the closed fist'
<b>hand</b>	Tsimshian	anʔon, gaʔanʔon		'hand'
<b>hand</b>	Tuyaca	wã'bō-pābã		'hand'
<b>hand</b>	Uyghur	qol		'hand'
<b>hand</b>	Uyghur	alqan		'palm'

<b>hand</b>	Vietnamese	tay		'hand'
<b>hand</b>	Waiwai	oy-amo-ri	[1st-hand-poss]	'my hand'
<b>hand</b>	Waiwai	oy-amo-y-ereta-ri	[1st-hand-close connection-middle- poss]	'my palm'
<b>hand</b>	Wapishana	-k <sup>h</sup> aʔi		'hand'
<b>hand</b>	Waurá	-wiʒiku		'hand'
<b>hand</b>	Waurá	-kapi-		'hand'
<b>hand</b>	White Hmong	tes		'hand'
<b>hand</b>	Wichi	totkwe		'hand'
<b>hand</b>	Yagua	sa-homutu		'hand'
<b>hand</b>	Yanomámi	pei imiki		'hand'
<b>hand</b>	Yao	myala		'hand'
<b>hand</b>	Yao	mkono		'hand'
<b>hand</b>	Yaqui	mamam		'hand'
<b>hand</b>	Yasin- Burushaski	-rén		'hand'
<b>hand</b>	Yasin- Burushaski	hesk		'back of the hand'
<b>hand</b>	Yasin- Burushaski	-tóto		'palm of the hand'
<b>hand</b>	Yasin- Burushaski	-tátas		'palm of the hand'
<b>hand</b>	Yélfí Dnye	ke <sup>ˈ</sup> e <sup>ˈ</sup>		'hand'
<b>hand</b>	Yoruba	o.wo'		'hand'
<b>hand</b>	Yuki	mepat		'hand'
<b>hand</b>	Yuki	aiggaq		'hand'
<b>hand</b>	Yup'ik	me-		'belonging to the hand, arm, or foot, with the hand, arm or foot'
<b>hand</b>	Yup'ik	aaggaq		'hand'
<b>hand</b>	Yup'ik	unan		'hand'; 'seal flipper'
<b>hand</b>	Zinacantan	k'obol		'arm, hand, bow, sleeve, branch'
<b>hand</b>	Zinacantan	k'abal		'arm, hand, bow, sleeve, branch'
<b>hand</b>	Zulu	isandla		'hand'
<b>hand</b>	Zuni	ʔasi-		'hand'
<b>knee</b>	Abui	na-bala buku	[1sg.INAL-knee	'knee'

			joint]	
<b>knee</b>	Aguaruna	ti'kiš-mat		'knee'
<b>knee</b>	Amanab	mokug		'knee'
<b>knee</b>	Anandilyakwa	yina~yiwalkwirra		'knee'
<b>knee</b>	Arabic	rukba		'knee'
<b>knee</b>	Araona	eadai		'knee'
<b>knee</b>	Araona	madaha		'knee'
<b>knee</b>	Archi	po <sup>s</sup> mp		'knee'
<b>knee</b>	Aushi	ikufi (ama-)		'knee'
<b>knee</b>	Aymara	ḱunḱuri		'knee'
<b>knee</b>	Ayoreo	kaata'de		'knee'
<b>knee</b>	Bagandji	dingi		'knee'
<b>knee</b>	Bayura	kwanna		'knee'
<b>knee</b>	Bayura	gyibirya		'back of knee'
<b>knee</b>	Bezhta	āga		'knee'
<b>knee</b>	Biloxi	cinaki		'knee'
<b>knee</b>	Binandere	baongo		'knee'
<b>knee</b>	Blackfoot	motokitsis		'knee'
<b>knee</b>	Buli	dunung		'knee'
<b>knee</b>	Bunak	gidi'tulur		'knee'
<b>knee</b>	Cayapa	'ne-n'bulu		'knee'
<b>knee</b>	Cayuga	ḱoṭshá'keh		'knee'
<b>knee</b>	Cayuvava	'awōse		'knee'
<b>knee</b>	Ceq Wong	ktoŋ		'knee'
<b>knee</b>	Chalcatongo Mixtec	loo		'knee'
<b>knee</b>	Chalcatongo Mixtec	xití		'knee'
<b>knee</b>	Chalcatongo Mixtec	šinì xití		'knee'
<b>knee</b>	Chalcatongo Mixtec	šinì žití		'knee'
<b>knee</b>	Chantyal	ghũre		'knee'
<b>knee</b>	Chantyal	ghurā		'knee'
<b>knee</b>	Chantyal	ghũra		'knee'
<b>knee</b>	Chantyal	ghũra-ye fiar	[knee-GEN bone]	'knee cap'
<b>knee</b>	Chantyal	ghũra-ye khurpiti	[knee-GEN hollow]	'knee hollow'
<b>knee</b>	Chatino, Zacatepec	kē štʰʔ-	[head knee]	'knee'
<b>knee</b>	Cheke Holo	phupuku gahe		'knee cap'
<b>knee</b>	Cheke Holo	ḡloḡlomno gahe		'knee joint'
<b>knee</b>	Chickasaw	iyyinto'lhka'		'knee'
<b>knee</b>	Chinese	xi1 (1)		'knee'
<b>knee</b>	Chipaya	owa		'knee'

<b>knee</b>	Coeur d'Alene	s-čĩ'-qón'-šən 'knee'	[forward part of the top of the foot]	'knee'
<b>knee</b>	Comanche	tanapu		'knee'
<b>knee</b>	Comanche	tana? ku?e		'kneecap'
<b>knee</b>	Delaware	gətuk <sup>w</sup> (k <sup>w</sup> ətkuak)		'my knee'
<b>knee</b>	Dobu	aetubwe		'knee'
<b>knee</b>	Efik	ədön~		'knee'
<b>knee</b>	Efik	nuk		'knee'
<b>knee</b>	Emai	uguo	[nominalizing prefix.bend.leg]	'knee'
<b>knee</b>	Embera	či'rāboro		'knee'
<b>knee</b>	Ese Ejja	e-k <sup>w</sup> io-šaxa		'knee'
<b>knee</b>	Finnish	polvi		'knee'
<b>knee</b>	Fore	narawé		'my knee'
<b>knee</b>	Gawwada	kilpayo		'knee'
<b>knee</b>	Ghulfan	kuté		'knee'
<b>knee</b>	Ghulfan	kútu		'knee'
<b>knee</b>	Girawa	uonta pau		'knee'
<b>knee</b>	Gnau	nembit		'knee'
<b>knee</b>	Gnau	bulbul		'concavity at the back of the knee'
<b>knee</b>	Goajiro/ Wayuu	ta-sapain		'knee'
<b>knee</b>	Gourma	dunli		'knee'
<b>knee</b>	Great Andamanese	t <sup>h</sup> ecorək <sup>h</sup>	[1sg=CL5=joint]	'my knee'
<b>knee</b>	Guarani	penarã		'knee'
<b>knee</b>	Guarani	t-enipi?ã		'knee'
<b>knee</b>	Gurindji	tingarri		'knee'
<b>knee</b>	Gurindji	dingarri		'knee'
<b>knee</b>	Guugu Yimidhirr	bunggu		'knee'
<b>knee</b>	Haida	k <sup>ʔ</sup> ulúu k <sup>h</sup> ač	[leg-head]	'knee'
<b>knee</b>	Hausa	gwíwàa		'knee'
<b>knee</b>	Hopi	támö		'knee'
<b>knee</b>	Hua	()ra'za		'knee'
<b>knee</b>	Hungarian	térd		'knee'
<b>knee</b>	Hup	wō?dæ wō~?-dæ	[?-tuber]	'knee'
<b>knee</b>	Icibemba	í kúfĩ 'knee'		'knee'
<b>knee</b>	Icibemba	ím pandé		'knee cap, large ornamental shell, white

				spot on head of cattle'
<b>knee</b>	Indonesian	lutut		'knee'
<b>knee</b>	Innu	utskikun		'knee'
<b>knee</b>	Innu	ushikakun		'back of the knee'
<b>knee</b>	Iraqw	gurungura		'knee'
<b>knee</b>	Jahai	kaltoŋ		'knee'
<b>knee</b>	Japanese	hiza		'knee'
<b>knee</b>	Kaingáng	yakrĩ		'knee'
<b>knee</b>	Kali'na	-ekunali		'knee'
<b>knee</b>	Kanuri	ngùrúmngùrùm		'knee'
<b>knee</b>	Karok	páθak		'knee'
<b>knee</b>	Ket	batpul bāt-būl	[face-leg]	'knee'
<b>knee</b>	Kildin Saami	pūvvl		'knee'
<b>knee</b>	Koasati	ittolpi		'knee'
<b>knee</b>	Korean	mu reup		'knee'
<b>knee</b>	Kosena	a-raaum-ba		'his knee'
<b>knee</b>	Kuman	goki-		'knee'
<b>knee</b>	Kuuk Thayore	pungk		'knee'
<b>knee</b>	Luala Enga	wapambu		'knee'
<b>knee</b>	Luala Enga	wampambu kuli		'kneecap'
<b>knee</b>	Luala Enga	luma pawua		'kneecap'
<b>knee</b>	Luala Enga	pawua		'kneecap'
<b>knee</b>	Lao	khawl		'knee'
<b>knee</b>	Lavukaleve	ku'kunio		'knee'
<b>knee</b>	Lengua	-tapnik		'knee'
<b>knee</b>	Limba	hubun hax		'kneecap'
<b>knee</b>	Loniu	tahapulekaka		'knee'
<b>knee</b>	Luo	chong'		'knee'
<b>knee</b>	Makalero	ia-itu'		'knee'
<b>knee</b>	Makalero	itu'		'knee'
<b>knee</b>	Malayalam	mut̪ə		'knee, joint'
<b>knee</b>	Malayalam	ka:ləmut̪ə	[leg joint]	'knee'
<b>knee</b>	Manange	2pɔtsi		'knee'
<b>knee</b>	Mapundungun	luku		'knee'
<b>knee</b>	Mbum	kōrvok		'knee'
<b>knee</b>	Mian	dlong		'knee'
<b>knee</b>	Misantla Totonac	cuqus-nj		'knee'
<b>knee</b>	Mohawk	-kwitsh-		'knee'
<b>knee</b>	Muisca	goca		'knee'
<b>knee</b>	Mundurukú	yĩŋ-ʔa		'knee'

<b>knee</b>	Mundurukú	-ĩŋ-ʔa		'knee'
<b>knee</b>	Nahuatl	i-tan-k <sup>w</sup> a-yr		'knee'
<b>knee</b>	Njébbana	njamanja		'knee'
<b>knee</b>	Nkore-Kige	okuju		'knee'
<b>knee</b>	Nubian	kurti		'knee, bone in wrist'
<b>knee</b>	Nubian	ōjin kurti	[foot/leg-? knee]	'kneecap'
<b>knee</b>	Nyulnyul	-mmurr		'leg, knee, shin, calf,' ngurrngk 'elbow joint, kneecap'
<b>knee</b>	Ojibwe	ningidig		'my knee'
<b>knee</b>	Oksapmin	kə tin		'knee'
<b>knee</b>	Orokolo	loa ari		'knee'
<b>knee</b>	Oromo	jilba		'knee'
<b>knee</b>	Oroqen	əŋŋən		'knee'
<b>knee</b>	Otomi	ñāhmu		'knee'
<b>knee</b>	Pangwa	ilifukamilo		'knee'
<b>knee</b>	Pulaar	hofru		'knee'
<b>knee</b>	Pulaar	tumbude hófru		'kneecap'
<b>knee</b>	Qawasqar	tʔeltal		'knee'
<b>knee</b>	Qʼeqchiʼ	aq (1)		'knee'
<b>knee</b>	Quechua	muqu		'knee, hill'
<b>knee</b>	Rotokas	kotupiu		'knee'
<b>knee</b>	Sakha	tobuk		'knee'
<b>knee</b>	Salish	ḡ.qp'úcid		'knee'
<b>knee</b>	Samoan	tulivae		'knee'
<b>knee</b>	Samoan	tuli		'knee'
<b>knee</b>	San (G/wi, G//ana)	!kori		'knee'
<b>knee</b>	Savosavo	tuturinga		'knee'
<b>knee</b>	Selknam	ḱʔahči		'knee'
<b>knee</b>	Seri	-aΦlk		'knee'
<b>knee</b>	Shilluk	cuŋ		'knee'
<b>knee</b>	Shipibo-Conibo	rā-βoʃo		'knee'
<b>knee</b>	Shipibo-Conibo	rā-tōko		'knee'
<b>knee</b>	Shipibo-Conibo	rā-		'knee'
<b>knee</b>	Shona	ibvi		'knee'
<b>knee</b>	Shona	bvi		'knee'
<b>knee</b>	Shona	gadyambu		'back of knee'
<b>knee</b>	Shona	gambwe		'back of knee'
<b>knee</b>	Somali	jilib		'knee'
<b>knee</b>	Southern Paiute	taŋa-		'knee'

<b>knee</b>	Swahili	goti		'knee'
<b>knee</b>	Takia	ŋe-n ŋdu-n	[leg-3SG nose-3SG]	'knee'
<b>knee</b>	Tarifit Berber	fud		'knee'
<b>knee</b>	Thai	khào		'knee'
<b>knee</b>	Thai	chaanú		'knee'
<b>knee</b>	Tidore	buku-buku		'knee'
<b>knee</b>	Tiriyó	wereena		'knee'
<b>knee</b>	Tlingit	-keey		'knee'
<b>knee</b>	Tlingit	-keey šá		'knee'
<b>knee</b>	Tonga	izwi		'knee'
<b>knee</b>	Tonga	igondo		'knee'
<b>knee</b>	Tsimshian	galgaʔaaysuu		'knee'
<b>knee</b>	Tsimshian	kʔalkʔays		'knee'
<b>knee</b>	Tuscarora	awetkwéθeh (etkweθ-)		'knee'
<b>knee</b>	Tuyaca	yĩ'kã-kobea		'knee'
<b>knee</b>	Uyghur	tiz		'knee'
<b>knee</b>	Vietnamese	đầu gối	[head knee]	'knee'
<b>knee</b>	Waiwai	oy-osokm-ru	[1st-knee-poss]	'my knee'
<b>knee</b>	Wapishana	-kʰuʔduru		'knee'
<b>knee</b>	Waurá	-kʰuʔduru		'knee'
<b>knee</b>	White Hmong	hauv caug	[head-knee]	'knee'
<b>knee</b>	White Hmong	caug		'knee'
<b>knee</b>	Wichi	topʔulhak		'knee'
<b>knee</b>	Yagua	hadasi		'knee'
<b>knee</b>	Yanomámi	pei maheko		'knee'
<b>knee</b>	Yao	lilungo		'knee'
<b>knee</b>	Yaqi	tonom		'knee'
<b>knee</b>	Yasin-Burushaski	-núrus		'knee'
<b>knee</b>	Yélf Dnye	yi mbodo	[lower-leg head]	'knee'
<b>knee</b>	Yuki	k'an'k		'knee'
<b>knee</b>	Yup'ik	ciisquq		'knee'
<b>knee</b>	Yup'ik	cisquq		'knee'
<b>knee</b>	Zulu	idolo		'knee'
<b>knee</b>	Zuni	ʔošši-		'knee'
<b>leg</b>	Abau	sune		'leg'
<b>leg</b>	Abau	sune-ihá	[leg-hand]	'body, body parts'
<b>leg</b>	Abui	toku		'leg'
<b>leg</b>	Aguaruna	kuhap		'leg, calf'
<b>leg</b>	Aguaruna	baku		'thigh'
<b>leg</b>	Amanab	mung		'leg'

leg	Amanab	bigisig		'thigh'
leg	Anandilyakwa	alhakpwa		'lower leg' (knee to ankle)
leg	Arabic	riʒl		'leg'
leg	Araona	tijada		'leg'
leg	Araona	heci		'thigh'
leg	Araona	eta		'leg'
leg	Araona	tabesese		'shinbone'
leg	Araona	wisoi-ono		'thigh'
leg	Araona	ebai		'leg'
leg	Archi	č'otxol	[elbow-arm]	'leg'
leg	Archi	aq		'leg/foot'
leg	Archi	žara		'thigh, hip'
leg	Archi	noq:ʰon		'calf, mouse, muscle, bolt'
leg	Aushi	ukūlu (amo-)		'leg'
leg	Aushi	ukukonso (imi-)		'leg'
leg	Aushi	itanta (ama-)		'thigh'
leg	Aymara	čara		'leg, thigh'
leg	Aymara	t'usu		'calf'
leg	Ayoreo	oota'di		'leg'
leg	Ayoreo	oota'd-abi		'calf'
leg	Ayoreo	e'tarudi		'thigh'
leg	Bagandji	garaya		'thigh, upper thigh'
leg	Bagandji	yalgu		'lower leg, leg'
leg	Bagandji	yalgu-birna		'leg bone'
leg	Bagandji	garga		'thigh, upper thigh'
leg	Bayura	sivila		'leg'
leg	Bayura	araabula		'calf of leg'
leg	Bayura	t+i'munya		'thigh'
leg	Bayura	taata		'thigh of pig'
leg	Bezhta	xäbä		'leg'
leg	Bezhta	yiyla		'thigh'
leg	Bezhta	kim		'calf'
leg	Biloxi	yukpe		'leg'
leg	Biloxi	taki		'thigh'
leg	Biloxi	yukpe ʒiti		'calf'
leg	Binandere	tai		'leg/foot'
leg	Binandere	tope		'thigh'
leg	Binandere	udu		'thigh'
leg	Blackfoot	mohkat		'leg/foot'



<b>leg</b>	Blackfoot	mohkinan		'calf'
<b>leg</b>	Blackfoot	moapisakis		'thigh'
<b>leg</b>	Blackfoot	mottoksiinann		'portion of thigh just above the knee'
<b>leg</b>	Blackfoot	issokat		'foreleg'
<b>leg</b>	Buli	nang		'leg, hind leg of an animal, thigh, foot, branch (of a tree), root (of a tree)'
<b>leg</b>	Buli	karik		'lower part of leg'
<b>leg</b>	Buli	bogi		'front leg of animal, wing'
<b>leg</b>	Bunak	sakan		'leg'
<b>leg</b>	Cayapa	neepa		'leg/foot'
<b>leg</b>	Cayapa	ne-'mil <sup>ʷ</sup> a		'the lower leg, including foot'
<b>leg</b>	Cayapa	ne-'čanbe		'the backside flesh from the knee to the heel'
<b>leg</b>	Cayapa	enbu		'thigh'
<b>leg</b>	Cayapa	'ne-čan-'buka		'calf'
<b>leg</b>	Cayuga	kehsín'akeh		'leg'
<b>leg</b>	Cayuga	k'enhq̄hská:'keh		'thigh'
<b>leg</b>	Cayuga	kenyēt'akeh		'shin'
<b>leg</b>	Cayuga	kehsná't'akeh		'calf'
<b>leg</b>	Cayuvava	daʃi		'leg'
<b>leg</b>	Cayuvava	βera		'lower leg'
<b>leg</b>	Cayuvava	ri-βera		'lower leg'
<b>leg</b>	Cayuvava	pɔčɔ		'thigh'
<b>leg</b>	Ceq Wong	bləʔ		'thigh'
<b>leg</b>	Ceq Wong	baŋkoʔ kəher	[be pregnant lower leg]	'calf'
<b>leg</b>	Chalcatongo Mixtec	sĩʔĩ		'leg'
<b>leg</b>	Chalcatongo Mixtec	saʔnda		'calf, leg muscle'
<b>leg</b>	Chantyal	tigra		'thigh'
<b>leg</b>	Chantyal	tigra-ye pholce		'calf muscle'

<b>leg</b>	Chantyal	koli		'lap'
<b>leg</b>	Chantyal	p̥hale		'leg below knee (including foot)'
<b>leg</b>	Chantyal	tigəra		'thigh'
<b>leg</b>	Chantyal	samra		'upper leg, thigh'
<b>leg</b>	Chantyal	səpito		'haunch, leg of animal'
<b>leg</b>	Chatino, Zacatepec	kiyaʔ-		'leg'
<b>leg</b>	Chatino, Zacatepec	li kiyaʔ		'leg'
<b>leg</b>	Chatino, Zacatepec	ndā-		'thigh'
<b>leg</b>	Chatino, Zacatepec	kunāʔ li		'calf'
<b>leg</b>	Chatino, Zacatepec	kunāʔ kiyaʔ-		'calf'
<b>leg</b>	Cheke Holo	gahe		'leg, foot'
<b>leg</b>	Cheke Holo	khaikasi		'calf, lower part of leg'
<b>leg</b>	Chickasaw	iyyi'		'leg'
<b>leg</b>	Chickasaw	iyyapi'		'lower leg'
<b>leg</b>	Chickasaw	iyyinchaamo'		'lower leg'
<b>leg</b>	Chickasaw	iyyobi'		'thigh'
<b>leg</b>	Chickasaw	iyyinchamo'		'calf of the leg'
<b>leg</b>	Chickasaw	iyyintakaali'		'calf of the leg'
<b>leg</b>	Chickasaw	iyyi' tikba'		'foreleg'
<b>leg</b>	Chinese	tui3		'leg'
<b>leg</b>	Chinese	jiao3 (3)		'leg/foot'
<b>leg</b>	Chinese	da4-tui3	[big-leg]	'thigh'
<b>leg</b>	Chinese	tui3-du4-zi	[leg-belly-NOMINAL.SUFFIX ]	'calf'
<b>leg</b>	Chipaya	lis		'leg'
<b>leg</b>	Chipaya	çok kome		'thigh'
<b>leg</b>	Chipaya	tʔuʂu		'calf'
<b>leg</b>	Coeur d'Alene	s-t-č'ém-ilq-šən	[on the cylinder (log) of the leg]	'the whole surface of the leg'
<b>leg</b>	Coeur d'Alene	s-hən-čém-ilq-šən	[the log-surface within the legs]	'crotch, the whole inner

				surface of both legs, from foot to foot'
leg	Comanche	sutsiʔomo		'shin, shinbone'
leg	Comanche	naape		'foot, lower leg'
leg	Comanche	oomo		'leg'
leg	Comanche	pukapu		'lap'
leg	Comanche	tapuhu		'hair of leg'
leg	Comanche	tapu		'hair of leg'
leg	Comanche	taʔwiitsa		'calf of the leg'
leg	Comanche	tohoobe		'thigh'
leg	Delaware	hwikat		'leg'
leg	Delaware	pom		'thigh, ham'
leg	Delaware	wiču		'calf'
leg	Delaware	hnikxkən		'shin'
leg	Dobu	ae		'leg'
leg	Dobu	'aeyoyo		'calf'
leg	Dobu	'aebila		'calf'
leg	Efik	uküt		'leg'
leg	Emai	oe		'leg'
leg	Emai	awe		'legs'
leg	Emai	ibélawe	[gourd of the leg]	'calf'
leg	Emai	osokoe	[ʔ -leg]	'thigh muscle'
leg	Emai	oroe	[oran 'tree/wood' -oe 'leg']	'leg'
leg	Embera	hě'rũ		'leg, foot, toe'
leg	Embera	hĩ'ru		'leg, foot, toe'
leg	Embera	mākā'rā		'thigh'
leg	Embera	hě'rũ-po'to		'calf'
leg	Ese Ejja	e-ahoho		'leg'
leg	Ese Ejja	e-kise		'leg, thigh'
leg	Finnish	jalka		'leg'
leg	Fore	agisáwé		'leg, wheel (rear wheel)'
leg	Fore	nagisáwé		'my leg/foot'
leg	Fore	nagai nkáyampuwe		'(my lower) leg bone'
leg	Fore	naraoné		'my thigh'
leg	Fore	narunex		'my thigh'
leg	Gawwada	t'ihile		'leg'
leg	Gawwada	tafo		'thigh'
leg	Gawwada	t'innife		'calves'

<b>leg</b>	Ghulfan	kot		'leg'
<b>leg</b>	Ghulfan	kwe		'leg'
<b>leg</b>	Ghulfan	tóɲu		'thigh'
<b>leg</b>	Ghulfan	toɲé		'thigh'
<b>leg</b>	Ghulfan	buta:r		'calf'
<b>leg</b>	Ghulfan	buta:rí		'calf'
<b>leg</b>	Girawa	isi		'my leg/foot'
<b>leg</b>	Girawa	apnoukou		'forearm, lower leg'
<b>leg</b>	Gnau	mangi		'calf'
<b>leg</b>	Gnau	su'i		'thigh, animal hindlimb'
<b>leg</b>	Gnau	wambep		'human or bird foot and leg or lower limb (but not animal foot or lower limb except to mean footprint or track)'
<b>leg</b>	Goajiro/ Wayuu	ta-saʔa		'leg'
<b>leg</b>	Goajiro/ Wayuu	ta-piʔi		'thigh'
<b>leg</b>	Goajiro/ Wayuu	ta-siise		'calf'
<b>leg</b>	Gourma	taali		'leg/foot'
<b>leg</b>	Gourma	panli		'thigh, upper leg'
<b>leg</b>	Gourma	biemu		'lower leg, shin'
<b>leg</b>	Gourma	ta-luaŋ-gu	[leg/foot-shin]	'depression in back on knee'
<b>leg</b>	Gourma	ta-bian-li		'knee to ankle part of leg '
<b>leg</b>	Gourma	biem-po-li	[lower leg-behind]	'calf'
<b>leg</b>	Gourma	pan-sagi-ma	[thigh-rubs]	'inside of thigh'
<b>leg</b>	Great Andamanese	o- ~ ɔ-	[CL7.POSS]	'pertaining to the lower parts of the body'
<b>leg</b>	Great Andamanese	tʰomɔʔɔ	[1sg=CL7.POSS=leg ]	'my leg'
<b>leg</b>	Great	tʰomɔʔɔʔ:	[1sg=CL7=leg-bone]	'my bone'

	Andamanese			below knee'
<b>leg</b>	Guarani	t-etima		'leg'
<b>leg</b>	Guarani	tetima		'thigh'
<b>leg</b>	Guarani	t-u <sup>m</sup> bi		'thigh'
<b>leg</b>	Guarani	'uva		'thigh'
<b>leg</b>	Guarani	t-etima-roʔo		'calf'
<b>leg</b>	Gurindiji	jamana		'leg, foot, footprint, shoe, boot'
<b>leg</b>	Gurindiji	kala		'thigh'
<b>leg</b>	Gurindiji	kurtpu		'calf'
<b>leg</b>	Guugu Yimidhirr	guman		'leg, thigh'
<b>leg</b>	Guugu Yimidhirr	ngarri		'shin'
<b>leg</b>	Haida	kʔulúu		'calf and shin, leg'
<b>leg</b>	Haida	tēl		'leg above knee'
<b>leg</b>	Haida	kiatl-ka-run		'leg below knee'
<b>leg</b>	Haida	tʰíl		'thigh'
<b>leg</b>	Haida	kʔyáal		'calf'
<b>leg</b>	Hausa	káfàa		'leg/ foot'
<b>leg</b>	Hausa	cínyàa		'thigh, hip'
<b>leg</b>	Hausa	k̀wàuríí		'calf'
<b>leg</b>	Hopi	qá:si		'thigh'
<b>leg</b>	Hopi	sáha		'calf'
<b>leg</b>	Hopi	hókya		'lower leg'
<b>leg</b>	Hopi	námo		'shin'
<b>leg</b>	Hua	gia'		'leg/foot'
<b>leg</b>	Hua	()ru'		'thigh, lap'
<b>leg</b>	Hungarian	láb		'leg'
<b>leg</b>	Hup	tǒk		'thigh'
<b>leg</b>	Hup	cǐʔ		'calf'
<b>leg</b>	Icibemba	kapáfu		'calf and shin'
<b>leg</b>	Icibemba	úmu kónsó		'leg below knee'
<b>leg</b>	Icibemba	-sóósook-		'bird legs'
<b>leg</b>	Icibemba	uku ulu		'leg'
<b>leg</b>	Icibemba	í tántá		'thigh'
<b>leg</b>	Icibemba	úlu túngú		'hip and upper thigh'
<b>leg</b>	Indonesian	kaki		'leg'

leg	Innu	ushkat		'leg'
leg	Innu	upuam		'thigh'
leg	Innu	utashtan		'calf'
leg	Iraqw	ya'ee		'leg, foot, river/stream'
leg	Iraqw	uryee		'thigh'
leg	Iraqw	tsi		'calf'
leg	Iraqw	i		'calf'
leg	Jahai	blíʔ		'upper leg'
leg	Jahai	gor		'lower leg'
leg	Japanese	ashi		'leg'
leg	Japanese	fukura-hagi	[swell-shin]	'calf'
leg	Japanese	mom		'thigh'
leg	Kaingáng	-Φa		'leg'
leg	Kaingáng	krɛ		'thigh'
leg	Kaingáng	Φa yẽmi		'calf'
leg	Kaingáng	Φa mɔ		'calf'
leg	Kali'na	isaiyi		'leg'
leg	Kali'na	-peti		'thigh'
leg	Kali'na	-isaipunu	[leg.chair]	'calf'
leg	Kanuri	shî		'leg/foot'
leg	Kanuri	dúnó (2)		'thigh'
leg	Kanuri	dóngəl		'calf'
leg	Karok	ʔápsĩh		'leg'
leg	Karok	ʔapkúruh		'thigh'
leg	Ket	būl		'leg'
leg	Ket	kĩʔs		'leg'
leg	Ket	dĩʔ (2)		'thigh, hip, tree trunk'
leg	Ket	qopqul		'calf'
leg	Ket	qopqu		'calf'
leg	Kewa	aa		'leg/foot'
leg	Kewa	ke		'upper thigh'
leg	Kewa	roaape		'calf of the leg'
leg	Kildin Saami	jüll'k		'leg/foot'
leg	Kildin Saami	čüarr-piell'		'thigh, hip, buttocks'
leg	Kildin Saami	piecck		'calf'
leg	Koasati	ittabí		'leg'
leg	Koasati	obí		'thigh'
leg	Koasati	konihlí		'calf of the leg'
leg	Korean	da ri		'leg'
leg	Kosena	a-ruq-a		'his thigh'

<b>leg</b>	Kosena	a-ma-ma		'his calf'
<b>leg</b>	Kosena	a-mai-ma		'his calf'
<b>leg</b>	Kosena	a-wetam-ba		'his lower leg'
<b>leg</b>	Kuman	kati-		'leg'
<b>leg</b>	Kuuk Thayore	yangkar		'calf'
<b>leg</b>	Luala Enga	kimbu		'foot, leg, wheel (of car or cycle), hind leg on animal'
<b>leg</b>	Luala Enga	luma		'shin'
<b>leg</b>	Luala Enga	pangu kuli		'shoulder blade, foreleg'
<b>leg</b>	Lao	khe`e`n3		'leg'
<b>leg</b>	Lao	khe`e`ng1		'lower leg'
<b>leg</b>	Lao	khaa3 tooj4	[thigh leg]	'thigh'
<b>leg</b>	Lavukaleve	tau		'limb'
<b>leg</b>	Lavukaleve	lausu		'thigh'
<b>leg</b>	Lengua	-ithčipuk		'leg, bone'
<b>leg</b>	Lengua	-yowuk		'thigh'
<b>leg</b>	Lengua	-ithčipuk apitik		'calf'
<b>leg</b>	Limba	kutai ko		'leg/foot, paw'
<b>leg</b>	Limba	bawuri		'leg, calf'
<b>leg</b>	Limba	kutũndo ko		'thigh, buttock'
<b>leg</b>	Loniu	kaka		'leg/foot'
<b>leg</b>	Loniu	pɛʔɛkaka		'shin'
<b>leg</b>	Loniu	čoweya		'thigh'
<b>leg</b>	Luo	tielo		'foot, leg, root, meaning, also a verb: to press down, compress (in a container)'
<b>leg</b>	Luo	em		'inner, lower thigh'
<b>leg</b>	Luo	bam		'outer upper thigh, hip'
<b>leg</b>	Makalero	ia		'leg'
<b>leg</b>	Makalero	ia-torok		'lower leg'
<b>leg</b>	Makalero	aten		'thigh'
<b>leg</b>	Malagasy	rànjo		'leg'
<b>leg</b>	Malagasy	fè		'thigh'
<b>leg</b>	Malagasy	kibondràño	[belly + -N- 'GEN'+leg]	'calf'
<b>leg</b>	Malayalam	ka:lə		'leg'

leg	Manange	3pale		'leg/foot'
leg	Manange	ʃili		'thigh'
leg	Mapundungun	chang		'leg'
leg	Mapundungun	llike		'thigh'
leg	Mapundungun	komofùn		'calf'
leg	Maybrat	ao		'leg, calf'
leg	Maybrat	-aur		'calf of leg'
leg	Maybrat	famu		'thigh'
leg	Mbum	vòk		'leg/foot'
leg	Mbum	máàhùl		'thigh'
leg	Mbum	hùl		'thigh'
leg	Mian	ikam		'leg'
leg	Misantla Totonac	tan-tuu-nì		'lower leg'
leg	Misantla Totonac	caas-tuu-nì		'side of leg'
leg	Misantla Totonac	paa-tan-tuu-nì		'calf'
leg	Mohawk	-hsin-		'leg'
leg	Mohawk	-senun-		'calf of leg'
leg	Mohawk	-hnitsh-		'thigh'
leg	Muisca	goca		'leg'
leg	Muisca	quhque		'thigh'
leg	Muisca	goque iosua		'calf'
leg	Mundurukú	dao		'leg'
leg	Mundurukú	tao		'leg'
leg	Nahuatl	i-kes		'thigh'
leg	Nahuatl	i-koc̥		'calf'
leg	Nahuatl	i-koc̥ko		'calf'
leg	Nahuatl	i-koci-kan		'calf'
leg	Nahuatl	i-kes		'leg'
leg	Nahuatl	i-mec̥		'leg'
leg	Navajo	ajáád		'leg'
leg	Njébbana	mémarla		'thigh, upper leg'
leg	Njébbana	waláya		'lower leg, tail'
leg	Njébbana	njakkárla		'lower leg'
leg	Nkore-Kige	okuguru		'leg'
leg	Nkore-Kige	muhanami		'calf of leg'
leg	Nkore-Kige	ekibero		'thigh'
leg	Nubian	ōj		'foot, leg'
leg	Nyulnyul	-mmurr		'thigh, lap'
leg	Nyulnyul	-mmurr		'leg, knee, shin, calf'



leg	Ojibwe	nikaad		'my leg'
leg	Ojibwe	nimbwaam		'my thigh (back), my hindquarter'
leg	Oksapmin	mun		'thigh'
leg	Oksapmin	bux/ mbux		'lower leg'
leg	Orokolo	mauki		lap, thigh'
leg	Orokolo	loa parae		'calf of leg'
leg	Orokolo	loa ekela		'calf of leg'
leg	Oromo	miila		'leg/foot'
leg	Oromo	luka		'whole leg including the foot and thigh'
leg	Oromo	gaadii		'calf, lower part of leg'
leg	Oroqen	algan		'leg/foot'
leg	Oroqen	bɔ:kan		'thigh'
leg	Oroqen	bɔltʃakta		'calf'
leg	Otomi	xinthe		'leg'
leg	Otomi	tukungo	[tender flesh]	'thigh'
leg	Otomi	dot'uwa	[fold leg]	'calf'
leg	Pulaar	koyngal		'leg/foot'
leg	Pulaar	cakutal		'leg'
leg	Pulaar	korlal		'lower leg, shank, shin'
leg	Qawasqar	kʰat		'leg'
leg	Qawasqar	kʰat-serpe		'thigh'
leg	Qawasqar	kʰat-kʰar		'calf'
leg	Q'eqchi'	a'		'leg'
leg	Q'eqchi'	ru a'		'thigh'
leg	Q'eqchi'	xsu oq	[3ERG-tecomate foot]	'calf'
leg	Quechua	čaki		'knee to toe'
leg	Quechua	čaka		'leg, thigh'
leg	Quechua	čaki sinqa	[knee-to-toe nose]	'shin'
leg	Quechua	č'upa		'calf'
leg	Rotokas	kokotoa		'leg'
leg	Rotokas	upisi keru		'lower leg'
leg	Rotokas	vatoukeru		'upper leg'
leg	Rotokas	vatoua		'thigh'
leg	Sakha	ataɣ		'leg/foot'
leg	Sakha	bu:t		'thigh'
leg	Sakha	soto bötöyötö	[shin ??-POSS.3SG]	'calf'
leg	Salish	jəsəd		'leg'

leg	Samoan	vae		'leg'
leg	San (G/wi, G//ana)	ng(!)are		'leg/foot'
leg	San (G/wi, G//ana)	kien		'thigh'
leg	San (G/wi, G//ana)	g i!kene		'calf of leg'
leg	Savosavo	nato		'leg/foot'
leg	Savosavo	geghe		'upper thigh'
leg	Selknam	hali		'leg'
leg	Selknam	koʔč		'lower front of leg'
leg	Selknam	is		'thigh'
leg	Selknam	tòhkʔn		'calf'
leg	Seri	-toā		'leg'
leg	Seri	-apix		'shin'
leg	Seri	-apot		'calf'
leg	Seri	-taɣim		'thigh'
leg	Shilluk	tyelo		'leg/foot'
leg	Shilluk	ram		'thigh'
leg	Shilluk	akeny tyelo		'calf of the leg'
leg	Shilluk	ogwal tyelo		'calf of the leg'
leg	Shipibo-Conibo	witaš		'leg'
leg	Shipibo-Conibo	kiši		'leg'
leg	Shipibo-Conibo	wi-		'leg'
leg	Shipibo-Conibo	kiši		'thigh'
leg	Shipibo-Conibo	wipoko		'calf'
leg	Shona	gumbo		'leg'
leg	Shona	mupanze		'lower leg/ knee to ankle'
leg	Shona	chidya		'thigh, hind leg'
leg	Shona	chidzva		'thigh, hind leg'
leg	Somali	lug		'leg'
leg	Somali	bawdo		'thigh'
leg	Southern Paiute	yu'u-		'leg'
leg	Southern Paiute	yi'u-		'leg'
leg	Southern Paiute	piŋkapi-		'upper part of leg'
leg	Southern Paiute	wica-		'calf'
leg	Southern Paiute	tapaci-		'leg bone'
leg	Swahili	mguu		'leg/foot'
leg	Swahili	paja		'thigh'

<b>leg</b>	Swahili	shavu la mguu	[cheek of leg]	'calf'
<b>leg</b>	Takia	ŋe-		'leg/foot'
<b>leg</b>	Takia	dge- ŋe-n		'thigh'
<b>leg</b>	Takia	labe-n	[leg-2SG scrotum-3SG]	'calf'
<b>leg</b>	Tarifiyt Berber	ḏ'ā (1)		'leg, foot'
<b>leg</b>	Tarifiyt Berber	ifaddən		'thigh, knees'
<b>leg</b>	Tarifiyt Berber	tar'r'əmmant (n) uḏ'ā	[pomegrenade of leg]	'calf'
<b>leg</b>	Thai	khāa	[origin/beginning-leg]	'leg'
<b>leg</b>	Thai	phlao		'leg'
<b>leg</b>	Thai	tônkhāa		'leg'
<b>leg</b>	Thai	nōŋ		'calf'
<b>leg</b>	Tidore	yohu		'leg'
<b>leg</b>	Tidore	pala-pala		'thigh'
<b>leg</b>	Tidore	usi-usi		'calf'
<b>leg</b>	Tiriyó	peti		'thigh'
<b>leg</b>	Tiriyó	ewapunu		'calf'
<b>leg</b>	Tlingit	-x'ooos		'leg'
<b>leg</b>	Tlingit	-gáɕ		'thigh'
<b>leg</b>	Tlingit	xées'		'shin'
<b>leg</b>	Tonga	ku-ulu		'a leg, foot'
<b>leg</b>	Tonga	mweendo		'a leg'
<b>leg</b>	Tonga	mwiindi		'the shin, calf of the leg'
<b>leg</b>	Tonga	mwiini		'the handle of an axe, etc.'
<b>leg</b>	Tonga	cibelo		'the thigh'
<b>leg</b>	Tsimshian	gasasi		'shinbone, tibia, sun rays'
<b>leg</b>	Tsimshian	t'mlaam		'leg'
<b>leg</b>	Tuscarora	uréhseh		'leg'
<b>leg</b>	Tuscarora	uθenèneh		'calf of the leg'
<b>leg</b>	Tuscarora	urəʔéʔčreh		'calf of the leg'
<b>leg</b>	Tuyaca	yĩ'kā		'leg'
<b>leg</b>	Tuyaca	ise-be'to		'thigh'
<b>leg</b>	Tuyaca	yĩ'kā-di-ga		'calf'
<b>leg</b>	Uyghur	paqalchek		'lower leg'
<b>leg</b>	Uyghur	pachaq		'lower leg'
<b>leg</b>	Uyghur	yota		'thigh'
<b>leg</b>	Uyghur	put		'leg, foot, lower limb'
<b>leg</b>	Uyghur	tuyaq		'limb of an

				animal with long legs, such as a horse, deer, camel or cow'
<b>leg</b>	Vietnamese	chân		'leg/foot'
<b>leg</b>	Vietnamese	đùi		'thigh'
<b>leg</b>	Vietnamese	bắp chân	[shaft leg]	'calf'
<b>leg</b>	Waiwai	o-Φeti-	[1st-thigh-poss]	'my thigh'
<b>leg</b>	Waiwai	o-hreΦu-Ø	[1st-lower leg-poss]	'my calf'
<b>leg</b>	Wapishana	-t <sup>h</sup> a <sup>ʔ</sup> baʔi		'leg'
<b>leg</b>	Wapishana	-uk <sup>h</sup> u <sup>ʔ</sup> ba		'thigh'
<b>leg</b>	Wapishana	-k <sup>h</sup> a <sup>ʔ</sup> d̥iɪzuu		'calf'
<b>leg</b>	Waurá	-kati		'thigh'
<b>leg</b>	Waurá	-puti		'thigh'
<b>leg</b>	White Hmong	ceg		'leg, branch'
<b>leg</b>	White Hmong	ncej puab	[pillar-thigh]	'thigh'
<b>leg</b>	White Hmong	plab hlaub	[stomach-lower.leg]	'calf'
<b>leg</b>	Wichi	totkolo		'leg'
<b>leg</b>	Wichi	tolheche		'the thigh'
<b>leg</b>	Wichi	totkolots'e	[POSS.INDF- leg+paunch]	'calf'
<b>leg</b>	Yagua	duse		'upper leg'
<b>leg</b>	Yagua	muda		'lower leg'
<b>leg</b>	Yagua	tudi		'thigh'
<b>leg</b>	Yagua	dusepude		'calf'
<b>leg</b>	Yanomámi	pei mat <sup>h</sup> a		'leg'
<b>leg</b>	Yanomámi	pei waku		'thigh'
<b>leg</b>	Yanomámi	pei mat <sup>h</sup> a šiäpi		'calf'
<b>leg</b>	Yao	lukongolog		'leg'
<b>leg</b>	Yao	ngongolo		'leg'
<b>leg</b>	Yao	makongolo		'leg'
<b>leg</b>	Yaqui	macham		'leg, thigh'
<b>leg</b>	Yaqui	woktomam	[feet-muscles]	'calf'
<b>leg</b>	Yasin-Burushaski	-ltánc		'leg'
<b>leg</b>	Yasin-Burushaski	-sák		'thigh' (of an animal)
<b>leg</b>	Yéllí Dnye	yi		'lower leg, foot'
<b>leg</b>	Yéllí Dnye	kpa <sup>ˆ</sup> a <sup>ˆ</sup> li		'upper leg'
<b>leg</b>	Yoruba	e.se'		'leg'
<b>leg</b>	Yuki	ʔ'aʔač		'leg'
<b>leg</b>	Yuki	miʔiyel'		'leg'

<b>leg</b>	Yuki	mɪk'ómɪs~k'umiš		'thigh'
<b>leg</b>	Yuki	mēl-tin		'lower leg'
<b>leg</b>	Yup'ik	ipik		'leg, leg of an animal'
<b>leg</b>	Yup'ik	iruq		'leg'
<b>leg</b>	Yup'ik	kanagaq		'leg'
<b>leg</b>	Yup'ik	kemegtuaq		'leg'
<b>leg</b>	Yup'ik	nakacugnaq		'lower leg muscle'
<b>leg</b>	Yup'ik	talliquq		'leg of an animal'
<b>leg</b>	Yup'ik	kemgtuaq		'thigh'
<b>leg</b>	Yup'ik	qugtuqaq		'thigh'
<b>leg</b>	Yup'ik	kingulir		'back of thigh'
<b>leg</b>	Yup'ik	nakacugnaq		'calf of the leg'
<b>leg</b>	Zinacantan	ʔakanil		'foreleg, leg (human)'
<b>leg</b>	Zinacantan	ʔokol		'leg, foot, post, handle, pole'
<b>leg</b>	Zinacantan	ʔoʔil		'thigh, hip'
<b>leg</b>	Zulu	umlenze		'leg'
<b>leg</b>	Zulu	umbala		'shin bone'
<b>leg</b>	Zulu	ithanga		'thigh'
<b>leg</b>	Zuni	sak <sup>wi</sup> -		'leg'
<b>leg</b>	Zuni	ʔoyyi-		'thigh'
<b>leg</b>	Zuni	šiʔpiya-		'calf'
<b>thumb</b>	Abau	yorpow		'thumb'
<b>thumb</b>	Abui	lei lohu	[the long overreaching one]	'middle finger'
<b>thumb</b>	Abui	lek		'index finger'
<b>thumb</b>	Aguaruna	muun 'uwih		'thumb'
<b>thumb</b>	Amanab	afa		'thumb, fifth'
<b>thumb</b>	Amanab	angig		'little finger, first'
<b>thumb</b>	Amanab	angieg		'ring finger, second'
<b>thumb</b>	Amanab	orinai		'middle finger, third'
<b>thumb</b>	Amanab	figneg		'index finger, fourth'
<b>thumb</b>	Arabic	ibham		'thumb'
<b>thumb</b>	Araona	me-šok <sup>w</sup> e		'thumb'
<b>thumb</b>	Archi	be <sup>k</sup> 'ərt:en gon		'thumb'
<b>thumb</b>	Aushi	iciŋkumwa (ifi-)		'thumb'

<b>thumb</b>	Aushi	akamindwa (utu-)		'little finger'
<b>thumb</b>	Aymara	tayka luk'ana		'thumb'
<b>thumb</b>	Ayoreo	ma'ne-naa'te	[the big finger]	'thumb'
<b>thumb</b>	Ayoreo	ma'ne-daa'te	[the big finger]	'thumb'
<b>thumb</b>	Bagandji	widu-mara	[big-finger]	'thumb'
<b>thumb</b>	Bagandji	namaga-mara	[mother-finger]	'thumb'
<b>thumb</b>	Bayura	a'jawinya		'thumb'
<b>thumb</b>	Bezhta	buq'o zaλ'o	[clIII.big finger]	'thumb'
<b>thumb</b>	Biloxi	cakxohi	[hand old]	'thumb'
<b>thumb</b>	Buli	nandub daasa		'thumb, big toe'
<b>thumb</b>	Cayapa	aa-t'a-'mišu	[large-hand-head]	'thumb'
<b>thumb</b>	Cayuga	kweyoká:keh		'thumb'
<b>thumb</b>	Ceq Wong	bəʔ cas	[full-sized hand]	'thumb'
<b>thumb</b>	Chantyal	huri əŋŋula	[old woman finger]	'thumb'
<b>thumb</b>	Chantyal	jethi əŋŋula	[eldest daughter digit]	'index finger, first toe'
<b>thumb</b>	Chantyal	mayli əŋŋula	[2nd daughter digit]	'middle finger, middle toe'
<b>thumb</b>	Chantyal	sāyli əŋŋula	[3rd daughter digit]	'ring finger, 3rd toe'
<b>thumb</b>	Chantyal	kanchi əŋŋula	[youngest daughter digit]	'little finger, 4th toe'
<b>thumb</b>	Chatino, Zacatepec	ʃnī tnũ-		'thumb'
<b>thumb</b>	Cheke Holo	gegesu bi'o		'thumb'
<b>thumb</b>	Chickasaw	ilbakshki'	[hand father]	'thumb'
<b>thumb</b>	Chickasaw	ilbak inki'		'thumb'
<b>thumb</b>	Chinese	mu3zhi3	[thumb/big.toe-finger]	'thumb, big toe'
<b>thumb</b>	Chipaya	čaxʷkšmari		'thumb'
<b>thumb</b>	Coeur d'Alene	s-č'ih-íp-ičt	[the right (surface) at the bottom of the hand]	'thumb'
<b>thumb</b>	Coeur d'Alene	s-ccíw'tumš-qən'-ičt	[the youngest child of the fingers]	'little finger'
<b>thumb</b>	Comanche	mahtokooʔ		'thumb'
<b>thumb</b>	Comanche	mahtuaʔ		'little finger'
<b>thumb</b>	Comanche	mahtupináa		'middle finger'
<b>thumb</b>	Comanche	tutsihtsukaʔ		'index finger'
<b>thumb</b>	Delaware	kitələnʃ	[big finger]	'thumb'
<b>thumb</b>	Dobu	nimamatapoi		'thumb'
<b>thumb</b>	Efik	äböŋ nuenuböŋ		'thumb'
<b>thumb</b>	Embera	hiu'a-papa	[hand-mother]	'thumb'

<b>thumb</b>	Ese Ejja	e-me-ʔai		'thumb'
<b>thumb</b>	Finnish	peukalo		'thumb'
<b>thumb</b>	Fore	mosowe		'thumb'
<b>thumb</b>	Fore	kuwikayinowé		'thumb'
<b>thumb</b>	Fore	ísa'a aríba'náne		'thumb'
<b>thumb</b>	Fore	arupúwe		'(middle) fingers or toes, forefingers'
<b>thumb</b>	Fore	ísapa aríbantáné		'thumb' (sweet potato peeler)
<b>thumb</b>	Fore	agewe		'(little) finger, little toe'
<b>thumb</b>	Fore	agentówe		'(little) finger, little toe'
<b>thumb</b>	Gawwada	ɢuʃakko dāmma	[finger-SG.M be.big-IPFV.3M]	'thumb'
<b>thumb</b>	Ghulfan	ʋʃi nɪnɪŋ / uʃi nɪŋaŋ	[mother hand]	'thumb'
<b>thumb</b>	Girawa	ipou tapau		'thumb'
<b>thumb</b>	Goajiro/ Wayuu	ho-ušu ta-hapi-řa	[grandmother of my fingers]	'thumb'
<b>thumb</b>	Gourma	nu-bi-ja-li	[arm/hand-small-male]	'thumb'
<b>thumb</b>	Gourma	luagidi'n ni	Lit. 'leave me alone'	'index finger'
<b>thumb</b>	Gourma	nu-bi-ka-sie-li	[arm/hand-small-look-there]	'index finger'
<b>thumb</b>	Gourma	nu-bi-waan-kaa-li	[arm/hand-small-tell-there]	'index finger'
<b>thumb</b>	Gourma	koankoan-nu-bi-li	[arguing-arm/hand-small]	'index finger'
<b>thumb</b>	Great Andamanese	tʰoŋkenapɕəkʰɔ	[1sg=CL3=finger-face]	'my thumb'
<b>thumb</b>	Guarani	kuã ɣʷasu		'thumb'
<b>thumb</b>	Guarani	kuãʷguasu		'thumb'
<b>thumb</b>	Gurindji	wartarn ngamayi	[hand mother]	'thumb'
<b>thumb</b>	Guugu Yimidhirr	guluurr		'thumb, fingers'
<b>thumb</b>	Guugu Yimidhirr	ngagin		'little finger, little toe'
<b>thumb</b>	Haida	stlakʷwáay		'thumb'
<b>thumb</b>	Hausa	bàbbán dān yátsàa	[big-GEN son-GEN finger]	'thumb'
<b>thumb</b>	Hopi	wükómalači	[big.finger]	'thumb'
<b>thumb</b>	Hua	buzuva		'thumb'

<b>thumb</b>	Hua	ropa		'old, mature, thumb'
<b>thumb</b>	Hua	()za'daia		'bunch, thumb'
<b>thumb</b>	Hungarian	hüvelykujj		'thumb'
<b>thumb</b>	Hup	cob popög	[big finger]	'thumb'
<b>thumb</b>	Icibemba	íci kúmó		'thumb'
<b>thumb</b>	Indonesian	ibujari		'thumb'
<b>thumb</b>	Iraqw	duguno		'thumb, big toe'
<b>thumb</b>	Jahai	tabo' (cyas)	[big digit (hand)]	'thumb'
<b>thumb</b>	Japanese	oyayubi	[parent-finger]	'thumb'
<b>thumb</b>	Kali'na	aina yumi	[hand father]	'thumb'
<b>thumb</b>	Kanuri	ngùlòndó bàlân	[finger town-of]	'thumb'
<b>thumb</b>	Karok	tikánkām		'thumb'
<b>thumb</b>	Ket	qəəl		'thumb'
<b>thumb</b>	Kildin Saami	piell'k		'thumb'
<b>thumb</b>	Koasati	ilbikí		'thumb'
<b>thumb</b>	Korean	eomji ka rak		'thumb'
<b>thumb</b>	Kosena	a-yaanavonda		'his thumb'
<b>thumb</b>	Kuuk Thayore	yuur-(koo-) ngamal	[hand-(nose-)big]	'thumb'
<b>thumb</b>	Luala Enga	kingi mange	[arm neck/stem]	'thumb'
<b>thumb</b>	Luala Enga	kingi pambu	[hand pump?]	'thumb'
<b>thumb</b>	Luala Enga	kingi yanda ipingi	[finger that pulls the bowstring]	'right forefinger'
<b>thumb</b>	Lao	poo4 mu`u`u2	[hand poo4]	'thumb'
<b>thumb</b>	Lao	niw4 poo4	[poo4 digit]	'thumb'
<b>thumb</b>	Lavukaleve	fetu		'thumb'
<b>thumb</b>	Lengua	yaiikla -aphehik		'thumb'
<b>thumb</b>	Limba	kutinkeli kotante		'thumb'
<b>thumb</b>	Loniu	pəkemata		'thumb'
<b>thumb</b>	Malagasy	ankihibè	[finger+big,much]	'thumb'
<b>thumb</b>	Manange	lja 1p <sup>h</sup> u	[hand-thumb]	'thumb'
<b>thumb</b>	Mapundungun	fütra chagüll kuwü	[big finger hand]	'thumb'
<b>thumb</b>	Mbum	gáñdôk 'thumb'	[big+hand]	'thumb'
<b>thumb</b>	Mbum	sárándôk	[end of +hand]	'little finger'
<b>thumb</b>	Mian	kweil awok	[hand mother]	'thumb'
<b>thumb</b>	Mohawk	-wiyuhkar'		'thumb'
<b>thumb</b>	Nahuatl	i-weyi ma-h-pil	[possessed-large hand-diminutive (child)]	'thumb'
<b>thumb</b>	Navajo	álátsoh		'thumb'
<b>thumb</b>	Nkore-Kige	ekishai ja		'thumb'



<b>thumb</b>	Nkore-Kige	ekikumu		'thumb'
<b>thumb</b>	Nkore-Kige	orutongana		'index finger'
<b>thumb</b>	Nkore-Kige	nkirezindi		'middle finger'
<b>thumb</b>	Nkore-Kige	nfayoki		'ring finger'
<b>thumb</b>	Nkore-Kige	akahera		'little finger'
<b>thumb</b>	Oksapmin	tipun/tupun		'thumb'
<b>thumb</b>	Orokolo	hue		'thumb'
<b>thumb</b>	Orokolo	harapo		'little finger'
<b>thumb</b>	Oromo	agicoo		'thumb, the big toe'
<b>thumb</b>	Oroqen	uru:n		'thumb'
<b>thumb</b>	Oroqen	uruwun		'thumb'
<b>thumb</b>	Otomi	nok <sup>h</sup> unsa'ñe	[thick, big finger]	'thumb'
<b>thumb</b>	Pulaar	fedeenduwórdú		'thumb'
<b>thumb</b>	Qawasqar	at <sup>h</sup> eles-at <sup>h</sup> eles-o-xar		'thumb'
<b>thumb</b>	Q'eqchi'	na' uq'm	[mother hand]	'thumb'
<b>thumb</b>	Quechua	maman riru		'thumb'
<b>thumb</b>	Rotokas	vavae aakopeva		'thumb'
<b>thumb</b>	Rotokas	kokorai kova		'little finger'
<b>thumb</b>	Sakha	erbex		'thumb'
<b>thumb</b>	Salish	sluʔ'álqačǝ?	[old finger]	'thumb'
<b>thumb</b>	Samoa	limamatua		'thumb'
<b>thumb</b>	Savosavo	ngai ririkina	[big digit]	'thumb'
<b>thumb</b>	Selknam	tèr kohrḱa	[finger first]	'thumb'
<b>thumb</b>	Seri	-ano'lækox		'thumb'
<b>thumb</b>	Shilluk	lwen dwon		'thumb'
<b>thumb</b>	Shipibo-Conibo	mi-ki-mapo		'thumb'
<b>thumb</b>	Shona	cara		'thumb'
<b>thumb</b>	Shona	'zara		'big thumb'
<b>thumb</b>	Shona	gumwe		'thumb, big toe, thumbprint'
<b>thumb</b>	Shona	chigumwe		'thumb'
<b>thumb</b>	Somali	suul		'thumb'
<b>thumb</b>	Swahili	(kidole) gumba		'(finger) thumb'
<b>thumb</b>	Takia	kafe-		'thumb'
<b>thumb</b>	Tarifiyt Berber	iməz		'thumb'
<b>thumb</b>	Thai	hǎmâeae <sup>m</sup> u	[head-mother-hand]	'thumb'
<b>thumb</b>	Tidore	gia ma-ngoda	[arm/hand POS-thumb]	'thumb'
<b>thumb</b>	Tiriyó	enja itamu	[hand-chief]	'thumb'
<b>thumb</b>	Tlingit	-gooš		'thumb'

<b>thumb</b>	Tonga	calanhanda		'the thumb'
<b>thumb</b>	Tsimshian	moos		'thumb'
<b>thumb</b>	Tuscarora	(-hsuʔku-)		'thumb'
<b>thumb</b>	Tuyaca	ma'ne-daa'te		'thumb'
<b>thumb</b>	Uyghur	baʃ barmaq	[head finger]	'thumb'
<b>thumb</b>	Uyghur	chimchalaq barmaq	[small.one finger]	'little finger'
<b>thumb</b>	Uyghur	chimaltek		'little finger'
<b>thumb</b>	Waiwai	oy-amo-ri yemhitho	[1st-hand-poss thumb]	'my thumb'
<b>thumb</b>	Wapishana	-kʰaʔi ʔdariʔdaʔi		'thumb'
<b>thumb</b>	Waurá	-neʒi-tiwi	[he/father-head]	'thumb'
<b>thumb</b>	White Hmong	nitv tes xoo	[digit + hand+ thumb/ big.toe]	'thumb'
<b>thumb</b>	Wichi	tofwefw lhukwe	[POSS.INDF-finger father]	'thumb'
<b>thumb</b>	Yagua	ntityũ hanã		'thumb'
<b>thumb</b>	Yanomámi	pata imihena	[large finger]	'thumb'
<b>thumb</b>	Yao	cacikongo		'thumb'
<b>thumb</b>	Yaqui	mampusiam	[hand-finger]	'thumb'
<b>thumb</b>	Yasin- Burushaski	phulúte -meş		'thumb'
<b>thumb</b>	Yasin- Burushaski	laphút		'thumb'
<b>thumb</b>	Yélî Dnye	ke^e^ k:aa pya^a^	[arm taro woman]	'thumb'
<b>thumb</b>	Yuki	mihoṭ	[finger big]	'thumb'
<b>thumb</b>	Yuki	mik'as		'little finger'
<b>thumb</b>	Yup'ik	asaun		'thumb'
<b>thumb</b>	Yup'ik	ayaun		'index finger'
<b>thumb</b>	Yup'ik	kul'u		'middle finger'
<b>thumb</b>	Yup'ik	kumlu		'ring finger'
<b>thumb</b>	Yup'ik	nangneq		'little finger'
<b>thumb</b>	Zinacantan	me7 k'obol	[mother hand]	'thumb'
<b>thumb</b>	Zulu	isithupha		'thumb'
<b>thumb</b>	Zulu	ucikicane		'small finger'
<b>thumb</b>	Zulu	unkomba		'forefinger'
<b>thumb</b>	Zuni	ʔasi lanakkʷa		'thumb'
<b>toe</b>	Abau	supow		'big toe'
<b>toe</b>	Abui	he-toku paka	[fruits of his foot]	'his toe'
<b>toe</b>	Aguaruna	caham dawi		'toe'
<b>toe</b>	Anandilyakwa	amwirgina	[small.joint]	'toe'
<b>toe</b>	Arabic	usʰbuʃ		'toe'
<b>toe</b>	Araona	waci-aca		'toe'
<b>toe</b>	Archi	gon		'toe'

toe	Aushi	icikondo (ifi-)		'toe'
toe	Aymara	kayu luk'ana		'toe'
toe	Ayoreo	gii'de		'toe'
toe	Bagandji	wiḍu-dina		'big toe'
toe	Bayura	sivijawinya		'toe'
toe	Bezhta	zoʁ'o		'toe'
toe	Biloxi	isi wusi		'toes'
toe	Blackfoot	mookitsis		'toe'
toe	Buli	nandub		'toe'
toe	Cayapa	ne-'mišu	[foot-head]	'toe'
toe	Cayuga	ketsi'ohta'keh		'toe'
toe	Ceq Wong	wɔŋ can	[offspring toe]	'toe'
toe	Chalcatongo Mixtec	šini xáʔa	[head foot]	'toe'
toe	Chantyal	əŋŋula		'digit'
toe	Chatino, Zacatepec	lō kiyaʔ-		'toe'
toe	Cheke Holo	ḡegesugahe		'toe'
toe	Chickasaw	iyyoshi'		'toe'
toe	Chickasaw	iyyishki'		'big toe'
toe	Chinese	jiao3zhi3	[foot-finger]	'toe'
toe	Chipaya	lok'ana		'toe'
toe	Coeur d'Alene	s-t'ér-šən		'toe'
toe	Comanche	tasakwuuḥkiʔ		'toes'
toe	Comanche	tahtokooʔ		'big toe'
toe	Comanche	tahtúaʔ		'little toe'
toe	Comanche	tahtupinaaʔ		'middle toe'
toe	Comanche	tookaatso		'toe'
toe	Delaware	enda tɔŋk.ata.	[where my leg is small]	'toe'
toe	Dobu	aematagigi		'toe'
toe	Efik	nuen-uküt		'toe'
toe	Emai	ukpoa	[beak.foot']	'toe'
toe	Ese Ejja	e-xioxi-sisi		'toe'
toe	Finnish	varvas		'toe'
toe	Fore	nayabáwé		'my fingers, my toes'
toe	Fore	nagisá amáwé		'my toes'
toe	Gawwada	ḡuʃakko		'toe'
toe	Ghulfan	kondúl		'toe'
toe	Ghulfan	kwendulé		'toe'
toe	Ghulfan	kwendulanú		'toe'
toe	Girawa	isi mauak		'toe'

toe	Girawa	isiwauk		'toe'
toe	Gnau	galbien		'digit (of hand or foot)'
toe	Gnau	gise'at		'animal (not bird) foot, paw or trotter' 'human toe (secondary usage)'
toe	Goajiro/ Wayuu	hi-pačĩra to-uui		'toe'
toe	Gourma	ta-jem-bi-lix	[leg/foot -end-small]	'toe'
toe	Great Andamanese	tʰɛɾtɔe	[1sg=CL2.POSS=bone(calf)]	'my bone'
toe	Great Andamanese	tʰɔmɔtɔtɔjukʰu	[1sg=CL7.POSS=leg-CL4.POSS=extension]	'my toe'
toe	Guarani	pi-sã		'toe'
toe	Gurindiji	jamana gnamayi	[foot mother]	'toe'
toe	Guugu Yimidhirr	ngagin		'little finger, little toe'
toe	Haida	sta-kwul-ting-ē		'toe'
toe	Haida	stai-kwool-ting-ai		'toe'
toe	Haida	tam-a-rē		'toe'
toe	Haida	tum-ai		'toe'
toe	Hopi	kükvosi		'toe'
toe	Hungarian	lábujj	[leg finger]	'toe'
toe	Hup	j'ib tãtã'h	[little foot]	'toe'
toe	Icibemba	j'ib popög	[big toe]	'toe'
toe	Indonesian	didu		'toe'
toe	Innu	jari kaki		'toe'
toe	Jahai	tabo' (can)	[big digit (of foot)]	'big toe'
toe	Japanese	ashiyubi		'toe'
toe	Kaingáng	pẽn mən		'toe'
toe	Kaingáng	pẽn yuya		'toe'
toe	Kaingáng	pẽn sĩ		'toe'
toe	Kali'na	-makalili		'toe'
toe	Kanuri	ngùlòndó shîbè	[finger foot-of]	'toe'
toe	Karok	fĩθih		'toe'
toe	Ket	tə'q		'toe'
toe	Kewa	rikini		'toe'
toe	Kewa	rikili		'toe'
toe	Kildin Saami	jüll'k-ciehp	[foot+toe]	'toe'
toe	Koasati	iyyocó:si		'toe'

toe	Koasati	iyyikí		'big toe'
toe	Korean	bal ka rak	[foot strings]	'toe'
toe	Kosena	a-isaavonda		'his big toe'
toe	Kosena	a-isana-ma		'his little toes'
toe	Kuuk Thayore	thamr-mant	[foot-small]	'toe'
toe	Kuuk Thayore	thamr-wuurr	[foot-digit]	'toe'
toe	Luala Enga	kimbu mange	[leg neck]	'big toe'
toe	Lao	khe`e`n3		'toe'
toe	Lavukaleve	soka		'toe'
toe	Lengua	-aphehik		'toe'
toe	Limba	hutori ha		'toe'
toe	Loniu	palakaka pøkemata		'toe'
toe	Makalero	ia-raka		'toe'
toe	Malagasy	rantsantòngotra	[branch foot]	'toe'
toe	Muisca	quihichyba		'toe'
toe	Mapundungun	changüll namun	[finger foot]	'toe'
toe	Maybrat	krem		'toe'
toe	Maybrat	-ao krem		'toe'
toe	Mbum	gûnvòk	[child+foot]	'toe'
toe	Manange	3pale 3ti	[leg/foot-toe]	'toe'
toe	Misantla Totonac	iš-tuu-slał		'his/her toe'
toe	Mohawk	-yakwir-		'toe'
toe	Nahuatl	i-mec-ikši-pil		'toe'
toe	Navajo	akézhoozh		'toe'
toe	Navajo	akédinibiní		'toe'
toe	Navajo	akee		'toe'
toe	Njébbana	kúdja		'hand, finger, foot, toe, tracks, base (of a tree)'
toe	Nkore-Kige	orukumu rw' ekigyere		'toe'
toe	Oksapmin	ngiβəl		'finger, digit, toe'
toe	Orokolo	loa lekoka		'toe'
toe	Oromo	k'ubicoo		'finger, toe'
toe	Oroqen	farbakta		'finger, claw, toe'
toe	Otomi	nsanwa		'toe'
toe	Pulaar	hólbundu		'toe'
toe	Qawasqar	tows-arksens		'toe'
toe	Q'eqchi'	ru'uj oq	[3ERG-point/nose]	'toe'

			foot]	
toe	Quechua	čaki riru	[leg finger]	'toe'
toe	Rotokas	sipareo		'toe'
toe	Rotokas	tapisa aakope		'big toe'
toe	Rotokas	kokorai kova		'little toe'
toe	Sakha	tarbaχ		'toe'
toe	Salish	sdəχq(s)šád		'toe'
toe	Samoa	tamatama'ivae		'toe'
toe	Savosavo	ririkina		'toe'
toe	Selknam	tèr		'toe'
toe	Seri	-toā		'toe'
toe	Shilluk	lwədo tyelo		'toe'
toe	Shipibo-Conibo	taí-miβi		'toe'
toe	Shona	mumwe		'toe'
toe	Shona	munwe		'toe'
toe	Shona	chigumwe		'toe'
toe	Somali	far cageed		'toe'
toe	Southern Paiute	-šru-		'finger, toe'
toe	Swahili	kidole (cha mguu)		'finger of foot'
toe	Takia	krɛ-		'digit'
toe	Tarifit Berber	tifdant		'toe'
toe	Thai	níwhūamāeatháa w	[finger-head-mother- foot]	'toe'
toe	Tidore	yohu ma-raga	[leg/foot INAL- digit]	'toe'
toe	Tiriyó	pupu jakɪ́i	[foot-small.ones]	'toe'
toe	Tlingit	-xʷustlʰeek		'toe'
toe	Tlingit	-xʷus-gooš	[foot thumb]	'big toe'
toe	Tonga	kanwe, kalolomi		'toe'
toe	Tsimshian	xskʷaanaxs		'toe'
toe	Tuscarora	uhsúʔkweh (- hsuʔku-)		'toe'
toe	Tuyaca	ɖipo'sũã		'toe'
toe	Uyghur	putbarmaq	[foot finger]	'toe'
toe	Vietnamese	ngón chân	[finger foot]	'toe'
toe	Waiwai	o-hro-ri	[1st-toe-poss]	'my toe'
toe	Wapishana	-kʰiʔdiʔba ši		'toe'
toe	Waurá	ki-ciwi	[foot-head]	'toe'
toe	White Hmong	ntiv taw	[digit + foot]	'toe'
toe	Wichi	topach'u fwefw	[POSS.INDF-foot finger]	'toe'
toe	Yagua	numutu hanã		'toe'
toe	Yanomámi	pata mami hena		'toe'

<b>toe</b>	Yao	cala		'toe'
<b>toe</b>	Yaqui	bwe'u wokpusiam	[big-feet-finger]	'toe'
<b>toe</b>	Yélf Dnye	yi pya <sup>a</sup> dmi	[leg woman bundle]	'toe'
<b>toe</b>	Yuki	me		'toe'
<b>toe</b>	Yup'ik	mehoṭ		'big toe'
<b>toe</b>	Yup'ik	cugaraq		'toe'
<b>toe</b>	Yup'ik	yugaraq		'toe'
<b>toe</b>	Yup'ik	angenquq		'big toe'
<b>toe</b>	Yup'ik	angunquq		'big toe'
<b>toe</b>	Yup'ik	putukuq		'big toe'
<b>toe</b>	Zinacantan	bik'tal 7okol	[little foot]	'toe'
<b>toe</b>	Zinacantan	ni7 7okol	[nose foot]	'toe'
<b>toe</b>	Zulu	uzwane		'toe'
<b>toe</b>	Zuni	tukni-		'toe'
<b>wrist</b>	Abui	na-táng ha-wei	[1sg.INAL-hand 3II.INAL-ear]	'wrist'
<b>wrist</b>	Aguaruna	šiigbauč dakums- amu		'wrist'
<b>wrist</b>	Amanab	enwesog		'wrist'
<b>wrist</b>	Anandilyakwa	amwirgina	[small.joint]	'wrist'
<b>wrist</b>	Arabic	kuṣ		'wrist'
<b>wrist</b>	Araona	me-bahatibo		'wrist'
<b>wrist</b>	Archi	zo <sup>ᶜ</sup> k'no <sup>ᶜ</sup>		'wrist'
<b>wrist</b>	Ayoreo	ṃa'ne gaata'de		'wrist'
<b>wrist</b>	Bagandji	māra-gīli		'wrist'
<b>wrist</b>	Biloxi	cakponi		'wrist'
<b>wrist</b>	Binandere	ipa tumbu		'wrist'
<b>wrist</b>	Buli	ni-tali		'wrist'
<b>wrist</b>	Buli	ni-tari		'wrist'
<b>wrist</b>	Cayapa	tʰakun-'bele		'wrist'
<b>wrist</b>	Ceq Wong	raŋɛl		'wrist'
<b>wrist</b>	Chalcatongo Mixtec	sūkũ ndaʔa	[neck hand/arm]	'wrist'
<b>wrist</b>	Chalcatongo Mixtec	sĩʔĩ ndáʔa	[leg hand/arm]	'wrist'
<b>wrist</b>	Chantyal	nari		'wrist'
<b>wrist</b>	Chatino, Zacatepec	ynĩ yaʔ-	[neck hand]	'wrist'
<b>wrist</b>	Cheke Holo	biobiño khame		'wrist'
<b>wrist</b>	Chickasaw	ilbak imosak		'wrist'
<b>wrist</b>	Chickasaw	shakba' imosak		'wrist'
<b>wrist</b>	Chinese	shou3wan2zi		'wrist'
<b>wrist</b>	Chipaya	ḳx̣ar-moko		'wrist'
<b>wrist</b>	Coeur d'Alene	s-cin-č'em-əl-ičt	[the surface below]	'wrist'

			the meeting of the two surfaces of the upper limb]	
<b>wrist</b>	Coeur d'Alene	s-cin-c'em-cən-ičt	[the surface below the edge of the hand]	'wrist'
<b>wrist</b>	Comanche	maʔwiitsa		'wrist'
<b>wrist</b>	Dobu	nimakuku		'wrist'
<b>wrist</b>	Efik	Itön~ubök		'wrist'
<b>wrist</b>	Emai	ukpohiobo	[beak.animal hoof]	'wrist'
<b>wrist</b>	Embera	hiu'a-koro'go (hand-snail)		'wrist'
<b>wrist</b>	Ese Ejja	e-me-kokaxi		'wrist'
<b>wrist</b>	Ese Ejja	e-me-šoşaxi		'wrist'
<b>wrist</b>	Finnish	ranne		'wrist'
<b>wrist</b>	Fore	naya nkáone		'my wrist, elbow, knuckle, carpus'
<b>wrist</b>	Fore	náinkaone		'my wrist, elbow, knuckle, carpus'
<b>wrist</b>	Fore	narínkaone		'my wrist, elbow, knuckle, carpus'
<b>wrist</b>	Fore	nayaru óne		'my wrist, elbow, knuckle, carpus'
<b>wrist</b>	Gawwada	hargfo		'wrist'
<b>wrist</b>	Ghulfan	ɔʃindul		'wrist'
<b>wrist</b>	Ghulfan	ɔʃindulano		'wrist'
<b>wrist</b>	Girawa	ipou apnakou		'wrist'
<b>wrist</b>	Girawa	ipu ärük		'wrist'
<b>wrist</b>	Girawa	amiru		'wrist'
<b>wrist</b>	Gnau	barugep		'wrist, knuckles'
<b>wrist</b>	Goajiro/ Wayuu	ta-hapi-kii	[my-hand-head]	'wrist'
<b>wrist</b>	Gourma	ni-biaŋ-ga	[arm/hand-bracelet]	'wrist, first third of forearm'
<b>wrist</b>	Gourma	ni-bian-tugi-li	[arm/hand-divides-joint]	'wrist joint'



<b>wrist</b>	Gourma	nu-tugi-li	[arm/hand-joint]	'wrist joint'
<b>wrist</b>	Gourma	nu-jiin-u	[arm/hand-root]	'tendons in wrist'
<b>wrist</b>	Great Andamanese	tʰoŋtɔ	[1sg=CL3.bone]	'my wrist bone'
<b>wrist</b>	Guarani	piapi		'wrist'
<b>wrist</b>	Gurindji	kajurta		'wrist, forearm'
<b>wrist</b>	Guugu Yimidhirr	marda		'forearm, wrist'
<b>wrist</b>	Haida	stláay kʷuʔúltañaay		'wrist'
<b>wrist</b>	Haida	tláay tamíi		'wristbone'
<b>wrist</b>	Hausa	wúyàn hánnúu	[neck-GEN hand]	'wrist'
<b>wrist</b>	Hopi	mátpikya		'underside of wrist'
<b>wrist</b>	Hopi	matpikyaqa		'wrist'
<b>wrist</b>	Hopi	matpíkye		'wrist'
<b>wrist</b>	Hua	()za' kupa'a		'elbow, wrist, knuckle'
<b>wrist</b>	Hungarian	csukló		'wrist'
<b>wrist</b>	Hup	kinĩm		'wrist'
<b>wrist</b>	Icibemba	ín nyumbí		'wrist'
<b>wrist</b>	Indonesian	pergelangan tangan	[wrist hand]	'wrist'
<b>wrist</b>	Iraqw	kundáy		'wrist'
<b>wrist</b>	Jahai	kri~l (cyas)	[(hand) joint]	'wrist'
<b>wrist</b>	Japanese	tekubi	[hand neck]	'wrist'
<b>wrist</b>	Kaingáng	nĩŋnã-Phi nĩŋnɔ-Phi		'wrist'
<b>wrist</b>	Kali'na	-amekun		'wrist'
<b>wrist</b>	Kanuri	dáwú múskòbè	[neck hand-of]	'wrist'
<b>wrist</b>	Ket	laŋat		'wrist'
<b>wrist</b>	Kewa	ki-loke		'wrist'
<b>wrist</b>	Kildin Saami	kĩdt-lābp'	[hand + sole]	'wrist'
<b>wrist</b>	Koasati	ilbitolokkó		'wrist'
<b>wrist</b>	Korean	son mok	[hand neck]	'wrist'
<b>wrist</b>	Kuuk Thayore	yuur-pil	[hand hip]	'wrist'
<b>wrist</b>	Luala Enga	kinge lenge	[arm eye]	'wrist'
<b>wrist</b>	Luala Enga	kingi lee	[arm node]	'wristbones, knuckles'
<b>wrist</b>	Luala Enga	kingi kuli		'wrist, knuckle bone, ulna'
<b>wrist</b>	Lao	kho`o`5 mu`u`2	[hand joint]	'wrist'
<b>wrist</b>	Lavukaleve	ngengeso		'wrist'

<b>wrist</b>	Lengua	-mik		'wrist'
<b>wrist</b>	Limba	hulokobe ha		'wrist'
<b>wrist</b>	Makalero	tana-pu'i	[hand-joint]	'wrist'
<b>wrist</b>	Malagasy	hatotānana	['neck' + 'hand']	'wrist'
<b>wrist</b>	Manange	tʃʰi		'wrist'
<b>wrist</b>	Mapundungun	troy kuwü	[joint hand]	'wrist'
<b>wrist</b>	Mbum	kólókndôk		'wrist'
<b>wrist</b>	Mian	gong		'wrist'
<b>wrist</b>	Misantla Totonac	maka-piš-nj	[hand.rel-neck.rel- NOM]	'wrist'
<b>wrist</b>	Muisca	yspqua		'wrist'
<b>wrist</b>	Nahuatl	i-ma-keč-tah		'wrist'
<b>wrist</b>	Nahuatl	i-ma-keč-tan		'wrist'
<b>wrist</b>	Navajo	álátsím'		'wrist'
<b>wrist</b>	Navajo	látsín		'wrist'
<b>wrist</b>	Nkore-Kige	orungingo rw' omukono		'wrist'
<b>wrist</b>	Nubian	eddin burdurti	[hand-? joint]	'wrist'
<b>wrist</b>	Nubian	kurti		'wrist bone'
<b>wrist</b>	Ojibwe	bikwaakoninj		'my wrist'
<b>wrist</b>	Oksapmin	xadəp		'wrist'
<b>wrist</b>	Orokolo	aukava		'wrist'
<b>wrist</b>	Oroqen	bilə:n		'wrist'
<b>wrist</b>	Otomi	bots'undo'yo 'ye	[bone + hand/arm]	'wrist'
<b>wrist</b>	Pulaar	jokkorde		'wrist, node'
<b>wrist</b>	Qawasqar	terwa-stal		'wrist'
<b>wrist</b>	Qawasqar	akolapa		'wrist, ankle'
<b>wrist</b>	Q'eqchi'	kux uq'm	[neck hand]	'wrist'
<b>wrist</b>	Quechua	nuru		'wrist'
<b>wrist</b>	Rotokas	kurasia		'wrist'
<b>wrist</b>	Sakha	begečček		'wrist'
<b>wrist</b>	Salish	p'əsq <sup>hw</sup> a'sač'i?	[arm joint]	'wrist'
<b>wrist</b>	Salish	ač'i?		'wrist'
<b>wrist</b>	Samoan	tapu lima		'wrist'
<b>wrist</b>	Savosavo	seghele		'wrist'
<b>wrist</b>	Selknam	čín k-p'ax	[hand-joint]	'wrist'
<b>wrist</b>	Seri	-ya'nopx it	[fist 3.POS.-base]	'wrist'
<b>wrist</b>	Shilluk	gule cino		'wrist'
<b>wrist</b>	Shipibo-Conibo	mi-tiki		'wrist'
<b>wrist</b>	Somali	jalaqley		'wrist'
<b>wrist</b>	Swahili	Kiwiko (cha mkono)		'wrist'
<b>wrist</b>	Swahili	kilimbili		'wrist'

<b>wrist</b>	Takia	bani-n ŋdu-n	[hand nose]	'wrist'
<b>wrist</b>	Thai	khôomau	[joint-hand]	'wrist'
<b>wrist</b>	Tidore	gia ma-sako		'wrist'
<b>wrist</b>	Tiriyó	emekunu		'wrist'
<b>wrist</b>	Tlingit	-ʃiklix'ées'		'wrist'
<b>wrist</b>	Tsimshian	lm'anʔon		'wrist'
<b>wrist</b>	Uyghur	bəghij		'wrist'
<b>wrist</b>	Vietnamese	cổ tay	[neck hand]	'wrist'
<b>wrist</b>	Waiwai	oy-emeknu-Ø	[1st-wrist-poss]	'my wrist'
<b>wrist</b>	Wapishana	-k <sup>ha</sup> ʔi ʔdik <sup>h</sup> uĩp <sup>h</sup> an		'wrist'
<b>wrist</b>	Waurá	-kanu-tapa		'wrist'
<b>wrist</b>	White Hmong	dab-teg	[neck-hand]	'wrist'
<b>wrist</b>	Wichi	totkwew'u	[POSS.INDF-hand+neck]	'wrist'
<b>wrist</b>	Yagua	homutu mururya		'wrist'
<b>wrist</b>	Yanomámi	pei ehetha		'wrist'
<b>wrist</b>	Yaqui	koomim, munyeeka (from Spanish)		'wrist'
<b>wrist</b>	Yasin-Burushaski	ót		'wrist'
<b>wrist</b>	Yasin-Burushaski	band		'wrist'
<b>wrist</b>	Yoruba	o,run-o,wo',	[neck hand]	'wrist'
<b>wrist</b>	Yup'ik	tayarneq		'wrist'
<b>wrist</b>	Zinacantan	nuk' k'obol		'wrist'
<b>wrist</b>	Zulu	isihlakala		'wrist'
<b>wrist</b>	Zuni	ʔasi ʕʔana-		'wrist'

## APPENDIX C

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- Wichmann, Søren & Hull, Kerry. 2009. Q'eqchi' vocabulary. In *World Loanword Database*. Martin Haspelmath & Uri Tadmor (eds.) Munich: Max Planck Digital Library.
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## Curriculum Vitae

Kelsie Pattillo  
kelsie@uwm.edu

**Education**

**Doctor of Philosophy**  
May 2014  
Department of Linguistics, University of Wisconsin-Milwaukee.  
Dissertation Title: Cross-linguistic Metonymies in Human Limb Nomenclature  
Committee chair: Garry Davis

**Master of Arts**  
May 2009  
Foreign Language and Literatures with concentrations in German and Linguistics, University of Wisconsin-Milwaukee.  
Advisors: Edith Moravcsik and Garry Davis.

**Bachelor of Arts**  
June 2005  
Department of Foreign Language and Literatures, Central Washington University. Major in German Teaching. Minor in History Teaching. *Magna cum laude*.  
Study Abroad: 1 semester at Justus-Liebig-Universität Giessen, Germany- earned 33 quarter credits in courses taught for German students in German.  
Student Teaching: West Valley School District, Yakima, WA.  
Taught German levels 1-5 to grades 8-12.  
Advisor: Dieter Romboy

**Associate of Arts**  
June 2003  
South Puget Sound Community College. *Magna cum laude*.

**University teaching experience**

Teaching Assistant  
Department of Linguistics, UW-Milwaukee. 2010-present.  
  
Diversity of the Human Language- Stand alone course. 100-level introduction to linguistics course for non-majors. 4 sections of 25 students. 2012-2013.  
Power of Words (online)- Stand alone course. 200-level introduction to sociolinguistics course for non-majors. 4 sections of 25 students. 2011- 2012, 2013.  
Power of Words 210 (lecture)- Assisted in the lectures and taught the discussion sections. 200-level introduction to sociolinguistics for non-majors. 12 discussion sections with 22 students each.

Adjunct Faculty  
Department of Foreign Languages, Cardinal Stritch University.  
2008-2009  
German 101- First semester German. 6 students. Fall 2008.

German 102- Second semester German with online component. 6 students. Spring 2009.

Teaching Assistant      Department of Foreign Language and Linguistics, UW-Milwaukee. 2007-2009.  
German 102- Stand alone course. Second semester German. 22 students. Fall 2007.  
German 204- Stand alone course. Fourth semester German. Two sections of 22 students. Spring 2008-spring 2009.

### **K-12 teaching experience**

German teacher      Oak Creek East Middle School, 2009-2010. Taught introductory and intermediate German classes to grades 6-8.

German teacher      Hamilton-Sussex School District, summer 2008, 2009. Taught introductory and intermediate German classes to grades 1-8.

German and history teacher      Richland School District 2005-2007. Taught German levels 1-4 to grades 9-12 and 20<sup>th</sup> Century US history to grade 9. Piloted and adopted textbooks. Advised German club. Traveled with students to Europe, summer 2007.

Private German tutor      Taught public, private and home schooled children ages 6- 65. Designed and implemented personalized curriculum. 2001-present.

### **Publications**

Pattillo, K. (2013). The typology of Uyghur harmony and consonants. *Rice Working Papers in Linguistics*, vol. 4. <http://scholarship.rice.edu/handle/1911/75166>.

### **Conference Presentations**

Pattillo, K. Metonymy in upper and lower limb nomenclature. Association of Linguistic Typology 10. Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany. Poster presentation. August, 2013.

Kellogg, J. and K. Pattillo. Semantic shifts in Irish body part terminology. National Association of Celtic Language Teachers Conference 2012. Indiana University. Paper presentation. June, 2012.

Pattillo, K. On the cross-linguistic specifications of Uyghur harmony and consonant assimilation. Illinois Linguistics Society 4. University of Illinois- Urbana-Champaign. Paper presentation. April, 2012.

Pattillo, K. On Uyghur Consonant Clusters: Using Russian loanwords for studying phonotactics. CUNY conference on the phonology of endangered languages. New York. Paper presentation. January 2011.

Pattillo, K. Arms, Legs, Fingers and Toes: A Cross-linguistic analysis of human body part terminology. High Desert Linguistics Society 9. University of New Mexico. Albuquerque, New Mexico. Paper presentation. November 2010.

### **Invited Paper Presentations**

Pattillo, K. Cross-linguistic naming patterns and historical change in the human limbs. The Scholar and the Library Lecture Series, UW-Milwaukee. November, 2012.

Pattillo, K. The typology of Uyghur consonant assimilation. Linguistic Department Colloquium Series, UW-Milwaukee. April, 2012.

Pattillo, K. A Cross-linguistic analysis of human limb terminology. MAFLC Colloquium Series, UW-Milwaukee. April, 2009.

### **Workshops and other Training**

**Linguistics** Institute on Collaborative Language Research (CoLang) at the University of Kansas. Participant. Received training in *database design and management, orthography development, FLEx, Toolbox, grant writing, lexicography, and ethnobiology*. Summer, 2012.

Field methods and language documentation course of the Uyghur language through the Institute for Field Linguistics and Language Documentation (InField) at the University of Oregon. Summer 2010.

InField workshop participant. University of Oregon. Received training in *field phonetics, lexicography, audio recording, data management and FLEx*. Summer, 2010.

**Pedagogical** Bausteine. Workshop focusing on improving student talk time in the German classroom. Marquette University. Fall 2007.

Total Physical Response Storytelling training with North Thurston Public Schools. January 2007.

Earned graduate credits working on a special project in Germany for use in classroom instruction. Eastern Washington University. Summer 2005.

Trilogy of Tragedy. Workshop focusing on teaching secondary foreign language students about fascist Europe in the 1930s. Sponsored by WAFLT and AATSP at Pacific Lutheran University. February 2005.

**Other**      Write Winning Grants. 8 hour workshop focusing on successful grant writing. Sponsored by the UW-Milwaukee Graduate School. February 2012.

Write Successful CAREER Award Proposals to NSF. 4 hour workshop focusing on CAREER Award proposals for the National Science Foundation. Sponsored by the UW-Milwaukee Graduate School. February 2012.

## **Honors and Awards**

UW-Milwaukee, Chancellor's Golda Meir Library Scholar Award to support dissertation research. \$5,000. 2012-2013.  
 UW-Madison, Foreign Language Area Studies (FLAS) Fellowship to study intensive intermediate Uyghur. \$5,500. Summer 2012 (declined).  
 UW-Milwaukee, Linguistics Department Travel Award. \$250. 2012.  
 UW-Madison, FLAS Fellowship to study intensive elementary Uyghur. \$5,500. Summer 2011.  
 UW-Milwaukee, Linguistics Department Travel Award. \$400. 2011.  
 UW-Milwaukee, Graduate School Travel Award. \$300. 2010.  
 UW-Milwaukee, Chancellor's Scholarship. \$2,000. 2009.  
 UW-Milwaukee, Chancellor's Scholarship. \$1,000. 2007.  
 Washington Association For Language Teachers, Professional Development Grant. \$750. 2007.  
 Washington Association For Language Teachers, Beginning Educator's Stipend. \$250. 2004 and 2005.  
 Central Washington University, Foundation Foreign Language Scholarship. \$1,000. 2004.  
 Central Washington University, Academic Scholarship. \$1,800. 2004.  
 USA Today, All-State Academic Team. \$250. 2002.

## **Service**

Reviewer for Wiley-Blackwell. 2012-present.  
 Co-chair of the UWM linguistics colloquia committee. 2011- 2012.  
 Session Chair at the UWM Conference on Endangered Languages. 2011.  
 Volunteer at the German Linguistics Annual Conference 16. UWM. 2010.  
 Student representative for the MAFFL coordinating committee. 2008- 2009.  
 Presenter at Wisconsin Association of Foreign Language Teachers Fall 2008 and Winter 2009 conferences.  
 Presenter for two workshops at bi-state Washington Association for Language Teachers and Confederation in Oregon for Language Teaching Fall Conference in Portland, OR. 2006.  
 Presider for WAFLT/COFLT bi-state conference in Portland, OR. 2006.  
 Interview committee member for German Language and School Club of Milwaukee. 2008.  
 Judge for regional and state German speaking contest in Wisconsin. 2008- 2012.  
 Teacher at AATG-Washington German Immersion Camp for 70 high school students. 2006 and 2007.  
 Workshop instructor at AATG- Washington German Student Convention. 2004, 2006.  
 Founder of a bi-weekly Stammtisch for Richland area high school students and community members to meet and speak German. 2007.

Co-founder of a weekly Stammtisch for CWU students, faculty and community members. 2005.

Mentor for CWU international students through international studies. 2005.

Volunteer for Bridges Program, working with children of migrant workers in elementary classroom and an after school book club in Cowiche, WA. 2003-2004

Organized and taught an after school German course for elementary students. 2001-2002.

### **Professional Affiliations**

Member Association of Linguistic Typology. 2013-present.

Member Linguistics Society of America. 2011-present.

Member Wisconsin Association for Language Teachers. 2007- 2011.

Member Washington Association for Language Teachers. 2004- 2008.

Member American Associated Teachers of German, 2005-2011.

### **Languages**

English	native speaker
German	near native speaker
Uyghur	intermediate low
Swedish	intermediate low
Polish	novice high