NAHUAT-PIPIL: THE ENCODING OF ECOLOGICAL KNOWLEDGE IN SEMANTIC AND LEXICAL CATEGORISATION SYSTEMS

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ABSTRACT

This thesis investigates the encoding of natural world knowledge by analysing folk nomenclature and folk classification systems of plant knowledge (Berlin 1992) within the Nahuat-Pipil language of El Salvador. Furthermore, it establishes how the possession of traditional ecological knowledge (TEK) for speakers of the language is a key component of indigenous identity, and how historical events and experiences affect the use and perception of the Nahuat-Pipil language amongst Indigenous people. It was found that cognitive categorisation practices appear both overtly within the lexicon of the language as well as covertly. The findings of the interdisciplinary field-based research are contextualised within Nahuat-Pipil history and social context to better understand the relationship between ecological knowledge and notions of identity. This research into the categorisation of plants draws on theories from Cultural Linguistics (Sharifian 2017), Linguistic Relativity and Cognitive Linguistics , in addition to theories and methods from Ethnobiology (Berlin 1992; Martin 2007) and Anthropology (Davies 2008). It has used semi-structured and topic led interviews, as well as ethnographic and experimental methods to gather data. Finally, the use of an interdisciplinary and community-led approach to language documentation brings into question the roles and relationships between community, language, documentation and revitalization.

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1. INTRODUCTION

The approaches and hypotheses used in this thesis are based on initial interactions with Indigenous people in El Salvador and their specific request to conduct research on Traditional Ecological Knowledge (TEK). This request has led me to examine contemporary constructions of (socio-cultural) identity in relation to the environment in accordance with a Nahuat-Pipil worldview as expressed in the Nahuat-Pipil language. Thus, the first hypothesis of this thesis is that possession of TEK is a key component of indigenous identity for the Nahuat-Pipil of El Salvador. To answer the question of how indigenous identity is constructed, the interaction between TEK and Nahuat-Pipil experiences are examined. This investigation is contextualised by exploring the historical construction of identity and the relationship between language, history and TEK. Therefore, the second hypothesis is that historical events and experiences, particularly those resulting in intergenerational trauma, affect how language is perceived and used (Levine 2003), which in turn informs the construction of indigenous identity among the Nahuat-Pipil of El Salvador. Historical trauma and negative attitudes towards Indigenous people in El Salvador have resulted in the invisibilization of the Nahuat-Pipil language and culture (Ching & Tilley 1998; Lindo-Fuentes, Ching & Johnson 2012; Gould & Lauria-Santiago 2014) which in turn has disrupted intergenerational transmission of language and traditional knowledge. As someone who is interested in language documentation to support language revitalization, I believe it is not only important to discuss the factors that have contributed to the disruption of intergenerational transmission, but to also consider those that continue to inhibit language learning. With this in mind, the question of how to improve indigenous wellbeing and heal historical trauma is posed. These questions are explored in Chapters 2 and 3.

Having established a baseline for understanding the motivations behind Indigenous interest in TEK, it is possible to then focus on the Nahuat-Pipil linguistic repertoire and how TEK is encoded within it. Thus, the investigation turns to looking at folk-nomenclature of plants as well as the categorisation and classification practices of plants in the surrounding environment and local ecology. The investigation of plant names is used to further inform documentation efforts of Nahuat-Pipil by adding new focalised materials to the existing range of resources. The naming strategies used within Nahuat-Pipil are compared to Berlin's (1992) theories on nomenclature, and it is hypothesised that naming conventions in Nahuat-Pipil are

in line with Berlin's theories. Following this, I explore the proposal that a morphological analysis of nomenclature and nouns in general might provide an insight into underlying values and belief systems of the Nahuat-Pipil culture. For example, the use of the same prefix /i-/ in Nahuat-Pipil to indicate a relation between either two objects or two people, in addition to the lack of gender marking, is said to be indicative of the non-hierarchical relationship between humans and the ecosystem they reside in (Hernandez Gonzalez 2011). Furthermore, items which have previously been analysed as absolutive markers /-t/, /-it-/ and /-ti/ with no semantic weight are hypothesised to carry semantic meaning which holds information about the state of the noun to which they are affixed. It is argued that this is a potential noun class marker that is used to provide information to the listener about the object in hand, i.e. whether the object is fully natural, derived from nature, or fully synthetic. This hypothesis and subsequent research questions are discussed further in Chapter 5.

The fourth research question discussed within this thesis touches on the question of categorisation of plants: how this is done by speakers of Nahuat-Pipil and whether cognitive categorisation strategies are reflected in the language itself. It is hypothesised that some cognitive categorisation practices are reflected within the lexicon of the language, however this is not to say that all categorisation strategies are lexically marked, as is demonstrated by instances of covert categorisation. This aspect of the investigation is informed by theories of cognitive and cultural linguistics and is discussed in Chapter 5.

The body of this thesis begins by discussing relevant theories within Linguistics and Ethnobiology in Chapter 2. Within the discipline of Linguistics (§2.1), I explore the following: Cultural Linguistics (Sharifian 2017), Linguistic Relativity and Determinism (Boas, Sapir, Whorf) and Cognitive Linguistics (Lakoff 1987; Langacker 1987; Langacker 1991; Langacker 1999; Taylor 1999; Taylor 2003). The presentation of ethnobiological theoretical contributions in §2.2 is based largely on the work of Berlin (1992) and focuses on his principles of folk nomenclature, categorisation and classification, as well as considering his views on how individual variation of folk taxonomies reveal insights into factors that affect classification systems. Finally to contextualise Indigenous TEK, §2.3 also presents considerations for Indigenous rights and Indigenous wellbeing, as well as some strategies employed to recognise and overcome historical trauma (Levine & Schulz 1999; Levine 2003).

Moving forward, Chapter 3 provides an overview of the Nahuat-Pipil language and its speakers (§3.1), as well as the geographical (§3.2), historical (§3.3) and cultural context (§3.4) that it resides in. In relation to language, this chapter includes information about the naming conventions used for Nahuat-Pipil, also known as Pipil or by its ISO code [ppl]. It also includes information about its classification, geographic distribution, and the previous linguists who have created descriptions of the language (Arauz 1960; Lyle Campbell 1985; King 2011; Hernandez Gonzalez 2011; Lara-Martinez & McCallister 2012; Schultze-Jena 2014). Finally, an overview of speaker profiles provides an insight into its types of speakers. Following this, in §3.2 the geographical region of Central America is presented, as are patterns of Nahua migration. These patterns inform how biological folk nomenclature might be affected by changes in the landscape and might account for speaker variation. Maps of the region and my field sites help the reader visualise the geographical location and the spatial organisation of Nahuat-Pipil culture. Indigenous people in El Salvador have been historically marginalised and the events that have resulted in this marginalisation are presented in detail in §3.3. This section provides both historical accounts as well as the indigenous perspective of the events. The inclusion of indigenous viewpoints of history and their social marginalisation helps the reader understand the impact of the socio-political context on indigenous identity and the value placed on TEK (§3.4).

Chapter 4 presents a more detailed overview of the PhD timeline (§4.1) presented in Table 1 below, as well as the methodologies (§4.2), methods (§4.3), and instruments §4.4 that have been used to conduct research on the proposed topics. In terms of methodologies, I employed an ethnographic (§4.2.1) and interdisciplinary approach (§4.2.2) with a strong emphasis on ethical collaboration (§4.2.3). I largely drew upon ethnobotany, anthropology, the collection of oral histories, and sociolinguistics for my selection of methods, in addition to my core background as a linguist and language documenter. Ethical considerations for collecting data on plants as well as conducting research with marginalised and minoritised speakers are also considered in §4.2.4.

Table 1: PhD Fieldwork Timeline

Month	**Activity**
September 2012	First visit to the Nahuat-Pipil Indigenous community in El Salvador
September 2013	PhD research project begins
August 2014	Pre-fieldwork visit to El Salvador to establish links the field-site
February 2015	First fieldwork visit to conduct elicitation and cognitive categorisation tasks
May 2015	Return to London
September 2015	Second fieldwork visit
January 2016	Sociolinguistic interviews
February 2016	Exhibitions 1&2
May 2016	Return to London

The concrete methods used for data collection were informed by anthropological (Hill 2006; Davies 2008) and ethnobiological approaches (Berlin 1992; Martin 2007; Puri 2014a; 2014b; 2014c). These included the use of ethnographic observation, semi-structured and topic-led interviews as well as experimental methods (free listing, pile sorting and forest and hill walks).

Chapter 5 presents the data collected as a result of the above methodologies and methods. Folk nomenclature used within Nahuat-Pipil is compared to Berlin's theories on nomenclature, and it was found that naming conventions in Nahuat-Pipil are in line with Berlin's theories (§5.1). I present an analysis of the morphosyntactic structure plant names, namely the noun phrase structure (§5.2.1) and the existence of nominal classifiers (§5.2.2). This is followed by an overview of morphemes found as described by Campbell (1985). On the topic of categorisation of plants, I present how this is done by speakers of Nahuat-Pipil and how cognitive categorisation strategies surface (§5.3). It has been found that some cognitive categorisation practices are reflected within the lexicon of the language (§5.3.2), however not all categories are lexically marked, as is demonstrated by instances of covert categorisation (§5.3.1).

An underlying aspect of my investigations of semantic categories in Nahuat-Pipil is the idea that language and culture are intrinsically tied to each other (Sharifian 2017). It has certainly been found that language and culture are closely connected and there is some evidence which

hints at the close relationship between the Nahuat-Pipil and nature. This is seen in the prominence of certain types of trees in local folklore and origin stories, as well as the complementary use of plants and herbs in spiritual practices. While there is evidence to support the importance of nature within Nahuat-Pipil culture, however, there are other aspects which need to be considered. Historical and political events, for example, have also contributed to the formation of Nahuat-Pipil worldview.

By seeking to listen to and understand the requests of the language and speech community, this thesis thus aims to investigate how TEK informs the construction of socio-cultural identity through language use, and how TEK itself is cognitively, culturally and linguistically encoded in Nahuat-Pipil. This approach raises a question of reflexivity for researchers: to what extent do they serve the needs of the community, and how can they conduct research that is beneficial? It is my belief that this approach of seeking a common ground between the motives of the 'researcher' and the 'community', which may be potentially but not necessarily different, more effectively includes Indigenous viewpoints and perspectives into academic research.

2. THEORY

This chapter presents the theoretical framework employed to analyse the results of the present research by reviewing the relevant literature and discussing the main approaches of the three disciplines or foci around which this thesis is centred: Linguistics (§2.1), Ethnobotany (§2.2), and issues of wellbeing and historical trauma (§2.3).

The first section (§2.1) concentrates on Linguistics and introduces the new subdiscipline of Cultural Linguistics (CL) (Sharifian 2017) (§2.1.1), which contextualises language as one feature within a larger system of human experience. Given the multidisciplinary approach of the present research, CL allows us to discuss our findings in a rounded and integrated manner, inasmuch as it provides a holistic view of what it means to conduct research on endangered languages within their contexts. The discussion moves on to linguistic relativism and the contributions of Boas, Sapir and Whorf (§2.1.2) who considered the issue of whether language affects how we perceive and think about the world. Finally, I review some concrete mechanisms used for categorisation within Cognitive Linguistics (§2.1.3) which help us understand how humans use classification to make sense of the world and how such classifications can be reflected in language. This is useful for understanding the relationship between the historical and socio-political context of the Nahuat-Pipil Indigenous experience, Indigenous identity, and the mechanisms that have allowed those who continue to identify as Indigenous in El Salvador to survive i.e. knowledge of the uses of plants in their surrounding ecology.

Having discussed aspects of language and culture that are taken into account within this thesis, the second section (§2.2) discusses Ethnobiology and the differences between how people and societies view and use nature. This is followed by an overview of the debate surrounding the motivations behind why humans classify Ethnobiological knowledge, and how scientists can contribute to understanding those motivations To this end, I shall provide the reader with a detailed overview of Berlin's (1992) contributions to the systematic study of taxonomic classification and nomenclature (§2.2.1), as well as his views on Variation (§2.2.2) and Evolution (§2.2.3).

The final section (§2.3) of this chapter deals with issues of Indigenous wellbeing and historical trauma. When it comes to understanding how and why knowledge of the natural world is encoded within indigenous and endangered languages, it is important to take into

account how reduced access to land and natural resources, usually by forceful action by a dominant power, impacts how knowledge is learned and transmitted to future generations of Indigenous people. Disruption of traditional land tenure and use creates gaps within traditional knowledge and its intergenerational transfer, and goes on to affect the wellbeing of the Indigenous population. Thus, I shall start with an overview of indigenous rights (§2.3.1), discuss some health and wellbeing aspects which often affect indigenous communities (2.3.2), and provide an overview of some of the ways in which historical trauma and its impact on wellbeing could be addressed (§2.3.3). This examination is also driven by the belief that understanding the complex reality that Indigenous people live in can help those working within language documentation and revitalisation to better support communities' efforts to deal with linguistic and knowledge loss and create targeted language resources and materials for their benefit.

2.1 Linguistics

2.1.1 CULTURE, LANGUAGE AND CULTURAL LINGUISTICS

In the Nahuat-Pipil culture, relationships between individuals are reflected in the way that individual components of an ecosystem interact with each other: natural-world metaphors are used to explain human relationships, and there are fixed expressions which highlight the specific relationship between human individuals and the earth, showing how the Nahuat-Pipil have cultural links to the natural world. In this section, I explore this link between Culture and Language, discussing it within the context of Cultural Linguistics (Sharifian 2017) as well as in comparison to other languages like Polish, and Australian English.

Culture can be seen as a learned body of behaviours and knowledge transmitted by transgenerational learning (Tylor 1958), while language is the means through which such behaviour and knowledge is expressed and transmitted. We may then ask: to what extent is it likely that cultural values and ideologies might be encoded in language?

To answer this question, it is first necessary to identify the meaning of the term 'culture', a concept which is well-accepted as difficult to define (Apte 1994; Spencer-Oatey 2012). Early definitions of 'culture' such as that of Tylor (1871: 1) present it as "that complex whole

which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society". Within this definition, culture is seen to be:

1. Primarily related to human cognitive or interpretative activity; OR
2. Primarily related to behaviour and its material outcomes.

The first point looks at how humans conceptualise and interact with the world around them, whereas the second focuses on how people act and what is produced from this conception and interaction. It could thus be said that culture is a reinterpretation of our surroundings which is expressed within our behaviour and the products or consequences of specific behaviours.

Tylor (1871) presents an inclusive view of culture and states that all humans have culture in some way or other. This view is contrasted to that of those who valued culture for its aesthetic contributions and thus saw it as being exclusively applied to high art or intellectual endeavours (Arnolds 1867). Tylor (1871) presents a more scientifically inclusive view, however a major issue with his definition is that it places culture on a scale, ranking its evolution within humans from 'savagery' and 'barbarism' to 'civilisation'.

In response to Tylor's (1871) evolutionist stance on 'culture', Boas developed his own views. He dismissed what he saw to be subjective value judgements on the evolutionary ranking of culture, choosing instead to value cultures for their unique contributions to the greater whole. Rather than emphasizing a universalist perspective which ranked different societies between the 'savage' and the 'civilised', Boas prefered to emphasise the differences and variety presented in cultures of people from different societies.

So far we have identified that culture is shared between members of a social group, that it is related to human cognitive and interpretative activity and that it is visible in human behaviours as well as material outcomes. To analyze these different aspects of culture, it is helpful to view culture as ocurring at three different levels of depth (Schein 1990: 3–4):

1. Artefacts
2. Values
3. Underlying Assumptions

At the first level are Artefacts, the most visible markers of culture in the way that they can immediately be seen and interacted with. This level includes things like the physical layout of space, behavious such as how people interact with each other and how they dress, as well as physical objects such as pots. Although visible, it can also be difficult to decipher why certain objects or behaviours are prevalent. Though you can see, touch, and hold a clay pot, it may

not be immediately obvious why it exists, what the function of the pot is, what its abstract value is, or how it fits into daily practices of the larger whole.

Looking at the values of a group can help the observer understand the artefacts. This second level is difficult to observe, however, and some sort of analysis is needed by, for example, interviewing key members of the culture, and listening to or reading stories that are important to the given culture. The issue with this form of analysis, however, is that the observer/researcher is only exposed to the espoused values, those which the speakers say are important to them. In order to get a more complete view of the culture, it is necessary to look at the underlying assumptions which include things like people's relationship to the environment they inhabit, nature of reality, nature of human activity and so on. This third level of underlying assumptions are often taken for granted, invisible and pre-conscious, but they determine what group members perceive, think, and feel. Underlying assumptions often start out as behaviours and through repetition become unconscious belief systems (Spencer-Oatey 2012: 4–5).

In addition to the three levels at which culture can be viewed, it can also be differentiated from individual personality and universal human nature as seen in Figure 1 (Hofstede 1991: 6).

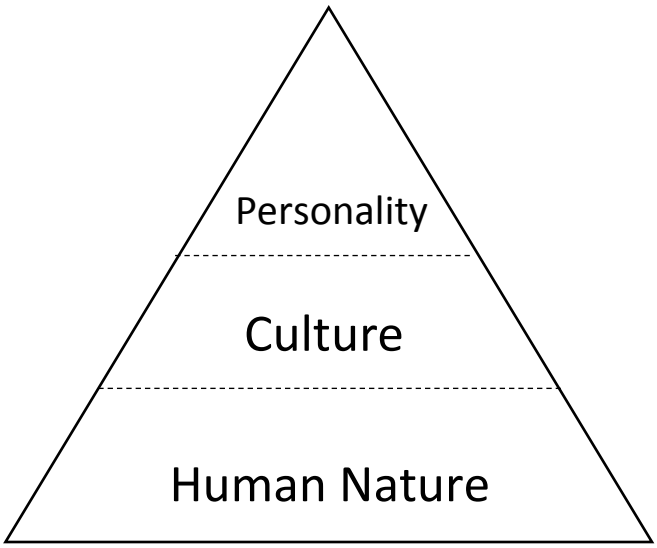


Figure 1: Three levels of uniqueness in human mental programming (Hofstede 1991:6)

According to Hofstede's (1991) model, Personality is specific to individuals and can be inherited as well as learned, Culture is specific to a group or category and can only be

learned, and Human Nature is universal and can only be inherited. The limits between the three are not hard boundaries, but we can understand them in broad terms. Human Nature refers to the universal aspects of human mental programming such as the ability to feel emotion, to observe the environment and talk about it with others, as well as the need to interact with other human beings, even though these traits are not exclusive to humans. How one does things such as express emotion, however, is affected by one's culture. On the other end, the personality of an individual refers to the unique traits the individual does not share with any other human being. Therefore, we can see Culture as the beliefs, values, and behaviours that are shared between members of a group.

Key within this model is the view that Culture is learned rather than inherited as it is derived from engaging with a social environment rather than it being present in the genes. If culture is viewed as something that is learned, the implication is that it has to be taught meaning that it has to be passed on from one person to another. We can consider Michael's (2012: 121) observation that culture consists of:

1. A learned body of behaviours and or knowledge transmitted by transgenerational learning; and
2. Such a learned body is predicated primarily of human groups and, only through membership in a group, of individuals.

For Michael (2012) culture is defined by the fact that it is a body of behaviour and knowledge that is passed on from one generation to the next by groups of people. This knowledge base includes language and a corollary of the above definition is that the relationship between language and culture is co-dependent (Michael 2012). Both act as important aspects within a larger system of social interactive practices within a given society. Language contains lexical items and grammatical rules for the creation of expressions, the use of which is embedded within larger systems of social practices and values, namely 'culture'. When we consider language and knowledge as part of culture, we begin to see culture in a more dynamic and active light. Consider Fuller's (1993: xv) characterization of the basic conditions of knowledge transmission:

> Knowledge exists only through its embodiment in linguistic and other social practices, [which] exist only by being reproduced from context to context [through] the continual adaptation of knowledge to social circumstances [with] few systemic

> checks for mutual coherence. . . Given these basic truths about the nature of knowledge transmission, . . . it is highly unlikely that anything as purportedly uniform as a mindset, a worldview, or even a proposition could persist through repeated transmissions in time and space.

In the definitions presented thus far, culture is seen as a static and unitary entity which can be clearly identified within a group of people who share similar behaviours or values. In contrast to this however, is the view of culture as an active and dynamic set of practices, as is exemplified by Practice Theory (Ortner 1984; Rouse 2007; Engelke 2017), of which language is a part of. A 'practice' is defined as an individual instance of performance which must be presented against the backdrop of semi-stable performances in order to be understood (Ortner 1984; Rouse 2007: 505). This backdrop of practices is what replaces the static interpretation of 'culture' or 'social structure'. Thus, the continuous transmission, uptake and reproduction of performances by individuals must be a dynamic process. Furthermore, in order to be understood, these performances must be seen as belonging to a larger set of practices which are sustained over time by the interaction of multiple practitioners and performances, thus providing a strong historical dimension to practice-based theoretical approaches (Rouse 2007: 506). We see this within disciplines like Cultural Linguistics, as well as in semantic theories which emphasise the need for contextualisation within the social, historical and political backdrops of the language (Wierzbicka 1992; Langacker 1987; 1991; Taylor 1999; 2003; Sharifian 2017). This is also seen in Ethnobiology through the way that variation of folk nomenclature and classification is contextualised within the larger social system (Berlin 1973; 1992; Ellen & Reason 1979).

Fundamental differences can arise when we consider how patterns of social practice supposedly govern, influence, or constitute the actions of individual practitioners, which is viewed as the central issue for any practice-based theoretical conception of social life (Rouse 2007: 507). If practices are temporally-extended patterns of activity by multiple agents, and they are cross-generational, then the question of how patterns are sustained, transmitted, and imposed upon subsequent performances must be a primary theoretical concern. An example of this is provided in §3.1.5.

There is good reason to think that different social practices might lead to structural variation over time, which puts into question the stability of the background for social practice,

because individual variation could in fact be great. An example of this comes from Laughlin's (1975) experience when compiling the Great Tzotzil Dictionary of San Lorenzo Zinacantan. In his preface to the dictionary, Laughlin relates his difficulties in identifying a unified shared knowledge of corn within the Zinacantecan group and draws a parallel to a unified shared knowledge of breakfast cereals among university students in the US. Within the two distinct cultural groups, Laughlin found that individual variation was so great that it was nearly impossible to find a single underlying commonality. Without being able to identify a commonality in either group within the specific sphere of knowledge (corn and cereal) it is difficult to identify a stable background for social practice. However, this does not mean they did not share any knowledge, beliefs, values or norms within their groups, simply that this shared knowledge base is not visible at this moment in time. With this example we see that the knowledge, values, belief systems and norms shared between members of a social group do not need to be shared by all members, however, returning to the Boasian sentiment, it is the differences between groups the delineate the parameters of a culture. In this case we see similar levels of variation applied to two different food groups therefore marking out two distinct cultures. The following sections present the theoretical and analytical model of Cultural Linguistics which discusses some of the ways in which language and culture can overlap with each other. This is followed by concrete examples of language acting as a mirror of culture.

2.1.1.1 Cultural Linguistics

Cultural Linguistics (CL) refers to a subdiscipline within linguistics developed with the aim of exploring the relationship between language and cultural conceptualisations (Sharifian 2011, 2012, 2017). It operates on the basis that many features of human language are entrenched or embedded in cultural conceptualisations, and that the study of these features can provide an insight into culturally constructed worldviews which encompass the whole range of human experience (Sharifian 2017). The discipline operates on a multidisciplinary level as it draws on cognitive psychology, complexity science, distributed cognition, and anthropology, in addition to linguistics. Rather than seeing language as the main focus, CL views it as being one aspect of a larger complex system. Thus, by working with various disciplines, CL can provide a theoretical and analytical framework for investigating the cultural conceptualisations that underlie the use of human language. In

Figure 2 we see a graphic representation of how language, cultural conceptualisations, and cultural cognition overlap in this model.

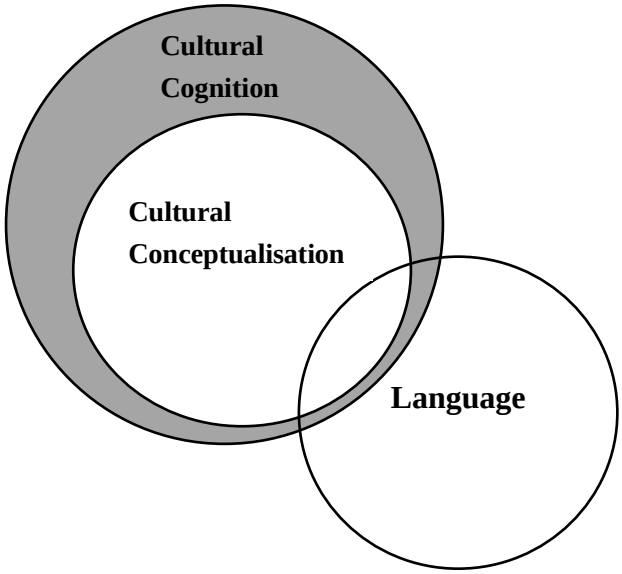


Figure 2: Theoretical Framework of Cultural Linguistics (Sharifian 2017: 6)

As can also be seen, the idea of cultural cognition is at the heart of the framework of CL, and language is a separate and tangential entity of which some aspects overlap with both Cultural Conceptualisations and Cultural Cognition. Cultural Cognition refers to an integrated understanding of the notions of 'culture' and 'cognition' and how these relate to language (Sharifian 2009, 2011). In other words, it is about how the way we think about the world and construct a shared culture is reflected in the language we use. It is important to recognise that this type of cognition moves beyond the level of the individual mind (Clark & Chalmers 1998; Sutton 2005) and that it is not simply 'an abstract "between the ears" entity' (Frank 2014: 494). Rather, cultural cognition is created through social and linguistic interactions between individuals across time and space[1]. In this way, it is seen to be a form of enactive cognition (Stewart, Gapenne & Di Paolo 2011).

The interest in the relationship between language and culture is not a new one, and can be traced back to the 18th Century and the work of Humboldt (1767-1835), Boas (1858-1942), Sapir (1884-1939) and Whorf (1897-1941). Boas, Sapir and Whorf (discussed in §2.1.2) treat 'language', 'culture' and 'thought' as if they were unitary and homogeneously distributed

[1] see also Cowley & Vallée-Tourangeau 2013

amongst all members of the speech community (Sharifian 2017: 118-119). However, the 'essentialist' use of the term 'culture' has made these theories particularly unpopular among many contemporary academic scholars, as argued by Sharifian.

CL, instead, avoids the 'culture' problem by drawing on conceptual tools from several disciplines and offering a more dynamic view of language and cultural cognition as being heterogeneously distributed across the minds of members of a speech community. This accounts for individual variation and the various degrees to which different individuals will construct and rely on their own cultural schemas to make sense of information being processed. Through this approach we are able to avoid the tension between what is created at an individual level and that which is created collectively, inasmuch as cultural cognition, and its collective and spatial-temporal origins recognises the individual's role within the larger collective conceptualisation. It accepts that elements of a speech community's cultural cognition may not be equally shared by speakers across that community and across generations. It emerges therefore that cultural cognition is a form of (heterogeneously) distributed and dynamic cognition (Hutchins 1994), and its transmission from one generation to the next engages in a continuous negotiation and renegotiation through contact between members of speech communities (Sharifian 2017: 3). This is a view that builds on the opinion that cognitive phenomena embody characteristics of historically bound sociocultural relations (Vygotsky 1987). As I shall demonstrate in Chapter 3, concerning the Nahuat-Pipil case and the construction of indigenous identity, historical and political events, as well as social structures, are reflected in the way that collective knowledge of plants is valued and expressed within the language.

Complex Adaptive Systems

Sharifian (2017:3) views cultural cognition as a Complex Adaptive System (CAS) and investigates how relationships between parts, or agents, give rise to the collective behaviours of a system or group (Holland 1995; Waldrop 1992), providing insight into overarching behavioural patterns. These observations are based on the microstructural or individual uses of the language and it is possible to shift attention between the two. Of importance within the notion of complex adaptive systems is the view that the sum of the parts which make up the system does not match the whole. In other words, the knowledge or categorisation system of the individual is not equal to the knowledge system of the speech community given that the

entire system is made up of individually differentiated and ever-expanding contributions. This leads to the conclusion that influence or control over cultural cognition is equally distributed throughout the group rather than being regulated via a centralised control system (Sharifian 2017). The sociological method for organising large groups of individuals is also reflected in the physical and geographic organisation of the Nahua communities in what is termed 'cellular' organisation (Lockhart 1992), as discussed in further detail in §3.2.4.

A Complex Adaptive System (CAS) is thus a decentralised system for organising collective behaviour and knowledge and it is composed of other systems which are also complex and adaptive in nature. Furthermore, these embedded systems are also open and constantly shifting in shape or form, according to the needs and perceptions of those who view them (Sharifian 2017:4-5). This means that it is difficult to determine the boundaries between different systems as the drawing of such boundaries is more a result of the observer's perceptions and ideologies rather than properties of the system itself (Sharifian 2017:5).

We see in Figure 3 an example of how cultural conceptualisations can be analysed as a CAS. Cultural conceptualisations in this case are proposed to be composed of broad categories which overlap with each other: Language, Emotion, Non-Verbal Behaviour, Ritual, Cultural Events, Literature, and Cultural Art. As can be seen, Language, is just one of the systems within the larger model, and in this instance is shown to be closely linked with emotion and cultural art. Within such a framework language plays a dual role in relation to cultural conceptualisation in the way that:

1. Linguistic interactions are crucial to the development of cultural conceptualisations. They provide spaces for speakers to construct and co-construct meaning about experiences.
2. Many aspects of both language structure and use draw on and reflect cultural conceptualisations (Sharifian 2003; 2011; 2017).

Thus, Cultural Linguistics via CAS provides a framework for understanding cultural conceptualisations and their relationship to language.

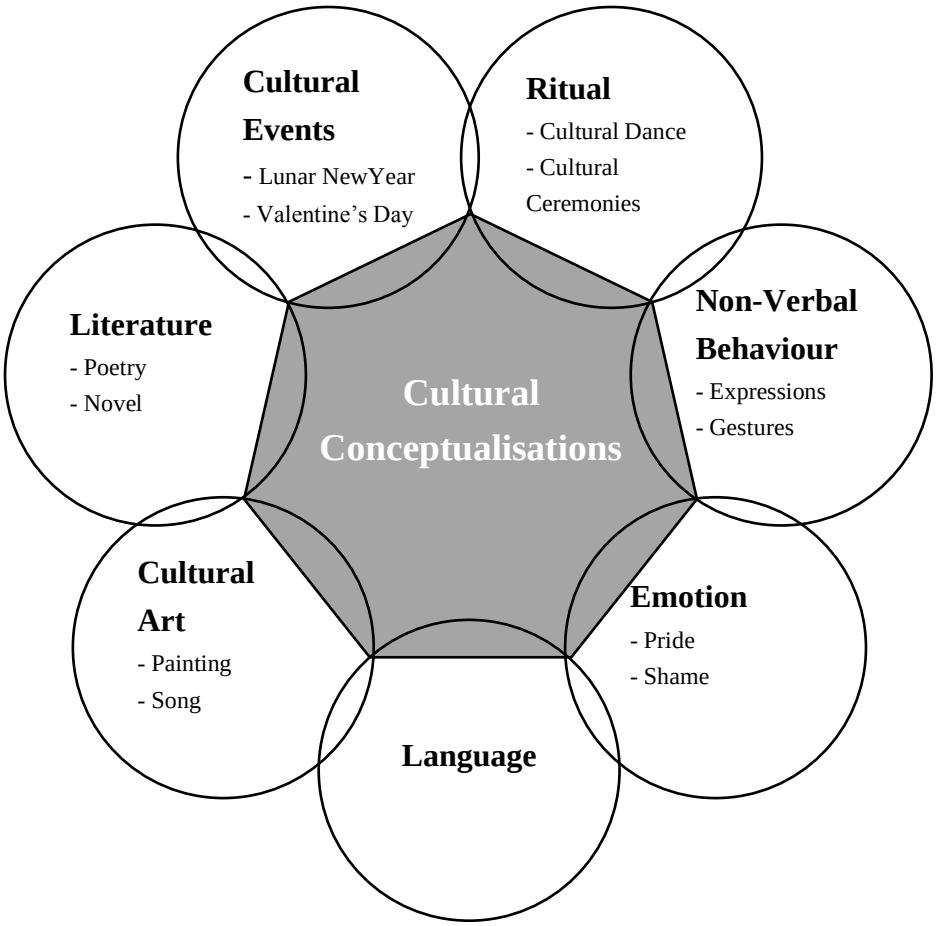


Figure 3: The relevance of cultural conceptualisations to various disciplines and domains (Sharifian 2017: 6)

In addition, systems are also composed of individual parts, and in Sharifian's (2017) model, the role of the individual within the complex system is twofold:

1. The individual as the locus of cultural cognition who thus has an initial causal role in its development, dissemination and reinforcement;
2. The individual as the receiver whose performance can be influenced or determined in varying degrees by the cultural cognition that characterises the speech community.

In this sense, it can be said that the role of individuals within a speech community exists in a circular pattern of cause and effect, and that this pattern is influenced by the experiences and actions of the individual as well as of the collective (Sharifian 2017: 5). With language being one of the components of the complex system, it can also be said to influence and be affected

by the individual. As a result, language can act as a 'collective memory bank' within cultural cognition (wa Thiong'o 1986), becoming the primary mechanism for 'storing', transmitting and retransmitting cultural cognition. This notion assumes that elements of a speech community's language are shaped by the factors of cultural cognition which have prevailed at different stages in history within the community, and that these have left imprints in subsequent language practice and use.

Applying this to the Nahuat-Pipil case, we see how historical suppression of the language can in fact affect how culture linked to that language is viewed by its individual performers and receivers. Individual experiences, and individual acts of violence towards the language and culture can become a part of the culture and the collective identity. Furthermore, with language acting as the 'collective memory bank', its continued use transmits both individual and collective knowledge and experiences of one historical event across multiple generations. The specific ways in which historical events in El Salvador have shaped Indigenous experiences in the country is discussed further in §3.3.

Having established the key principles upon which the subdiscipline of Cultural Linguistics is based, the next step is to look at the proposed analytical framework for uncovering the cultural conceptualisations which are claimed to be embedded in features of human language. As Sharifian (2017: 7) acknowledges, this is a subdiscipline that is in its infancy, there are forms of analysis that have yet to be used and developed. Nevertheless, the multidisciplinary nature of the subdiscipline means that it is open to new contributions. Thus, some forms of analysis which are relevant to the research being presented include:

- Cultural Schema
- Cultural Categories
- Cultural Metaphors

Cultural Schemas are intended to capture beliefs, norms, rules, expectations and components of experience. An example of a Cultural Schema is the 'scary things' schema found in Australian Aboriginal English that non-Aboriginal English speakers might refer to as the supernatural (Malcolm 2017: 637–639). A similar schema can be found in Nahuat-Pipil which refers to geographical places or features which are 'alive' and the beliefs, expectations and rules around visiting such places. These beliefs, expectations and rules are all based on the experiences that those who have visited these places have had (see §3.3.2).

Cultural Categories on the other hand are culturally constructed conceptual categories such as colours, emotions, and food items. These are primarily reflected in the lexicon of the language, and their analysis within the Nahuat-Pipil language is presented in Chapter 5. Finally, Cultural Metaphors refers to cross-domain conceptualisations grounded in cultural traditions such as folk medicine, worldview, or spiritual belief systems. For example, in Australian Aboriginal English, the earth is viewed as being alive, a view which is embedded in the expression 'We close the fire in with the all the sand to heal the wound of the earth'. Nahuat-Pipil people express a similar view towards the earth which can be observed in an expression like *ne mil igustuj numey* "the field likes my hand", which is an equivalent to the English phrase 'having a green thumb'.

The basic premise underlying CL is that certain features of human languages are entrenched in such cultural conceptualisations as cultural schemas, cultural categories and cultural metaphors. Thus, we see language and culture are inextricably linked to each other, as shown in the following section.

2.1.1.2 Wierzbicka

Given the apparent link between language and culture, the question of predictability can be posed (Wierzbicka 1992): is it possible to predict which areas of language are most likely to reflect a living culture? As investigated by Wierzbicka (1992), optional grammatical categories are likely to be more revealing of cultural dynamics than obligatory ones. Furthermore, parts of language which are related to the relationship between the speaker and the addressee are most likely to reflect living and on-going culture. For example, the equal manner in which the Nahuat-Pipil indicates a relation between two objects and two people using /i-/, and lack of gender marking, could be said to be indicative of the non-hierarchical relationship between humans and the ecosystem they reside in (Hernandez Gonzalez 2011). The examples in Table 2 exemplify how gender in Nahuat-Pipil is not marked, and furthermore how the relationship between an individual and their name is equated with the relationship between a fruit and the plant or tree it comes from. This relationship is not one of possession, rather of pairing. Consider *ishuchiuw* in (c). It literally means the 'whole flower belonging to X', however, it is often used metaphorically to refer to the loving or partnered

relationship between two people. As noted, however, this form is marked for possession and in some way is different to the relationship between an individual and their name, or that of the fruit and the plant it comes from. The issue of possession is discussed further in §5.2.2

Table 2: Nahuat-Pipil /i-/

a.	I-tukay *3sg.name*	His/her name
b.	I-takil *3sg.fruit*	X's fruit
c.	I-shuchi-uw *3sg.flower.poss*	His/her girlfriend/boyfriend

The above examples demonstrate how the pragmatic aspects of grammar can be culturally revealing of social attitudes and styles of social interaction. Another example of how word final morphemes can be indicative of social relationships is Wierzbicka's (1992: 376–384) study of Australian nicknaming conventions and the semantic meaning of the endings /-z/, /-za/, /-i/, -/ae/. She suggests that the link between naming conventions and notions of Australian identity is demonstrated by the semantic meaning attached to each of these endings, and the choices made in their assignment or pairing with names.

Overall, Wierzbicka argues that naming conventions are linked to an Australian identity which is condensed as being anti-intellectual, informal, and disliking long words. Word length is associated with notions of proximity between individuals. Therefore, the shortening of words or names can be indicative of friendliness and familiarity, whereas the use of long words is indicative of psychological distance. Concrete examples, she suggests, can be found in nicknaming conventions, e.g. the use of -/i/, which is seen as a diminutive expressing tenderness and childishness. In contrast, -/z/, -/ae/ both act as anti-diminutives, being affectionate but not tender as they imply a certain familiarity and toughness. These types become more popular as people age, particularly when entering the teenage years. Finally, the addition of word final /-za/ indicates proximity and affection, but with an added layer of

good-naturedness and humour. This ending is typically used for men but is also occasionally inclusive of women.

Wierzbicka also proposes that the embodiment of culture in language is also seen in the formation of Australian depreciatives, nouns in a form that constitutes an abbreviation of the standard noun, combined with a pseudo-diminutive suffix. Thus, the depreciative form of 'present' is 'prezzie', 'mosquitoes' is 'mozzie' and 'mushrooms' is 'mushies'. In reality these are not diminutives, rather abbreviations with an added suffix to the truncated form of the word (Wierzbicka 1992: 384). Unlike the shortening of names, which express endearment, these abbreviations are said to express convivial good humour, and to be restricted. Thus magpies are called ‘maggies’ but birds in general are not called ‘birdies in this way (there is a diminutive of ‘birdies’ but it is only used in child-directed language). Furthermore, the patterns which emerge from analysing when forms can be abbreviated demonstrate an underlying sense of toughness. Thus, ‘mozzies’ presents the speaker as dismissive of mosquitoes as a nuisance or problem. The underlying implication is one of toughness paired with a depreciation of importance.

A final indicator of the relationship between language and culture, according to Wierzbicka, can be found in the use of fixed expressions. For example, the phrase 'good on you' in Australian English is said to be indicative of a set of shared values between the speaker and the addressee (Wierzbicka 1992: 388). By using this expression, the speaker indicates that the addressee has demonstrated an attitude which the speaker assumes both they and the addressee admire. The uses and context in which fixed expressions are employed can therefore be culturally revealing of the values of the linguistic community, as well as its attitudes, socially accepted behaviours, and so on (Wierzbicka 1992).

In Nahuat-Pipil, fixed expressions such as *ne mil igustuj numey*, ‘the corn/field likes my hand’ are used when someone has ‘a green thumb’ or is having agricultural success. As noted, the earth is personified as an active entity, one with which a relationship must literally be cultivated. Fixed expressions such as this one, are indicative of the historical relationship of the Nahuat-Pipil culture with nature and the land. This demonstrates how historical identity can be seen in fixed grammatical structures that are used in metaphors.

2.1.2 LINGUISTIC RELATIVITY

The notion of a link between language and thought was first developed by Humboldt in the 1800s (Mackert 1993; Slobin 1996). In his work, "The diversity of human-language structure and its influence on mental development of mankind", Humboldt suggests that language plays a role in the creation of thought and perception of the world, and that language and thought cannot exist without each other: "Language is the formative organ of thought…thought and language are…one inseparable form of each other" Humboldt ([1836] 1988: 54). Furthermore, since languages differ from each other, each speech community must therefore embody a separate and distinct worldview to the other. Ultimately, these ideas fed into theories on language relativity developed by Boas (1988-1942), and in particular Boas' students Sapir (1884-1939) and Whorf (1887-1941). In this section, we explore the individual and collective contributions of Boas, Sapir and Whorf to the development of the theory of Linguistic Relativity.

2.1.2.1 Boas, Sapir and Whorf

Like Humboldt, Boas was interested in demonstrating how languages of the world reflect and encode their speaker's views and interpretations of the world (Mackert 1993: 199; Sharifian 2017: 112), and how the lexicons of human languages are reflective of speakers' cultural interests. Within this general area, he viewed grammatical categories as tending to bring certain aspects of human experience to the speaker's attention, giving rise to the notion of 'thinking for speaking' (Slobin 1996), as is explored in further detail in §2.1.3.2 Thinking for Speaking. Boas' position, therefore, is that human thought is not limited by one's language, but rather that language directs attention and attends to certain features in principled ways (Sharifian 2017: 112). As such, there is no linguistic limitation, restriction or determination on what thought can be (Leavitt 2015: 25). When it comes to the relationship between language and culture, Boas stressed the importance and value of having access to the knowledge of languages for conducting ethnology and ethnography. He also argued, however, that (Boas 1995: 23):

> [i]t does not seem likely [...] that there is any direct link between the culture of a tribe and the language they speak, except insofar as the form of the language will likely be moulded by the state of the culture, but not insofar a certain state of culture is conditioned by morphological traits of the language.

For Boas, the relationship between language and culture is unidirectional and influence is only exerted from culture to language, if required, but never from language to culture.

Following Boas, Sapir subscribed to the research tradition set by Boas and became an influential pioneer within anthropological linguistics in North America (Sharifian 2017: 113). One aspect of Sapir's research that makes him stand out is that he strongly believed in using language internal methods for the creation of descriptive grammatical categories in non-Western languages, and was wary of forcing languages to fit within the parameters of Western grammatical categories (Leavitt 2015). Sapir did not believe it was possible to compare concepts across languages if they did not share a common culture (Sapir 1949: 162), and he viewed language as a mirror of the geographical, social and cultural traits surroundings its speakers. This is best exemplified by the following extract from Sapir (1912: 228):

> It is the vocabulary of a language that most clearly reflects the physical and social environment of its speakers. The complete vocabulary of a language may indeed be looked upon as a complex inventory or all the ideas, interests and occupations that take up the attention of the community, and were such a complete thesaurus of the language of a tribe at our disposal, we might to a large extent infer the character of the physical environment and the characteristics of the culture of the people making use of it.

However, in some of his later writings Sapir maintains that there is no exact correlation between cultural traits and linguistic structure because chronologically, they can change at different paces (Sapir 1995: 59). Syntax and morphology, for example, are only rarely likely to reflect contemporary cultural traits as culture tends to change at a faster rate than the fundamental structure of language. On the other hand, the lexicon of a language is much more readily adaptive to cultural changes and does reflect the contemporary culture of its speakers. Today we see an example of this in the way that neologisms used within rap and hip-hop music by well-known rappers and musicians have become culturally and linguistically adopted by the wider population of rap and hip-hop enthusiasts (Daniels 2019).

Sapir is also often associated in subsequent literature with deterministic views on the relationship between language and thought as he appears to suggest that the structure of language influences and determines how speakers perceive and conceptualise the world

(Sapir 1929; Leavitt 2015). This view has created a field of study which aims to determine the answers to the following questions (Sharifian 2017: 114):

1. What is the scope of this influence and on which aspects of thinking/thought is the influence exerted and which features of languages take part in this direction of influence?
2. Is this influence marginal? Do features of language structure directly determine the structure of our thinking?

Those who have sought to answer these questions have attempted to defend and refute both 'weak' and 'strong' versions of linguistic relativity (c.f. Wolff & Holmes 2011). The different results of such studies can be partially accounted for by the different interpretations that researchers associate with notions of language and thought (Sharifian 2017: 115).

Sapir saw language as a guide to social reality (Sapir 1949: 162). Thus, the world is seen to be unconsciously constructed on the linguistic habits of the individual speaker and the language community. Benjamin Lee Whorf, a student of Sapir, developed these notions further in his study of Amerindian languages such as Hopi, and compares these languages to what he called 'Standard Average European' (Whorf 1939; Whorf 1956). Within his studies, Whorf attempted to demonstrate how grammatical forms of a language can configure a linguistic model of the universe. His conclusions result in the Theory of Linguistic Determinism: that spoken language constructs how individuals see the world. The idea behind linguistic determinism is that each language incorporates a combination of categories and that it is these categories that decide what is referred to as 'habitual thought'. The individual interprets and navigates experiences of the real world by looking through the lens of the categories provided by their language.

Some argue, however, that Whorf only appears to subscribe to the hypothesis of linguistic determinism by attempting to uncover what is termed to be the habitual thought of the Hopi people as encoded in the Hopi language (Leavitt 2015; Sharifian 2017: 115). Whorf's view of the linguistic determinism hypothesis is reflected in the expression 'our linguistically determined thought world' (Whorf 1956: 154). His position on linguistic determinism is made clearer in Whorf (1940: 213–214) (emphasis in original quote):

> We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a

> kaleidoscopic flux of impressions which has to be organised by our minds. We cut nature up, organise it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organise it in this way - an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is of course, an implicit and unstated one, BUT ITS TERMS ARE ABSOLUTELY OBLIGATORY; we cannot talk at all except by subscribing to the organisation and classification of data which the agreement decrees.

What is key here is the suggestion that languages offer their users pre-established categories through which to organise experiences and information about the physical world within the mind. Whorf does not talk about 'perception' in anyway, but rather focuses on categorisation and organisation, and on the inability 'to talk' about the world without these categories rather than an inability 'to think' without them (Sharifian 2017: 116).

Whorf (1950: 67) notes that Hopi does not employ the same range of linguistics expressions on time and space as other languages do (Whorf 1950: 67). Most importantly, he acknowledges that this difference does not imply a cognitive constraint, as the language uses alternative concepts, or 'abstractions' to make sense of the universe. Rather, different languages may rely on different conceptual systems and these conceptualisations may be consistent with underlying worldviews associated with the language (Sharifian 2017: 117). The question of whether the worldview being reflected in language is a result of contemporary experiences or has been passed down through generations is a different matter (Sharifian 2017) and is one which is explored in further detail in §2.3.3 in the discussion of historical trauma. Most importantly however, Whorf observes that conceptualisations encoded within a language reflect the model that a worldview imposes on the universe. This does not, however, mean that the language imposes a framework for thinking onto an individual speaker.

Though Whorf's relativistic and deterministic views on the relationship between language and cognition were challenged by later scholars such as Berlin & Kay (1972, 1973) as well as Chomskyan arguments in favour of language universals, his research has been and remains highly influential.

Leavitt (2015) argues that, contrary to common discussions, neither Whorf nor Boas nor Sapir held the view that language determines and limits speakers' worldviews, but that "on

the contrary, no language, they insisted, puts limits on what is possible to conceptualise" (Leavitt 2015: 19). Rather, the three authors emphasised that language patterns tend to guide habitual patterns of conceptualisation.

In this way, as presented by Sharifian (2017), different researchers attempting to investigate linguistic relativity empirically could come up with totally different hypotheses depending on the specific meaning that is attached to the terms used, as shown in the case of Boas, Sapir, and Whorf and in the role they have played in the creation and development of the theory of language relativity and linguistic determinism. Having looked at the basic principles of language relativity, the following section will present some of theory's applications to different language contexts, namely Eegimaa, a Niger-Congo language, Zinacantan Tzotzil, a Mayan language, and Murrinh-patha, an Australian Aboriginal language.

2.1.2.2 Applications of the Linguistic Relativity hypothesis

One application of the Linguistic Relativity hypothesis that is particularly relevant to the present study relates to 'overt' and 'covert' categories. In his early papers on grammatical categorisation, Whorf makes a distinction between Overt Categories and Covert Categories (Whorf 1937). Overt Categories are those which are lexically and structurally encoded within a language. This can include noun classes, plural markers, possessive markers, aspectural classes etc. An example of how semantic principles can be encoded in the overt grammatical classification of nouns can be found in Sagna's (2012) study of Eegimaa, a Niger-Congo language of Senegal. Sagna shows that grammatically encoded noun class marking in Eegima is not simply a matter of semantic classification but rather he aims to show that physical properties and culture-specific factors are central principles of categorisation in the Eegimaa noun class system. Categories are structured according to prototypicality, family resemblance, metaphorical extensions and a chaining or linkage process that can be understood within the framework of cognitive linguistics. In Eegimaa, nominal classification can include categories based on utility, shape, and importance to social organisation (Sagna 2012: 143) as can be seen below in Table 3. Objects used as exchangeable goods in the traditional barter economy of the region have a special place in the system (class ñu-).

Table 3: Semantic classification in Eegimaa (Sagna 2012)

Class marker	**Semantic Meaning**
bu-	Assemblages, augmentative
ga-	Flat, big size, augmentative
fu-	Round entities
e-	Default class, semantically unspecified
ñu-	Economy and social organisation
ju-	Diminutive

Shape in particular is seen to be an important parameter for noun categorisation and has been reported in the literature for different classifier systems (Aikhenvald 2000).

Covert categories are more subtle categories which are not expressly marked in the morpho-syntax of the language and can only be uncovered when looking at how specific expressions react with different environments in a process that Whorf has labelled 'reactance'. It is within this type that most cross-linguistic universals can be found. An example of Covert categorisation can be found in Zinacantan Tzotzil (Laughlin 1975), which is a Mayan language spoken in southern Mexico. Here the use of possessive markers is dependent on the context of the object being possessed (Laughlin 1975: 10). Possession of a verb is in accordance to agent/subject agreement. For example, the verb 'to bless' can only take an inalienable possessive marker if the context in which it appears includes God as the active agent. In other words, the verb 'bless' cannot be possessed by anyone other than God. If the verb is employed in any other context, e.g. 'The priest blessed the man', the verb 'bless' must be realised in the passive form and remains unpossessed.

One can also look at the relation between nouns and the verbs they may be used in construction with. For example, in English verbs for cutting can be subcategorised for the kind of objects being cut and the instrument used to carry-out the action. Consider the difference between the verbs 'to snip' and 'to shear', both of these involve different types of

cutting motions and utensils used for specific purposes. The verb ‘to snip’ must occur in construction with a small two-bladed utensil used for making precise incisions, whereas 'to shear' implies the use of larger single or double-bladed instrument used for cutting wool off a long haired animal such as a sheep or a goat. The fact that the verb 'snip' cannot be co-occur with a large bladed instrument, nor that 'shear' be used in conjunction with, e.g. dainty scissors, reflects the covert categorisation of these verbs of cutting.

The examples above show instances of covert categorisation because even though an expression may not be specifically marked within the syntax or lexicon as belonging to a specific category, it is possible to demonstrate that there is an underlying categorical system of words that only appears when looking at the combinations of expressions with other elements. In the case of Tzotzil, what is revealed is a worldview concerning the powers and humans and God, and so the linguistic expression could be said to provide an insight into the cultural hierarchies of the Zinacantecan Tzotzil people. However, we also need to keep in mind that such worldviews are subject to individual variation.

As is discussed in further detail in Chapter 5, I have identified various overt basic categories for natural edible foods in Nahuat-Pipil which are lexically labelled. Four of these basic categories are: *kilit, tzaput, kamuj,* and *shukut*. Instances within overt categories are always marked with the lexical marker associated with the category. For example all items within the *kilit* category will include *kilit* within their name e.g *masakilit,* or *Fernalda pandurata,* a fragrant edible flower which features widely in Salvadoran cuisine. Much like in Eegimaa, these categories seem to be based on shape in relation to the human body. Thus, *tzaput* refers to fruits or vegetables which fit in the palm of the hand, and *shukut* to fruits or vegetables which can be held by the tips of the fingers. Such overt classification is found in other semantic domains within Nahuat-Pipil such as in the naming of animals.

Many anthropological linguists accept that a complete examination of the internal mechanisms of linguistic features requires an understanding of the culture and the worldview underlying the language (past, present, or both) (Palmer 1996). An example is the noun class system in Murrinh-Patha, an Australian Aboriginal language, and how it reflects aspects of a speech community's cultural conceptualisations and worldviews. In this language there are 10 noun classes which reflect Murrinh-Patha cultural categorisation, encoded by a noun class marker that appears before the noun (Walsh 1993; Street 1987). We can see this in the following Table 4:

Table 4: Class marker of Murrinh-Patha (Walsh 1993: 110)

Class Marker	Semantic Meaning
kardu	Aboriginal people and human spirits
ku	Non-Aboriginal people and all other animates and their products
kura	Potable fluid (i.e. fresh water) and collective terms for fresh water (i.e. rain, river)
mi	Flowers and fruits of plants and any vegetable foods. Also, faeces
tahmul	Spears
thu	Offensive weapons (defensive weapons belong to *nanthi*), thunder and lightning, playing cards
thungku	Fire and things associated with fire
da	Place and season (i.e. dry grass time)
murrinh	Speech and language and associated concepts such as song and news
nanthi	A residual category including whatever does not fit into the other nine categories

Of interest within this particular classifier system is that nouns can be associated with different classifiers depending on their function. For example, during the telling of Dreamtime stories, a practice which is part of the Aboriginal worldview, the Ancestor Beings change form into different animals, and this change of form is indicated by using different nominal classifiers (Sharfian 2017:16). Another example is presented by Walsh (1993): a boomerang can be either classified as a *nanthi* if it is being used as a backscratcher, or a *thu* if it is being used as an offensive weapon. It is also proposed that the different categories that underlie the above classifying system are indicative of prominent place in the culture of language, fire and fresh water.

Sapir and Whorf's claims that languages are lexically and morpho-syntactically incomparable have been tested with empirical research (Lucy 1992a; Lucy 1992b). Lucy (1992a) compares the differing uses of nominal number marking in Yucatec and English in order to uncover the

potential for impact on habitual thought of each language. His argument is that as nominal number marking is frequently used and structurally obligatory in both languages, there is a great potential for studying the impact that subtle differences can have on habitual behaviour. Thus, in order to study the force of semantic categories on behaviour or perception, data must be compared between two or more languages using empirical research methods. Such methods include collecting comparative data, calibrating the content to a metric standard, establishing a common reality and articulating the implications of the findings on theories on the difference of thought (Lucy 1992a).

Other elaborations of Linguistic Relativity point to environmental factors as playing a role in the dynamics between language and thought (Cardona 1990). In addition to the interaction between language, culture and thought, it is important to consider biological and environmental aspects and how these have the potential to influence language. The inclusion of biological and environmental factors also places limitations to the notion of universal categories. While it is true that human beings have one biological reality (Castillo Hernández 2000), there is a wide range of variation and ways this is perceived.

This section has provided an overview of the contributions that Boas, Sapir, and Whorf have made to the creation of the hypotheses on Linguistic Relativity and Linguistic Determinism, which link language, thought and worldview. Furthermore, it has looked at Overt and Covert categorization and the forms that these can take in language. Looking at Linguistic Relativity, Linguistic Determinism, as well as Overt and Covert categorisation is useful for determing how categorisation of plants is present in Nahuat-Pipil lexicon, and helps created a better understanding of existing plant naming conventions from a linguistic perspective. To identify whether there is a link between cognitive categorisation and lexical forms present in Nahuat-Pipil, it is necessary took at Cognitive Linguistics. In the following section, I review some theories from Cognitive Linguistics, which focuses in on the inner mechanisms of the human mind, and the concrete ways in which grammatical structure provides an insight into cognition, meaning and perception.

2.1.3 COGNITIVE LINGUISTICS

In order to discuss some of the approaches that fall under Cognitive Linguistics, it is necessary to present and define some key concepts: knowledge (as well as traditional knowledge), and cognition. To begin with, knowledge can defined both as the 'facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject' or as the 'awareness or familiarity gained by experiences of a fact or situation' (LEXICO 2019a). This thesis deals with what some refer to as Indigenous Knowledge (IK), Traditional Knowledge (TK), or Traditional Ecological Knowledge (TEK), domains which imply using a slightly different perspective as the contextualisation of the knowledge within broader contexts and socials systems is deemed to be important. Consider the following ((Brockman, Masuzumi & Augustine 1997: n.p.; Brockman & Legat 1995):

> Traditional Ecological Knowledge is a body of knowledge built up by a group of people through generations of living in close contact with nature. Traditional Knowledge is cumulative and dynamic. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual and political change. The quantity and quality of Traditional Knowledge differs among community members according to their gender, age, social standing, profession and intellectual capabilities. While those concerned about biological diversity will be most interested in knowledge about the environment, this information must be understood in a manner which encompasses knowledge about the cultural, economic, political and spiritual relationships with the land.

Despite its name, TEK encompasses much more than traditional knowledge about the environment. It is adaptive, cumulative, and dynamic and is deeply rooted in the different facets of the social systems of its holders. It cannot be understood or applied without looking at the broader social, economic, historical and political dimensions (Stevenson 1996: 281), and thus it is not possible to understand how TEK is perceived, conceptualised and embedded within cognitive processes by simply looking at how it is represented in language. Nevertheless, as previously stated, analysing language can provide insights into the cognitive processes of speakers, which, leads us to define cognition as 'the mental action or process of acquiring knowledge and understanding through thought, experience and the senses'

(LEXICO 2019b). To understand the link between language and mental processes, we look at Cognitive Linguistics.

Cognitive Linguistics presents two perspectives (Jackendoff 1983):

1. What is the nature of meaning in human language such that we can talk about what we perceive and do?
2. What does the grammatical structure of natural language reveal about the nature of perception and cognition?

To answer the first question, it is first necessary to establish the relationship between extra-linguistic information such as encyclopaedic knowledge, and internal features of language. The differing views on this relationship are presented in §2.1.3.1. The approach called Thinking for Speaking (Slobin 1996) looks at how language directs speaker to dimensions of experience arising from the grammatical categories set by their spoken language (§2.1.3.2). The second question can then be answered by looking at language internal strategies for organising and representing information, namely linguistic categorisation (§2.1.3.3). In this subsection I discuss Prototype Theory (Rosch 1978), Objectivism and Experiential Realism (Lakoff 1987), the Idealised Cognitive Model (Lakoff 1987) and Frame Semantics (Fillmore & Atkins 1992; Fillmore 2006).

2.1.3.1 Structural Semantics and Cognitive Grammar

The emergence of European Structural Semantics, also known as Structuralism, saw a requirement for the separation of 'encyclopaedic knowledge' from 'language specific semantic features' (Taylor 1999: 17). Encyclopaedic knowledge refers to contextual and extralinguistic information such as cultural and environmental understandings, whereas language-specific semantic features refer to intralinguistic features, or those aspects of categorisation that are linguistically encoded. The European structuralist framework views language-specific semantic factors only in the study of linguistic semantics.

In contrast, Cognitive Linguistics argues for the inclusion of encyclopaedic knowledge into the analysis of categorisation systems (Taylor 1999; 2003; Langacker 1987; 1991; 1999). It is argued that cognitive grammar, for example, does not make a distinction between 'sentence

meaning' and 'utterance meaning', whereby 'sentence meaning' is defined as 'the meaning that a sentence has in virtue of the linguistic meaning of its parts' and 'utterance meaning' is defined as 'the meaning that an utterance acquired in a particular communicative context' (Taylor 1999: 20). Both types of meaning belong in the semantic representation associated with the symbolic unit and both need to be characterised as related to appropriate background knowledge. The only difference is that utterance meaning must be contextualised against a detailed and richer background knowledge and assumptions, and take socio-culturally embedded interaction into account.

In this view, Cognitive Linguistics is the study of semantics within the framework of cognitive grammar (Taylor 1999: 17). The main emphasis is generally placed on prototype categorisation and on the assumption that the linguistic sign is arbitrary. It is deemed so because the linguistic signs are seen to be a product of conventionalisation, namely of speakers acting in the belief that the signifier-signified relation they use is also utilised by other members of the language community.

Semanticists interested in diachronic developments of meaning prefer a combined approach to understanding semantic categories. While the importance of encyclopaedic knowledge is acknowledged, so are intralinguistic features (Geeraerts 2006; Geeraerts 2010), the role of social values (Rastier 1999), and the role of both of these for inducing semantic change (Blank 1999; Rastier 1999). It is however agreed that distinguishing between encyclopaedic and intralinguistic knowledge creates a new field of cognitive semantic research, one which is open to the inclusion of cross-linguistic and cross-cultural factors (Blank & Koch 1999). As has already been discussed, the study of Cultural Linguistics is an example of how the combination of approaches can enhance understanding of cognitive patterns for information expression and understanding. It can also be used to explore whether linguistic creativity is constrained or limited by human perception (Blank & Koch 1999: 11; Sharifian 2017).

Language can be used to represent mental projection of the world (Jackendoff 1983: 29) or elements present in 'mental spaces' (Fauconnier 1985, 1994; Fauconnier & Turner 2002). A mental model may be a model of the world as it is, or a world that is imagined, dreamt or represented in a picture, novel, and so on. Within Cognitive Linguistics, there is thus no 'linguistic' difference between a fictional narrative and a narrative which relates to events that 'really' happened (Taylor 1999: 25). The challenge for Cognitive Linguistics is to

describe languages in all their complexity and variety including aspects of their use and variation over time.

2.1.3.2 Thinking for Speaking

The approach called 'thinking for speaking' (Slobin 1996) builds on the previously presented views on language relativity. Instead of concentrating on 'thought' and 'language', it is proposed that the focus should be instead on 'thinking' and 'speaking'. This marks a shift from abstract entities to more concrete ones and draws attention to the active mental processes involved in the formulation of utterances, and away from static subconscious worldviews that might be embodied. Rather than being about thought and behaviour, language is seen to direct the speaker to dimensions of experience enshrined within grammatical categories. This, however, does not affect the individual's ability to perceive everything around them, rather it dictates the points of emphasis as was originally formulated by Boas. The idea is that, while reality may be perceived as a whole, only a part of the experiences or concepts about it will be expressed via language. Thus, each language can select which aspects of a particular state of affairs its speakers focus on. This is reflected in the grammar of languages.

For example, in Inuit languages one says 'man sick' to indicate ill health (Slobin 1996: 70) an expression that does not require obligatory indication of definiteness, tense, visibility or location. In contrast, the expression of this state of affairs in Spanish, requires speakers to indicate whether it is permanent or temporary: making a distinction between chronic illness, e.g. *está enfermo* is sick (chronic/permanent) and temporary illness, e.g. *se enfermó* 'became ill' (Slobin 1996: 71).

Thus, the argument is that when a situation is represented in language, a grammatical point of view will be imposed, depending on the obligatory features that must be expressed. Often, however, even within a single language, grammar will provide a set of options for thinking about experience for the purposes of verbal expression (Slobin 1996). External experiences in the physical world are filtered through language into verbalised events. In support of this, Slobin (1996: 74) argues that children between the ages of 3-4 who are speakers of different types of languages are already influenced by the grammatical systems of their languages when describing events depicted in storybooks. Ultimately, Slobin (1996) concludes that

habitual thought and worldview are not determined by the mental structures that underlie perception, reasoning and habitual behaviour. Instead, it is the context of verbal behaviour, including requirements of the grammatical system, which conditions the way we express habitual thought and worldview.

Slobin's 'thinking for speaking' can be applied to lexical categorisation practices in Nahuat-Pipil, in the way that if a set of lexical categories for plants exists in Nahuat-Pipil, then it is likely that plants and their products will be discussed in relation to existing lexical categories. It is unlikely, however, that all cognitive categories processes of all individual speakers of Nahuat-Pipil are likely to be lexically marked. Processes involved in linguistic categorisation are discussed further in the following section.

2.1.3.3 Linguistic Categorisation

An important concept for understanding categorisation is information. Luciano Floridi (2004: 560) presents a model that identifies three viewpoints:

1. Information as a reality
2. Information about reality
3. Information for reality

The view of information *as a* reality considers patterns of signals from the physical world as neither true nor false. This is also known as 'ecological information'. Information *about* reality considers semantic information in terms of truth, grouping and probability. Finally, information *for* reality views data as instructions, much like an individual's genetic code. Within the three parameters identified by this model, the research presented in this thesis is interested in the approach to information about reality. It looks at the manner in which information is categorised, how it is represented in language, and then used to talk about the world. It is the representation and processing of information that can provide insights into individual and collective worldviews.

The human need to deal with any input or information received in order to make sense of the world gives rise to the grouping of information into categories thereby allowing for the creation of order in an otherwise complex and data-rich environment. Without this ability individuals would be unable to handle the complexity of daily interactions with the world

(Markman 1989; Aitchison 2004). Therefore categorisation is seen to be a fundamental cognitive mechanism (Polzenhagen & Xia 2015) that simplifies the individual's experience of the environment by grouping information and thereby reducing the load on memory and facilitating the efficient storage and retrieval of information from the cognitive system (Jacob 2004: 518). The process of categorisation involves dividing information into groups, members of each group can share similarities and features (Jacob 2004).

Cognitively, the individual finds order and meaning in the environment by imposing boundaries, splitting and lumping aspects of experience to create 'islands of meaning' (Zerubavel 1993: 5). This mental process can be referred to as 'cognitive categorisation'. How an entity is categorised creates a context or conceptual frame that contains information about the entity but also shapes the individual's interaction with it, along lines similar to those elaborated by e.g. Slobin (1996), discussed above. In addition, different features or properties can be used to represent the same category at different times and in different contexts therefore there is great scope for individual (and contextual) variation (Barsalou 1987).

A set of features associated with a given category can be both context-dependent and context-independent (Barsalou 1987: n.p.). Context-dependent features are only relevant within a given context, such as in relative statements of truth. For example, 15 °C may be regarded as cold in the summer but warm in the winter. Context-independent features on the other hand provide information on a category that is relevant across various contexts, e.g. in the way that 'fire' connotes light, heat, and energy. Context-dependency of categories is a reflection of the flexibility and plasticity that are the power of the cognitive process of categorisation and the individual's ability to create and modify the informational content of a category as a function of immediate context, personal goals and past experience (Jacob 2004: 519).

Some view categorisation as being intrinsically cultural, a view represented by Glushko et al. (2008: 129):

> Categorisation research focuses on the acquisition and use of categories shared by a culture and associated with language - what we call 'cultural categorisation'. Cultural categories exist for objects, events, mental states, properties, relations, and other components of experience. Typically, these categories are acquired through normal exposure to caregivers and culture with little explicit instruction.

Considering the above quote, semantic categories are not explicitly transmitted and taught, rather they seem to be absorbed organically based on the shared context, behaviour of speakers and treatment of language. We can therefore view semantic categorisation as contextually and culturally dependent. Lexical categorisation on the other hand refers to the way that categories are marked within language, usually by way of a classification system. We see an example of this when considering the classification of nouns in Murrinh-Patha as previously presented. My own understanding of the key difference between lexical categorisation and semantic categorisation lies in the difference between lexically marking and culturally, environmentally and socially contextualised categorisation. The relationship between the two concepts is such that context, or semantic meaning, can dictate the way that information is lexically marked or categorised by means of classification.

Lexical items of human languages act as labels for categories and their instances, e.g. in English 'food' refers to a category and 'steak' is an instance of that category (Sharifian 2017: 15). Another aspect of categorisation is that categories usually form networks (through senses relations) and hierarchies (through hyperonymy). For instance, members of a category can serve as categories with their own members e.g. Food > Pasta > Penne, Spaghetti etc. These subcategories in turn are generally culturally constructed, as are their prototypical and less prototypical instances (Sharifian 2017: 15). It is possible, due to inter speaker variation, for individual items to fall between categories e.g. 'tomato' being classified as either a fruit or vegetable.

We can analyse this further within the context of Prototype Theory (Rosch 1978), a seminal theory for understanding basic principles of categorisation. In 'Classical' Prototype Theory, categories and their meanings are seen to be composed of a checklist of necessary and sufficient features or truth conditions. For example, according to the Oxford English Dictionary (OED), a square can be defined as "*a plane rectilinear and rectangular figure with four equal sides"* (OED Online 2017a). While this strategy of clearly defining the parameters and features of an object works particularly well for geometric objects, it is not as useful for defining items that are socio-culturally embedded. Furthermore, this strategy does not consider inter-cultural and cross-linguistic variation.

Taking the word 'fruit' as an example, the OED presents the following as a definition:

The edible product of a plant or tree, consisting of the seed and its envelope, esp. *the latter when it is of a juicy pulpy nature, as in the apple, orange, plum, etc.* (OED Online 2017b).

Considering objects which by their nature are juicy, pulpy and consist of their seeds and envelope, one might expect it to include chilis, aubergines, courgettes, squash and the like. However, in English none of those edible plant products are considered as fruits, rather they are seen to belong to the category of 'vegetable'. On the other hand, the OED's definition for 'fruit' is also too specific in the way that it does not offer space for the likes of the rhubarb which is culturally perceived to be a fruit[2] but is scientifically categorised as a stalk.

3.2.1 Prototypes

Rosch (1978) identifies two main principles which govern categorisation. The first, based on cognitive economy, states that in order for a possibly infinite number of items to be accessible to the human cognitive system, a finite number of categories for these items must be created (this is essentially the same as the pigeonhole principle of categorization advocated by Boas mentioned above). This finite number of categories allows the mind to group several distinct real-world entities under one category and thus enables memory and cognitive processing. The second principle refers to the assumption that the world has a natural order which allows for easy categorisation and that certain features or characteristics are more likely to occur in conjunction with some other features, e.g. feathers with beak, rather than others e.g. feathers with gills.

The second principle relies upon making a distinction between the perceived world and the metaphysical one. The creation of categories to define the natural world is very much dependent on an individual's experiences and perceptions of it. Someone who is blind, for example, is more likely to categorise the objects in their environment according to how they sound or feel, in contrast to someone who is deaf, and who might focus more on visual cues for categorisation.

[2] When asked, "If you had to categorise 'rhubarb' into a food category, what category would you choose?", 52% of respondents answered 'fruit', 38% answered vegetable, and 10% answered 'stalk'. Participants' ages ranged from 18-68 and female to male ratio was 2:1.

These two principles developed by Rosch (1978) have implications both for the level of abstraction of categories formed within a language and culture, and for the internal composition of those categories once formed. These principles led Rosch to develop Prototype Theory, whose main argument is that individual instances within linguistic categories may share some characteristics but will not necessarily share all the same features. Thus, categories can be fuzzy at the edges, but clear at the centre. Objects denoted by lexical items which sit at the centre of categories, embody the central instances of a particular category, are the most representative, or most prototypical items of the particular category. Objects which sit in the margins of a category, though perhaps highly different from each other, will be tied together by the prototype of the category since they will be seen as instances of 'less prototypical' category membership.

Summarising Rosch's findings (Geeraerts 2010: 185) identifies four characteristics of prototypicality:

1. Exhibit degrees of typicality: Not every member is equally representative of their category;

2. Exhibit a family resemblance structure, or more generally, their semantic structure takes the form of a radical set of clustered and overlapping readings;

3. Are blurred at the edges;

4. Cannot be defined by means of a single set of criteria attributes.

Prototypicality is not concerned with the technical, biological reading of a category, but rather with the models of that category (Geeraerts 2010: 189). This means, for example, that types of animals or plants are not necessarily grouped together because they share exactly the same features or characteristics but rather because they are seen to embody some of the same features. Items within a category will share sets of overlapping features, but they will not all share the same features. As such, it is important to remember that category membership does not necessarily equal typicality. For example, if we consider the category BIRD we might think of the robin, sparrow, or pigeon as a prototype depending on where the speaker resides geographically, and whether they live in an urban or rural setting. At the very least these are examples of non-controversial members of the category, however it is also worthwhile to note that these prototypes would only be proposed in the northern hemisphere by speakers. For speakers of Australian English, for example, the sparrow may be thought of as a

prototype, since robins are not found in that geographical location. This further demonstrates that prototypes are culturally and geographically variable. The above examples of a robin, sparrow or pigeon are all suitable as prototypes as they share the features of being relatively small, having visible feathers, as well as the ability to fly and lay eggs. Other members of the BIRD category may not have the same features such as penguins or ostriches, neither of which fly, but are nevertheless members of the BIRD category. In the way that a robin, a penguin and an ostrich are all birds, there will always be central and marginal members within any category.

3.2.2 Objectivism and Experiential Realism

Lakoff (1987) identifies two views of cognitive science: the traditional and the new. Both views see categorisation as the main way of making sense of experience. Categories in the traditional sense are, as noted above, created based solely on the properties shared by its members, independent of the beings doing the categorisation and with no imaginative concept entering the realness of categorisation, i.e. in this account there is no space for metaphors, metonymy or imagery (Lakoff 1987).

The traditional view, known in the literature as Objectivism, is philosophical (Lakoff 1987). It views the mind as a rational, logical machine which makes sense of the world in an objective manner, faithfully mirroring nature in its truest sense. It leaves little space for individual variation, imagination or creativity, assuming also that all minds work according to the same principles. In this sense, objects are assigned categories based on specific shared factors or characteristics. Much like a computer with an algorithmic equation, the mind is said to act in an efficient, straightforward manner, readily and objectively identifying the categories which are to be used.

Lakoff contrasts this with what he calls the ‘new view’, one that embodies the individual’s experience and perception of the world. As such it can be termed Experiential Realism, or Experientialism. In this view, the individual’s physical and conceptual interaction with the world is central to how objects, concepts and experiences are categorised. This view acknowledges that the human mind is an organic, creative force, which derives its ability to categorise objects on existing knowledge from the surrounding environment, including the socio-cultural contexts of interaction as well as knowledge acquired from or taught by other

social beings. As such, categories are much more fluid, and there is space for individual variation, as well as traditions that are passed from one generation to the next. This view was influenced by Rosch's (1968) psycholinguistic investigations into how the mind approaches internal categorisation.

2.1.3. Idealised Cognitive Model and Frame Semantics

In addition to the above, is the Idealised Cognitive Model (ICM) developed by Lakoff (1987). Within ICM there is no need to draw a boundary between strictly definitional and descriptive features of semantic categories, as such information does not take the form of a single concept corresponding to a single lexical item (Geeraerts 2010: 222). Instead, knowledge is organised into broader categories which are culturally based. Such an encyclopaedic conceptualisation of linguistic meaning requires a way of representing those larger chunks of knowledge on one platform, linking all the relevant lexical items to broader conceptual structures. An example provided by Lakoff (1987: 68–70) is that of the concept of a BACHELOR, which can be defined as an 'unmarried man', but culturally it can be seen to exclude the Pope, men with partners but are unmarried, or those in polyamorous relationships, even though they meet the requirements of the definition. Thus, we can link the concept of BACHELOR to its ICM which is associated with men of marriageable age, who are single and who typically engage with monogamous partnership. The ICM in question does not consider those in its periphery and can only be applied to certain segments of society.

ICM draws from Frame Semantics (Fillmore 2006), a form of cognitive semantics which uses an onomasiological approach to lexical items, and in this way considers separate elements of language. This can be compared to lexical field approaches as identified by Fillmore & Atkins (1992: 76–77).

The Lexical Field approach looks at lexical items and their relationships, employing the following two principles:

- Inter-item relationships that can be defined for items in the lexicon
- Lexical sets structured in terms of such relationships

In contrast, the Frame Semantics approach embodies the following:

- Meaning is only understood with reference to a structured background of experience, beliefs, practices etc. Speakers will know the meaning of a word only by understanding the background frames that motivated the concept encoded by the word.
- Meanings of lexical items therefore reflect an element of a particular frame, or category.

Concluding remarks

As a result of the theoretical literature reviewed thus far, we can begin to think about the ways that knowledge might be encoded in the Nahuat-Pipil language and lexical ways the natural world can be categorised. We have seen that language is a part of culture and that culture itself is not a fixed concept. It is dynamic, influenced by historical events and individual experiences, but it is also the collection of beliefs, values, knowledge and so on, that can be passed on between generations. The literature so far supports the idea that historical events and experiences can affect how language is perceived and used. The manner in which this is applicable for speakers of Nahuat-Pipil will be discussed in further detail in Chapter 3.

This section has provided an overview of the literature on the main linguistic theories that have been used to inform the research presented in this thesis. Cultural Linguistics (CL) and the influence of culture on language have presented the contextual evidence for reasoning why language should be considered as an element within a broader system. CL offers a theoretical and analytical framework that focuses on examining features of language that encode conceptualisations rooted in cultural experiences of speakers (Sharifian 2017). It also provides a more flexible system which does not result in individuals being constrained by the patterns of their languages and cultures. While CL does not readily generate testable hypotheses, its analytical tools have the potential to be useful in interpreting the result of certain empirical studies, as presented in further detail in Chapter 4.

Furthermore, having established the model used to understand the broader context in which Nahuat-Pipil has been studied, Linguistic Relativity provides a basis for understanding the relationship between language, thought, and culture. Boas, Sapir, and Whorf all provided perspectives and different insights to understand how language and its lexical and

grammatical structures can reflect human thought and culture. Ultimately, this has served as the base for Cognitive Linguistics, the study of semantics and grammatical structure within natural language to gain evidence for a theory of cognition (Jackendoff 1983). Cognitively, of interest is the mental process of categorisation, and theories on linguistic processes for categorisation such as Prototype Theory, Objectivism and Experiential Semantics, as well as the Idealised Cognitive Model, and Frame Semantics were presented. Each of these approaches argues that lexically marked categorisation must be contextualised within its meaning, i.e. cultural setting. Engaging with these theories provides a basis for understanding the processes involved in the categorisation of plants in Nahuat-Pipil, as well as how these might be reflected in language.

It remains to be seen however how plant names are discussed in the discipline of Ethnobiology, particularly in relation to the work of Brent Berlin. The following section looks at strategies used for classification and categorisation within the discipline of Ethnobotany. With respect to the categorisation of plants and animals specifically, a distinction must be made between scientific definitions of items, and the definitions that reside in the minds of people both collectively and individually. Due to the nature of their profession, scientists must use clearly defined vocabulary in order to share information with each other. Experiments must be reproducible, and information must be transparent (Karp 2018). Researchers are held accountable for the research they produce, not only by their peers but by anyone who takes interest in their work. Thus, the language used is often specific, precise and as clear as possible. On the other hand, the human mind is often a vague and fuzzy data processor which scientists are still struggling to understand. When it comes to the creation of definitions and categories, there is a great deal of individual variation on a micro level and collective variation on a macro level.

Categorisation is not a finite and fixed strategy. It is flexible and spontaneous (Jacob 2004). Exposure to different cultures, languages and experiences will affect the way categories are created (Barsalou 1987), and as a result the human mind is in a state of adaptation. As a result, modes of expression are in flux as are the definitions of words used and categorisation of items (Beck 2000), although constrained by conventions that are shared among members of social groups that use particular means of expression. This tension between stability through convention and tradition and instability through individual experience is what leads to slow and gradual diachronic change.

2.2 Ethnobiology

Ethnobiology refers to the systems of terminology relating to the biological world employed by individuals who are not trained scientists. The work of Brent Berlin, especially Berlin (1992), which is based on 20 years of ethnobiological fieldwork and research, is seminal for the topics of taxonomy, classification and nomenclature in ethnobiology. Berlin (1992: 2) argues that:

> The observed structural and substantive typological regularities found among systems of ethnobiological classification of traditional peoples from many different parts of the world can be best explained in terms of human being's similar perceptual and largely unconscious appreciation of the natural affinities among groupings of plants and animals in their environment - groupings that are recognised and named quite independently of their actual or potential usefulness or symbolic significance to humans.

Berlin draws a line between those who view reality as a social and cultural construct unhindered by the parameters of the physical world, and those who recognise the seemingly innate ability of humans to recognise 'natural affinities' amongst the living entities of our biodiverse planet: plants and animals. These affinities result in taxonomical grouping by means of classification, which are reflected in language. Taxonomy can be viewed as a hierarchical system and classification as the action which helps encode and arrange the categories within this system. In the case of the natural world, taxonomy refers to the hierarchical categories which are applied to plants and animals, whereas classification is how categories of plants, animals, objects, or information in general are grouped, based on features such as size, shape, or colour. Within Ethnobiology, classification is the means by which humans navigate, utilise, and survive in the natural world, as 'before humans can begin to utilise the biological resources of the local environment, they must first be classified' (Berlin 1992: 5). Thus, '[c]lassification...is an absolute and minimal requirement of being or staying alive' (Simpson 1961: 3).

The different types of classification as applied by those who view reality as a social and cultural construct versus those those who recognise 'natural affinities' between living entitities is acknowledged. As discussed by Berlin (1992) and Ellen (1996), an important conceptual distinction between different types of classification can be made by differentiating

between general purpose and special purpose classification. The former is mostly natural morphology-based taxonomy, and the latter is always humanly determined (or artificial), based on use, for cultural, sacred or symbolic criteria.

Almost all practicing ethnobiologists would agree that the field of ethnobiology is devoted to the study of the knowledge and practices that encapsulate the complex sets of relationships of plants and animals to present and past human societies (Berlin 1992: 3). As such, two major questions are posed as being central to ethnobiology ((Berlin 1992: 4):

1. How and in what way do human societies *use* nature?
2. How and in what ways do human societies *view* nature?

Early ethnobiological research focused on the first question, aiming to study the 'utilisation of plant and animal life by primitive peoples' (Castetter 1944: 158) and tended to present its findings as lists of plants in alphabetical order by genus, or in their presumed phylogenetic sequence by biological family. Such research 'might more accurately be said to treat botany [or zoology] with notes on ethnology' (Conklin 1954: 10).

The major impetus for cognitively-oriented ethnobiological research can be traced back to Conklin's influential doctoral dissertation (Conklin 1954). It was the first ethnographically and botanically sophisticated description of a full ethnobotanical system of classification for a nonliterate society (Berlin 1992: 4), and his research stressed the importance of discovering indigenous categories for plants and their conceptual relationships to one another as complete, self-contained systems. This figured prominently in the methodological approach to cognitive ethnography as the development of the discipline towards the inclusion of integrated ethnographic and biological descriptions acknowledges the importance of economic and cognitive factors, and comes together to face a third question that unites the two sides (Berlin 1992: 5): 'Why do human societies classify nature in the ways they do?'

Human beings all over the world are seen to be constrained by nature's basic plan in essentially the same way in their conceptual recognition of the biological diversity of their natural environments (Berlin 1992: 8). Social organisation, ritual, religious beliefs, notions of beauty and so on are constructed by human societies. Berlin (1992: 9) claims that when viewing nature, human beings 'discern' rather than 'construct' order on the basis that it is not possible to look at the:

> landscape of organic beings and organise them into cultural categories that are...inconsistent with biological reality…Groups of plants and animals present themselves to the human observer as a series of discontinuities whose structure and content are seen by all human beings in essentially the same ways, perceptual givens that are largely immune from the variable cultural determinants found in other areas of human experience.

In this is the observation that human beings can recognise many distinct patterns in nature's structure in general. However, in any local flora or fauna a single pattern stands out from all the rest, referred to by biologists as the *natural system*. The natural system becomes manifest presumably because of the human ability to recognise and categorise groups of living beings that are similar to one another in varying degrees in their overall morphological structure, or morphological plan (Berlin 1992: 9).

Based on the above assumptions, Berlin's Principles of Nomenclature and Principles of Categorisation reflect the presumed natural system observed by humans. This, and a discussion on how individual variation and evolutionary processes are factors to be considered within classification, are presented in the following sections.

2.2.1 NOMENCLATURE AND TAXONOMIC CLASSIFICATION

The term 'linguistic naming conventions' refers to the linguistic patterns found in the emic naming of plants and opens up a discussion around the existence of linguistic categorisation and language universals. The study of folk taxonomy of living organisms presents questions of universal patterns in folk classification across the world's languages (Berlin 1972; 1973; 1992). Berlin makes an argument for the human mind's innate need to categorise which creates the necessary conditions to understand the natural system of the world around us and classify plants and animals accordingly. Like the traditional objectivist theory, here emphasis is made on the mind acting as an objective computer, creating categories on the basis of objects' morphological similarities and differences (Berlin 1973: 260). By looking at evidence from unrelated languages, it is possible to create a case for the existence of many linguistic universals in folk classification and nomenclature (Berlin 1992). Note however, Hernandez (1997) points at the importance of considering variation of importance placed on certain features from culture to culture, as well as the importance of

considering individual variation within a given culture. For example, in Nahuat-Pipil, a great deal of variation was found in the names assigned to plants within Santo Domingo de Guzmán (SDG) in addition to differences between SDG and other field-sites like Cuisnahuat and Nahuizalco[3].

Berlin's work on ethnobiological categorisation was preceded by studies of cross-linguistic patterns of lexicalisation of colour terminology (Berlin & Kay 1969) which uncovered not only that there seem to be universal catgories cross-linguistically but also predictive relationships synchronically and diachronically between the lexicalisation patterns that encode them. Berlin and Kay (1969) identified the existence of maximally eleven universal terms for perceived colour categories, and cross-linguistically stable prototypes for colours, as well as pointing to a fixed hierarchy of terms for any lexicalised colour as in Figure 4:

$$\left[\frac{white}{black}\right] > red > \left[\frac{green}{yellow}\right] > blue > brown > \left[\begin{array}{c}\frac{purple}{pink}\\ \frac{orange}{grey}\end{array}\right]$$

Figure 4: Colour Universals (Berlin and Kay 1969)

Thus, languages can be placed on a hierarchy of lexicalisation such that existence for a term at one point predicts lexicalisation of points above (to the left) in the hierarchy. For example, a language that lexicalises 'blue' will also have terms for 'green', 'yellow', 'red', 'white' and 'black', and so on. In addition, the hierarchy is claimed to be diachronically relevant such that development of new colour terminology will follow the same hierarchy in temporal order. It was also claimed that the hierarchy reflects cultural differences: lexicons with fewer colour terms tend to occur with cultures and that evidence relatively simple technologies while colour lexicons with many terms tend to occur in association with complex technologies. This hierarchy is also reflected in language internally through covert categorisation, as in English causative and inchoative constructions (thus we find the affix -en for 'blacken', 'whiten' and 'redden', but not for other colour terms lower down in the hierarchy, i.e. no *'yellowen', *'greenen', *'bluen' etc.).

[3] Through observations and personal communications, it was found that within SDG this variation was a result of familial idiolects developed over generations. These familial idiolects can be traced back to three main families in SDG. This observation, however, would benefit from a more thorough and detailed analysis.

Generally, lexemes of nomenclature are productive, or transparent, allowing meaning to be embedded in names. Proto-Aztecan nomenclature for generic and life form taxa, for example, often have descriptive or onomatopoeic names for birds, a practice that is common for bird names (Hunn & Brown 2011: 322). Proto-Aztecan examples include *kakalo*, crow or 'animal that says /kaka/', and *tukulo*, owl or 'animal of the night' which says /tuku/. Nomenclature for specific and varietal forms is often accompanied by an adjective which describes colour or size e.g. *red sparrow* or Nahuat-Pipil *ayutzin* – small turtle. Berlin argues that the above two systems can be found in all languages, and while many have confirmed these claims, some sceptics (Dwyer 2005; Baker 2007; Si 2011) maintain that far more languages need to be investigated in detail before these naming conventions and levels of categorisation can be treated as universal.

In Nahuat-Pipil, colour terms are often used in ethnobiological naming conventions, particularly in reference to botanical items. Some point to the need to observe possible relationships and correspondences between biological variables and culture (Kay et al. 1997). Research on the meaning of colour, for example, can give light to the relationship between biology and culture. The study of the Hanunóo language of the Philippines was one the first ethnobotanical studies to look at colour categories within a given community (Conklin 1973; Conklin 1986). It found that that plant identification was dependent on chromatic differences based on levels of contrast between the plants and their surroundings. Biological and natural factors such as this can begin to explain why certain colour categories arise and why the creation of basic colour terms arises out of a need for distinctions.

To better understand how colour terms are incorporated into Nahuat-Pipil biological nomenclature, we can look at how colour terms and categories are created in Cuezalan Nahuatl. It has been found that within Cuetzalan Nahuatl the lexical system of a language interacts with the social and natural context its speakers live in (Castillo Hernandez 1997). Colour terms in this language have a direct relationship with objects found in nature and their meaning is taken from cultural uses. This has also been found across other Nahuatl variants (Caplan 2017) including Nahuat-Pipil. In Cuetzalan Nahuatl, 'basic' and 'non-basic' colour terms have been identified (Castillo Hernandez 1997), and basic colour terms refer to specific colours and are applied to a variety of objects. In contrast, non-basic colour terms incorporate a referent into the term e.g. gold-colour or tzaput-colour. Borrowed terms from other languages are also classed as 'non-basic'. The five colour terms are presented in the following Table 5:

Table 5: Cuetzalan Nahuatl colour terms

Tiltik	Istak	Ciciltik	Sosoktik	Kostik
Black	*White*	*Red*	*Green*	*Yellow*

The basic colour terms found in Cuetzalan Nahuatl are similar to basic colour terms found in other Mexican languages like Ixcateco, Mazateco, Popoluca de la Sierra, Tzeltal and Tzotzil. These terms and other non-basic colour terms in Cuetzalan Nahuatl are transparent, derived from plants and animals as is indicated in Table 6.

Table 6: Etymology of Cuetzalan Nahuatl Colour Terms (Castillo Hernandez 1997)

Cuetzalan Nahuatl	**English**	**Nahuatl Root Referent**	**English**
Tiltik	Black	Til	Coal
Istak	White	Istat	Salt
Ciciltik	Red	Cil	Chile
Sosoktik	Green	Sosok	Raw fruit
Kostik	Yellow	Kosti	Necklace
Taltik	Brown	Tal	Earth
Saltik	Beige	Sal	Sand
Capultik	Purple	Capulin	Small purple berry or ‘chokeberry’

The colour terms presented in Table 6 are found in (Castillo Hernandez 1997) having been compiled from (Molina 1970; Karttunen 1983; Joe R. Campbell 1985). As is demonstrated, both basic and non-basic colour terms are derived from objects found in the natural world. Thus, black is derived from the word for coal; red is derived from the word for chili and so on. This is a tactic that has been employed across other Nahua languages. In Classical Nahuatl for example *sosok* was used to refer to fruits in general (Molina 1970) whereas in Cuetzalan Nahuatl the same word is used to refer to oranges. The important point to note however is that often many species of oranges in Central American are in fact green. Therefore, the colour reference remains the same while the object referent changes. Similarly, Cuetzalan Nahuatl uses *capulin* as the root for the colour purple *capultik*. This fruit is a small purple berry. In contrast, the Classical Nahuatl term for purple is *camopalli* or *camopaltic*, which is derived from *camotli*, the word for an edible root or potato. While the colour of the potatoes consumed by those who spoke Classical Nahuatl is unknown, the naming

conventions for other colours would suggest that the referent object would have been a purple root or potato.

A morphological analysis shows how in each case, the nominal form of the referent is paired with the morpheme *-tik* which some have analysed as an adjective marker (Robinson Federico 1969; Sullivan 1983). However, more recent analysis has argued for a shift away from this view in favour of one that states that Nahuatl does not have a grammatical class for adjectives. It is argued that /-tik/ instead acts as an approximator indicating proximity to the root it is attached to, much like the function of the word 'like' in English (Launey 1992). This reanalysis of word final morphemes is supported by the findings of the research presented in Chapter 5.

Berlin (1992: 26) claims that the formal linguistic structure of plant names is similar in all languages. Furthermore, the linguistic properties of plant and animal names indicate the cognitive status of the taxa to which they refer. Berlin also claims that salient morphological and behavioural features of plant and animal species are often encoded directly in the ethnobiological names used to refer to these species. He suggests that this nonarbitrary, iconic assignment of names to plants and animals may have adaptive significance because such terms will be less difficult to learn, easier to remember as well as to utilise, thus reducing the cognitive effort required of people of non-literate traditions who must control large ethnobiological vocabularies. Furthermore, the transparency and productivity of lexemes allow meaning and knowledge to be embedded in plant nomenclature. Finally, it is important to note that a comparative analysis of the mapping of names demonstrates that while a name indicates the existence of a particular taxon, the absence of a name does not imply the absence of a category.

Basic Principles of Folk Classification

Berlin applied his analysis and theoretical framework developed for the study of colour terms to folk taxonomies of living organisms seeking to identify universal patterns of categorization and lexical encoding. He noted that cross-culturally, ethnolinguistic folk classification can be organised into 5-6 categories arranged hierarchically in taxonomical groups, much like those identified by Western scientific methods for identification. Berlin's folk classifiers do not

correspond exactly to scientific categories, however, the following tables provides an approximation of the correspondence between the two (Table 7 and Table 8):

Table 7: Scientific Classification of Plants

Scientific Division	**Example**
Kingdom	*Plantae*
Class	-
Order	*Fagales*
Family	*Fagaceae*
Genus	*Quercus*, Oak
Species	*Q. ilex*
Varietal	*Q. ilex* subsp *gracilis*

Table 8: Folk classification of plants (Berlin 1992)

Berlin's Ranks	**Example**
Unique Beginner	Plant
Life form	Tree, bush
Intermediate (optional)	Covert e.g. flowering
Intermediate (optional)	Covert e.g. evergreen
Folk Genera (basic level)	Oak
Folk Specifics	Red oak
Varietal Taxa	Red dwarf oak

Scientific, or Linnaean categories include seven obligatory ranks, in addition to other ranks which are optional and are used as needed. These ranks are used to classify all living things, making folk taxonomies very shallow by comparison (Hunn & Brown 2011: 326). Berlin (1992) identifies six universal ranks, of which generic taxa is identified as being highly salient and the first terms to be encountered in ethnobiological investigations because they stand out in the landscape (Berlin 1978: 17).

As outlined by Hunn & Brown (2011: 326-327), "[a] folk-taxonomic structure is a set of categories or taxa arranged so that every taxon is included within one and only one higher

order class, up to the unique beginner or kingdom category, designated respectively by plant and animal in English folk-taxonomies." This structure is called a taxonomic tree. Often depicted upside-down, the trunk represents the kingdom and subsequent branches represent terminal taxa. Each branching joint is a node in the taxonomic structure and constitutes a taxon that includes all subsidiary taxa. With the exception of the existence of covert categories, each node is named. Finally, taxa are assigned to a single taxonomic rank (Kay 1971).

The most basic rank as defined by Berlin (1992) is the Folk Generic. Generic taxa are defined as logically general and perceptually salient. Each generic taxon is polythetic, meaning they are distinguished from all other generic taxa by several characteristics. A corollary of these properties is that each generic taxon is likely to correspond to a phylogenetically recognised scientific taxon, often a single living species as there is often only one species of a genera in a given folk-inhabited area. Generic taxa are typically understood as sets of living organisms that reproduce after their own kind. They are structurally basic, meaning they are the foundation on which the elaborated taxonomic hierarchy is built.

A taxa of a given rank may be found at different taxonomic levels, defined by the number of nodes between a taxon and a unique beginner. This is a result of ambiguity or 'fuzziness' in the boundaries recognised for categories. An example of this 'fuzziness' can be seen in the distinction between tree and bush, as there are bushes that may be very tree-like and vice versa. In some contexts, ambiguous or unaffiliated generic taxa may be considered different from other plants. In other words, they cannot be described as 'a kind' of something else because they carry so much cultural significance or because they are very distinct. An example of this would be 'corn' for Mexican Indians, and 'cactus' for English speakers.

Life form taxa are 'polytypic', meaning they always include at least two named taxa (usually more than two). Folk generic taxa may be either polytypic or monotypic e.g. the generic category coyote only includes a single species *Canis latrans*, as opposed to a polytypic folk generic taxa which includes two or more folk specific taxa e.g. White Oak and Black Oak.

Folk specific taxa are generally named through the use of secondary lexemes (e.g. White Oak, Cutthroat trout), however, some are named with primary lexemes as is often the case with protypical folk specifics. Ultimately, a taxon is judged as folk specific by virtue of it being immediately included in a folk generic. Statistically, the distribution of folk specifics demonstrates that most generic taxa are monotypic, while a smaller number of specific

subdivisions are polytypic. Generally, in traditional local systems, very large polytypic generics are cultivated plants and domestic animals.

At the folk varietal level we see structural replication of the folk specific. Folk varietal names are characteristically binomial or even multinomial unless abbreviated e.g. Eastern diamond-backed snake vs. Western diamond-backed snake. Usually this level is monotypic unless there are cultivars of high value. Polytypic cases are relatively rare.

The psychological properties of folk specific and folk varietal taxa are not always clear cut. Specific and Varietal taxa will generally be 'monothetic', defined with respect to a simple contrast such as colour (black, white) or size (large, small). Such taxa will lack a distinctive 'gestalt', or a characteristic perceptual pattern.

Berlin's taxonomic proposal for classification provides a common framework for the comparative analysis of plants across languages (Hunn & Brown 2011: 300). When it comes to nomenclature, Berlin (1992) argues that universals are found in ethnobiological nomenclature i.e. the patterns that underlie the naming of plants and animals in systems of ethnobiological classification. Such nomenclature is said to represent a natural system of naming that reveals much about the way people conceptualise the living things in their environment (Berlin 1992: 26). These are outlined in Berlin's (1992: 34-35) Principles on Nomenclature:

1. Taxa of the ranks of kingdom and intermediate are generally not named. There is growing evidence that some covert life-form taxa may also be found. When such taxa are labelled, they often show polysemous relations with taxa of subordinate rank.
2. Names for plants and animals exhibit a lexical structure of one or two universal lexical types that can be called primary and secondary plant and animal names. These types can be recognised by recourse to linguistic, semantic, and taxonomic criteria. Primary names are of three subtypes: simple (e.g. fish), productive (e.g. catfish) and unproductive (e.g. silverfish). Secondary names (e.g. red maple, silver maple), with generally specifiable exceptions, occur only in contrast sets whose members share constituents that refers to the taxon that immediately includes them (e.g. maple).
3. A specifiable relationship can be observed between the names of taxa and their rank. Life-form and generic taxa are labelled by primary names; subgeneric taxa are labelled, in general, with secondary names.

4. There are two well-understood conditions under which subgeneric taxa may be labelled by primary names, although these two conditions do not account for all of the empirically observed data.
    a. When the name of the prototypical subgeneric is polysemous with its superordinate generic. Disambiguation of polysemy is accomplished by the optional occurrence of a modifier glossed as 'genuine' or 'ideal type'.
    b. When a non-prototypical subgenerics refer to subgeneric taxa of great cultural importance.
5. Ethnobiological nomenclature is semantically active in that the linguistic constituents of plant and animal names often metaphorically allude to morphological, behavioural, or ecological features that are non-arbitrarily associated with their biological referents.

Principle 1 is exeplified in Hanunóo: *kayu* means both 'tree' and 'plant in general', and in Aguaruna *yámpits* means 'white winged dove' and ‘dove’ in general (Berlin 1992: 27). In Nahuat-Pipil, *tzaput* is used to refer to both the general category and the individual prototype of the category.

Principle 2 is based on the important semantic notion of a *contrast set* first proposed by Conklin (1962) and Frake (1962). It was Kay (1971: 868), however, who ‘defines two taxa as being members of the same contrastive set if they are immediately included in the same superordinate taxon’. The example given by Berlin (1992: 28) is *Monterrey pine* and *Ponderosa pine* being members of the contrast set *pine*. Knowledge of the contrast set also provides crucial information for determining the structural type of the taxon's name. For example, *sugar maple* can be shown to be a secondary name as one of the name's constituents (***maple***) is also the name of the taxon that immediately dominates the category labelled by the expression *sugar maple*. Secondly, *sugar maple* occurs in a contrastive set whose other members are also labelled by names that also include the same term (red maple, Oregon maple etc.). In contrast, complex primary names such as *tulip tree* or *catfish* do not show this distributional pattern. These terms occur in contrastive sets where other members are labelled with simple primary names e.g. (*ash*, *hickory*, *poplar* - ***trees***) and (*bass*, *crappie*, *carp* - ***fish***). It is important to note that this principle applies to habitually necessary components of the labels by which ethnobiological taxa are named (Berlin 1992: 28). A *hickory* may also be called a *hickory tree* for example, however in contrast to a *tulip tree*, the label *tree* does not

need to accompany *hickory* in order for the word to be identifiable. In contrast, in order to identify 'tulip tree' as *Liliodendron tulipifera*, the full form 'tulip tree' is obligatory. Secondary names on the other hand can be abbreviated e.g. *winesap apple* can simply be referred to as *winesap* (cf. Conklin 1962: 122). Berlin (1992: 29) also notes however, that the observation should not be taken as a general tendency or without exception as in rural Oklahoma one can hear expressions such as "You shoulda seen that 40 pound cat ol' Billy caught in the creek last night", making reference to catfish. In this sense, it is important to consider context before applying generalizations.

Principle 3 states that the rank of the taxon predictively governs the ways in which that taxon gets named. Thus, primary names mark biological life forms e.g. bird, fish, tree etc. Generic taxa are also labelled by primary names e.g. woodcock, redbud, jackass, cockroach etc. Subgeneric taxa are labelled with secondary names e.g. blue spruce, spotted salamander. These expressions are structurally identical to the binomials of standard scientific nomenclature, which are comprised of generic appellation and a specific epithet (Berlin 1992: 29).

Principle 4 describes the notable exceptions to the application of secondary names for subgeneric taxa of Principle 3. Two conditions are outlined under which subgeneric taxa are not labelled by secondary names:

1. When one of the subgeneric taxa of some generic category is considered to be prototypical, for any of a number of reasons. In most cases, the primary name used to designate the prototype is polysemous with that of its superordinate generic.
2. When the biological species involved are imbued with high cultural importance. For example, Aguaruna Jivaro classification of manioc varieties includes more than 100 forms (Boster 1980: 60).

Principle 5 observes the non-arbitrariness or iconicity of plant and animal names. Primary names of all subtypes on further analysis reveal metaphorical associations of the name with its referent. In ethnozoology, onomatopoeic representations are associated with typical vocalizations of animals. In summary, we can see that folk nomenclature is principally organised into two main groups: labels for generic and life form taxa, and labels for specific and varietal forms. We can used Berlin's Principles of Nomenclature to deduce the taxonomic placement of named taxa within a given language. Generally, Unique Beginner

and Intermediate categories do not have names, rather naming begins at the Generic level. There are two types of names: Primary and Secondary. Primary names are usually assigned to Life Form and Generic Taxa, and secondary names are assigned to any subgeneric taxa. Primary names can be simple (fish), productive (catfish) and unproductive (silverfish), whereas secondary names only occur in contrastive sets (red maple, silver maple). Finally, primary names can also be assigned to prototypical taxa. These are the ideal types within a category and the name of the prototypical taxon is polysemous with the superordinate category. In the case where primary name is used for subgeneric taxa, it is usually because it is culturally important.

In the following section I explore Berlin's views on variation and outline Relativist and Comparativist approaches to the presentation and analysis of variation.

2.2.2 VARIATION

In this section, I present Berlin's view on the central role of cognitive variation in ethnobiological classification to demonstrate how patterns emerge from regularity in diversity. Key to understanding variation within ethnobiological nomenclature and classification is the motivation behind why humans engage in these activities, and how the choices made are classed as being either utilitarian, practical, and pragmatic, OR intellectual, serving an innate need for classification. Overall, this reflects a larger discussion: that of cultural particularism and relativism compared to cross-cultural generalization and comparison.

The relativist view holds the positions that cultures are different in innumerable ways. Description of cultures provides an insight into individuals and this in turn makes comparison of cultures based on individual and unique instances of human experience, very difficult (Ellen 1986).

The comparativist view on the other hand recognises the broad range of inter-cultural and intra-cultural variation in human societies. Nonetheless it seeks to discover and document general features of cross-cultural similarities that are widely, perhaps universally shared, in order to develop theoretical explanations that underly the empirical generalizations one observes (Berlin 1992).

Ethnobiologists taking a relativist approach follow a view expressed by Locke (1848) who argues that species are products of human imagination, mental creations comparable in their reality to any other social or cultural construct. Ellen (1978: 154) states that 'nature is ultimately a continuity made discontinuous by taxonomic science on the basis of certain selected criteria' and to argue otherwise is to be caught up in 'the confusion of the order of nature with that imposed on it by man' (Ellen 1979a: 1).

On the other hand, ethnobiologists adopting a comparativist and cross-cultural orientation find themselves aligned with the view that separation between biological species is real rather than being seen as a continuum. The naturally occurring groupings are considered to present objective, well-defined clusters of plants and animals, even more so in the locally restricted habitat exploited by a particular traditional society. These well-defined categories do not always exhibit clear cut boundaries, but they will always exhibit a prototypical member surrounded by less typical exemplars of the class. These prototype exemplars serve as the anchors of the ethnobiological system of classification in terms of their overall salience or perceptual distinctiveness.

The outcomes of these opposing views are the following: for the relativist, the description of the ethnobiological knowledge of some particular society is an end in itself. It is another ethnographic contribution to the picture of the multifarious cultural diversity of the human species. One is motivated to search for the specific and cultural factors at work in any particular human group's construction of biological reality. In reference to large theoretical issues, the relativist's position is to demonstrate how the contextual and symbolic complexities of sociocultural variation make broader comparative statements impossible, or when decontextualised from their cultural matrix, become so trivial and self-evident so as to be of little value (Bousfeld 1979; Gardner 1976; Ellen 1979a).

In contrast, the cross-culturalist perspective views descriptions of individual systems as the first step in studies of ethnobiological classification, and that these descriptions are only the initial necessary phase of a larger enquiry. Biological reality is seen to be easily divisible into readily definable chunks that can be described in terms of the objective methods of biological field botany and zoology. One is motivated to discover what portions of this reality are cognitively recognised in any particular folk biological system and why. Individual descriptions are then examined in a cross-cultural manner in search of general features of both structural and substantive similarities between and among various systems being

compared. These types of examinations lead to the formulation of empirical generalizations that are confirmed on the basis of new evidence, and thus, steps towards the development of an explanatory theory can take place and hypotheses can ultimately be tested.

My own take on this discussion is that by acknowledging the human factor, and the impact that social and cultural matters can have on the organisation of knowledge, the relativist view seems to acknowledge that each human classification system is unique, and deserves to be contextualised within a broader system of social and cultural determinants. I would add that history, politics and other such aspects would play a role in how classification systems develop. On the other hand, the comparativist, cross-cultural view aims to uncover the underlying universal system for categorisation that is innate to the human mind. It recognises a certain natural order in the world, and ascertains that humans are able to tune into this natural order. To uncover the underlying universals that describe this natural order, we must use cross-cultural, and presumably cross-linguistic comparisons, which will reveal empirical generalizations which can then be used to create theories about biological order of the world. It seems to me that there are two primary distinctions between these two views. One focuses on how human beings organise knowledge, and the other uses human knowledge as a means for understanding biological order in the world, while also pushing for a synchronicity between human cognition and what is termed to be 'natural order'.

It is recognised that one view does not exclude the other as humans have the capacity for individual expression despite having the same biological basis for cognition. Knowledge embedded in productive plant names can reflect local ecology, subsistence practices, and botanical histories, as well as social and historical particularities, and be comparable to knowledge embedded in other languages. However, in addition to presenting data that can be compared cross-linguistically,this thesis also chooses to present a relativist approach by discussing the history, politics and sociolinguistic context of Indigenous people in El Salvador. I am equally interested in understanding the context that has resulted in the categorisation and classification systems it describes. This does not mean that I believe it is not beneficial to do cross-linguistic and cross-cultural comparisons of categorisation systems, however the ultimate aim and motivation of the thesis is much more localised. Ultimately, from a language documentation and description standpoint, my interest lies in creating a body of work that is detailed, descriptive, and nuanced, which will also leave an open door for language revitalisation to take place if there is an interest. Of course, the creation of a well rounded documentation of all the ways that knowledge of plants and the environment (e.g.

TEK) are found in the language within proverbs, stories, rituals, poems, songs, oral histories, would be ideal. This is, however, beyond the scope of this thesis. Where appropriate, metaphors, proverbs, and folklore are used as examples, However, the main interest must first remain in describing taxonomic classification within the cultural, social and political context of the language and its speakers.

When it comes to variation, Berlin's view is that ethnobiologists are more aware of issues relating to intracultural variation than are most ethnographers in other subfields, however their view that cultural knowledge is distributed throughout a population and that possession of such knowledge is affected by other factors such as gender and age, has been around since Sapir (1938). Factors that can influence distribution of knowledge include: sex, age, social status and role, kinship affiliation, personal experience, and basic intelligence. As (Ellen 1979b: 338) states:

> Little quantitative information has been presented on the distribution of response variability in interpretations between informants according to such normally important variables as geography, age, gender, kinship affiliation, ideology, degree of literacy, and so on.

Variation can be observed both cognitively and lexically. Cognitive variation refers to the different ways of classifying the same things. Lexical variation on the other hand includes phonological and morphological variation and refers to the use of distinct or partially distinct lexical expressions to refer to the same ethnobiological referent (Berlin 1992: 204). It appears likely that factors relating to attributed cultural importance of a particular plant and animal species will work toward the reduction of linguistic variation for highly important organisms and propel variation forward in the case of less important species. The evidence for this is in (Berlin et al. 1973) who demonstrate that in Tenejapa Tzeltal and Zinacatan Tzotzil (two Mayan languages), 87% of the names for cultivated plants were cognates. The numbers drop to 80% for protected plants, 45% wild-useful forms, 17% plant species that are only sporadically treated.

An unstated assumption that is made in ethnobiological classification is that the variation apparent in participants' answers reveal a pattern of distribution that allows the researcher to infer the underlying structure (Berlin 1992: 200). If patterned distributions can be discerned in the ways that plants and animals are classified and named, we can begin to provide tentative explanations for the observed patterns. To gain an insight into such patterns, one

must also be aware of the methodology and methods utilised as is presented in further detail in Chapter 4.

2.2.3 EVOLUTION

Plants and animals evolve over time and the ethnobiological classificatory systems developed by humans may also change and develop over time. This results in typological growth of ethnobiological systems of classification (Berlin 1992: 272).

In his previous work, Berlin (1972: 72) claimed that naming of varietal taxa occurred almost exclusively in the classification of important cultivars, and that 'one should not expect to find varietal ethnobotanical nomenclature except in languages of societies which practice more complex methods of cultivation'. His view was that even in these languages, varietal names would be restricted to highly important groups of cultivated plants. By his own admission, these statements were made in the context of having only conducted research on horticultural societies at the time. Later research with foragers and hunter-gatherers revealed a different pattern (Brown 1985; 1986), namely that, with exception of the Seri, folk species are not recognised within the ethnobiological systems of traditional non-agricultural people. Life form taxa however are well established in all such systems (Brown 1984). This results in reorganisation of how ethnobiological taxa are encoded and means that the cognitive motivation for the recognition of subgeneric taxa is directly tied to the emergence of plant domestication, and must be historically late in the evolution of systems of ethnobiological classification (Berlin 1992: 274).

Comparison of hunter-gathers and horticulturalist societies demonstrate that foragers will exhibit systems of ethnobiological classification that include fewer named generic groupings than those of horticulturalists (Hunn & French 1984; Brown 1985; Hunn & Brown 2011: 330). It is proposed that this is the case because subsistence farmers are subject to periodic crop failures, and during such times of need are forced to rely on wild foods in order to feed their larger families. Thus, their size forces them to recognise a wider range of species as a potential use compared to hunter-gatherers. It is hypothesised that binomial naming strategies for the recognition of folk taxa are used in response to the need of an expanded ethnobiological repertoire (Hunn & French 1984: 89). This is certainly the case for the

Nahuat-Pipil as is described further in Chapter 3 and Chapter 5. Hunn, French and Brown thus argue that cultivators are driven to expand their knowledge of wild plant diversity directly as a result of people's utilitarian concerns with the implication of major failures in food production due to the negative effects of bad weather, crop pests and so on. I would add that social and political unrest such as war and social marginalization, factors which have affected the Nahuat-Pipil, will also produce a similar effect.

Berlin (1992: 283) is not convinced by the argument, stating that binomials are also found within domains that do not contribute to the food chain, but nevertheless have other utilitarian uses such as for construction, fencing, cordage and so on. This expansion to other domains, however, could be explained in two ways. As is presented in detail in the following chapters, indigenous agricultural communities, at least in El Salvador, have had to endure a lot of violence, marginalization and trauma as a result of land-related conflict. This marginalization is not unique to the Salvadoran context, but the resulting social marginalization caused by war and political and social discrimination could explain the increased reliance on natural resources to continue living in the way people know how. This ties in with the idea that the elaboration of a vocabulary is motivated by utilitarian biases, and is not limited to what is only edible but also includes species that are medicinally, technologically, aesthtically, spirtually and ecologically valuable (Hunn 1982). An alternative explanation is that the increased size of the population of agricultural societies compared to hunter-gatherers means that there is more demand for ritual, entertainment, and that nature provides both an inspiration and a resource to satisfy these elements of culture. In the context of the Nahuat-Pipil of El Salvador at least, the agricultural history and practices of the Indigenous people paired with a history of social marginalization, as well as social and political unrest would explain the existence of binomials in folk taxonomies as well as the broad range of ethnobiological knowledge.

The above review of Berlin's theories on ethnobiological nomenclature, categorisation and classification can be used to address some of the key research questions presented in this thesis. The strategies used for nomenclature and plant naming conventions provide insight into the notions of the productivity of lexemes, which allows meaning, and thus knowledge, to be embedded in binomials and trinomials. Thus, we can analyse some of the ways that knowledge is encoded in nomenclature, particularly in regards to categorisation practices. Following this, an overview of Berlin's views on what is categorised and how these

categories are arranged and classified are integral for analysing Nahuat-Pipil categories. It is possible to see how plant categories are reflected in naming conventions as is explored in more detail in Chapter 5.

Differences between relativism and comparatism, are also presented. The former is interested in the ways that the context of an environment informs naming practices whereas the latter is interested in studying the comparable universal structures that can be found across languages and ecological systems. While interest in one does not exclude the other, for the purpose of tying all the different elements of this thesis together and understanding the perspective of Indigenous people in El Salvador, effort is made to include a relativist approach as well as a comparativist approach. Doing so allows the reader to understand why the possession of TEK is important for the Nahuat-Pipil, and how historical events and experiences might tie in to notions of indigenous identity which are also tied in to a relationship with the environment. Given this interaction between history and knowledge, in the following section I present an overview of factors, such as historical trauma, that have affected Indigenous wellbeing and by consequence the evolution and transmission of their traditional ecological knowledge.

2.3 Issues of wellbeing and addressing historical trauma

In this section I explore the socio-political context of the Nahuat-Pipil language and the effect that this has had on Salvadoran Indigenous people's notions of identity and how this in turn has influenced the transmission of traditional ecological knowledge (TEK). The descriptions of the encoding of TEK presented in the previous two sections are now contextualised within a wider socio-political framework. This is done to better understand the motivations behind the interest of Nahuat-Pipil speakers to document TEK, and the way that contextual factors such as social discrimination and segregation, poverty and low self-esteem, language, conflict, violence, ancestry and racism affect the transmission of knowledge and the classification of plants. Furthermore, it is my belief that by understanding the motivations and importance associated with the transmission of traditional knowledge, and by linking these to language preservation initiatives, positive steps can be made towards a model of sustainable language revitalisation. Taking the time to

identify important aspects of culture and identity can help to identify topics or domains that might benefit from further language documentation.

I begin by first identifying some of the issues of indigenous and language rights and their correlation to notions of 'wellbeing'. The rights of Indigenous people's lives in El Salvador are contextualised by comparing the Salvadoran government's development model to global models such as the UN Millennium Development Goals (United Nations 2015) and the subsequent Sustainable Development Goals (United Nations 2019) (§2.3.1). This then continues to a discussion on issues of general wellbeing and how language and culture can fit into development models. A comparison of the Salvadoran government's policies which seek to promote and protect indigenous rights, to international declarations like the United Nations Declaration on the Rights of Indigenous People (Saira 2007) follows (§2.3.2). It also looks at models like that of the Arctic People's council and the Guatemalan NGO Wuqu' Kawoq and their incorporation of language and culture into their wellness indicators. The third section (§2.3.3) looks at some techniques which have shown positive results in dealing with issues of historical trauma, primarily the interdisciplinary work of Ben Levine (Levine & Schulz 1999; Levine 2003; Levine & Leavitt 2012).

2.3.1 CONTEXTUALIZING INDIGENOUS RIGHTS

In order to understand the context of Indigenous people's rights in El Salvador, it first important to understand the current reality of Indigenous people in the country, the conditions in which they live and the manner in which they are perceived. After the genocide of 1932, the Salvadoran government stopped acknowledging the existence of Indigenous people in El Salvador by removing any mention of the term and category for indigeneity from the official census and any official documents. This is one of the ways in which the existence of Indigenous within El Salvador has been erased. Nevertheless, as is presented in further detail in Chapter 5, by their own admission, Indigeneity in El Salvador is strongly associated with poverty as most Indigenous people in El Salvador live below the poverty line. Statistically, it has been found that in El Salvador in 2017, 29% of the population lived below the poverty line based on $5.50 USD/day, and 8.5% live in extreme poverty classed as living on less than $3.20 USD/day (World Bank 2019).

The Salvadoran government considers two types of poverty: financial, and multidimensional (STPP & MINEC-DIGESTYC 2015). Whereas financial poverty refers to lack of monetary resources, multidimensional poverty takes into account the following indicators:

1. Education
2. Living conditions
3. Employment and social security
4. Health, basic services and food security
5. Environment

This model is derived from the paradigm of 'good living' outlined by the *Plan Quinquenal de Desarrollo 2014-2019,* translated as the *5 Year Development Plan 2014-2019*. This plan claims that development is integral and consequential and must incorporate aspects of cultural, social, political, economic, and environmental wellbeing (GOES 2015). The inclusion of different aspects of wellbeing ties in with research conducted on Indigenous wellbeing which links loss of access to land, traditional food, language and culture to increased problems with health and a decrease in quality of life (Biddle & Swee 2012; Oster et al. 2014) as is covered in further detail in section 2.3.2.

When it comes to international efforts, communities perceived to live below a certain standard of living, often receive aid from a variety of well-intentioned organisations. In the year 2000 for example, the United Nations drew up the Millennium Development Goals, a list of negative indicators which it aimed to eradicate by 2015. This list is comprised of the following:

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve mental health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Global partnership for development

Though well-intentioned, the list of development goals does not take culture or language into consideration. Instead, in order to quantify success and achievement of these goals, they are presented as quantifiable percentages. Thus, universal primary school education is measured by enrolment of children into formal education. It is not contextualised within existing cultural practices for knowledge transfer or oral traditions. Literacy rates do not take into account whether literacy in the mother tongue is achieved. Likewise reducing child mortality is measured by whether a birth is attended by 'skilled health personnel' (Figure 5) and again does not necessarily consider traditional roles and knowledge systems that indigenous women might already have in place. Since 2015, the United Nations Development Programme (UNDP) set up the Sustainable Development Goals (SDG) which are in place until 2030, however these also do not seem to take non-Western cultural and linguistic perspectives on development into account either (UNDP 2018). On the other hand, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) aims to raise awareness of the linguistic diversity of the world via a series of actions such as the creation of World Atlas of Languages in Danger (UNESCO 2011). However, as of yet, an integrated approach within efforts of the UN and their promotion of development does not exist. Though language rights are not often at the forefront of humanitarian efforts to improve living conditions and the quality of lives of people, there is a strong case to be made in support of the idea that indigenous language rights can and should be recognised as an important human right (May 2011).

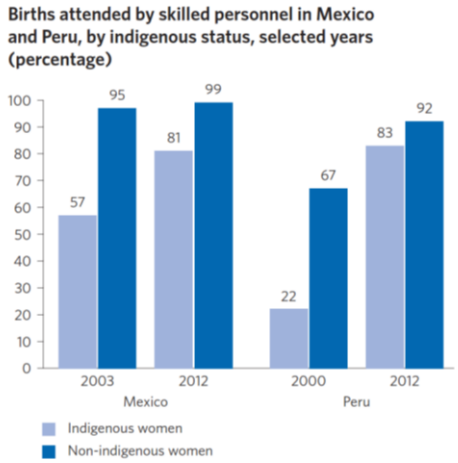


Figure 5: Births attended by skilled personnel in Mexico and Peru (United Nations 2015: 11)

From the perspective of those with an interest in the preservation of indigenous and minority languages, it is important to first understand why language loss can occur. There are a range of perspectives on language endangerment and loss. On one extreme, is the view that indigenous and minority languages and the traditional lifestyles they represent do not have a place in the modern world and should simply be allowed to die (Malik 2000). Others take a macro view of language and contextualise language loss within the larger scheme of language ecology. Language death is thus seen as a natural process within language ecology (Mufwene 2001; 2011). On the other hand, there is the view that language loss as experienced in past centuries, must be embedded and contextualised within social and political factors such as colonialism, contact, migration and economics (Nettle & Romaine 2000; Haugen 2001). Finally, there is the view that language loss is a direct result of targeted violence due to complex power dynamics (May 2012). Loss is not seen to be a purely linguistic or cultural issue, rather a result of an imbalance of power, prejudice, unequal competition, and overt discrimination and subordination.

For some, language-based conflicts lie within the nation-state and its emphasis on imposing a common language and culture via mass education (May 2012). Parallels can be drawn between the dynamics of minority and majority languages in opposition to each other, and the conflict between the concept of ethnicity versus national identity. At the heart of the relationship between minority and majority languages is an imbalance of power. The majority language has more social, political and economic influence. The majority language is often

the language of wider communication used within the legal system, government, education and the media. The minority language on the other hand will typically have fewer speakers and may have more limited resources. May (2012: 134) argues that this power imbalance results in tensions like those between ethnicity and national identity. Whereas the concept of ethnicity is perceived to be a social construct of shared value systems and ideologies, the notion of national identity considers all inhabitants within defined political borders to share the same values derived from representation of the nation state. Ethnic identification challenges national identity because it promotes the idea that there may be multiple ideologies and value systems within a political territory (Tilley 1997; May 2012). Much like the majority language, notions of national identity are promoted with larger influence in the interests of the public, whereas alignment with notions of ethnicity and minority languages are deemed to be optional, socially constructed and individualistic.

A multicultural and multilingual society may be perceived to be problematic and conflictive as has been recently demonstrated by Kurdish struggles with the governments of Turkey, Syria, Iraq and Iran, however these misconceptions can begin to be addressed if one reframes the notion of nation-state as a culturally and linguistically diverse entity (May 2012). Rather than viewing a multi-cultural and multi-ethnic society as one that needs to be homogenised in order to exercise control over it, the diversity of the population within any given territory can be celebrated and seen as a sign of strength rather than weakness. This ties in to the notion of 'resilience thinking', a framework for analyzing complex systems as dynamic rather than static in order to achieve sustainability (Walker & Salt 2006; Walker & Salt 2012). This framework places an emphasis on adaptively responding to disturbances imposed upon the system rather than avoiding or resisting them. Thus, different perspectives and viewpoints increase the preparedness of a given population to respond and adapt in the face of adversity (Bradley 2010), something which is especially useful given the unpredictability of the world today, such as increasing global temperatures that are resulting in erratic weather patterns and extreme temperatures (Carrington 2016; NASA 2018; Post, Steinman & Mann 2018). Solutions for combating the effects of climate change can be found by speaking with people who have first-hand experience preserving the natural balance of their immediate ecosystem (Whitecloud & Grenoble 2014). The techniques of information transfer and exchange between indigenous communities, government representatives and NGOs are already being employed by the Ministry of Environment and Natural Resources (MARN) in El Salvador.

When considering what a culturally inclusive society might look like, it is also important to avoid essentialising the link between language and identity.

My view is that approaches to language rights and speaker rights should be adapted to the specific context of the language and its speaker community. The creation of models for each language and its speakers will be more effective and descriptive if the time is taken to gain a better understanding of the sociolinguistic context, the history, politics and power dynamics within each speaker community. This move can, furthermore, make documentation materials more relevant to the speaker community. The following section looks at some issues of wellbeing within the context of indigenous language rights.

2.3.2 ISSUES OF WELLBEING

Wellbeing is seen to be a broader concept than socio-economic status and includes the balance between an individual's positive and negative feelings over a particular period of time (Biddle & Swee 2012: 225). This also includes how they feel about their life and the extent to which it has met and is meeting their expectations. At the core of issues surrounding the wellbeing of indigenous people around the world is the recognition that the actors and decision makers on issues should be indigenous people themselves. When addressing issues of wellbeing, there is a need to consider people's rights to self-determination. It is this conclusion that has led to the creation of the United Nations Declaration on the Rights of Indigenous People (UNDRIP) (Saira 2007).

UNDRIP is "the only declaration in the UN which was drafted with the rights-holders themselves, the Indigenous Peoples. We see this as a strong Declaration which embodies the most important rights we and our ancestors have long fought for…" (Tauli-Corpuz & Corp 2007: 2). It is the most advanced and comprehensive Declaration on indigenous peoples' rights, consisting of 46 articles describing not only rights but also actions that governments should take to protect and respect these rights. The Declaration covers the following themes:

- The right to self-determination
- The right to cultural identity
- The right to free, prior and informed consent
- The right to protection from discrimination

Essentially, this Declaration supports the notion of respecting indigenous people's rights to live their lives in a way which is meaningful to them and their communities, mindful of their history, traditions, and knowledge (Saira 2007). Within this is the recognition of language and culture as being important components of the wider picture of rights. The right to self-determination refers to the idea that indigenous people can choose what is best for them and their communities. This is applied to all aspects of their lives and includes but is not limited to education, health, culture, language, freedom, and security. A right to cultural identity refers to the freedom to choose and practice language, religion, dress and food, and not be assimilated into the wider population. It also includes a right to know, use and pass on history, oral traditions, writing systems and literature, and to an accurate portrayal in the media which is reflective of indigenous diversity. Education and public information should also portray indigenous people accurately in a manner which is deserving of respect. Educational systems should be culturally sensitive and indigenous people should have access to materials that are respectful of their histories, languages and cultures.

The right to free, prior, and informed consent (FPIC) is applicable in instances of policies and laws (Mugabe 1999; Popova-Gosart 2009). Indigenous people have a right to be informed and consulted before laws policies and programmes affecting them are put into place. This also includes having a right to seek justice when the above conditions are not met, in addition to rights concerning indigenous land and resource development. As discussed in Chapter 3, the issue of land rights is a particularly sensitive topic in El Salvador, as it is a dispute over land rights that sparked the events leading up to the genocide which took place in 1932 (Lauria-Santiago 1999; Ching & Tilley 1998; Gould & Lauria-Santiago 2014).

Finally, the right to protection from discrimination refers to a life free of violence, and a right to live freely and securely. This includes being protected from forceful relocation, forceful assimilation and destruction of culture, access to fair and non-discriminatory employment, and a right to cultural and intellectual property. It also includes a right to economic and social wellbeing in addition to a right to access health care and social services like everyone else in the wider population. This is particularly relevant in El Salvador as the dispute over land-rights resulted in overt violence against indigenous peoples which resulted in the death of approximately 6,000-45,000 people (Anderson 1982; Gould & Lauria-Santiago 2014; Delugan 2013). In August 2011, during a commemorative event in Izalco, the focal point of

the massacre, Wilfredo Reyes, president of El Salvador's National Legislative Assembly estimated as much as 3% of the total population were killed during the killings of 1932, however it is recognised that without additional research which includes forensic examination of mass graves, any total number or percentage is likely to remain in question (Delugan 2013: 966). In addition, forceful assimilation and destruction of culture also took place via the outlawing of the practice of language and cultural traditions and the use of traditional attire.

Though the Salvadoran government signed UNDRIP in 2007, the Procurator's Office for the Defence of Human Rights (PDDH) in El Salvador had already begun earlier to take action to consider indigenous people's rights (Palma 2006). PDDH led efforts of constitutional reform to include indigenous rights in the Constitution which now includes the following statements (Constitución SV 1983 art. 63 (amended 2014))[4]:

Constitution of the Republic of El Salvador

Article 63: "The artistic, historic and archaeological wealth of the country forms part of the Salvadoran cultural treasure, which is safeguarded by the state and subject to special laws for its conservation. ***El Salvador recognises its indigenous people and will adopt policies with an end to maintain and develop its ethnic and cultural identity, world-view, values and spirituality.***

In 2013 a diagnostic report carried out by the UN (Anaya 2013) was released outlining the context of indigenous people in El Salvador. This report charted a series of recommendations to the Salvadoran government to repair the damage caused to indigenous people as a result of historic marginalization. It stated that indigenous people in El Salvador continue to suffer from the loss of their cultural knowledge and the ability to manifest their identity and thereby exercise subsequent rights. This loss is summed up by the conditions of extreme poverty and marginalization and calls on the State to create more concrete actions than it already has. These actions should be aimed at the preservation of manifestations of culture such as language and ancestral traditions, and their incorporation into systems of social protection. This is inclusive of sectors of health and education as well as financial assistance like programmes of land ownership and programmes to strengthen social organisation of the Indigenous people of El Salvador (Anaya 2013).

[4] Own translation of the Salvadoran Constitution.

It is likely that in response to this report, the Salvadoran government sought to strengthen its position in support of indigenous rights by incorporating them further into national legislation:

National Legislation

Chapter 1B, 4, Priority populations: "The government, in accordance to the principle of equality and in compliance with its national and international obligations, will execute specific actions towards groups within the population who have been traditionally excluded from development initiatives and from exercising their rights. In consequence [the government] establishes the following groups as a priority for future action and intervention: […] indigenous people, in accordance to constitutional recognition of their rights." (GOES 2015)

Law of Order and Social Protection

Scope of Application, Art. 2: "The present law will be applied to the whole population, especially those people under conditions of poverty, vulnerability, exclusion, and discrimination, prioritizing girls and boys, women, the youth, the elderly, people with disabilities, the neglected and the indigenous people and all those who do not fully enjoy their rights".[5]

Despite shifts in national stance and policy, and the translation of the above into Nahuat-Pipil, little has been done to include indigenous people in decision-making processes on topics that are of interest to them. Indigenous people have a right to choose the lives they want to lead and have a say in the government policies that affect their lives. Furthermore, there is evidence to suggest that local knowledge and Western scientific practices could complement each other as 'together they can provide a complete picture of the physical environment' (Whitecloud & Grenoble 2014: 8). Interdisciplinary projects which treat both the researcher(s) and members of the community as equal partners can be of great benefit to both parties, as well as having a greater impact on external communities (Yamada 2007; Yamada 2014; Hansen 2015; Bradley 2010) In order to achieve this however, it is important

[5] Own translations of extracts from Salvadoran National legislation originally in Spanish.

to find the right balance between Western and non-Western ideologies (Grenoble & Whitecloud 2014).

An example of how this can be achieved is via the formation of local governing bodies and educational institutions which reflect the knowledge, views and needs of the local people, while also positioning them on a global scale. The notions presented by UNDRIP were originally reflected in the work of the Arctic People's Council and their creation of own wellness indicators such as the Arctic Social Indicators (ASI-I, Larsen et al 2010 and ASI-II, Larsen et al 2014). Both reports cite the following as important and measurable indicators for wellbeing:

1. Health and population
2. Material Wellbeing
3. Education
4. Cultural wellbeing and vitality
5. Contact with nature
6. Fate control

The above provides an example of the work is being done to address the gap between Inuit knowledge, western science and western development indicators. The group *Inuit Qaujisaruingat* focuses on providing culturally relevant education and aims to 'bridge the gap…and build capacity among Inuit to respond to global interests in Arctic issues'. This group has been established in response to rapid climate change in the Arctic regions (Whitecloud & Grenoble 2014: 8). The Arctic People's Council also aims to represent the needs of all residents of the Arctic region, inclusive of indigenous and non-indigenous people. As can be seen, there are benefits to including non-Western perspectives as these can provide insights to tackling global problems such as climate change. It is only possible to be inclusive of different perspectives however, if these have been safeguarded and protected, and autochthonous language and culture respected.

Returning to the issue of wellbeing, studies have shown a correlation between language vitality and physical and mental wellbeing (Biddle & Swee 2012; Oster et al. 2014) which leads to an argument for a positive correlation between strong links to identity and language with wellbeing and mental health (Grenoble 2017). Central to this is the notion of 'cultural

continuity', defined as 'something that is potentially enduring or continuously linked through processes of historical transformations with an identifiable past or tradition' (Kirmayer et al. 2007: 77). The correlation between land access and wellbeing is an important one as it demarcates a positive relationship between the sustainability of indigenous land, language and culture with an indigenous person's subjective and emotional wellbeing (Biddle & Swee 2012). This study observed Aboriginal communities in Australia and sought to understand the relationship between language, culture, and land. It was found that Indigenous Aboriginals maintain a strong attachment to land despite high levels of mobility. Regardless of where they were, recognition was positively associated to participation in harvesting activities, learning an indigenous language, and participation in indigenous cultural production (Biddle & Swee 2012: 224).

Looking at emotional wellbeing, there are studies that demonstrate a link between suicide rates and indigenous language use amongst aboriginal communities in British Columbia, Canada (Chandler & Lalonde 1998; Chandler et al. 2003; Hallett 2005; Hallett, Chandler & Lalonde 2007). It has been found that among aboriginal 'bands' that lack various markers of cultural continuity such as degrees of self-governance, secure access to traditional lands, preservation of cultural artefacts, traditions, and language, youth regularly experience heightened rates of suicide and early school leaving (Chandler & Lalonde 1998; Chandler et al. 2003; Hallett 2005). Conversely, it has been found that among the same communities, increased cultural continuity factors decreased suicide rates among indigenous youths. Groups where less than 50% of members had conversational language knowledge averaged a suicide rate of 96.59/100,000 people. Whereas groups with over 50% fluency in their aboriginal language averaged a rate of 13/100,000, well below the national average for Canadian aboriginal and non-aboriginal youth (Hallett, Chandler & Lalonde 2007). Compared to other cultural continuity factors, language was found to be the most effective contributor to decreasing suicide rates.

In terms of physical wellbeing, there are studies that demonstrate that traditional diets such as those obtained via traditional hunting, fishing and gathering practices are likely to be healthier than alternatives found in many remote communities (Stuart-Fox 1999). This is in line with the results from a mixed methods study which looked at the association between cultural continuity, self-determination and diabetes prevalence amongst First Nations in Alberta, Canada (Oster et al. 2014). It was found that cultural continuity is linked to increased

physical activity due to traditional activities such as fishing, hunting and foraging. It was also found that First Nations saw their language as being central to succeeding in life. For First Nations in Alberta, language is at the centre of culture and provides the blueprint for how to live and survive. First Nations who have been better able to preserve their culture as measured by indigenous language knowledge, have thus been relatively protected from diabetes. Even when factoring in other variables such as household income, unemployment rates, and high school completion, indigenous language knowledge was the only factor that acted as a significant predictor of diabetes in a simple linear form.

This link between language and wellbeing is one that is recognised by Wuqu' Kawoq[6] in Guatemala (Rohloff, Díaz & Dasgupta 2011; Tummons, Henderson & Rohloff 2012), an NGO that aims to improve indigenous people's access to health services by providing them in the local language, Kaqchikel, and including the language as the sole medium of communication within the workplace. By calling for the inclusion of a language policy in the agenda for development within Guatemala, making a conscious step away from using Spanish in the workspace, and allowing the domain to be reclaimed by indigenous languages the organisation can claim to 'overcome barriers to health – uniting medicine, culture and language' (Wuqu' Kawoq 2018).

Wuqu' Kawoq has played a large role in raising awareness and fighting for indigenous rights as it has helped to improve indigenous communities' living standards by providing access to public goods and services, creating socioeconomic opportunities, and increasing the social status of its indigenous workers (Dohle 2012: 9). In doing so, Wuqu' Kawoq and other organisations who have employed similar language inclusive strategies towards improving issues of wellbeing have demonstrated that such strategies are effective for achieving successful language maintenance and revitalisation efforts, stimulating the local economy and improving wellness of Indigenous communities (Dohle 2012: 14). Wuqu' Kawoq, along with the Arctic People's Council, Inuit Qaujisaruingat and UNDRIP, all recognise that language is a node in a complex system of wellbeing indicators, and that inclusion of it in models that seek to promote development and improve the quality of life of indigenous people can greatly support service provision and uptake of the offered services. Furthermore, inclusion and awareness of language issues can lead to a better understanding of social dynamics between

[6] http://www.wuqukawoq.org Last accessed: 05/02/2018

different cultural groups. Having said this, simply understanding the conflicts that have arisen out of repressive acts and policies does not equate to being able to move forward and away from the intergenerational wounds that decades of violence have inflicted on indigenous communities. The following section looks at techniques recently developed to begin healing the wounds of historical trauma.

2.3.3 ADDRESSING HISTORICAL TRAUMA

Historical Trauma is defined as a cumulative emotional and psychological wounding of an individual or generation as a result of traumatic experiences or events (Sotero 2006). It can result in a fear towards displaying and practicing an identity, culture or belief systems which has been transmitted across various generations (Levine 2003).

Ben Levine is a documentary film maker and clinical psychologist who has worked via the medium of film with minoritised language communities who have suffered the effects of historical trauma (Levine 2003; Levine & Schulz 1999; Levine & Schulz 2001; Levine & Leavitt 2012). Levine has developed a technique to address these issues by filming interviews with parties who have experienced historical trauma. These interviews are conducted with the help of a trained language facilitator to gently prompt speakers if needed. This is particularly important when working with speakers who experience inhibitions when asked to hold conversations in the triggering language. A language facilitator helps create links between comments in stilted conversations and encourages speakers to explore the underlying dimensions of the speech event. Much like the work of a psychiatrist, the language facilitator helps release inhibitions to talk about painful experiences (Levine & Schulz 1999; Levine & Schulz 2001). After allowing some time to pass, the interviews are played back to the interviewees and a group of close friends and family in order to initiate a discussion around the described events. This technique allows for a deeper exploration of the traumatic events in an environment which those most affected feel is safe. This deeper exploration and discussion allows for internalised feelings of shame and unworthiness to be overcome, leading to a healthier outlook on self and identity, and a reconnection with heritage language and culture (Levine & Leavitt 2012).

This technique involving a documenter and a language facilitator, has been employed in various communities throughout the Americas, particularly among children of historical

French speakers in Maine, USA (Levine 2003), and with the Passamaquoddy-speaking communities in eastern Maine (Levine & Leavitt 2012). At the turn of the 20th Century, French-speaking Catholic Canadians migrated to New England but maintained close connections with Quebec and French culture. Protestants living in New England feared a loss of social, economic and political power and began a systematic campaign to stigmatise the use of French. Some of the tactics used included alignment with the Ku Klux Klan, mob violence, exclusionary laws in schools and attacks on the leadership of the Catholic church (Levine 2003; Schulz 2006). Levine's longitudinal study with Francophones of New England follows two families over the course of twenty-two years. The techniques used helped overcome internalised feelings of trauma within the Francophone community and the researchers came to two conclusions. First, it became evident that just because a culture is invisible does not mean it is dying, and that people do not experience a desire to live and experience that culture again. Second, culture changes because emergence and decline occur simultaneously (Levine 2003; Levine 2006: n.p.). This is a process that is also described in theories around language shift; use of one language will decline as speakers opt to use another perhaps more dominant language (Nettle & Romaine 2000; Grenoble & Whaley 2007; Marquis & Sallabank 2013).

Although French speakers in the United States are not indigenous, the situation experienced by them is comparable to that of indigenous people in El Salvador as the use of language is the most tangible identifier of indigeneity. This is discussed in further detail in §3.3.2. It is believed that techniques such as the ones used in these projects offer effective relief for overcoming fear for speaking indigenous languages, particularly amongst communities that have experienced violent histories like in El Salvador. The use of video also offers opportunities to enrich language documentation.

Concluding Remarks

This chapter has provided an extensive review of the relevant theory for this thesis of interdisciplinary origins. The recurring themes encountered throughout have been that of culture, language and the contextualization of knowledge within overarching structures that affect Indigenous people and communities. Linguistically, I have discussed the way theories on the relationship between language, thought, and culture have evolved since Humboldt, through Linguistic Relativity (Boas 1995; Sapir 1912; 1949; Whorf 1939; 1956), to the most

recent development of Cultural Linguistics which aims to provide an integrated model for understanding language as an aspect of culture and vice versa (Sharifian 2017). In discussing the hypothesis of Linguistic Relativity, it becomes possible to see how language structures have a way of focusing or directing the mind to consider events, objects, or information in pre-set ways. This, however, does not mean that language necessarily determines cognition, and it certainly does not affect our ability to perceive events or objects around us. The proponents of the hypothesis make a case of the importance of contextualizing meaning and grammatical structures within social and cultural structure, and certainly this is relevant in the case of Nahuat-Pipil given their turbulent socio-political history and the role that their connection with land and knowledge of the land has played in this.

Cognitively, we cannot divorce meaning from context, as it is argued within Cognitive Linguistics and cognitive grammar (Taylor 1999; 2003; Langacker 1987; 1991; 1999). This sentiment is repeatedly expressed, albeit with slightly different variations, within various theories: Frame Semantics (Fillmore & Atkins 1992; Fillmore 2006) and Idealised Cognitive Model (ICM) (Lakoff 1987). When viewing some of the ways we organise information by grouping and classifying, Classical Prototype Theory (Rosch 1978) demonstrates how individual items can exist under one category and not necessarily share all the features attributed to that category. This is vital to understanding the presence of 'outliers' within a given group, and understanding how one item can prototypically represent a category without sharing all features with other items in that category.

Ethnobiological principles of classification and nomenclature provide more insights into taxonomical grouping and naming practices in relation to the natural world (Berlin 1972; 1973; 1992). Berlin's hypothesis is that the manner in which biological entities are classified and named by Indigenous people reflects an ability to spot the natural system or natural order of the world. Others, consider the need for classification to merely be an imposition of human-made systems onto the natural world (Ellen 1978; Ellen 1979a). Thus, to understand these systems, it is important to take into account cultural, social, and historical contexts.

In doing so, we can begin to understand the motivations behind the interest of Nahuat-Pipil speakers to document TEK, and the way that contextual factors such as social discrimination and segregation, poverty and low self-esteem, language, conflict, violence, ancestry and racism affect the transmission of knowledge and the classification of plants. Furthermore, by

understanding the motivations and importance associated with the transmission of traditional knowledge, and by linking these to language preservation initiatives, positive steps can be made towards a model of sustainable language revitalisation. Taking the time to identify important aspects of culture and identity can help to identify topics or domains that might benefit from further language documentation.

To this end, I have discussed some of the ways in which Indigenous knowledge must be contextualised. By recognizing Indigenous rights and issues of wellbeing, it is possible to begin to heal the wounds of historical trauma. In the following Chapter, I present the Salvadoran specific context.

3. RESEARCH RATIONALE: A LOOK AT SOCIOLINGUISTIC AND HISTORICAL MOTIVATIONS

This chapter provides an overview of the Nahuat-Pipil language and its speakers (§3.1), as well as the geographical (§3.2), historical (§3.3) and cultural context (§3.4) that it resides in. In relation to language, this chapter includes information about the naming conventions used for Nahuat-Pipil, also known as Pipil or by its ISO code [ppl]. It also includes information about its classification, geographic distribution, and the previous linguists who have created descriptions of the language (Arauz 1960; Lyle Campbell 1985; King 2011; Hernandez Gonzalez 2011; Lara-Martinez & McCallister 2012; Schultze-Jena 2014). Finally, an overview of speaker profiles provides an insight into its types of speakers. Following this, in §3.2 the geographical region of Central America is presented, as are patterns of Nahua migration. These patterns inform how biological folk nomenclature might be affected by changes in the landscape and might account for speaker variation. Maps of the region and my field sites help the reader visualise the geographical location and the spatial organisation of Nahuat-Pipil culture. Indigenous people in El Salvador have been historically marginalised and the events that have resulted in this marginalisation are presented in detail in §3.3. This section provides both historical accounts as well as the indigenous perspective of the events. The inclusion of indigenous viewpoints helps the reader understand the impact of the socio-political context on indigenous identity and the value placed on TEK (§3.4).

3.1 Language overview

3.1.1 LANGUAGE NAME: PIPIL, NAWAT, NAHUAT-PIPIL

In texts on Uto-Aztecan languages (Karttunen 1983; Lyle Campbell 1985), the term ‘Nahua’ is used to refer to all languages, dialects and variants of the Nahuat subgroup. The naming of the Nahuat-Pipil language, however, is more complex given some of the socio-political relations between the Nahuat-Pipil indigenous community in El Salvador and the Nahuatl communities in Mexico as well as its international presence in academia. Internationally amongst academic circles, the Nahuat-Pipil language spoken in El Salvador is

known as ‘Pipil’ and its corresponding ISO Code is [ppl]. There is general agreement among linguists that this language is sufficiently different from its Mexican relatives to be considered a separate language rather than a dialect (Miller 1983; Miller 1984; Lyle Campbell 1985). Certainly, the name Pipil allows for a better conceptual distinction between the two languages. Given that English is often used in academia to disseminate research and information, the distinction between the branches is simple: Pipil vs. Nahuatl. Despite this, when conversing with members of the Pipil indigenous communities in Spanish, it was found that they did not identify with the name ‘Pipil’, and would often say “I don’t speak Pipil. That’s a different language that the *gringos* (foreigners) have made up. It’s not my language. The language I know is Nahuat”. I did not once come across a member of the Nahuat-Pipil community who called themselves or their language ‘Pipil’.

In Spanish, a distinction is made between the two branches of the Aztecan language group orthographically. Thus ‘Pipil’ is known as ‘Nawat’ or ‘Nawate’ whereas Nahuatl is known as ‘Nahuatl’. The two words are almost phonetically identical given the fact that the lateral affricate <tl> does not exist in Salvadoran Spanish and is often completely dropped, however this does not seem to matter, and this orthographic distinction is enough of a difference for Salvadorans. Complications instead arise amongst the literate members of the Nahuat-Pipil community. The language does not yet have a standardised orthography and as more language speakers become literate and empowered to start producing their own language teaching materials, song books, poems, and stories, the orthographic variations become increasingly endless. In addition, there is also disagreement among the few linguists who have developed orthographies for the language (Lyle Campbell 1985; Lemus 2008; King 2011). Each believes their orthography provides the best representation of the sounds of the language and have groups of local followers who passionately defend their preferred orthographic choices. This sometimes leads to bitter disagreements on the naming of the language, whether it should be ‘Nahuat’ or ‘Nawat’, two words which are phonetically identical. This argument is by no means unique; it is an argument that is often had within language communities with no standardised orthographies (Seifart 2006). It is without a doubt that the support and revitalisation movement would progress much faster if there was agreement between the efforts of different activist groups within and external to the language communities in regards to a standardised alphabet and orthography. It is, however, unlikely that this will happen without the external support of overarching governmental organisation

such as the Ministry of Education (MINED) to produce extensive language materials and support for an orthography.

Amongst those who study, research, work with or speak the language, the 'Nawat' vs. 'Nahuatl' orthographic distinction is sufficient to differentiate between the languages. However, there are an overwhelming number of members of the public, as well as local academics, government officials, teachers and anthropologists who do not know that such a linguistic distinction exists. This apparent ignorance is partially a result of the political strategy to avoid providing services in the language and thereby suppress speakers (Ching & Tilley 1998; Lindo-Fuentes, Ching & Johnson 2012; Gould & Lauria-Santiago 2014); it adds an extra layer of conflict when discussions surrounding the language and its naming conventions arise.

This confusion extends beyond the Mexican border to Nahuatl speakers and there is an apparent lack of regional awareness over the existence of different variants of Nahua languages beyond Mexican borders and whether these are mutually intelligible or not. As has been related by the Nahuat-Pipil, on the limited occasions when speakers have had the opportunity to attend regional indigenous encounters, Nahuat-Pipil is not often recognised as its own language by non-speakers. Small efforts to encourage Nahuat-Pipil participation in regional indigenous encounters (such as the Encounter of Indigenous Communicators in Oaxaca, Mexico in 2015) is helping to inform members of the indigenous communities of its existence (Miranda 2016). As mentioned, mere interaction and attempts at communication between Nahuatl and Nahuat-Pipil communities makes it immediately obvious to the speakers that their languages are different. Over time, such activities and encounters will improve local and regional access to knowledge and information about Nahuat-Pipil, however there is still much work to be done. In the meantime, to decrease the confusion and remain faithful to the language name used by speakers themselves, I have opted to use a hybrid of the various naming conventions and refer to the [ppl] language as Nahuat-Pipil.

3.1.2 NAHUAT-PIPIL CLASSIFICATION

Nahuat-Pipil is a Uto-Aztecan language classified under the Nahua or Aztecan subgroup (Lyle Campbell 1985), and it is an agglutinating and polysynthetic language. There is a lack of agreement in regard to the classification of Uto-Aztecan languages. Some

researchers make a distinction between northern and southern Uto-Aztecan languages, whereas others prefer to group them all as Uto-Aztecan. Example 1 demonstrates the least controversial classification of the Uto-Aztecan languages includes eight branches (Lyle Campbell 1985: 3):

Example 1:

Uto-Aztecan (Lyle Campbell 1985: 3)

I. Numic (Plateau Shoshone)

1. Mono (Monachi), Paviotso
2. Panamint, Shoshone
3. Kawaaisu, Ute

II. Tübatulabal (Kern River)

III. Takic (Southern Californian Shoshone)

1. Serrano, †Kitanemuk, †Vanyume, †Alliklik
2. †Fernandeño, †Gabrieleño, †Nicoleño
3. Cahuilla, Luiseño, Cupeño, †Juaneño

IV. Hopi

V. Piman

1. Pima, Papago
2. Northern Tepehuan, Southern Tepehuan

VI. Taracahitic

1. Tarahumara
2. Cahita, Varihio (Guarihio)
3. Opata

VII. Cora-Huichol

1. Cora
2. Huichol

VIII. Nahuat (Aztecan, Nahuatlan)

1. †Pochutec
2. Pipil
3. Core Nahua (All other Nahua varieties)

Note: † = extinct.

Other proposals of classification suggest higher ordering, more inclusive grouping and a split between Northern Uto-Aztecan and Southern Uto-Aztecan. In Campbell's language family tree, Northern languages are represented in groups I-IV, and Southern languages in groups V-

VIII). An alternative classification from Miller (1983; 1984) considers proposals of higher ordering, inclusive grouping and a north-south divide evident in Example 2:

Example 2:

Uto-Aztecan (Miller 1984: 121)

1. Numic
    a. Western Numic: Mono, Paviotso (or Northern Paiute) (Bannock)
    b. Central Numic: Panamint, Shoshoni, Comanche
    c. Southern Numic: Kawaiisu, Ute (Chemehuevi, Southern Paiute, Ute)
2. Tubatulabal
3. Takic
    a. Serrano-Gabrielino
        i. Serran: Serrano, Kitanemuk
        ii. Gabrielino (Gabrielino, Fernandino)
    b. Cupan
        i. Cupeño, Cahuilla
        ii. Luiseño
4. Hopi
5. Southern Uto-Aztecan
    a. Sonoran
        i. Tepiman: Upper Piman (Papago, Pima, Nevome), Lower Piman, Northern Tepehuan, Souther Tepehuan, (Southern Tepehuan, Tepecano)
        ii. Taracahitian
            1. Tarahumaran: Tarahumara (Eastern Tarahumara, Western Tarahumara, Souther Tarahumara), Guarijío (Upland Guarijío, Lowland Guarijío)
            2. Opatan: Opata, Eudeve
            3. Cahita (Mayo, Yaqui)
        iii. Tubar
        iv. Corachol: Cora, Huichol
    b. Aztecan
        i. General Aztec: Pipil, Aztec (Classical Aztec, Tetelcingo, Zacapoaxtla, and others)
        ii. Pochutec

Names in parenthesis are dialects of the preceding languages. Here, Nahuat-Pipil is subsumed under General Aztec: Pipil.

3.1.3 GEOGRAPHIC DISTRIBUTION

3.1.3.1 Pre-Columbian Nahuat-Pipil language

It is believed that Nahua populations first came to settle in the geographical area that is now El Salvador somewhere between 1000-1100 AD, after 300 years of constant migration in the southern regions of Mexico in Veracruz and Chiapas (Arauz 1960). Some scholars place Nahua migration at around the year 900 AD (Escalante Arce 2004), however what is most important in terms of the evolution of the language is the time its speakers spent in migration. It is proposed that during this time contact with Mayan languages in addition to Nahua technological advancements in agriculture would have accelerated the process of language evolution and contributed to its separation from classical Nahuatl (Arauz 1960). I would also propose that changing geographies and environment would have had an impact on the language and that the discovery of new plants and animals would lead to the early creation of neologisms.

There is no documentation of classical or 'pure' Nahuat-Pipil before the conquest. The documents that do exist were created after the conquest from the 1500s onward, and these already include Spanish influences as is demonstrated in Figure 6.

```
(SD) albanyíl  albañil
       mason, builder
       Sp. albañil

(SD) alegre(h)  alegre
       happy, fun
       nemi alegre(h)  "(the fiesta) is fun"
       Sp. alegre

(C) -al-ehku (i.v.) "to arrive (here)"; see (w)al-ehku
(SD) -al-ehku

(C)-al-i:ka (t.v.) "to bring"; see (w)al-i:ka
       cf. (w)al-wi:ka
```

Figure 6: Dictionary entries - Spanish loanwords (Lyle Campbell 1985: 160)

3.1.3.2 Post-Columbian Nahuat-Pipil language

The Spanish conquest of the Americas took place with the help of the Tlaxcalan branch of the Nahua empire which controlled central Mexico, and the region east of what is now Mexico DF[7], the capital city of Mexico (Escalante Arce 2004). The details of the conquest of the Americas are documented in what is known as the Tlaxcala Manuscript (Muños Camargo 1585; Muños Camargo 1981). The manuscript is in three parts: a textual description of Tlaxcalan society, and two pictorial sections known as the *Tlaxcala Calendar* and the *Tlaxcala Codex*. The first part describes the social, political and geographical organisation of the indigenous people and also includes a description of some previously unknown plants. The second section depicts and describes the calendar used in Tlaxcala. Finally, the codex depicts and illustrates each battle which took place between the Spanish and Nahua settlements from Nahuatl and Tlaxcala migration during and after contact with the Spanish in 1519. This includes battles which took place in the Nahuat-Pipil region of what is now El Salvador.

Ultimately, this demonstrates that there were at least two waves of migration of Nahuatl speakers who settled in the Salvadoran territory. The first took place before the conquest, and the second was a result of the Tlaxcalan invasion. While not previously considered, it, can be hypothesised that these two separate waves can account for the dialectal differences found within the Nahuat-Pipil language, in my field data. The dialectal differences include the use of different lexical items to refer to the same referent (e.g. *shuti* (SDG) vs. *shutichkuat* (CUI) 'snail'), and sound change (e.g. /nutuɣai/ (SDG) vs. /notokai/ (CUI).

There exist regional dialectal differences within Nahuat-Pipil which are mostly composed of lexical and phonetic differences. These differences are outlined in some detail in Campbell (1985, 13). Amongst speakers today, these dialectal differences have resulted in a rivalry and competition around who speaks the most 'correct' form. As has already been stated, not much is known of the development or evolution of the Nahuat-Pipil language in the years after the conquest as the earliest documents found documenting the language are from the turn of the 20th Century which have in recent years become publicly available (Arauz 1960; Lara-Martinez & McCallister 2012; Schultze-Jena 2014), as is discussed further in §3.1.4.

[7] The full name of the capital is *Mexico Distrito Federal*, translated as 'Mexico Federal District', and also known as 'DF'.

Spanish Colonial Contact

At the time of the first contact with Spanish colonial forces in 1525, El Salvador was home to at least three distinct indigenous languages and cultures, the Pipil or Náhuat, the Cacaopera or Cacahuiles, and the Lenca or Potones (Lemus 2011). All three cultures continue to exist. Of these three, the most widely spoken is Náhuat or Pipil, though sources such as the UNESCO Atlas of the World's Languages in Danger and Ethnologue present it as a language that is 'critically endangered' (Moseley 2010) or 'nearly extinct' (Lewis, Simons & Fennig 2016). While it is true that number of speakers are very low, there is recent evidence which suggests that the language itself is for the moment relatively stable, and even trending slightly upwards in numbers of speakers due to revitalisation efforts. In 2008, the number of Pipil speakers was said to be 200 (Censo Nácional 2008) however, by 2013 numbers are reported to have increased to 300 (Censo Nacional 2013), possibly due to increased instances of self-reporting. From my own field experience, having visited the various sites where Nahuat-Pipil is spoken in El Salvador, I would estimate that the numbers of speakers could be as high as 500, however I will discuss the subtleties and difficulties in arriving at solid statistics in the following sections, particularly given the mistrust of researchers as a result of the historical and ongoing violence (§3.3). For the most part, native speakers of Nahuat-Pipil are generally of the age 50+ and all are bilingual Spanish speakers (Lemus 2011). However, the recent establishment of language nests in 2010 in the village of Santo Domingo de Guzmán for children from the ages of 3-10 is creating opportunities for the language to be passed on to future generations.

Classifications like those given by UNESCO or Ethnologue are problematic in this particular context as they do not accurately or fully represent the linguistic diversity of the country. Though the exact distribution of the three languages is not known, the approximate locations of where they would have been spoken are illustrated below in Figure 7. When consulting the UNESCO Map of Languages in Danger or Ethnologue, of the three original groups, Nahuat-Pipil is the only indigenous language represented as 'alive' within El Salvador, in addition to Spanish and Salvadoran Sign Language (Moseley 2010; Lewis, Simons & Fennig 2016) which are used throughout the country. There are reports of latent speakers of Cacaopera who live in the north-eastern side of the country (Lemus PC: 2012) and Lenca is still reportedly spoken on the Honduran side of the eastern Salvadoran border (Lewis, Simons & Fennig 2016; Pérez 2017b; 2017a).

The following map has been created using different sources: Ethnologue, the UNESCO map of endangered languages and Miturzikin. Points on the map do not show specific sites where the languages are spoken, rather, they are meant to show the distribution of languages of El Salvador at the point of first contact with the Spanish in 1525.

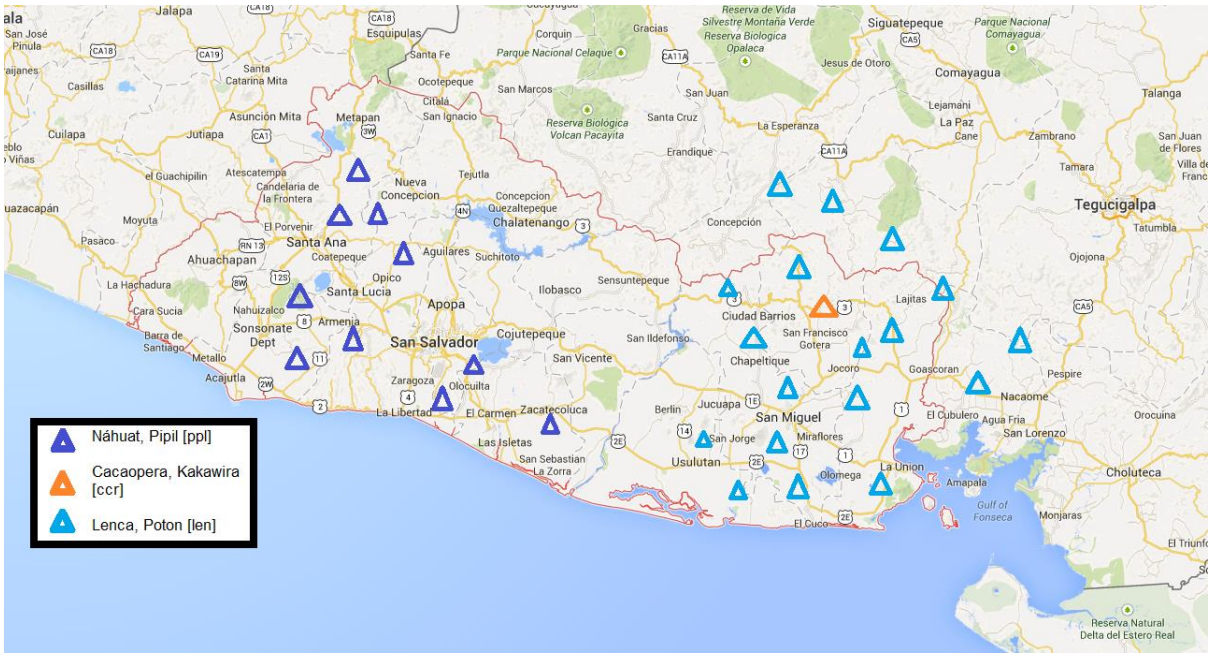


Figure 7: Distribution of Languages in El Salvador in 1525

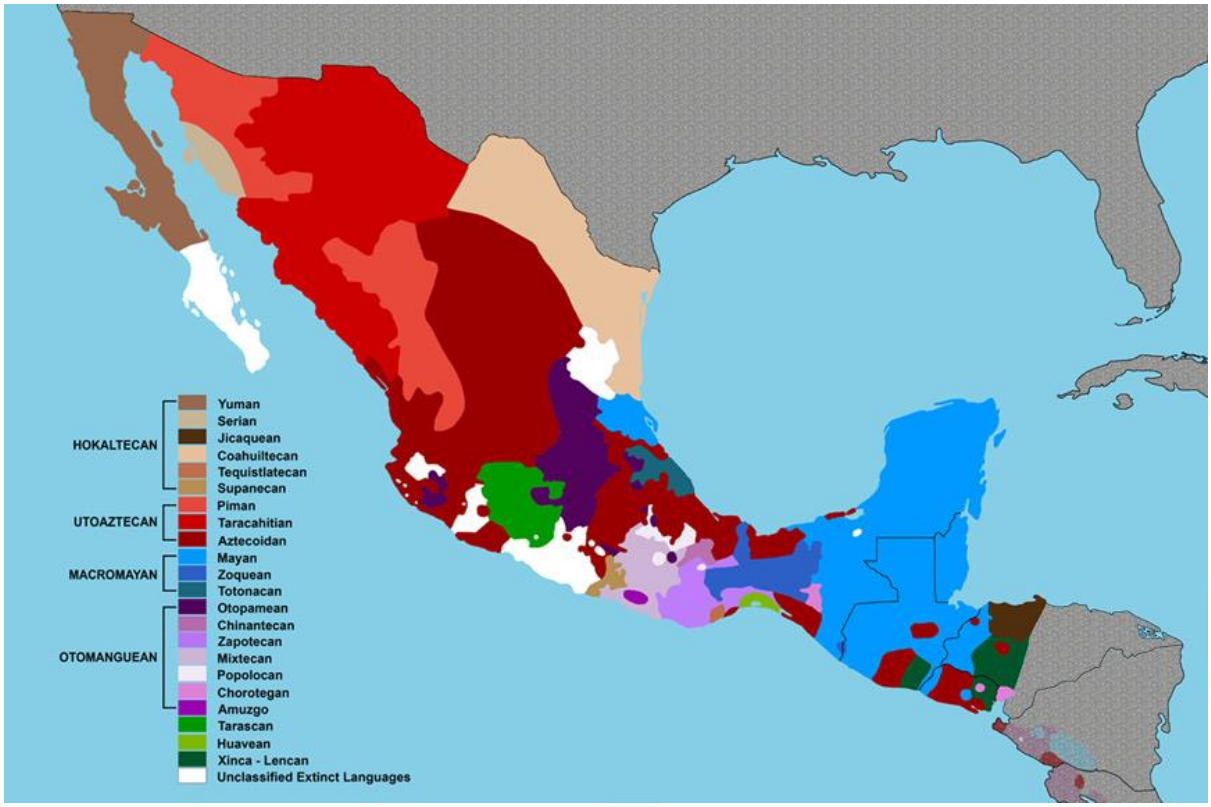


Figure 8: Distribution of Indigenous Languages in Mesoamerica (Mendizabal et al. 1955)

Figure 8 is a linguistic map based on the previous linguistic maps of Mendizábal and Jiménez (1936, 1941), Frederick Johnson (1940), and McQuown (1955) and has been modified from The Handbook of Middle American Indians, and borrowed from the Foundation for the Advancement of Mesoamerican Studies Inc. (FAMSI) website (http://www.famsi.org/maps/linguistic.htm). It shows the distribution of languages upon Spanish contact in the 1500s.

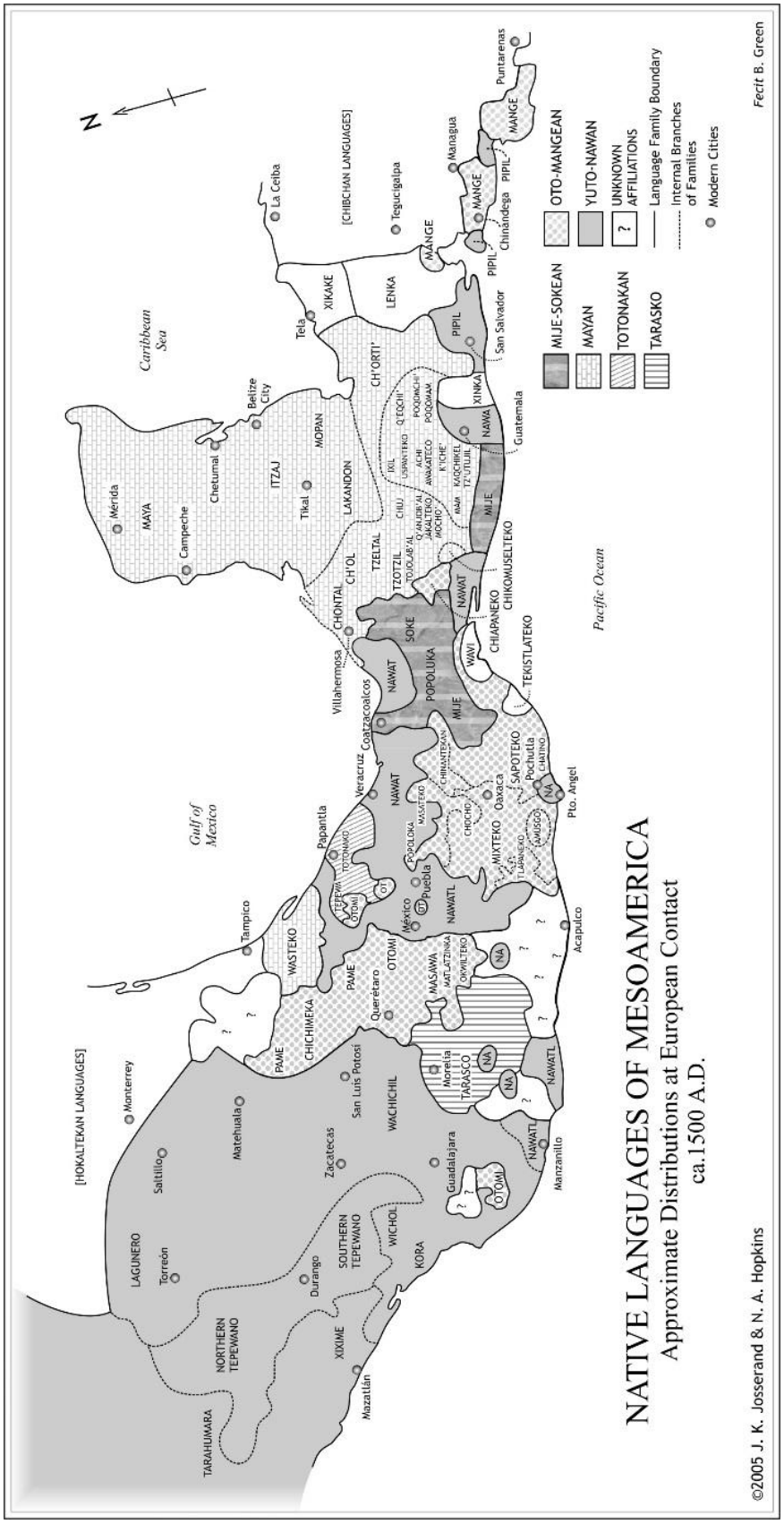


Figure 9: Native Languages of Mesoamerica ca. 1500 AD (Josserand & Hopkins 2005)

Figure 9 shows shows that during the time of the Spanish conquest, the languages spoken in El Salvador would have been Xinka, Ch'orti' (Mayan), Nahuat-Pipil (Uto-Aztecan language), and Lenka. Both Xinka and Lenka are believed to be language isolates.

3.1.4 PREVIOUS LANGUAGE DOCUMENTATION

In terms of documentation, the Pipil language was first mentioned in the volume *Arte de la lengua Mexicana con declaración a los adverbios della* (Carocci 1645) by an Italian Catholic missionary who documented Classical Nahuatl. Some centuries later German researcher Leonhard Schultze-Jena made a collection of Nahuatl-Pipil myths and legends in 1935. The results of this documentation effort, however, were not made accessible until very recently, when this collection was finally translated from German to Spanish (Schultze-Jena 2014). Small dictionaries such as *La Lengua Salvadoreña: El Español que hablamos en El Salvador* (Rivas 1998) have documented the influence of Nahuat-Pipil on Salvadoran Spanish, however these have been treated more as recreational dictionaries which carry little linguistic weight. The most comprehensive description and analysis of Nahuat-Pipil is *The Pipil Language of El Salvador* (Lyle Campbell 1985), a handbook of the language; *Toponimia Náhuat de Cuscatlán* (Rivas 1973: 19), a Spanish guide to Nahuat-Pipil place names; and most recently, *Nawat Mujmusta* (Hernandez Gonzalez 2011), a Nahuat-Pipil dictionary for language learners. Further primary research applying theoretical models to the language has been carried out in works such as the NawaCoLex corpus (King 2011; King 2013; King 2018) as well as secondary research based on Campbell's grammar in a comparative analysis of Nahuat-Pipil parts-of-speech and word order (Hengeveld, Rijkhoff & Siewierska 2004) and literary analysis of Nahuat-Pipil myths and legends (Lara-Martinez & McCallister 2012).

3.1.4.1 Early Documentation: 1900-1950

In 1924, a resident of Nahuizalco was asked by the Ministry of Education to complete a study of Nahuat-Pipil. Prospero Arauz was a Panamanian teacher interested in indigenous languages, and so he came to create the earliest known documentation of Nahuat-Pipil. His work *El Pipil de la Región de los Itzalcos* includes a description of the phonology

of the language, as well as word lists, a description of the numerical system, etymology of words and a brief grammatical description (Arauz 1960). The documentation efforts took 9 years to complete, and once completed his work remained unpublished in the Ministry of Education until 1960.

From 1930-1935, the German anthropologist Leonhard Schultze-Jena went to El Salvador and collected what is now regarded to be the most complete collection of Nahuat-Pipil stories (Schultze-Jena 2014). The first translation of Schultze-Jena's dictionary and linguistics analysis was carried out by the Salvadoran bank *Federación de Cajas de Credito de El Salvador* in 1982. Lara-Martinez translated and published Schultze-Jena's collection of Nahuat-Pipil stories. Similarly, María Mendoza de Baratta was a Salvadoran musician and poet who took an interest in Nahuat-Pipil and documented and transcribed its oral literature and music in 1951-1953. After an initial publication of her work (Baratta 1951), it was largely forgotten until Rick McCallister and Rafael Lara-Martinez released an edited volume of her work (Lara-Martinez & McCallister 2012). These have been made freely accessible to the public by Fundación AccessArte, an open source art foundation in El Salvador.

3.1.4.2 Smithsonian Archives

The Smithsonian Archives hold collections of American botanist Paul Carpenter Standley's botanical expeditions to Central America (1921-1922). The aim of these expeditions was to increase the number of botanical collections from Central America for the New York Botanical Garden and the Gray Herbarium of Harvard University. These expeditions were not too successful in collecting plant material, though they did amass a collection of vernacular plant names, particularly in El Salvador (Carpenter Standley 1922). Some of these vernacular plant names are in Nahuat-Pipil, and though Carpenter Standley's work was not published in El Salvador, it was published at a later date by the botanist Felix Choussy in four volumes (Choussy 1975; Choussy 1976; Choussy 1977; Choussy 1978).

3.1.4.3 Rivas

The anthropologist Pedro Geoffroy Rivas has released many approximate descriptions of Nahuat-Pipil, starting in the 1970s. Though he did not conduct any documentation of the language, Rivas has provided an insight into the influences of Nahuat-Pipil on Salvadoran Spanish. Much of his work explores etymologies and toponyms and makes this work accessible to non-academic audiences (Rivas 1973; Rivas 1998).

3.1.4.4 Campbell

The most comprehensive study of Pipil is Lyle Campbell's *The Pipil Language of El Salvador* (1985). This book consists of approximately 150 pages of description, two dictionaries, a collection of stories and appendices in the remaining 750 pages. The volume provides an overview of the basic grammatical principles and syntactic features including an overview of the phonology, grammatical categories, morphology and syntax of the language. Furthermore, it is also the only grammar which attempts to distinguish between variants of Nahuat-Pipil in a consistent manner and describes some of the phonetic and phonological differences of the variants. Discussions on the morphology of the language in subsequent chapters are based on Campbell's grammatical descriptions.

While the dictionary does not make any claims of producing an accurate representation or definitions of the ethnobiological terms of Pipil, these must be discussed as they are the topic of the thesis. Campbell's grammar (1985), offers room for improvement from the circular definitions used to describe ethnobiological terminology such as those used for *atsakwani* and *cuyul* (Lyle Campbell 1985: 42) presented in Table 9. Definitions for specific terms are often vague and presented as part of one category. Some further examples are presented in Table 10 and include the word *ayekuh* defined as 'a large bean' (p. 174), *berdolake* as 'an edible plant' (p. 177) and *chacha* as 'a bird which sings a lot' (p. 181). In these terms, there is a lot of specialised and detailed knowledge which has not yet been documented. Although such definitions might have been clear to a local audience in the present time, they might not be clear for more removed audiences such as future generations of Nahuat-Pipil speakers or outsiders. This thesis builds on existing documentation efforts to further contextualise and

refine the knowledge that has been documented and thereby make it more culturally significant for future generations.

Table 9: Nahuat-Pipil dictionary entries (Lyle Campbell 1985: 39-42)

Ppl	**Eng**	**Ppl**	**Eng**
Akat	Water reed	*Ulut*	Corncob
At	Water	*Elut*	Ear of corn
Atsakwani	Azacuan bird	*Chan*	Amaranth
Ayekuh	Bean	*Tamal*	Tortilla
Atsakwani	Azacuan bird	*Kamut*	Sweet Potato
Awakat	Avocado	*Kuwayu*	Horse
Cuyul	Coyole palm		

Table 10: Nahuat-Pipil botanical definitions (Lyle Campbell 1985: 42)

Ppl (-l)	**eng**	**Ppl (-C)**	**Eng**
Chil	Chili	*amux*	Moss
Atul	Atole	*ayuh*	Squash
Kuyul	Coyol palm	*kamuh*	Sweet potato

To date, there is no study which looks specifically at the categorisation of plants and animals in Pipil. While Campbell's volume makes a good start at documenting the basic vocabulary and grammar of Nahuat-Pipil, it is by no means exhaustive and there is space for more detailed documentation of the language and lexicon.

3.1.4.5 King

The British linguist Alan King, along with the Salvadoran linguist Jorge Lemus started a documentation project with the Universidad Don Bosco of San Salvador in 2010. Together they worked with the anthropologist Carlos Enrique Cortez a resident of Santo Domingo de Guzmán. This collaboration resulted in numerous projects, among them the Pipil Talking Dictionary[8] (Cortes et al. 2012) and NawaCoLex (King 2013; King 2018) an open-access online resource of Pipil vocabulary, educational materials, and other visual and audio resources[9] available in English, Spanish and Pipil. The NawaCoLex project can be accessed on King's language resource platform, Tushik. This is a website which acts as a source for all languages of El Salvador and is inclusive of Nahuat-Pipil and Lenca documentation and revitalisation efforts. Tushik is the outcome of an independent ongoing grassroots documentation project which aims to bring together existing written materials in order to facilitate study and research of Nahuat-Pipil and Lenca language texts and lexical sources. The NawaCoLex integrated database, seen in Figure 10, is a Toolbox based language learning resource. Though access to this corpus requires previous linguistic and software knowledge, interested language teachers in El Salvador have used this source to make more Nahuat-Pipil language material available to the public. In addition to the corpus, accessible dictionaries and textbooks for beginners such as *The Pipil Handbook of El Salvador* (Campbell 1985), *Nawat Mujmusta* (Hernandez Gonzalez, 2011), and *Timumachtikan!* (King, 2011) are available in pdf format for download from the NawaCoLex site. An active Facebook page acts as a practice and support group where new learners can pose questions and interact with teachers and other learners[10].

[8] http://talkingdictionary.swarthmore.edu/pipil/, last accessed: 29th March, 2018
[9] http://tushik.org, last accessed: 28th March, 2018
[10] https://www.facebook.com/groups/1410970169143843/, last accessed: 1st December, 2014

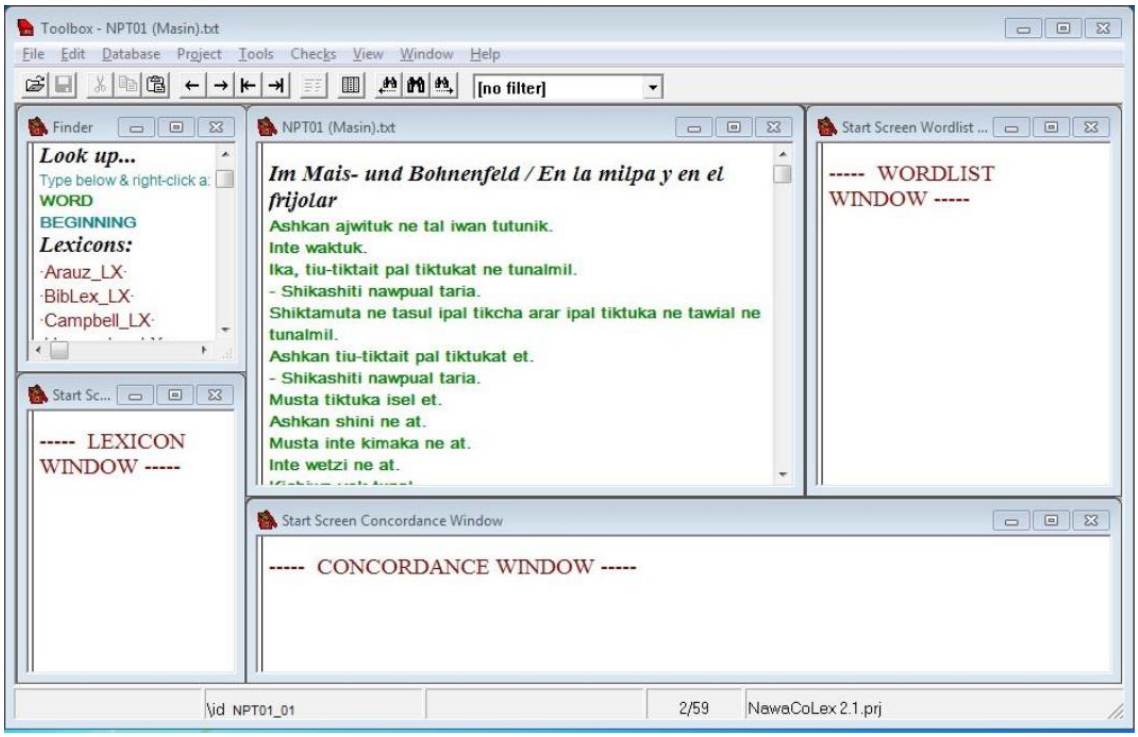


Figure 10: NawaCoLex Screenshot

3.1.4.6 Lemus

The work of Jorge Lemus has continued to focus on Nahuat-Pipil and has explored ways to revitalise the language (Lemus 2008, 2015). In collaboration with the Casa de la Cultura of Izalco, UNESCO and Don Bosco University, a Nahuat-Pipil kindergarten was set up in Santo Domingo de Guzmán in 2012. Today, this kindergarten continues to function and is now monitored and overseen by the Ministry of Education (MINED).

Concluding remarks

In this section I have outlined some existing research, materials and Nahuat-Pipil language resources which will be used as principle sources during my investigations in addition to my own original field data. The following section provides a sociolinguistic overview of the different types of speakers encountered in the context of endangered languages.

3.1.5 SPEAKER PROFILES

There are a variety of speakers encountered in the context of endangered languages. From the 'fluent-speaker' to the 'last-speaker', there exist different terms to describe the various types of language knowledge, the manner in which it is retained and its speakers' levels of productivity. The conversation around different types of speakers began with the creation of the 'semi-speaker' (Dorian 1977, 1981), the most frequently found type of speaker in endangered languages context. Following Dorian's typology, the term 'rememberer' was created by adding sociolinguistic variables (Muntzel 1998; Campbell and Muntzell 1989). Most recently, this typology has been further extended to consider language competence by Grinevald and Bert (2011). In addition, they view individual levels of language vitality cross tabulated with date of birth, language attitudes and linguistic insecurity as elements which factor in to the profile of the language speaker. The following is a list of eight types of speakers identified within most recent typology (Grinevald & Bert 2011):

1. *Fluent or native speaker*

   These are also known as traditional speakers and are seen to be the most conservative in relation to others with lower proficiency. These speakers have often had and may continue to have conversation partners in the language. There may be few of these speakers left at advanced stages of language loss.

2. *Semi-speaker*

   This group includes members with receptive skills but varying levels of productive skills. It can include those with relatively high fluency, particularly in routine contexts. Also includes those with limited knowledge but good social integration. This means that speakers can have good sociocultural competence despite limited productivity. These types of speakers have often not had conversation partners throughout their lives and conduct most of their daily activities in the dominant language. Their speech may contain modified forms which can be considered as errors by more fluent speakers. Most involved language activists are said to emerge from this group.

3. *Terminal or Partial speaker*

   These speakers have passive knowledge and limited productive skills. Their speech is sometimes reduced to frozen, fixed expressions. This may be a result of partial acquisition of extensive language attrition, having been a fluent speaker during childhood. Fixed expressions may have been learned by overhearing grandparents using them during childhood.

4. *Rememberer*

   In this group, speakers share similar competencies as those in the Semi-speaker or Terminal speaker group. Language attrition however may be related to traumatic circumstances such as ethnic massacres. There is a strong possibility that speakers within this group may recover language abilities despite initial hesitation to engage with other speakers.

5. *Latent speakers*

   Individuals raised in an environment where the ancestral language was spoken but who did not become a speaker of that language (Basham & Fathman 2008). These types of speakers have a greater capacity than other learners when learning the language.

6. *Ghost speakers*

   Despite evidence to the contrary, these speakers deny any knowledge of the endangered language. This is a result of a strong negative attitude and deep rejection towards the language.

7. *Neo speakers*

   Central to language revitalisation are the neo speakers. These are learners of endangered languages within the context of revitalisation programmes. These speakers can have a range of high to low fluency, depending on their individual language-learning abilities. This group may include outsiders of the language community however members hold strongly positive attitudes towards the language.

8. *Last speakers*

   Most widely reported in media outlets, these speakers are mythical in a way. This term is better understood as a type of social or political status rather than language proficiency. In reality, the last speaker can be any of the above, however, they are often alone in their battle against the dominant language and have no conversation partners.

It is worthwhile to consider the dynamic components of the above described typology. None of these categories are fixed. There can be a steady loss of vitality resulting in language attrition, or an increase of proficiency within speakers. Rememberers can demonstrate partial, if not full recovery, and become semi-speakers or fluent speakers. Similarly, speakers can be recategorised as attitudes towards the language change, thus inspiring speakers to join language revitalisation initiatives. This is a phenomenon that has been observed among Nahuat-Pipil speakers between 2012-2016 based on my own observations from various field visits.

In the Nahuat-Pipil context, the terms 'neohablante' and 'nahuahablante' were coined by Anastacia Lopez, a Nahuat-Pipil speaker, during one of our discussions on what it means to be indigenous. *Nahuahablante* is used to refer to the native speaker and *neohablante* refers to new speakers of Nahuat-Pipil. These terms are intended to highlight the differences between native speakers and new speakers who have in recent years begun visiting the older speakers in Santo Domingo de Guzmán. This discussion included themes of poverty and ancestry and the notion that you cannot be indigenous if the link between generations has been cut. In other words, the transmission of knowledge, language, culture or behavior is an integral aspect of indigeneity.[11] The importance of this transmission is seen in the description of the 'latent speaker', an individual raised in an environment where the ancestral language was spoken but who did not become a speaker of that language (Basham & Fathman 2008). These types of speakers have a greater capacity than other learners when learning the language. They are more able to remember common expressions and emotionally laden vocabulary. However, they also tend to have lower than average estimates of their language abilities and

[11] It is important to note that there are other types of speakers that this article will not touch upon such as dormant or semi-speakers. This is not because the author does not deem such speakers to lack importance, rather because it was not possible to conduct research with these types of speakers for a variety of reasons. It is my belief that to gain a more complete understanding of the linguistic situation and notions of indigenous identity, other types of speakers should also be consulted.

report being hesitant to speak. Comprehension skills will often surpass production skills. Despite this, latent speakers play an important role in language revitalisation as they can reactivate their knowledge by working with fluent speakers to develop their own speaking skills (Basham & Fathman 2008: 58). As such it is possible for latent speakers to become fluent speakers as adults and become effective transmitters of the language and culture. In order to do this however, historical/ancestral language classes must build on existing knowledge of latent speakers. It is important that educators learn about latent speakers' life experiences, attitudes and abilities. In the same way, it is important to show latent speakers of language what they already know and give them confidence in their ability to reactivate their latent knowledge, speak their heritage language and ultimately pass it on to others (Basham & Fathman 2008: 593).

Anastacia Lopez does not have any formal training in language documentation, nor does she have any knowledge on the literature that has been written on language endangerment. However, through her experience of working as a Nahuat-Pipil language teacher, in addition to her involvement in revitalisation activities and a member of the language community itself, she has coined the above terms to pinpoint some to the trends taking place in the Salvadoran context. The association nahuahablante and native speaker is similar to the association between native speaker and fluent speaker (Marquis & Sallabank 2013: 171). However, being a native speaker does not necessarily refer to language fluency rather to the language of one's ancestors (Grenoble & Whaley 2007).

The following Table 11 demonstrates the characteristics associated with two of the types of speakers of Nahuat-Pipil.

Table 11: Speaker Profiles

'Nahuahablante'		**'Neohablante'**	
Age	50+	*Age*	20-45
Location	Santo Domingo de Guzmán (Witzapan), Nahuizalco, Izalco, Cuisnahuat	*Location*	San Salvador, Armenia
Languages	Bilingual – Nahuat-Pipil, Spanish	*Languages*	Bilingual – Spanish-Nahuat-Pipil
PPL Language Acquisition	Childhood via parent, close relative or friend/neighbour	*PPL Language Acquisition*	Early adulthood via self-teaching
Population	300-500	*Population*	10-50
Occupation	Agricultural farmers, potters, herbalists, midwives	*Occupation*	Pyschiatry, medicine, law, graphic design, dance, theatre, anthropology
Education	1st-2nd year of primary school	*Education*	University
Self-Identification	Indigenous	*Self-Identification*	Indigenous

As is demonstrated in Table 11, the differences between these two types of speakers are very marked. On the one hand, the *nahuahablante* is older, usually over the age of 50. This speaker lives in more rural settings and has an occupation which requires physical labour. They have usually attained low levels of education. In contrast, the *neohablante* is younger, highly educated and tends to live in urban centres such as the capital city. Their occupations vary, but they have levels of education in common. All new speakers have obtained a university degree or are in the process of it.

Despite these differences however, there is one commonality between the two groups: language. Both profiles are fluently bilingual in Spanish and Nahuat-Pipil. Though the order and manner of language acquisition may be distinct, both groups have a deep-seated interest and love for the Nahuat-Pipil language. For the *nahuahablante*, Nahuat-Pipil was acquired first, Spanish second. The acquisitions of Spanish usually took place around the age of 7 upon entry into primary education, but in some instances, it took place when the person was

in their early 20s. The reverse is the case for the *neohablante* whose first language is Spanish. They learn Nahuat-Pipil as young adults. The manner of acquisition is also very distinct. Whereas the *nahuahablante* has learned organically via immersion with caregivers and other available speakers, the *neohablante* has chosen to learn and are thus self-taught, usually by whatever means is available. Fortunately, thanks to the work of previous researchers, Nahuat-Pipil does have online resources[12] which facilitate self-study of the language (King 2011; King 2013; King 2018; Hernandez Gonzalez 2011; Alej 2017). In addition, social media sites such as Facebook and Twitter offer opportunities for interaction in the target language which is of great benefit for new speakers wishing to practice their developing language skills[13]. Given the different backgrounds of the two types of speakers, it is not usual to hypothesise that the two will have different outlooks on what it means to be indigenous.

This section has provided an overview of the Nahuat-Pipil language and the different types of speakers found within the context of an endangered language. The following section provides on overview of the geographical are in which Nahuat-Pipil is spoken.

3.2 Geographical overview of the research area

Nahuat-Pipil, iso 639-3 [ppl], is spoken in El Salvador in the geographical region known as Central America seen in Figure 11. This region is part of the North American continent and consists of seven countries (Belise, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama). It spans a territory of 523,780 km² which extends from the Southern end of Mexico to the Northern part of Colombia and is sandwiched between the Caribbean Sea on the Eastern coast and the Pacific Ocean on the Western coast. El Salvador is colloquially known as the 'thumb' of Central America (Sanchez Ruiz 2006), due to the small size of its territory (21, 041 km²). Its bordering countries are Guatemala on the Northern and Western borders, and Honduras on the Northern

[12] www.tushik.org (Accessed: 15/02/2018);
https://www.youtube.com/channel/UCbYqsaNZAzdRq94OfRO4odQ/feed (Accessed: 15/02/2018)
[13] https://www.facebook.com/pg/NawatElSalvador (Accessed: 15/02/2018);
https://www.facebook.com/Tzunhejekat (Accessed: 15/02/2018)

and Eastern side. It is the only Central American country without a coast on the Caribbean Sea.

Figure 11: Central America

The region is highly volcanic; there are 60+ active but dormant volcanoes in El Salvador alone (Sanchez Ruiz 2006). As a result, the country experiences frequent earthquakes, particularly when there is a change of seasons. El Salvador itself lies at an altitude of 600m and higher and has two seasons: a dry season (November – April) and a rainy season (May – October). The change of seasons coincides with important cultural celebrations such as the Day of the Dead at the beginning of November and the Day of the Cross in early May. Although these are ostensibly festivals based on the Christian faith, based on interactions and engagement with these events during fieldwork, as well as literature, it is certain they have pre-colonial origins (Brandes 1997; 1998: 186).

Central America is home to the Mesoamerican Biodiversity Hotspot which extends from Southern Mexico to the Panama canal (CEPF 2016). It is ranked second among the 25 richest and most threatened biodiversity hotspots of the world (Olivet & Asquith 2005), outranked

only by the Andean mountains. North and South America were initially two separate landmasses, thus the flora and fauna of the two continents evolved separately from each other. The narrow strip of land which now connects the two is highly diverse, representing the convergence of two biogeographic regions. This is seen in Figure 12. Furthermore the geography of Central America includes highlands (mountains and volcanoes) and lowlands (swamps, coasts, grasslands and valleys) which simultaneously provide the perfect conditions for isolation and speciation as well as movement and migration (CEPF 2016).

Figure 12: Mesoamerica Biodiversity Hotspot (CEPF 2016)

Looking at figures, approximately 17% of the roughly 17,000 plant species found in the Mesoamerican Biodiversity Hotspot are endemic species unique to this landmass as is illustrated further in Table 12. This means that knowledge of the uses, treatment and possible cultivation of the nearly 3,000 endemic species will most likely be held by the people living in this area. In relation to the languages spoken in Central America, it is likely that such

knowledge is encoded within the communication systems of distinct language groups as is discussed in §3.2.

Table 12: Diversity and Endemism of Mesoamerican Flora and Fauna (CEPF 2016)

	Taxonomic Group	Nr. Species	Nr. Endemic Species	Endemism %
1	Plants	17,000	2,941	17.3
2	Mammals	440	66	15.0
3	Birds	1,113	208	18.7
4	Reptiles	692	240	34.7
5	Amphibians	555	358	64.5
6	Freshwater Fish	509	340	66.8

3.2.1 GEOGRAPHICAL DIFFERENCES BETWEEN MEXICAN AND SALVADORAN TERRAIN

Plant naming conventions can provide insights into the mobility and migration patterns of a given population (Berlin 1972), and the Nahua culture expanded across Mesoamerica and reached as far south as Peru on the South American continent (Escalante Arce 2004). Mesoamerica has a range of geographical terrains: from the arid deserts of Northern Mexico to the rich and fertile soils of the volcanic valleys of El Salvador. Mexican terrain where the Nahua reside is arid and desert-like, whereas Salvadoran terrain is mostly composed of rich humid rainforests and volcanoes. Temperature wise, central and Northern Mexico are 10 degrees Celsius cooler than El Salvador. These differences of terrain, altitude, temperature and humidity mean that the flora and fauna are also different.

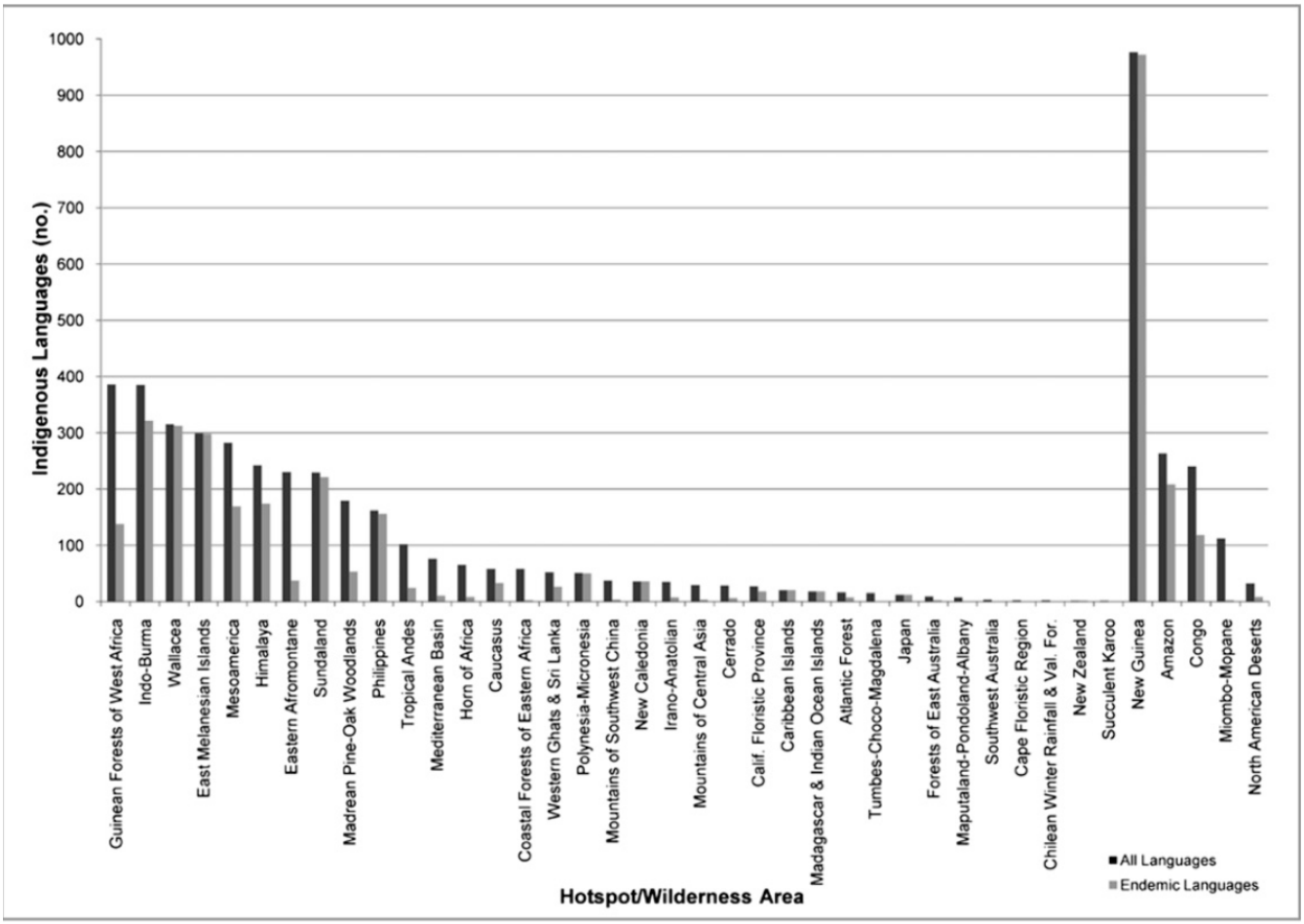
Considering these differences of terrain, it is worthwhile to consider how movement across different geographical realities would affect human behaviour, language and culture. As communities of speakers migrate south and their physical environment changes, the language used to talk about and describe the physical environment must be adapted to reflect the new geographical reality (Berlin 1972; Berlin 1973). Therefore, an object may no longer be ‘X’ it may be ‘X-like’ or ‘Xish’. The impact of terrain on naming conventions of plants is discussed further in Chapter 5. Furthermore, changes in the natural environment can also result in changes to the way it and its subspecies are conceptualised. The role of human engagement with environment and the impact of this on morphosyntactc marking is discussed further in Chapter 5.

3.2.2 BIOLOGICAL AND LINGUISTIC DIVERSITY

In line with the claim that there is a positive correlation between biological and cultural diversity (Nettle & Romaine 2000; Gorenflo et al. 2012; Stepp 2015), Mesoamerica is also a hotspot of linguistic diversity. Furthering the discussion around the link between language, culture and biodiversity, is the claim that there is not only a correlation but rather an interdependence between the three concepts (Terralingua 2017). The link between humans and nature is seen to have evolved over time, and collective knowledge spanning generations offer a unique insight into the mutually beneficial relationship between people and nature in some contexts. The physical aspects of geographical terrain that allow for a wealth of biodiversity are the same aspects that encourage the development of a high density of linguistic diversity.

Through improved availability of the geographical distribution of language and biodiversity data, it is possible to see that there is in fact a positive relation between the two (Gorenflo et al. 2012). Of the estimated 5,000 – 7,000 languages spoken around the world, 3,202 are found in 35 of the 50 biodiversity hotspots. The biodiversity hotspots with particularly high linguistic diversity include the East Melanesia Islands, the Guinea Forest of West Africa, Indo-Burma, Mesoamerica and Wallacea, with each acting as a home for more than 250 languages. In terms of language endangerment, 50-90% are endangered, 85% have less than 100,000 speakers, 52.5% have less than 10,000 speakers and roughly 4,000 languages have not been adequately described (Nettle & Romaine 2000). The Living Planet Index demonstrates trends in the populations of several thousand vertebrate species worldwide and demonstrates an overall decline in biodiversity of 30% in the last four decades (Loh et al. 2005). The Index of Linguistic diversity shows the same rate of decline over the same period worldwide, however at a regional level demonstrates linguistic loss of as high as 60% in the Americas (Harmon & Loh 2010; Loh 2017). In the top 5 biodiversity areas there are 1,622 languages, and 2,166 languages in biodiversity hotspots are endemic to individual regions (Gorenflo et al. 2012). Though Mesoamerica has considerably less linguistic endemism than other hotspots, it has approximately 175 endemic languages, seen in Table 13.

Table 13: Correlation between Indigenous Languages and Biodiversity Hotspots (Gorenflo et al. 2012)



3.2.3 MAPS AND OVERVIEW OF FIELDWORK SITES

Although El Salvador is situated in the centre of the Mesoamerican Biodiversity Hotspot, as shown in Figure 12, which has nearly 300 languages, it is the widespread belief of the Salvadoran population that it is itself completely homogenous (Lara Martínez 2006). When I was conducting fieldwork for this thesis it was observed that those who are not directly involved with, or work on, indigenous issues are unaware of the fact that separate cultures and languages continue to co-exist within the country's political borders; at least three Indigenous languages are still spoken in El Salvador. It is a fact that the Nahuat-Pipil language is still spoken and has in recent years gained more visibility in the media (Lemus 2014b; 2014a; Miranda 2016). Simultaneously, rumours of the persistence of some of the other indigenous languages such as the Potón language of the Lenca and the Pisbi language of the Kakawira, have turned out to be true. Potón and Pisbi are now both

reportedly undergoing revitalisation efforts in the north of El Salvador through the creation of media and digital textbooks (Pérez 2017a; Pérez 2017b).

The lack of awareness of the cultural diversity of El Salvador can be found at different levels, from the personal to the institutional. It must be said, however, that in the last two to three years, awareness raising efforts have been successful and members of the public are slowly being sensitised to indigenous issues and the cultural diversity of the country. This observation is based on my own engagement in awareness raising activities, some of which have resulted in concrete action such as the integration of Nahuat-Pipil into the national curriculum by the Ministry of Education (MINED) (Sibrián 2019; MINED 2019). Efforts are, for example, being made by young activists with a legal background to ensure the state provides legal recognition of the indigenous names of towns and villages with a large presence of native language speakers. As is the case of Santo Domingo de Guzmán, which in the Nahuat-Pipil language is known as Witzapan, many towns and villages have a dual naming system. The case of Witzapan offers the most extreme example of renaming. The village was completely renamed as Santo Domingo de Guzmán in Spanish, as opposed to having its indigenous name phonetically adapted to Spanish as was the case for Sonsonate, Izalco and many others.

In the case of Nahuat-Pipil, the highest concentrations of speakers and language revitalisation efforts can be found in three villages of the western department of Sonsonate. These are the sites where I conducted my fieldwork and their urban centres are called Santo Domingo de Guzmán, Nahuizalco and Izalco. These sites are indicated as stars in Figure 12, and can be examined in detail in Figure 14. It is also worthwhile to note that there are significant security risks and issues with basic infrastructure in El Salvador which make conducting research and obtaining up-to-date demographic data challenging. This is reviewed in further detail in §3.3. What is presented in the following is based on the government surveys and academic research I was able to find.

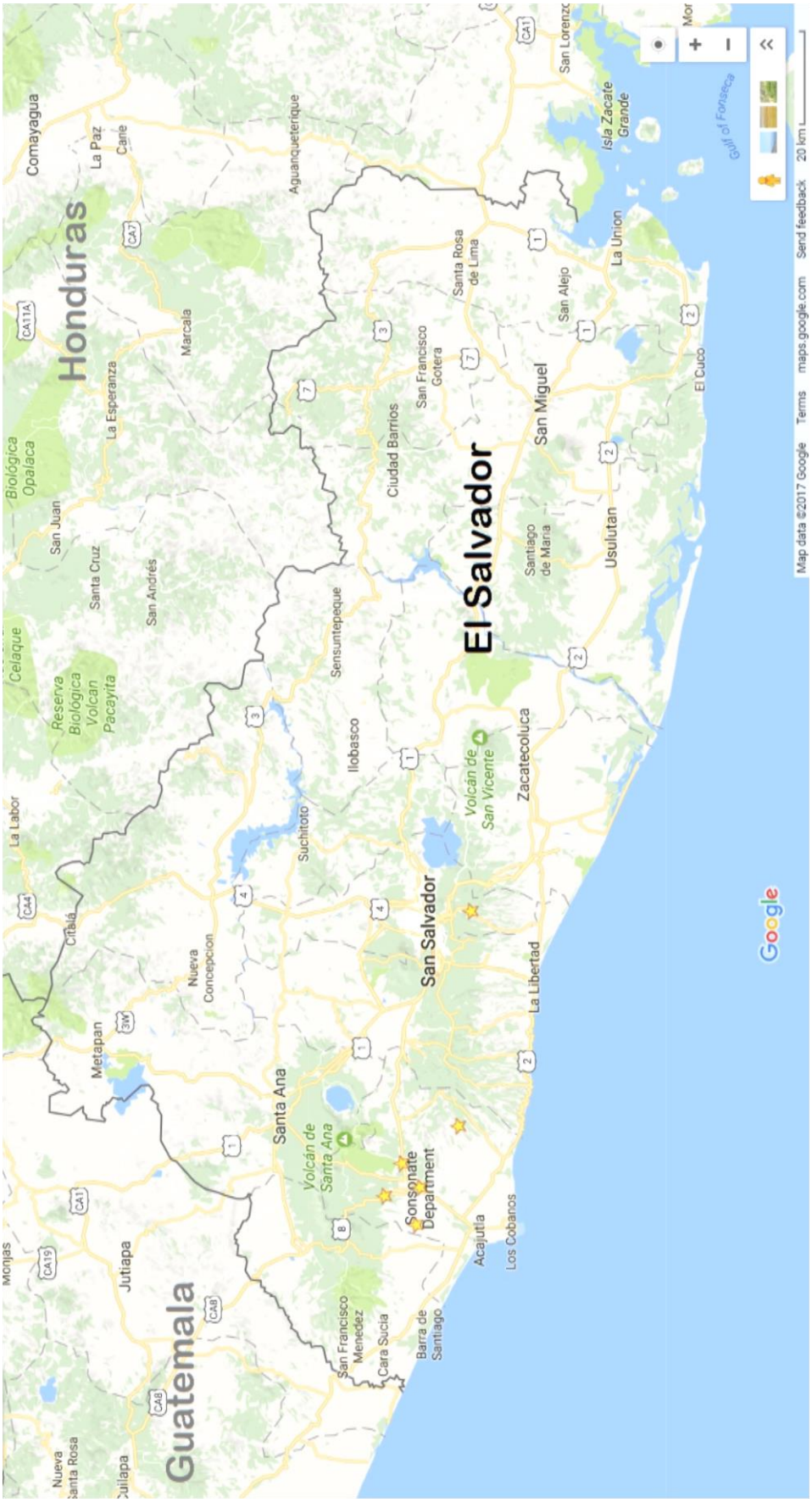


Figure 13: El Salvador

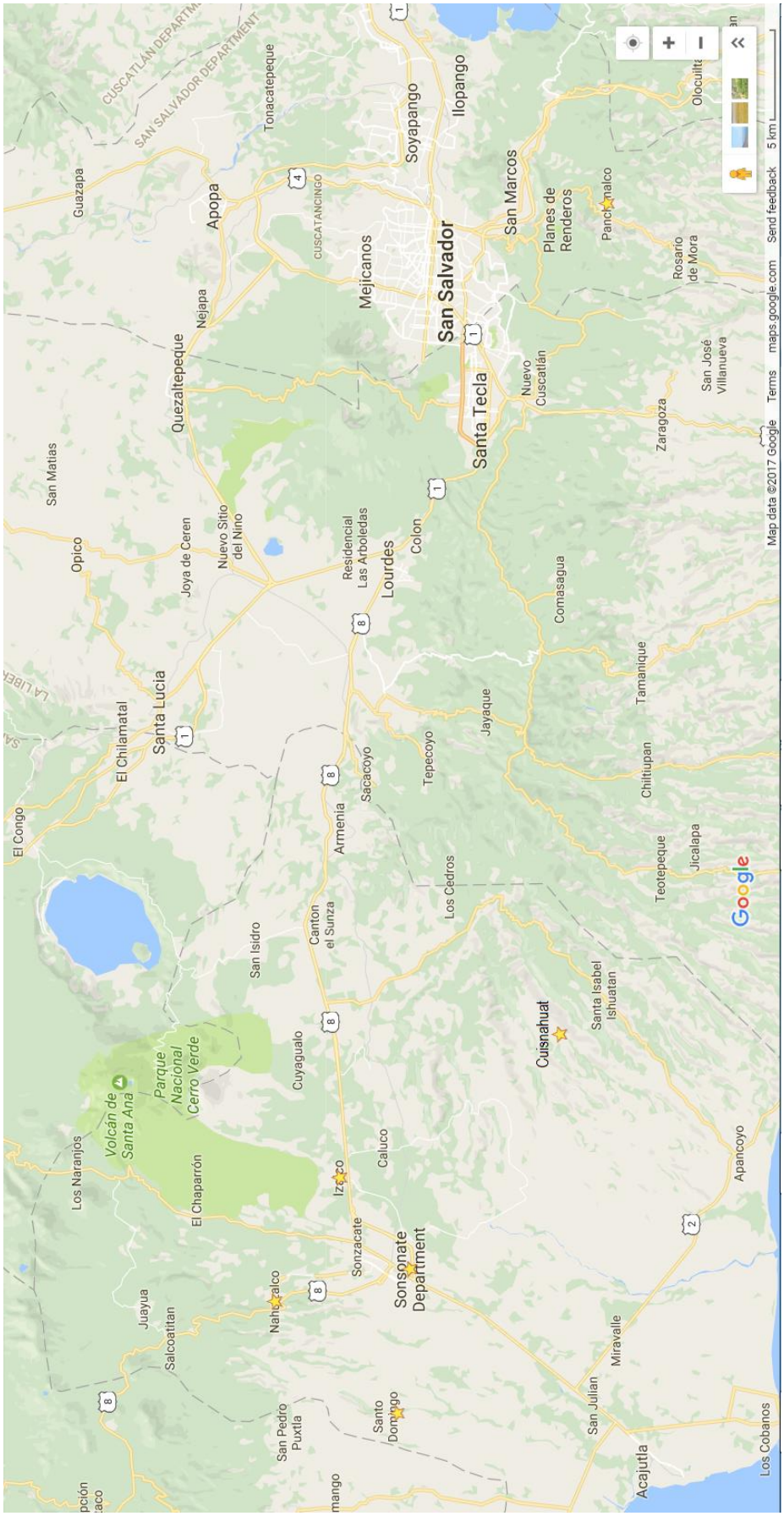


Figure 14: Field-sites in Western El Salvador

Witzapan

Santo Domingo de Guzmán (SDG), also known as *Witzapan*[14] to Nahuat-Pipil speakers, is found in the Western region of the country, in the state of Sonsonate. It lies approximately 80km or a 75-minute car journey west from the capital, San Salvador. The capital of Sonsonate state is also called Sonsonate, or *Tzuntzunat* in Nahuat-Pipil, and is the biggest urban centre in the state. It is the closest commercial centre to Witzapan. Access to the village from San Salvador is through Sonsonate, which is approximately an 18km or a 20-30-minute drive from the village. Residents of Witzapan will often journey into Sonsonate to engage in commercial activities, selling and buying produce, as well as to access health services. Witzapan is one of the poorest municipalities of the state of Sonsonate and is presented as one that contributes very little to the economic development of the nation (Lara Martinez 2006). In reality, it is home to a wealth of intangible resources (language, indigenous culture, and folklore) and offers one of the richest opportunities for Salvadorans to connect with their own cultural heritage. Whether this wealth will be harnessed and turned into economic benefit for local Witzapans remains to be seen.

The name Witzapan makes reference to the river which flows through the town, a river which features widely in the rich and vibrant worldview and folklore of its residents. Whether consciously or subconsciously, the river itself acts as a source, or gateway, to the cultural beliefs of the Nahuat-Pipil, a pattern which is replicated in other Nahuat-Pipil settlements. Nahuizalco, for example, is thus named because it lies in a valley surrounded by mountains. The name itself means 'the place of the four mountains'. These mountains also feature heavily in the oral history of residents of the town, much like the river of Witzapan. Meanings associated with place names are widely accepted by both locals and linguists, although variation does occur in some instances such as the case for Cuisnahuat which has been translated as *witznahuit* 'four thorns', *witznahuac*, 'next to the thorny place', and literally to refer to an older currency, the *cuís*. On the other hand, the name Witzapan for example, is widely analysed and accepted as thorn + river (Lyle Campbell 1985; King 2011; Hernandez Gonzalez 2011). I offer an alternative analysis in Chapter 5.

In terms of population distribution and demographics, Witzapan is composed of a main urban centre and 4 *cantones* or suburbs spread around the urban centre: El Carrizal, El Caulote, El

[14] Gloss: Witz = thorns; Apan = fluid, abundance

Zarzal, and El Zope. Based on the most recent research available for the village (Lara Martinez 2006), the total population measured by the population census of the year 2000, counted 7,444 inhabitants. The same source cites gender distribution (1992) of 3,059 (48.78%) males and 3,211 (51.21%) females. The age distribution in 2000 was heavily pyramid shaped, with 66.66% of the population in the 0-24 age bracket and a further 6% in the 25-29 age bracket using the same reporting conventions used by Lara Martinez (2006: 28)[15]. This means that 72.7% of the population of Witzapan is under the age of 30.

The majority of Nahuat-Pipil speakers in El Salvador are over the age of 50. At the time of writing, the youngest speaker is 54, the previous youngest speaker having passed away at the age of 52 in June 2016.

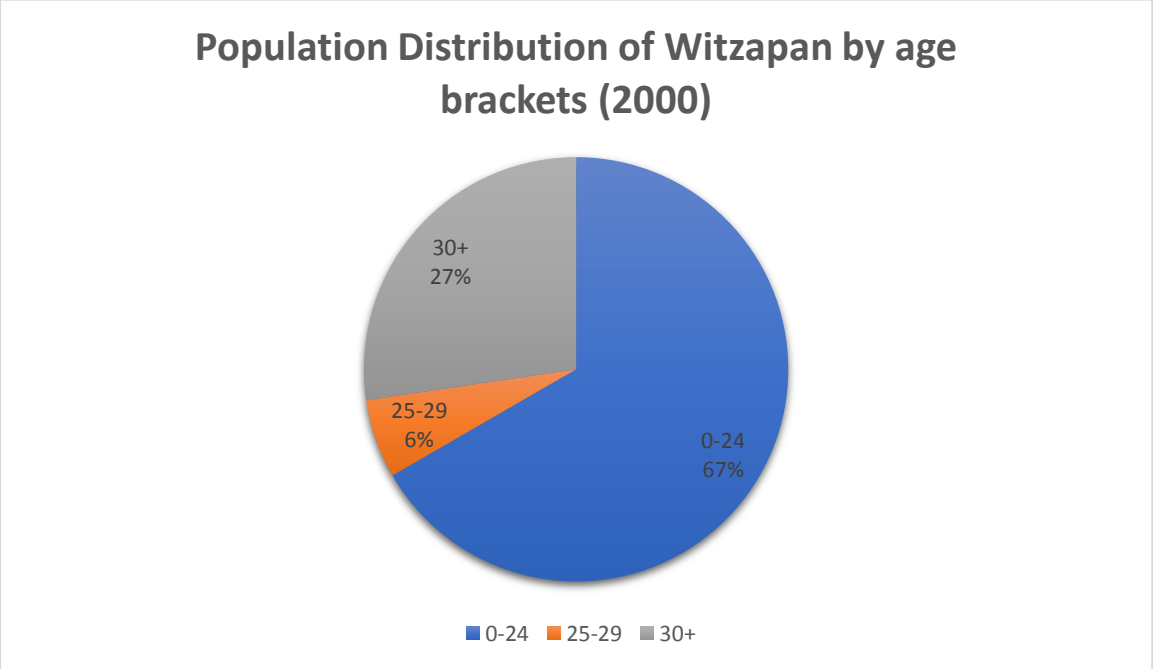


Figure 15: Population Distribution Witzapan (Martinez 2000)

There is very little data to describe the distribution of the indigenous population of the country as this category of the population census was abolished from all national censuses in the 1930s (Ching & Tilley 1998: 123). This was a decision taken on administrative level and has contributed to the suppression and devaluation of indigenous people and their lifestyles.

[15] While these may not be the same reporting conventions used in other demographic sources, I retain those used by the source here as the original figures are not available to me at this time.

In the most recent government census however (Censo Nácional 2008), indigenous populations were counted as is demonstrated in Table 14.

Table 14: Indigenous Population in Sonsonate State (Censo Nácional 2008)

		Total Population	Lenca	Kakawira	Nahuat-Pipil
1	San Salvador	1,567,156	158	90	875
2	Sonsonate	438,960	207	13	1,403
3	Cuisnahuat	12,676	0	0	721
4	Izalco	70,959	1	0	154
5	Nahuizalco	49,081	2	0	277
6	Santo Domingo de Guzmán	7,055	0	0	8

Based on the data provided by the National Census (Censo Nácional 2008), Santo Domingo de Guzmán or Witzapan, officially has very low numbers of indigenous people. An investigation of birth records from Witzapan (1935 – 1945) however, provides an insight into the possible distribution of indigenous people in the town. It is estimated that in 1935, 82% of the population of Witzapan was indigenous. This percentage reduced to 71.4% in 1940 and 67.7% in 1945 (Ching & Tilley 1998: 130). Despite these figures, it is unclear what criteria were used within this time frame to determine cultural or 'ethnic' identity of new-borns.

Table 15: Distribution of Indigenous Population of Witzapan (Ching & Tilley 1998: 130)

	Year	Population %
1	1935	82%
2	1940	71.4%
3	1945	67.7%

Conversely, (Lara Martinez 2006: 28–29) poses socioeconomic status is a more essential factor for defining indigeneity as indigenous people tend to be small-time agricultural farmers and clay workers, whereas *ladinos* have attained a higher socioeconomic status by becoming cattle ranchers, merchants, and 'being employed'. Considering socio economic status alone, the Indigenous people of Witzapan make up approximately 88% of the population of 6,648 inhabitants as is demonstrated in Table 16. Of these it is estimated that 2% speak Nahuat-Pipil, whereas the rest speak Spanish as a mother tongue (Lara Martinez 2006: 29).

By looking at the discrepancies between numbers and figures on indigenous populations in El Salvador, it is possible to get a sense facts, figures and statistics for indigenous people in El Salvador are severely lacking for over a generation. There is no agreement at the government and federal level on what constitutes an indigenous person. This is not an issue unique to El Salvador. There also appears to be a lack of consensus at a governmental levels in the countries of Guatemala and Honduras (Metz 2012). The different characteristics and features that tie into the concept of indigeneity are discussed further in §3.3.2 and §3.4. As previously suggested, the exclusion of Indigeneity as a category in national surveys, and lack of coherence from a government recognition has helped to create an environment where indigenous people are not seen to be valuable enough to be counted as part of the overall population (Ching & Tilley 1998). This in turn contributes to the persistent belief that the Salvadoran population is predominately *mestizo*[16] or *ladino*, and thus homogenous.

Momentarily setting the complexities of indigeneity to the side, looking specifically at speakers of Nahuat-Pipil provides a very rough picture of the language situation. Officially the municipal website of Witzapan states that 35 of its residents are speakers of the language (Municipios de El Salvador 2014b), although based on fieldwork carried out between 2015-2016, I would estimate that about 200 speakers reside in the urban centre of the village, and that an unknown number reside in surrounding suburbs, or *cantones,* which are difficult to access due to gang-related territorial criminal activity. As of July 2017, the monthly Nahuat-Pipil language reunions hosted by the Casa de la Cultura of Santo Domingo de Guzmán average 125 attendants. The organiser of these cultural activities, Matilde Ramirez, estimates there are approximately 150 active Nahuat-Pipil speaking members of this organisation (PC: Ramirez 11/07/2017).

[16] Mixed-race. Usually used to indicate someone who is ‘half Spanish and half Indigenous’ (Arauz 1960)

Table 16: Geographical Distribution of Witzapan Population (Lara Martinez 2006)

	Canton	Population	Indigenous Population	Population %
1	Urban centre	1,807	n/a	n/a
2	El Caulote	1,414	n/a	n/a
3	El Carrizal	1,099	n/a	n/a
4	El Zarzal	2,014	n/a	n/a
5	El Zope	1,110	n/a	n/a
6	TOTAL	7,444	6,548	87.96%

Cuisnahuat

Cuisnahuat (CUI) is situated on a mountain ridge, at an altitude of 430m above sea level and is approximately 66km away from San Salvador. It was founded in 1543 and its geographic area is approximately 73km². It has a population of 12,676, and 8% of its population, or 965 people, are over the age of 60. The festivities of its patron saints are celebrated from the 26th-29th November. Local lore describes the name as being derived from Nahuat-Pipil words *witz*, *nahui* and *at*: 'thorn', 'number four' and 'water'. In other words, the 'place of the four spiny rivers'.

As per official figures presented in Table 14, the third largest Nahuat-Pipil population lives in Cuisnahuat (Censo Nácional 2008). However, despite official confirmation and recognition from the municipality of speakers of Nahuat-Pipil, at the time of writing official and publicly accessible statistics on the numbers of speakers do not yet exist. Nevertheless, Cuisnahuat served as the secondary field-site for the collection of Nahuat-Pipil data due to personal contacts with speakers. Speakers in Cuisnahuat are in their 80s and 90s and mostly reside in the outskirts of town. Due to their age, it was necessary to visit speakers in their homes. During the time that fieldwork was carried out (September 2014 – May 2016), Cuisnahuat was not a safe field site due to aforementioned gang activity. Given the remote locations of the speakers, and the danger involved in visiting, only four visits were made to the town.

Nahuizalco

Nahuizalco is located in a valley and surrounded by volcanoes. It is said to be a pre-colonial settlement of the Nahuat-Pipil and has a geographic extension of 34.32 km²

(Municipios de El Salvador 2014a). It has population of 49,081, of which 3,378 people or 7% of its population are over the age of 60 (Censo Nácional 2008). Nahuizalco is an important cultural site as it still preserves many pre-colonial traditions and festivities. Celebrations of the Day of the Dead which take place on the 1st and 2nd of November each year, but unlike other towns or cities they do not take place in the church but rather in the streets, much like the flower festival of Panchimalco. Colloquially known as the *Kanchules*, celebrations are centred around the communal activities of preparing food and drink and decorating shrines for the deceased. The living visit each shrine collecting food and drink, and singing the song of "Kanchultía". The message of this song is similar to the notion of Halloween's 'trick-or-treat'; visitors ask for food and drink lest the spirits of the ancestors become upset and angry. When all the houses and shrines have been visited, the living congregate in the cemetery at midnight and feast with their departed loved ones. The next day, on the morning of the 2nd of November, the living visit the cemetery once again to 'lift' the graves. Fresh dirt or cement is used to create a dome shape in each plot where bodies are buried, and tombstones are painted and decorated with fresh or plastic flowers.

Nahuizalco is also the site which hosts a yearly commemoration of the massacre of the Indigenous people of 1932, also known as '*La Matanza'*. More information on the *La Matanza* follows in Section 2.4. Because of these activities, the youth in Nahuizalco are very active and involved in the organisation of events. From interactions with young people, it is possible to see their pride in their history and culture. This is especially evident in the small but informative museum in the town's House of Culture, or the *Casa de la Cultura*. This museum is called the Nahuat-Pipil Community Museum.

Despite the cultural vibrancy and youth engagement, Nahuizalco is one of the more dangerous sites. Two public shootings took place between rival gang members during my field stay and as a result, the decision was made to avoid exposing myself more than necessary. The impact of violence on El Salvador and the Nahuat-Pipil is discussed further in §3.3. If the violence diminishes, it would be interesting to conduct further research in this site as there are both speakers and visible support and activism for these speakers. Nahuizalco is also where the original request to document traditional ecological knowledge (TEK) was made to the researcher.

Panchimalco

Panchimalco is the closest pre-Columbian settlement to the capital city of San Salvador and is best known for its pre-Columbian festival of flowers which takes place in May, at the start of the rainy season. The researcher believes there are Nahuat-Pipil speakers here, however they are difficult to find and if found, are scared to be seen to speak the language. Reasons behind this fear are explored further in §3.3.1. Furthermore, the town is overrun with gangs and is not safe to visit.

Panchimalco has a total population of 41,260 people. Of these 2,831 are over the age of 60 and 246 are indigenous Nahuat-Pipil (Censo Nácional 2008). The *Casa de la Cultura* offers Nahuat-Pipil classes to children and visitors, however the person who teaches these classes was not willing to collaborate with this project.

Izalco

Izalco is the cultural, political and symbolic capital of the Nahuat-Pipil. It was an important pre-colonial Nahuat-Pipil settlement and an important trade centre of the Americas (Sampeck 2013). In the week preceding what is now termed as *La Matanza*, an indigenous 'uprising' took place here, and resulted in the massacre of 1932 (Gould & Lauria-Santiago 2014). During fieldwork, efforts were made to establish contact with Nahuat-Pipil speakers, but I was met with much distrust, and was asked to pay high fees ($100 per 30 min) in order to gain access to speakers. As such, the decision was made to not interact with speakers in Izalco.

Izalco has a total population of 70,959 people. According to the official figures, of these 154 are Nahua-Pipil, and 5,938 are over the age of 60. It was not possible to get information on the numbers of speakers although the *Casa de la Cultura* confirmed the existence of speakers.

3.2.4 TRANSCENDENCE OF NAHUA WORLD-VIEW AND CULTURAL VALUES

The term Mesoamerica is used to describe the culture of people residing in the geographical region of Central America. Studies of Mesoamerican pottery, territorial occupation, urbanization, as well as social and political organisation, have shown a clear link

between the Nahuatl and Nahuat-Pipil culture (Sampeck 2013: 43). In fact, Nahuatl settlement of Mesoamerica prior to contact was already very extensive, with migration from Northern Mesoamerica starting in the Early Post-Classic era between 900 A.D. to 1100 A.D. (Escalante Arce 2004) and reaching its peak in the late Post-Classic era between 1100 A.D. – 1500 A.D (Sampeck 2013). Despite the extensive settlement of the region, the Pipil, henceforth Nahuat-Pipil as discussed further in §3.2.1, are not known for their large urban centres. Instead, they are known for having created small settlements spread in a uniform manner like those found in Nahua areas of Mexico. This type of migration or settlement is termed 'cellular' by the historian James Lockhart who also proposed that the Nahua culture was one entity before and after the conquest (Ortiz & Sturtevant 1983). Lockhart argues that an extensive region of Mesoamerica utilised similar political, social and economic principles and therefore can be identified as belonging to one cultural group (Lockhart 1992). This identity extends beyond the borders of Mexico to the Nahuat-Pipil who also used the same principles of organisation and terminology.

Some of the key values and principles identified by Lockhart (1992) of the Nahua culture were those of 'independence', 'symmetry' and 'equality', thus the cellular type of settlement. In practical terms, these values have ensured that communal life is important, and equal access to sacred or religious sites continues to be guaranteed in a non-hierarchical manner. As a result to this day there is a lack of large urban settlements within the Nahuat-Pipil area, something which can be seen in the physical and geographical organisation of Nahuat-Pipil dominated towns that do exist such as Witzapan, Cuisnahuat, Nahuizalco and Panchimalco. A common feature of Spanish settlements is that churches and government offices were centralised and placed around a square, with residential houses built in the surrounding areas (Escalante Arce 2004). This is not the case for the Nahuat-Pipil settlements, and it is not uncommon for families or small groups to live away from the 'urban centre' and to travel back and forth as necessary between their homes, their religious sites and places of commerce. There is an abundance of churches and places of worship dotted all over and in the outskirts of each town. It was not uncommon to see the older people of these villages spending their days moving from religious site to religious site offering up prayers and offerings. Lockhart argues that this pattern is a result of Nahuat-Pipil preference for symmetry and independence, which in turn echoes the similar values of the Nahua culture (Ortiz & Sturtevant 1983; Lockhart 1992).

Specifically in relation to Nahuat-Pipil, culture and values can be observed both in their behaviour and their language. It is suggested that the contrastive duality of all things (beings, objects and concepts) is recognised within language and worldview e.g. male-female, black-white, good-bad, and the defenceless are often taken care of and protected (Hernandez 2017b). Thus, equal treatment of all beings is of high importance. Linguistically this is observed in the lack of word or noun class markers to distinguish between animals and humans. Cognitively a distinction is made between 'those who eat me' and 'those I eat', as is demonstrated in further detail in Chapter 5, §5.3.3, however distinction between different types of animate beings is not lexically marked

As well as reflecting culture and belief systems, I believe that language and its patterns of use reflect an are constrained by historical and political events. The following section presents the historical context for understanding the relationship between the language and its speakers given El Salvador's turbulent history.

3.3 Historical overview of the country

The violent and turbulent history of El Salvador has given rise to an environment where it is difficult, if not dangerous, to conduct research. Attaining accurate and up-to-date demographic data is particularly difficult. This is exemplified by Ching and Tilley (Ching & Tilley 1998: 123):

> Until recent years, historical research was difficult or impossible in El Salvador, a country that has presented daunting conditions for even the most diligent of researchers. Government archives were strictly off-limits until the late 1980s, travel was dangerous, and during the Civil War of 1980-1992 local suspicions of researchers were high.

Despite the passage of 20 years since this statement was made, conditions have not improved. Violence has increased greatly, making travel around the country difficult as is discussed in further detail in §3.3.1, archives are largely inaccessible due to natural disasters having destroyed the buildings in which they were housed, and the little funding for archive accessibility is often poorly managed and misplaced. Furthermore, negative attitudes towards the language and culture prevail and there is a great deal of distrust from within indigenous communities towards perceived outsiders (discussed in §3.3.2).

In El Salvador and in Central America access to indigenous minority groups is very restricted due to a combination of factors:

1. High levels of socio-economic instability
2. Racist attitudes towards all things indigenous
3. Socio-economic inequality

This section looks at the historical events, and negative attitudes which have contributed to a separation between indigenous people and *mestizo* society in El Salvador.

3.3.1 A VIOLENT HISTORY: THE GENOCIDE OF 1932 AND CIVIL WAR

It is estimated that before the genocide of 1932, or *La Matanza*, there were approximately 300,000 people who identified as and lived as indigenous people, 25,000 of whom were speakers of Nahuat-Pipil (Gould & Lauria-Santiago 2014). The figures vary depending on the source, but it is estimated that somewhere between 5,000-45,000 people were killed during the indigenous uprising and subsequent genocide of 1932 (Lara Martinez 2006; Delugan 2013; Gould & Lauria-Santiago 2014; Hernandez 2017a). This genocide arose due to land disputes, a result of an agricultural reform which sought to privatise 'public' land which was the agricultural land of indigenous people.

Privatizations occurred in order to form coffee plantations resulting in a small revolt of 20 *campesinos,* or farmers. This movement was led by Feliciano Ama, an indigenous leader based in the city of Izalco. In response to this relatively small revolt, the government of El Salvador, by order of General Martinez and his military forces, made an example of the indigenous people and deployed troops to enforce the new laws. From this point onwards, amendments to the Salvadoran legal system made it difficult for indigenous people to maintain their identity. It became illegal to speak native languages in public, practice an indigenous religion, to engage in tradition customs and to wear indigenous dress. Many are said to have fled to remote and less populated areas such as Honduras and Guatemala. It is believed (and hoped) by the Nahuat-Pipil community today that some speakers still live and survive in such remote dwellings.

The political legacy of 1932 is the concentration of power and wealth at the hands of the agricultural elite. This elite imposes a combination of fear and disdain towards the 'rural poor' and depends on an oppressive regime to maintain their power. The cultural legacy of the genocide is the annihilation of indigenous cultural identity. This resulted in a fear of and dependence on those in power of communities in western El Salvador, as well as the unwillingness of these groups to engage further in political activities. It is proposed that the cultural transformation that took place resulting in the devaluing of indigenous culture, had already been put in place at the end of the 1800s, if not during the colonial conquest of the Americas. This transformation continued to take place up until the 1970s when for the first time, indigenous people and people in rural areas had access to secondary education. This access to secondary education, however, contributed directly to the disintegration of the remaining cultural practices and expressions of the indigenous people, particularly language and clothing (Gould & Lauria-Santiago 2014).

The Civil War (1980-1992) further damaged the delicate balance between the oppressors and the oppressed and a further 8,000 lives were claimed during the 12 years of conflict (Gould & Lauria-Santiago 2014). Educational reform was initiated in 1968 which resulted in horizontal mixing between social groups and a freer flow of information and ideas (Lindo-Fuentes, Ching & Johnson 2012). Tensions began to build in the late 70s as large percentages of youth from indigenous settlements such as Santo Domingo de Guzman, Nahuizalco and Cuisnahuat began joining the political party which was to become the leftist *Frente Farabundo Martí para la Liberación Nacional* (FMLN), translated as the Farabundo Martí Front for National Liberation (Gould & Lauria-Santiago 2014). In the late 70s guerrilla fighters began to assassinate top government officials. In response, those who promoted national dialogue on education reform were targeted by the paramilitaries. The assassinations which took place in 1980 were partly a response to the fact that earlier that year on 26th February, 1980, the military had murdered 11 people in Santo Domingo de Guzmán (Gould & Lauria-Santiago 2014). These increasing tensions and assassinations of countless peasants, teachers, office workers, intellectuals, politicians, ministers, and civilian bystanders, in addition to the deaths of guerrilla fighters and professional soldiers marked the start of the Civil War. The Civil War began officially in January 1981, when the FMLN launched their military offensive. This marked the beginning of the end of the military regime which had ruled the country for most of the 20th Century (Lindo-Fuentes, Ching & Johnson 2012).

3.3.1.1 Social Impact

A direct result of the violence of El Salvador's history is the conditioning of the Salvadoran population to believe that a homogenous cultural identity exists throughout the entirety of the political territory (Tilley 2002; Delugan 2013). The perception is that this homogenous culture is composed of *mestizos* and *ladinos* only, and disregards the existence of indigenous groups (Lara Martinez 2006). Although demeaning attitudes towards indigenous people already existed before 1932, the view of homogeneity was reinforced when the government decided to 'restore order' in 1932 by taking military action against indigenous groups of farmers. The result is that to this day the majority of the population in rural and urban settings believe that indigenous groups were completely wiped out during this time. The government following the genocide 1932 adopted an attitude of indifference and ignorance towards the existence of indigenous groups (Lara Martinez 2006: 9).

There is evidence to support the fact that indigenous communities did not disappear altogether in the immediate years following the genocide. It is proposed their communities continued to grow despite social indifference from the general Salvadoran population (Tilley 1997; Ching & Tilley 1998). It is claimed that between the 1970s-1990s there was a reorganisation of indigenous groups, and that sociocultural identities were reactivated during this time, meaning that indigenous groups no longer hide the symbols of their identity when in public (Lara Martinez 2006). However, it was not until 2013 that the recognition of indigenous groups and their rights was proposed by the UN Human Rights Council (Anaya 2013) and was finally approved in 2014 by President Salvador Sanchez Cerén with the rewording of Article 63 of the Constitution of El Salvador (see §2.3.1).

3.3.1.2 Linguistic Impacts

The consequence and the cultural legacy of the 1932 genocide and the Civil war was the suppression of indigenous language and culture. After the genocide, General Martinez forbade the use of Nahuat-Pipil and the use of traditional clothing. It is argued that the loss of language was followed by a severe questioning of the legitimacy of indigenous identity from both internal and external stakeholders (Gould & Lauria-Santiago 2014). The symbolic value of language as an emblem of indigenous authenticity means that the loss of

language was the catalyst for cultural transformation away from indigenous values. The outlawing of the language accelerated the process of language shift which was already in place. The domains of use of Nahuat-Pipil had already shrunk to the home and its use was seen as a marker of familiar intimacy, not a language for the public domain (Contreras 1963). After the genocide, the Martinez regime continued accelerating this shift by building schools in indigenous areas, and investing in the *ladinization* of children and orphans of indigenous people (Gould & Lauria-Santiago 2014).

Research conducted during the 60s and 70s demonstrates prevailing negative attitudes towards the language by children of speakers in addition to shame of the speakers themselves (Contreras 1963; Campbell 1975). Contreras writes, "During the investigation, they all denied speaking the dialect *nahuate*…the truth is that they all speak *nahuate*, they just don't speak in public because the *mestizos* make fun of them (Contreras 1963: 45). When the linguist Lyle Campbell visited El Salvador in the 1970s to work on Nahuat-Pipil, he reports finding 40 speakers of Nahuat-Pipil in Cuisnahuat, and that nearly all indigenous adults spoke the language. He also reported that few young people had learned it (Campbell 1975: 833). It is this same generation that grew up in the 70s that now speaks the language in El Salvador today, and this generation now echoes the sentiments expressed by their predecessors. As is demonstrated in Section 3.2.2, older speakers today feel that their children and grandchildren are ashamed of the language, much like speakers' parents and grandparents might have felt about them.

3.3.1.3 Spirituality and Religion

It is proposed that access to secondary education in the 1970s further contributed to the disintegration of cultural forms of the indigenous people with respect to language and clothing (Gould & Lauria-Santiago 2014: 305). There is, little discussion of the impact that organised religion had on indigenous communities. During colonial times, Spanish Franciscan missionaries appealed to the Spanish crown to incorporate indigenous languages in the religious and political conquest in order to make these efforts more effective and thus have better chances at succeeding (Heath 1972: 15). These appeals were successful and during 1550-1627, indigenous languages were used as the instrument for religious conversion and thereby political conquest (Heath 1972: 36). The use of the Nahuatl languages as a means for Catholic conversion has combined two separate belief systems. In more recent

history, Salvadoran indigenous people point to the establishment of the church in Santo Domingo de Guzmán in the 1950s as the point when their belief in Nahuat-Pipil 'spirits' began to disappear.

Witzapan itself has a school, a health clinic, local government office and a large number of churches of different rival Christian denominations. Based on my own interviews and calculations, nearly all Nahuat-Pipil speakers in Witzapan, approximately 98%, identify with a Christian religion, and there is a great rivalry between the Catholic and Evangelical sector which can sometimes create a divide within the linguistic community. To my knowledge only one resident vocally identifies as non-Christina (Cuellar PC: 2016). In this respect, the church and its missionaries have been very successful in eradicating any conscious identification with native belief systems or worldviews.

Throughout many of my interviews there is a marked separation between the beliefs of the church and the 'unofficial' stories or belief-systems. For example, when discussing the uses of the plant *ruda* or 'rue', Ruta *chalepensis*, the initial statements established its use in protecting the home from invasion or ill-intent, for bringing luck and for its protective properties. Such statements were followed by a quick denial in believing in such things of the past because God and the church provide this protection now. Nevertheless, all the houses and gardens I visited always had a *Ruta chalepensis* plant near the entrance of the home. In this case, it seems that Christian religious beliefs, worldviews and explanations will always affect the way people provide explanations as it is the accepted mainstream belief, however, with gentle questioning[17] and observation it does not take much to see the traditional as well as folkloric undercurrents.

The belief in Nahua spirits, traditional folklore, and traditional medicine, is not perceived by Indigenous people to be aligned with the teachings of the church. This belief is not discouraged by the church. For example, when asked why the *Ciguanaba*, a female spirit who lures young men into the river in order to devour their souls, stopped making an appearance in Witzapan, the response always points to the 'raising of crosses', or the establishment of the church, in the 1950s. In this same way, traditional uses of plants to ward off or cure ailments caused by spirits or witchcraft are seen to be discouraged by the church because of their

[17] A strategy I often used if individuals refused to accept having any personal knowledge, particularly spiritual knowledge which might come in conflict with the church, of plants was to ask what their parents or ancestors thought of the plant in question. This always worked.

mystical connotations. Most households now prefer to use pharmaceutical drugs as opposed to natural medicines.

In some ways, however, the icons and beliefs of the church have been adapted by indigenous people to reflect their own underlying belief systems. For example, each town has a patron saint which is said to become animate in times of need and protect the village and its residents. During the 1932 massacre it was reported a man on top of a large white horse kept military troops from advancing to destroy villages like Santo Domingo de Guzmán, Nahuizalco, Cuisnahuat, Tepecoyo and Nahuilingo (Gould & Lauria-Santiago 2014: 315). For some indigenous people, this man was believed to be the patron saint of their village. This image of a man atop a large horse, however, is also seen in the stories collected by Schultze-Jena in the early 1900s. In his stories, this man on the horse represents the devil (Schultze-Jena 2014). It is interesting to note however that this man is always depicted as having fair features: white skin, light-coloured hair and eyes, pointing back at the first points of contact between the indigenous people and European men in the 1500s.

Today, some of the most avid male language activists and leaders in the language conservation and revitalisation effort have to some effect stepped away from the church, choosing instead to lead a life separate but parallel to its teachings. Though still identifying as religious, these individuals accept their knowledge and heritage as their own, taking care to pass on their insights to their descendants. Interestingly, they are regarded as important leaders within the Nahuat-Pipil community. It is these individuals who have been most helpful during my data collection.

3.3.1.4 Social Inequality and Gang-related violence

Today, the largest factor which limits access to any rural community is the high crime rate in El Salvador, which is primarily a direct cause of criminal activity and territory disputes between two rival gangs: MS-13 and Barrio 18. From 2009-2012, gang violence, including shootings, kidnapping and armed robbery and the trade of drug, sex and weapons, were most prevalent in rural areas (Valencia 2015) such as Sonsonate, the location of my primary field-site. Since 2013 however, due to the government's shift in strategy towards organised crime, there has been a shift in the manifestation of gang violence. In protest to new policy, gangs and their members have focused their activities on urban areas

and were at the end of 2015 actively attacking all city, government and police offices (Valencia 2015; Labrador & Rauda Zablah 2015) resulting in the spread of panic across many populations and social groups. Death tolls have now surpassed those of the Civil War era (1980-1992) (Watts 2015; ContraPunto 2015).

The final issue which I believe contributes to the mistrust of Nahuat-Pipil speakers towards outsiders is the issue of socio-economic inequality found across the country. El Salvador is amongst the poorest nations in the Americas (IBRD-IDA 2015; WFP 2015) with an ever-widening gap between the poor and the wealthy. This unequal distribution, paired with the view that wealth demands power and respect, results in the mistreatment and devalorisation of those belonging to lower social classes. This has resulted in the creation of mutually exclusive social groups, closely guarded by those who belong to them. This aspect of social inequality plays a significant role in the perception of what it means to be indigenous as is discussed in greater detail in the following section.

3.3.2 ATTITUDES

In addition to the above issues affecting Nahuat-Pipil speakers, there are deeply ingrained racist attitudes towards indigenous people and their cultures (De Burgos Henriquez 2010). These highly negative attitudes are found equally within *mestizo* or *ladino* groups, groups who identify more with a 'modern' or northern way of life and thereby reject their indigenous heritage, as well as within indigenous groups themselves, to the extent that many people of indigenous origin will not only deny their roots, but also deny participation in any activities which might be considered 'indigenous'. This includes wearing the traditional dress, speaking the language, or passing on any knowledge linked to indigenous identity. In El Salvador, being 'indigenous' is synonymous with being 'dirty', 'uneducated', 'stubborn' or 'backwards' (Tilley 2002) and to be called an *india* is highly offensive (De Burgos Henriquez 2010).

From an outsider’s perspective notions of indigeneity in El Salvador are tied to biological ancestry, socio-economic status, social discrimination and ideological constructions of identity (Lara Martinez 2006; Tilley 2002). Physical features can also be indicative of ancestry; however, the widespread homogenization of the Salvadoran population means that physical features alone aren’t strong enough markers of indigeneity. Instead, it is necessary to

assess socio-economic status and social attitudes towards specific groups of people in addition to physical characteristics.

Certain groups who identify as indigenous are seen to share specific ideologies connected to spiritual ritualism. During interviews it was observed that these groups adopt physical or symbolic markers of indigeneity such as wearing ethnic prints or adopting a name derived from a Nahuat-Pipil word or concept. These groups also look to present a shared ideology by promoting the use of ritualistic ceremonies to mark the start of important events. Usually such rituals, ceremonies or outward markers of indigeneity are borrowed from neighboring indigenous groups such as the Maya from Guatemala or the Yucatan peninsula. The Maya of Guatemala, for example have a very strong visual identity which is tied into traditional dress and ritualistic tradition and is widespread across all sectors of social organisation, from the individual level up to local governance structures. This however is a remnant of denigrating and essentialising policies which were enforced in the 1930s-1940s by Guatemalan dictator Jorge Ubico (Little 2008). At the time, visual representation was prioritised to promote their role in tourism within the government's modernization agenda. The Maya were essentialised and presented as a contrast to Guatemala's technological potential for development, something which continues to inform Guatemalan and scholarly attitudes towards the Maya today (Little 2008).

Given the essentialised image of the Guatemalan Maya is so prominent in people's minds, the tendency in El Salvador is to try to emulate this with its own indigenous population. With an emphasis on the visual image, the indigenous person's relationship with the natural world is seen to be ritualistic and thereby superficial, however in reality it is a practical and pragmatic relationship which has allowed indigenous groups to survive despite conflict, genocide and social segregation. The ecological knowledge that has been passed down from one generation to the next, is the basis on which indigenous people have built their homes and fed their families. Although elements of natural world knowledge fit in to the systematic construction of identity at a national level (Lara Guerra 2006), to date, little has been done to investigate the relationship between indigenous identity and ecological knowledge in El Salvador.

In the following sections I present Nahuat-Pipil perspectives on what it means to be Indigenous. The themes that have come out of the discussions on indigeneity with residents of Witzapan reflect what has already been discussed thus far. In this respect, there is

alignment between theoretical notions of indigeneity and how indigenous people see themselves. Being indigenous, however, is often associated with negative imagery. While on the one hand each individually professes a love of their language and culture, this is always paired with feelings of discrimination, low self-esteem, poverty, and outright racism and violence towards the indigenous individual. The following sections discuss these themes and provide sample extracts from the interviews.

3.3.2.1 Discrimination and social segregation

Indigenous people bear the brunt of much social and verbal discrimination in El Salvador. Indigeneity is perceived to be a very negative characteristic and verbally, insults are topically phrased around the concept (De Burgos Henriquez 2010). The phrase 'improving race' is coined by the researcher De Burgos (2011) as a way of describing the motivations behind this type of discriminatory behaviour. His research presents the socially constructed image of the indigenous person is a very negative one, and states that to 'improve race' and promote the 'progress' of Salvadoran society, it is necessary to step away from all the characteristics which are perceived to be indigenous. Society characterises the indigenous person as unattractive, stupid, uneducated, backwards and so on. This is most notable in the way in which insults are formulated to highlight the correlation between indigeneity and negative characteristics as seen in Table 17: Verbal insults, and the sometimes-extreme choices people make to avoid association with indigeneity. One such example within De Burgos Henriquez's (2011) study is the case of Enrique, a businessman from San Salvador, who describes the motivations for choosing his partner (De Burgos Henriquez 2010: 17).

> I remember that I fell in love with my girlfriend's older sister at a party at her parent's house. Ironically, I ended up leaving my girlfriend and marrying her sister. Matilde was much prettier than Mercedes because she was fair-skinned, blue-eyed and somewhat blonde. Mercedes had light brown skin and a short stature but had a great personality. I didn't want my children to come out tan…When my children travel to the United States, they can mix with the Americans. In addition, my grandparents were also fair-skinned, just like me.

In this example, Enrique chooses a partner who is more likely to guarantee social mobility for his children as a result of having fairer features which are more European. Such choices are not restricted to choosing potential life partners but are also present in other sectors of social organisation. Some examples include the fact that a person is more likely to receive employment opportunities if they have European features (De Burgos Henriquez 2010: 17). This is emphasised by the practice of requesting photographs of potential employees during the hiring process. The emphasis of physical appearance is reinforced by the fact that there is very little representation of indigenous people in the media; TV presenters and actors in advertisements have mostly Caucasian features.

As previously discussed, discrimination based on the colour of one's skin is not rare. Neither is verbal discrimination. As FSGa points out in Extract 1, speaking Nahuat-Pipil also means being subjected to derogatory comments from those who do not speak the language. This contributes to some speakers' unwillingness and hesitance to engage with non-speakers, and others decision to stop speaking the language altogether.

Extract 1

[00:11:26]

ED : What does Nahuat mean to you?

FSGa: Nahuat is what is most important. I began speaking it in my childhood and I have not forgotten it. I would rather speak in Nahuat but only amongst those who speak it. One gets made fun of by those who don't speak.

Some common phrases which are often used as insults by Salvadorans can be found in the table below. These phrases are not exclusively directed at indigenous people themselves, rather are used to highlight aspects of a person which are socially deemed to be undesirable. These unwelcome features such as being uneducated, unattractive, poor, irrational, violent and insignificant are all attributed to the concept of indigeneity in juxtaposition to the positive features of being American or European which include wealth, intelligence, education, attractiveness and social value.

Table 17: Verbal insults

Nr.	Spanish	English	Meaning
1.	Todavía se le vé la pluma	You can still see their feather	Refers to the difficulty some people have in hiding their ancestry due to their culture or physical appearance.
2.	Un Indio menos una tortilla mas	One indian less, one tortilla more	Emphasises the low value of the indigenous person's life
3.	No seas tan Indio	Don't be so indian	Emphasises the subject's lack of intelligence, knowledge or education
4.	Ese es un Indio feo	That is an ugly indian	Indigenous people are naturally unattractive
5.	Ese maitro con cara d'indio no parece doctor	That dude with the indian face doesn't look like a doctor	Essentialising indigenous appearance and emphasises the contrast between indigenous ignorance and the formally educated.
6.	Indio come cuando hay	Indian eats when there is food	Emphasis on poverty
7.	Ya se te salió el Indio	Your Indian is coming out	Emphasis on one's irrational, violent and idiotic nature which results from indigenous ancestry rather than European

MARa pinpoints this exactly in Extract 2:

Extract 2

[00:10:03]
MARa: We are poor right? And, well, less valued by people. That's what you see. Because here, people more or less identify as indigenous, but the person who has overcome that has priority. Like what you said, by having worked hard, he can have things.

Although MARa does not outright say that there is discrimination, the implication is clear. Once you 'overcome' indigeneity, you become more valuable to society. Within this, is the notion that you can achieve a higher status and improve your social chances by working hard. The reality is that working hard does not necessarily mean that better chances and opportunities will be afforded to the hard-working individual because of the systematic discrimination that is already in place. This is primarily due to underlying racist attitudes

towards indigenous people which has resulted in systemic racism. This will be discussed in more detail in §3.3.2.6 Colour, Ancestry and Bloodlines. In the following section the impact of poverty and low self-esteem in relation to indigenous identity is discussed.

3.3.2.2 Land and Environmental Knowledge

The notion of being hard working and possessing the skills required to work with natural resources are two elements associated with land and environmental knowledge. Cultivating land and preparing clay are processes that require constant attention and dedication. Environmental factors the high humidity and harsh sun, also mean that efforts are made to avoid the heat of midday. As such indigenous people are early risers and as is evidenced by the following extract, perceived to be hard workers.

Extract 3

[00:04:25]
MARa: [Laughter] That's where you fail the test. See, the majority of the indigenous people who can, they are quite hard working. And currently, the people of today don't work as much as before.

The dedication to working the land despite the harsh environment, in addition to the collective knowledge and ability to do so, is what distinguishes the indigenous person from the *ladino* or *mestizo*. It is not a coincidence that young people who are no longer interested in working clay or becoming agricultural farmers, are therefore no longer considered to be as hardworking as their predecessors.

Clay work and agriculture are the two traditional economic activities of the indigenous person. They are the main source of income as well as symbolic ties to cultural activities of the past. Traditionally, clay work was carried out by women. They would visit the clay mines, prepare and mold the clay into various cooking utensils, to be dried and baked, and then sell them in the nearest marketplace. Much like agriculture, clay work is a labor-intensive activity. Today, women continue to dominate this field, however young women and

girls are no longer entering into this type of work and have seemingly lost interest in learning and taking on the tradition. However, rather than losing this collective skill altogether, young men are beginning to take on the family inheritance of clay work. As women have begun to age and lose the strength needed to visit and collect clay from the clay mines, their sons have stepped in to help with the more labor-intensive activities. Over time, they have started taking part in other processes of clay work such as molding and shaping. This has progressed to the point where the business of the most prominent clay working family is largely run by the two grandsons of the family matriarch.

Extract 4

[00:21:32]
MARa: [Clay work] is the economic heritage that most people have. Because this has been inherited from the grandparents to the new generation. And in this way, we have continued to work. Because, as I'm telling you, my grandmother could, my mother learned, and she taught us. And now, currently, the new generation does not want to learn how to work with clay. But it is our economic heritage. Which is being lost. Even so, I'm leading a project that looks at how visits to the clay mines are carried out, because that's where we get it from. I'm looking at the whole process, extraction, transportation and processing. Everything. I'm also taking pictures and will show the whole process.

As is stated in Extract 5, the skills required to work with clay have been handed down from one generation to the next. These are skills and knowledge that have not only been refined across generations but are also passed down exclusively within families. Nevertheless, due to a perceived lack of interest, it is a skill and knowledge base which is at risk of being lost. In response to this, some people like MARa who are aware of the cultural significance of clay-work, are attempting to document and preserve the traditional processes involved. These attempts are being carried out in Spanish. Much like those who described an interest and desire to document traditional botanical knowledge to the researcher, there is a strong interest amongst indigenous leaders to preserve clay-work both as an economic and cultural activity.

In the way that working with clay was historically a female dominated field, agriculture was the workplace of men. In the following extract, MARa discusses the significance of working the land and cultivating maise as a source of income and sustenance for the family.

Extract 5

[00:25:03]
MARa: Well [cultivating maise] is another economic activity which provides for the family. Because if we cultivate it there are fewer expenses. And if we didn't cultivate it, there would be more expenses. Take me for example. These are things that come up. Um, my father used to cultivate an apple[18] of land. Right. So he would say, there will be corn. And within those corn fields he would plant *frijol de bara*, *frijol de castilla*, *chipilines*[19]. Why? Because when he would go to the fields to check on the corn, he would plant and there would already be stuff ready to harvest. He would bring home beans too, it would be our food and drink while we had it, right. Because he was always lucky. He would always bring small amounts of beans. But yes, it is part of what helps maintain a family. And the corn, when it has been harvested and it is at home, it is what helps us buy fertiliser. It can also be used to start off the next cycle of crops. That's how it is.

As is evidenced by Extract 5, the cultivation of maise acts both as a source of food and a source of income. It is essential for the maintenance of the family unit. As the conversation continues, MARa also discusses the involvement of the family in the cultivation process. Preparing the earth, sowing seeds, weeding and harvesting of crops have always been a collective effort, if not a family one. Though predominantly a male dominated profession, women have slowly become incorporated into certain aspects of the agricultural process such as sowing of seeds, fertilizing and weeding. Perhaps this is because much like in the case of

[18] Salvadoran unit for measuring land
[19] Types of beans and herbs

clay-work, young men are not as interested in following in their father's footsteps as they are in pursuing job opportunities in urban centers such as Sonsonate and San Salvador. MARa herself now looks after her father's land. While she does not physically work the fields, she oversees and manages how they are used and cultivated and encourages her daughters to become involved by making them participate in some of the processes.

Though contemporary clay-work and agricultural processes are mostly valued for their financial contributions, there are aspects and traditions within these activities which link to rituals of the past. Although the motivations for carrying out these specific ritualised activities may have evolved over time, they still carry strong elements of tradition and spirituality. The division of labor between men and women for example is such that there are never mixed groups. Men and women do not work side-by-side at the same time, but rather take turns to complete their specified tasks. This is seen in clay mining when men and women take turns to enter the mines in gendered groups. In agriculture, women can participate the sowing, fertilizing and weeding process, but again only within gendered groups. When asked to explain the reasons behind this choice, it simply stated that this is the way it is and that it is better to avoid the mixing of groups. Today the language used to carry out these activities is Spanish as younger people no longer speak Nahuat-Pipil. This is why it is important to work with older speakers who are still familiar with context specific terminology and document parts of the lexicon relevant to these domains.

Ritualised acts include the blessing of the clay mines. Older speakers of Nahuat-Pipil actively refer to this act as a ritual, however younger members of the community such as MARa, see it less as a ritual and more a pragmatic custom. Upon entering the mine cave and clearing the site which is to be mined, the leader of the group will pause as everyone gathers and say something along the lines of "We are now in our places, we ask God that nothing happen to us". Though it is a very simple statement, it is an acknowledgement of the potential dangers present within the clay mines.

In an early discussion with Nantzin Chon, the 87-year-old matriarch of the clay working family, she contextualises the blessing the cave mines referring to it as one of the '*lugares vivos*', or the 'places that are alive'. Such sites include the clay mines, the local waterfall, the river and natural rock formation known as 'the arch'. These are all places which are deemed to be alive because they are dangerous having claimed lives in the past. As such, they are

seen to demand the respect of those who visit. These sites are also key geographical points of interest which feature heavily in local folklore. The *ciguanaba*, the six-fingered female demon who preys on young men, is often seen bathing in the river. The incarnation of the devil, a tall white blonde man with fair features, is said to appear when approaching 'the arch'. Caves often feature as entrances to the underworld or places where parallel universes exist (Schultze-Jena 2014). Finally, it is said that the cave behind the waterfall is the entrance to Nanawatzin's cave. Nanwatzin is the powerful shape shifting '*brujo*', or sorcerer. If parents want to find out if their newborn child will become a witch or sorcerer, they must place their child on a raft in the river and allow this raft to enter the cave. If the child comes out laughing, he has what it takes to be a sorcerer or witch, whereas if the child comes out crying, he does not.

Although pre-Columbian belief systems about the local ecology and spiritual realm have been replaced by Christianity, some underlying connections are still visible in the conversations with the older generation and speakers of Nahuat-Pipil. Younger generations are stepping away from these belief systems, opting instead to focus on income generating activities to better their social and financial stability. Despite this, even younger generations cannot deny the unpredictability of nature and natural disasters, and thus maintain a respect for it. The motivations behind certain traditions may change, but the acts involved are still maintained. As the conversation about agriculture was coming to an end, MARa stated, "And of course we always kill chickens. You can't start the process of working the fields without killing chickens. Most people will kill one or two, but I kill five or six". Although she was referring to the act of killing chickens as a source of food to feed the workers, this act carries strong parallels to Mayan and Aztec rituals of sacrificing birds to mark the beginning of agricultural processes. These sacrificial acts continue to be practiced among some Mayan cultures today, like in the town of Chichicastenango in Guatemala.

In terms of natural foods – there are many nutrient-rich natural alternatives to maise, a staple of the Nahuat-Pipil diet, which have been used as food in times of severe poverty or drought. Because of the association of these foods to extreme poverty and wanting, however, they are not used or valued as they should be. One example is the *ojushte*, a highly nutrient rich seed which was used in place of maise when crops did not produce a large enough yield to feed the family. On such occasions, seeds from the *ojushte* tree would be gathered, cooked and taken to the mill to be ground. The resulting paste would be used instead of maise as a base for

making tortillas. The *ojushte* is so nutritiously rich that less food is needed to satisfy hunger. A person who normally needs to consume three maise tortillas to feel satisfied would only need to consume two *ojushte* ones to feel the same type of satisfaction. There is a movement to rescue traditional foods which advocates for the uptake and incorporation of *ojushte* into daily diet. However, at the time the fieldwork was conducted, negatives associations of this type of food kept speakers from fully accepting the *ojushte* into their diet by choice. Because of feelings of shame, this type of knowledge about the natural world is being lost.

3.3.2.3 Poverty and Self-esteem

As was previously reviewed in §2.3.1, indigenous people in El Salvador mostly live below the poverty line. This means living on less than $5 a day (World Bank 2019). For the indigenous people of El Salvador, poverty refers primarily to a lack of financial resources and the limitations this results in such as restricted access to education and health services, or access to basic commodities like shoes and clothing. It is considered an absolute marker of indigeneity since a person cannot be indigenous and financially well-off. The relationship between indigeneity and poverty is such that the two terms are treated as synonymous. The shared experience of being raised with scarce resources is a binding agent which in this case also acts as a marker of indigeneity. This is highlighted in Extract 6:

Extract 6

NiPl: So then, to be indigenous means to be poor?

FSGa: Yes, for me that's what it means. Because we're not…those people that have means…their children go to university let's say in Sonsonate. And there you can distinguish between who has [money] and who doesn't. And when they don't have money anymore, they can't go because they don't have enough to pay for their studies. So if you have financial means, you are something. Now there are many people who are *chuso*[20]. Families have land and they don't suffer anymore like you did in those times. It was serious then. So we grew up with scarce resources. At 8 or 10 years, we walked around very freely. Others must have already told you this. No shoes, with underpants made of burlap. Sugar came in these burlap sacks, and those were used [gestures to groin area]…and no one made fun because we were all the same. Then with time things started to change. Many could buy shoes. Even I began to worry when others could buy them and I couldn't. And I was with my friends. I started feeling ashamed because others were showing off their new shoes and I wasn't. I started worrying about how to get enough money together to buy shoes. Then it was cheap unlike now. Shoes are so expensive. That's how we grew up. Thank God that you haven't seen extreme poverty. Some say you have grown up in paradise because you don't live- you haven't lived through what I'm telling you about. Barefoot and without clothes. And old [enough to feel shame]. The only thing we had was the suit we were born in. But in those times everything was like that.

[20] Colloquialism for having fair skin and light features.

FSGa was born in the 1940s, in the years following the indigenous massacre. The time frame of the childhood he is referring to is 1940-1950, and these years would have been the most difficult for indigenous survivors. Fear and oppression would have been at their peak, and as can be seen by his recounting, these were the years of most extreme poverty experienced during his lifetime. During the course of the interviews with other participants, this lack of access to resources is cited as a fact of life, a tactic also employed among geriatrics in the UK as a way of discussing extreme hardship or historical trauma (Hiskey & McPherson 2013). "We had no clothes or shoes" or "I could not go to school because we did not have the money" are common phrases, yet like FSGa states, "no one made fun because we were all the same". There was collective hardship and suffering, but no hierarchy or power imbalances.

In the 1950s things start to change. Children are becoming young adults and the first church is established in Witzapan. Money is slowly becoming more available; however, it is not equally distributed. With this comes a deep sense of shame. It is the combination of unequal distribution of money and the resulting sense of shame which sets the tone for many of the prevailing attitudes towards indigeneity still seen today amongst Nahuat-Pipil speakers. It is also this sense of shame however which binds those who grew up during the 1940s-1950s and contributes to a sense of collective indigenous identity. As is stated by psychologists who study shame, the most powerful stereotypes of identity and values are provided by the individual's family of origin (Brené Brown 2007).

While shame may be a collective binding agent, poverty itself is seen to be above all a social rank to be overcome. The amount of social mobility involved with the feature is reliant on the acquisition of financial means, and this is achieved through a strong and disciplined work-ethic. The belief is that hard work will result in a certain amount of financial fluidity and thereby diminish the individual's association with indigeneity. However, this does not mean that upon acquisition of wealth the connection with indigeneity is lost forever. Loss of financial fluidity reverts the individual back to their original self. This is recognised in the following Extract 7:

Extract 7

[00:06:49]
MARa: We have two neighbourhoods. There is *Rosario*, which was seen as the poor one, and the *Calvario*, which was seen as the rich one. And those people, called themselves *Ladino*. So there were two groups. Between the *Ladino*, and the poor one. I guess it is up to you to decide. The poorer people worked with clay. The wealthier ones, not so much. They didn't want to do that anymore. But now that has changed again. Because now, *Rosario* works with clay less and *Calvario* works it more.

In this extract, the residents of Witzapan are divided into two groups. Those considered poor and thereby indigenous, and those considered wealthy and thereby *Ladino*. Upon attaining a certain amount of wealth, the more affluent neighborhood will attempt to shed its associations with indigeneity by no longer working with clay. This is interpreted as an attempt to improve their social status and thereby become *Ladino* by removing themselves from negative associations of indigeneity and 'traditional' indigenous craft. This rejection of the craft however means that the main source of funds is removed, and eventually dries up. In the meantime, the other group continues working with clay and rises to prominence within the community thus completing the cycle. In this manner, it is possible to see how indigeneity and the skilled craft passed down generations, have a permanence that financial wealth does not.

Unlike the generation of active *nahuahablantes*, their grandchildren, or the generation currently between the ages of 15-30, are no longer perceived as being indigenous by the oldest generation. The motivations behind this shift are unclear, however there are many reasons why this could be the case. On the one hand, the young adults have not experienced the same binding difficulties as the *nahuahablantes* and their perspectives are completely different. They are interested in attaining and developing skills such as computing and IT, which are perceived to be modern and forward-looking. Young adults today also have more opportunities to complete their education and enroll in apprenticeship schemes which result in employment opportunities in the larger cities. Until recently, the education provided by the national schooling system was not one that valued local knowledge systems or truthfully acknowledged the collective experiences of the indigenous people of the country. Like their

grandparents, they also experience shame, but it is a different type of shame. Rather than being ashamed of their immediate circumstances, they are ashamed of the past and their links to their indigenous ancestors as is explained in Extract 8.

Extract 8

[00:28:20]

NiPl: But now, if you ask young adults if they are indigenous, they say no right?

FSGa: Yes, they say no. Since they haven't experienced the past. Shame also makes them say no. There are many who deny [their ancestry].

3.3.2.4 Language

Extract 9

[00:01:19]
MARa: Well, I can only tell you from my point of view what others say about us. Because others say that indigenous people are those who have dark skin. That we have red blood. And we are- how can I say it. We have dark skin, red blood and we are identified by our language.

Of all the themes discussed, the individual's connection with their language is the most positive by far. For the *nahuahablante*, speaking their language is a source of joy, love and lyricism which is often expressed in self-composed music and poetry. Language not only connects the individual to their parents, grandparents and other ancestors, but it also connects them to each other. Most importantly, this connection to family is a sentiment that is expressed not only by the generation of *nahuahablantes*, but also by their children who are dormant speakers, and the generation of *neohablantes*. In a practical sense, language is also

starting to be seen as a source of income by some speakers, particularly as language revitalisation opportunities such as language teaching in schools, become more prevalent.

On the surface, the relationship between language and identity is clear. Speakers of Nahuat-Pipil are indigenous people and if given the option, will always choose to speak to each other and those who understand in Nahuat-Pipil. However, as was demonstrated by the distinction between *neohablante* and *nahuahablante*, for some there is a subtle difference between the relationship that the *neohablante* has with the language compared to that of the *nahuahablante*. This seems to relate back to the manner of acquisition, or more importantly the relationship between the language mentor and the acquirer. By considering the age and manner of language acquisition when approaching the response to 'What does Náhuat mean to you?' a clear pattern begins to emerge. Those who associate strong positive emotion to the language and describe how Nahuat-Pipil makes them feel have learned the language from a parent at a young age and have heard it spoken frequently in the home. Some responses include 'It makes me happy', 'It completes me', 'It makes me proud' or 'it makes my heart sing'[21], a response that was turned into the lyrics of a song by a speaker. This contrasts to those who choose to describe positive qualities of the language by responding 'It is pretty', 'It connects us' or 'it is the language we heard growing up'. Such responses typically come from speakers who have learned the language as children either from a grandparent, neighbour or friend. These speakers have weaker emotional ties to the language, but they find value in the language in other ways. It can become the language of gossip and social connectivity, a means for obtaining employment or financial reward, or the language of a partner or spouse. Interestingly, emotional connectivity to the language does not factor into the level of language activism within the individual. Having a strong emotional connection to the language does not make an individual more or less likely to promote the language. This is more or less in line with the notion that many language activists are semi-speakers (Grinevald & Bert 2011; Hinton 2011).

When asked why it was important to continue speaking the language, *nahuahablantes* highlighted truth, origins and a sense of ownership towards it.

[21] Recordings of Nahuat-Pipil speakers singing with their hearts can be found on the Language Landscape project page: http://www.languagelandscape.org/project/inyujyulu-takwikat Last accessed: 06/04/2018

Extract 10

[00:00:00]
GeVR: Well, it is important because we develop our mother tongue. And even though in my case, there are some who say I use words that aren't real, it is not true. For me they are real words. Because when it comes to a mother tongue, no one else can judge what is a lie and what is truth…some say that a mother tongue points to the values of our ancestors. They may call us old and ignorant, but they can't say the same about our ancestors. There are people who are not interested. They think we are worthless. But when we begin to speak, it's not that we become important, but by speaking the language we add value to it and to ourselves.

GeVR declares ownership of Nahuat-Pipil by challenging those who pass judgement on his use and knowledge of the language. Despite his statement, GeVR is a widely regarded Nahuat-Pipil teacher and activist and was amongst the first in the 1970s to lay down his agricultural tools in order to focus on the preservation of the language. He is a key player in the revitalisation of Nahuat-Pipil having taught the language in schools around western part of the country when there was even less support and awareness of it. In his later years, GeVR served as the director of the *Casa de la Cultura* of Witzapan coordinating language related activities, before passing this role on to MARa. In this extract, GeVR acknowledges the doubts and criticisms that have been directed at him over years in regard to his role as an activist, however he defends his right to speak and share what he considers to be his rightful legacy. This is a sentiment echoed by others who have learned Nahuat-Pipil from their parents. This idea that the language belongs to the town and is a source of pride because it is theirs in the way that Spanish is not.

The language is seen to be a direct link to indigenous ancestors. GeVR sees language as a vessel for embodying and transmitting the values and principles of speakers of the past. He believes that although he himself does not necessarily command the respect of non-speakers, those non-speakers do not have a say on how values and principles are embedded within phrases and sayings. Only speakers of the language have the right to make such a judgement

and by the act of speaking, speakers are embodying the values and principles of their ancestors.

A concern expressed by all *nahuahablantes* is the lack of uptake amongst the younger generations. From their perspective young adults have no interest in learning to speak because the language sounds ugly, is too difficult and cannot be understood. As previously discussed, shame plays a role in the dynamics of language use. It is present amongst all generations; however, it is a result of different driving forces. The oldest generation are proud of their language and their heritage. It brings them joy and a sense of belonging. For them shame is a result of the circumstances they have endured throughout their lives: poverty, hardship, social discrimination and so on. It is not directed at their indigeneity. The middle generation, or the children of speakers, are dormant or passive speakers. They have full comprehension and are proud of the family history, however when it comes to language they are self-conscious about speaking because they are afraid to make mistakes as is evidenced in Extract 11. They lack confidence in their own abilities, and this is not helped when *nahuahablantes* tell them off for speaking poorly.

Extract 11

[00:37:02]

MARa: Working here [*Casa de la Cultura*] people always ask if I can or can't [speak Nahuat-Pipil]. So I said, I have to learn. That made me want to learn. And my mother of course. When it's just the two of us we talk at night [in Náhuat], but there are times, like I said, that when she starts saying a lot and I freeze because I don't know how to respond to her. But then I say, you said this and this right? 'Yes', she says. That's why she says, 'So you can speak. Why do you say you can't?' 'It's because I can't respond to you in Náhuat', I tell her, 'but I understand what you're saying.'…I also learned to support the youth. Sometimes I used to help *niña* Paula with her teaching down at the school. That really helped me overcome my shame because before that I was really shy about it. They used to say, *ishkinahuas*…I asked my mother what that meant. She shamelessly replied, 'they're saying that you're a scaredy-cat, that you are afraid.' Can you imagine, my own mother knocking me down like that. 'No daughter, learn', she says. So I tell her, 'the problem is that I'm shy about speaking. Sometimes, I'm really afraid of speaking'. But then when I find my bearings and I find my voice in a chorus of voices, it sounds really good. That thing with the national anthem was a huge experience for me. For me it was a moment in history being able to walk forward and sing it [in Nahuat-Pipil].

It is unclear what the youngest generation think, the grandchildren of *nahuahablantes*. Certainly, the speakers themselves believe that their grandchildren are not interested in knowing anything about the language and are ashamed of their cultural identity. However, the researcher did not interview any members of the youngest generation and this would benefit from further research. What is clear, is that both the *nahuahablantes* and their children believe that the youth play a key role if efforts to maintain the language are to continue.

Extract 12

AnLL: I think that if we continue teaching the children, not the elderly but the children, Nahuat will continue. Nahuat will grow. But if we teach the elderly, it's a lie. They're headed in the same direction we are. They're on the way [out]. Children on the other hand, are not. They are little sponges waiting to be taught.

3.3.2.5 Conflict and violence

The issues of shame, discrimination and social segregation are related to historical events which the Nahua-Pipil have had to endure. The massacre of 1932, the twelve-year civil war (1980-1992), and currently gang disputes over territory, are events which are all connected. The aggression experienced by indigenous people in 1932 had a spillover effect to the Civil War (Ching & Tilley 1998; Lauria-Santiago 1999; Gould & Lauria-Santiago 2014) which has served to push indigenous groups to the fringes onto territories which the government, corporate organisations and organised crime have deemed to be worthless. I believe that it is because of this marginalization that traditional ecological knowledge is valued and has been internalised as part of the identity. As stated previously, it is because of this knowledge that indigenous people have managed to survive until now. Nevertheless, these historic events of intense violence have permeated indigenous identity, and the collective memory of the violent acts endured are never far from the mind is seen in Extract 13.

Extract 13

[00:48:36]

NP: What do you think will happen to the language in ten years' time?

MUGa: Here what will happen...it's because now…well now we're talking about a time of peace. Now there is peace. Today there was peace. In that time there was no peace. What can happen in the end is that we lose all the Nahuat speakers again. Why will they be lost? Because…there will be another time when they will forbid it. They will, like they say we will be persecuted, those of us who speak this language Nahuat. They will throw us out, because that's what they did before. That's why people went losing it. Because they were afraid. That's why, that's why so many people, no they said, if that's what will happen to me I'd better lose it. No, I will grab the- grab this word in Spanish. This is why we speak Spanish. Because of fear. Since today all- we are all free because there is peace. If we go back to previous times, that's where the language will start to be lost.

When asked to speculate about the future MUGa responds in relation to what she already knows: the events of the past. Even though MUGa was born ten years after the massacre took place, she speaks of it as if it had happened to her. It seems as if the targeted violence towards indigenous people has been internalised as part of an identity and forms part of the oral history.

Within psychiatry researchers have looked at how culture and language affect the manner in which traumatic events are perceived, codified and reacted to (Marsella 2008; Marsella 2010). This type of research was initially seen to be controversial by some as it questions the universality of human neurological response to externally motivated stress. However, with increased interaction between western NGOs, mental health practitioners and non-western groups who have experienced trauma, it is becoming increasingly evident that cultural

differences do play a role in the manner which trauma is dealt with. For example, the Western based practice of verbally processing traumatic events in order to externalise emotion does not work in a culture where speaking about one's emotions is not the social norm. This was the case in Taiwan in 1999, when after a large earthquake, local psychiatrists trained Western medicine became frustrated by the fact that people preferred to cope by visiting Buddhist temples, rather than by speaking to medically trained psychiatrists (Lin 2000). Cases such as these, demonstrate that although neurological responses to trauma are universal, the manner in which events are processed and encoded are embedded within language and culture.

It is uncertain the extent to which the on-going trauma that the Náhua-Pipil experience has been internalised as part of their culture, however on a broader scale, violence has been normalised within Salvadoran society and culture (Delugan 2013). Violence has been a part of history, and it is present within the oral history that is passed down from one generation of Nahua-Pipil to the next. The stoicism, the ability to face, endure and survive conflict due to the knowledge and skills that have been passed down many generations are part of the indigenous identity, and the knowledge systems such as traditional ecological knowledge encoded within language have evolved and adapted over the course of events in order to guarantee survival.

3.3.2.6 Colour, Ancestry and Bloodlines

Two very strong features that factored into the concept of indigeneity were the colour of one's skin and the notion of ancestry or blood relations.

Extract 14

[00:29:00]
FSGa: …Many claim to be ladino. That is a different race. Like you. It is a white skin. And we say, they are now ladinos. They have money. We don't know if they have money or not but that is how a person is differentiated. The colour, we are not like you who have for example lighter skin. Sometimes there are changes that come about. We say, 'he's indian but he's white'. And it's a different colour, a different race. We cannot mix with them.

In the first part of Extract 14, FSGa points to skin colour as an indicator of indigeneity and financial wealth. Those with light skin have money, much like, in the eyes of FSGa, the interviewers. It is worthwhile to note that while the researcher does in fact have lighter skin than most people in El Salvador, the other two interviewers do not. In fact, as is mentioned in Section 5.2.3, an outsider might have difficulty differentiating based on physical features alone, an indigenous person from a ladino or mestizo.

The Salvadoran government puts the indigenous population at 13,310 out of a total population of 5,744,113 (Censo Nácional 2008). This means 0.2% of the Salvadoran population is considered to be indigenous. The overall distribution is cited as 86.3% mestizo, 12.7% white, 0.2% Amerindian (includes Lenca, Kakawira, Nahua-Pipil), 0.1% black, and 0.6% other. It is uncertain how people are categorised and whether these results are based on self-assessment, however the researcher's consensus is that these categories are based on socio-economic status rather than physical appearance. Putting these figures in context with Extract 14, it becomes clear that the issue of colour is really one about perception and the social, economic and political standing that one is perceived to have. In other words, if a person is perceived to be educated and has a job that does not involve either working in the fields or working with clay, they are "white" and ladino.

In 1942, two American psychologists Clark and Clark[22] created an experiment to measure what they termed internalised racism within young African-American children in the United

[22] Doll experiment video: https://www.youtube.com/watch?v=PZryE2bqwdk

States. Children from the ages of 6-9 were presented with a choice to play with either a light or dark-skinned doll. The children were also asked to answer the following questions:

1. Show me the doll that is ‘pretty’.
2. Show me the doll that is ‘ugly’.
3. Show me the doll that is the ‘nice’ doll.
4. Show me the doll that looks ‘bad’.
5. Give me the doll that looks like you.

In the original Clark and Clark study it was found that 72% of children preferred to play with the lighter skinned dolls. When this study was reproduced in El Salvador in 2009, 90% of children between the ages of 7-12 preferred to play with the light-skinned doll; this figure dropped to 69% among 13-17 year olds (De Burgos Henriquez 2010: 11). These results were based on a sample of 400 participants who were also asked to answer the above questions. It is also telling that when preparing for this experiment, the researchers struggled to find a toy store that stocked dolls that weren’t blond with blue or green eyes. When asked about the lack of darker dolls, store owners and managers responded that there was simply not a demand for them, and if they were stocked they often ended up being sold at highly discounted prices because no one would buy them (De Burgos Henriquez 2010: 11).

The above extract and the replicated doll study very clearly show the extent to which racism has been internalised in El Salvador. In the second part of Extract 14, it is evident that these perceived differences of skin colour also have an element of exclusivity. Once a person moves from one category to the next, they are no longer allowed to mix with the previous category. This is exemplified further by Extract 15.

Extract 15

[00:03:07]
MARa: Yes, because of her colour. Because, think of Niña X. I think you know her right? She wears the *refajo*[23] and everything. With everything. Because she identifies as indigenous even more [than anybody]. But a lot of people say [tongue click] 'What is that woman doing wearing a *refajo*? That doesn't belong to her. Just look at the colour of her skin. She has that, we are poor/copper[24].' [Skin] is something that is seen.

Notions of 'race' are not based on genetics or biology but rather are argued to be social constructs and categorical concepts aimed at projecting a political and social ideal (De Burgos Henriquez 2010). Skin colour aside however, another key marker of indigeneity is ancestry and the notion of being 'red-blooded'. Though it is not clear what it means exactly to be 'red-blooded' it is often cited as the link between the living individual and their ancestors. This direct link is recognised by some, particularly if they see themselves as physical and socio-economic mirrors of their ancestors. However, in many cases such as the one outlined below in Extract 16, there is an outright refusal outside the language community of Witzapan to recognise ancestral origins. This denial of the self, has negative effects on self-esteem and creates an identity vacuum (De Burgos Henriquez 2010).

[23] Traditional skirt used by indigenous Nahua and Mayan women
[24] MARa either said 'pobre' for poor, or 'cobre' for copper. The researcher was unable to get clarification on this.

Extract 16

[00:05:49]
MARa: Older people and us, the children at least right? The children. For example, my mother is indigenous. I am her daughter, I am, I am indigenous. Right? Although, sometimes talking about this with other people who say that all of us born in El Salvador, we are all part indigenous. But I'll tell you something, at my work, we have someone who looks like her [points at EbDo]. She is like that. When we say that we are all indigenous because we carry their blood, she says, 'No. How are you going to believe that I am indigenous? No,' she says, 'that's embarrassing', she says. And they say to her, 'No, but it's because we are all indigenous. Whether we want it or not, we carry the same blood. We carry the same blood.' But that's how it is. We have always had that discussion. But we are indigenous. We are indigenous.

3.4 Culture and Identity

In Latin America being indigenous can have different implications. It is a term that can be used to refer to people with a particular physiognomy; skin colour, eye shape and stature are some of the features that may point towards a particular biological ancestry (Masferrer & Mayer 1981; Barth 1998; Lemus 2011) as is discussed in §3.4.1. However, the term 'indigenous' is also a socially charged one which can be used to refer to an individual's social, political or economic status (Lara Martínez 2006; Tilley 2002; De Burgos Henriquez 2010) as discussed in §3.4.2. Lastly, the term can be used to refer to a group that shares an ideological identification with the views and values of their ancestors. Whether this group chooses to display their affiliation with such values or not via the use of symbols, rituals or language, will be discussed in §3.4.3. One thing which is not often discussed or considered, is the importance that the indigenous person places on possessing knowledge about the natural world. This is discussed in further detail in §3.4.4.

3.4.1 BIOLOGICAL ANCESTRY

It is important first to define an 'ethnic' group and present the various features which factor into this definition. One way of defining an ethnic group is by referring to individuals who share cultural, linguistic, religious and biological features (Lemus 2011). This definition overlaps with that of Barth (1998) who views ethnic grouping as consisting of the following four factors: 1) Biologically perpetuated, 2) sharing of fundamental cultural values which manifest in cultural forms, 3) integrated communication and interaction, and 4) self-identification (Barth 1998). Biological perpetuation refers to having ancestors and descendants of the same ethnic group. The sharing of fundamental cultural values and manifestation of cultural forms can refer to cultural celebrations such as the Panchimalco flower festival or the festivities of the Day of the Dead in El Salvador. His third feature refers to language a shared language or shared communicative and linguistic markers. Finally, the fourth feature is self-explanatory. If an individual chooses to identify with an ethnic group, then they are a member of that ethnic group. Nevertheless, this model of ethnic grouping does not consider group acceptance of the self-identified individual. In this respect Masferrer (1981) offers three levels of identification:

1. Sociocultural
2. Blood relation
3. Descendence

The first point recognises that group identity is an important component. Therefore, in this model, the group must recognise the individual as belonging to the group in order for self-identification to take effect (Masferrer & Mayer 1981). In the second level of identification, Masferrer (1981) clarifies that in order to qualify as belonging to a specific group, at least 25% of the individual's bloodline must be shared with the group. This ties in with the final level which states that the individual must have at least a grandparent who would have been considered a member of the ethnic group. This level of connectivity with ancestors is seen in indigenous communities in El Salvador. Within a given community, indigenous people in El Salvador identify each other amongst themselves (Lemus 2011, 10). They can speak about their indigenous parents or grandparents and are often able to identify speakers of their languages. As a result, it is claimed that the last generation of indigenous people who have

survived the massacre of 1932, still recognise their ethnicity and that of their descendants (Lemus 2011, 11) as was exemplified in §3.3.2.

3.4.2 CULTURAL IDENTIFICATION

Some of the experiences during my time in the field have made it clear that a distinction must be made between the different types of indigenous identities that exist within the Nahuat-Pipil world of El Salvador. Certainly, this topic is very often deliberated between the various indigenous groups, and the discourse surrounding what it means to be indigenous is often used as a tool to increase the divide between the groups. As such, it is important to define the type of identity which I aim to uncover and describe, as well as briefly define and discuss the other types of indigenous identities which are emerging in the country.

I believe that my particular role as a language documenter requires that I describe as accurately as possible what I perceive to be the local identity or worldview of the Nahuat-Pipil. As a linguist, this means describing the values, beliefs and worldview of those who not only identify as indigenous but have also been raised by someone who speaks the language as a 'native' language. This view is based on the perceptions of the indigenous people themselves when it comes to defining indigenous identity or ethnic grouping. Whether this person speaks Nahuat-Pipil or not is not so important so long as they have been brought up by a mother or father who spoke the language and thus had access to the collective cultural values embedded in the language. This is an assumption that is echoed by the Nahuat-Pipil themselves in the distinctions they make between 'Neo-speakers' and 'native-speakers' discussed in §3.2.5. For the Nahuat-Pipil, a native speaker learns to speak the language from "the breast of their mother", whereas the neo-speaker does not have that proximal connection. Regardless of their level of fluency and the depth of their knowledge, the neo-speaker will never become a native speaker if they did not learn to speak Nahuat-Pipil from a parent. This implies that an additional element is passed on from parent to child that cannot be learned if that connection does not exist. In relation to how knowledge and ways of thinking about the world, this ties in with the observation that typically, cognitive categories are acquired through normal exposure to caregivers and culture with little explicit instruction (Glushko et al. 2008: 129)

On the other hand, there currently exists an indigenous movement carefully constructed and put together, which is in many ways artificial, given the number of elements that have been borrowed and combined into the Nahuat-Pipil mix from other neighbouring indigenous identities such as the Maya (Metz 2012). This includes many people who do not necessarily identify with each other in terms of internal values and beliefs, but rather portray the outward physical characteristics of belonging to an indigenous group by dressing, accessorizing and labelling themselves in specific ways. Despite their internal differences, these individuals all have one thing in common: they are trying to find their place in the modern world while retaining a connection to their indigenous identity. In the following section the role of the natural world in relation to the construction of identity is discussed.

3.4.3 THE BIOCULTURAL WORLD

The domestication of plants has resulted in the agricultural practices used today around the world. Early domestication efforts yielded crops that were much smaller in size and produced much lower yields than today. The volcanic archaeological site *Joya de Cerén,* the Jewel of Cerén, in El Salvador provides a useful insight into paleoethnobotanical samples and the cultivation practices that took place around the time of the *Loma Caldera* volcano's explosion (590 AD). The large amounts of wet ash at low temperatures which covered much of the surrounding Mayan villages, proved to be the perfect environment for the preservation of plant materials (UNESCO 2016). When visiting what is now a UNESCO World Heritage site, it becomes possible to see how much smaller the relative size and output of food crops were in comparison to today.

The domestication process of corn (bot. *Zea mays*), squash (bot. *Cucúrbita sp*.), chili peppers (bot. *Capsicum sp*.), beans (bot. *Phaseolus sp*.) and some roots such as the potato (bot. *Solanum tuberosum*) and cassava (bot. *Manihot esculenta*) began around 4,000 BC, and it is estimated that the first agricultural communities appeared in 1,600 BC and resulted in a population boom in the Americas (Reader 2009).

The Nahuat-Pipil language distinguishes cultivated and domesticated plants or crops from their wild counterparts via the use of a word-final classification system such as /-ti/ and /-t/ as is discussed further in Chapter 5. Through this, we see an example of the contrastive duality

of Nahua-Pipil worldview in the opposition of carefully selected and domesticated crop wielding plants, to their wild counterparts. Wild plants are those that continue to grow and thrive in the wild, for the most part forgotten by mainstream society in El Salvador yet, nevertheless used to supplement the lives of those who know how to consume them. Wild, uncultivated counterparts have survived and continued to evolve in the wild, often building up natural defences to plagues, droughts, floods and extreme cold which their domesticated relatives no longer have (Lara Guerra 2006: 36). Thus knowledge, of both wild and cultivated plants can be important to ensuring a plentiful yield of crops and a stable source of food and income (Hunn & French 1984; Brown 1985). Reference to these is prominent in the Nahuat-Pipil lexicon. Of interest is how the distinction between cultivated and un-cultivated crops is morpho-syntactically marked in the language as in the case of *kakawat (*cultivated cacao, bot. *Theobroma cacao)* and *patach(ti) (*uncultivated cacao, bot. *Theobroma bicolour)*. This is discussed further in §5.2.2.

Lara Guerra (2006) discusses the nationalistic importance of plants within El Salvador in the creation of a unified national identity. He considers plants that have been raised to national emblematic status via legislative and executive decree. The *flor de izote (*bot. *Yucca gigantea* Lem.*),* or *shuchit isut* in Nahuat-Pipil, for example is El Salvador's national flower. The *maquilishuat (bot. Tabebuia rosea),* or *makwilishuat* in Nahuat-Pipil, is the national tree. Finally, the *ceiba* (bot. *Ceiba pentandra* (L.) Gaertner) or *puchut* in Nahuat-Pipil, is known as the tree of peace by Executive Decree. All of these politically marked symbolic plants are also culturally relevant symbols for the Nahuat-Pipil. The *ceiba*, or *puchut*, is a large towering tree that acts as reference point when providing directions. It is also features widely in the local folklore, often taking the role of the protector and nurturer of the protagonist (Schultze-Jena 2014). The *maquilishuat* is a tree whose branches metaphorically represent the family unit as illustrated in the phrase, "Se, ume, makwil". The literal translation for the phase is "One, two, five", and by using the hand as a prop or a guide, this phrase is figuratively translated as "Father, mother, and their children". The leaves of the *maquilishuat* are always present in groups of five, much like a hand and its five fingers, thus it is said to represent the family unit. Finally, the *izote* flower while not symbolic, features widely in the local cuisine.

There are several plants which greatly contributed to the shaping of El Salvador as the nation we are familiar with today. These include the domestication of cacao, indigo and eventually the introduction of coffee as an agricultural crop. By far the most valuable crop when the

Spanish arrived was cacao, a bean known for its high nutritional value, use in religious ceremonies, and used as local currency when gold or money were not available (Sampeck 2013: 41). Interestingly, this perception of cacao as a high value crop is still retained today by the modern Nahuat-Pipil, as will be discussed in Chapter 5. Cacao has been cultivated for over 3,000 years in Mesoamerica (Mcanany & Murata 2007) and is believed to have originated in the Amazon, though it is unknown whether it dispersed naturally upwards to Central America or was brought there via human migration and trade. El Salvador's economy was based on the export of cacao between the 16th – 17th Century and the cultivation of this crop was based in Western El Salvador in the state of Sonsonate. As a result of this, the state of Sonsonate was, and still is, an important political and cultural centre for the indigenous people, having been one of the most important pre-Columbian settlements of Southern Mesoamerica (Sampeck 2013: 39). The decline in the cultivation of cacao around 1580 was a result European led expansion and by 1625 other sites such as Guayaquil, Ecuador and Venezuela dominated the production and export of cacao (Escalante Arce 1991: 40). This decline in Indigenous led production in Izalco was replaced by the rise of the cultivation of Indigo (Lara Guerra 2006: 51).

Indigo was a mostly wild plant at the time of Spanish contact however it was used by Mexican Indians and Nahuat-Pipils as a blue dye for clothes. It is claimed that most of its production was centred in El Salvador (Lara Guerra 2006: 40) making the country an important centre for the export of indigo to the markets of Spain, England, France and Holland. It remained El Salvador's main export and source of income from the decline of cacao until 1880-1890 when an artificial and cheaper alternative was discovered by Bayer in Germany. At this point, the indigo market crashed and was quickly replaced by coffee.

Whereas those who cultivated indigo were of humble background with years of knowledge and collective experience behind them, coffee growers were young, mestizo and less socially accepted, due to their mixed background (Lara Guerra 2006: 42). Perhaps because of this social animosity they were more willing to invest in coffee, a previously unknown crop introduced by the Spanish, and thus began taking over the lands that had previously belonged to indigo farmers in order to cultivate coffee. Ultimately, it was the agricultural reform that decreed that all public lands should be used to cultivate coffee which resulted in the indigenous massacre of 1932 (Gould & Lauria-Santiago 2014; Lauria-Santiago 1999).

3.5 Conclusion: Why is categorisation worth looking at in this particular context?

This chapter has provided an outline of El Salvador's geographic, linguistic, political, religious and agricultural history in an effort to demonstrate the links between these factors and the construction of indigenous identity as well as the impact on language and its use. As was outlined in Chapter 2, the semantics and cognitive grammar of a language are context dependent (Langacker 1987; 1991; 1999; Taylor 1999; Fillmore & Atkins 1992; Fillmore 2006), and therefore it is important to consider the context of a language and its speakers in order to better understand them and the way that language is used. This chapter has demonstrated how past events in El Salvador and the geographical area have contributed to the formation of oral history and local folklore.

The Nahua-Pipil who settled in El Salvador originated from Mexico, and it is believed that two waves of migration occurred between 900-1500 AD (Sampeck 2013) thereby causing a separation from Nahuatl culture and resulting in the Nahuat-Pipil language. The geographical terrain between central Mexico and El Salvador is very different, and it is likely that lexical items used for describing the natural world would have had to be adapted in order to describe the new flora and fauna. Little has been done until now to linguistically document and describe Nahua-Pipil knowledge of the natural world, and its importance to speakers of the language.

The history and politics of El Salvador have provided the background to better understand the importance attributed to TEK by the Nahua-Pipil. Through conversations with Indigenous people themselves, it has been found that they are still highly affected by the genocide of 1932 and have incorporated the dialogue around it into their indigenous identity. The dialogue around common suffering and survival is particularly strong, and survival has been possible through the possession of TEK. The appreciation of traditional knowledge and historical trauma have both been passed down from the generation that first experienced the targeted violence, down three generations to the grand-children of Nahuat-Pipil speakers today. This is thus termed to be an example of historical trauma. As a result, indigenous identity, culture and language in El Salvador are still highly associated with negative factors. These include but are not exclusive to: poverty, isolation, social rejections, and persecution.

Further research is needed however to concretely ascertain which factors are attributed to indigenous language and identity, as well as traditional knowledge, by individuals in the Nahuat-Pipil community who are under the age of 30 as my fieldwork focused on older speakers.

For those over 30, links to the land and the environment are still seen to be highly relevant. These links are practical and concrete as without the knowledge and ability to work the land and forage food from the natural world, the indigenous people of today would not have survived the hardships that were imposed on them. It is this knowledge of the natural world that has ensured the survival and endurance of indigenous people in El Salvador. Furthermore, this knowledge is encoded and transmitted via the language, Nahuat-Pipil, and through practice in livelihood activities. Thus, to honor the request of the Nahuat-Pipil themselves and to help preserve their knowledge of the natural world, this thesis describes the ways that this knowledge is categorised and classified in the language. The following chapter looks at how the methodologies, methods and instruments that have aided the collection of data on the categorisation and classification of Nahuat-Pipil TEK.

4. METHODOLOGY, METHODS AND INSTRUMENTS

4.1 Introduction

This chapter provides an overview of the methodologies (§4.1), methods (§4.2) and instruments (§4.3) that I have selected to conduct research and collect data on the categorisation and linguistic classification of Nahuat-Pipil TEK. In terms of methodologies, I employed an ethnographic (§4.2.1) and interdisciplinary approach (§4.2.2) with a strong emphasis on ethical collaboration (§4.2.3). I largely drew upon ethnobotany, anthropology, the collection of oral histories, and sociolinguistics for my selection of methods, in addition to my core background as a linguist and language documenter. My research has also included the creation of spaces for creative and artistic expression, which resulted in two photographic exhibitions, which have greatly contributed to the establishment of trust and my own acceptance within the Nahuat-Pipil community. In this sense, the methods I implemented are to an extent experimental and adaptive to circumstances as well as the intangible needs of the Nahuat-Pipil community. I have sought to push the boundaries of the approaches and instruments that can be utilised for linguistic data collection as well as increase the accessibility and minimise the barriers for who can contribute to the research process.

4.1.1 TIMELINE

To better understand the data collection processes it is important to acknowledge how the research was planned and how specific activities were timed, as demonstrated by the Timeline presented in Table 18. The timing of the sociolinguistic interviews within the project, for example, was essential as it was necessary to first establish a working relationship of trust between myself and the Indigenous participants. I, thus, established contact with Indigenous people of El Salvador well before the start of the PhD research project. Participants were invited to inform the planning of what was to be the final chosen topic. In order to develop a starting point for the research project, time was taken during personal trips to El Salvador to gauge whether a research project focusing on language documentation would be of interest and use to Indigenous communities. In the pre-PhD stages, Izalco and Nahuizalco, two symbolic Indigenous cultural urban centres were visited.

During a visit to Nahuizalco, an Indigenous leader proposed the documentation and preservation of knowledge about agricultural practices, plants, and the environment.

Table 18: PhD Fieldwork Timeline

Month	**Activity**
September 2012	First visit to the Nahuat-Pipil Indigenous community in El Salvador
September 2013	PhD research project begins
August 2014	Pre-fieldwork visit to El Salvador to establish links the field-site
February 2015	First fieldwork visit to conduct elicitation and cognitive categorisation tasks
May 2015	Return to London
September 2015	Second fieldwork visit
January 2016	Sociolinguistic interviews
February 2016	Exhibitions 1&2
May 2016	Return to London

As can be seen, the data was collected in two stages. The first stage of fieldwork focused on eliciting plant-related linguistic information such as names, naming and categorisation strategies, and descriptions of uses. This three-month period was also vital for further developing relationships with the community and becoming accepted as a contributor to the village ecology. This was done by participating in cultural events, lending audio and video recording services for such events, living in the village, and partaking in daily food preparation activities.

The second field visit was more prolonged as it lasted 7 months. I used this time to explore further nuances of linguistic and non-linguistic categorisation systems, collect local narratives and metaphors, and conduct the sociolinguistic interviews on the concept of Indigenous identity. It was during this stage that events and talks that had been planned during the initial fieldwork visit came to fruition. These discussions included the creation of an exhibition at the National Museum of Anthropology[25] (MUNA) in San Salvador (Figure 16), which was the first of its kind to exhibit the Nahuat-Pipil people and their language in a celebratory

[25] Own translation from Spanish name *Museo Nacional de Antropología Dr. David J. Guzmán*

manner (SECULTURA 2016). The exhibition not only featured information and photo descriptions in both Nahuat-Pipil and Spanish, but it was also the first time that Indigenous people were present during an event celebrating their language and culture at the MUNA. They furthermore had the opportunity to speak and share their thoughts during the inaugural event in a public manner as was stated by José Heriberto Erquicia Cruz, Director of MUNA, in his inauguration speech of the event. A second exhibition was organised at the French Alliance in San Salvador which celebrated the documentation activities of present and past language revitalisers. This exhibition acknowledged not only the activities of current groups and individuals such as Tzunhejekat and I, but also the acts, work and sacrifices that the Indigenous people themselves have made when taking steps towards preserving their language. These public events which ultimately cemented my position within the Indigenous community during this time, as such public declarations of inclusion, respect, and admiration were unprecedented. During this period sociolinguistic interviews touching on notions of identity and indigeneity presented in §3.3.2 were conducted. Analysis of the data collected during fieldwork is supported by pre-existing documentation efforts such as those outlined in §3.2.4.

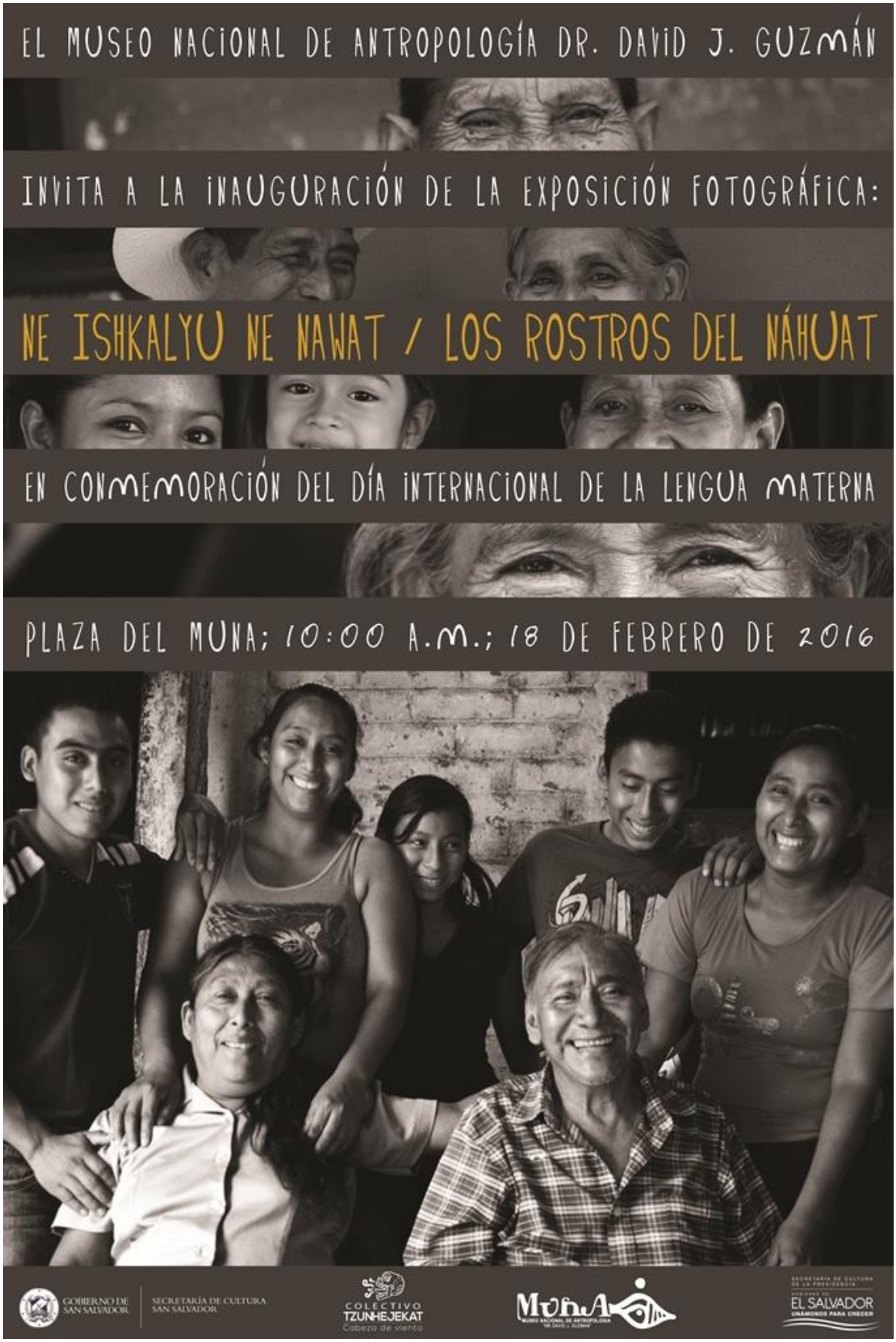


Figure 16: Exhibition poster for 'Ne Ishkalyu ne Nawat', The Faces of Nahuat-Pipil

4.1.2 CHAPTER OUTLINE

The chapter is divided into three main sections: §4.2 Methodology, §4.3 Methods, and §4.4 Instruments. Starting with the Methodology section, in §4.2.1, I present Traditional Ecological Knowledge (TEK) and my position on why it is important to document it. Following this, I introduce the approaches and methods used for this work from an ethnographic perspective by discussing the concepts of subjectivity and reflexivity within my research and explaining my choice to employ a reflexive approach to create the current thesis (§4.2.2). This is followed by §4.2.3, an overview of different approaches, from multidisciplinary to transdisciplinary ones. In §4.2.4, I discuss the specific ethical issues that I encountered and addressed, particularly when dealing with the collection of ethnobotanical data. This includes a discussion about intellectual property rights and some of the legal frameworks in place to protect them, such as the Convention for Biological Diversity and the Nagoya Protocol. Furthermore, to maintain an ethical approach, I have sought to understand the existing social structures within the language's specific community and aspects of social structures like the distribution of power, my own position within these power relations, and how this affects data collection and language use. With this in mind, I acknowledge my choice to incorporate community-driven approaches for this project.

In §4.3, I define the scope of my research including some of the concrete outcomes of this body of work, specifically, an increase of the lexical database available for Nahuat-Pipil (§4.3.1). I then present the parameters of the plants which were utilised in this study (§4.3.1), followed by a description of data collection methods in §4.3.2, and methods used for analysis in §4.3.3. This chapter ends with a description of the instruments used for carrying out methods and analysis in §4.4.

4.2 Methodology

This PhD is in many ways a personal project. I was born in El Salvador and I moved away when I was a child as partly a result of the Civil War. Despite having left at a young age, I still have a close relationship with the relatives who continue to live there, and I often visit them. This means that unlike those who conduct research in a country which is not their 'home' country, the division between research and personal family life in my case is not

as clearly defined. This is not to say that the research and data presented is 'tainted', but I do believe it is important to acknowledge how my personal relationship to the country and the people I have met informs the research which I have conducted. Rather than working with participants who I happen to collect information and data from, I work with individuals who have not only become my friends, but have also helped me see and understand another side of this country, something which is personally very valuable to me. This has resulted in the creation of a mutually beneficial relationship between myself and speakers of Nahuat-Pipil which has given way to mutual respect and balance between our interactions.

I am a 'native' speaker of Salvadoran Spanish and return to my native country frequently, at least once a year. During my fieldwork I attended Nahuat-Pipil language classes at the University of El Salvador (UES) and Central American University (UCA) taught by members of Tzunhejekat as it was important to me that I be able to interact with language consultants in Nahuat-Pipil. As I was unable to learn Nahuat-Pipil before commencing fieldwork, in the first stage of fieldwork much of the documentation of the Nahuat-Pipil plant names and categories took place in the language with the help of research assistants: Carlos Alberto Ruiz Cuellar, Alberto Cruz and Alex Parada Henriquez. These men were studying at UES at the time, are fluent speakers of the language and aspiring linguists, and at that point in time, had had a working relationship with members of the Nahuat-Pipil speaker community of Witzapan for approximately three years. During the second stage of fieldwork, the sociolinguistic interviews were conducted with the help of Ninel Pleitez, a local anthropologist affiliated with the MUNA, and Carlos Alberto Ruiz Cuellar.

Considering my own relationship with the people I have worked with, it has been vital to employ methodologies that are both mindful of my history with El Salvador, as well as respectful of other Salvadorans relationship with local Indigenous people. Thus, I have employed approaches that allow for observation and are reflexive in their nature, such as ethnography, as well as those which are flexible and open enough to allow for a range of people with different backgrounds to interact and work with each other. For this, an interdisciplinary grounding has been essential. In the following section I discuss how principles of ethnography have informed the research conducted and how it has allowed me to position myself within this research project.

4.2.1 DEFINING AND DOCUMENTING TEK

As previously discussed in §3.1.4, traditional ecological knowledge (TEK) is adaptive, cumulative, and dynamic. It is deeply rooted in the different facets of the social systems of its users. It cannot be understood or applied without looking at the broader social, economic, historical and political dimensions (Stevenson 1996: 281), and thus it is not possible to understand how TEK is perceived, conceptualised and embedded within cognitive processes by simply looking at how it is represented in language.

When it comes to TEK and its position within the context of endangered languages, in general, it is observed that the parts of the lexicon dealing with TEK are the most threatened (Si 2011). This heavily affects Nahuat-Pipil as well. For example, children are pushed to enter the Spanish-medium education system in El Salvador, which is greatly influenced by Western ideologies, as well as its attitudes towards learning and priorities of what should be learned. As a result, a Nahuat-Pipil child's exposure to the oral transmission of Nahuat-Pipil TEK is greatly minimised. Similarly, young adults migrate to larger cities, or abroad to Mexico, the United States or Canada in search of work, hence losing much of this knowledge which is considered less relevant or even backward in their new context (Little 2008; Gould & Lauria-Santiago 2014). Therefore, in the interest of preservation of traditional knowledge, it is of vital importance to create accessible materials of TEK documentation where possible to preserve this knowledge for future generations.

The collection of TEK requires ethical consideration as this can bring up issues of ownership and knowledge sharing, as well as issues concerning movement and sustainability. Internationally, issues around knowledge ownership and sharing are recognised by the World Intellectual Property Organisation (Mugabe 1999), and issues around biodiversity are recognised by the Convention on Biological Diversity (1992) and its subsequent protocols: The Cartagena Protocol (2000) and the Nagoya Protocol (2012). The Convention on Biological Diversity (1992) was formed via the recognition that the biological diversity of the planet is "a global asset of tremendous value to present and future generations" (SCBD 2019: n.p.). Given the increase of threats to species and ecosystems, and the recognition that this is a result of human activity, the Convention on Biological Diversity was opened for ratification in 1992 and had been signed by 168 countries by 1993, including El Salvador. The ultimate aim of the convention was to take steps towards "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from

the use of genetic resources" (SCBD 2019: n.p.). Following this, the Nagoya Protocol (Greiber et al. 2012) looks at Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation (ABS). It provides and enforces a legally binding framework of ABS at regional, national and local levels, within the territories of party members. It is a concrete example of how recognition of the value of biodiversity, ecosystems and knowledge of these is key to their conservation and sustainability (Greiber et al. 2012).

The Convention and its subsequent Protocols provide access to information and legally binding frameworks which can be adopted by those who have opted in. El Salvador has signed and ratified both the Convention (1994) and the Cartagena Protocol (2003) but is yet to ratify the Nagoya Protocol. Instead, El Salvador's Biodiversity Strategy (2013) has been developed in accordance to the country's Environmental Law (Constitution of El Salvador, Art. 69). The overall goal is to reverse environmental degradation thereby reducing vulnerability to Climate Change. The strategy identifies priority areas and has 3 main goals:

1) biodiversity mainstreaming in the economy (agriculture, fisheries and aquaculture, tourism);
2) restoration and conservation, including critical ecosystems (mangroves and beach ecosystems, rivers and wetlands, gallery forests and other forest ecosystems);
3) biodiversity for the people (rescue of traditional conservation practices for genetic resources, rights of use of biological resources, local economic options).

As emphasised by the third point, there is a governmental interest to work with people op issues of conservation. Based on initiatives by the Ministry of Environment and Natural Resources (MARN), such as the collaborative project created in 2009 with the support of the German Ministry for Cooperation and Development (BMZ) and German International Cooperation (GIZ) with the aim of opening up communication between indigenous people in El Salvador and MARN in order to combat the effects and impact of climate change in the country's coastal regions (Salamanca 2013). In this respect, the indigenous people of El Salvador (Pipil, Lenca and Cacaopera) received an unprecedented opportunity to share their specialised knowledge of the environment and have an impact on a national scale by being directly involved in reforestation efforts to minimise flooding and erosion in coastal regions. This was done via focus groups of indigenous leaders and government officials to facilitate knowledge exchange. At the time, MARN was the only government office to create spaces

which encouraged any type of dialogue between the government and indigenous people in El Salvador (PC: 2012). The respect and appreciation that these activities generated by encouraging knowledge exchange between various stakeholders, presented a rare opportunity to preserve and document TEK, and allowed those who possess it to acknowledge and value TEK's importance as well.

There is evidence that points to the links of indigenous people to the land of their ancestors thereby indicating a positive relationship between the sustainability of indigenous land, language and culture and an indigenous person's subjective, emotional wellbeing (Biddle & Swee 2012). Traditional diets such as those gained from hunting, fishing and foraging, are likely to be healthier than the alternatives found in many rural communities (Stuart-Fox 1999), and there is a link between cultural continuity, which includes language and traditional life style, and wellbeing. (Oster et al. 2014). A survey of Canadian Aboriginals found that "when First Nations live in their language, they are maintaining all that [they] believe in and all that you've been born with" (Oster et al. 2014: 3). This observation concluded that without their use of traditional language, Nations were deemed incapable of succeeding since language is at the centre of culture and provides the blueprint for how to live and survive.

As can be seen, working with and documenting TEK is a valuable endeavour which not only benefits indigenous people and their wellbeing but is also key for finding transdisciplinary solutions to global problems such as fighting the effects of Climate Change. With the rapid decrease of transmission of traditional knowledge given factors such as social mobility due to issues of violence, economic incentives, and the devaluing of traditional knowledge in favour of knowledge on modern technologies such as computing, it becomes imperative to document TEK for the benefit of all before it disappears altogether.

4.2.2 ETHNOGRAPHY, SUBJECTIVITY AND REFLEXIVITY WITHIN RESEARCH

One result of the research carried out by Boas, Sapir and Whorf, was the incorporation of ethnography as a methodology within linguistics, and this signals a meeting point between linguistics and anthropology. Davies (2002) defines ethnography as a research process based on fieldwork using a variety of mainly, though not exclusively, qualitative research techniques. It includes researcher engagement in the lives of those being studied

over an extended period. The eventual written product draws on the period of fieldwork and usually emphasises descriptive detail as a result (c.f. Ellen 1984: 7–8; Hammersley & Atkinson 1995: 1–3; Davies 2002). The enduring utility of ethnography as both a product and a technique is perceived to be a result of its socially-embedded nature and the drawn-out character of any ethnographic investigation (Atkinson et al. 2014). Ultimately, ethnography seeks to understand the way that a given culture perceives, organises and classifies the social and natural world it lives in. It attempts to identify the features that members of a speech community use to classify and order objects in their physical reality. Ethnography has been used within this research project to collect data, and some key features of ethnography, namely the tension between subjectivity and objectivity and how this affects data collection, are discussed in more detail.

In practice, the qualitative nature of ethnography involves participant observation, social interaction, extended interviews and so on. In turn, the social nature of ethnography demands that there be some social proximity between the researcher and their area of study. The ideal proximity between the researcher and the research interest is a highly debated topic and leads to questions of subjectivity or perceived objectivity of the researcher. Regardless of one's position within this debate, however, it is recognised that some of the things that affect ethnography and its observations include the personal history of ethnographers as well as the fact that broader sociocultural circumstances under which they work dictate the topics chosen and people they work with (Davies 2008: 5).

In addition to the personal history of the ethnographer, the relationship between the ethnographer and those who are deemed to be informers or participants of the research project must also be considered. With this relationship, developed through communication and social interaction, it can be argued that the ethnographer is actively complicit in the construction of observable data (Davies 2008: 6). The idea of an objective researcher therefore is difficult to ascertain within research that requires social interaction. Rather than seeing this as detrimental to the process of participant observation however, Davies (2008: 6) argues that in order to successfully merge and integrate observations into a research practice:

> individual ethnographers in the field - and out of it- must seek to develop forms of research that fully acknowledge and utilise subjective experience and reflection on it as an intrinsic part of research. Furthermore, given the contribution of the ethnographer's sociocultural context to the research, these contexts must too be

> considered. They become a part of the research, a turning back in the form of cultural critique that has moral and political implications as well.

This may be of particular interest to the 'native' researcher who may already have more invested in the project than pure data collection, and it is in such contexts where reflexivity can be especially useful. Reflexivity is broadly defined as (Davies 2008: 4):

> The process of turning back on oneself and a process of self-reference. In the context of social research, this means that at its most immediately obvious level, reflexivity refers to the ways in which the products of research are affected by the personnel and process of doing research. It is found in all phases of the research process from initial selection of topic to final reporting of results.

This means that in research that is reflexive in nature the subjectivity or objectivity of collected data and their subsequent analysis are put to question.

In its most transparent guise, reflexivity expresses researchers' awareness of their necessary connection to the research situation and hence their effects on it, what is sometimes called reactivity (Davies 2008: 6). As outlined by Davies (2008), techniques such as standardised wording of questions are used to limit the effect of the interviewer on this particular social encounter. Researchers may also limit their effect by maintaining as much distance as possible, or conversely, by integrating as fully as possible and connecting on a human level, thereby becoming invisible in their role as a researcher if not as a human participant. My own position while conducting my research lies somewhere in the middle of this. It was beneficial to be viewed as a researcher in many circumstances, for example to avoid being pulled into small town politics and conflicts. On the other hand, it was also important to establish a close and personal relationship with members of the community to counter the resentment felt from the way they had been treated by previous researchers.

This technique of periodic reflection on the impact that conducting research on a topic that is personal to the researcher in addition to the overall ecology of an immersive fieldwork experience is recognised as a valid exercise with the social sciences (Behar 1996; Kleinsasser 2000; Davies 2008), and I believe the practice would be beneficial to documentation-based linguistics. It is also a topic that has already been discussed extensively in Anthropology (Abu-Lughod 1991; Narayan 1993; Behar 1996; Motzafi-Haller 1997; Davies 2008).

Meanwhile, it is not easy to define the 'native researcher' because it is difficult to concretely outline the boundaries of home, as well as account for the subjective nature of the concept of 'home', particularly given the mobile nature of human beings. As a notion, 'home', is an extremely personal one which can only be uniquely defined at an individual level (Davies 2008: 42). Defining who is at home and when one is at home is not an easy task, and this is seen to be partly a result of 'the heterogeneity of any society and the multiduplicity of social boundaries thereby created, as well as being a result of the variety of ways in which individuals are felt to belong or not belong to different social categories or groups' (Strathern 1987: 16).

Doing research 'at home' creates complexities in the way belonging is negotiated and the factors that may create distance. Abu-Lughod (1991) calls attention to the ambiguities experienced by 'halfies', people who for various reasons, such as migration or parentages, have mixed or multiple cultural identities. Furthermore, Narayan (1993) considers not only how her own multifaceted identity has variously affected her research among different groups to which she can trace some cultural affinity, but also calls attention to the distancing effects of a professional persona that researches and problematises the daily reality of others. Though not exclusively applicable to 'native researchers', reflexivity is perhaps a strength for those of us who have complex personal relationships with our areas of research because in being aware of our potential subjectivity, it is harder to assume and take for granted a false sense of objectivity. Thus, personal proximity in some ways can actually be of benefit to social research as it allows for a more nuanced insight to better understand how things function. For example, researchers with complex identities and relationships to their areas of research have demonstrated that it is these factors precisely that have allowed them to approach the complexities of ethnography without objectifying participants, without using analytical categories that deny their history or oppression, and without essentialising them as exotic or oppressed people thereby obscuring the complexities of internal division of class and gender (Abu-Lughod 1991; Narayan 1993; Motzafi-Haller 1997; Nagar-Ron & Motzafi-Haller 2011).

From this perspective, the purpose of such research is to increase our understanding of social reality by developing explanations of social forms and events, as well as critically examining the conceptualisations used in these explanations (Davies 2008: 6). Within this is the observation that critical realism also accepts that social research is inextricably linked to questions of meaning and that interpretation due to the self-conscious nature of its subject

matter. This implies that the process of interpretation and influence is mutually beneficial in social research, and final products thus may take a variety of forms and be addressed to different audiences thereby affecting the research process through all its stages (Roberts & Sanders 2005).

Ethnographic study must be able to add value to personal accounts, experiences and reports of living abroad among a culture other than ones' own, and it achieves this by the theoretically informed nature of its investigations and the deployment of research methods that provide greater depth and validity to the explanations it develops (Davies 2008: 45). Thus, good ethnographic research encourages tension between theory and on-the-ground methods and experiences. The underlying principles of ethnography for understanding and describing a socially and culturally embedded knowledge systems based on observation and reflexivity have been used extensively within this research project. However, the resulting product is not an ethnography, rather, it is an ethnographically informed collection of linguistically, socially and culturally embedded data which, by using ethnographic techniques and principles, aims to provide a comprehensive overview of various topics related to traditional knowledge in Nahuat-Pipil including the specificities of plant and environmental knowledge. This body of work thus gives both information about plant taxonomies and their linguistic classification as well as cognitive categorisation, and at the same time provides a socially-embedded understanding of how and why knowledge of these systems are relevant to the preservation and eventual revitalisation of a given language. This leads to the discussion in Chapter 6 about how socially embedded research and documentation practices are key to the future of field linguistics and any discipline aiming to work with minoritised languages and cultures. Such a broad view of how an aspect of language, namely taxonomic classification and cognitive categorisation, can have social and cultural relevance greatly benefits from the use of interdisciplinary approaches. Thus, in the following section I continue following the thread of methodological approaches and discuss aspects of interdisciplinary research.

4.2.3 INTERDISCIPLINARY, MULTIDISCIPLINARY AND TRANSDISCIPLINARY APPROACHES

The underlying assumption in academic studies is that “each discipline has its own concepts, definitions and methodological protocols for the study of its precisely defined

domain of competence" (Lawrence 2010: 126). However, there are a growing number of studies which aim to cross the boundaries of disciplines, and advocate for the use of interdisciplinary, multidisciplinary or transdisciplinary approaches. Literature on these topics has yet to agree on concrete definitions of these terms (Austin & Grenoble 2007; Lawrence 2010). For the purposes of this research, I shall use the following definitions:

Multidisciplinary – An additive research agenda in which each researcher remains within his or her academic discipline and applies its concepts and methods without necessarily sharing a common goal with other researchers. A fictional example of this would be, a multi-disciplinary research project involving biologists, anthropologists and linguists conducting research on mushrooms in the Yunnan province of China. The biologists may seek to name and describe all the different kinds of mushrooms; the linguist might look at naming conventions for mushrooms within different language groups in Yunnan province; the anthropologist might seek to understand the cultural importance of mushrooms within various ethnic groups in Yunnan province. All of these activities can build on each other however they are not dependent on each other to yield results as they do not share common research questions. Furthermore, the results of these activities can be presented independently of the research of scientists in other disciplines.

Interdisciplinary – In this scenario, scientists from at least two different disciplines collaborate to answer common questions. They apply the concepts, principles and methodologies of their distinct disciplines in order to achieve shared results. A fictional example of this would be a research project where academic researchers from different disciplines such as botany and linguistics develop the aims and research objectives of the project together. A cooperative research project between botanists and linguists might look at the extent to which emic naming conventions of plants are reflective of scientific Linnean naming conventions.

Transdisciplinary – This type of research incorporates learning and problem-solving approaches aimed at tackling real world problems. This type of research involves researchers as well as stakeholders outside of the academic community as a means of finding mutually beneficial solutions that will have a wider impact and contribute to solving social problems on a larger scale (Lawrence 2010). A transdisciplinary research project might look at the issue of endangered biological species. In order to increase awareness of the issue, a team of

biologists, linguists and anthropologists could examine the context of a particular area, observe the relationship between the residents and the area, observe the manner in which knowledge about the ecology is encoded in the language, and together with non-academic stakeholders, look for solutions to improve the conditions which result in the identified issue. An existing example of transdisciplinary research is the work carried out by MARN in conjunction with Indigenous stakeholders for combating the effects of climate change.

These approaches to research are seen as being particularly relevant when dealing with complex subjects such as core environmental questions (Lawrence 2010). Along the same vein, the issue of endangered languages is also deemed to be similarly complex and deeply intertwined with biological diversity. There is evidence that biodiversity hotspots and high biodiversity wilderness areas contain considerable linguistic diversity, accounting for 70% of all languages on earth, most of which are endangered (Nettle 1999; Gorenflo et al. 2012; Loh 2017).

Hence, we must take into consideration these complexities, particularly if there is an interest in using the documentary output to engage in activities geared towards language revitalisation (Austin & Sallabank 2011). As a consequence, transdisciplinary research helps us to foster an interest in minoritised and endangered languages and engage with them more generally at a wider level; if this interest is then funnelled into action, it may help in the preservation of that language and its ecosystem[26] which includes at least both the biological and social context. However, these types of activities not only require a team of stakeholders from different fields, at both individual and institutional levels, but also require engagement from those within the language community in order to be able to succeed and achieve stable and long-term results.

Taking the above definitions into consideration, from its very inception to its execution, this research project is interdisciplinary. The research questions and the entire project itself have evolved over the entirety of the duration of the research project in conjunction, and with input from the language community. From the choice of research topic to the involvement in tangential but important activities such as the photography exhibition at the museum of

[26] The term ‘ecosystem’ in this case is not only used to refer to the biodiversity present in the physical surroundings of an endangered language context, but also includes social, cultural, historical and economic contexts which need to be present for the language to survive.

anthropology (MUNA), I have sought to engage with a wide range of non-academic stakeholders throughout all research activities to find creative approaches and solutions to solve some of the issues that surround endangered languages . This was done by making connections with individuals and institutions such as MINED, MUNA and MARN, in addition to individual artists, anthropologists and lawyers who have taken an interest in the processes and issues that have resulted out of this type of documentary research, as well as those community members that have a vested interest in the language. Like the environmental and human impact of Climate Change, language endangerment is a complex issue which deserves and benefits greatly from the broad scope of transdisciplinary research.

4.2.4 ETHICAL CONSIDERATIONS

The Linguistics Society of America (LSA 2009) has a list of guidelines for conducting ethical research which includes being aware of responsibilities as a researcher in relation to other stakeholders within the research process:

1. Responsibility to individual research participants
2. Responsibilities to communities
3. Responsibilities to students and colleagues
4. Responsibility to scholarship
5. Responsibility to the public

(1) calls for the recognition of the collegial status of language consultant and the responsibility to respect their rights and wishes. Linguists should do everything possible to ensure that their research poses no threat to the wellbeing of research participants. This includes giving way and communicating a research participant's right to anonymity and to dictate the terms under which any of their information will be accessed by others. This ties in with the linguist's responsibility to obtain informed consent from those providing data. This consent can be recorded in a manner of ways, written or oral, as long as it is recorded. Compensation for time, effort and knowledge should also be considered, and remuneration should be provided where appropriate. Finally, linguists should facilitate access to research results to research participants.

(2) Linguists should consider how their research impacts the wider community in addition to the individuals they are working with. The LSA (2009) acknowledges that it can be difficult

to define what constitutes as a relevant community, however consideration should be made for all those involved in a research encounter, and way should be given to account for the community's cultural norms and values. The LSA's view is that in most communities, responsibility for linguistic and cultural knowledge is viewed as corporate, thereby individuals within that community are not able to provide consent for how information is shared. Linguists therefore should identify who is able to represent the community to grant permission for use of their knowledge and work out the terms of research. This principle reflects what Driem (2016) identifies as the imposition of a Western world view of how information is managed onto a non-Western strategy for sharing and passing on knowledge which views knowledge as something that is communally constructed and therefore something which all members of the community have communal rights to. While there is agreement that traditional knowledge is communally constructed, Driem (2016) disagrees with the idea that it is possible to ask one individual to represent the views of the entire community as it assumes as the existence of a system of social organisation which is hierarchical in nature. This is simply not always the case and certainly not the case when it comes to the Nahuat-Pipil context. As has been discussed previously (§3.1.4), Nahua culture and social organisation is described as nodular (Lockhart 1992), or a wide cellular network with smaller centres for social congregation spread out over a large geographical area. Nonetheless, the LSA recognises that shared knowledge should be recognised as intellectual property and thus respected by outsiders. On the other hand, I recognise that efforts to discuss issues regarding access to information, archiving and distribution of results is not necessarily time-efficient if the researcher takes it upon themselves to have these conversations with each individual within the community or at least every individual that contributes to the research project. However, for the sake of establishing long-term and lasting relationships of mutual respect, it is important to do so.

Points (3) and (4) are self-explanatory, however the last point merits a mention as it brings to the foreground the linguist's responsibility to consider the social and political implications of their research. This includes ensuring research is publicly accessible and comprehensible to non-academics, and to consider the damage that misinterpreted research findings might cause.

Conversely, Driem (2004, 2016) argues that all guidelines for conducting ethical research in place today are created to protect the institution that will benefit from the research rather than the wellbeing or the rights of those being researched on the lower end of the power

imbalance. Ethics protocols drawn up at the turn of the century (2000), and which are still being used today, are flagged as being problematic (Driem 2004), and are deemed to be morally bankrupt (Driem 2016). As outlined by Driem (2016: 245) the issue lies in the fact that at their core, ethics protocols are based on the Anglo-saxon legal tradition where a European population has displaced and at other times largely exterminated indigenous language communities. Another problem is set by the granting agencies who set forth 'absurd' and unethical practices which aspiring linguists must comply with. Fundamental cultural differences and disparate histories of diverse language communities are ignored, and those implementing and enforcing ethics protocols have in some cases unwittingly practiced a not altogether benign form of cultural imperialism. He further states that ethics protocols assume universal and moral authority, assume that one individual or administrative body can speak for a group of speakers, and does not consider the colonial history of many endangered language speakers and how the imposition of paperwork may be cause for concern and fear e.g. land rights, ownership and mistrust (Driem 2016: 244).

The Code of Ethics of the International Society of Ethnobiology (ISE) acknowledges outright that biological and cultural harms have resulted from research undertaken without the consent of Indigenous peoples, which is a reflective practice that has not yet been incorporated into guidelines for documentary linguistics at such a methodological level. Ethics guidelines such as that of the LSA (2009) state the intention to act in a manner that is responsible and ethical, but without acknowledging the mistakes and the harm that has been caused in the past to Indigenous people via uncollaborative research practices. In acknowledging the past, the affirmation of the ISE to work collaboratively is grounded and can claim to: support community driven development of Indigenous peoples' cultures and languages; acknowledge Indigenous cultural and intellectual property rights; protect the inextricable linkages between cultural, linguistic and biological diversity; and contribute to positive, beneficial and harmonious relationships in the field of ethnobiology (International Society of Ethnobiology 2006).

With this in mind, I believe it is vital to acknowledge the work carried out in the past in order to integrate Indigenous knowledge systems into our methodologies and methods when conducting linguistic fieldwork (Dohle & Squillaci 2018). Building on Driem's (2004, 2016) point that existing guidelines for ethical fieldwork are only created for western perspectives and organisation of power, Dohle and Squillaci (*forthcoming*) call for more of an integration

of indigenous perspectives into linguistic research working with endangered and minority languages.

A manner of ensuring that research bears the above considerations in mind, is to allow members of the language community acting as participants to be involved. This can have a positive impact on the language community (Woodbury & England 2004) providing opportunities for skill-sharing and increased involvement in cultural preservation and maintenance, as well as creating links between language and education (Fitzgerald 2010).

The documentation of Tohono O'odham, an Uto-Aztecan language spoken in Arizona on the border of Mexico, provides an example of how this can be achieved (Fitzgerald 2010). Most of the material gathered from Tohono O'odham from the 1950s are inaccessible to the language community and until recently have been left un-transcribed, untranslated and unpublished. They started becoming accessible to the language community in the early 2000s, when Fitzgerald began producing a dictionary of the language[27].

Indeed, Fitzgerald is an avid advocate in stating that the ultimate choice of what should be included in a linguistic handbook should be in the hands of the community, not the linguist. Her model of collaborative research is the following (Fitzgerald 2010: 238):

- Create stakeholders: Do this by communicating and sharing information. This creates links and opens pathways of communication to share what is being learned;
- Personalise research: Make it personal for everyone involved. Linguists should value the deeply personal value of recordings, for example, the recording of a loved one.
- Listen and work to build trust: Consider how to address the concerns of the community by asking members for input and suggestions of course of action. Think creatively and allow research to be community driven.
- Recognise ideologies held by linguists and those held by the Indigenous community. Consider internalised negative attitudes, recognising and valuing the difference within, as well as outside of the community.
- Seek partners such as community intellectuals, grassroots activists etc.
- Create and open (and ongoing) process of dialogue and brainstorming.

[27] http://www.acsu.buffalo.edu/~mathiotm/Mathiot/Volume%20I.pdf

Considering the above, it is important to recognise the potential for variation within our own standards of ethics, and that research programmes and expectations often reflect Eurocentric assumptions and power dynamics which privilege these assumptions (Grenoble & Whaley 2007; Lipski 2000). These assumptions may not necessarily be in line with those of the community being researched. For example, when the idea of photographing portraits of the Nahuat-Pipil took root, it was presented to members of the Nahuat-Pipil community individually and the idea for the exhibition was developed collaboratively. In my experience with photographing individuals as a means to documenting intangible heritage, the process often results in complications. It helps to have signed consent forms which outline in detail the rights of all involved and what the photographs will be used for, and this was done in this case. One particular individual very much liked the idea and was excited about the opportunity to provide some artistic direction the setting and lighting of their own photograph, and their direction was incorporated. However, to my dismay, when presented with the sample photographs, the participant suddenly became very angry, stormed out, and refused to speak to me thereafter despite my many attempts to make amends. It was only six months later when the exhibition was finally taking shape, and I had decided to revisit all those who had participated to double-check if they were still willing to take part, that I was able to have a conversation with them. During our conversation it came out that the offence, while obviously unintentional, had been a result of taking for granted what was understood as a portrait. For me, a portrait is a close-up of the upper torso and head, however when presented with their portrait the individual was shocked to be presented with a picture of a head without a body and had become very upset at the idea of having been decapitated and presented in this way to a wider audience. "What use is my head without its body? I want to be presented to the world in my full essence, not cut up into little pieces."

As can be seen with this example, to help counteract the imposition of assumptions and power dynamics, it is important to create an open and continuous dialogue with members of the language community. In this case being open to learning about other's perspectives while also being sensitive to the political history and perceived imbalance of power, as well as being gently persistent were key traits to overcoming challenges in creating mutually beneficial projects. Such approaches help create a space for community driven agendas which have the potential to be mutually beneficial (Fitzgerald 2010: 240). With this in mind, I established communication with the community prior to my enrolment in the PhD programme and the research topic itself was developed with input from appointed heads of

the Nahuat-Pipil communities in Izalco, Santo Domingo Guzman, and Nahuizalco. It is through communication with heads of the cultural houses of both towns that this project has been developed and will continue to develop. The ultimate aim of this research is to emically understand language and categorisation of TEK from the perspective of the Nahuat-Pipil and infuse cultural meaning to existing documentation to further increase its utility for the speaker community (Austin & Grenoble 2007). The active and continuous inclusion of Indigenous perspectives into research practices is necessary as without it "speakers [can] feel frustrated by the one-way relation established by academics, feel undervalued when their views or their approaches to their language are misinterpreted or not even considered, and feel devalued when research outputs researchers do not produce anything that can benefit the community at a symbolic or material level" (Dohle & Squillaci 2018: 27).

Having said this, it is also important to acknowledge that creating personal links to the language community, research and so on will have consequential ethical and emotional implications which can result in complications. This is not to say that these complications should be avoided, rather that the impact of these is not always recognised by formal academic institutions or funding bodies. As such it is important to find a balance between creating personalised research and research that is just 'work'.

4.2.4.1 Community-driven Approaches

Community-driven research considers the needs of a given community and allows the identified group of people to have a say and input into the direction of the research (Dwyer 2005; Dobrin 2008; Fitzgerald 2010; Yamada 2007; 2014). On behalf of the researcher, this also means listening to participants' observations and incorporating them into the research. Of course, it is also important to maintain a balance between the interest of the community, the interests of the academic institution and funding body, as well as one's own interests. A way of ensuring that power relations are kept in balance is by carrying out community-driven research (Yamada 2014). This allows research participants to engage with the work being carried out and makes it more likely that they will want to invest time into the project. Though financial remuneration is sometimes used to incentivise participation, this is not a long-term solution, particularly if there is an interest in language revitalisation. As has been evidenced by government attempts to encourage language use via financial

remuneration, those working within this particular context are not ones motivated by financial reward. In fact, I would argue that assigning monetary value to language use in this context is more harmful as it encourages the commercialization and commodification of language and creates barriers to entry for interested parties not previously identified as belonging to the language community.

Research based on trust and acceptance of all the stakeholders is also likely to increase the value of the final results, as is evidenced by other documentation projects such as the collaborative documentation of Tohono O'odham (Fitzgerald 2010) and the community-based documentation of Kari'nja in Suriname (Yamada 2007).

4.2.4.2 Addressing power imbalances as a researcher

An integral component of collaboration and community driven research in this specific context has included being aware of power imbalances between myself as the researcher representing a European institution, and the Indigenous population. In general, Salvadoran society is very aware of the social ranking of every one of its members as is evidenced by the forms of address used at the start of every communicative interaction. Although ample research has been carried out to investigate the phenomenon of 'voseo', also known as the common use of second person singular pronouns amongst friends belonging to the middle class (Baumel-Schreffler 1989; 1994; 1995; Castro-Mitchell 1991; Gaínza 1976; Lipski 1986; 1989), as a whole, Central American Spanish has not been researched very much (Lipski 2000). As such, although the following explanation of honorifics would benefit from further research, it is nevertheless a description based on personal experience of navigating societal conventions for over 30 years.

At face value, forms of address are indicative of age, education and social status, however the underlying implication points to the subtle power relations between individuals. For example, the most common form of address is the term Licenciado or Licenciada, abbreviated as Lic./Licda. This form is reserved for all individuals who have attained a bachelor's degree at university. Continuation up the academic ladder results in the assignation of other forms of address: Maestro/Maestra for those who have attained a master's degree, Doctor/Doctora (Dr./Dra.) for those who have attained a PhD. Forms of address also extend to specific

professions such as medicine (Dr./Dra.) engineering (Ing.) and architecture (Arq.). What is different in this context compared to forms of address in other languages such as the English language, is that these titles are not reserved for special occasions or formal events or invitations. Though individuals are not socially obliged to use these forms of address, the social convention and expectation is that they be used on a regular basis every time a person is referred to by name. This phenomenon is also common in Italian (Musumeci 1991).

Forms of address outside the professional and academic sphere are also indicative of power relations. The terms Don and Doña (Master and Mistress), Patron and Patrona (male and female employer) are still widely used today. It is believed that in the past both terms were used to indicate ownership of land and people. Today they are used to demonstrate respect for someone who is older or higher up on the social ladder. Finally, it is interesting to note that children also feature in this paradigm with the terms Niña, meaning girl, reserved for younger female placed above the speaker on the social hierarchy and Joven or Niño, meaning boy, for boys. This hierarchy is also present in pronoun usage. The use of the third person singular 'usted' indicates respect, and demonstration of respect is expected when the addressee holds a different socio-economic status, academic achievement, social rank, power dynamics or is perceived to be a foreigner.

It is with the knowledge of these social conventions that I consider awareness of power relations to be an important aspect to consider in interactions with Indigenous people. To my knowledge there are no forms of address reserved for people perceived to belong to a working class. At the most, someone without formal education can expect to hear the term 'Joven' as a respectful form of address, which translated into English means 'young person'. This term can be used to address and refer to individuals of a lower social rank regardless of their actual age. Take for example, two men of the same age but different socio-economic backgrounds. The one with the more elevated social position may refer to the other as 'Joven' and thereby indicate their superiority to the other. The other is not offended by the use of this term. As such, the conventions for reference and address are asymmetrical. Asymmetry in this relationship conveys distance. Amongst and between Nahuat-Pipil speakers however, address and reference is symmetrical which is indicative of solidarity and closeness.

As a doctoral researcher going into a town where the majority of the population have not completed primary education (Lara Martínez 2006), it is necessary to be aware of the social

position which will be assigned to the researcher, regardless of whether they want it or not. The improper use of pronouns or forms of address can establish unequal power relations and indicate malice, disrespect and superiority (Lipski 2000). This imbalance of power can result in requests being understood as commands, which in turn can result in resentment and hostility towards the researcher. Furthermore, social convention dictates that the person with the highest title is the ultimate authority within any given group. However, as the idea behind this particular type of research and documentation is to collect and describe existing Indigenous knowledge systems present within the Nahuat-Pipil language, it is vital that the speakers understand themselves to be in the eyes of the researcher, the ultimate authority on this type of knowledge. Therefore, knowledge of power relations and the way that forms of address can be indicative of this is essential.

Concluding remarks

As is detailed in Chapter 3, the violent history and context surrounding El Salvador's Indigenous population has resulted in the invisibilization of those groups of people identifying as Indigenous rather than mestizo. This has been such that in the past, field-based researchers have found very reduced numbers of speakers (Contreras 1963; Campbell 1975) which has resulted in the language being classified as nearly extinct in sources such as Ethnologue (Lewis, Simons & Fennig 2016) and the UNESCO handbook of languages in danger (Moseley 2010). Such assumptions on the vitality of the language have since been corrected thanks to recent language activism, however, it is my belief that these misguided assumptions might have been avoided if time had been afforded to consider the sociolinguistic and political reality at the time, though of course the mounting political instability at the time might have made this more difficult. Nevertheless, such considerations are valuable in deciding the approach that is to be taken when carrying out fieldwork, and ultimately the results and quality of the fieldwork experience.

Given El Salvador's history, it was significant to me that this project be carried out in a manner reflective of the social changes which need to be enacted in order to promote the valorization and preservation of Indigenous languages and cultures. As such, it was vital to be aware of power imbalances within society as a whole and how this would affect my position within the linguistic community (Grenoble and Whaley 2007; Lipski 2000). Possible conflicts due to perceived power imbalances were preempted by making sure members of the

community knew they had a say in the research being carried out. This helped ensure that the research and the relationship between the researcher and members of the community, was one based on trust and acceptance. Given the reduced number of speakers and my own limitations, it was also important to carry out research in an interdisciplinary manner. This has enriched the data collection processes, as well as the involvement of not only the community, but non-Indigenous members of Salvadoran society who previously had no interest or lacked an awareness of Salvadoran Indigenous issues. This in turn, has not only enriched the type of data collected, but the involvement of several researchers of diverse backgrounds has allowed for the project to have a wider-reaching impact than originally expected.

4.3 Methods

Following the methodologies presented previously, this section outlines the methods of data collection and analysis used while conducting research for this thesis. The scope of the research is presented in §4.3.1, followed by the techniques used for data collection §4.3.2. and data analysis.

Data collection techniques involved:

1. Ethnography: engaging with routines, how they interact with environment such as food preparation, evidence of prepared medicines, home gardening, preparing building materials, and preparation of cultural activities such as the day of the cross and the decoration of the *palo de jiote*.
2. Discussions and narrative collection and analysis – achieved via topic led conversations e.g. can you tell me more about x? Analysis of these narratives was achieved via transcription, translation, and double checking the transcriptions with participants. Overall useful for understanding semantic paradigms and categories.
3. Experimental methods – cognitive linguistics
    a. Plant identification via picture cards
    b. Pile sorting

4. Semi-structured interviews – sociolinguistics, understanding the relationship between environmental knowledge and identity

The data was analysed using the following methods:

1. Ethnographic analysis
2. Transcription, translation and glossing of plant names
3. Morphological analysis using secondary data
4. Experimental results analysis using primary data
5. Key word analysis – looking at the correlation between key concepts, and any modification of original meaning. What were the modifications and how were these made?

The above was achieved thanks to the use of specific instruments which aided the data collection and analysis. Data collection instruments, for example, include the use of picture cards as stimuli for plan naming or pile sorting exercises. On the other hand, instruments that aided the analysis of data include specific software like FleX, and the robust metadata and note-taking. These and other instruments are outlined in further detail in §3.3.4.

4.3.1 SCOPE OF RESEARCH

As a result of this research and data collection, the lexical database of Nahuat-Pipil has been increased. This was achieved by using a range of methods, including ethnographic observations, semi-structured interviews, collections of narrative and experimental methods such as plant identification, and pile sorting to identify plant categories. These methods contributed to the collection of naturalistic data, as they were focused on specific tasks such as food preparation, gardening and farming, foraging, prepared natural remedies, clay work, and forest and hill walks. By observing and participating in these aspects of daily life a rich and detailed understanding of the relationship between the Nahuat-Pipil of SDG emerges. The resulting documentation of recipes, songs, conversations and discussions of plants demonstrates the extent to which interaction with the natural world is embedded in daily life. I have recorded narratives rich in cultural and ethnobiological knowledge, such as descriptions of traditional agricultural practices, gardening techniques, narratives discussing the impact of climate change on agriculture and what agriculture means

to the community, as well the medicinal uses of plants and other forms of traditional plant knowledge. Local flora and fauna guides, tree trails and outdoor excursion to important landmarks in Santo Domingo de Guzmán and Cuisnahuat were also valuable in the elicitation of ethnobiological knowledge.

To account for variation in plant identification and naming (Berlin 1992: 204), I worked with 73 participants (45 females; 28 males) in total, and of these 52 (33 females; 19 males) took part in the plant identification and pile sorting tasks. All participants were willing and comfortable to speak Nahuat-Pipil in my presence and were all between the ages of 52-90+[28]. The goal was to include as many participants as possible who varied in age and gender. Ideally one would also attempt to represent participants of different social statuses and professions (Berlin 1992: 204), however, considering within this context the limits of intergenerational transmission, the perception of Indigeneity as a social status, and the gendering of profession or skilled work as previously discussed (§3.3.2), it was not possible to vary these factors much.

What follows is a detailed description of all the methods that were employed to elicit information as well as prompt and encourage discussions and description of the uses of plants in daily life. These varied methods were used to create a sociolinguistic, semantic, cognitive and morphological understanding of the Nahuat-Pipil language and how TEK is embedded within it. By using pile sorting, plant and animal identification tasks with individuals as well as focus groups I have collected plant names and created morpho-syntactic paradigms with emphasis on noun classification systems, as well as achieved a better understanding of folk-classification systems and variation between individuals and groups.

4.3.2 DATA COLLECTION

A range of methods were used to collect different types of data. Ethnographic observation was used throughout the data collection process as a means to gather social contextual data for TEK. In addition, semi-structured interviews and discussions as well as experimental methods such as elicitation of plant names, or plant identification, and pile sorting were utilised. As my research is mostly focused on consultants' biological knowledge, interaction with the natural world was maximised. This was done by taking consultants on

[28] In the case of the individual who was 90+, their exact age was unknown, but known to be at least 90.

forest and hill walks, doing individual and group-based tasks, and asking direct and indirect questions about consultants' knowledge of agricultural practices, staple foods, as well as prominent local flora (Martin 2007; Puri 2014a; 2014b; 2014c).

Initial elicitation sessions focused on individual free listing of plants, fruits and vegetables (Martin 2007; Puri 2014a; 2014b; 2014c). The aim was to identify the most contrastive plant categories by asking participants to free list plants. It was predicted that the first 3-4 plant names would be basic categories for plants, with terms further down the list acting as referents for varieties of plants within the basic categories. The idea was that such a task would provide insight into individual's knowledge of the natural world, categorisation and relational patterns, allowing for the identification of any overlap between the categorisation patterns of individuals. Furthermore, this being a relatively straightforward task, it was hoped that it would help to establish a working relationship with consultants in a non-intimidating way. This plan, however, was not successful as participants were hesitant and self-conscious to simply free-list plant names. Questions were asked in Nahuat-Pipil with the help of translators who were well-known by the Indigenous community, and participants were asked to list names within the domain of plants. When that was not successful the domain of medicinal plants was suggested, but participants continued to hesitate, so the exercise was dropped in order to preserve the relationship. This occurred twice more with other participants. Upon reflection it is possible that not enough rapport had been established between myself and my research assistants as well as the participants. It is possible the questions were not being asked in the right manner in Nahuat-Pipil, and that they came across in an intimidating manner which highlighted the power imbalances mentioned previously (§4.2.4.2). Rather than insisting on continuing the free listing task and potentially harming what was at the time my new relationship with individual members of the community, I decided to eliminate this step and move on to plant identification and pile sorting. In the future, I would attempt this exercise again having established a better relationship with all those involved.

All activities were recorded with audio and video whenever weather and social conditions allowed for it. Audio and video recording were only continued once the verbal consent of participants had been recorded after the scope of the research project had been explained to them in Nahuat-Pipil by one of the research assistants. The results of these tasks informed follow up interviews and discussion with individuals after categorisation systems had been

established. These discussions with participants allowed for more subtle and in-depth knowledge about objects to be identified as being culturally significant. This method allowed for the discovery of category-specific gestures for example as discussed further in Chapter 5. This also allowed for contextual cultural information to be uncovered as stories, agricultural methods and medicinal uses of plants were recounted. By learning more about how specific items are cultivated, prepared and consumed, I hoped to uncover more on their semantic relationships and syntactic encoding.

To facilitate the recording of data as well as to better manage technical practicalities of documentation, I trained both male and female research assistants with Nahuat-Pipil language skills to use audio and video recording equipment and elicitation techniques. This was intended to be useful in helping to reduce observer's paradox and community external biases, assuring that consultants would be able to make use of audio and video recorders in more natural settings on their own, thus documenting genuine community perspectives. In practice, however, it was found that the research assistants were better at conducting the elicitation tasks and were less comfortable with handling the microphones and recording equipment. Given the fact that Nahuat-Pipil conversations flowed more easily when they were not interrupted by questions in Spanish from myself, I allowed my research assistants to conduct most the interviews initially while I focused on recording and note-taking. In addition to technical training, I provided training on best practices for notetaking and data management. However, lack of sustained access to data processing tools meant that the research assistants were not as keen to implement these techniques into their daily data collection routines. Two consultants were employed to help annotate and translate recorded texts; however, they were both found to be unreliable and did not provide any annotations or Spanish translations. I input all data into FleX, and many of the translations were done simultaneously as data was being elicited.

4.3.2.1 Ethnography

The use of ethnography can help documentary linguists be aware of how language and its use is embedded in culture. "Documentary linguists need to be ethnographers because they venture into communities that may have very different forms of language use from those of the communities in which they were socialised as human beings or trained as scholars" (Hill 2006: 113). In this case, ethnography was used to observe how

speakers interact with the environment and each other, how knowledge of the natural world was evidenced in foraging, cultivation and food/medicine preparation practices, and how it varied from speaker to speaker. The use of ethnographic methods provided the necessary background information to contextualise categorisation practices within the sociolinguistics of the language.

General observations were made at all other times; however, they were particularly useful during excursions and more 'social' visits when the recording equipment was kept in its bag. If possible and appropriate to do so, detailed notes were made during any social visit, interview or elicitation session, and these were attached to transcriptions, translations, and/or recorded audio files in order to create a systematic overview of the observations. It is suggested that the practice of attaching detailed ethnographic metadata to sessions where interviews or word elicitation took place in produces more meaningful documentation of language use (Franchetto 2006: 185).

4.3.2.2 Interviews

Semi-structured interviews in Spanish and Nahuat-Pipil with speakers of Nahuat-Pipil were useful for collecting socio-linguistic data as well as for providing clarification on plant categories once these had been established via the more experimental methods. There were two types of interviews: 1. Sociolinguistic, and 2. Discussions and narratives. All interviews took place once rapport with the Indigenous community had been established, during the second field trip to El Salvador. This was designed in this way to permit Nahuat-Pipil speakers enough time to get to know and trust me with their knowledge and opinions which was especially important for the sociolinguistic interviews. By using an oral history framework (Russell 1992), I came up with four simple yet broad questions which were specifically designed to encourage open discussions to look at the personal significance of the language, the future of the language, and the concept of indigeneity. The following questions are a translation of the questions that were asked to the participants:

1. What does Nahuat mean to you?
2. What do you think will happen to Náhuat in 10 years' time?
3. What does it mean to be Indigenous?
4. Do you consider yourself to be Indigenous?

Most of the interviews were conducted in conjunction with Ninel Pleitez, an anthropologist associated with the MUNA, and Carlos Ruiz Cuellar, a student at the University of El Salvador (UES) who worked as a research assistant for this research project. Both Ninel Pleitez and Carlos Ruiz Cuellar conducted the interviews in Spanish and Nahuat-Pipil respectively.

The second type of interviews, which I have labelled discussions, took place during lunch breaks or towards the end of the day when people were at home and had some spare time to have more informal conversations on the topic of plants and plant categories. These discussions were topic led and were used to learn more about specific categories or plants that had caught my attention. Questions used included "can you tell me more about x?" or "What do you think about…". These moments of free discussion provided the most data on animal categories, as well as the clearest data on categories and their prototypes. Unfortunately, I only discovered that semi-structured interviews coupled with observation were a good way of uncovering categories towards the end of my stay in El Salvador. Thus, I believe the data collected on categories could be elaborated in further research to uncover covert lexical nuances.

4.3.2.3 Experimental Methods

From an ethnobiological perspective, the collection of basic data to attain an ethnobiological description for the study of human categorisation of plants and animals requires the following (Berlin 1992: 201):

1. Determining the intentional meaning of a set of concepts, most of which are realised by names in a given languages, as can be inferred from the ways these terms are applied to a set of living organisms.
2. To discover the structure(s) that unite these concepts in a classificatory manner.

The first step can be achieved by mapping out folk nomenclature of plants onto Western scientific naming conventions. In this case, scientific identification was achieved by using the detailed ethnobotanical descriptions of Salvadoran flora of Choussy (1975; 1976; 1977; 1978). The second step was achieved by studying the linguistic naming conventions for plants and identifying points of overlap which might be used as classifiers for the category.

For example, the forms *tzaput istak*, *tzaput chiltik*, and *muyutzaput* were all preliminarily identified as belonging the category *tzaput*, based on the naming conventions alone, as discussed further in Chapter 5. Once preliminary classification systems were identified, pile sorting tasks were introduced to identify any covert categories which might be present in the language and culture. Pile sorting tasks were conducted using photographs of local plants.

Multiple participants were asked to view and name all the plants in the photographs independently of each other as this is a known systematic method for establishing patterns of variation within participants' classificatory structures (Berlin 1992: 202). While the use of prepared voucher specimens is ideal, it was not possible to use them in this case as due to lack of funding, I was not able to hire an ethnobotanist to help out with the fieldwork, and I am not trained in the collection and preparation of voucher specimens. Instead, photographs of plants from the surrounding area were printed in full colour on A6 sheets of card to ensure durability, and there were approximately 240 samples. The use of printed photographs reduced distortion, discolouration and disfigurement of the plant 'specimens', however it was observed that on occasion, some older speakers were unable (or unwilling) to identify the plant based on the picture alone. Nevertheless, it was found that the overall convenience of being able to transport such a large collection of plants in my backpack meant that it was possible to be more flexible when conducting the plant identification task, especially given the long distances we sometimes had to travel on foot while also carrying recording equipment. Having the cards on me at all times meant I could quickly go through them with a Nahuat-Pipil speaker while we were waiting for the bus or making lunch, for example, as opposed to traveling an hour on foot to a remote residence with 240 voucher specimens only to find the speaker had gone to visit their offspring in the city for a couple days, even though this did occur on occasion.

Despite the size of the collection, it must be acknowledged that the full biodiversity of the area was not represented with the photographs alone. This gap was accounted for by going for forest and hill walks with those speakers who were able to do so. The hill walks were a rich source of data as the biodiversity of the more rural area is much greater than what is found in the urban centre of the field sites, and it provided the opportunity to discuss foraging knowledge, as opposed to knowledge of cultivated plants. The walks also provided the rich natural context ideal for plant identification for both me as the researcher, and the participants. They also provided rare opportunities for children and grandchildren of speakers to accompany us and participate in the plant identification process. However, given the

security issues, and to avoid unwanted exposure to gang violence and other risks, the opportunities for excursions were limited. In total, over the two field trips to El Salvador, only four excursions were possible.

Plant identification using picture cards

As previously mentioned, elicitation cards with photographs of plants, fruits and vegetable were created in order to carry out plant identification and pile sorting tasks (Martin 2007; Puri 2014c). Approximately 240 cards were presented to 52 different consultants, (33 females; 19 males) over a period of 2 months. The consultants were asked to identify plants and their fruits based on the images that were presented to them. Age, gender and language fluency were taken into account and annotated in the session metadata in my field notebook. This allowed for the visual identification of overt categories within the language as well as relationship between objects at hand. By grouping participants in terms of age, gender and language fluency, I also observed how these different groups interact, and how they negotiate and discuss the grouping of objects. This type of grouping also allowed variable-related patterns based on gender, age and language fluency to emerge.

The images of plants were also scientifically identified according to Linnaean naming conventions with the help of Salvadoran plant guides (Choussy 1975; 1976; 1977; 1978). Towards the end of the fieldwork, these plant guides were also used to elicit data from participants who had previously demonstrated the most knowledge of botanical terminology. This allowed for the collection of more plant names than had been originally anticipated.

Having previously studied the subject, I was aware that data collection would be most successful if I employed culturally and geographically relevant techniques (Martin 2007). Regardless, when creating the picture cards, I immediately fell into the trap of using the most readily available plant, fruit and vegetable specimens failing to take into consideration that much of the plant life that is available in urban centres is actually imported from other countries. I also initially failed to consider how presentation of these specimens would differ between urban and rural settings and thus affect individual's abilities to correctly identify them. For example, in a market or shop within an urban setting, fruits and vegetable are presented in as clean and tidy a manner as possible. The produce is often washed, and excess such as stems or leaves, are removed. In rural settings, the opposite is true. Dirt, stems and

leaves are left on the produce to indicate the produce is indeed freshly picked. The implications of this on data collection methods are discussed further in Chapter 6.

Initially I photographed the plants, fruits and vegetables I had easy access to in the city with the idea of printing the images on card and using them as a fixed and comparable set of cards for the purpose of plant identification. It was found however, that as a result of the difference in presentation, participants were sometimes unable to identify the most common images of local vegetation. After realising my mistake, I found it necessary to continuously add different versions of the same images as they became available to me. This was much easier to achieve once I was living at the field-site with participants and more importantly, within their environment. Each visit to new consultants introduced new terms for plants, fruits and vegetables, and outings through their cultivated plots of land and gardens provided opportunities to elicit, identify and photograph previously unknown plant specimens.

Pile sorting and categorisation task

The intention behind the pile sorting or categorisation task was to uncover whether underlying cognitive categories matched linguistic categories. As the aim is to investigate how knowledge of plants is grouped within the mind and whether this is reflected in language, this task seemed to be a logical choice.

After carrying out the plant identification task, participants were asked to put together each identified sample into groups according to personal preference. It was emphasised that there was no right or wrong answer and the participant could select how to group the samples on their own terms based on how similar the plants were. This in itself turned out to be problematic for the participants as they were uncomfortable with setting their own parameters for categorisation. When necessary, I would create an example group, taking care not to overlap with any linguistic categories. The participants were given 15 minutes to go through the cards on their own. Once the grouping was complete, they were asked to talk me through their thought process, identifying each category and all of the plants within them. The purpose of the task was explained once it had been completed by the participant. All of the grouping activities were documented with both video and audio recorders in addition to pen and paper.

There were three different issues with this task. Firstly, for some it was conceptually difficult to understand what was required of them as the act of consciously dividing plants up into groups did not seem very logical to them. Perhaps it would be interesting to see whether this is also the case with a broader selection of objects (e.g. toy cars, pebbles, glasses). This would help identify whether the act of grouping is an issue in general or if it is specifically problematic within the domain of plants. Secondly, in addition to the conceptual difficulty, some participants were uncomfortable having complete freedom to create whatever groups they thought made sense. These participants would ask for further guidance, asking outright how the plants should be divided into groups. Finally, as the number of elicitation cards grew in size, the grouping task became more overwhelming. Though the identification task would take between 10-20 minutes to complete, the categorisation task would take between 30-45 minutes, by which point the participant would become bored, tired or frustrated. In the future it is probably best to use only a fixed number of cards and not exceed 30 samples.

Despite the issues encountered, the results that were collected provide an insight into the value and categorisation systems of the Nahua-Pipil which are discussed further in Chapter 5.

Excursions and Forest Walks

El Salvador is currently one of the most violent countries in Central America. The US Department of State warns its citisens against travelling to the country, stating that violence in the country is at a 'critical' level[29], and the British Foreign Office[30] advises visitors take care and not expose or draw too much attention to themselves in order to avoid becoming the target of violent behaviour. Given previous experience and regular surveys of local newspapers, I know that there is a fair amount of localised drug and gang-related violence, particularly in the department of Sonsonate, where most of the field-sites are located. Gang-related violence increased during the period of time that fieldwork was carried out (2015-2016), and media coverage of it and hardened government responses to the situation did not improve feelings of general security (Valencia 2015; Labrador and Rauda Zablah 2015). Towards the end of the second field trip, in May 2016, the daily death toll due to gang-related

[29] US Bureau of Diplomatic Affairs, https://www.osac.gov/pages/ContentReportDetails.aspx?cid=13875, Last accessed: 1st December, 2014

[30] https://www.gov.uk/foreign-travel-advice/el-salvador, Last accessed: 1st December, 2014

violence was above the daily death toll held during the civil war, and the government had moved to impose a national curfew (Valencia 2015).

As a result of the socio-political situation and the state of general unrest, excursions to open fields and important landmarks for the Nahuat-Pipil were very controlled. It was necessary to travel in groups and with people who not only knew the area but were also known by residents in the immediate proximity of the focal points as this allowed for safe passage. The risk involved meant that oftentimes the only recording equipment available during these excursions was pen and notebook. Furthermore, it meant that occasionally, Nahuat-Pipil speakers were discouraged by their families from going on these excursions because of their advanced age. Nevertheless, when they took place, the excursions proved to be the richest source of data for collecting previously unknown names and uses of plants in Nahuat-Pipil.

4.3.3 ANALYSIS

The collected data was analysed in different ways. Detailed metadata was kept for individual recording sessions and experiments, as well as participants themselves, and in order to preserve the data, care was taken to store files in a manner that is conducive for easy access and retrieval (Austin 2006). Ethnographic observations and key word analysis of semi-structured interviews and discussions were used to contextualise and interpret the data which resulted from the experimental tasks. Plant names were glossed and translated into Spanish and English, and in doing so the structure of the names was also analysed. All findings are presented in further detail in Chapter 5.

4.3.3.1 Data Management

The various techniques and modes for recording data mean that a lot of digital and analogue data was collected during fieldwork. In order to make the best possible use of this data, effective data management techniques were necessary. This section provides an overview of the metadata that was collected, the file naming conventions and data structures used to keep track of files, and the linguistic software used to analyse the data. This was done in effort to create a corpus of digital materials which are shareable with the language community and local digital archives (Wilbur 2014).

Data was recorded using an audio recorder and a notebook; speaker and elicitation metadata were recorded for each session in a notebook. Video was used occasionally when it was deemed appropriate to do so, for example during pile sorting and plant identification tasks however, most sociolinguistic interviews were recorded using audio only. Video was only recorded during the sociolinguistic interviews if the speaker expected or requested it. In my opinion and experience although video is useful in some contexts, it is not always appropriate to use as it can be intrusive and make speakers feel more self-conscious compared to the use of audio-recorders only. As such, I was mindful to respect the requirements of each individual interview session rather than imposing a pre-defined model for documentation. I believe that a flexible approach which is receptive and responsive to different contexts is key to successful documentation.

After each interview, the data was stored on an external hard drive and backed up for safekeeping. I marked relevant recordings in my field notebook during the interview sessions which were to be transcribed using ELAN (Wittenburg et al. 2006) at a later date. Of the 25 sociolinguistic recordings which were made, approximately 10 recordings, each ranging from 30-75 min, were identified as being truly vital for this research project and have been transcribed by myself. These recordings have been proofed by research assistants to ensure that transcriptions and translations are in fact correct.

4.3.3.2 Metadata

The annotation of metadata during the data collection process is important, as it allows for a more in-depth analysis by permitting a more detailed comparison of factors which may account for variation (Wilbur 2014). The background of a speaker, their profession, their movement or travels, gender and social status are all aspects which might influence how plants are named and categorised. Metadata was recorded for both individual participants and individual recording sessions. Further details of how this was done can be viewed in Appendices A and B. During elicitation sessions the metadata was recorded in the field notebook. It was then passed on to an excel spreadsheet at the end of the day when all the digital data was being downloaded and backed up to a computer and hard drive. The photo cards used during the identification of plant activities were individually numbered and

input into an individual spreadsheet along with the plant's scientific name, Spanish names and Nahuat-Pipil name variants organised by speaker.

File naming was an important aspect of data management (Austin 2006) and can be viewed in further detail in Appendix C. Figure 17 shows an example of the structure used to organise the collected data, and Figure 18 shows an example of the file naming conventions employed.

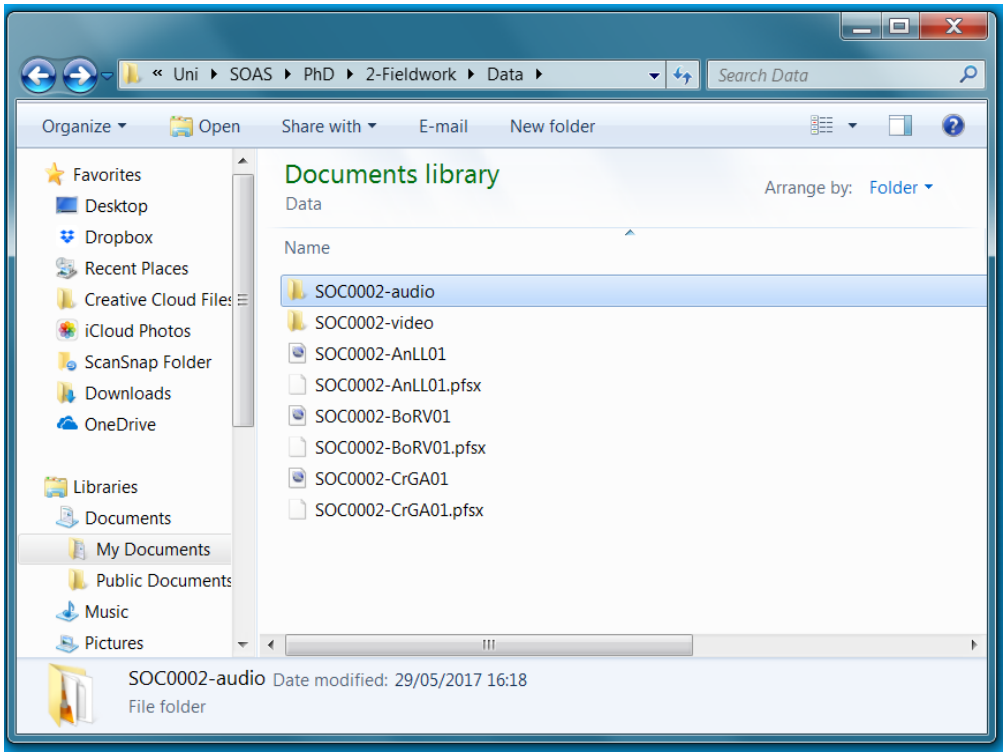


Figure 17: Data management

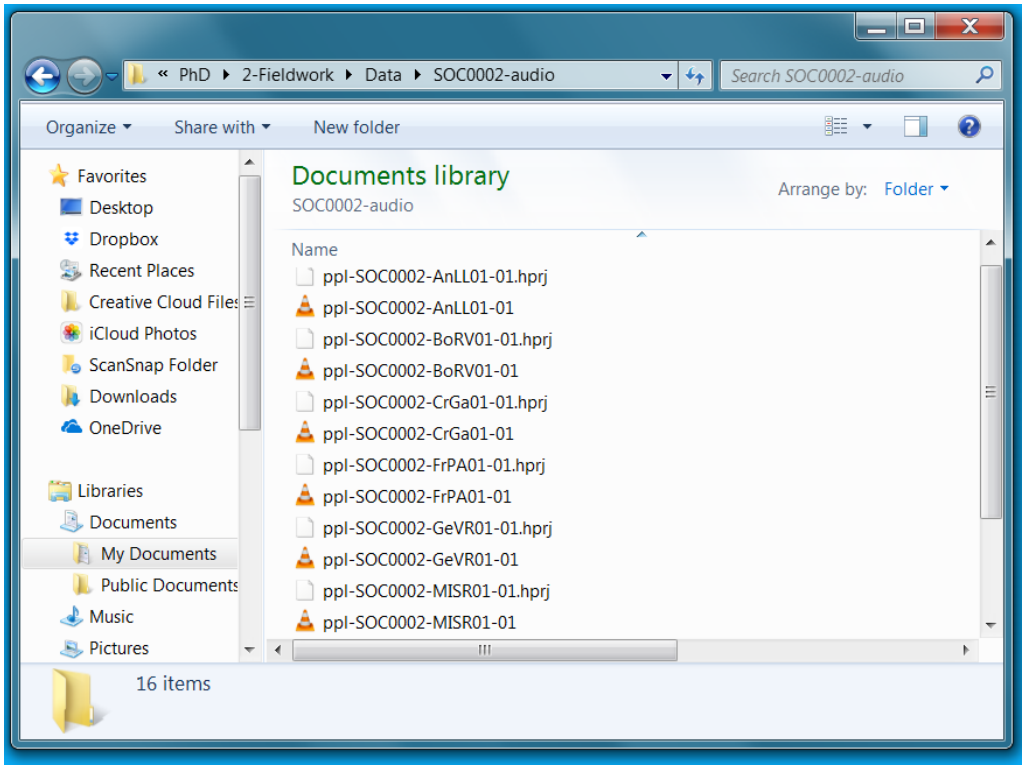


Figure 18: File Naming Examples

4.3.3.3 Instruments

Overall, data and metadata were captured through the use of video and audio recordings as well as detailed annotations in field notebooks. Audio recordings were used to document language and video was used simultaneously to record visual cues and information when appropriate. Video recordings were especially useful when eliciting data from groups as well as during outings such as forest walks and cultural events like the celebrations of the Day of the Dead and the Day of the Cross.

Ceremonies and everyday activities such as the preparation of food and medicines, and the processing of crops were also captured on camera. The combined resource of audio and video techniques have ensured that elicitation sessions, conversations, discussions, and narratives have been richly documented. It was intended that the use of video recordings would be of additional value in individual elicitation and/or group discussion sessions in order to stimulate further discussion and description. However, this will need to be done at a later date if research on this topic continues.

Field Notebooks

Field notebooks were a crucial aspect of the data collection and documentation process as they were a constant fixture of the field and data collection process. Given the detailed notes and metadata collected in an analogue form, these field notebooks were digitised to form part of the digital corpus of data. An example of a field entry can be seen in Figure 19.

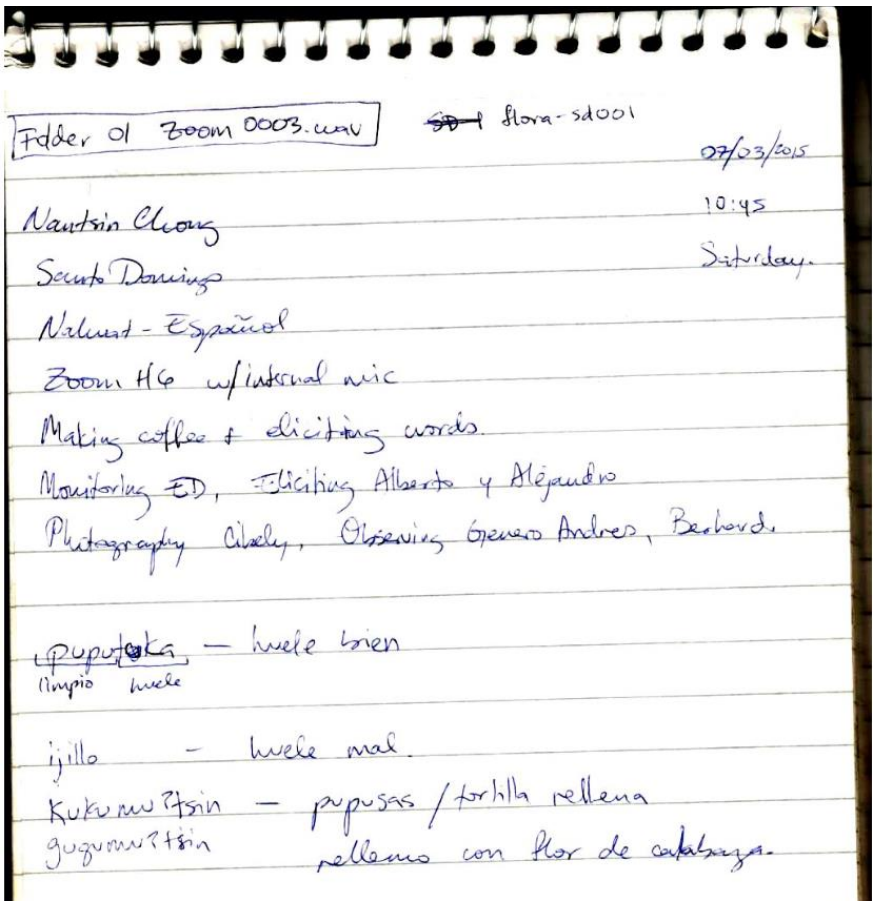


Figure 19: Field Notebook Example

FleX

Plant names were recorded and analysed using the Summer Institute of Linguistics software, Language Explorer, also known as FleX. Figure 20 shows an example view of how the data was organised and input into the software.

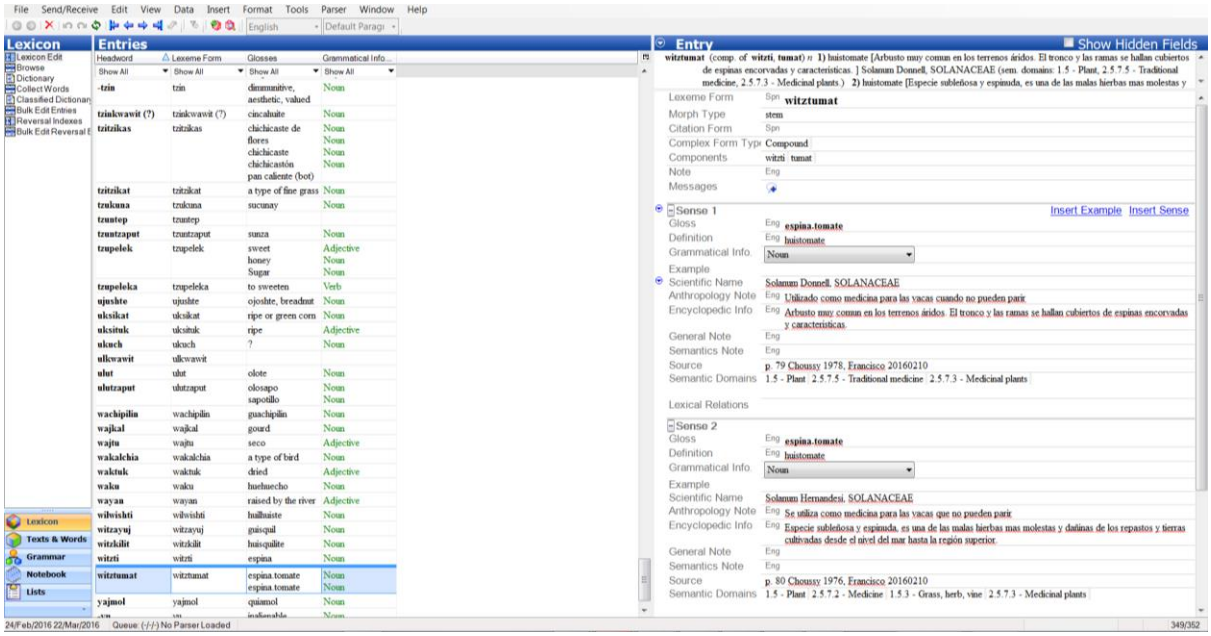


Figure 20: FLEx Screenshot

The software was used to get a better understanding of morpho-syntactic aspects of plant namings and to group lexical items into semantic fields.

Concluding Remarks

This chapter has presented the methodologies, methods and instruments which have been used to conduct the research presented in this thesis. Drawing on material collected over a period of 15 months between February 2015 and May 2016, the collected data was nevertheless a result of the long-term collaborative relationship with the Nahuat-Pipil community of El Salvador which was established in 2012 before starting the PhD programme.

The documentation of TEK has benefited from an interdisciplinary and collaborative approach with Indigenous participants, anthropologist, ethnobiologists and other stakeholders. Ethnographic methods of reflexivity in research have been key in cultivating an awareness of some of the factors involved in conducting a combination of social and experimental research while also juggling the role of being both a native and foreign researcher. As a Salvadoran, I am an insider who has first-hand knowledge of the historical, social and political issues that can affect the ability to interact and build relationships of trust with Indigenous people in El Salvador. However, as a representative of a European academic institution and a member of a different social class, I am an outsider who must be aware of

power dynamics and imbalances in order to conduct research in a manner that is respectful and collaborative.

The methods used to collect data on the naming, classification and categorisation of plants included ethnographic observation, semi-structured and topic led interviews, as well as ethnobotanical experimental methods such as plant identification, pile sorting and forest and hill walks. Some methods worked better than others given some of the aforementioned power dynamics, however, with time, gentle persistence and continuous acts of collaboration with the Nahuat-Pipil, most of these issues were overcome. The following Chapter presents the data that was collected.

5. RESULTS

Having established a baseline for understanding the motivations behind Indigenous interest in TEK, and the manner in which data on categorisation and linguistic classification of plants was collected, this chapter presents the findings resulting from the methodologies and methods outlined in Chapter 4.

Folk nomenclature used within Nahuat-Pipil is compared to Berlin's theories on nomenclature, and it was found that naming conventions in Nahuat-Pipil are in line with Berlin's theories (§5.1). I present an analysis of the morphosyntactic structure of plant names, namely the noun phrase structure (§5.2.1) and the existence of nominal classifiers (§5.2.2). This is followed by an overview of morphemes found described by Campbell (1985). On the topic of categorisation of plants, I present how this is done by speakers of Nahuat-Pipil and how cognitive categorisation strategies surface (§5.3). It has been found that some cognitive categorisation practices are reflected within the lexicon of the language (§5.3.2), however not all categories are lexically marked, as is demonstrated by instances of covert categorisation (§5.3.1). Within this section is the presentation of my proposed reanalysis of the morphemes and their relation to a nominal classification system. Items which have previously been analysed as absolutive markers /-t/, /-it-/ and /-ti/ with no semantic weight are hypothesised to carry semantic meaning which holds information about the state of the noun to which they are affixed. It is argued that this is a potential noun class marker that is used to provide information to the listener about the object in hand, i.e. whether the object is fully natural, derived from nature or fully synthetic.

As has already been stated, the overall data presented in this thesis was collected over a period of 10 months during two separate trips to the field which took place between 1st March 2015 – 10th May 2016. The initial trip lasted 3 months; the second lasted 7 months. The data presented in this chapter however is a result of comparisons between the data collected during fieldwork with what has been found in existing dictionaries and grammars (Lyle Campbell 1985; King 2011; Hernandez Gonzalez 2011). It offers a continuation on the discussion of the analysis of morphological systems in Nahuat-Pipil, however, the proposed reanalysis is by no means finite or complete.

5.1 Folk Nomenclature

This is not a cross-linguistic comparison of morphemes across Uto-Aztecan or even Nahua languages. Rather it offers a description of existing morphemes and suggests how they can be reanalysed to account for semantic meaning. Further research projects would benefit from comparing morphemes across other Uto-Aztecan languages as well as comparing them intra-linguistically across different domains. In the same way that the emphasis on plant terminology has been conducive to better understanding the language, it is likely that emphasis on other vital elements of the Nahuat-Pipil culture, such as clay work, would provide further insight into morphological and semantic interactions.

Concrete results include a 316-item wordlist of local names in Nahuat-Pipil for local plants and animals. This list includes approximately 300 plant names, and the remaining 16 are terms for animals. A note on data presentation: All Nahuat-Pipil plant-names are accompanied by their corresponding Salvadoran Spanish names (SV) and, when possible, their corresponding English names (EN). Most plant-names have been identified by their scientific name presented in italics and prefaced with ‘bot.’, and they are also presented when available.

As was previously mentioned in Chapter 4, it was found that some participants were unable to identify many of the samples provided during the plant identification task. Taking the mentioned factors into consideration, it was found that the plants that consultants had most problems with were those which are not native to the Americas and would have been introduced in the years proceeding contact with the Spanish colonisers. Such plants include onions, rue, carrots and were often found in the consultant's gardens and houses. While in most cases the consultants were able to correctly identify these plants in Spanish, they were not able to produce their corresponding names in Nahuat. Not surprisingly, none of the consultants had any issues identifying and naming plants native to Central America in Nahuat, such as tomato, avocado, maise, beans and so on. Comparison to plant terminology found in previous documentation of Nahuat-Pipil (Lyle Campbell 1985), showed that terms were already missing from the lexicon when fieldwork was carried out by Lyle Campbell in the 1970s. Comparison to early 1920s botanical guides (Carpenter Standley 1922; Choussy 1975; Choussy 1976; Choussy 1977; Choussy 1978) did not bring up any Nahuat-Pipil terms for non-endemic plants.

It was also noted that the boundaries between Nahuat and Spanish were sometimes unclear to the consultants and that words would be phonologically transliterated into the target language. In some cases, it was clear which lexical items were borrowed from Spanish e.g. *ajonjolin* from *ajonjolí* for 'sesame' however at other times the relationship was not so clear e.g. *izote* vs. *ekzote* for the national flowe *izote* (SV), and *tuna* for 'cactus'. There are also cases where Nahuat-Pipil has influenced Salvadoran Spanish as a regular pattern of sound change can be identified. This is exemplified in Table 19 demonstrating how /sh/ in Nahuat always becomes /j/ in Spanish. There are of course exceptions to this rule illustrated below in Table 20. Finally, Table 21 illustrates how /tz/ in Nahuat usually becomes /s/ or /ch/ in Spanish.

Table 19: /sh/ > /j/

Nahuat-Pipil	**Spanish**	**English**
Eshut	Ejote	Green beans
Shukut	Jocote	*Spondias purpurea* (bot.)
Shikut	Jicote	A large black wasp
Kushi Nekwil	Cojin	A fruit found in coffee plantations
Shulut	Jolote	Turkey (animal)
Shilut	Jilote	Green corn
Shikal	Jicara	A type of gourd

Table 20: /sh/ > /j/ Exceptions

Nahuat-Pipil	**Spanish**	**English**
Ujush	Jujushte	*Brosimum alicastrum* (bot.)
Ujushte	Ojoshte	Breadnut *Brosimum alicastrum* (bot.)
Shukulat	Chocolate	Chocolate

Table 21: /tz/ > /s, ch/

Nahuat-Pipil	**Spanish**	**English**
Tzaput	Zapote	*Pouteria mammosa* (bot.)
Ulutzaput	Ulusapote/Olosapo	*Couepia polyandra* (bot.)
Witzayuj	Guisquil/Guisayote	Chayote *Sacchum edule* (bot.)
Tzumpipe[31]	Chompipe	Turkey (animal)
Eksote	Izote	*Yucca elephantipes* (bot.)

At other times, however, it is difficult to deduce whether the term being offered is of Nahuat-Pipil or Spanish origin. The words *izote* (national flower), *tuna* (bot. *Opuntia ficus-indica*) *chan* (chiya seeds), *pacaya* (the edible flower of a palm tree) and *savila* (bot. *Aloe vera*) are consistently rejected during the elicitation tasks even though these are plants that are native to Central America. Direct elicitation of the Nahuat-Pipil names for these plants was in most cases unsuccessful, however, general discussions of such plants with Nahuat-Pipil participants in the target language have revealed slight variations in pronunciation. Thus,

[31] *Tzumpipe* and *shulut* both have the same referent 'turkey', however, it is likely that *shulut* comes from the Classical Nahuatl term whereas *tzumpipe* was a result of contact with Maya languages. This is based on the fact that in Mexican Spanish the term used for 'turkey' is generally *oajolote* whereas in Salvadoran Spanish the terms *chompipe* or *chumpe* are used but needs further verification.

izote becomes *eksote* or *iksote*, and *ajonjolí* (sesame, bot. *Sesamum indicum*) becomes *ajonjolin*. Comparison of these terms to early documents however, demonstrate that in some cases such as *izote*, these forms are very similar to those used during time of contact with the Spanish e.g. *itzut* (Muños Camargo 1585).

In relation to Berlin's (1992) Folk Classification of plants, it was found that all category names were found at the Generic level of folk classification of plants as outlined in Table 22 and Table 23[32], Berlin identifies generic taxa as being highly salient and the first term to be encountered in ethnobiological investigations, because they stand out in the landscape (Berlin 1978: 17). This was certainly found to be the case in Nahuat-Pipil. Folk nomenclature of plant categories, which are outlined in further detail in §5.2.2, were found at a generic level.

Table 22: Scientific Classification of Plants

Scientific Division	**Example**
Kingdom	*Plantae*
Class	-
Order	*Fagales*
Family	*Fagaceae*
Genus	*Quercus*, Oak
Species	*Q. ilex*
Varietal	*Q. ilex* subsp *gracilis*

Table 23: Folk Classification of Plants (Berlin 1992)

Berlin's Ranks	**Example**
Unique Beginner	Plant
Life form	Tree, bush
Intermediate (optional)	Covert e.g. flowering
Intermediate (optional)	Covert e.g. evergreen
Folk Genera (basic level)	Oak
Folk Specifics	Red oak
Varietal Taxa	Red dwarf oak

[32] Tables 22 and 23 show an approximation of the correspondence between scientific and folk classification as identified by Berlin (1992).

The following section provides a linguistic analysis of the internal structure of folk nomenclature.

5.2 Morphosyntactic Structure

In the results outlined in this section, I present the internal morphological compositions of plant names names and their relation to Berlin's Principles on ethnobotanical nomenclature and ethnobotanical classification. The processes of breaking down the internal composition of botanical nomenclature clearly demonstrates that many of these terms include reference to the root category to which they belong, which is in keeping with strategies for the creation of colour terms in Cuetzalan Nahuatl (Castillo Hernández 2000).

As an agglutinating and polysynthetic language, the lexical items of Nahuat-Pipil are a composite of root words or concepts paired with morphemes to signpost lexical items' relationships with each other. As a result, it can be difficult to uncover the etymology of a given plant-name. Thus, the following presents approximations of etymologies based on nominal structure of plant names by analysing in detail the internal morpho-syntactic structure of naming conventions of plant names. These are ultimately indicative of the noun phrase structure. The internal nominal structure incorporates three principal strategies: N, NN and NAdj. These are outlined in the following subsections.

5.2.1 NOUN PHRASE STRUCTURE

5.2.1.1 N

Nomenclature of plants classified as Generic within Berlin's (1992) Folk classification paradigm are often primary names as outlined in §2.2.1. Primary names can simple and composed of a single nouns (e.g. fish), productive and composed of compound noun (e.g. catfish), or unproductive and composed of Adj + N (e.g. silverfish). In Nahuat-Pipil, simple primary names usually refer to both the superordinate category and the prototype of the category, which is in line with Berlin's (1992) views on protypicality. Examples include: *tzaput*, *shukut*, and *et*.

Given the agglutinative nature of Nahuat-Pipil, however, it can be difficult to analyse the lexical composition of plant names. It is difficult to know where form ends, and another begins. For example, in §5.3.2.1, *eshut* has been analysed as one semantic category but lexically it could be analysed as either a single noun (N) or a compound noun (NN). Therefore, eshut could also be analysed as a productive primary name, however more research would need to be carried out to see if it behaves in a productive manner, or if it has become fossilised as a simple pirmary name. I would suggest that generally, the shorter the name, the less likely it is to be composed of a compound. For example, *et* 'beans', and *at* 'water', are single concept words.

5.2.1.2 NN

It was found that the use of compound nouns in ethnobotanical naming conventions is most common when the referent of the term is less likely to resemble the prototype of the category it belongs to. This strategy is always agglutinative and combines key features of the fruits or categories in question. When combined, the listener can determine in an intuitive manner what the object being referred to might resemble. For example, *kuyulmatza* combines the concept *kuyul* 'small hard fruit', with *matzaj* 'prickly but not spiny fruit'. This is the same strategy used in English when compounding names for fruits e.g. crab-apple or eggplant. This is an example of what Berlin (1992) refers to as 'secondary names', which are often employed to refer to taxa which are folk specific.

Althernatively, these could also be analysed as primary productive names, or folk specific or folk varietal names that are monothetic. Generally, to be monothetic, names must be defined in relation to a simple feature contrast such as colour or size. In Nahuat-Pipil, size of a fruit is usually indicated by referring to a small or large animal. Something small, for example, would be indicated in relation to *michin* 'fish', or *muyut* 'fly' e.g. *muyulala* 'mandarin', and *muyutzaput* 'nispero' (bot. *Manilkara achvar*).

5.2.1.3 NAdj

Without getting into a discussion about whether adjectives exist in Nahuat-Pipil, for this specific section, an adjective is defined as terms with the morpheme ending /-tik/. The combination of noun or root word with an adjective is in some cases, agglutinative

and other cases paired as a compound. Thus, *et istak* can also be called *istaket*. In both of these cases there is emphasis on the colour of the bean *istak* 'white'. These names are secondary names within Berlin's (1992) principles of nomenclature, as they only appear in contrastive sets, the most common contrastive sets being made between *istak* 'white', and *chiltik* 'red' as in *et istak* and *et chiltik*, *tzaput istak*, *tzaput chiltik*.

It was also found, however, that on occasion, the NAdj compound has become fossilised as is the case for *tzanajtultik* 'stem'. It would appear that in this example, the colour term is no longer an active component or a focal point of the term. This however needs to be investigated further to see if distinctions are made between different types of stems within a plant. In general, folk names with this linguistic construction are secondary names and are classified as folk specific taxa.

5.2.1.4 Non-agglutinative Noun phrases

Non-agglutinative noun phrases are also employed in ethnobotanical naming strategies, particularly when speakers are not confident in their responses. For example, *tzaput pal mico* 'category.prep.monkey', is a descriptive noun phrase (NPrepN) as is *kuyul ne mistun* 'category.art.cat' (NArtN). When this strategy is employed, the superordinate classifier is always used, as seen in this case with *tzaput* and *kuyul*. Noun phrases are more commonly employed to name plants which were identified but not frequently seen. This is to say that these plants did not feature in the everyday lives of the speakers and thus had to be described rather than named. Within Berlin's Folk Classification paradigm, these names refer to varietal taxa, however he does not refer to this naming strategy within his principles of nomenclature.

Comparing these naming conventions to Prototype Theory as discussed in §2.1.3, I would suggest that N names represent both the superordinate semantic category and its prototype, NAdj represent alternative prototypes and NN represent items which are furthest away from the prototype which is why they need to be described in further detail. Within Berlin's (1992) principles of nomenclature, N names are simple primary names assigned to the Generic level and prototype of that level, NAdj are secondary names used for taxa at subgeneric level such as folk specific levels as they usually only ocurr in contrastive sets, and NN names are productive primary names. Finally, the use of noun phrases to refer to varietal taxa and the

inclusion of superordinate classifiers within the naming convention is evidence that these classifiers are still productive. The following section describes word-final morphemes and considers the possibility of a nominal classification system which has become fossilised and is no longer productive.

5.2.2 NOUN CLASSES: FORMAL AND FUNCTIONAL ASPECTS OF MORPHOSYNTACTIC FEATURES

In the *Pipil Language of El Salvador*, noun-final suffixes are termed 'absolutives', "occur[ing] with most noun roots when these appear without affixes" (Lyle Campbell 1985: 39). In other words, the absolutive suffix appears in nouns in their untouched state, before they are possessed or pluralised. Four allomorphs of the absolutive marker are identified as the following: -/t/, -/ti/, -/in/ and -/ø/ as is indicated in Table 24.

Table 24: Absolutives in Nahuat-Pipil (Lyle Campbell 1985: 39–41)

Nr.	Absolutive	Environment in which it appears	Example
1	-t	When the noun ends in a vowel	*Siwat* 'woman', *akat* 'reed', *ulut, muyut* 'fly', *kwawit* 'tree'
2	-ti	Occurs with noun roots which end in consonants other than 'l', mostly with monosyllabic noun roots, but some polysyllabic ones also take it.	*esti* – 'blood' *ichti* – 'century plant' or string/rope' *sahti* – 'wax' *sinti* – 'maise'
3	-in	Non-productive; it appears principally with terms for small animals and other nouns. This allomorph is not lost when the noun occurs with a prefix, but is absent from compounds.	*nuchapulin* 'my grasshopper' *chapulehtapal* 'grasshopper wing tree' *kapulin* 'chokeberry' *kapulamat* 'tree name' (*kapulin* + *amat*)
4	- ø	Occurs with roots which end in *-l* and with many polysyllabic roots which end in a consonant including all that end in *-h*. Also occurs in Spanish loan words (L) regardless of whether they end in a consonant or vowel, and with nouns derived from verbs with the *-ni* 'agent' suffix.	*chil* 'chili pepper' *atul* 'a drink made from maise' *amux* 'moss' *ayuh* 'squash' *kawayu* 'horse' (L) *mesah* 'table' (L) *atsakwani* 'azacuan bird' *ehkuni* 'foreigner' *mikini* 'dead person'

In addition to the absolutive suffix, mention is made of possessive, diminutive, locative, and agentive affixes as well as nominalisers. While the description of these is thorough as will be seen in the following pages, it is my belief that the underlying morphosyntactic rules governing the interactions and use of these affixes have not been represented in their full semantic complexity. In the following section, I will present the postnominal and plural markers as they are described in Campbell (1985) then offer an alternative view for analysing the nominal morphosyntactic rules based on semantic grouping rather than syntactic function. Hopefully, this will serve towards furthering the discussion that there should be more of an interaction between syntactic structure and semantic meaning and categorisation when documenting and describing under-described languages.

The following subsections will look at the reanalysis of absolutive and locative markers in more detail.

5.2.2.1 Absolutives

In contrast to the paradigm of absolutives presented in Table 24, I propose that a more relevant semantic element exists within Nahuat-Pipil's nominal classification systems which has not been considered to date. I propose that the 'absolutive' (Lyle Campbell 1985) or 'clitic' (King 2011) markers as they have been previously named, such as -/t/, -/ti/, -/l/ and -/n/, are actually the remnants of a nominal classification system which has become fossilised over the years. I believe that each of these noun classes possess distinct semantic information akin to gender class system in other languages (Sagna 2012).

The nominal classification system becomes evident when considering how different absolutives combine with different possession and plural marking. Possession and plural marking in Nahuat-Pipil is marked in different ways. The possessive person affix is always present: /nu-/ '1sg', /mu-/ '2sg', /i-/ '3sg', /tu-/ '1pl'. /anmu-/ '2pl' and /in-/ '3pl'. In addition to person marking, the absolutive marker is either dropped or modified. Thus, possession can be marked as /nu-, -w/, and /nu-,-ø/. The term being possessed is always preceded by 1sg possessive marker /nu-/ and the final suffix is either replaced by /-w/ or completely dropped. Plural marking involves reduplication of the first syllable + /-j/ added to the reduplicated first syllable of the root word. This is either followed by word final /-ø/, /-chin/, /-ket/, /-met/ or /-wan/ (Hernandez Gonzalez 2011: 14) as is demonstrated in Table 25.

Table 25: Plural Marking in Nahuat-Pipil (Hernandez Gonzalez 2011: 14)

Singular		**Plural**	
Nahuat-Pipil	*English*	*Nahuat-Pipil*	*English*
Pipil	Child	Pijpipil	Children
Piltzin	Child	Piltzinchin	Children
Sital	Star	Sitalmet	Stars
Tepet	Mountain	Tepetket	Mountains
-manuj[33]	Sibling	-manuwan	Siblings
Siwat	Woman	Siwatket or sijsiwatket	Women
Takat	Man	Tajtakat or Tajtakamet	Men

This means that the addition of possessive changes the root suffix, and the underlying form of the root affects how the Possessive or Plural marker will be incorporated. I would suggest rather that the manner in which possession is marked is determined by the suffix of the root word, and that this suffix does in fact carry some semantic weight.

In Classical Nahuatl possession follows a similar pattern as presented in Table 26:

[33] Inalienable possession

Table 26: Classical Nahuatl (Campbell 2011: 246)

	Absolutive	Translation (EN)	Possessive (no-)	Locative (-lan)
1	Tepos-tli	axe	No-tepos	Tepos-tlaːn
2	Kak-tli	shoe	No-kak	-
3	Teʃ-tli	flour	No-teʃ	-
4	Mis-tli	cougar	-	Mis-tlaːn
5	Kal-li	House	No-kal	-
6	Tlal-li	Land	No-tlal	-
7	Tʃiːma-li	Tortilla griddle	No-tʃiːmal	Tʃiːmallaːn
8	Miːl-li	cornfield	No-miːl	Miːllaːn
9	Aːma-tl	Paper, fig tree	N-aːma	Aːma-tlaːn
10	e-tl	beans	n-e	E-tlaːn
11	Siwaː-tl	woman	No-siwaː	Siwaː-tlaːn
12	Ol-li	rubber	n-ol	Ol-laːn
13	Ikʃi-tl	foot	No-kʃi	-
14	Ikni-tl	fellow	No-kni	-
15	Isti-tl	fingernail	No-sti	-
16	Ihti-tl	Stomach	N̲-ihti	-
17	Iːʃte-tl	Eye	N-iːʃte	-
18	Ihwi-tl	feather	N-ihwi	-
19	Itskʷin-tli	Small dog	N-itskʷintli	-
20	Itʃka-tl	cotton	No-tʃka	-
21	Okitʃ-tli	male	N-okitʃ	-
22	Kaʃi-tl	bowl	No-kaʃ	-
23	Kʷawi-tl	tree	No-kʷaw	-
24	Maːyi-tl	hand	N̲o-maːy	-
25	ʃaːmi-tl	brick	No-ʃaːn	-
26	Paːmi-tl	flag	No-paːn	-
27	Koːmi-tl	jug	No-koːn	-

Although, the data would need to be compared across other Uto-Aztecan languages, it would appear that suffixes are actually an indicator of state, i.e. whether something can be consumed in its natural form or whether it needs to be processed or cultivated in some way. It remains to be seen whether the relationship between the absolutive marker or nominal classification marker and possession can also be translated into pluralization and the patterns that arise when considering the root suffix. As of yet, there are no theories which account for the different markers of pluralization in Nahuat-Pipil. What follows is some evidence to support reanalysing previously termed absolutive suffixes as nominal classifiers which consider the natural, synthetic or manufactured state of objects:

/-t/

Meaning: natural objects in their unprocessed form

Examples: *Tumat* 'tomato', *iat* 'tobacco', *awakat* 'avocado', *amat* 'amate tree', *at* 'water', *tzakat* 'grass' or 'marijuana', *akat* 'cane', *shukut* 'jocote', *elut* 'baby corn', *tzaput* 'sapote', *et* 'beans'

Table 27: Natural kind (-t)

Nr.	Lexical Item	Translation (EN)	Possession
1	*Tumat*	Tomato	Nutumaw
2	*Awakat*	Avocado (Bot.) *Nectandra globosa*	Nuawakaw
3	*Amat*	Amate (Bot.) *Ficus insipida*	Nuamaw
4	*At*	Water	Nuaw
5	*Tzakat*	Grass	Nutzakaw
6	*Shukut*	Fruit category; Prototype - Jocote (Bot.) *Spondias purpurea*	Nushuku
7	*Elut*	Young corn (Bot.) *Zea mays*	Nuelu
8	*Tzaput*	Fruit category; Prototype - Sapote (Bot.) *Pouteria mammosa*	Nutzapu
9	*Et*	Fruit category; Prototype - Beans	Nuew
10	*Tet*	Rock	Nutew
11	*Sukit*	Clay	Nukiw (?)

/-at/

Meaning: A product; Something which is created

Examples: *Tekumat* 'gourd', *metat* 'grinding stone', *kweyat* 'refajo', traditional skirt worn by women, *kwitat* 'feces', *matat* 'a traditional woven bag used by both men and women made of dried maguey', *petat* 'a traditional woven mat made of dried grass'

Table 28: Artefact or products (-at)

Nr.	Lexical Item	Translation (EN)	Possession
1	*Tekumat*	Drinking gourd	Nutekum
2	*Metat*	Grinding stone	Numet
3	*Kweyat*	'Refajo'	Nukwey
4	*Kwitat*	Faeces	Nukwit
5	*Matat*	Traditional woven bag	Numat
6	*Petat*	Traditional woven mat	Nupet

This perhaps should be analysed as (Vt) as some words ending in -/it/ also behave in the same way. Some exceptions include:

Ushit 'balsam tree' – *nuush*
Kashit 'plate or clay pot' – *nukash*
Tewkwit 'gold' – *nutewkwit*

/-ti/

This is a noun class marker that could be said to indicate a change of state. I would go a step further and propose the following:

Meaning: Useful things that must be elaborated or interacted with in order to undergo a change of state in order to be functional. Considering the cultivation and preparation process of maise in Table 29 for example, the word ending transforms from /-t/ to /-ti/ when the form undergoes a process of human led transformation e.g. via harvesting or cooking. It would be worthwhile investigating how vital the human element in the transformation process is, and whether this marker is indicative of something that a human or object must become e.g. mother.

Examples: *Witzti* 'thorn', *pajti* 'medicine', *patachti* 'wild cacao', *tutumuchti* 'rabbit', *sinti* 'corn', *ujti* 'path', *katashti* 'portable structure' e.g. skeleton, *pukti* 'smoke', *kwachti* 'rag', *talawti* 'handful of dough', *tepusti* 'iron', *kakti* 'sandals'

Table 29: Partial life cycle of cultivated and prepared maise

Lexical Item	**Translation (EN)**
Shilut	Green corn (not ripe)
Uksikat	Yellow corn (not ripe)
Elut chamajka	Ripe corn
Sinti	Harvested corn, unpeeled with flower and leaves still attached
Elut	Harvested and peeled corn, uncooked still on the cob
Tishti	Maise prepared as dough

This noun class marker attaches to both animate and inanimate nouns. Within inanimate nouns, possession is indicated in agglutinative format with the addition of the possessive 1sg marker /nu/- and the dropping of the noun class marker -/ti/ as can be seen in the examples below.

Table 30: Transformed material: Inanimate and Processed (-ti)

Nr.	**Lexical Item**	**Translation (EN)**	**Possession**
1	*Witzti*	Thorn	*Nuwitz/Nuwitzyu* (inalienable)
2	*Pajti*	Medicine	*Nupaj*
3	*Patach(ti)**	Uncultivated cacao, Patashte (Bot.) *Theobroma bicolour*	*Nupatach*
4	*Tutumuch(ti)**	Cob	
5	*Sinti*	Corn on the cob	*Nusi*
6	*Ujti*	Path	*Nuuj*
7	*Kakashti*	Skeleton, basket	*Nukakash*
8	*Pukti*	Smoke	*Nupuk*
9	*Kwachti*	Rag, fabric	*Nukwach*
10	*Talawti*	Handful of dough	
11	*Tepusti*	Iron	*Nutepus*
12	*Kakit*	Sandals	*Nukak*
13	*Tewti*	Dust	*Nutej***

*These are forms that are only seldom heard among very old and isolated speakers

** Phonological change to avoid ambiguity.

Except for 'mother' which must always be preceded by a possessive marker, animate objects are possessed in a non-agglutinative format with the addition of 'nupal', another marker for possession as is indicated in Table 31.

Table 31: Animate (-ti)

Nr.	Lexical Item	Translation (EN)	Possession
1	*-Nan(ti)**	Mother	*Nunan*
2	*Tuchti*	Rabbit	*Nupal ne tuchtin*
3	*Kwichti*	Hawk(?)	*Nupal ne kwichti*
4	*Kanawti*	Duck	*Nupal ne kanawti*
5	*Tujti*	Hawk(?)	*Nupal ne tujti*
6	*Kwawti*	Eagle	*Nupal ne kwawti*

Proof that -/ti/ is a fossilised version of a processed good:

1.

	N		*V*		*N*
PPL	Et	+	Mana	=	Emanti
ESP	Frijoles	+	Cocinar	=	Frijoles cocidos
ENG	Beans	+	Cook	=	Cooked beans

2.

	Obj.		*V.*		
PPL	Ta	+	Paka	=	Tapakti
ESP	Obj.	+	Lavar	=	Lo lavado
ENG	Obj.	+	Wash	=	The washed object

3.

	Obj.				*Adj*
PPL	Ta	+	Mana	=	Tamanti
ESP	Obj.	+	Cocinar	=	Lo cocido
ENG	Obj.	+	Cook	=	The cooked

4.

	Obj.		*V*		
PPL	Ta	+	Alawa	=	Talawti
ESP	Obj.			=	El puñito de masa
ENG	Obj.			=	A handful of dough

In the above examples we can see how the marker -/ti/ indicates a change of state, particularly in the first example. The -/t/ final word et, undergoes a change of state when it is cooked, and this is not only indicated by the agglutination of *mana* to cook, but further indicated by the addition of a post-nominal suffix. This strategy is also applied in order to nominalise verbs as can be seen in examples 2 and 3 where *paka* – to wash, becomes *tapakti* – the washed object. Similarly, *mana* – to cook, becomes *tamanti* – the cooked object.

Furthermore, considering once more the terms for corn presented in Table 29 and reproduced below in Table 32, it is possible to see how word endings change whenever the product undergoes a change of state. Corn is a completely cultivated crop developed over years of agricultural processes. Looking at the different terms for corn in the table below it is possible to see that all terms ending in /-ti/ (5, 9-11) require some sort of human interference or a change of state. It is also possible to observe /-l/ endings (1, 7, 12) which are also present in terms resulting from human processing. Further investigation and analysis is needed to understand the meaning of word final /-l/.

Table 32: Cultivation process of Maise

	Nahuat	**English**
1.	Mil	Maise field
2.	Shilut	Green corn (not ripe)
3.	Uksikat	Yellow corn (ripe)
4.	Elut chamajka	Ripe corn
5.	Sinti	Harvested corn, unpeeled with flower and leaves still attached
6.	Elut	Harvested and peeled corn, uncooked, still on the cob
7.	Tawilial	Husked corn (grains removed from the cob)
8.	Ulut	Bare cob
9.	Sinti wajtu	Dried corn
10.	Tishti	Maise prepared as dough
11.	Tawial tamaltu	Cooked corn
12.	Tamal	Tortilla – another of the many corn-based foods. Like the 'rigua' but made with dried corn.
13	Elutaska	Rigua – one of the many corn-based food products. This is one made with fresh corn.

5.2.2.2 Locative Markers

If one aspect the morphological system can be analysed to carry more semantic weight, it is likely that other aspects of the morphology can also be analysed thus. Therefore, this section

and the following propose some alternative analyses for what have been previously been termed locatives.

Table 33 provides an overview of locative markers in Nahuat-Pipil.

Table 33: Locative Markers (Lyle Campbell 1985: 46–49)

Marker type	Form	Meaning	Description	Example
Locative	/-pan/	On, upon, near	Non-productive. This suffix always appears in relation to the surface of something.	*Apan* 'river' *Shupan* 'rainy season' *Tiupan* 'church'
	/-tan/	In, among, under, near, next to	A non-productive marker which is historically very closely connected with -/tani/ meaning 'under, beneath and below'.	*Kojtan* 'forest' *Miktan* 'deep' *Tsaputan* 'Ishuatán' *-nakastan* 'beside'
	-/k/ -/ku/	in	Non-productive. -/k/ appears after a vowel whereas -/ku/ appears after a consonant.	*Anawak* 'breeze' *elishku* 'stomach' *Ishtawak* 'meadow' *Nawitzalku* 'Nahuizalco'
	-/kan/		A restricted suffix which appears to be related to -/ka/. There are very few examples.	*Taweykan* 'countryside' *Taneskan* 'dawn', 'clearing' *Yejkan* 'alone', 'to the right'
	-/tal/	A place of many	Derived from the root word 'tal' meaning land. It corresponds with the Spanish suffix -/al/ and -/ar/ which implies 'field of' whatever noun the suffix is attached to. It is possible that the meaning and even the origin of this suffix has been influenced by Spanish case, given that other Nahua varieties are not known to have this ending.	*Akatal* 'canebrake', 'place of reeds' *Amatal* – 'many amate trees' *Sakatal* 'pasture' *Tetal* 'a rocky place' *Ukutal* 'pine grove' *Uwatal* 'canebrake', 'uncleared land' *Waktal* 'dry land'

An alternative analysis for the definition of /-pan/ presented in Table 33 above, is that it signifies a fluid abundance or constant movement of some sort. For example, *apan* 'river' can be said to come from *at* 'water' and /-pan/ could indicate abundance. The same can be said for *ikshipan* 'on foot' (from *ikshi* – foot + abundance), *tiupan* 'church' (*tiut* – God +

abundance) and *shupan* ‘rainy season’. Campbell glosses *shupan* as derived from *xuxuwik* a word he identifies as meaning ‘green’. However, the word *shushuknaj* is more commonly used today.

The following analysis of /-pan/ is proposed:

Gloss

1.

a-	pan
Water-	*LOC.Fluid abundance*

Moving water
River

2.

Tiu-	pan
God-	*LOC.Fluid abundance*

Abundance of God
Church

3.

Shu-	pan
Green-	*LOC.Abundance, movement*

Abundance or growth of green
Rainy season

The suffix /-tan/ is generally found in place names, much like /-pan/ and could also be interpreted as having an element of abundance in its meaning. Take for example, *kojtan* (SDG) or *kujtan* (CUI), derived from (*kwawit* – ‘tree’ + grounded abundance) or *miktan* ‘deep’. *Miktan* is also the name of the underworld, composed of *miki* – to die, + grounded abundance.

Consider the following analysis:

1.
Kuj- tan
Tree- *LOC.grounded.abundance*
Abundance of trees
Forest

2.
Mik- tan
Death- *LOC.grounded.abundance*
Abundance of death
The underworld

3.
Tsapu- tan
Zapote- *LOC.grounded abundance*
Place where there are many zapotes
Place name

Some exceptions include *-nakastan* meaning ‘besides’ or ‘next to’. This is derived from *nakas* ‘ear’. Perhaps this is a metaphorical expression like the English expression ‘ear-to-ear’ meaning in extreme proximity. In this sense, /-tan/ could be seen to an abundance of proximity, however further investigation is required.

Gloss

1.
Ta- Wey- kan
Obj.- *big-* *Abundance*
Countryside

2.
Ta- Nes- kan
Obj- *To appear-* *Abundance*
Dawn or clearing

3.
Yej- kan
Good?- *Abundance*
Alone, to the right

Considering the reanalysis of /-tik/ as indicating likeness, perhaps /-ku/ endings should be analysed thus. For example, it has been found that addition of -/k/ to an absolutive noun served to turn that noun into something that behaves like an adjective. For example:

shukut = jocote

shukuk = sour

ayuj tselek = young squash

kamuj chiltik = red potato (sweet potato)

tzaput chiltik = red zapote

istat = salt, white

tzaput istak = white zapote

tzupelek = sweet

tumawak = large

In terms of -/ku/, Classical Nahuatl analyses -/co/ as a place marker. For example, the name Shuchimilco, a town south of Mexico City is known for its fields of flowering maise plants. The name of the town reflects the geography of the surrounding area. Consider also, Nahuizalco, the place of the four mountains. Nahuizalco itself is situated in a flat valley and is surrounded by a ridge of volcanic mountains.

Gloss

1.

Shuchi-	Mil-	co
Flower-	*Maise, field-*	*GEN.LOC*

Place of the flowering corn fields
Place name

2.

Naw-	I-	Tzal-	ku
Four-	*3sg-*	*To thunder-*	*GEN.LOC*

Place of the four thunders
Nahuizalco lies in a valley of volcanoes

3.

Tunal-	ku
Sun-	*GEN.LOC*

Place or time of the sun
Summer

The analysis of ‘itzalku’

4.

I-	Tzal-	ku
3sg-	*To thunder-*	*GEN.LOC*

The place that thunders
Izalco is the name of a volcano that almost continually erupted from 1770-1958. Its last eruption was in 1966.

Considering all of the above, I would like to suggest that the underlying marker for 'abundance' is -/an/. It is possible that there may be underlying phonological processes which affect the appearance of each preceding consonant. Alternatively, the consonant does alter the meaning ever so slightly and can only be applied to specific words. Following Campbell's (1985) proposal that -/tal/ is of Castilian origin, the fact that the suffix -/tal/ was so readily incorporated into the language could be considered as support for the idea that such forms were already common and frequently used. Furthermore, the suffix /-tan/ could be etymologically traced to the combination of *tal* 'earth' and /-an/ 'abundance'. All words ending with /-tan/ seem to incorporate an element of groundedness.

This section has provided some explanations which detail what a reanalysis of morphosyntactic marking in Nahuat-Pipil might look like. It is believed that the view presented in this section could be applied across all morphosyntactic markers in the language, however this would require a more detailed investigation. The following section

5.3 Categorisation

5.3.1 UNMARKED CULTURAL CATEGORIES

The pile sorting and categorisation tasks revealed some of the cultural values behind the grouping of items. Participants were asked to group items depending on how similar they were, and it was found that items were grouped according to the use, value, and methods of preparation. In addition to linguistic categories, the pile sorting task revealed cognitive categories such as the following:

- High value crops (economic, nutrition, spiritual)
- Nutritious plants
- Medicinal plants
- Cold foods
- Hot foods

These categories offer an insight into how covert categorisation varies depending on non-linguistic factors. These covert categories appear at the level that Berlin (1992) terms as Intermediate level taxa.

As is explained above, the variables noted for these categorisation tasks include gender, age, occupation, language fluency, parents' languages and age at which Spanish was learned. There were marked gender differences in the categorisation. Males tended to group plants into the top three categories, whereas women would group things according to the bottom three categories presented above.

Looking at the following data set for example:

AnRa01, 65, male, agricultural farmer and religious community leader

- Uncooked plants
- Cooked plants
- Highly nutritious plants
- Plants with high economic or spiritual value
- Medicinal plants

Women, on the other hand have a tendency of grouping things in accordance with what foods are combined to make certain dishes:

AnLL01, 50, female, nursery teacher and language activist

- Juices
- Seasonal vs. unseasonal fruits
- Ingredients for soup
- Ingredients for guacamole
- Ingredients for *chilate*

We see here evidence for the idea that the elaboration of a vocabulary is motivated by utilitarian biases, and is not limited to what is only edible but also includes species that are medicinally, technologically, aesthtically, spirtually and ecologically valuable (Hunn 1982). In the two examples presented above it can be seen that there are cognitive differences in the way that men and women categorise plants. In this context, it seems that men consider the value be it economic, spiritual, medicinal or nutritional, whereas women appear to group plants in terms of how they would prepare them for human consumption. For example, men focused on grouping high value plants such as the jiote (spiritual value) and the cacao

(economic and nutritional value), whereas women forcused on grouping together food items. This could be reflective of the roles of men and women play within this society, where men provide for their families and women prepare these provisions in order to nurture their families. From discussions had with women and men, it seemed that in the past most foraging was done by women whereas agriculture and cultivation were carried out by men, even though the roles seem to be reversing now. It would be interesting to continue this research in the future to see if and how role reversal affects cognitive categorisation of plants in the Nahuat-Pipil context.

This exercise also provided insight into what was deemed to be culturally important within a historical context. For example, the grouping of cacao along with other items that are perceived as being of high value, rich or with a high nutritional content is a remnant of the history surrounding the items within this category. It was also found that some foods such as maise or beans have their own extended and specialised vocabulary which is dependent on the different stages of cultivation and preparation. This is probably because these two crops are considered staples within the Nahuat-Pipil speakers' diet and have been for many centuries (Morán 2008). In the case of maise and beans, the cultural value of these two crops is reflected in their taxonomic classification, as they are both generic categories, and the different taxonomic varities found within each category are extensive.

Other culturally important plants were considered while discussing my research with a local anthropologist, who claimed that the *wajkal*, or gourd, and the *morro* tree are part of the Nahuat-Pipil world view (PC: Lopez 2015). The claim was made that Nahuat-Pipil worldview positions the world within a gourd split into two equal pieces. The top half represents the physical realm where humans, animals, and plants reside, and the bottom half represents the underworld, or *miktan*, where the spirits and magical beings reside. Within this model of the universe, each half represents a season: The top half the time of sun and drought, the bottom half represents the time of rain, and the two points furthest from each other where the two halves meet are marked by the cultural festivals of the Day of the Cross[34] and the Day of the Dead[35], both which mark the start of the rainy season and dry season respectively. Research into existing Nahuat-Pipil folk stories provided some support for this theory. Humanity, for example, is said to have been born from a gourd which cracked open

[34] Celebrated on the 3rd May.
[35] Celebrated on the 1st and 2nd November.

(Schultze-Jena 2014). Despite anthropological claims that the squash and gourd were deeply meaningful to the Nahuat-Pipil identity and culture, however, I have found no evidence within overt linguistic categories, taxonomic classification or nomenclature to support this claim. Along these lines, other investigations were made on the positioning of squashes and gourds. Based on the prominence of maise within Nahuat-Pipil culture, and the various terms used to refer to maise as evidenced in Table 34, I hypothesised that a similar paradigm might be found for the many different types of squashes and gourds that are cultivated in home garden. However, as discussed in further detail in §5.3.2.1, I found only one term for each: *ayut* and *wajkal*.

Table 34: Different stages of Maise Cultivation[36]

Nahuat	**English**
Mil	Maise field
Shilut	Green corn (not ripe)
Uksikat	Yellow corn (ripe)
Elut chamajka	Ripe corn
Sinti	Harvested corn, unpeeled with flower and leaves still attached
Elut	Harvested and peeled corn, uncooked, still on the cob
Tawilial	Husked corn (grains removed from the cob)
Ulut	Bare cob
Sinti wajtu	Dried corn
Tishti	Maise prepared as dough
Tawial tamaltu	Cooked corn
Tamal	Tortilla – another of the many corn-based foods. Like the 'rigua' but made with dried corn.
Elutaska	Rigua – one of the many corn-based food products. This is one made with fresh corn.

[36] For images of some of the different stages of corn see Appendix D10.

5.3.2 PLANT CATEGORIES

Through categorisation tasks and general observation and conversation, I have identified what I believe to be semantic and lexical categories in Nahuat-Pipil. Within Berlin's (1992) model for plant classification, all these categories would be found at the Generic level, and individual taxa within each category are subgeneric taxa. It has been found that no distinction is made between fruits and vegetables in Nahuat-Pipil, rather the categorisation of fruits and vegetables is done in relation to their interaction with the human body. Features such as size are measured according to how the human would have to hold said fruit i.e. will it be held in the palm of my hand or the tips of my fingers? Does it need to be torn, sliced or parted to be consumed? Interestingly, references to these different categories are occasionally accompanied by a respective hand motion. Here is an overview of the identified categories presented in alphabetical order:

Table 35: Nahuat-Pipil Plant Categories

	Plant Category	**Category Description**	**Prototype**	**Examples**
1	*Akat/Uwat*	Plants with partitioned, tube like stems such as bamboo, cane and 'bara de castilla'.	*Akat* 'Sugar cane'or 'grass'	*Akat* 'sugar cane, small' *Elutzakat* 'tall grass' *Istahuat* 'fine grass used for building' *Tekumajakat* *Tzakat* 'marijuana' or 'grass'
2	*Ayut* *Ayuj*	Squashes, pumpkins and edible creeper plants that grow along the ground, members of the *Cucurbiteae* family. Generally, have thick outer skin, a soft, fleshy interior and come in all shapes and sizes. Its seeds are highly sought after and used in cooking.	*Ayut* 'squash' or 'pumpkin'	*Ayut* 'squash' or 'pumpkin' *Witzayut* 'chayote'

3	*Chil*	All chillies, members of the *Capsicum* family. Used to add flavour to cooked food, though not necessarily spicy.	*Chil* 'red chilli pepper'	*Chil Chukulat, Chil Tzupelek, Chil Tata, Chil Tepet, Chil tekpin* 'different types of chilis'
4	*Eshut*	All young beans which are edible without being cooked		*Eshut* 'green been'
5	*Et*	All bean-like fruits which grow in 'pods'	*Et* 'red bean'	*Istaket* 'white bean' *Perunhet* 'lentil'
6	*Kamut* *Kamuj*	All starchy and edible roots.	*Kamut* – sweet potato, yuca	*Chiltikamuj* - red sweet potato *Kamuj* - yucca *Shuchikamuj* - carrot
7	*Kilit*	Small, edible and leafy with a woody stem. Objects which belong to this category are 'torn' from their woody stem	*Kilit* 'chipilin' Crotallaria vitellina	*Masakilit* 'lorocco' Fernaldia pandurata *Ishkilinit* 'tamarind' Tamarindus indica
8	*Kushit*	Fruit encased in pods like beans, however, the inner flesh is fleshy. Like a combination of a banana and a peapod. Outer skin is thin and can be peeled easily.	*Kushit* 'pepeto'	*Kushit* 'paterna' Inga paterno Harms *Kushit* 'pepeto negro' Inga leptoloba Schecht *Kushit* 'pepetillo' Inga espuria Humb. and Bonpl. *Kushit* 'cojín de finca' Inga preussi Harms

9	*Kuyul*	All small, hard ornamental fruits or nuts. They usually have some sort of economic value or spiritual function. Highly valued.	*Kuyul*	*Kuyul ne mistun* 'coyol de gato' Solanum hirtum
10	*Kwawit*	Tree	*Kwa-*	*Kwaulut* 'caulote' Guasuma umifolia *Kwashilut* 'kwajilote' Parmentiera edulis
11	*Mekat*	Vines		*Mekat pal corral* 'Petastoma patelliferum' *Mekat* 'vieja' – n/a *Mekayo* 'hammock'
12	*Tzaput*	All palm-sized sweet fruits with a hard skin and smooth shiny seed. Need to be consumed using a 'splitting' or 'slicing' motion in order to qualify	*Tzaput* 'sapote'	*Tzaput istak* 'custard apple' Annona squamasa *Muyutzapu*t 'nispero' Manilkara achvar *Atzaput* 'pear'
13	*Tumat*	n/a	*Tumat* 'tomato'	*Witztumat* 'huistomate' Solanum donnell
14	*Shukut*	All small fruits which are sour and can be held by the tips of the fingers	*Shukut* 'jocote' Spondias purpurea	*Shukut jobo* – jocote verano, Spondias mombin *Shukut* – jocote invierno, Spondias lutea *Lalashukuk* - mandarin

15	*Pajti*	Medicinal plants	*Pajti* 'medicine'	*Siwapajti* – 'ciguapate' Pluchea odorata *Tempajti* 'Tempate' Jatropha curcas
16	*Puputukat*	Herbs which add flavour to food (coriander, mint, spring onion, sometimes include carrots and celery etc.)		Coriander Mint Spring onion
17	Citric Fruits	Covert category: there is no term for this category, possibly because citric fruits are not native to the area	*Lala* 'orange'	*Muyulala* 'mandarin'

This list of categories has been composed via active discussions and interactions with native Nahuat-Pipil speakers and is by no means a finished list, but rather represents an overview of the categories within which plant names were placed throughout the data collection process. Almost all these categories are productive; they are still being used to create new words whenever a new fruit is encountered as is the case with *muyulala* or *lalashukuk*, two terms for 'mandarin' which were spontaneously created and agreed on by speakers during one of my elicitation sessions. Rows 1-9 and 12-15 represent the Generic taxa in the system of folk taxonomies; rows 10-11 represent Life Form taxa. Finally, rows 16 and 17 represent cover categories which are undergoing a process of lexical shift. The term *puputukat* for example means 'reeds that smell good' and is applied to all herbs which are not classified as *kilit*. In contrast to other categories however, taxa within the category *puputukat* do not have Nahuat-Pipil names and thus not subject to lexical nominal classification. Finally, the category of citric fruits is one that appears to be expanding as neologisms are created for taxa within this category. The prototype is *lala*, 'orange', and it is possible that the nominal classifier for this category might also be *lala*, but it remains to be seen and depends on the lexical form of future neologisms for items within this category.

Below I discuss the categories in further detail and divided themes further into Traditional and New Categories. Images of the referents of these categories are presented in Appendix D.

5.3.2.1 Traditional Categories

Classic categories are those which make reference to plants and fruits that have been around since pre-colonial times. They include *Akat*, *Ayut*, *Chil*, *Eshut*, *Et*, *Kamut*, *Kilit*, *Kushit*, *Kuyul*, *Pajti*, *Shukut*, *Tumat*, and *Tzaput*. This section will describe some of the features of each category and provide lexical examples.

Much like in many languages like English or Spanish, Nahuat-Pipil has words that are used to refer to different types of plants. Due to its polysynthetic nature, categories at the life form rank such as *kwawit* 'tree', or *mekat* 'vine' , are combined with the descriptive features of that plant to create the plant name. In some cases, the supra-category is combined with other categories such as in the case of *Kwawkilit*. The technique is to combine with terms that are easily accessible. The names *Kwaulut* and *Kwashilut* both refer to different stages of maise production for example. Maise is a major crop in the Mesoamerican culture. This means that upon hearing the word, the hearer will be able to identify key features of the named plant and visualise it to some extent, even if it is unknown to them. This is a naming strategy which is frequently used within Nahuat-Pipil.

Table 36: Kwawit

a.	Kwawit *Category* Tree/wood	
b.	Kwaj *Category* Guajimol (SV)	Mol
c.	Kwa *Category* Cuajilote (SV) *Parmentiera edulis*	Shilut *Cat.Ref.*
d.	Kwa *Category* Caulote (SV) *Guasuma ulmifolia*	Ulut *N. (olote)*
e.	Kwawit *Category* Rubber tree (EN) *Castilla elastica*	Ujle *N. (rubber)*
f.	Kwaw *Category* Guachipilin (SV) *Diphysa robinoides* Benth	Kilit *Cat.Ref.*
g.	*Kwaw* *Category* Palo de zope (SV) *Aegiphila martinicensis*	*Kusma* *N. (vulture)*

Akat

Akat or *uwat,* is a term which refers to long, thin plants with cylindrical stems (see Appendix D1). The stems must be partitioned much like bamboo, sugar cane and the *bara de castilla*. The prototype fluctuates between sugar cane and grass. Some examples of items belonging to this category are *akat* ‘sugar cane, small’, *uwat* ‘sugar cane, large’, *akat chamawak* ‘bamboo’, *elutzakat* ‘tall grass’, *tekumajakat* ‘medicinal tree’, tzakat ‘grass’ or ‘marijuana’, *tzinhakat* ‘dragonfly’. The individual partitions of the plant or animal are called *inekpach*. See Table 37.

Table 37: Akat

a.	Akat *Category*			**b.**	Akata *Category*		Chamawak *Adj. (large, robust)*
c.	*Elut* *N. (young corn)*	*tz* *O.*	*Akat* *Category*	**d.**	*Tz-* *Onomatopoeia (O)*		*Akat* *Category*
e.	Tzin *Diminutive*		Akat *Category*				

One younger semi-speaker discussed the onomatopoeic quality of names of natural phenomena. They claimed that in the case of *tzakat* specifically, the sound /tz-/ refers to the sound the wind makes when it passes through tall grass. This is not something that was corroborated by older speakers, however.

Ayut

Ayut or *ayuj* is the term used to refer to many members of the *Cucurbiteae* family, including squashes and pumpkins (see images in Appendix D2). Members of this category have a tough outer skin, firm edible flesh and soft edible seeds. They grow on vines and interestingly, most members within this category are not separated or distinguished further. It seems there is no need to differentiate between the different members of the *Cucurbiteae* family, since they are all prepared in the same manner: sweetened with a sugar syrup and cinnamon sticks. There are two exceptions however, one of which is *witzayut*, also known by some as *witzkilit*. There is a lack of consensus between speakers on Náhuat in regard to the proper term for what in English is sometimes known as 'chayote'. Scientifically, the chayote is known as *Sacchum edule*. It shares all the same features with other members of the *ayut* category except that it is prepared savoury rather than sweet and is consumed as part of the main meal rather than as a snack or for special occasions. In Salvadoran Spanish, the chayote is known as *güisquil*, thus the lack of consensus, as such within Nahuat-Pipil there is often variation in regards to the Náhuatl-Pipil as the sign seems to be undergoing a process of lexical change. This discussion between speakers is split 50-50; approximately half use the term *witzayut* and the other half uses the term *witzkilit*. This disagreement is visible in the comparison of terms in two separate Náhuat dictionaries *Nawat Mujmusta* (Hernandez Gonzalez 2011) and *The Pipil Language of El Salvador* (Lyle Campbell 1985). Hernandez Gonzalez (2011: 82) uses the term *witzayut* to refer to the *güisquil* or *chayote*, and Campbell (1985) uses the term *witzkilit*

to refer to the same referent. Considering the main features of members of the *ayut* category outlined above and comparing these to features of the *kilit* category discussed below, I suggest the most fitting term for this fruit is *witzayut* as it embodies all the features of the *ayut* category. However, it is also possible that there are other factors which might affect lexical variation such as, for example, familial idiolects.

The second exception within this category is seen in the treatment of the cucumber and similarly eaten family members such as the watermelon and *sandía de culebra*. It seems that members of the *Cucurbiteae* family which can be consumed without being cooked, have either lost their original Nahuat-Pipil names, or were simply not named in the first place. The cucumber, or *pepino* in Spanish, is simply knowns as *pepinuj*; watermelons and its variants are known by their Spanish names *sandía* and *sandía de culebra*.

It is interesting to note that term *ayut* is also metaphorically used for animals that in some way or other share some of the key characteristics of the *ayut* category. Thus turtle, with its hard-outer shell, is *ayutzin* (literal translation: small squash). Likewise, the armadillo is named *ayutuch*.

Table 38: Ayut

a.	Ayut *Category* *Squash*			
b.	Witz *N. (thorn)* *Sacchum edule*	Ayut *Category*		

Chil

Chil is the name of the category that refers to all members of the *Capsicum* family, otherwise known as chillies (see images in Appendix D3). Members of this category are used for flavouring cooked food, though this does not necessarily mean they are spicy. Unlike the *ayut* category where despite having a great variety of squashes available a few lexical items can be used to refer to many referents, in this category, each type of chili is individually named. Some examples include: *Chil Chukulat*, *Chil Tzupelek*, *Chil Tata*, *Chil Tepet*, and *Chil Tekpin* seen in Table 39. The name of each chili plant is indicative of the flavour that its consumer can expect or its relative size. Thus, *Chil Chukulat* could be expected to have a richer more chocolatey flavour. *Chil Tzupelek* refers to what in English are known as sweet peppers. *Chil*

Tata and *Chil Tepet* are chillies that are highly spicy. Finally, the name *Chil Tekpin* refers to its size, so consumers can expect to look for a small chili.

Table 39: Chil

a.	Chil *Category*		**b.**	Chil *Category*	Tekpin *N. (flea)*
c.	Chil *Category*	Tata *V. (to burn)*	**d.**	Chil *Category*	Tepet *N. (volcano)*
e.	Chil *Category*	Chukulat *N. (chocolate)*	**f.**	Chil *Category*	Tzupelek *Adj. (sweet)*

Eshut

Eshut is a sub-category of *Et*, in the way that it encompasses features of *Et* with the additional feature that it must have an edible pod. Furthermore, *Eshut* is a term that is used to refer to the green or freshly picked product that has not yet been dried. Its prototype is the green bean, which is the only pulse which does not dry well and thus must be eaten fresh.

Alternatively, *eshut* be reanalysed as *e(t)shut*. The term *eshijchil* is used to refer to the food *tamal de frijol*, which could be described as a large maise flour dumpling with a bean filling. The first part of the word clearly refers to *et* thus could be argued that the voiceless dental is dropped when it is paired next to a palatal fricative. If *-shut* is derived from the classical Nahuatl form of *shukut* meaning raw or green fruit (Molina 1970), *eshut* could effectively be glossed as *category.greenfuit*.

Et

Et is an important category as it forms an integral part of the Nahuat-Pipil culture, being a staple part of the diet along with maise (see images in Appendix D4). The category itself includes members of the *Fabaceae* family, particularly varieties of the common bean, *Phaseolus vulgaris.* The most widely available and consumed bean, and the prototype of this category is the Salvadoran red bean or the *frijol de seda*, a variety of *Phaseolus vulgaris*. The

Salvadoran red bean is about 2/3 the size of a red kidney bean and differs from the bean prototype of other countries. Both Nahuat-Pipil and Spanish speakers in El Salvador will identify the red bean as the prototype. In contrast, in conversations with Spanish speaking Mexicans, the black bean is identified as their prototype, whereas Spanish speaking Guatemalans identify brown pinto beans as their prototype. Spanish speaking Hondurans identify a light red bean as their prototype.

In order to belong to the *et* category, the product of the plant must have the following features: small, approximately 2 cm or smaller; easily dried for long-term storing; grows in a pod-like structure. The various members of this category come in different shapes and colours. Some Nahuat-Pipil examples include: *Istaket* – white bean, *Perunhet* – lentil, *Et chiltik* – Red bean, *Et Tiltik* – Black bean.

Table 40: Et

a.	Et *Category* Red bean (EN)		**b.**	Istak *Adj. (white)* White bean (EN)	Et *Category*
c.	Perunh *Unknown* Lentil (EN)	Et *Category*	**d.**	Et *Category* Red bean (EN)	Chiltik *Adj. (red)*
e.	Et *Category* Black bean (EN)	Tiltik *Adj. (black)*			

Kamut

The *kamut* category encompasses edible roots or tubers (see image in Appendix D5). Prototypically, these roots or tubers must be dug up and cooked to be consumed, as well as have a floury texture as in the case of potatoes, sweet potatoes and cassava. However, on the other end of the spectrum of prototypicality are roots such as carrots and the *shikamuj*, which are categorised as *kamut* but can be eaten raw. Note, not all roots are included in this

category. Onions and garlic for example are not included, neither were they found to have a Nahuat-Pipil name. Variants of the word *Kamut* include *Kamuj* and *Kamuk*.

The prototype of this category was found to fluctuate between the cassava and sweet potato. When pressed to make a distinction between the two, speakers would elaborate further by adding a colour term to the name. Thus, cassava would become *istakamuj* and sweet potato would become *chiltikamuj*. This is a naming strategy that is also used to make further distinctions between fruits in other categories, as is the case with *Tzaput* below. Other Nahuat-Pipil examples of members of the *Kamut* category include: *Shuchikamut*, *Shikamut*, and *Kamut tultik*.

Another outlier is the *papa de aire*, an invasive species from the Asian continent. It is not widely known in El Salvador and has both poisonous and edibles species. In Witzapan, what has been identified as the edible *Dioscorea bulbifera*, or aerial yam, grows rapidly in the family gardens and is harvested and eaten in the same way as a potato. Though it is categorised as a *kamut* by members of the Nahuat-Pipil community, it is colloquially known as the *papa de aire* in both Náhuat and Spanish. I have classed this example as an outlier both for its lack of Náhuat name and the fact that it grows above ground. The tuber can be planted either below the ground or simply left on the ground. Over the course of 3-4 months, it will cast roots and a vine will wrap itself around a tree or taller structure until it hangs down. When ready to be eaten, the aerial yam will fall to the ground for easy harvesting.

Table 41: Kamut

a.	Kamut/kamuj *Category* Cassava/sweet potato (EN)	
b.	Chiltik *Adj. (red)* Sweet potato (EN)	Kamut *Category*
c.	Istak *Adj. (white)* Cassava (EN)	Kamuj *Category*
d.	Kamut *Category*	Tultik *Adj. (yellow)*
e.	Shuchi *N. (flower)* Carrot (EN)	Kamut *Category*
f.	Shi *Unknown* Jicama (SV)	Kamut *Category*

Kilit

The *kilit* category includes plants with leaves or fruits which must be torn from the plant to be consumed (see image in Appendix D6). Reference to category is always accompanied by a hand gesture replicating the manner in which the plant is harvested as can be seen in Figure 10. Many members of the *kilit* category belong to the *Fabaceae* family but not exclusively. The majority of the *kilites* have small, green, edible leaves and are used frequently when cooking. Some members of this category such as the *witzkilit*, *shuchikilit*, and *shikilit*, also have a flowering stem, or in botanical terms, an inflorescence. The flower of these plants is composed of many small flowers, all of which are clustered around the stem of the plant to form a long conical shape.

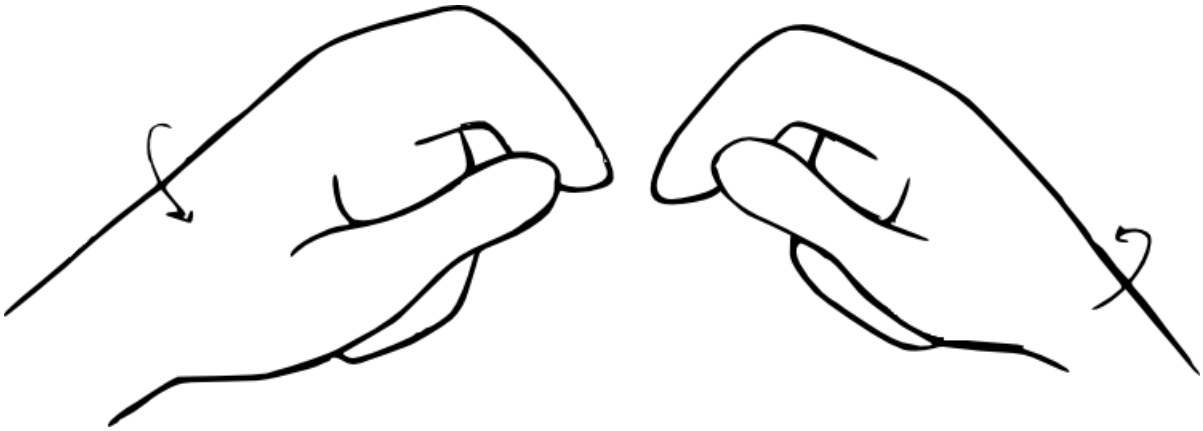


Figure 21: Kilit tearing gesture

The prototype of *kilit* refers to *chipilin*, *Crotalaria longirostrata*, a tree with small but nutrient-rich leaves. The flowers of this tree are also arranged in an inflorescence, albeit in a larger and looser composition. Its yellow flowers are the size of a fingertip and spaced further apart from each other compared to other members of the *kilit* category. The word *chipilin* is usually used to refer to the leaves of the tree, particularly when in reference to food; it features frequently in Salvadoran food such as soups, *tamales* and *pupusas*. *Masakilit* also features frequently in Salvadoran food, its distinct flavour combining well with cheese filled tortillas called *pupusas*, a staple of the Salvadoran and Nahuat-Pipil diet.

Given its close relation to food, it could be said that the kilit category is like the 'herb' category in English. While it is true that many members of the *kilit* category such as the *kilit*

and the *masakilit* would be considered herbs in English, the parallels end there. As mentioned previously in the discussion about *ayut*, *witzkilit* has also been identified as amaranth, *Amarthus Spinosus*. It fits in with the features normally associated with the category as it is an herb like plant whose edible produce needs to be picked from the plant using a tearing motion of the hands. The parts of the amaranth plant that are consumed however are the tiny seeds, which after being shaken loose from the flowers are heated until they pop. Once popped, the amaranth seeds resemble tiny popcorn pieces. Furthermore, *shikilit*, or *Indigofera suffruticosa*, refers to the plant used to create indigo dyes. This is not an edible plant, its principal value being the creation of dyes which were commercially sold across the Americas as well as in Europe.

Given the naming conventions of the plants within this category, as well as the features that are deemed important, I would suggest that semantically the term *kilit* would have actually referred to the stem of the plant at one point, even though it did not come up as a plant part when participants were asked. It is possible that the term has undergone semantic shift.

Table 42: Kilit

a.	Kilit *Category* Chipilin (SV) *Crotalaria longirostrata*	
b.	Masa(t) *N. (deer)* Loroco (SV) *Fernaldia pandurata*	Kilit *Category*
c.	Kwaw(it) *N. (tree)* Guachipilin (SV) *Diphysa robinoides Benth*	Kilit *Category*
d.	Witz *N. (thorn)* Amaranto (SV) *Amarthus spinosus*	Kilit *Category*
e.	Shuchi(t) *N. (flower)* Santa Mariá (SV) *Piper umbellatum L.*	Kilit *Category*
f.	Ish *N. (eye)* Tamarind (EN) *Tamarindus indica*	Kilinit *Category*
g.	Shi *Unknown* Añil, jiquilite (SV) *Indigofera suffruticosa*	Kilit *Category*

Kuyul

The *kuyul* refer to fruits of a tree that have a very hard outer shell which must be cracked to be eaten (see image in Appendix D7). Not all members of this category are suitable for human consumption; the fruits are primarily used as decoration during important cultural events such as the celebrations of the Day of the Dead in November and the Festival of Flowers in May. The prototype resembles a mini coconut of high cultural and spiritual value. The term is also metaphorically used to refer to the male anatomy, primarily the testicles. The word *mukuyulua* for example means to be curled up in a ball and is glossed thus: 2sgPOSS.category.

Table 43: Kuyul

a.	Kuyul *Category* Coyol (SV)		**b.**	Kuyul *Category* Coyol de gato Solanum hirtum	ne *Art.*	Mistun *N. (cat)*
c.	Witz *N. (thorn)* Huiscoyol (SV)	Kuyul *Category*	**d.**	Kuyul *Category* Pinecone (EN)	Matza *N. (pineapple)* Cogoyo (SV)	
e.	Kuyul *Category* Cojon (SV)	Kuyamet *N. (pig)*				

Shukut

This category is used to refer to fruits that have a sour or tart flavour and can be held by the tips of the fingers (see images in Appendix D11). They are easy to eat and can be consumed without any preparation. In other words, they can be eaten straight off the tree. This category is like the 'berry' category in English, however more emphasis is placed on the manner in which the human body must interact with the fruit in question. A large portion of the fruit is made up of a seed which is enveloped in a thin layer of flesh and skin, easily pierced by the teeth. The flesh of the fruit does not come away easily from the seed and therefore must be sucked or chewed on. Given their size, members of the *shukut* category are usually consumed in large quantities despite their sour nature. Though not all fruits within this category are sour, I would argue that at one point, the most important feature of this category would have been sourness. This is based on the fact that *shukuk* is the adjective used to indicate sourness. Processes of adjectivization are discussed in §5.2.2.

The prototype of this category is *Spondias purpurea*, a green or yellow oblong fruit approximately 3 cm long. All interviewees identified *spondias purpurea* and its other varieties as belonging to the category. It is worth mentioning that varieties of the *spondias purpurea* grow at different times of the year and are identified as the following: *shukut italku*, *shukut jobo* and so on. On the opposite end of the spectrum of prototypicality is the guava and its variants. While they are categorised as members of this category, they do not share all of the same features as the prototype. The guava is sweeter, though not as sweet as members

of the *tzaput* category as will be discussed in the following section. Furthermore, the guava does not have one large seed, instead many small hard seeds. Most varieties of the guava can be held by the tips of the fingers, with exception of the white guava which is large enough to be help in the palm of the hand. All guavas do however have a thin layer of flesh surrounding the seeds and easily pierced skin.

Metaphorically the concept of *shukut* to can be extended to *tzunshukut* meaning 'unable to think' or 'lacking in ideas'. This refers to the notion of something being so sour that it renders the consumer temporarily incapable of thinking.

Table 44: Shukut

a.	Shukut *Category* Jocote (SV) *Spondias purpurea*		**b.**	Talpa Mamon (SV)	Shukut *Category*
c.	Iska *Adj. (white)* Icaco (SV)	Shukut *Category*	**d.**	Shal Guayabilla (SV)	Shukut *Category*
e.	Chal Guayabilla (SV-K)	Chulut *Category*	**f.**	Chal *Unknown* Guava (SV)	(Sh)ukut *Category*

Tumat

There exists a large variety of edible tomatoes, however only a few are available in El Salvador. As such, the elicitation of the tomato category would benefit from more research if botanical samples of different types of tomatoes were made accessible to speakers. Nevertheless, three different fruits were identified as belonging to this category: *tumat* (*Lycopersicum esculentum*), *tumatzin* (*Physalis philadelphica*) and *witztumat* (*Solanum donnell*). All three are edible members of the *Solanaceae* family. The referent of the prototype *tumat*, is a large, red, oval tomato which fits easily in the palm of the hand. It is consumed both raw or cooked. It is interesting to note that in Mexico, the prototype of the

tumat category is *Physalis philadelphica*, what in Nahuat-Pipil is referred to as *tumatzin*. In Mexico, the *tumatzin* is more widespread and features more frequently in local cuisine than in El Salvador. In contrast, what is seen to be a generic tomato in El Salvador, is named *shitumat* in Mexican variants of Nahuatl.

The principal feature of this category is the rounded plumpness that the fruits share. All fruits have a thin, easily pierceable skin and small, flat, edible seeds encased within the watery flesh of the fruit. The three identified fruits have distinctive appearances which affect human interaction with the fruit and plant. The *tumat* has smooth skin and can be eaten straight off the plant without needing further preparation. The *tumatzin* on the other hand is encased within a papery shell which must be removed from the tomato before it can be eaten. Furthermore, it is usually cooked, unlike the *tumat* which are sometimes eaten like an apple. Finally, *witztumat* is a plant with many thorns which means that a great deal of care must be taken when the plant is being harvested. The *witztumat* is edible, however, it is best known for its medicinal value. Here, once again, a different method is required in order to prepare the plant for consumption.

Tzaput

The final category to be discussed is one that refers to all sweet fruits which can be held in the palm of the hand (see images in Appendix D12). Their flesh has a soft, slimy to grainy texture, leathery or sandpapery outer skin and a hard, shiny seed. The prototype of the *tzaput* category has been identified as one of the two: the sapote, or *Pouteria mammosa* member of the *Sapotaceae* family, and the custard apple, or *Annona squamasa* member of the *Annonaceae* family. All identified members of this category belong to either the *Sapotaceae* or *Annonaceae* family.

The referent *Annona squamosa* was assigned with more frequency to the term *tzaput* as opposed to *Pouteria mammosa*. Nevertheless, given that the assigned name of *Pouteria mammosa* in both Spanish and English is sapote, I would suggest that at one point, the sapote would have been the principal if not sole referent of the prototype. When pressed to make a distinction between the two fruits, speakers will describe the fruit further by referring to its colour. Thus, the sapote which is a deep terracotta colour, become *tzaput chiltik*, and the custard apple, which is usually white, becomes *tzaput istak*. There is a variety of the custard

apple which has a pink tint. This is also referred to as *tzaput chiltik* however, when asked to distinguish between the sapote and the pink custard apple, speakers will use the construction *tzaput chiltik* for sapote, *tzaput tsayantuk chiltik*[37] for pink custard apple, and *tzaput tzayantuk istak*[38] for white custard apple. Furthermore, the custard apple also has a summer and winter variety. The naming strategies discussed above refer to the winter varieties. The summer variety, in addition to being referred to as *tzaput*, also goes by a completely different name: *chulut*[39]. This lexical variation was consistent across different speakers from different families, and most recognised the yellow summer custard apple as *chulut* as well as *tzaput* after being prompted.

It is worth noting that during discussions with participants it was observed there is a consistent pairing of two hand gestures with the description of the category. These can be seen in Figure 22 and Figure 23. The two indicate a sequence of actions required in order to consume the fruits of the *tzaput* category. Figure 22 indicates the first step, depicting a cutting and slicing motion of the hands. Figure 23 demonstrates the seconds step, depicting an opening motion of the hands, much like the one required to open a book. The first gesture refers to the action required to pierce the tough leathery skin of the *tzaput*; the second – the motion required to pry open the fruit to reveal its shiny seed or seeds. It must be noted that the custard apple is the only exception to this generalization. Only the gesture depicted in Figure 23 is used to accompany the description of the custard apple. This is probably due to features of the custard apple's leathery skin. The skin of the custard apple is scaly, and when it is ripe, the skin of the fruit itself will crack and part easily without the need of a knife or machete.

[37] CATEGORY, ADJ 'cut' or 'broken', ADJ 'red'
[38] CATEGORY, ADJ 'cut' or 'broken', ADJ 'white'
[39] Morpheme by morpheme gloss unknown

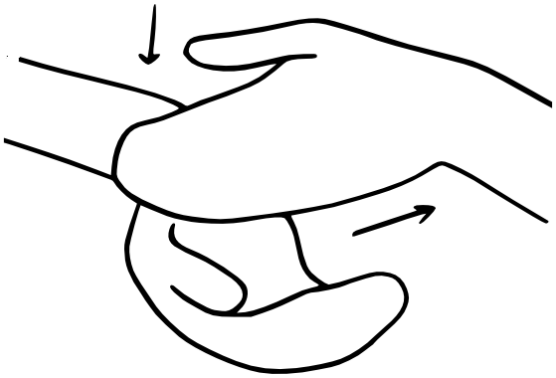


Figure 22: Tzaput Gesture #1

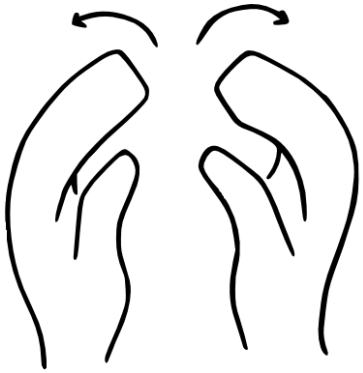


Figure 23: Tzaput Gesture #2

Other members of the tzaput category include *tzaput tiltik*, the black sapote and *tzaput pal mico*. Like other members of this category, *tzaput tiltik* has a leathery outer skin, sweet slimy flesh and two or three hard, shiny, black seeds. *Tzaput pal mico*, on the other hand, is the outlier of this category both in name and substance. Its referent is the cannonball tree or *Couroupita guianensis*. The fruit of this tree has tough leathery skin and slimy flesh but does not have shiny black seeds. It is not edible and not a member of either the *Sapotaceae* or *Annonanceae* family. Though it is not edible it was explained that this fruit is considered to belong to the *tzaput* category because of its tough sandpapery skin.

Table 45: Tzaput

a.

Tzaput
Category
Sapote OR anona (SV)

b.

Tzaput	Chiltik
Category	*Adj. (red)*
Sapote (SV) *Spondias purpurea*	

c.

Tzaput	Istak
Category	*Adj. (white)*
White custard apple (EN) *Annona reticulata*	

d.

Tzaput	Chiltik
Category	*Adj. (red)*
Pink custard apple (EN) *Annona reticulata*	

e.

Tzaput	Tzayantuk	Istak
Category	*Adj. (cut)*	*Adj. (white)*
White custard apple (EN) *Annona reticulata*		

f.

Tzaput	Tzayantuk	Chiltik
Category	*Adj. (cut)*	*Adj. (red)*
Pink custard apple (EN) *Annona reticulata*		

g.

Tzaput	Tiltik
Category	*Adj. (black)*
Caymito (SV) *Chrysophyllum cainito L.*	

h.

Tzaput	pal	Mico
		N. (monkey)
Sapote mico (SV) *Couroupita guianensis*		

5.3.2.2 New Categories

The concept of new categories has been created around words that were introduced upon contact with Spanish. Oranges and other citric fruits were introduced during colonial times and have been around since, being a popular and refreshing fruit to snack on (see image in Appendix D8). The word for 'orange' is *lala* and is derived from the Spanish word *naranja*. Overall other citric fruits are either described using *lala* as the referent, such as *shukuk* – 'sour', for lemon, or the corresponding Spanish word for it is used e.g. *toronja* – 'grapefruit'. The fact that the word *lala* was already used as a basis for naming other citric fruits such as mandarin – *lala shukuk* could be used to argue that a cognitive category for citric fruits already exists and *lala* was already productive. However, during one of the discussions with a consultant regarding the fruits, the speaker looked down thoughtfully at the mandarin he was holding, and after some consideration pronounced that the fruit could

also be called *muyulala*[40]. He did not explain his reasons, but it was clear to those of us who work on the language that he was using pre-existing conventions[41] for naming fruits to recreate and integrate the concept of the 'mandarin' into Nahuat-Pipil. When the term was presented to other speakers it was readily accepted. While both *lala shukuk* and *muyulala* are words for mandarin, the spontaneous creation and acceptance of the word *muyulala* to me marked the creation of a new category *lala* for citric fruits in the frame of mind of the Nahua-pipil.

This section has provided an overview of the categories that were encountered when identifying and discussing plants. The following section briefly describes some findings on the relationship between humans and animals and what this indicates about the Nahuat-Pipil worldview.

5.3.3 ANIMAL CATEGORIES

The main emphasis during data collection was on the discussion of plants. However, occasionally the topic of animals would come up. It was found that the human-animal relationship is in the form of a food pyramid as is illustrated in Figure 24. In terms of animals, any moving creature which can be eaten by man is placed beneath him in the food pyramid. These animals are called *takwalmet*, which can be glossed as *food.pl* or '3sg.eat.pl*'*. This category includes all animals which do not eat humans such as ants, fish, chickens, opossums, iguanas and deer. In contrast, man's natural predators are placed at the peak of the pyramid and form a separate category. There are only two animals in this category. They are 'jaguar' or *tekwani*, glossed as '3sg.eat.1sg', literally translated as 'the one who eats me'. Vultures are known as *kusma(jmet)*. I have yet to uncover whether Nahuat has a descriptive term for this category other than *tekwani.*

[40] N 'fly'. CATEGORY
[41] Other plant names incorporate the form *muyu* to indicate the small size of the item e.g. *muyutzaput*

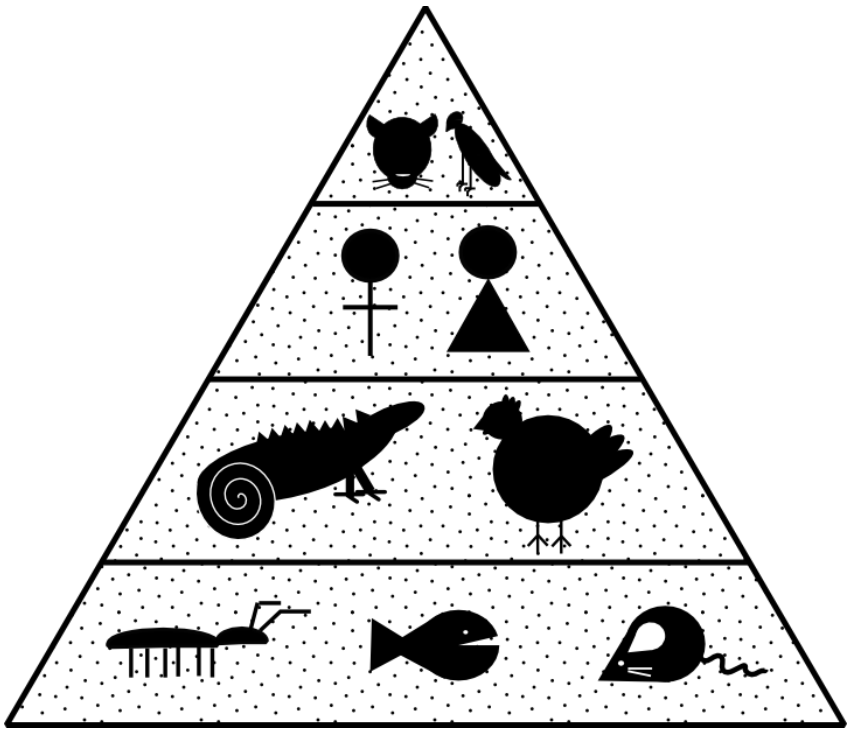


Figure 24: Animal Food Pyramid

Takwalmet can be broken down further into categories similar to those found in Western categorisation systems such as 'fish' *michin* and 'birds' *tutut.* Taking into account the basic principle outlined previously, these subcategories should exclude all predatory animals. This was found to be the case for predatory birds e.g. vultures and hawks, but has not been tested with predatory fish such as sharks.

The above provides an example of how language can be a lens through which the physical world is viewed (Slobin 1996). Based on the division of the animal kingdom, which is inclusive of humans, in terms of ‘to eat’ or ‘to be eaten’, I would suggest that in the case of the Nahuat-Pipil, the creation of these morphemes or categories, are a result of a basic need to quickly identify those features within each concept that are vital for survival. I propose that this classification system, is a result of the close proximity that previous generations of Nahuat-Pipil speakers have had with the natural elements. Though it is no longer an immediately necessary prerequisite for survival to distinguish between those animals that will eat the individual and those that can be eaten, these forms have continued to remain in the language. Even though vultures are not predators, they will still eat human remains, and perhaps this was significant.

The manner in which knowledge or worldview is encoded in language but is being lost is further exemplified by the two diminutive markers for animate nouns. These are *-tzin* and *-chin* as presented in Table 46. Initial claims from some consultants stated that these were interchangeable and had no significant effect on the semantics of the words. Further inquiry however produced one explanation by Tajtzin Francisco, one which was also repeated by Tajtzin Cruz at a later date. According to these two individuals, the distinction between *-tzin* and *-chin* is rooted in how edible or consumable the noun in question is. Therefore, beings which are considered agreeable to the eyes or to the palate are marked with *-tzin* whereas beings which are simply small in size are marked with *-chin*.

Table 46: -tzin vs. -chin

-tzin	**English**	**-chin**	**English**
Takwatzin	Opossum	*Kimichin*	Mouse
Witztakwatzin	Porcupine	*Michin*	Fish
Chijchipintzin	'Chichipince'	*Tepemichin*	'Mountain fish'
Ayutzin	Turtle		
Piltzin	Youth (male)	*Chijchin*	Baby
Siwapiltzin	Youth (female)	*Lamachin*	Elderly female
Kukumutzin	Pupusa (cheese or meat filled tortilla)		

Considering once more the agglutinative nature of Nahuat-Pipil it possible that the diminutive marker is simply /-in/. Referring back to Campbell's analysis of the absolutive suffix /-in/ presented in Table 46, it is noted this ending is often found in terms for small animals such as *chapulin* 'grasshopper' and *michin* 'fish'. It also seems to extend to small fruits such as *capulin* 'chokberry'.

This theory would benefit from further research as it still needs to be verified. Though it is likely that the semantic distinctions between the two morphemes were once a conscious effort, it appears that over time the subtle semantic differences between the two endings have

become blurred to the speakers of the language. Though *-tzin* and *-chin* are still used correctly in existing Nahuat words, it is unknown whether they would be applied in the same manner to neologisms or made up words.

5.4 Discussion

When looking through the findings presented in this chapter, it is clear that they provide an insight into what Berlin (1992: 4) presented as the two central questions of Ethnobiology: how humans *view* nature and how they *use* nature. In the context of Nahuat-Pipil, these questions can be answered by looking at Overt and Covert taxonomic categorisation and classification as well as by looking at the nomenclature of plants.

We can get an insight into how the Nahuat-Pipil view nature by looking at categorisation and classification, and the evidence found for the classification of plants in both Overt and Covert ways. As is outlined by Berlin (1992), Overt categories are those which are lexically marked by simple primary names, and whose items are named using secondary names. This is achieved by compounding the label of the category with a descriptive lexeme e.g. *kamuj* 'edible root', *chiltikamuj* 'coloured edible root' (sweet potato). Compounded items generally follow a (Modifier + Head) pattern though it was observed that speakers will occasionally reverse the order. Generally, this tends to occur amongst younger speakers when the word is elicited independently of a sentence or when the plant is first identified in Spanish either by the speaker or the researchers.

Covert categories on the other hand are all categories which are not lexically marked but were identified by consultants during the elicitation tasks. These include high value plants, and ways of grouping edible plants such as cooked vs. uncooked, as well as Citric fruits, Herbs and Young Sprouts as presented in Table 35. It is likely that there is a covert relationship between these and other grammatical classes. With the exclusion of the 'young sprout' category, the lexical items included within these conceptual categories would have been introduced post contact with the Spanish. Thus, it makes sense that the internal structure of the categories not be as clearly marked as that of native plants.

There is some indication that the marked categories are covertly marked within other grammatical categories. For example, fruits belonging to the 'Tzaput' category have tough leathery skins and sweet custard-like flesh. As the fruit ripens the skin will extend and occasionally split at the peak of the maturing process though generally the fruits are picked before this point to ensure they do not spoil. Because of their thick skin, all fruits within this category must be split or sliced open with a sharp object like a machete. In addition to the verb 'to slice', reference to the fruit is often accompanied with a slicing motion of the hands to indicate how the fruit is to be consumed. Perhaps hand motions are also used to differentiate between the fruits within each category as some can simply be split using hands alone as opposed to with the help from an additional tool and thus involve different hand motions. I have not however investigated this further.

On the otherhand, we can get an insight into how Nahuat-Pipil speakers use nature by looking at how categories are formed and how taxa are named. The analysis of semantic features of categories has revealed that in Nahuat-Pipil, manner of interaction, as well as shape and texture are an important component for the creation of semantic categories. This is present not only on the supra-categorical level but also within categories themselves. Larger semantic categories are created around fruits of plants that must be dug up from the ground, torn from their stems or can be held by the tips of the fingers. Within each of these categories however, analysis of the assignation of names revealed that interaction with the plant or fruit is relevant here as well. As was seen in both the *Ayut* and *Tumat* categories, there exist more varieties of each, squashes and tomatoes, than names. It was found that distinctive names were only assigned when the fruits in question within each category were harvested or prepared differently to other members within their categories. This naming strategy points to a practical level of naming. Since the names of plants are descriptive, assigning a name to a specific plant is already indicative of the manner in which the user will need to interact with it. Therefore, as presented by Berlin (1992: 26) names are transparent which allows knowledge and meaning to be embedded in plant nomenclature. Plant names can therefore act as a warning system for those who may be unaware of specific features of the plant, for example if it is spiny.

Along these same lines, the names of categories can also be adjectivised and take on the meaning of the most distinctive feature of that category. Thus, *tumat* becomes *tumawak*, meaning ‘rounded’ and ‘large’. *Shukut* becomes *shukuk*, meaning ‘sour’. *Kuyul* becomes

kuyuntuk, meaning 'hollow'. *Tzaput* becomes '*tzayantuk'*, meaning sliced or surgically cut. *Kamut* and *kamuk* were sometimes used interchangeably to refer to edible roots. No adjectival derivatives were found for *akat*, *et* and *ayut*, however this does not mean they do not exist for other individual speakers of Nahuat-Pipil who did not participate in the study.

There was also found to be a correlation between plant categories and colour terms in Nahuat-Pipil when it came to analysing folk nomenclature. Though I have not conducted any interviews to specifically define colour terms and their referents, all colour terms were verified using secondary sources such as dictionaries and other materials produced from previous documentation (Lyle Campbell 1985; Hernandez Gonzalez 2011). The use of colour terms within folk nomenclature is in line with theories on the positive interrelation between colour terms and plants with variants of Nahuatl (Castillo Hernandez 1997). In Nahuat-Pipil, words for basic colour terms are derived from naturally occurring objects or plants. For example, the word for red, *chiltik*, is derived from the category *chil*; the work for white, *istak*, is derived from the word *istat*, salt; black, *tiltik*, is derived from *til*, coal; yellow, *tultik*, is possibly derived from *tulin*, junco[42]; finally, *shushuknaj*, was used to refer to both green and blue[43] and is derived from the category *shukut*, which is commonly green in colour.

In terms of Berlin and Kay's (1969) colour universals we can observe that at least the first six colour universals (black, white, red, green, yellow, and blue) are all present in Nahuat-Pipil. All of these colour terms were employed in plant nomenclature to refer to taxa at the specific and varietal level. This is in line with Berlin's (1992) observation that nomenclature of plants at the specific and varietal level tend to be monothetic, defined by simple characteristics such as colour or size. Furthermore, the hypothesis that colour lexicons with many terms tend to occur in association with complex cultures and complex technologies (Berlin & Kay 1969), and the findings that agriculturalist societies tend to have more terms for folk specific taxa (Hunn & French 1984) are both applicable in the Nahuat-Pipil context. Hunn and French's (1984) proposal that subsistence farmers are subject to periodic crop failures, and during such times of need are forced to rely on wild foods in order to feed their larger families is also relevant within this context. As demonstrated in Chapter 3, Indigenous people in El Salvador tend to be agricultural farmers, and have had to endure periods of intense social marginalisation and had their lands taken away from them. Despite the hardships faced, the

[42] *Junco* is a plant which when dried is used to weave baskets, beds and chairs.
[43] Today, *susul* is also used to refer to the colour blue. *Kususul* is light blue.

Nahuat-Pipil have survived periods of hunger as a result of the above by using their TEK knowledge to supplement their diet via foraging practices. This supports the hypothesis that binomial naming strategies for the recognition of folk taxa are used in response to the need of an expanded ethnobiological repertoire (Hunn & French 1984: 89).

Analysis of the morphological structure of folk nomenclature of plants revealed that semantic meaning could be associated with what appears to be a fossilised nominal classifier system in Nahuat-Pipil. It was also found that naming strategies like the addition of adjectival marker /-tik/ to nouns is a strategy used to indicate proximity or likeness and is commonly used during instances of migration (Berlin 1972; 1973). As the landscape changes, plants and animals may also change and rather than something being named X, it is named 'X-like'. In Nahuat-Pipil this is observed in colour terms. Colours are always likened to a referent found in the natural world e.g. *chil* 'chili' > *chiltik* 'red'. Furthermore, it is proposed that the adjectival marker /-tik/ could be further reduced to /-k/ as is evidenced by descriptive terms used within nomenclature of varietal taxa which indicate size and distinctive features e.g. *tumawak* 'large' and *tzayantuk* 'cut'.

When compared to other variants of Nahuatl, colour terms also seem to be derived from objects or plants found in the environment. This is observed in words like *capultik*, used to indicate purple in Cuetzalan Nahuat which uses *capulin* as the root for the colour purple *capultik*. This fruit is small purple berry. In contrast, the Classical Nahuatl term for purple is *camopalli* or *camopaltic*, which is derived from *camotli*, the word for edible root or potato. While the colour of the potatoes consumed by those who spoke Classical Nahuatl is unknown, the naming conventions for other colours would suggest that the referent object would have been a purple root or potato. Nevertheless, variation between Classical Nahuatl and its variants can be attributed to change in landscape and access to the same referents.

An underlying aspect of my investigations of semantic categories in Nahuat-Pipil is the idea that language and culture are intrinsically tied to each other (Sharifian 2017). It has certainly been found that language and culture are closely connected and there is some evidence which hints at the close relationship between the Nahuat-Pipil and nature. Metaphors for example are often based on plants or plant parts e.g. the metaphor of the family unit in relation to the five leaf formation of the *makwilishuat*, and the use of *ishuchiu* '3sg.flower.poss' to refer to someone's girlfriend. Furthermore, looking at the personification of plants, earth, mountains and rivers and the persistence of these forms in modern day Nahuat-Pipil could also provide

insight into how underlying world-views continue to persist given social, political and environmental changes in the Nahuat-Pipil ecology. As it was well-known within the community that I was interested in plants, it is possible that plant related metaphors were specifically brought to my attention by speakers. Therefore, it would be worthwhile to conduct further research on the overall use of metaphors in order to gain a better understanding of Nahuat-Pipil worldview.

There is evidence to support the importance of nature within Nahuat-Pipil culture, however, there are other aspects which need to be considered. Historical events, for example, have also contributed to the formation of worldview. In line with the view of culture as a learned body of behaviours and or knowledge transmitted by transgenerational learning (Ortner 1984; Rouse 2007; Michael 2012; Spencer-Oatey 2012), and language as a transmitter of behaviour and knowledge, the Nahuat-Pipil case provides evidence to support how cultural values and ideologies learned from past experiences are passed from one generation to the next via language. Further research should also consider a more detailed exploration of nominal morpho-syntactic marking as well as an investigation of nominal interaction with verbs, and the resulting covert semantic categories that may arise from these interactions. Furthermore, the nominal classification system would also benefit from a cross-comparison with pluralization forms.

Finally, the findings and reanalysis of data presented in this chapter would greatly benefit from a comparison to more Nahua variants, and particular to Classical Nahuatl grammars and vocabularies. These might provide more insight into the etymology of nouns. Comparison with other regional language families such as the Maya languages would be worthwhile for investigating whether any parallels exist cross-linguistically, and what forms have been adopted throughout the linguistic systems. This has not been done here because it would require conducting further fieldwork with contemporary speakers of variants of Nahuatl and Mayan languages in order for the results to be comparable.

6. CONCLUSION

This thesis has provided a description of the categorisation, classification and folk nomenclature of plants as encoded in the Nahuat-Pipil language of El Salvador. It has also discussed the relationship between Nahuat-Pipil language, identity, and Traditional Ecological Knowledge within the broader context of the socio-political history of the country. In doing so, I have contributed to the existing documentation of the Nahuat-Pipil language (Arauz 1960; Lyle Campbell 1985; Hernandez Gonzalez 2011; King 2013). By focusing on traditional knowledge encoded within language, I have shifted the focus away from the creation of general grammatical, phonetic and phonological descriptions of an endangered and minoritised language, and instead presented a view of semantic categorization processes. Such an approach has aimed to understand language from the perspective of its speakers rather than imposing Western and academic viewpoints. This is not to say that grammatical descriptions and dictionaries are not valuable. On the contrary, this research would not have been possible without access to the aforementioned documentation of Nahuat-Pipil. However, I believe there is a need and an obligation within the field of language documentation to consider Indigenous perspectives within research on endangered and minoritised languages (Fitzgerald 2010; Yamada 2007; Yamada 2014; Dohle & Squillaci 2018). Furthermore, putting language and its speakers at the forefront of research activities can improve understanding of the issues which contribute to language endangerment, and bring about much needed solutions for improving the quality of life of Indigenous people as well as supporting language revitalisation (Rohloff, Díaz & Dasgupta 2011; Biddle & Swee 2012; Henderson, Rohloff & Henderson 2014; Grenoble 2017).

I have represented Indigenous perspectives in an ethical and collaborative manner. To achieve this, Nahuat-Pipil speakers were invited to share their perspectives on the concept of Indigenous identity, as well as their views on the Nahuat-Pipil language and its future. These perspectives are represented in detail (§3.3.2), and this is significant because it is only in recent years that Indigenous people have been recognised within El Salvador (Anaya 2013). By consistently creating spaces both within this thesis and during the research process I have contributed to the visibilisation of the Nahuat-Pipil language, its speakers and their perspectives.

The inclusion of Indigenous perspectives has been challenging. This is partially a result of the specific Salvadoran context where the political and social history of the country has created

an environment of mistrust of Indigenous people towards outsiders. The ongoing social tensions as a result of gang-related criminal activity have also made access to Indigenous communities challenging. Furthermore, creating a research product focusing on TEK based on the request from a Nahuat-Pipil indigenous leader without any previous knowledge of ethnobiology has provided a steep learning curve. Funding has also been an issue as it was found that it is extremely difficult to attain funding for interdisciplinary projects, especially as a PhD student. Without funding, it was difficult to create formal links with researchers within other disciplines, however this was overcome with some persistence and luck. In spite this however, I genuinely believe that research, especially when working with endangered languages, must at least be interdisciplinary, if not transdisciplinary, in order to increase its impact and attain better, more nuanced results (Lawrence 2010; Childs, Good & Mitchell 2014; Whitecloud & Grenoble 2014; Olko, Wicherkiewicz & Borges 2016; Olko & Bilewicz 2017; Korne & Leonard 2017).

Focusing on the specific aims and findings of this research project, I set out to investigate the following hypotheses in relation the Nahuat-Pipil language of El Salvador and its speakers:

1. Possession of TEK is a key component of indigenous identity;
2. Historical events and experiences affect how language is perceived and used;
3. Naming conventions of plants are in line with Berlin's (1992) theories of folk nomenclature;
4. Cognitive categorisation practices are reflected within the lexicon of the language.

It was found that TEK is a key component of indigenous identity, and its possession and transmission is linked to indigenous identity as it is the means by which the Nahuat-Pipil have survived violent historical events. Historical events and the negative experiences endured by the indigenous people have very much affected how language is used, however it was found that amongst fluent speakers of Nahuat-Pipil, negative emotions such as shame are not directed at the language. Rather, negative emotions are associated with the circumstances around what it means to be Indigenous: poverty, low socio-economic status, social marginalization, discrimination, racism, conflict and violence. It was suggested by fluent speakers that their children and grandchildren might be ashamed of the language, however this is a view that would benefit from further research.

When analysing folk nomenclature and folk categorisation and classification of plants it was found that the strategies employed in Nahuat-Pipil were in line with Berlin’s (1992) theories

on folk nomenclature, categorisation and classification. Naming conventions for taxa at the generic level employed what Berlin (1992) terms 'primary' names, and those at the folk specific and varietal levels employed what are termed 'secondary' names. This was reflected in the morphological analysis which revealed that primary names are composed of a single noun, and secondary names are binomial or consist of noun phrases. Binomial names are generally found at the folk specific level whereas noun phrases are found at the varietal level. At the folk specific level names included colour terms, which is in line with Conklin's findings that colour contrastiveness is key for plant identification (Conklin 1954; 1986). The colours most often employed in plant naming conventions are 'red' and 'white' which is somewhat in line with the temporal order of colour universals proposed by Berlin and Kay (1969). Within Berlin and Kay's (1969) model for colour universals, 'black' and 'white' are the first contrastive pair to be lexicalised, and is followed by 'red'. The absence of the term 'black' in plant nomenclature, however, can be explained by the fact that the colour black does not often feature on plants which are alive.

Finally, it was found that some cognitive categorisation processes were lexicalised via the use of overt marking, however this was not always the case. Covert categories were also found in Nahuat-Pipil, and what Berlin (1992) terms the intermediate level of classification. These were most prominent in more recently established categories such as that of 'herbs' *puputukat*, and 'citric fruits'. Although the category for 'herbs' is lexically marked, category internal items are not. Overt categories such as *tzaput* and *kilit*, were found at the generic level of classification and any subgeneric taxa found within the category are always marked with the category name e.g. *muyutzaput* and *masakilit*. Furthermore, in overt categories, nomenclature at the generic level is used for the prototype of the category and acts as a type of nominal classifier. These classifiers are productive and are actively being used to create neologism for plants which do not yet have, or have lost, their Nahuat-Pipil names over the course of history. An example of a neologism includes *muyulala* for 'mandarin'.

Evidence was also uncovered to support the existence of a fossilised nominal classification system. This classification system is word final and seems to make distinctions between objects or items in their natural state and those which have been elaborated or undergone a change of state through human interaction. This was an unexpected discovery and while it has been described in detail, it would benefit from further research with speakers of Nahuat-Pipil.

The above findings have served to consider the relationship between language and culture (Sharifian 2017). A view of the relationship between language and culture provides the concept of language as a mirror of culture as well as being part of culture (Geertz 1973; Wierzbicka 1992: 373). The issue when it comes to investigating how culture is reflected in linguistic phenomena is deciding which linguistic phenomena can be legitimately interpreted as culturally significant outside of language itself (Hernandez Gonzalez 2011). Lexicons change more quickly than grammar in response to changes in social reality, however not all lexical differences between languages reflect current differences in culture.

Grammatical features inherited from previous centuries will not reflect recent cultural facts (Wierzbicka 1992). This is particularly relevant in the case of the Nahuat-Pipil whose lifestyles have had to change due to political and social events. Subtle information encoded in the language with regards to environmental knowledge has in some cases ceased to be productive, and semantic distinctions between word final morphemes have been lost as in the case of the fossilised classification system. Intergenerational transmission of language and traditional knowledge has been interrupted in the Nahuat-Pipil context as a result of both historical events, racist attitudes towards Indigenous people, and migration. It is therefore no longer a given that Indigenous people will a) still possess TEK, and b) it is less likely that it is being passed down to their children.

The construction of worldviews and a uniform identity is based on a shared knowledge of values, folklore and oral history of origin (Street 1987; Penelope Brown 2007; Michael 2012). The Nahuat-Pipil have a shared background knowledge which is unique to El Salvador. Aspects of this knowledge base are found among people who do not identify as Indigenous, however this constructed world or belief system is much richer and more 'real' within the indigenous communities and Nahuat-Pipil speakers themselves. As part of broader conceptualisation of culture, identity, and worldview, TEK and the study of folk classification and nomenclature offers a view of how humans engage with and benefit from nature (Ellen 1978; 1979a; 1986).

Berlin (1992) states that folk classification is a result of human's innate ability to perceive natural order, however this view must be paired with the values and cultural context associated with complex knowledge systems of any given culture. The reasoning behind the existence of large elaborate bodies of knowledge of the natural world that have been orally transmitted generation after generation must also be taken into account. It is valuable to aim

to understand the folk classification systems that indigenous and endangered language speakers possess and compare these cross-linguistically, but it is also important to understand why such systems have been developed at a localised level. Doing so reveals a deeper understanding of the complex interrelation between humans, nature, and culture, and who better to learn this from than those who have been living alongside nature harmoniously for hundreds of years? Furthermore, and tying this back into the disciplines of ethnobiology, anthropology, linguistics and language documentation, to not ask *why* is to deny these disciplines the opportunity to develop more nuanced theories for the understanding of human nature. For linguistics, it gives us an insight into the motivations, which is turn is vital for language documentation and eventual revitalisation of any given language. By working with speakers, by understanding their motivations behind requests to document certain aspects of language, we can better document and preserve these languages for the benefit of future generations.

APPENDIX

A. Metadata: SPEAKER

- Speaker name > first names, last names
- Speaker ID > “AABB##” OR “(AABb/AaBB/AaBb)##”
    - “AA” - first letter of two first names
    - “Aa” - first two initials of first name in case the speaker does not have or want to share their two first names
    - “BB” - first letter of two last names
    - “Bb” - first two letters of last name in case speaker does not have or want to share their two last names
- DoB – will accept just year if necessary
- Language and variants spoken
- Fluency
- Age when speaker learned to speak in the language
- Level of education
- Language of education
- Parents' language and/or variant
- Occupation
- Frequency of use of language
- Self-identification in terms of ethnic identity
- Personal description
- Consent
- When and where they use the different languages?

B. Metadata: SESSION

- Session ID: ABC### e.g. ELT001
    - ELT: Elicitation
    - NAR: Narrative
    - EXC: Excursion
    - SOC: Sociolinguistic Interview
- Documentation Type
    - Type 1: Audio
    - Type 2: Video
    - Type 3: Notebook
    - Type 4: Photograph
    - Type 5: Observation
- Participant and Role
- Recording Device
- Microphone
- Description of content
- Comments
- Language used
- Start time
- End time
- Location
- Activity: e.g. free listing, pile sorting, excursion, categorising...

C. File naming

- Audio
  - ppl-SessionID-ConsultantID-##(m, r, l).ext
    - M: Mono recording
    - R: Right microphone
    - L: Left microphone
  - e.g. ppl-ELT001-AABB01-01m.wav, ppl-ELT001-02.wav
- Video
  - ppl-SESSIONID-##.ext
- Scanned notes
  - ppl-SESSIONID.pdf
- Photographs
  - ppl-SESSIONID-###.ext
  - e.g. ppl-ELT001-001.jpg

D. Plant Category Photographs

D1. AKAT

1. Akat Tamawak – Bambú – Bamboo

2. Tzinhakat – Libelula – Dragonfly

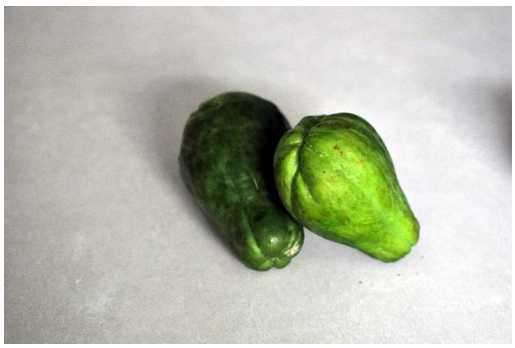
D2. AYUT

3. Ayut – Ayote – Squash

4. Ayut – Pipian

5. Ayut

6. Witzayut – Güisquil – Chayote



7. Ayut – Ayote – Pumpkin

D3. CHIL

8. Chil Tzupelek – Chile – Sweet Pepper

9. Chil Tekpin

10. Chil Tepet

D4. ET

11. Et – Red bean

12. Pacheko – Chilipuca – lima beans

13. Istaket – frijol blanco – white beans

14. Perunhet – arberja – peas

15. Eshut – ejote – green beans

D5. KAMUT

16. Kamut – camote – sweet potato

17. Shikamuj – Jicama

18. Kamut titik – remolacha - beetroot

19. Papaj – papa - potato

20. Shuchikamut – zanahoria - carrot

D6. KILIT

21. Masakilit - Loroco

D7. KUYUL

22. Kuyul Kuyamet – Cojón

D8. LALA

23. Muyulala – Mandarina - Mandarin

D9. PUPUTUKA

24. Puputuka – hierbas – herbs

D10. SINTI

25. Sinti - Maiz




D11. SHUKUT

26. Shukut – Jocote

27. Manzanía

28. Talpashukut - Mamón

D12. TZAPUT

29. Tzaput Chiltik – Sapote

30. Tzaput Istak – Anona

31. Muyutzaput – Nispero

32. Tzaput tiltik – Caimito

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