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A Grammar of Southern Bai

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in General Linguistics and Chinese Languages

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Abstract

Bai is the language spoken by the Bai people located in Yunnan, China and surrounding provinces. The southern dialect, Southern Bai, is spoken by approximately 500,000 people in and around the Dali Bai Autonomous prefecture.

Through a descriptive linguistics framework this study provides detailed description and analysis of the phonetic, morphological, and grammatical systems within Southern Bai. Expanding on features already described in previous studies on the central dialect, considered the standard in the People's Republic of China, this study presents further detail and description of under described features. Among these features, discussed in this study are the limited morpho-syntactic system including inflection on personal pronouns, classifier derivation from nouns, affixation, and compounding formed from right-headed modification. Aspect marking is performed via coverbs grammaticalised from lexical verbs and sentence final pragmatic particles play a major role in the formation of non-declarative sentences.

In addition to describing the linguistic systems of the language, a secondary aim was to explore how speakers express motion and placement events, which can be found in Chapter Ten. Based on this description, this study argues that Southern Bai should be considered a satellite-framed language according to Talmy's (1985, 2000, 2007) typology.

This thesis represents the first comprehensive study of Southern Bai. As such, the findings of this study can contribute to the greater typological discussions surrounding the world's languages.

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nal did dad ngel baod no, ngaot zex zil qierl duox laoz!

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List of Abbreviations

#	Number
1SG	First person singular pronoun
1PL	First person plural pronoun
1PL.INCL	First person plural inclusive pronoun
1GEN	First person genitive pronoun
2SG	Second person singular pronoun
2PL	Second person plural pronoun
2GEN	Second person genitive pronoun
3SG	Third person singular pronoun
3PL	Third person plural pronoun
3GEN	Third person genitive pronoun
Adj	Adjective or Adjectival modifier
ADV	Adverbialiser
AFF	Affirmation modal
AGR	Agreement modal
ALL.	Allative marker
ATTR	Attributive
AUX.NEG	Auxiliary negative
CLF	Classifier
COP.	Copula verb
COVB	Coverb
DEM	Demonstrative pronoun
DISP.	Disposal marker
DIST	Distal deictic Pronoun
DUR.	Durative aspect marker
EMPH.	Emphatic modal
EXIST	Existential verb
EXP	Experiential aspect marker
FILL	Grammatical filler word
IMP	Imperative modal

INC	Inceptive aspect marker
LINK	Linking device
LocPP	Locative postposition
MOD	Modal
MULT.	Unspecified human multiplier
MSM	Modern Standard Mandarin
NEG	Negator
PASS.	Passive
PART.	Grammatical particle
PFV	Perfective aspect
PL.	Pluraliser
POL	Politeness marker
POSS	Possessive marker
PRF	Perfect aspect marker
PROG	Progressive aspect marker
PROX	Proximal deictic Pronoun
PRT	Grammatical particle
Q	Question modal particle
RES	Resultative complement
REF.	Referent nominaliser
SUFF	Suffix
SUGG	Suggestive modal
SVC	Serial Verb Construction

Chapter 1 - Introduction

The following work is a grammar of the southern dialect of the Bai language, referred to as Southern Bai (ISO 639-3: bfs). To begin this introductory chapter, section 1.1 will present notes on some of the terminology to be used in this thesis. Section 1.2 provides an introduction to the history, geography and language of the Bai people. Section 1.4 will cover the status of Southern Bai in Dali. Following an introduction to the typological characteristics of the Bai language (Section 1.5), section 1.6 presents an overview of the debates surrounding the genetic classification of the language before offering an overview of the framework and aims of the project in section 1.7. Finally, section 1.8 provides a breakdown of each chapter in the thesis and their contents.

1.1. Notes on terminology

At this point, it is important to define some terms to be used throughout this thesis. While the subject of this thesis is on southern Bai dialect, for brevity I will employ the term 'the language' to refer specifically to Southern Bai. The term 'the Bai language' or 'Bai' refers to the language including the three major dialects. The term 'dialect' refers to one of the major dialects, Central (ISO 639-3: bca), Southern, and Northern (ISO 639-3: bfc). Finally, the term 'variety' refers to one of the geographical topolect varieties found within each dialect. Often, the Mandarin term *fāngyán* (方言), which may refer to either a topolect or dialect, is simply translated as 'dialect. This study will distinguish between the two.

The term *Hanyu* (汉语) literally means 'language of the Han' and is a term frequently used to refer to Mandarin Chinese, or Sinitic languages. Its use may refer to either modern Chinese or old Chinese. Some literature also uses the English term Han Chinese in translation of the 'Han language'. Within the language itself, there are several terms used for the language we

refer to in English as Mandarin Chinese. Which one is used is often determined by one's geographical or political alliances. The most common of these include *pǔtōnghuà* (普通话) 'common language' which is used in the People's Republic of China (PRC), *guóyǔ* (国语) 'national language' used in Taiwan & Hong Kong, and *huáyǔ* (华语) 'Chinese language' used among the Chinese diaspora in countries such as Singapore and Malaysia.

During fieldwork, I often heard Bai Speakers use the term *Hanhua* (汉化) (lit: Han -ise) to refer to the Sinicisation of their language.

While the Chinese term *shǎoshùmínzú* (少数民族) is often translated as 'minority' 'ethnic minority', 'national minority' or 'nationality', this study will use the term 'ethnic group'. This is also one of the many accepted translations of the term and more closely reflects its Chinese use.

Throughout this thesis, the terms Modern Standard Mandarin (MSM) and Mandarin will appear frequently. These are not interchangeable. MSM refers specifically to the modern standardised form of the language, currently referred to in mainland China as *Putonghua*, or 'common language'. Mandarin refers to the language more generally as many of the consultants spoke the Southwestern dialect of Mandarin.

The following section will begin the thesis by introducing the history and geography of the Bai people.

1.2. History and geography of the Bai people

Bai is the language spoken by the Bai people (白族) of Southwest China, one of the 56 ethnic groups recognised by the Chinese Communist Party (CCP) (Hoddie, 2008, p. 305; G. Wang, 2016; A. Wu, 2009; D. Y. H. Wu, 1990).

The majority of the Bai people are found in the Dali Bai Autonomous prefecture, Yunnan, a province in southwest China that is bordered by Tibet, Laos, Myanmar, and Vietnam. Yunnan is a province with high levels of linguistic and cultural diversity. It is home to people of over 25 ethnic groups recognised by the PRC, 15 of which are unique to Yunnan, and over 26 different languages are spoken (Guo, 2013; Tsung et al., 2011).

The Bai people are the second largest non-Han nationality in Yunnan, after the Yi people (Liu, 2000; Wiersma, 2007) and are regional neighbours with the Naxi, Pumi, Lisu, and Tibetan people (S. Li, 2016). You Weiqiong (2013) traces the Bai people back to the Bo people (僰族), an ethnic group of Southern Sichuan who moved south into present day Yunnan, subsequently splintering into several groups and settling throughout current day Yunnan, Guizhou and Guanxi. In approximately 840 AD, the Yi and Bai people in the area now known as Dali established the Nanzhao Kingdom (南诏国). While the King and elites were Yi, most of the clerical roles in the court and military were held by Bai people. As a result, the Bai language became a lingua franca of the kingdom (S. Li, 1998). Following the Nanzhao kingdom, the Bai people established the Dali Kingdom (AD 937-1253) with present day Dali Old Town as its capital. During this period, Bai was spoken among the aristocracy, but no attempts to standardise it were made (Wāng, 2004). During the Yuan dynasty, Mongolian forces captured and assimilated the Dali Kingdom into greater China. The language, however, remained a critical aspect of Bai life and is still widely spoken in Dali and surrounding regions.

The etymology of the name *Bai* can be traced back to the Han dynasty (You, 2013). Yet, its use as an ethnonym for the Bai people has a more recent history. During the Nanzhao era, the people now referred to as ‘Bai’ adopted Han culture and rituals and developed strong trade relations with the ruling Han (Wāng, 2004, p. 279). As a result the Han referred to them as

"White barbarians' (白蛮 *bái mán*) which distinguished the Bai people as being more 'civilised' than the other 'barbarian' tribes of the area (Mackerras, 1988). The term 'barbarian' was a common *nomenclature* for any non-Han peoples at the time as they were deemed to be 'uncivilised' according to Confucian standards.

Prior to the establishment of the People's Republic of China in 1949, the Bai people were referred to by Han Chinese as the *minjia* (民家) which means 'commoner' or 'guest'. Following the establishment of the Dali Bai Autonomous Prefecture in November 1956 which officially recognised the Bai as one of China's 56 nationalities, the Bai people formally adopted the long used autonym (Wāng, 2004).

The Dali Bai Autonomous Prefecture (大理白族自治州) is a prefecture of Yunnan province with a population of almost 3.5 million people (Guo, 2013, p. 330) located approximately 350 kms northwest from Kunming, the provincial capital of Yunnan. Dali is home to 21 recognised ethnic groups of which the Bai are the largest (Dong, 2013). The latest census data released in 2010, reveals a Yunnan Bai population of over 1.5 million people (Office for the Population Census of Yunnan Province; Yunnan Provincial Bureau of Statistics, 2010). Of these, over 80% of Bai people are found in the Dali Bai Autonomous prefecture in Yunnan, mostly around Erhai Lake (洱海), but with enclaves spreading as far north as Sichuan and east into the Bijie (毕节) Autonomous Region in Guizhou (Wāng, 2004). Figure 1 (below) represents Dali's location within Yunnan province on the left, with the red dot on the image on the right-hand side depicting Dali old town within greater Dali, to the west of Erhai Lake.

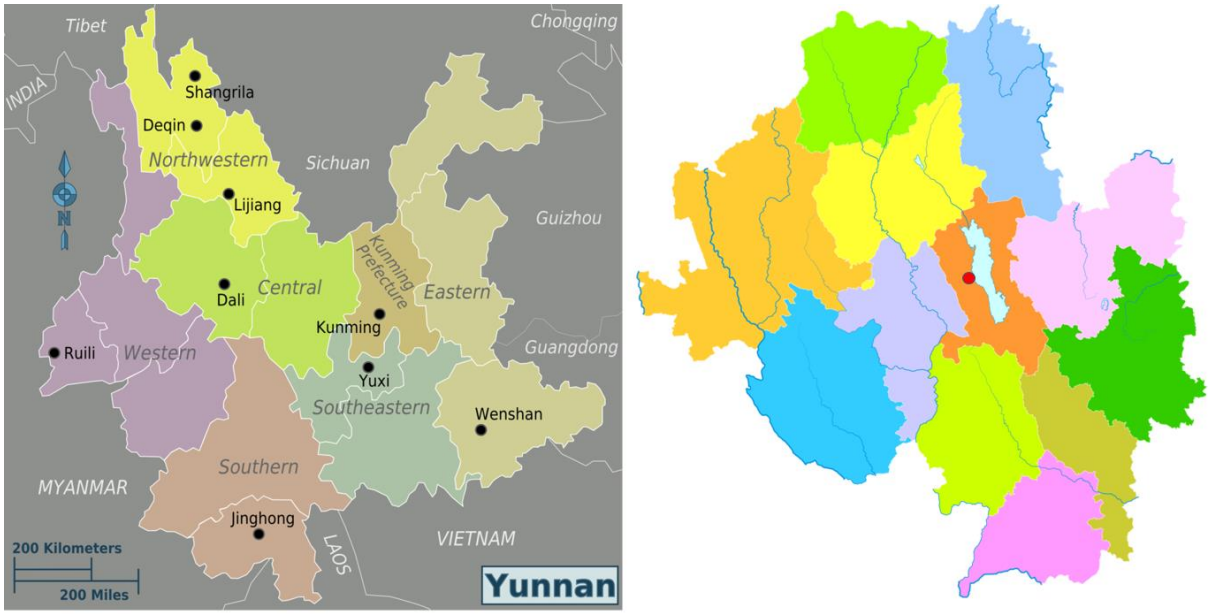


Figure 1: Map of Yunnan and Dali (ClausHansen, 2010; 'Dali Bai Autonomous Prefecture', 2020)

One tradition of the Bai is the tie-dyeing of batik cloth. While McCarthy (2009, p. 106) states this tradition involves multicoloured dyes, the Dali tradition typically uses a blue dye, similar to their traditional clothing. On the topic of clothing, Bai people often wear white clothes with men typically wearing a blue vest.

Another tradition of the Bai is the 'three rounds of tea' *sa*^{55} *tao*^{31} *tsɔ*^{21}, the legend of which is the topic of one elicitation. The tradition dates back to the second century C.E. (Q. Luo, 2020, p. 35) and involves a tea ritual beginning with a cup of bitter tea followed by a sweet tea flavoured with crystalised sugar and honey. The ceremony is finished with a third cup of tea that is bitter, sweet, and spicy. This third cup is further flavoured with both black and Sichuan pepper (prickly ash). The ceremony is meant to represent the bitterness and sweetness of life, which finishes in balance with all flavours working in harmony.

The Bai have been documented as having their own religion Af za li (*a*^{35} *tsa*^{44} *li*^{44}), referred to in Mandarin as *benzhu* (本主) that involves worship of local protector spirits and takes elements from Daoist and Buddhist traditions (Mackerras, 1988, p. 55; McCarthy, 2009, p. 103).

Bai have their own musical style called the ‘music of Nanzhao’ (McCarthy, 2009, p. 107). I was able to witness some Bai musical performances which typically employ a three stringed instrument called a *ɕie*^{35} *tsɨ*^{31} which is played like a banjo, alongside a vocalist and sometimes an *er hu*, a two stringed instrument common throughout China.

Figure 2 - Bai male playing the ɕie^{35} *tsɨ*^{31} *(G. Tian, 2020)*

Uncommon among mainland Chinese food culture, the Bai are known for cheese making (Allen & Allen, 2013). Common on the streets of Dali are two popular cheeses made by the Bai, which are commonly referred to in Dali using their Mandarin equivalents *rubing* (乳饼) and *rushan* (乳扇). *Rubing* is a flat, cake-like cheese similar to haloumi made from goat’s milk that is typically cooked and may be used in stir-fries (which I can attest are delicious). The Southern Bai term is *youd bap*[1] /*jou*^{21} *pa*^{42}/ (Lit: Sheep milk). Made from cow’s milk, *rushan* (*nivx seiz / ȵv*^{33} *se*^{32}/) is a common street snack of a thin cheese that is stretched, wrapped over a stick, and fried. The taste is similar to grilled cheese.

[1] The orthography of Bai will be discussed in detail in section 2.4.

Another popular Bai food item is *baba* (粑粑), commonly referred to in English as a 'Chinese pizza'. The *baba* is a round bread topped with minced pork, spring onions, and pickles, sometimes topped with an egg, then baked. These are very common and popular in Xizhou (喜洲), where long queues accompany each stall.

The Bai people have their own unique architecture. Their houses are typically white with the slanted tiled roof that is commonly associated with Chinese architecture. The walls are adorned with blue tiles. Most houses contain at least one wall with panels depicting poetry, calligraphy, or painting. There has been a revival in Bai architecture recently following motions from the Yunnan government to promote the area for tourism. Figure 3 (below) is a picture of a typical Bai house.

Figure 3 - Example of Bai architecture

The Bai people have two major festivals. Held during the third lunar month is the Third Month Market, a market fair that takes place over four to five days involving several of the local nationalities of the area which includes the buying and selling of local goods, socialising, and horse racing (McCarthy, 2009, p. 106) The second is the 'Torch festival' *fv*^{44} *wa*^{44} *v*^{21}. This tradition is shared among the Yi (彝族), Naxi (纳西族), Jinuo (基诺族), and Hani (哈尼族) people of the region, although celebrated on different dates. It is a very lively event, with families gathering for an evening meal before congregating in the village centre to light a huge torch. Locals sing and dance around the fire before lighting their own torches and carrying them home while pranks and tricks are played with gunpowder. It is recommended that one not wear light footwear to a torch festival celebration. I almost suffered several burnt toes. Figure 4 (below) is a picture taken at a Torch festival celebration in the Yiyuan district of Xiaguan, Dali.

Figure 4 - Torch festival celebration in Yiyuan district, Dali

1.3. Overview of the language

Southern Bai is one of the three major dialects of the Bai language recognised in the People's Republic of China, the others being the Central and Northern dialects. It is spoken predominately in the Dali Bai Autonomous prefecture and surrounding towns and villages.

In 1958, the Bai Language Working Group wrote a report to the Chinese Academy of Science establishing three dialects of the language, Central, Southern, and Northern. Each of the three dialects has its own ISO code. While the Southern dialect is associated with Dali, the Central dialect (ISO 639-3; [bca]) is based in Jianchuan (剑川) with previous research describing key features as containing a nasal vowel contrast, SVO word order, and inflection for number and genitive case on personal pronouns (Wāng, 2004; Wiersma, 2007; L. Xu & Zhao, 1984). It has

also been designated the standard form of the language. The Northern dialect (ISO 639-3; [bfc]) is associated with the Bijiang (碧江) region and has been described as being mutually unintelligible by speakers of the other two dialects (Allen, 2007). Southern Bai contains several different topolects, which are generally intelligible to other speakers. These include Dali (大理), Eryuan (洱源), Binchuan (宾川), Yunlong (云龙), Yongping (永平), Yunxian (云县), Fengqing (风庆), Xiangyun (祥云), Baoshan (保山), Nanhua (南华), Kunming (昆明), Yuanjiang (沅江) (Wáng, 2016, p. 1) and Zhaozhuang (Y. Zhao, 2012). Bai is currently used in everyday speech in regions with high populations of Bai people, and is also used in poetry, song, and in performances (Wāng, 2004; Wáng, 2016; L. Xu & Zhao, 1984).

1.4. Current status of Bai language in Dali

As at the 2010 census, there were over 500,000 speakers of Southern Bai (Office for the Population Census of Yunnan Province; Yunnan Provincial Bureau of Statistics, 2010) and the language has been classified as being stable according to the latest edition of the Ethnologue website (Simons et al., 2020). This means that the language is 'not being sustained by formal institutions, but it is still the norm in the home and community and that all children learn and use the language'. This also means that the language is currently not endangered with high rates of transmission to children.

The Bai speech community in Dali are very engaged with their language. Considerable work on promoting the Bai language and culture is being conducted by the Dali Cultural Research Centre (白族文化研究所 báizú wénhuà yánjiūsuǒ) in Dali Old Town. The centre is run by Professor Zhang Xilu (张锡禄) and aims to promote Bai language, history, and culture. Among their efforts to promote the Bai language are regular weekly public lectures. Each lecture is held by prominent academics from all over mainland China and usually chaired by Professor Zhang. Many lectures conclude with a performance of Bai song or poetry. Lectures

on the history of the language, and on learning the orthography are common and are well attended by both academics and other interested people. The centre also has a strong online presence posting Bai stories and articles on Bai culture and history almost daily on the local social media platform, WeChat. I attended many of these lectures during my time in Dali during which there was often heated debate around the Bai orthography. Many of the older representatives believe that the old 'square script' based on written Chinese was sufficient to represent the Bai language. However, opponents believe that the old writing system insufficiently represented spoken Bai, could not represent differences between the dialects, and was too difficult to learn. Supporters of the old system also argued that learning two Romanised scripts was actually too burdensome, the other being Hanyu Pinyin.

Many people I spoke to also showed concern around the Hanhua, or Sinicisation, of Bai. These people said that there is too much of a Han influence in the language and far too many Chinese loan words. One Southern Bai speaker stated that Bai "isn't strong" and commented that "there are too many Han words. It's embarrassing". One Jianchuan speaker also commented that "Southern Bai isn't real Bai. There are too many Han words."

A great example is the gradual Sinicization of the name of the town Xiaguan (下关), the capital of the Dali Bai Autonomous Prefecture. Xiaguan is the Mandarin Chinese term for the town and translates literally to 'below frontier'. Named for its location south of Erhai Lake, the original Bai term was *kɔ*^{21} *ŋv*^{44} 'sea'. This was later changed into the Bai term for the Mandarin *xia* (下) 'below' and became *e*^{33} *kɔ*^{21} 'below the sea'. Now many young people just use the Mandarin term *Xiaguan*.

However, the Bai are proud of their language and this is evident by the high rates of transmission to children, its daily use, and the growing uptake of their orthography. One

speaker from Wanqiao stated to me “Bai is its own language, with its own structures and its own characteristics. It doesn’t matter that there are a lot of words from Hanyu.”

While not formally taught at schools, Bai children are typically bi- or multi-lingual in Bai alongside Mandarin, and regionally close languages such as Lisu, Yi, or Naxi. Bai is still commonly used as a language of social interaction among Bai people and in marketplaces in Dali. As Southwestern Mandarin is the dominate language in Yunnan and surrounding provinces, Bai does not hold much status as a lingua franca in the region. However, it is among the three languages used in broadcasts on the newly constructed (2018) Kunming to Dali high speed train — the other two being Mandarin and English.

1.5. Key typological characteristics of the Bai language

Structurally, Bai has been noted as having serial verb constructions (Wiersma, 2007), a noun phrase order with a modifier that follows the head, and markers to indicate Mood and Aspect within the clause boundary (Ramsey, 1987). All works cited mention a high degree of borrowing from Old and Middle Chinese.

While word order is a source of debate, consensus is moving towards a canonical Subject-Verb-Object (SVO) word order that underwent a shift from Subject-Object-Verb (SOV) following influence of Han Chinese (Fu & Xu, 2009, p. 3; Wáng, 2001b, p. 99). However, as this thesis will demonstrate, particularly in section 9.2, word order in Bai may vary according to a number of semantic and pragmatic conditions.

While Bai has borrowed 70 – 80% of its lexicon from early-middle Chinese, Wáng Feng (2012) asserts that Bai has managed to maintain many of its unique features, including pronoun inflection (see section 5.1.1), a system of modal verbs (see section 7.9), postposition classifiers (section 6.3), and verb negation (section 8.1).

Xi (2008) investigates the similarities and differences in word order between the Jianchuan and Dali dialects of Bai stating that both forms of the language contain Subject (+ Adjunct) + Predicate (+ Object) word order. However, they differ in how the Object can be moved. Where the Central variety allows an Object to appear before a predicate if it is a personal noun or pronoun with the inclusion of structural particles, the Dali variety does not, possibly due to the higher Sinitic influence. Grammatical relations, including word order is covered in Chapter Nine.

Some other interesting typological features have been found in the language. In the creation of compounds, Southern Bai employs a [modifier] + [head] order (section 5.4). In regard to motion events, Southern Bai should be considered a Satellite language that employs serial verb constructions to depict the direction of the action (section 10.3). The language also marks aspect using coverbs that have been grammaticalised from full lexical verbs (section 7.10).

1.6. Classification debates

As of 2012, there was still no consensus regarding the genetic classification of Bai (F. Zhang, 2012). Current scholars agree that Bai rests somewhere in the Sino-Tibetan[2] language family, but no agreement has been made regarding to which branch of this family Bai belongs.

The current main hypotheses class Bai as an unclassified Tibeto-Burman language (Dryer, 2007; LaPolla, 2006; S. Li, 2016; Wāng, 2004), a language within the Yi/Loloish[3] family (A. Li, 2015; A. Wu, 2009; L. Xu & Zhao, 1984; L. Zhao & Yang, 2009), or a Sinitic language (Thurgood, 2007; Wāng, 2006a). Other theories classify Bai as a language belonging to the

[2] The term 'Sino-Tibetan' has recently come under debate, with some linguists (e.g. van Driem, 2014) arguing that the family should be titled 'Trans-Himalayan with Sinitic and Tibeto-Burman set as sister language trees. It is beyond the scope of this study to contribute to this debate and I merely acknowledge that this debate exists.
[3] More discussion on this nomenclature to follow in section 1.6.2.

Qiangic-Burmo branch of Sino-Tibetan (A. Wu, 2009; H. Zhao, 2016) or a mixed Sino-Loloish language (S. Li, 1992). Zhang (2012) also describes early viewpoints of Bai being a Mon-Khmer language among Chinese scholars but argues that these views are no longer strongly held.

The following is an outline of the major arguments for the positions taken for the classifications mentioned above.

1.6.1. Tibeto-Burman

The main consensus among Western linguistic scholars, (e.g. Dryer, 2007, p. 6; Hefright, 2011; Thurgood, 2007, p. 19) is that Bai is an unclassified language within the Tibeto-Burman family. That is, that Bai does not belong to the Sinitic side of the Sino-Tibetan family but belongs to the Tibeto-Burman family. However, there is a lack of consensus as to which branch of the family it belongs.

Matisoff (1991, pp. 494–496) describes a number of features common among Tibeto-Burman languages, such as topic prominence with the ability for to move the noun phrase, the ability to nominalise whole sentences, and a preference to mark aspect rather than use verbal tense. Many verbs among Tibeto-Burman languages become grammaticalised to function as aspect markers or as directional or locative verbs found in serial verb depictions of motion or space. Another common feature is the lack of morphological marking of gender or number. Even though Bai contains a strong stock of loan words, mostly from Sinitic languages, he argues that Bai is a Tibeto-Burman language because it contains many of the above characteristics that are common to Tibeto-Burman languages, rather than Sinitic. Others include a Noun Phrase with modifiers that follow the head noun, a mostly isolating and monosyllabic lexicon, and the use of grammatical particles to mark relationships involving sentences that have undergone word order changes (Wāng, 2004). As this thesis will outline, Bai also

contains aspectual marking, topic prominence, and verbs that have become grammaticalised into aspect markers or directional verbs.

However, there are also a number of critical features of Tibeto-Burman languages not found in Bai. Ramsey (1987, p. 290) states that while Bai has many elements that look like Tibeto-Burman, many others resemble Tai or Mon-Khmer, and others resemble Sinitic. One major deviation is SVO word order. This is problematic as a primary, distinguishing feature of Tibeto-Burman languages is (S)OV word order. LaPolla (2015) offers a potential resolution of this issue, suggesting that SVO word order is a recent development in Bai resulting from the strong influence of Han Chinese.

Like LaPolla, Dryer (2007) hypothesises that areal contact with surrounding languages is responsible for the inconsistency that Bai contains a [relative clause] + [noun] word order, despite being a VO language. Ramsey (1987, p. 290) claims the Tibeto-Burman classification is 'premature', while conceding that Bai is phonologically similar to Yi/ Loloish languages, which is a sub-group of Tibeto-Burman.

While the current consensus is that Bai belongs to the Tibeto-Burman language family, this issue is complicated by debates among historical linguistic scholars regarding to which branch of Tibeto-Burman Bai should belong. Scholars have hitherto been unable to reach agreement whether Bai is a Yi language, forms an independent Baic group within the Tibeto-Burman family (Z. Luo, 2006, 2011; Y. Zhou, 1978), a Lolo-Burmese language, or an independent Sino-Tibetan branch of its own (Z. Luo, 2011). LaPolla (2006) classifies Bai as Tibeto-Burman, but acknowledges this is problematic, mentioning that the Tibeto-Burman language family resembles less a family tree than 'a network of fuzzy-edged clots of languages' (LaPolla, 2006, p. 226).

1.6.2. Yi/Loloish

The common consensus within mainland China scholarship on Bai is that it belongs to the Yi/Loloish branch of the Tibeto-Burman language family.

The Yi, or Loloish, languages form a branch of the Lolo-Burmese group of languages within the Tibeto-Burmese family (Benedict, 1976; Edmondson et al., 2017, p. 1). The term Yi (彝) is used in most Chinese language literature while much of the Western literature uses alternatively use Lolo and Yi. The language and people have also been referred to as 'ngwi', which removes the pejorative connotations previously associated with the term 'lolo' (it contained a dog radical in written Chinese) and was the term proposed for them by the CCP (Bradley, 2004). I will continue to use the term Yi as it is the most commonly used among the literature.

Except for a lack of nasal final consonants and possessing a lax/tense verb distinction, Bai shares phonological and syntactic similarities with many Loloish languages, as well as much of its lexicon. These similarities influenced Xu and Zhao's (1984) classification of Bai as a Yi language. This view is shared by other scholars in mainland China, such as Li Aiqin (2015), Wu (2009), and Zhao and Yang (2009).

However, Hefright (2011) argues that the continued persistence of this classification within the PRC is problematic, being based on somewhat weak evidence. She traces the Yi classification theory back to Luo and Fu (1954, cited in Hefright, 2011) who based their assessment of Bai as a Tibeto-Burman language on two syntactic features that no longer exist in Bai — SOV word order and a [modifier] + [Head] noun phrase. She argues that this classification continues within linguistic scholarship in the PRC without any debate or criticism regarding its preliminary status (Hefright, 2011, p. 58).

1.6.3. Independent Sinitic

The Sinitic hypothesis can be traced back to Benedict who proposed in 1972 that Proto-Bai was a sister language of Proto-Chinese (Thurgood, 1985, pp. 8–10). This hypothesis has been subsequently followed by several scholars including Wāng (2006a), who claims that Proto-Bai split from Proto-Chinese about 3,000 — 3,500 years ago. Wāng (2014) later stated that Bai and Chinese are full sister languages.

However, Benedict's analysis has fallen out of favour as scholars began criticising his reconstruction methods that involved the use of far-fetched phonetic correspondences together with imprecise semantic correspondences (Hefright, 2011, p.70). Additionally, Wiersma (2007) suggests that large numbers of loanwords from Old-Chinese can account for any Sinitic similarities and Ramsey (1987, p.291) mentions that Bai has 'a large stock of words that can be directly compared to Middle Chinese'.

Another feature possibly ruling Bai out as an Independent Sinitic language is the large bi- and polysyllabic vocabulary, where Sinitic languages tend to be isolating and monosyllabic (S. Duan, 2014).

1.6.4. Independent Baic branch of Tibeto-Burman

The current stance taken by Glottolog (Hammarström et al., 2020) and Ethnologue (Simons et al., 2020) is that the Bai language belongs to an independent, Baic branch of the Tibeto-Burman language family.

This is also the stance taken by Luo Ziqun (2006) who argues that Bai has moved away from Loloish languages. She concluded that Bai borrowed not only content words, but words of grammatical particles from Sinitic by comparing phonetic and grammatical similarities between Bai continuous aspect markers *tu*^{44} and *tso*^{42} with Tang dynasty era Chinese.

Luo Ziqun (2011) later elaborates on this position claiming that Bai was originally a Loloish language that shifted towards a more Sinitic grammar as a result of large-scale contact with the Han beginning from the southern Tang dynasty. She describes considerable borrowing of lexicon and grammatical functions resulting from this contact that would explain the shift to SVO word order. As a result of this shift, she argues that Bai has shifted away from Lolo-Burmese and is now more Sinitic.

1.6.5. Other hypotheses

Bai has also been described as a mixed language, most likely comprised of Sinitic and Yi. Based on a phonetic comparison of cardinal numbers among several Sinitic and Yi dialects, Li Shaoni (1992) argues that Bai is a mixed Sinitic, Tibeto-Burmese language, with 80% of cardinal numbers originating from early Sinitic. However, it is the position of this study that making such large claims should not be based merely on comparisons of such a small data set, especially considering that many languages have numerals borrowed from Sinitic. Li Shaoni (2001) later maintains their view based on the phonology, lexicon, and syntax of Bai and that the tonal system of Bai appears to be a mix of Old Chinese and Yi. Another argument Li makes for this classification is the high number of set constructions similar to those found in Mandarin, such as the comparative *…bi …* 'X compared to Y' and *bu dan … er qie…* 'not only … but …' constructions. However, I find Li's methodology problematic as he seems to cherry pick data among various dialects and smaller topolects to prove his analysis.

Luo Ziqun (2011, p. 95) claims linguists making the mixed language conclusion are taking an 'easy way out' and urges for further examination of the grammatical system is needed to draw stronger conclusions.

Wu (2009) argues that phonological comparison of Bai lexical items with early Sinitic reveals similarities with early Yi and Qiangic languages. The author argues that it is possible that early Bai people were speakers of a Qiangic language who were influenced by contact with Yi speakers around Erhai Lake, sometime in the Song Dynasty. Similarly, based on a Systemic Functional Linguistic analysis of Bai, Zhao Haiyan (2016) argues that the language belongs to an independent Qiangic-Burmo branch. Wu (2009) also argues for a Qiangic classification for Bai.

Other scholars, such as Zhao Yanjie (2016) take a similar stance towards Bai's independent status stating that Bai is an independent Sino-Tibetan language. This would place Bai higher up on the language family tree as opposed to the view of scholars such as Luo, who claims that Bai belongs to an independent branch of Tibeto-Burman.

It is clear that the genetic classification of Bai remains undetermined and contested. This research project seeks to contribute to the growing corpus of documentation work aiming to further understand how Bai might be classified. The next section sets out the project framework, including the aim and key questions.

1.7. Aim and key questions

Since the work of Xu and Zhao in the 1980's, the Bai language has been the subject of a considerable amount of research. Among this are surveys and descriptions focusing on the phonological system and lexical features of Bai. Most of this work has focused on the central dialect with little work on the southern dialect. It is also predominately in Chinese. A number of scholars on Bai have indicated that work on the grammatical system of Bai is lacking (Z. Luo, 2011; Wáng, 2012; F. Zhang, 2012). Luo Ziqun (2011) suggests that deeper understanding of the syntactic system of Bai may help resolve some of the questions surrounding the genetic classification of the language.

This project will be in the vein of a descriptive grammar, as outlined by Himmelmann (1998). The main goal of a descriptive grammar is the collection of a naturalistic corpus of the language and language practices in order to analyse and describe various elements and features of the language (Dench & Evans, 2006). The goal is to collect *naturalistic* rather than *natural* data as it is recognised that collecting natural data may be seen as unrealistic and potentially unethical as participants may not be aware they are being recorded. Mithun (2001, p. 53) states that that natural data includes 'spontaneous speech in natural communicative settings.' In order to avoid potential issues around the collection of natural data, Dench and Evans (2006) suggest collecting *naturalistic* data which involves a much more structured elicitation, but still aims to collect speech that is close to natural speech. Other factors inhibiting natural data collection through elicitation include constraints to the elicitation exercise, the observer's paradox, and the higher cognitive load often involved in processing stimulus materials over natural speech (Himmelmann, 2006; Labov, 1972b).

Ethical questions also arise around recording people constantly and recording people who may not be aware they are being recorded. Based on these considerations, naturalistic data was collected from elicitation sessions. These sessions included such tasks as describing what one did during the day, retelling stories from texts, and elicitation from stimulus materials. While some conversational data may have been preferrable, conditions in the field made this difficult. Methods employed in data collection for this study will be covered in depth in section 3.3.

An important factor in a descriptive grammar is the involvement of native speakers in the linguistic analysis and in offering native judgements on the grammaticality and 'acceptability' of utterances.

As a descriptive grammar, this study will include analysis on the phonology of the language, lexicology and word formation, morphology, general syntax, and clausal construction. In addition to providing a descriptive sketch grammar of the language the project has a secondary aim in investigating how motion events are encoded in Southern Bai.

To fulfill these aims, the project will answer the following questions.

- What are the phonological and grammatical features of Southern Bai?
- How do they relate to existing work on other dialects, particularly the Central dialect which has been deemed the standard dialect?
- How are motion events encoded in the language?

1.8. Chapter outline

Chapter Two will encompass the existing research on the linguistic features of Bai and will discuss work on various features found among the three dialects. It includes a review of several seminal works on the Bai language, some reference grammars of other dialects, and the agreed upon shared features among these. Discussion will then move on to works on phonological features and grammar including word classes, sentence construction, the noun classifier system, aspect marking and morphological inflection. The chapter ends with an overview of the orthographic system developed for the language.

Chapter Three will be an outline of the methodology undertaken for the project. This section will outline the data collection methods and reasons for their choice. In addition to an outline of the field and methods undertaken, this chapter will describe the participants and participant selection methods and describe the elicitation stimulus materials employed during data collection.

Chapter Four will explore the phonological features of Southern Bai. Beginning with a description of the consonant inventory and monophthong and diphthong vowels, it will then move on to a description of the complex suprasegmental system of the language. The suprasegmental system in Southern Bai is a complex system of five tonal contours overlaid with breathy and creaky phonation. This will be covered in depth, including new data describing the average frequency and duration of each tone, and spectrogram images of typical tones. Following a description of the suprasegmental system will be a description of the construction of the Southern Bai syllable.

Chapter Five will introduce and describe the morphological and word formation processes in Southern Bai. This chapter will begin covering the morphological inflection system on personal pronouns and the derivation of classifiers from echoed nominal morphemes. Discussion will then progress to how new words are formed in the language via the methods of affixation, compounding, reduplication, and contraction.

Chapter Six will cover the Southern Bai noun phrase beginning with a description of common constituents found therein, ranging from nouns, numerals, classifiers, pronouns, adjectives, locative postpositions and conjunctions. From there, the chapter will progress to general noun phrase constructions ranging from numeric modification to adjectival modification to possession.

Chapter Seven will focus on the verb phrase beginning with introducing different verb types, sentence final pragmatic particles, adverbs, and verbal classifiers. Discussion will then move on to simple declarative predicates, the existential construction, modal auxiliary constructions and aspectual marking. The chapter will end on a description of two important constructions in the language, serial verb constructions and the *ka*^{44} construction.

Chapter Eight will discuss and describe sentence types, sentence linking, and some more complex constructions. This chapter will begin with a discussion of negation in Southern Bai, then a description and discussion of non-declarative sentences. This will be followed by description of sentence linking including coordination, and temporal linking which involve two or more events that occur in a set order (where one needs to be completed before the other). Next will be the description of two different subordinate clauses in Southern Bai, conditional and relative clauses before moving on to comparative constructions.

Chapter Nine will discuss grammatical relations in Southern Bai. This chapter will begin by describing various semantic roles in Southern Bai then move on to discussion of whether the language contains a grammatical Subject. Following this, the chapter will cover two multi-faceted grammatical particles *nɔ*^{44} and *mɯ*^{55}. This will be followed by descriptions of several constructions including double object constructions, benefactive constructions, anaphor, referent tracking, and passive constructions. The chapter will conclude with a discussion on spatial relations.

Chapter Ten is an in-depth description and discussion of the expression of motion events in Southern Bai. This will focus on how the syntactic forms of motion events are created and how semantic and prosodic information determine the forms used to express motion events. This chapter will focus on Talmy (2000, 2007) and Slobin's (2004) work on the linguistic typologies of motion event expressions, the debates surrounding this typology, and discuss where Southern Bai may fit into the existing framework.

The final chapter, Chapter Eleven will be the conclusion of this thesis. This chapter will offer a summary of the findings of the project and discuss how this project has contributed to knowledge while acknowledging some of the shortcomings of the project.

1.9. Summary

This chapter has introduced the current research project. Beginning with an outline of who the Bai people are and where they are geographically located, the discussion moved on to introduce the three major dialects of the Bai language. Discussion in Section 1.6 then progressed to the various debates surrounding the genetic classification of the Bai language. Section 1.7 outlined the terms and motivations of the project while Section 1.8 offered a chapter-by-chapter outline of what will be covered in this thesis.

The following chapter, Chapter Two outlines existing linguistic research on Bai.

Chapter 2 - Literature Review

This chapter presents an overview of the existing literature on the Bai language. It will begin by introducing some of the larger, seminal works on the language (section 2.1) before progressing to discuss some of the grammars written on smaller Bai topolects (section 2.2). Section 2.3 will discuss works on the linguistic features of the language. This includes phonological works on Bai (section 2.3.1), works on word classes (section 2.3.2) and works on syntax and the grammar of Bai (section 2.3.3). These sections will not provide any new findings. Rather, it is intended to provide an overview of the existing descriptions of the Bai language and some of its dialects. This background chapter will conclude with an overview of the Bai orthography (section 2.4).

2.1. General works on grammar

Perhaps the most influential descriptive work on Bai was Xu and Zhao's (1984) *baíyǔ jianzhi* 'Survey grammar of the Bai language' (白语简志). This work is still a frequently cited source and maintains considerable influence on subsequent research and description of the language. This sketch grammar is based on previous language surveys conducted in Yunnan as part of the Chinese Communist Party's National Language Survey Project conducted in the 1950's. Further research conducted in the late 1970's resulted in the publication of this seminal work in 1984. It is still considered the standard reference on the Bai language (Hefright, 2011, p. 80).

This is primarily a descriptive work covering a vast area of language description from the phonology, syntax, word constructions, basic syntax, and basic clause construction. However, it offers only a minimal analysis of the linguistic features of Bai. Another issue is that it focusses mostly on the Jianchuan dialect, with very minimal description of the other two dialects, although it does occasionally discuss features of the Southern dialect. Other than

listing modal particles, there is very little in the way of pragmatic or semantic description of the language.

The book chapter provided by Wiersma (2007) is the most commonly cited English source on Bai. Like Xu and Zhao, it offers a general sketch of Bai, with some basic description of other linguistic elements and a further analysis on the phonology and general syntax. It also offers a good non-specialist's description of the likely Old Chinese origins of the Bai tone system and an analysis of phonological features of Bai. The chapter argues that the phonology of Bai shares many characteristics with Yi and other Lolo-Burmese languages with modal contour tones interacting with other phonation. Regarding the Bai syllable, this work states that the onset of a syllable may be either a consonant or vowel, however a rhyme may only be constructed of vowels or a glide, and that there is no dialect of Bai described as having checked or stopped syllable endings (Wiersma, 2007, p. 654). The Central and Northern dialects are also described as exhibiting nasal vowel contrasts.

Li and Duan (1998) also offers a brief outline of the linguistic features of Bai. The greatest asset of this reference is an exhaustive list of the pronunciation of over 2,000 words in each of the three Bai dialects, over a total of 23 languages spoken in the region. This is not only beneficial as a primary lexicon used in the initial parsing of data, it also allows for comparisons between other languages and discovery of possible cognates.

Wáng Feng (2016) is primarily a collection of annotated texts in Southern Bai. The greatest asset of this collection is that it provides a very basic sketch grammar of Southern Bai to assist in reading the annotated texts contained within.

While not a grammatical work, Allen (2007) is a useful resource on intelligibility and variation among several Bai dialects. This work collected a word list of more than 500 items

over nine locations with high populations of Bai speakers. Not only is this work useful as a collection of lexical items, but also contains phonetic inventories of the selected topolects.

Among the current research on Bai, a number of features are agreed upon, many of which make Bai a unique and interesting language to study. Like other languages in the Sino-Tibetan family, it is a tonal language with suprasegmental features carrying a lexical distinction. Bai has also been described as including negation infixing, inclusive and exclusive first person plural pronouns, morphological inflection on personal pronouns to inflect for plural and genitive case, and phonological shifts on verbs to achieve negation (Wáng, 2006; Wiersma, 2007; L. Xu & Zhao, 1984).

2.2. Grammars on Bai topolects

There have been a number of Chinese language works on some of the topolects of Bai. These are the smaller geographical varieties of the language within each of the three Bai dialects. Most of these works are on the variety spoken by the individual researchers. Zhao (2012) provides a descriptive grammar of Zhaozhuang Bai. This is a reference grammar covering the Zhaozhuang topolect of Southern Bai, based on her (2009) PhD thesis. This is a highly descriptive grammar covering the phonological, lexical, and syntactic systems of the topolect of which she is a native speaker.

Dai and Zhao (2009) also provides an overview of the phonetic system and general syntax of Zhaozhuang Bai. This is a precursor to Zhao's thesis on the topolect and provides only a summary of the main features.

Zhao Jincan (2011) provides a grammar of Heqing Bai, a variety of the Central dialect spoken in Heqing, north of Dali. Like Zhao (2012), this is a reference grammar of the topolect he speaks, and is derived from his PhD thesis.

These grammars offer complex description of the language systems of and cover a lot of ground in regard to phonology, lexicology, and syntax. However, they do little other than providing lists and provide minimal analysis. There is little discussion on any of the features or how they differ or function. There are no insights as to how the authors reached any of their conclusions, nor any discussion into semantic or pragmatic considerations other than the use of pragmatic particles. Another issue I find is that they do not present any criteria for inclusion into a word class, instead just listing some words in that class.

Wáng Feng (2001a) provides a description of the Bai language spoken by approximately 20,000 people in Xishan, north of Kunming. This study describes a language phonetically similar to the Southern and Central dialects, with a grammar exhibiting a greater number of mono-syllabic words and a nominal suffix system to express gender, position, size, and body parts, and a higher number of Sinitic loans than other varieties, possibly due to the speakers' location close to the provincial capital.

Zhao Yiping (2015a) found that Bai is a stable language in Shalang, a village within the Wuhua district of Kunming with high numbers of speakers and transmission rates. While not used in official contexts, due to the high Han population, Bai is the everyday language in their private life. Additionally, Zhao found there is a strong desire among the Bai community in Shalang to see their language persist into the future through the development of writing systems to produce their own stories and record folklore in the belief this will help Bai persist and ease transmission to future generations.

2.3. Works on specific linguistic features of Bai

The following section will discuss existing works that focus on more specific linguistic features of Bai. Discussion will begin with the large body of work on the phonological system, before progressing on to works on the Bai grammatical system in more detail.

2.3.1. Phonological works

The following section will outline the major works that have focused on the phonology of the Bai language (and related works on Sino-Tibetan phonology). The majority of works either focus on, or at least feature, discussion on the phonological system of Bai. Starting with the consonant, this section will then describe works on the vowel system, before ending with works on suprasegmental features.

2.3.1.1. Consonants

Xu and Zhao (1984) outlined the basic consonant structure of Bai based on the Jianchuan dialect. They describe 20 consonants over five places of articulation with five manners of articulation. Among these phonemic distinctions are aspiration contrasts between voiceless plosives and affricates, a voicing distinction between fricatives but not among plosives and nasals, three nasals - /m, n, and ŋ/, and one singular lateral /l/.

Since Xu and Zhao's (1984) work, several other studies have worked on constructing the consonant inventories among the Bai dialects and topolects. Xi and Li (1997) and Zhao (J. Zhao, 2010, 2011) describe contrastive aspirated fricatives /s^h/, /$ɕ^h$/, /x^h/, and /f^h/ found in the Heqing topolect of Northern Bai. This aspiration contrast is assumed to be a feature retained from Proto-Bai influenced by Tibetan and early forms of Chinese (Wāng, 2006b), which has subsequently dropped from modern Bai. Other works (e.g. Allen, 2007; Dai & Zhao, 2009; L. Wang, 2012) have also mentioned an alveolo-palatal nasal /ȵ/.

The phoneme [j] is potentially problematic. Xu and Zhao (1984) include /j/ as a voiced palatal fricative, in contrast to /ɕ/. The Yunnan almanac (J. Li & Duan, 1998), possibly using Xu and Zhao (1984) as a reference, also lists /j/ as a phoneme within the Bai inventory, without a contrasting phoneme for /ɕ/. Their description contains a voicing or aspiration

contrast for all other fricatives. However, Allen (2007) lists /j/ in several Bai dialects as an approximate.

Based on the Jianchuan dialect, Wiersma (2007) includes [j] among the consonant inventory alongside /ɕ/ but includes no further information. In her chapter, it is ambiguous whether this is a voiced contrast of /ɕ/ or the palatal approximant /j/, as represented in the standard International Phonetic Alphabet (IPA).

Opper (2017) offers another possibility. He draws the conclusion that in many Bai dialects, /ɕ/ and /ʑ/ may be free variants of the same phoneme as no inventory of Bai includes both these phonemes (Opper, 2017, p. 64). Therefore, both representations may be possible. Section 4.1 will address this study's findings on [j] in Southern Bai as well as discussion on the consonant system.

2.3.1.2. Vowels

According to Xu and Zhao (1984) and Wiersma (2007) the vowels of Jianchuan Bai are: /i/ /e/ /ɛ/ /ɑ/ /o/, /u/ /ɯ/, /ɤ/. The Yunnan Almanac (Li, 1998) lists nine vowels for Dali (Southern) Bai with an extra rhotic /e˞/ and the back vowel /ɔ/ replacing the front vowel /ɛ/. The rhotic /e˞/ is also verified in Xu and Zhao (1984) who describe this phoneme in both Dali and Bijiang varieties. According to Wiersma (2007), each vowel has a corresponding diphthong, with the following restrictions: Diphthongs beginning with /u/ are restricted to apical and velar initials and diphthongs beginning with /i/ are restricted to dentals and apical initials. The findings of this study regarding the vowel inventory of Southern Bai can be found in section 4.2.

While generally agreed that Bai has eight vowels, Ramsey (1987, p.290) describes a vowel inventory of up to 12 vowels for the Dali (Southern) dialect. His inventory includes /ü, ö, v,

and ɘ/ in addition to those listed above. While not standard IPA symbols, it is likely that /y/ and /ɯ/ are the standard representations for /ü/ and /ö/.

Nasalised vowels are found in both Bijiang and Jianchuan dialects with nasalisation occurring on all vowels in Jianchuan, except /u/, /ao/ and /iao/ (Wiersma, 2007, p. 655). However, earlier studies state the Dali dialect does not contain any nasal contrasts (Wiersma, 2007; L. Xu & Zhao, 1984).

2.3.1.3. Works on suprasegmental features of Bai

Edmondson and Li (1994) found three conditions which affect voice quality among suprasegmental features in Bai. These qualities affect each of the five pitch targets with harsh and breathy more likely on the mid-low falling tone. The first, degree of glottal stricture, affects modality, breathiness, and harshness of voicing. The second, global setting, affects lax or tenseness of the vowel. Finally, supralaryngeal settings produce nasal or oral qualities.

Allen, Su and Zhao (2002) is the first work to look at the tone and phonation system in a dialect other than Central Bai. They argue that a close relationship exists between voicing and modality among Bai tones. This work presents detailed descriptions of suprasegmental features found in the Xizhou variety of Southern Bai including average pitch and length information of each of the tones of male and female speakers and detailed spectrograms of each of the tones. Among the suprasegmental features of Xizhou speakers, they found three flat modal tones — high (55), mid-high (44), and low (33), a rising tone (35), a ‘super-high falling’ (42). They also argued for two mid-falling tones, (31) with breathy phonation, and (21) with creaky phonation. In opposition to most work on suprasegmental in Bai, they argue against the ‘32’ mid-falling tone stating there is no clear distinction between the ‘31’ tone and the ‘32’ tone (Edmondson & Li, 1994, p.266). Section 4.3.1 will address this claim in relation my findings.

After an analysis of loanwords from Southwestern Mandarin in the Jianchuan dialect of Bai, Wu (2009) found a relationship between loans from Southwestern Mandarin and corresponding tone in Jianchuan Bai. They argue the *yinping* tone (equivalent of tone 1 in MSM) became mid-flat 33 tone in Bai. Consequently, words with *yangping* (MSM tone 2) became the high-falling 42 tone, *shang* (MSM tone 3) became mid-falling 31, and *qu* tone (MSM tone 4) became the high-flat 55 tone.

In contrast to previous research, Wāng Feng (2015) argues against a correlation between tone group and phonation. Conducting EEG recordings on speakers of Jianchuan Bai, his study grouped the eight tones together based on the pitch of the fundamental frequency (F^0) and found phonation distinctions didn't necessarily translate into a one-to-one correspondence and do not occur on all modal contours (Wāng, 2015, p. 440). Section 4.3.1 of this essay will argue that phonation distinctions only occur in the mid-falling tones.

Wáng (2015) investigated variations in laryngeal features among vowels found in Jianchaun (Central) Bai. He found that F^2 values found in lax vowels were higher than their tense counterparts. In contrast to earlier work, he argues for two non-modal phonation types, harsh and pressed, over four tonal contours as opposed to the three-way split over five modal tones argued in other grammars.

Section 4.3 of this thesis covers the suprasegmental features of Southern Bai in detail.

2.3.2. Word classes

Xu and Zhao (1984) list 11 word classes found in Bai, noun, pronoun, numerals, classifiers, verbs, adjectives, prepositions, adverbs, conjunctions, grammatical particles, and modal particles. However, Wiersma (2007) argues word classes in Bai, as in many Tibeto-Burman languages, are not as clear cut as those found in Indo-European languages.

On discussing word formation in the Heqing variety of Northern Bai, Duan (2014) found that Bai contains a lot of bi- and polysyllabic compounds whereby the first lexeme modifies or restricts the following element. This takes a variety of methods, such as [noun] + [noun], as in *mu*^{21} 'wheat' + *mi*^{42} to form 'wheat flour'. [Adjective] + [noun] compounds may be employed to form metaphorical terms, such as *pe*^{42} 'white' + *pi*^{42} *kua*^{44} 'bridge of the nose' to form 'liar'. Section 5.4 discusses word formation processes found in Southern Bai.

2.3.2.1. Pronouns

According to Xu and Zhao (1984) Bai contains four classes of Pronoun — Personal, Demonstrative, Interrogative, and Modifier. While classified as pronouns in Xu and Zhao (1984, pp. 22–23), the latter group includes two grammatical particles *va*^{31} and *ŋv*^{31} that provide genitive modification. The following sections will discuss personal, demonstrative, and interrogative pronouns in further detail. The findings of this study on pronouns will be presented in section 6.4.

Personal Pronouns

Bai pronouns inflect for plurality and genitive case (Fu, 2013; Wiersma, 2007; L. Xu & Zhao, 1984). This could be further evidence that Bai is indeed not a Sinitic language, most of which tend to be isolating, i.e. not containing morphological inflection (S. Duan, 2014). However, rather than inflecting, some dialects employ a bound morpheme following the personal noun to express pronoun plurality (Allen, 2007). This could either be the result of language contact or an old grammatical form from Sinitic as Mandarin contains the same form.

Table 1 illustrates the personal pronoun paradigm for Central Bai, reproduced and translated from Xu and Zhao (1984, p. 16).

		Person #		
	Case	**1st**	**2nd**	**3rd**
Single	Nom/Acc[4]	ŋo^{31}	no^{31} / jĩ ^{55} (pol.)	mo^{31}
	Genitive	ŋɯ^{55}	nɯ^{55}	mɯ^{55}
Plural	No case distinction	ŋa^{55} [5] jã^{55}(incl)	na^{55}	ma^{55}

Table 1 - Bai pronouns (Xu & Zhao, 1984)

As can be seen in the above table, the Nominative/Accusative form *_o^{31}* inflects for genitive case to *_ɯ^{55}* and for plural to *_a^{55}* while the initial consonants *ŋ_*, *n_*, and *m_* remain intact for first, second and third person, respectively. Furthermore, genitive case may be marked by placing *va^{42}* or *ŋɤ^{42}* after a noun to indicate the preceding person or object is the possessor. The personal pronoun paradigm for Southern Bai is similar and can be found in section 6.4.1.

Interestingly, there is no case distinction between Nominative/Accusative case and Genitive case in the plural form. According to Palosaari and Campbell (2011), this is a rare feature in world languages. They state that while genitive noun inflection is rare in itself, where it does exist, it is usually employed within a system of noun classifiers.

Fu (2013) speculates that these inflections are derived from an earlier Locative or Genitive marking system based on the Dali dialect that exhibits differences between stand-alone subjects and adjectives modified for possession (e.g. similarly to English ‘my’ versus ‘mine’). This inflection, contends Fu, is most likely derived from the locative ‘on’ — meaning something akin to ‘I have something on me’ (Fu, 2013, p. 216). As a result, Bai developed to conform to the isolating characteristic used in many Tibeto-Burman languages in the formation of plural pronoun and case.

[4] While I argue later in section 9.2 that Southern Bai lacks case, this is a reproduction of the table from Xu and Zhao (1984).

[5] The original text does not specify whether this pronoun is exclusive, rather glosses it as the Mandarin plural pronoun *wǒ men* 我们, which is not necessarily exclusive.

Wu (2009) has another view, indicating that Yi languages commonly use suffixes to form plural pronouns, such as Naxi *-gɯ*^{21}, Southern Hua Yi *-ke*^{33}, Heijiang Hani *-thi*^{33}, and Jinuo *-jo*^{31}. Wu traced a proto-Bai form back to **-la* and concluded this inflection is likely to have developed from the merging of these two forms.

Reflexive personal pronouns can be formed by adding *tɯ*^{42} *tɑ̃*^{55} *jĩ*^{21} after any pronoun, regardless of number. For example, forming the first-person singular reflexive pronoun 'myself' would involve adding *tɯ*^{42} *tɑ̃*^{55} *jĩ*^{21}*'* to the first-person form *ŋɔ*^{21} '1SG' to become *ŋɔ*^{21} *tɯ*^{42} *tɑ̃*^{55} *jĩ*^{21} 'myself'.

Demonstrative Pronouns

Xu and Zhao (1984) describe two main demonstrative pronouns in Central Bai: *lɯ*^{31} 'Proximal' and *mɯ*^{31} 'Distal'. These are changed into plural form with a tonal change from 31 to 55. When spoken in combination with the general quantifier *ja*^{42}, phonetic assimilation occurs, becoming *lia* and *mia* respectively.

In addition to these two major pronouns, Bai also has three other demonstrative pronouns, *a*^{55} *ta*^{44} 'proximal', *mɯ*^{35} *ta*^{44} 'distal', and *ta*^{35} *ta*^{44} 'further distal' used to indicate deixis from the speaker. Section 6.4.2 will discuss the demonstrative pronouns found in Southern Bai.

Interrogative pronouns

Xu and Zhao (1984, pp. 20–22) describe seven interrogative pronouns found in Central Bai, as listed below. They state that interrogative pronouns typically appear before the head of a noun phrase.

(1) *a*^{31} *to*^{31} 'who'
a^{55} *na*^{44} 'where'
a^{55} *sɛ̃*^{31} 'what'
tɑ̃^{55} 'how many' (small number)
sɛ^{31} *tsɯ*^{42} 'how many' (large number)

sɛ^{31} *suɯ*^{33} ‘how’ (character)
tsi^{55} *kɛ*^{21} ‘how’ (action or manner)

Section 6.4.3 will discuss the interrogative pronouns found in Southern Bai.

2.3.2.2. Grammatical particles

Research on Bai has shown that the language makes use of grammatical particles to convey structural, modal, and aspectual information. This research will be discussed below.

Dai and Dong (2016) argue that modal particles are likely to be found among Sino-Tibetan languages and constitute an independent word category. However, the research in their paper is somewhat lax as it only includes one example of a modal particle from each language investigated in the paper.

Research into the Central dialect reveals a grammatical particle *no*^{33} that serves a number of functions. It can function as a topic marker and an attributive modifier to verbs, nouns and adjectives. The general functions of *no*^{33} are outlined below.

Zhao (2013) and Zhao and Li (2005) refer to *no*^{33} as a ‘topic marker’, often placed after a noun in a non-SVO sentence to indicate sentence Topic. Dryer (2007) also describes *no*^{33} as an Indirect Object marker. Alternatively, Xu and Zhao (1984) state that placing *no*^{33} after a Noun or Personal pronoun marks it as the grammatical Object of the clause.

They also state that when placed after a noun, pronoun, verb, adjective, modifier clause, co-ordinating clause, or expressive phrase, *no*^{33} can also be used to mark the preceding word or clause as the phrase modifier and can be used to mark the following noun or verb as the attributive or adverbial adjunct in the sentence.

Fu and Xu (2008) describe two locative particles *nɔ*^{33} and *ŋv*^{55} that have become object markers through grammaticalisation. They argue that these locatives have developed to mark

recipient and source, respectively, in dative constructions. Examples (2) and (3) taken from Xu and Zhao demonstrate this function.

(2) *nɯ*^{55} *pu*^{35} *tha*^{55} *nɯ*^{55} *-no*^{33} *li*^{33}
2GEN uncle accept 2SG no gift
'Your uncle accepted the gift for you'

(3) *nɯ*^{55} *pu*^{35} *tha*^{55} *nɯ*^{55} *-ŋv*^{55} *li*^{33}
2GEN uncle accept 2SG ŋv gift
'Your uncle accepted the gift from you.'
Source: (Xu & Zhao, 1984 cited in Fu & Xu, 2008, p. 124)

The authors state that *ŋv*^{55} behaves more like a 'general location marker.'

These two postpositions have evolved to indicate participant roles in transitive and di-transitive sentences and utterances with two participants. The locative no^{33} which originally indicated location with direct contact, became grammaticalised to indicate the participant directly affected by the action, or towards whom the action was directed. Similarly, *ŋv*^{55} has evolved from a locative indicating location near an object into a grammatical marker indicating the participant with a peripheral role in the action, or the addressee of an utterance. The number of verbs whose arguments can be marked by *ŋv*^{55} are much more restricted than those that are marked by *nɔ*^{44} (Fu & Xu, 2008, p. 129).

When placed after a noun or pronoun, *nɔ*^{44} functions to indicate the direct recipient of the action, whereby *ŋv*^{55}/*mɯ*^{55} indicates who the action was conducted for, as illustrated in examples (4) and (5) below.

(4) *mo*^{31} *pɛ*^{21} *ŋɯ*^{55} *-nɔ*^{33} *sv*^{55} *ts*^{h}*ua*^{44}
3SG return 1GEN -no book CLF
'He returned a book *to*[6] me'

(5) *mo*^{31} *pɛ*^{21} *ŋɯ*^{55} *-ŋv*^{55} *sv*^{55} *ts*^{h}*ua*^{44}
3SG return 1GEN -ŋv book CLF
'He returned a book *for* me'

[6] Emphasis mine.

Source: (Xu & Zhao, 1984, cited in Fu & Xu, 2008, p. 124)

Both *no*^{33} and *ŋv*^{55} may also act as locatives when placed after a Subject with the difference being that *ŋv*^{55} expresses containment (Xu & Zhao, 1984). However, Fu and Xu (2008) claim that *ŋv*^{55} expresses location near or around a referent object whereas *no*^{33} expresses surface contact. They claim that this central vs. peripheral meaning of these postpositions is extended metaphorically to function as object markers in dative constructions to indicate recipient/goal and source respectively. The Southern Bai equivalents to these particles will be covered in detail in section 9.3.

Wu (2015) also traces the grammaticalisation path of Central Bai *no*^{33} from a locative postposition to a nominaliser to verbal complement. He describes several functions of the grammatical particle *no*^{33} ranging from a locative, human oblique marker, indirect object marker, nominaliser, attributive, adjunct marker on adjectives, and verbal complementiser. He also states that *nɔ*^{44} is the Southern Bai equivalent.

Zhao Yanzhen (2013) discusses topic markers found in the Bai variety spoken in Xiaguan. The paper describes four major topic markers and their pragmatic uses — *nɯ*^{55}, *tsɿ*^{55}, *lɯ*^{44}, and *na*^{55}. These particles are described as having a pragmatic use as discourse markers that are in the process of grammaticalisation from existing verbs. *nɯ*^{55} can function either as a discourse marker to bring attention to information that follows or as a conditional. *tsɿ*^{55} can function as a discourse marker or as a complement of degree following a verb. *lɯ*^{44} functions as focus marker after a declarative sentence. When combined with *xɯ*^{55}, it can function as a clause linker similar to ‘and then…’ The least common of these particles, *na*^{55} also functions as a discourse marker and nominaliser. That these particles are still in the process of grammaticalisation may explain the unfixed nature of their use, argues the author.

2.3.2.3. Sentence final particles

As with many Tibeto-Burman languages, Bai uses sentence final particles to express the speaker's manner or attitude. These are a pragmatic strategy by a speaker to strengthen or mitigate an utterance or carry their intention to the interlocutor (D. Yang, 2006).

Zhao Haiyan (2016) conducted a systemic functional analysis on Bai modal particles in the Zhaozhuang topolect and describes five functions: declarative, imperative, interrogative, inference, and interjection/exclamation.

In her analysis, she describes the following modal particles. The modals *la*^{42} and *ne*^{21} are declarative modal particles. Imperative modal particles include *me*^{42}, *ua*^{55}, *pi*^{31}, *ja*^{33}, *lɯ*^{31}, *tsɯ*^{35}, and *khɯ*^{33}. The interrogative modal *mu*^{33} shifts a statement into a question, much like the Mandarin question particle, *ma* (吗). The inferential modals *kha*^{33}, *ɛŋ*^{33} and *sɯ*^{33} are used to soften a statement, or offer a suggestion to an interlocutor, similar to Mandarin *ba* (吧).

The final modal category contains interjections and exclamations and include *to*^{42}, *la*^{42}, and *sa*^{33}. Yang (2006) analyses sentence final particles found in the Jianchuan variety of Bai in their Master's thesis.

Pragmatic particles in Southern Bai will be discussed in detail in section 7.2.

2.3.2.4. Classifiers

As found in many Tibeto-Burman languages of mainland Southeast Asia, countable nouns must be modified by a classifier when being counted, Each classifier is assigned to the noun according to temporal qualities of the objects they modify, such as shape, size or usage (Blench, 2015; Enfield, 2005; Matisoff, 1991). According to Wiersma (2007) and Xu and Zhao (1984), the classifier should occur after the number, which follows the head noun, i.e.

NP — Noun + (Number) + Classifier.

Xu and Zhao (1984) state that the use of classifiers varies according to the number and definiteness of the object being modified. Nouns with an undefined number, such as those referring to a class, are not modified by any classifier. Where a noun is plural, but the number not clearly defined, *xo*^{44} is used to pluralise people and *ja*^{42} is used to refer to non-human objects, particularly animals. For countable nouns, the generic classifier *ji*^{21} may be used. Locational, time, abstract and proper nouns do not need to be modified by a classifier. The place of numerals in relation to classifiers and definiteness in Southern Bai will be discussed in section 6.8.1.

The classifier system of Bai has received considerable attention, focusing mostly on a functional sentence perspective. Wiersma (2007, p. 661) states that common nouns have such a close association with the associated classifier that an utterance involving a noun is considered ungrammatical if a classifier is not used with the associated noun. Previous work on classifiers in other Bai varieties have described a word order whereby they appear after the head noun. Wáng (2005b, p. 194) states that the Noun + CLF order of Bai is uncommon among Sino-Tibetan languages that display a preference for classifiers to appear before nouns..

Wáng Feng (2002, p. 40) groups classifiers into three categories based on their pronunciation. The first group have no relationship to the pronunciation of the head Noun. The second, which he refers to as ‘echoed’ are derived by reduplicating the second syllable of a disyllabic noun. An example is presented below.

(6) *pʰi*^{31} *sɿ*^{35} *sɿ*^{35}
wind CLF

In this example, the classifier *sɿ*^{35} is derived from the second syllable of the noun ‘wind.’

Wáng Feng (2005b) later describes two associations Bai classifiers have with the nouns they are modifying. The first is a ‘loose’ association based on a general class, for example *tu*^{21} the

general classifier for animals. Other loose associations include measurements, such as *ʨe*^{35} 'jin'[7], *su*^{35} 'litre', *sv*^{55} 'pair', or collective noun classification, such as the multiplier for people, *xuo*^{35}. The second association proposed are classifiers that are what he calls 'bound'. The classifiers in this group are bound to some quality of the noun such as shape or size. Examples include *tso*^{35}, classifier for flat objects such as paper, *phi*^{31} classifier for round objects, or *ke*^{31} classifier for rooms.

As classifiers can inherently contain some quality of the noun they are modifying, they can be useful in determining between homonyms, as seen in the example below: -

(7) *lo*^{21} *tu*^{21} 'tiger' *lo*^{21} *se*^{32} 'fan' (Wáng, 2005a, p. 197)

While the head nouns are homonyms, the differing classifiers can be helpful in distinguishing between the two nouns.

Based on a corpus of Bai Classifiers among Southern Bai topolects, Zhao (2005, p. 211) states that Bai has one of the largest/most advanced Classifier systems among Tibeto-Burman languages, numbering over 300. Classifiers in Southern Bai may also be used metaphorically, particularly in descriptions of people. Bai speakers use classifiers associated with wood or trees in metaphorical descriptions of people. For example, a speaker may use the Classifier for a stick, *kua*^{42}, when referring to a tall, skinny person, much like 'string bean' is used in Australian vernacular English. Likewise, *te*^{44}, the Classifier for plant roots may be used to refer to a short person, or *pe*$^{33'}$, the Classifier for wood may be used in reference to a tall and strong, or aloof person.

Wang Ya (2015) states that Classifiers can also be reduplicated to indicate 'all' quantity of a Noun.

[7] A 'jin' is a Chinese measurement of weight equivalent to approximately 500gm.

2.3.3. Grammar

The following sections will introduce existing work that focuses on more specific aspects of Bai grammar. Beginning with sentence construction and word order, discussion will move on to works covering the construction of the noun phrase, work on the varied word classes of Bai, morphological inflection, modals and pragmatic markers, before ending on work on aspect marking in Bai.

2.3.3.1. Word Order and Sentence Construction

The sentence in Bai is constructed of the following six parts: Subject, Predicate, Object, Complement, Attributive (modifier), Adverbial adjunct, of which all but the predicate are optional. Sentence constructions for Southern Bai will be covered in detail in Chapters Seven and Eight.

Current research suggests that word order in Bai is typically Subject, Verb, Object (SVO) but may exhibit SOV order in some contexts. LaPolla (2015, p. 51) indicates that many older speakers still exhibit SOV word order in their utterances. He suggests this may indicate that the word order shift to SVO is recent and the result of language contact from young Bai people learning Mandarin as their first language. In this regard, Bai is unique among Tibeto-Burman languages that typically exhibit SOV word order, with Karen being the only other SVO language (Bradley, 1997).

Wáng Feng (2001b) also argues that word order in Bai has retained some features of Tibeto-Burmese but has shifted to a dominant SVO word order under the influence of Mandarin. This paper outlines several semantic conditions that trigger word order shifts. In modern Bai, SVO sentences express an action in progress. When expressing negation or completion, word order shifts to SOV or OSV with a structural particle on the Object of the sentence. Additionally, if an aspectual marker is disyllabic, SVO cannot be used. If an adverbial

construction is used to express the level or extent of an action, then any of the three orders can be used, as long as the appropriate markers are employed.

Likewise, Zhao and Li (2005) argue that the basic word order in Bai is SVO, with SOV and OSV sentences employing Topic markers to mark primary and secondary sentence topics. This creates a sentence whereby the sentence Object is fronted, typically taking on an accusative particle, such as *nɔ*^{44}. Word order in Southern Bai is discussed in section 9.8.

Wang Ya (2015) explores word reduplication in Bai. This work discusses how reduplication functions in nouns, adjectives, classifiers and onomatopoeia. Like many of the reference grammars mentioned earlier, this work is quite extensive in the area it covers but tends to just list groups of words without offering much in the way of analysis or how they reached their conclusions. Reduplication in Southern Bai is discussed in section 5.5.

Q. Dai and Fu (2002) state that the Bai noun phrase order whereby adjectives typically appear before the nouns they modify is uncommon among Tibeto-Burman languages. They argue that most Tibeto-Burman languages typically have a head-modifier word order. This conclusion is slightly problematic as they only examine nine languages, all of which are found within a similar geographic area, mostly Yunnan. In a more systematic work, Dryer (2007, p. 45) analysed the order of adjective and noun among 85 languages and found that adjectives occurred before nouns in 28 languages. The placement of adjectives in the Southern Bai noun phrase is covered in section 6.8.2.

Tian (2017) looked at both the Jianchuan (Central) and Dali (Southern) varieties of Bai and reports an interesting quality in the Noun Phrase. Typically, adjectival modification occurs in Bai before the head Noun of a Noun Phrase, much like in English and MSM. Furthermore, the paper argues that the terms for ‘male’ in both dialects have no cognates in Tibeto-Burman, nor do they appear to be Sinitic loans.

In an examination comparing word order between the Central and Southern Bai varieties, Xi Zhi (2008) states that word order in Southern Bai was less prone to word order variation than Central Bai. Where word order in the Central dialect switches to SOV word order in interrogative sentences and word order shifts based on the animacy of semantic roles in di-transitive constructions, Southern Bai remains quite stable with Objects typically appearing after the predicate verb.

The construction of compound words and most nominal and verbal modification follows the pattern of Modifier + Modified (Hefright, 2011; Wáng, 2016; Wiersma, 2007). Section 5.4 discusses how compounds are constructed in Southern Bai.

2.3.3.2. Morphological Inflection

In addition to the phonological shifts for accusative and genitive case in personal pronouns described in Xu and Zhao (1984), Duan (2002) identified minimally used phonetic shifts in two specific verbs, the first being a phonetic shift to indicate a semantic role shift in the intransitive verbs 'roll' and 'open'. In several dialects, 'roll' undergoes a tonal shift from *ju*^{31} to *ju*^{21} and 'open' undergoes a vowel shift from *khe*^{55} to *khɯ*^{55} to indicate a shift in the semantic role of *instrument* to *recipient*. This inflection was found to be specific to these two verbs and may be related to varying semantic roles they can undergo. Whether Southern Bai contains this shift is discussed in section 5.1.2.2.

Wáng (2006) identified two methods of negation in Bai. The most common method utilises one of a series of set bound morphemes to negate the meaning of a sentence. These words may be singular or compound. Compound negation words are formed by either [NEG] + [other], or [NEG] + [NEG].

One particularly interesting finding is the observation of phonetic inflection being used on verbs to create a negative form. In the case of Bai, this involved a change in the vowel rhyme

to create a change in meaning. Duan (2002) and Wáng (2006) observed that a sentence final verb can be negated either by a shift in the final vowel, or through infixation of [u] between the initial consonant and the final vowel. For example, the verb *ju*^{44} 'to eat' becomes 'don't eat' or 'didn't eat' by raising the vowel to form *ju*^{44}, or the verb 'able to' *ta*^{42} is negated with the insertion of [u] to form *tua*^{42} 'unable'. Duan's (2002) description of negative vowel shift is illustrated below.

Vowel shift

/-ɯ/ or /- ɣ/ → /-u/

/-i/ → /-y/

/u/ infixation

/ke/ → /kue/

While there were some differences among the three dialectal regions (South, Central, and North), the greatest differences were between the southern dialects (e.g. Dali) and the others. In investigating eastern dialects of Bai, Wāng and Gong (2016) found that negation through infixation and vowel shift was limited and only a pragmatic function to indicate subjunctive mood or imply a tough to impolite tone. However, they found this function was limited.

Wáng Feng (2006) describes a wider scope of verb negation performed by rounding of the final high vowels /-e/ or /-ɛ/ to /-u/ and /-ɔ/ respectively.

For discussion on how morphological inflection functions in Southern Bai, refer to section 5.1.

2.3.3.3. Aspect marking

Research on Bai has revealed several aspect markers used to express the completion of an event. While many of these have a set primary function, some are still on the path of grammaticalisation and may exhibit more than one function.

In an analysis of several research works on the Jianchuan Bai dialect, Luo (2006) lists a number of continuous aspect markers in Bai, including *tɯ*^{44}, *tso*^{42}, *tu*^{44}, *to*^{55} and *tso*^{53}. While all these exhibited similar grammatical functions to continuous aspect after the verb, both *tɯ*^{44} and *tso*^{42} can perform further grammatical functions. In marking grammatical aspect, the primary function of *tɯ*^{44} as a grammatical particle indicating an ongoing action is illustrated in the example below.

(8) *mo*^{31} *jɛ*^{42} *tɯ*^{44} *sɛ*^{31} *sɯ*^{33} *ke*^{55}
3SG carry DUR what type bundle
What kind of bundle is he carrying? (Z. Luo, 2006, p. 98)

In addition to indicating an ongoing action, *tɯ*^{44} can also indicate a result or the completion of an action. Additionally, while *tso*^{42} can also express an ongoing action, it can also be placed before a verb to function as a passive marker.

Luo (2006) explains that the muti-functionality of *tɯ*^{44} is the result of language contact, particularly with Southwest Mandarin. He argues that *tɯ*^{44} is most likely conflation of the Southwest MSM durative aspect marker *zhe* (着), and the completive aspect marker *le* (了).

Li and Chen (2018) describe the many aspectual uses of *xɯ*^{55} including use as completive aspect, perfect/anterior aspect, perfective aspect, and a present state marker, all of which are derived from what they claim is the original usage of *xɯ*^{55} as a marker indicating the completion of an action.

Li Xuan (2018) states Meiba Bai, a variety of Southern Bai, contains eight aspect markers. Focusing on just two, *xɯ*^{55} and *tɯ*^{44} her analysis states that *xɯ*^{55} expresses perfective aspect

when used with dynamic verbs and present state with stative verbs. When following an adjective, it expresses a change of state. The other aspect marker she analysed, *tɯ*^{44}, indicates the completion of an action when following dynamic verbs.

Section 7.10 discusses the functions and features of aspectual marking system found for Southern Bai.

This concludes the overview of work on the linguistic features of the Bai language.

2.4. The Bai Orthography

2.4.1. History, development, and implementation

Bai has a long-written tradition dating back to the Nanzhao era (X. Zhang, 2018) with a writing system based on using altered Chinese characters, or *Hanzi*, to represent Bai pronunciation. This orthography is often referred to as *gu bai wen* (古白文), or 'Old Bai script.' It is also known as *fang kuai bai wen* (方块白文) or 'Square Bai script' due to its very square-like appearance[8]. Literacy in this system was very low. The earliest existing *gu bai wen* document 滇载记 'A Record of Yunnan province' dates back to the Ming Dynasty (1368—1644CE) (Zhai, 2020, p. 118).

Wáng Feng (2004) identifies two major systems in the development of the old orthography, mostly based on existing Sinitic characters, each broken down into further classifications. The first system involved characters borrowed from Sinitic. Among these were a group borrowed based on phonetic similarities of Chinese pronunciation. These included such characters as 宽 (kuān) for the Bai *kʰɯa*^{33} 'dog' and 杯 (bēi) for the Bai *pe*^{44} 'to go'. As can be seen, the phonetic correspondence is not strong, especially considering that Bai has no final

[8] Another translation is 'Chinese character-based script'.

consonants. This is one reason why many supporters of the current orthography state the old writing system is redundant. The next group were those directly borrowed from Sinitic. These included 天 'sky' for the Bai word 'sky' and 火 'fire' for the corresponding Bai word. The next group of loans are those based on their shape and bear no resemblance to either their Sinitic sound or meaning. These are the least common and include characters such as 丘 'mound' for the Bai *xuu*^{31} 'in'.

The other system for creating characters in the old Bai script, according to Wáng (2004) was to adapt existing Sinitic characters and add elements. This could be as simple as adding a mouth radical, 口, to a Sinitic phonetically similar character, such as 敢/kan^{213}/ to form the character 嗰 for the Bai word *ka*^{31} 'explain'. Similarly, a radical could be added with similar pronunciation to a Sinitic character to form a character with a radical indicating pronunciation and another component expressing meaning. For example, the character 赫 (hè) was added to 生 'to give birth' to form the composite 生赫 *xe*^{55} 'to give birth'. Some composites also combined two characters of meaning, such as 朝上 comprised of 朝 'morning' and 上 'ascend' to represent *tso*^{33} 'morning'. The final group comprise the 'square script' and include characters such as 配口 to represent the Bai word for 'to join/match' *pʰe*^{55} which is composed of the Sinitic phonetic loan 配 *pèi* above another mouth radical.

Following the establishment of the People's Republic of China, the Chinese Central Committee established the Constitution of the People's Republic of China which secured the 'freedom of every ethnic group to develop and use their own writing system.' Following the publication of the constitution, many minority ethnic groups set about developing their own writing systems, and the Bai were no exception. *Gu bai wen* was deemed to not be useful as it was long out of use. Therefore, in 1958, the Chinese Academy of Sciences (CAS) drafted a

Bai writing system (L. Yang, 2008). Unfortunately, this system was never put into circulation due to the political turmoil of the Cultural Revolution as the work was deemed as 'rightest' (L. Xu & Zhao, 1984, p. 133).

However, there was strong support for the establishment of an orthographic system among the Bai people. Reasons for the establishment of a Bai orthographic system included the fact that 60% of Bai people didn't speak Mandarin at this time or were illiterate (L. Xu, 2008). As a result, many academics thought learning the *gu bai wen* system, based on Chinese characters would be too hard. Many also felt that these characters inadequately represented the sounds of their language. The common thought was that developing a Romanised orthography would be easier to implement and facilitate the spread of the language, while making it easier to document stories and folklore.

That is not to say that the idea was devoid of detractors. Many among the community opposed the notion. Many put this idea in the 'too hard basket' believing that creating an orthography that was accessible to all and that could reflect the variation among the dialects could not be achieved. Soon after the establishment of the People's Republic of China, the Chinese Communist Party had established compulsory education for all children. Many believed that learning another orthography on top of Pinyin and Chinese characters would over burden young students.

The first draft of the current orthography was developed in 1982 in conjunction with Dali researchers by the Chinese Academy of Social Sciences (CASS), Beijing (Hefright, 2011, p. 267; J. Li & Duan, 1998). This version was based on the Central Bai dialect as spoken in Jianchuan which was deemed the standard version of the time. The aim of this orthography was to develop a Romanised written representation of Bai, based on *Hanyu Pinyin*[9] (Xu &

[9] Hanyu Pinyin is the official romanisation script for Mandarin Chinese in mainland China.

Zhao, 1984, p. 133). Some examples taking from Hanyu Pinyin include *x* for /ɕ/, *j* for /tɕ/, *h* for /x/, *z* for /ts/ and representing aspiration contrast with the voiced/voiceless equivalent, for example /p/ and /pʰ/ are represented in the orthography as *b* and *p* respectively. Where the orthography differs is the use of double letters for voiced consonants, for example *hh* to represent the voiced velar fricative /ɣ/ and *ss* to represent /z/.

One major difference from Hanyu Pinyin is that the developers applied letters at the end of the syllable to indicate tone, rather than tone diacritics which Pinyin utilises. The reasoning for this was that the designers believed that diacritics were unable to effectively represent extra phonation features such as breathy and creaky phonation, rhoticity, nasalisation, or tense/lax vowel distinctions. Some examples of the tonal representations are *-l* for the 55 tone, *-x* for the 33 tone, and *-d* for the 21 tone. One major benefit of this development is that it makes typing Bai much easier as it does not require the installation of extra fonts, a feature that would have been particularly useful in typing Bai prior to the proliferation of PCs and mobile devices.

In 1993 the orthography was revised as it was believed that the earlier system did not sufficiently represent features in the Southern and Northern Bai dialects. The revision was undertaken this time in conjunction with the leaders of the Yunnan minority orthography work association, CASS, the Central University for Nationalities[10] in Beijing and Dali elders (J. Li & Duan, 1998). The new revision added suffixes for vowel nasalisation and rhoticity prior to the tone letter, while adding the tone marker *-z* to represent the 32 mid-falling tone found in the Southern dialect.

[10] Now called Minzu University of China.

2.4.2. Representation of the Bai orthography

The following tables outline the letters employed in the current orthography, along with their IPA equivalent, adapted from Hefright (2011, p. 339).

2.4.2.1. Consonants

IPA	**Bai**	**IPA**	**Bai**
/p/	b	/pʰ/	p
/t/	d	/tʰ/	t
/k/	g	/kʰ/	g
/f/	f	/v/	v
/s/	s	/z/	ss
/ɕ/	x		
/x/	h	/ɣ/	hh
/ts/	z	/tsʰ/	c
/tɕ/	j	/tɕʰ/	q
/m/	m	/n/	n
/ɳ/	ni	/ŋ/	ng
/w/	w	/j/	y
/l/	l		

Table 2 - Bai orthography and IPA equivalents

As Table 2 illustrates, doubling the consonant represents a voiced variant. The default state of Bai consonants is voiceless.

2.4.2.2. Vowels

Table 3 outlines how vowels are depicted in the Bai orthographic system. The reason ‘ao’ is chosen to represent /ɔ/ is to distinguish this vowel from /o/ which is a contrastive phoneme in the Central dialect.

Monophthongs		Diphthongs									
IPA	**Bai**	**IPA**	**Bai**	**IPA**	**Bai**	**IPA**	**Bai**	**IPA**	**Bai**	**Bai**	**Bai**
/i/, /ɨ/	i	/ia/	ia	/iɯ/	ie	/ie/	iei	/iao/	iao	/iou/	iou
/y/	ui										
/e/	ei	/ei/	ei								
/e˗/	er										
/ɯ/	e										
/u/	u	/ua/	ua	/ue/	ui	/uo/	uo				
/ɔ/	ao	/ou/	ou								
/a/	a	/ai/	ai	/ao/	ao						
/v/	v										

Table 3 – Orthographic representation of vowels in Bai

2.4.2.3. Tone markers

Table 4 demonstrates the orthographic representation of the tones of Southern Bai[11]. Rather than using tone markers to represent tones, as is done in Mandarin Chinese, Bai uses Latin characters placed at the end of the syllable.

Tone letter	**Contour**[12]
-l	55
-x	33
(null)	44
-p	42
-t	31
-f	35
-d	21
-z	32

Table 4 - Bai tone markers

The examples below illustrate how some words are represented using this orthography.

[11] There are other tones in the Central dialect but these are not presented here.

[12] Based on the tone numbering system for Asian languages proposed by Chao (1930).

IPA	Bai Orthography	English translation
/kɐ˗^{55}/	*gerl*	this/current
/ŋɔ^{31}/	*ngaot*	1SG
/me^{21}/	*meid*	door
/ŋɯ^{55}/	*ngel*	my/mine
/ɳv^{33}/	*nivx*	female
/ta^{44} ts^{h}ɐ˗^{44}/	*da cer*	bicycle
/ɛy^{55} ni^{55}/	*xuil nil*	pear
/tsɯ^{33}/	*zex*	existential verb
/tɕ^{h}iou^{55}/	*qioul*	good
/xɯ^{33} tɕie^{33}/	*Hex jieix*	Xizhou (town north of Dali)

Table 5 - Some lexical representation in the 1993 orthography

An apostrophe is used to distinguish between syllabic boundaries in disyllabic words where the tone marker and initial may be ambiguous. For example, the apostrophe in *nei'de* 'lifted' serves to distinguish *nei* 'lift' from *neid* 'twenty'.

2.4.3. Attitudes towards the orthography

Although the Romanised orthographic system has been in circulation since the early 1980's, its implementation in the wider community is much more recent and literacy in the system is limited. While Bai speakers number over 500,000 of the Southern dialect alone (J. Zhao et al., 2012), literacy in the Romanised orthography is low. Hefright (2011, p. 274) has stated that as recently as 2011, the Romanised orthography was seldom used except in literary practices, by government language workers, or language enthusiasts. However, during fieldwork, I noticed growing interest and usage of the writing system, particularly among university aged students.

Recent efforts to promote the orthography among the Bai community, particularly in Dali, and the development of social media have seen increasing interest and uptake of the Romanised orthography.

The Romanised script is not without its critics. During several public salons, there was heated debate regarding the efficacy of the new script with many people arguing that the old writing system was more than adequate in representing spoken Bai. In contrast, supporters of the new script argued that the old writing system was only useful in representing an approximation of the Bai syllable and was completely inadequate in representing the eight tones of Bai.

Hefright (2011) noted that many Bai people believed it was unnecessary to burden students with the need to learn yet another Romanised orthography on top of Hanyu Pinyin. Indeed, many attendees at the salons held at the Dali Cultural Research Centre were quite resentful towards the notion of having to learn another writing system.

Despite its detractors, the new system is quite intuitive and easy to learn for those who have been educated in the Mainland Chinese school system where *Hanyu Pinyin* is taught, as they are quite similar.

Social media platforms, particularly WeChat, have also played a major role in increasing interest in the Romanised orthography. Several groups have been established to regularly post information on Bai culture language and history. Two in particular, *Baiyu Yaolan* (白语摇篮) 'The cradle of the Bai Language' and *Baiyu Chazuo* (白语茶座) 'Bai Teahouse', are loosely affiliated with the Dali Cultural Research Institute and post articles almost daily including short stories, poems, articles on Bai history and cultural events. With a few exceptions these articles are posted using the 1993 orthography, with Mandarin translation, and are re-posted by individual users among their peers. Some speakers have even taken to developing memes using the orthography; a positive sign of the growing interest in the orthography among young netizens and its spreading use.

As a member of these two groups, I have witnessed a sense of pride among the online community towards their language and culture, particularly the notion of a written language.

This sense of pride plays a major role in determining the future viability of a language (Crowley et al., 2007).

2.4.4. Issues with the orthography

While the new orthography is gaining popularity, it is not without its problems. In transcribing fieldwork recordings, I found several ambiguities exist in several of the representations chosen. Firstly, the letters 'ni' were chosen to represent the alveolo-palatal nasal /ȵ/ which leads to considerable ambiguity between this phoneme and any morpheme beginning with n+i. For example, the morphemes /nia/ and /ȵa/ are both represented as 'nia' in this system. Similarly, the letters 'ei' can represent both the vowel /e/ and the diphthong /ei/. These ambiguities made transcription and correction of fieldwork recordings a little problematic. The combination of 'ui' can represent both the front rounded vowel /y/ and the diphthong /ue/ which is less problematic as /y/ is limited to the consonants /ɕ, tɕ, tɕʰ/. Similarly, 'i' can represent the central high /ɨ/ after /s, z, ts, tsʰ/ and /i/ following other initials.

2.5. Summary

This chapter has provided an overview of current literature on the Bai language and people. It began by introducing existing descriptive works on Bai and works on some of the dialects. The discussion then progressed to more specific descriptions on features of Bai, starting with the phonological details. From the literature it can be expected that Bai dialects contain consonants ranging in places of articulation from bilabial, labiodental, alveolar alveolo-palatal consonants, and velar. The sound system has been described as containing approximately eight vowels, no consonant finals and a tonal system that combines modal tone with other modes of phonation, most likely breathy and creaky phonation.

The chapter then covered more specific grammatical works beginning with word classes, the classifier system, morphological inflection on personal pronouns and on verbs for negation, before presenting the aspectual marking system and sentence final particles.

This chapter ended with an exploration of the Bai orthographic system. This included an overview of the system and its history, discussion on how it is viewed within the Bai community and ended with some issues the orthography presents in transcription and representation of the language.

The following chapter will present the methodology of the project including the field, the consultants, and the stimulus materials used in data elicitation. In addition to describing the materials and methods used in data collection, the next chapter will offer justifications on their use, as well as any limitations met.

Chapter 3 - Methodology

This chapter will outline the methodology of data collection and language consultant recruitment employed during the study. This includes both the methods employed and the reasoning for using those methods. This chapter will also discuss the choice of location, consultant recruitment, data collection methods, stimulus materials, and data analysis.

3.1. Field site

Data for this project was collected during fieldwork conducted in Dali Old-Town (大理古城), henceforth Dali, and surrounding towns in Dali Bai Autonomous Prefecture. There were several reasons why this site was chosen. Firstly, Dali and the areas surrounding Erhai Lake are the base of the Southern dialect of Bai. As mentioned in Chapter 1, Dali has a high concentration of Bai speakers. Approximately 500,000 of the 3.5 million people in Dali and the surrounding towns and villages speak Southern Bai, with a high concentration in and around Dali town (J. Zhao et al., 2012). There is also a high concentration of Bai villages surrounding Erhai lake and the regions around Cang mountain range (苍山). Dali is also a good transport hub with transport to these surrounding regions very simple and convenient.

Dali is easily accessible from the provincial capital, Kunming, which lowers the burden on travel. Additionally, Dali University, which was to be the academic base for my principal contact, is a short bus ride from Dali city.

The principal contact worked at Dali University and provided networking with several Bai speakers and an introduction to the Dali Cultural Research Centre. Being located close to the university provided greater access both to this person and opportunities to network with other academics.

Fieldwork consisted primarily of language elicitation sessions designed to collect data on a variety of features of the Southern Bai language over two separate site visits from 2018–19. These will be covered in greater detail in section 3.3.

3.2. Consultant recruitment

All consultants were L1 speakers of Southern Bai and grew up in towns or villages surrounding Erhai. All consultants were educated in Modern Standard Mandarin (MSM), but still spoke Bai at home. There were eight consultants in total, with seven consultants contributing texts and one just offering consultation. This number provided enough variety in the data to avoid a single person bias while still being workable. The number of female consultants far outnumbered male consultants. However, there was a beneficial variation in ages, spanning three generations of Southern Bai speakers.

Language consultants were initially recruited through the principal contact at Dali University, the Dali Cultural Research Centre, the WeChat group run by the Centre, and via networking with locals. Additional consultants were then recruited via snowballing through the initial consultants. Many of the consultants were students at Dali University, with one acting as a main consultant due to his ability to read and write in the Bai orthography, his strong Bai language skills, and enthusiasm for his language, led to his value as a translator of the transcribed Bai texts.

Before commencement of any data collection, each participant was provided with a Plain Language Statement (PLS) and a consent form to be signed. This documentation was translated into MSM and checked by an accredited NAATI translator prior to the commencement of fieldwork. This documentation has been stored separately in a locked filing cabinet in Melbourne.

3.2.1. Consultants

In order to protect confidentiality, a system of numbers and prefixes were employed to refer to consultants in the project. Each consultant was identified with a prefix, F for female, M for male, followed by a number, which was merely determined by the chronological order in which they were interviewed.

The following is a brief description of the consultants and their role/s in the project.

F1

F1 was a woman in her mid-thirties from Wanqiao (湾桥), a village north of Dali Old Town, between Dali and Xizhou. While she grew up in Wanqiao, and still spent much of her time there, although at the time of data collection, she lived and worked in Xiaguan. F1 was responsible for many of the earliest recordings and early paradigm collections. Unfortunately, she had to withdraw from the second round of data collection.

F2

F2 was a university teacher and consultant at the Dali Cultural Research Centre. She was a Southern Bai speaker from Dali and contributed the first San Dao Cha recording.

F3

F3 previously worked as a teacher and is a resident of Dali. Due to circumstances, she was unwilling to be recorded, but did offer consultation on the tone system and early contributions on the syntax of Southern Bai.

F4

A relative of F1, she grew up in the same village. As a result, their language was quite similar. F4 was a teacher at a local university and spent her time between Dali and Xiaguan.

She contributed much of the longer narrative text, some of the Max Planck materials, a Jackal and Crow collection, as well as some assistance in transcription and translation.

F5

F5 was a recently retired middle school teacher originally from Xizhou. She had spent much of her later adult life in the Dali capital, Xiaguan. She contributed some short narratives of life in Dali and Xizhou, some of the Max Planck materials, and a Jackal and Crow recitation.

F6

F6 was a student at a university in Dali. She was originally from Yunlong county, west of Dali city, but lived in Dali at the time of data collection. F6 contributed to some of the Max Plank materials and a Jackal and Crow collection.

F7

Also a university student, F7 was from Eryuan county. Eryuan is considerably further north from Dali and her spoken Bai had the greatest variation from the other participants, likely under the influence of the central Jianchuan dialect. F7 also contributed to much of the Max Planck data and a Jackal and Crow session, in addition to assisting in translation of materials.

M1

Another university student, M1 was a native of Dali city. He contributed to much of the Max Planck materials (see section 3.3.2) and was the main consultant whenever there was an inconsistency or irregularity in the data. He also helped to fill in some of the gaps in the data, such as pronoun paradigms. M1's contribution was invaluable as the only consultant fluent in the Bai orthography. This meant he was able to assist in correcting transcripts and help translate those texts where the original speakers were no longer available.

3.2.2. Issues with consultant recruitment

It would be remiss of me to not acknowledge that all consultants have been educated at least until university level. This is problematic as all education in Mainland China from Kindergarten onwards is conducted in MSM. The result of this is likely an even heavier influence of MSM on the participants' spoken language. Therefore, while this project may not be representative of all topolects of Southern Bai spoken, particularly among the outer villages, it is still representative of how the language is spoken.

Being fluent in MSM, rather than Southwestern Mandarin, was advantageous regarding ease of communication between myself and the consultants and in translating the recorded materials from Southern Bai into Mandarin.

Additionally, having consultants spanning a large area around Erhai lake has resulted in some variation among the data collected, particularly in the lexicon. Wherever possible, I have endeavoured to demonstrate these differences. However, there may be inconsistencies that have resulted.

Finally, there is also a clear gender imbalance in the consultants. This was due to the fact that many of the men contacted were retired or unwilling to be consultants. However, as the aim of this project is to describe the general language rules of Southern Bai, rather than a socio-linguistic exploration, I believe this is not too problematic, but may form the basis for future studies on the language.

3.3. Data collection

The following section will outline the procedures employed in collection of data for this project, the equipment used, and techniques and procedures implemented in data analysis.

3.3.1. Equipment and collection method

Data collection sessions were recorded using a Zoom H4n digital audio recorder. This unit is an affordable, highly portable device that is able to produce very high-quality recordings in a variety of formats. This device is also familiar to me.

Audio was recorded in .wav format, a highly transferrable, commonly used non-proprietary format. This is a best practice recommendation as it allows for easier archiving and access for other researchers, without the need for proprietary, often expensive, software (Margetts & Margetts, 2011; Thieberger, 2004; Thieberger & Berez, 2011).

In case of emergency, an earlier model, Zoom H2 was utilised as a backup. This is a lighter, lower quality device, while still capable of making recordings of sufficient quality. It also has functionality to record in .wav format and shares the same storage medium as the H4n. Its lighter weight also proved beneficial when trying to elicit data on the move as the consultant could easily carry the device in a small strap-on bag.

In addition to audio, video recordings were made of many of the Max Planck narrative elicitation sessions. There were several considerations for this decision. Firstly, many of the instructions of the Max Planck stimulus materials required recording of video data as part of their method. Furthermore, video recording is highly recommended in much of the literature on linguistic documentation. Thieberger & Berez (2011) argue that collecting data in a variety of media is preferred in order to obtain a variety of data on the dynamics of language. It also allows recording of data on non-verbal language, such as articulatory information, gesture and eye movement. Obtaining multi-media data for archives provides richer information to future researchers to observe para-linguistic features of the language (Margetts & Margetts, 2011; Thieberger & Berez, 2011). Multi-media data can also assist data

transcription by providing extra clues, such as articulatory information and iconic gestures (N. Evans, 2010).

3.3.2. Elicitation

Data was collected over two visits to Dali in 2018, over several sites in Dali Old Town, Dali University, Wanqiao (湾桥), Xizhou (喜洲), and Xiaguan (下关).

The first visit lasted three months, from June to August 2018 resulting in the collection of 14 recordings. The second site visit lasted two months from November to December 2018 where a further 14 recordings were elicited with additional collection on data gaps in addition to translation and transcription of texts from the first visit. Upon returning from the second visit, a third visit was planned in the latter half of 2019. However, the majority of consultants were unavailable from July to September due to internships elsewhere and work commitments. Unfortunately, COVID-19 hit China at the end of 2019, making any further travel impossible.

Further consultations and translation were subsequently carried out over the social media platform WeChat. To assist in translation and transcription of elicitation sessions, the segmented audio of a previously recorded session was played back to the consultant/s who participated through a Bluetooth speaker/microphone during a WeChat session. The consultant/s were then able to read back the segment and offer a translation. The session was then able to be recorded onto the H4n recorder.

This was deemed to be satisfactory as high-quality recordings were no longer deemed necessary, nor was it deemed necessary to observe consultants' language use as this phase of data collection consisted primarily of translations of the original texts and the development of linguistic paradigms.

Following advice from the secondary supervisor, elicitation sessions progressed straight into narratives rather than beginning from word-list elicitations. There were two major justifications for this. Firstly, it was determined that beginning with lexical inventory elicitation is both boring and taxing on the consultants. Conversely, producing a narrative would provide more of a 'flow' during the session and elicit more natural material and structures from the consultants. In turn, this would be more interesting to both the consultant and the researcher. It was determined that this data would be of greater use to the project and that individual lexical items and grammatical structures could be checked by consultants at a later stage of the project. Secondly, a general lexical inventory of over 2,000 words had already been conducted for Southern Bai and other major languages spoken in Yunnan and published in the Yunnan Almanac (J. Li & Duan, 1998, pp. 651–1318).

The aim of data collection was to obtain data on the foundational linguistic systems of Southern Bai in order to analyse and describe the general phonological and grammatical system of Southern Bai. A secondary aim of this project was to learn and describe how Southern Bai speakers encode motion events and spatial relations.

Language elicitation sessions were conducted in Mandarin, with all consultants being fluent Mandarin speakers due to their level of education. The researcher too is fluent in Mandarin. Each session was capped at a maximum of one hour to prevent fatigue and to relieve possible discomfort to the language consultants.

Initial, primary elicitations involved recording introductions of each speaker, followed by an initial paradigm exploration. Later sessions involved consultants telling a story from their childhood or retelling a local folk story or tradition. One successful device were stories sourced in Mandarin which were then retold by the consultant in Southern Bai. Others, such as the story of San Dao Cha (三道茶) and Huo Ba Jie (火把节), were gathered during time

spent with locals in Dali and retold by consultants in their own words. This type of elicitation has the advantage of obtaining naturalistic data in a comfortable setting, while helping reduce the 'observer's paradox' (Labov, 1972a).

In order to gain a wide variety of texts, stimulus materials were also employed in many of the elicitation sessions. The collection of texts that span a variety of genres and diverse topics is essential in acquiring the necessary data for the analysis of the grammatical structures of a language (Margetts & Margetts, 2011; Mosel, 2011; Thieberger & Berez, 2011), and is an essential part of the Himmelman documentary framework. Furthermore, the use of stimulus materials during elicitation has the advantage of rapidly gathering large amounts of data and creating semantic maps of the language (Majid, 2011).

This method of data collection also avoids the potential for recording content that involves gossip, fables containing political allegory, or anything that could potentially be involved in a land right dispute, a problem flagged as a potential issue in some documentary and description projects (Crowley & Thieberger, 2007).

The following sections detail these elicitation methods starting with the text-free picture book, Jackal & Crow, the Max Planck elicitation materials, and a 'spot the difference' exercise called '*diapix'*.

Jackal and Crow

The Jackal and Crow stimulus (Carroll et al., 2011) was used as an elicitation tool during the second collection phase.

Jackal and Crow is a pictureless story based on a local Nepalese folk story. It was designed to elicit child language data and track referencing for languages in the region. While these materials have been developed to gain data on children's language acquisition and

typological information on semantic differences between languages, they are also beneficial narrative devices for adult language elicitation. Fieldwork revealed that older adults in Dali are also familiar with this tale.

Fortunately, it was also a familiar story to the older two generational consultants who offered invaluable synopses of the story's moral. Another fortunate outcome of using this stimulus was the opportunity to gather data from the same source material over three generations, each offering their own unique materials, particularly on lexical items.

Max Planck stimuli

Stimulus materials developed by the Max Planck Institute for Psycholinguistics comprised a large component of the elicitation tools utilised. These are highly useful elicitation tools consisting of audio-visual materials designed to garner information on the semantic typology of a variety of languages from consultants with minimal literacy skills (Levinson & Majid, 1992). The Max Planck stimulus materials played a vital role in achieving the secondary aim of this project, to describe how motion events are expressed in the language.

However, there were some disadvantages. Firstly, the intended meaning of the material was not always clear to the consultant. Secondly, some of the animations were confusing to the consultants who were unsure what event was being depicted. Finally, in some materials, objects may have been unfamiliar to consultants or the exact taxonomy may have been unknown. In such situations, consultants were encouraged to substitute a similar object. Despite these shortcomings, the data collected was still very useful to the project, even if not every single utterance contained the exact data wanted.

The following section will offer a description of each of the Max Planck materials and how they were utilised during the project.

The BowPed Topological Relations Project

This stimulus package was developed by Bowerman and Pederson (1992) in order to elicit naturalistic data on how speakers express spatial relations. It consists of a series of pictures, each with one object, indicated with an arrow, placed in relation to another. The aim of this was to describe where the object indicated by the arrow was placed in relation to the other, as illustrated in Figure 5.

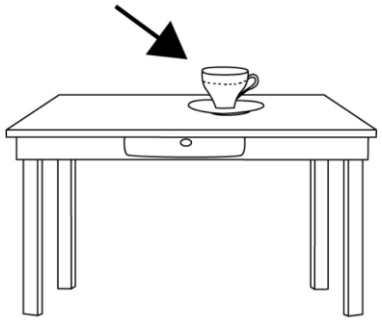


Figure 5 – Example of BowPed stimulus materials (Bowerman & Pederson, 1992)

This particular picture was designed to elicit information on how a native speaker would express the location of the cup in relation to the table.

Consultants were shown each picture on a laptop and asked to describe where the object with the arrow is. Consultants were prompted to respond after each picture was displayed.

In some instances where the consultant did not have a lexeme in Southern Bai for the primary object, an equivalent in MSM was deemed acceptable as the aim of the exercise was to gain information on the grammatical structures employed in describing space. There were also instances where the consultant was unable to determine the object and the researcher was unable to describe the item in MSM. In these cases, the picture was disregarded, and the session moved on. There were also some pictures that confused the consultant, such as butter,

as they are not common items in Bai culture. These too were disregarded. This has been seen to be a common problem in language elicitation as many materials developed have tended to be 'Eurocentric'.

Some pictures did not receive the expected response. For example, where the expected response would be 'The X is on the Y', F1 would often reply with 'Y has an X on it.' This was mostly due to an error in correctly prompting the consultant for the correct response expected from the design of the materials (not correctly following the instructions provided by the authors of the project, or just general nervousness and inexperience on my behalf). However, such responses still proved useful as examples in descriptions of different sentence constructions.

Put Project

This series of stimulus materials consists of a series of short videos designed by Bowerman, Gullberg, Majid & Narasimhan (2004) to elicit cross-linguistic data on how speakers encode placement events. Each video spans a few seconds and depicts one or two characters performing an action of placement. The aim of this is to elicit native speakers to describe both the action and how the placement is encoded within space.

Consultants were shown the series of short video clips on a laptop. After each clip was shown, consultants were asked to repeat what they saw in the video in Southern Bai. Figure 6 (below) demonstrates the setup and placement of consultants during elicitation.

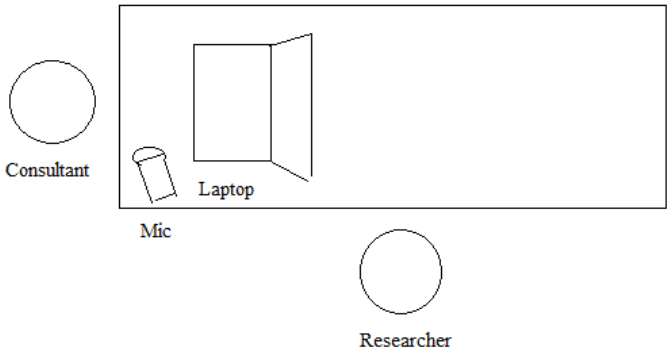


Figure 6 – Placement of consultant and equipment for Put Project elicitation

This elicitation was effective in gathering syntactic data on the encoding of both spatial relations and on motion. A secondary benefit of this data set was the collection of a variety of verbs used in expressing events involving placement.

As with the BowPed project, consultants may not have had a word for several of the objects in the clips. When this occurred, a substitute or MSM equivalent was used. For example, 'lighter' was used to substitute for 'highlighter pen' due to its resemblance in shape and size. Similarly, some of the clips had to be disregarded due to being too unfamiliar to the consultant.

Staged Events

The Staged Events elicitation was designed to 'elicit elaborate descriptions of complex events.' (Van Staden et al., 2001, p. 115). It consists of a series of short video clips of events and stills of those clips for a re-enactment task. The events in this set of stimuli are more complex than those in the Put Project and designed to elicit more complex constructions from language consultants. The authors developed this project with three sub-aims; to elicit multi-verb and/or serial verb constructions, event complexity, and event typicality.

Due to differences in the availability of some consultants, two separate methods were applied to this set of stimulus materials. The first method was the original method intended for the materials by the authors. Two consultants would sit across a table from one another. One would face the screen, the other had their line of vision to the clip obstructed. The materials consisted of several sets of five short clips of an event, followed by five stills of the events in the set. After each video clip, the consultant facing the screen described the event to their interlocutor. Once each set was completed the consultants swapped places and the second consultant is shown the still pictures of the previously described events, in a random order. Their task was then to recall the aforementioned events based on a still shot of the clip. This achieved a shorter, more concise description of the event, for example, 'Man kicking a ball.' This was repeated until all the sets were completed.

Figure 7 (below) illustrates the placement of consultants and equipment for the Staged Events elicitation sessions.

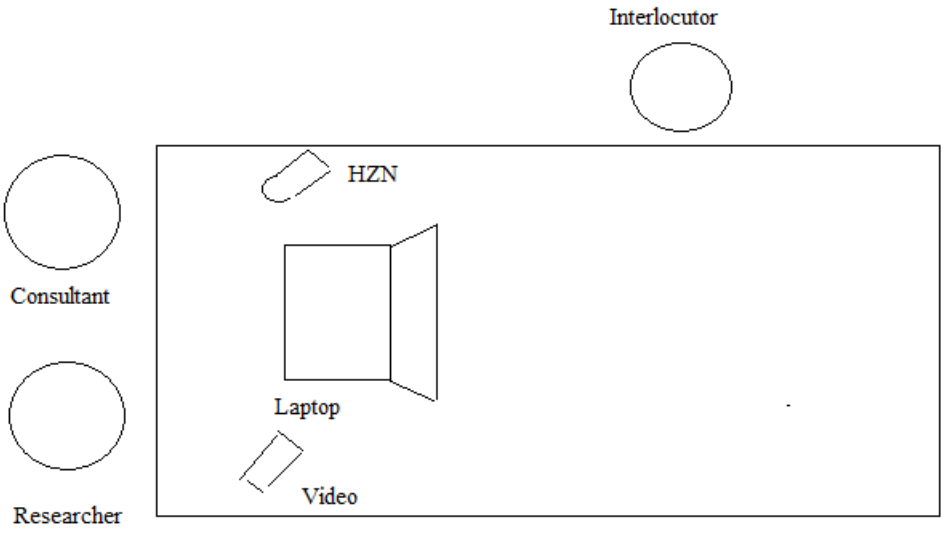


Figure 7 – Setup of Staged Events elicitation

In instances where only one consultant was available, they only described the events depicted in the short clips.

Video of these sessions was also recorded in order to capture potential iconic gestures related to the actions being described.

Diapix

The Diapix elicitation is a 'spot the difference' task developed by Hazan and Baker (2011). The stimulus consists of two similar pictures with a number of slight differences. The aim of the task is for the consultants to describe their picture to each other in the chosen language in order to find the differences. Two consultants were each given a familiar picture with a number of small differences. The two consultants either stood facing each other, or at a distance whereby each consultant could not see the picture of the other. Prior to arrival in Dali, any text was translated into Chinese script and checked with a native speaker.

The task involved describing each scene, one quadrant at a time to determine if each pair could discover the differences between the two pictures whilst being recorded. Once completed, the pictures were revealed to each consultant. Recording continued as the consultants discussed the differences in each picture. This resulted in the elicitation of semi-naturalistic spoken data from the participants as they negotiated the differences between the two pictures. Figure 8 (below) provides an example of Diapix elicitation materials.

Figure 8 – Set of Diapix materials (Hazan & Baker, 2011)

The result of the recordings was quite 'noisy' data, with considerable instances of consultants talking over each other. Unfortunately, transcribing and translating such 'noisy' data via social media proved too difficult and these sessions remain untranscribed. This is an issue that I would like to revisit sometime in the future.

Elicitation Issues

While I believe the data collection methods and techniques were sufficient to achieve the aims of the project, there were some limitations.

Firstly, conducting elicitation in MSM often led to obtaining features that exist in MSM. This was particularly noticeable when eliciting for sentence final modal particles, as I was only able to test for particles that I was aware of in MSM. This could have led to several particles being missed. Additionally, this could have resulted in a skewing of the data towards structures that exist in both Southern Bai and MSM and missed some that are unique to Southern Bai. However, I believe the varied nature of the elicitation materials was enough to overcome this.

3.3.3. Data analysis

Each recording collected during elicitation was transcribed using ELAN (*Elan*, 2020). ELAN is a linguistic transcription tool developed by the Max Planck Institute for Psycholinguistics

allowing multi-tiered, time aligned transcriptions of audio-visual data, including synchronisation of audio and video data. The software also allows for easy reproduction of data points and simple replaying of audio on a section-by-section basis. ELAN also provides simple export into a variety of other software after transcription for further analysis.

A template was constructed in ELAN for each speaker containing tiers for the original text and a Mandarin translation provided either by the original speaker or a consultant. Each text was transcribed into the 1996 Bai orthography as opposed to IPA to allow correction by a consultant literate in the orthography.

Analysis of suprasegmental information was conducted in Praat, a software package designed for speech analysis that provides detailed, spectrographic analysis of tone and phonation. Praat is integrated into ELAN allowing for direct analysis of a selected section of text in spectrogram form. Some of these spectrograms have been reproduced in Chapter Four to demonstrate tonal contours and phonation features.

The determination of suprasegmental information was first informed by previous research on Bai, mostly Xu and Zhao (1984), Wiersma (2007), and Allen and Su (Allen & Su, 2002). This provided a background on what modal contours and phonation variation to expect. Following an elicitation by F2 who provided a paradigm of all tones on the phoneme /tɕi/. Using this, along with the existing research, provided me with a rough guide on how to identify each tone based on their contour, pitch, and phonation. Each syllable was then checked in Praat and judged according to the rough guide. This was updated as more data became available and I became more familiar with each tone.

Once completed, each transcription was then exported into a text file to be checked and corrected by a consultant. The consultant also provided translation into MSM for many of the more complex texts. This was conducted during the second half of the first field visit and

second field visit. As a third field trip was not possible, some translation, correction and further analysis of the texts was conducted via the social media platform, WeChat.

Following translation in ELAN, Transcribed files were imported into a FieldWorks Language Explorer (FLEx) database for interlinearisation. FLEx is a versatile language analysis tool developed by SIL FieldWorks specifically for fieldwork language documentation.

Based on the Mandarin translation, each text was glossed word by word into Mandarin and then into English. Glossing in FLEx allows the development of a lexical database and a digital database of interlinearalised texts with searchable content for analysis. The lexical database has the functionality to produce a dictionary providing phonetic information and translation of each lexeme.

The concordance function in FLEx allows searchability of a text at the baseline, lexeme, gloss, or translation level to analyse the function of a particular lexeme or syntactic construction. The process also allows the assignment of grammatical categories to each lexeme to analyse how specific word classes operate.

3.3.4. Data management

This project collected large volumes of data. As mentioned previously, audio data was recorded in an uncompressed audio format, .wav in high fidelity in order to capture phonetic data. Best practice guidelines recommend recording in 16-bit digital at a sample rate of 44 kHz (Margetts & Margetts, 2011). At this rate, one hour of recorded audio equates to approximately 650MB of storage space (Sound Devices, LLC, 2017). Therefore, considerable storage space was required.

Sessions were recorded onto SD cards — the standard storage format of the Zoom recorders. Each session was then copied onto a password encrypted external hard drive with a backup to

another external storage device. On advice from Resplats, the University of Melbourne research computing service, external storage devices capable of storing 1TB of data were selected. Each recording was later uploaded to OneDrive as a further, cloud-based backup. This is a password protected cloud service licenced by the University of Melbourne allowing up to 1TB of online storage.

File naming stuck to a strict protocol outlined by PARADISEC (Miller, 2006). This was used for all audio, video, transcription, and metadata files. This format was based on the collection ID assigned by PARADISEC, which was SC1. All files were saved using the format SC1-YYYYMMDD_NAME-##.fmt whereby:

- SC1 refers to my PARADISEC collection ID
- YYYYMMDD refers to the date of recording
- NAME[13] refers to the content of the material
- ## is the content number of the specified content on that date
- .fmt is the file format (e.g. .wav, .mp4, .eaf)

Therefore, the audio of a Staged events elicitation session recorded on July 1st, 2018, would be saved as *SC1-20180701_StagedEvents-01.wav* with the corresponding ELAN file named *SC1-20180701_StagedEvents-01.eaf.* A second elicitation of the same content on the same day would be saved as *SC1-20180701_StagedEvents-02.wav* This meets best practice guidelines as suggested by Thieberger & Berez (2011).

The reasoning behind choosing this file naming standard was two-fold. Firstly, a standardised file naming system is crucial to keeping track of recordings and their content. Secondly, all data and metadata are to be archived within the PARADISEC archives following completion of this thesis.

[13] For the sake of ease of reading, only the content name will be used in citing data.

All participant data was anonymised, as per the pseudonyms used in section 3.2.1, with any identifying data removed and stored separately in a locked filing cabinet in Melbourne.

3.4. Summary

This chapter has outlined the data collection methods employed during the project and offered justification for their selection. It began with describing the field site where data collection was conducted as well as offering reasons why that site was chosen. Discussion then moved on to the method of recruitment for language consultants for the project and a small description of their background and roles in the project. Discussion then progressed to data collection including the equipment used in collecting data and a description of the elicitation materials and techniques employed before moving on to data analysis and management.

Chapter Four will introduce and discuss the sound system of Southern Bai.

Chapter 4 - Phonology

This chapter will discuss the sound system of Southern Bai beginning with the phoneme inventory which contains a set of 24 consonants and 10 vowels, including one fricative vowel /ʯ/. Discussion will then move on to the suprasegmental features of the language. Overall, Southern Bai has eight tones in total, comprising five tonal contours and two phonation types — breathy and creaky phonation, also referred to as laryngealisation, on mid-falling tones. The chapter will end with a description of the construction of the syllable.

Discussion will begin with the consonants of Southern Bai in section 4.1 below.

4.1. Consonants

The consonant inventory for Southern Bai is almost identical to that described by Wiersma (2007) and Xu and Zhao (1984) for the Central Bai dialect spoken in Jianchuan. The difference being that Southern Bai includes the alveolo-palatal nasal /ɳ̟/ and the rounded bilabial approximant /w/.

In total, Southern Bai possesses 24 consonants. These are produced over six areas of articulation which are bilabial, labiodental, alveolar, alveolo-dental, palatal, and velar, although only one consonant appears in the palatal position, /j/. Consonants are also produced over six manners which are plosive, nasal, fricative, affricate, approximant, and lateral. Among consonants, the language utilises an aspiration contrast among obstruents and a voicing contrast among fricatives.

There are six plosives, distributed over three places of articulation, each with an aspiration contrast. All plosives are voiceless. These are /p/, /pʰ/, /t/, /tʰ/, /k/, and /kʰ/. An aspiration contrast also exists among the four alveolar and alveolo-palatal affricates /ts/, /tsʰ/, /tɕ/, and /tɕʰ/. This project found no evidence of the three-way aspiration contrast found in fricatives

among dialects spoken further north, such as Heqing (X. Xi & Li, 1997; J. Zhao, 2010, 2011). Table 6 (below) illustrates the aspiration contrast using minimal pairs.

Voiceless	**Aspirated**
puɯ^{33} **'**axe**'**	*pʰuɯ*^{33} 'to flush'
puɯ^{31} **'**distal deictic pronoun**'**	*pʰuɯ*^{31} 'cover'
ta^{31} **'**to steal**'**	*tʰa*^{31} 'charcoal'
kuɯ^{55} **'**boundary**'**	*kʰuɯ*^{55} 'to open'
tsuɯ^{31} 'tree'	*tsʰuɯ*^{31} 'vegetables; food'
tsa^{55} 'whole'	*tsʰa*^{55} 'breakfast'
tɕe^{33} 'plum'	*tɕʰe*^{33} 'lead (Pb)'

Table 6 - Demonstration of aspiration contrast

A voicing contrast exists on Southern Bai fricatives, except the alveolo-palatal fricative /ɕ/. While a small set of minimal pairs exists for /f/ and /v/, the role of /ɣ/ as a vowel makes establishing phonemic status difficult. Table 7 (below) demonstrates the phonemic contrast of voicing among fricatives via minimal pairs.

/f/	**/v/**
fuɯ^{55} – CLF for papers, documents	*vuɯ*^{31} – steady
fe˕^{33} – to reverse	*ve˕*^{42} – to write
/s/	**/z/**
suɯ^{35} – to rise	*zuɯ*^{21} – fly
sa^{55} – three	*za*^{31} – to allow
sou^{55} – red cloud	*zou*^{44} – to wind
sɣ31 – to comb	*zɣ*^{31} – to use
/x/	**/ɣ/**
xɯ33 – line; thread	ɣɯ33 – to drink
xɯ31 – in	ɣɯ31 – hot
xɔ31 – house	ɣɔ21 – summer
xou44 – birthmark	ɣou42 – concave

Table 7 - minimal pairs demonstrating the voicing contrast on fricatives

Nasals are distributed over four places of articulation and are /m, n, ɳ, and ŋ/. The alveolo-palatal nasal /ȵ/ as described by L. Wang (2012) and found among other Southern topolects, such as Zhaozhuang (Q. Dai & Zhao, 2009; Y. Zhao, 2012), Eryuan, and Zhoucheng (Allen,

2007) was found consistently among speakers. In many of the higher quality recordings, this consonant can be identified by a slight clicking of the tongue as it makes contact with the alveolar ridge.

An allophonic relationship exists between /ŋ̡/ and /n/ in monophthongs and diphthongs. /ŋ̡/ only appears before /i/ as a monophthong whereby /n/ appears before diphthongs beginning with /i/. This could explain why 'ni' was selected to represent /ŋ̡/ in the orthography. However, as mentioned in section 2.4.4, this still leads to some ambiguity in words like 'niaf' as to whether they represent *ŋ̡a*^{35} or *nia*^{35}. The below table uses some minimal pairs to illustrate their phonemic contrast.

/ŋ̡/	**/n/**
ŋ̡ɯ^{21}- – tender	*nɯ*^{21} – floor
ŋ̡e^{44} – sky; time	*ne*^{44} – breast
ŋ̡ou^{44} – other	*nou*^{44} – lively
ŋ̡a^{44} – to apply	*na*^{44} – to darn
ŋ̡a^{35} – to slip over	*na*^{35} *tsou*^{35} – candle

Table 8 - minimal pairs of /ŋ̡/ and /n/

Fricatives are distributed over four places of articulation with a voicing distinction, except for the voiceless alveolo-palatal fricative /ɕ/. Unlike earlier consonant inventories reported for Bai (J. Li & Duan, 1998; L. Xu & Zhao, 1984), this study found no evidence of a voiced contrast for the alveolo-palatal fricative /ɕ/. Later work by Opper (2017) supports this study's findings stating that no consonant inventory among the Bai dialects he studied included phonemes for both the voiced alveolar fricative /z/ and the voiced alveolar-palatal fricative /ʑ/. As Southern Bai contains a phoneme for /z/, it seems plausible that there is no /ʑ/. As mentioned in section 2.3.1.1, much of the literature included a phoneme [j], but it was unclear whether that referred to the approximant /j/ or the affricate /tɕ/. This study has found, at least in Southern Bai, that [j] is an orthographic representation of /tɕ/. In total there are seven fricatives in Southern Bai, /f, v, s, z, ɕ, x/, and /ɣ/. Finally, there are two glides, /w/ and /j/ and

one lateral, /l/. Table 9 (below) shows the distribution of consonants in Southern Bai by place and manner of articulation. This is comparable to existing research by Wiersma (2007), Xu and Zhao (1984), and Allen (2007).

	Bilabial		**Labiodental**		**Alveolar**		**Alveolo-palatal**		**Palatal**	**Velar**	
Plosive	p	p^h			t	t^h				k	k^h
Nasal	m				n		ɳ			ŋ	
Fricative			f	v	s	z	ɕ			x	ɣ
Affricate					ts	ts^h	tɕ	$tɕ^h$			
Approximant	w								j		
Lateral					l						

Table 9 - Southern Bai consonants

Some allophonic interchangeability was found among consonants produced on the Alveolar ridge. Most notably are the consonants /l/ and /n/ which are often interchangeable preceding high cardinal vowels. For example, the Southern Bai word for 'pear' *ɕy*^{55} *ni*^{55}, is often pronounced as *ɕy*^{55} *li*^{55}. Similarly, the sentence final particle *lɔ*^{32} is also often pronounced by some speakers as *nɔ*^{32}. This was particularly noticeable in utterances by the two speakers from Wanqiao village. This allophony has also been described among speakers of Zhaozhuang Bai (H. Zhao, 2016, p. 63) and among northern Bai dialects (L. Xu, 2008). This variation does not affect interpretation of the utterance. When preceding non-high cardinal vowels, these two phonemes perform a contrasting function. Table 10 illustrates this contrast.

/l/	**/n/**
la^{21} – orchid	*na*^{21} – south
le^{44} – to accuse	*ne*^{44} – to lift
le^{21} – mud	*ne*^{21} – twenty

Table 10 - /l/ vs /n/ contrast

Similarly, the existential verb *tsɯ*^{33} is often pronounced as *tɯ*^{33} by many speakers. This study found also found this to be the case with *tsou*^{33}/*tou*^{33} 'above/ to ascend'. However, these two

obstruents appear to be mostly phonemic. This phonemic contrast is illustrated in the minimal pairs table below.

/t/	**/ts/**
ta^{44} – conjunction	*tsa*^{44} – to blink
ta^{35} – to raise	*tsa*^{35} – to tie
ta^{42} – to step	*tsa*^{42} – to help
tɯ^{31} – bean	*tsɯ*^{31} – tree
tou^{42} – to choose	*tsou*^{42} – to chew

Table 11 - Minimal pairs of /t/ and /ts/

The affricates /ts/ and /tɕ/ form a phonemic contrast in the language. This is demonstrated by the minimal pairs in the table below. This is not a common contrast but there are some minimal pairs that suggests that the two affricates are phonemic. Some examples are presented in the following table.

/ts/	**/tɕ/**
tse^{33} – CLF; pile; stack; heap	*tɕe*^{33} – plum
tsɯ^{35} – to steam; to pour	*tɕɯ*^{35} – bear
tse˞^{35} – table	*tɕe˞*^{35} – nail
tsa^{42} – to help	*tɕa*^{42} – plate

Table 12 - minimal pairs of /ts/ and /tɕ/

While allomorphs when appearing before +[high] +[front] -[rounded] vowels (i.e. /i/ and /ɨ/), there is a phonemic contrast between the aspirated affricates /tsʰ/ and /tɕʰ/. However, this study found this to be the case in only two environments — before the rhotic /e˞/ and the diphthong /ua/. Minimal pairs of these contrasts are presented below.

/tsʰ/	**/tɕʰ/**
tsʰe˞^{55} – light (weight); voice	*tɕʰe˞*^{55} – clear
tsʰe˞^{33} – to lie; to sleep	*tɕʰe˞*^{33} – to ask
tse˞^{44} – red	*tɕʰe˞*^{44} – to pierce; to embroider
tsua^{33} – to chop	*tɕʰua*^{33} – pangolin

Table 13 - illustration of /tsʰ/ and /tɕʰ/ minimal pairs

Another interesting finding appeared in the form of the velar nasal /ŋ/. Some speakers, particularly those from Wanqiao village produce this as a pre-nasalised, /^{ŋ}k/. Figure 9 (below) displays a spectrogram of an utterance of *ŋɔ*^{31} by a speaker from Wanqiao. The selected section of the spectrogram illustrates a pre-nasalisation period of 0.115 milliseconds (ms) before the opening of the velar aperture at the point of the arrow, then the onset of the rhyme /*ɔ*^{31}/. This was consistent in utterances from this speaker and was also common in two other speakers.

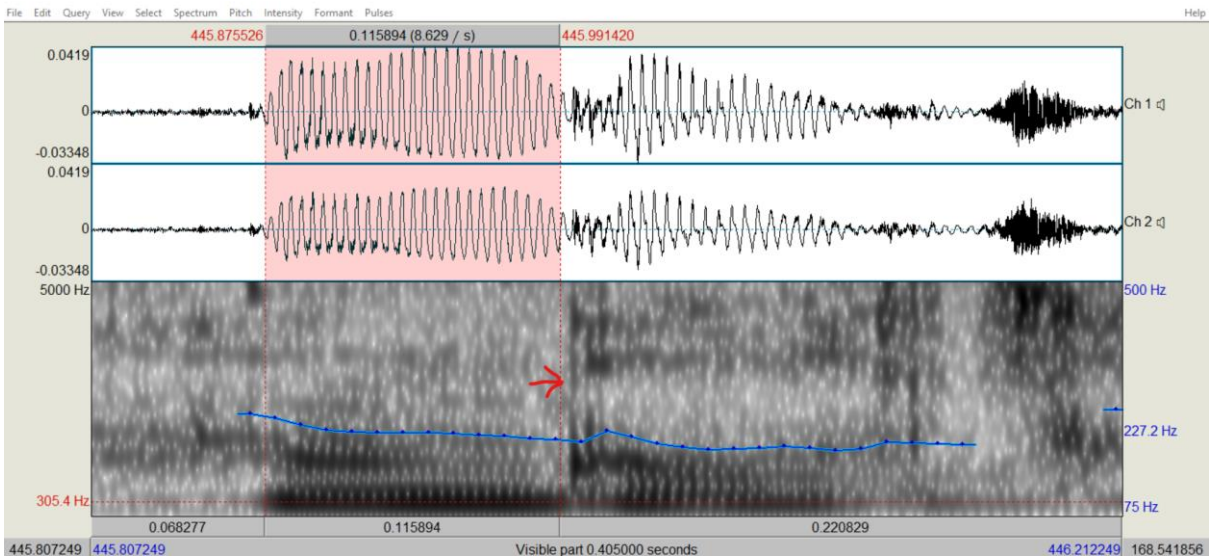


Figure 9 - Pre-nasalised /ŋ/
Source: Childstory-01, 7:26

A hierarchy exists among bilabials with /p/ being the most commonly used bilabial consonant, followed by /m/ then /w/. Consequently, if a consonant + vowel combination exists beginning with /w/, then a similar combination will also exist with /m/ and /p/.

Similarly, among alveolar consonants, the hierarchy is /n/ > /t/ > /ts/ whereby if a combination exists beginning with /ts/, then the same combination exists with /t/ and /n/.

4.2. Vowels

As found by Wiersma (2007) and Xu and Zhao (1984), Southern Bai contains nine regular vowels, /i, y, e, ɨ, ɯ, u, ɔ, a/, a rhotic /e˞/, and a fricative vowel /ʮ/. A rounding contrast only exists between high front and high back vowels. Unlike the Central Bai dialect, (Hefright, 2011; Wiersma, 2007), Southern Bai does not contain nasalised vowels. In regards to Ramsey's (1987, p. 290) findings, it is possible that /ü/ and /ö/ represent /y/ and /ɯ/ respectively, as mentioned in section 2.3.1.2. However, this study did not find the 12 vowels he claimed. Figure 10 (below) demonstrates the vowel space of Southern Bai.

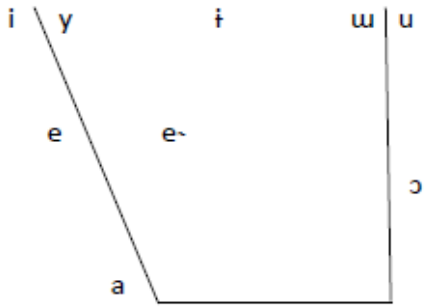


Figure 10 - Southern Bai vowel space

Most vowels can stand alone as a syllable. The only vowels that were found to not stand alone are high front /i/ and its centralised counterpart /ɨ/, and the back-high rounded vowel /u/. The syllable in Southern Bai will be discussed in detail later in section 4.4.

In addition to open vowels, Southern Bai also contains a fricative vowel /ʮ/. When in the initial position, /ʮ/ acts as a lone, initial vowel. This is evident from data which demonstrates /ʮ/ as a standalone phoneme able to carry tone and phonation. No consonant can behave in this manner in any other described form of Bai. However, vowels are able to behave as free morphemes, as illustrated in example (9).

(9) *ɣ*^{44} – to incubate *ɣ*^{35} – to obstruct *ɣ*^{21} – cloud *ɣ*^{32} – rain *ɣ*^{31} – POSS
e^{44} – hobby *e*^{21} – CLF *e*^{35} – exclamation *e*^{42} – to swallow
ɔ^{44} – CLF *ɔ*^{21} – prawn *ɔ*^{31} – thin *ɔ*^{35} – to feed
a^{44} – duck *a*^{31} – one *a*^{33} – to look
u^{44} – to extinguish *u*^{21} – beard *u*^{35} – prefix for bug like creatures
ɯ^{44} – to curse *ɯ*^{33} – to smoke

Furthermore, /ɣ/ occurs in the rhyme of a syllable, after the initial consonant, as demonstrated in example (10).

(10) *kɣ*^{21} – buckwheat *kɣ*^{35} – river *kɣ*^{31} – to kneel
fɣ^{33} – to scatter *fɣ*^{32} – CLF *fɣ*^{44} – belly
sɣ^{55} – child *sɣ*^{33} – mouse *sɣ*^{32} – mountain
ŋɣ^{21} – yellow *ŋɣ*^{35} – fish *ŋɣ*^{33} – five
t^{h}*ɣ*^{31} – bucket

Furthermore, fricative vowels have been described within rhymes in several geographically related languages such as Hlepho (Pelkey, 2011), Namuyi Khato (J. Li, 2017), Nuosu Yi (Edmondson et al., 2017), Mosuo (Zhenhong, 2009), and Lisu (Tabain et al., 2019). Based on this information and on the descriptions provided by Wiersma (2007), Xu and Zhao (1984), and for several Bai dialects in Allen (2007), I conclude that /ɣ/ is a vowel.

4.2.1. Monophthongs

This section will describe the environments and restrictions on vowels in Southern Bai. The least restricted vowel is /e/ which can co-occur with all consonants except /v/, /ɣ/, /ɕ/, and /tɕ^{h}/. If /e/ is to occur after /ɕ/ or /tɕ^{h}/ then it requires the intervention of either /i/ or /u/. The rhotic /e˞/ has similar distribution to /e/ with added restrictions on /l/ and /j/.

The vowels /i/ and /ɨ/ are allomorphs in certain environments. /i/ follows bilabial and alveolar plosives, nasals /m/, /n/, and /ŋ̟/, alveolo-palatal affricates, and approximants /l/ and /j/. The only fricative it follows is the alveolo-palatal /ɕ/. Among alveolar fricatives and affricates, it shifts to the tense /ɨ/. Among alveolo-palatal fricatives and affricates, it shifts back to /i/. It

also does not co-occur with velar consonants. It is the only vowel in Southern Bai that cannot stand alone possibly due to this allomorphic relationship.

/u/ occurs with most consonants but does not co-occur with alveolo-palatal or labio-dental glides or consonants. With nasals, /u/ is limited to only co-occur with the alveolar /n/.

The back rounded vowel /ɔ/ has similar distribution to /u/ except it does co-occur with glides. However, it is not found to co-occur with voiced fricatives.

The rounded high front vowel /y/ is not found to follow any bilabial or labiodental consonant. Among other places of production, it is restricted to co-occur only with the alveolo-palatal fricative /ɕ/, affricates /tɕ/ and /tɕʰ/ and the palatal glide /j/. Consonants that can precede the vowel /y/ cannot be followed by the fricative vowel /v/ suggesting an allophonic relationship between the two.

Both major works on Bai, Xu and Zhao (1984) and Wiersma (2007), include no description of /y/ in their descriptions of the vowel space in both Central and Southern Bai dialects. However, it is listed in Allen (2007).

The back high unrounded vowel /u/ does not appear after dental fricatives or alveolo-palatal consonants. After alveolo-palatal consonants, it becomes produced as the front high rounded vowel [y], which suggests that they are allophones in this environment. However, /y/ is contrastive with its unrounded counterpart /i/, in a small number of environments as demonstrated by the minimal pairs below.

/i/	**/y/**
ɕi^{33} – to die	*ɕy*^{33} – water
tɕi^{33} – to pull	*tɕy*^{33} – face
tɕʰi^{31} – thorn	*tɕʰy*^{31} – to choose

Table 14 - minimal pairs for /i/ and /y/

The central high vowel [ɨ] is an allophone of /i/ and was found to only follow the alveolar affricates /ts/ and /tsʰ/, and alveolar fricatives /s/ and /z/.

A rounding contrast exists between high, back vowels /ɯ/ and /u/. The following minimal pairs illustrate this contrast.

/ɯ/	**/u/**
puɯ^{55} – 3GEN	*pu*^{55} – cloth
tuɯ^{33} – to wait	*tu*^{33} – male genitals
tʰuɯ^{55} – to descend	*tʰu*^{55} – to invite
muɯ^{33} – to change	*mu*^{33} – NEG
nuɯ^{55} – 2GEN	*nu*^{55} – corn
tsuɯ^{33} – to have[14]	*tsu*^{33} – early

Table 15 - minimal pairs of /ɯ/ and /u/

The most commonly found vowel in Southern Bai is the high, back, unrounded vowel /ɯ/. The table below demonstrates how /ɯ/ contrasts with other vowels in the language over the same initial consonant and demonstrates the contrastive function of the most common monophthongs within Southern Bai.

[14] For brevity purposes, I have glossed *tsuɯ*^{33} as 'to have' here, although, as I argue in section 7.6, I have classed this lexeme as an existential verb.

	/ɯ/	/a/	/i/	/e/	/e˗/	/u/	/ɔ/
/p/	*puɯ*^{21} – to float	*pa*^{21} – bowl	*pi*^{21} – sprout	*pe*^{21} – skin	*pe˗*^{21} – flat	*pu*^{33} – cloth	*pɔ*^{31} – 3SG
/pʰ/	*pʰuɯ*^{55} – to blow	*pʰa*^{55} – rake	*pʰi*^{42} – slow	*pʰe*^{55} – to tear	–	*pʰu*^{35} – to lie on stomach	*pʰɔ*^{55} – to boil
/t/	*tuɯ*^{21} – head	*ta*^{21} – peach	*ti*^{21} – if	*te*^{21} ordinal prefix	*te˗*^{42} – CLF for fruit	*tu*^{33} – male genitals	*tɔ*^{31} – big
/m/	*muɯ*^{21} – fog	*ma*^{21} – hair	*mi*^{44} – to squint	*me*^{21} – door	*me˗*^{21} – to cry	*mu*^{33} – NEG	*mo*^{21} – to hone
/n/	*nuɯ*^{55} – 2SG	*na*^{21} – south	–	*ne*^{21} – twenty	*ne˗*^{42} – fat	*nu*^{21} – bag	*nɔ*^{31} – 2SG
/ŋ/	*ŋuɯ*^{21} – cow	*ŋa*^{21} – sweat	–	*ŋe*^{21} – shoe	*ŋe˗*^{21} – to go	–	*ŋɔ*^{31} – 1SG
/s/	*suɯ*^{55} – to return sth	*sa*^{55} – three	*sɨ*^{35} – book	*se*^{31} – small	*se˗*^{55} – deep	*su*^{55} – to bake	*sɔ*^{55} – to grab
/ts/	*tsuɯ*^{21} – tree	*tsa*^{21} – silkworm	*tsɨ*^{21} – spirit	*tse*^{21} – money	*tse˗*^{21} – town	*tsu*^{33} – early	*tsɔ*^{21} – tea

Table 16 - contrast of most common vowels

In lower tones, the phonemes /ɔ/ and /u/ may be interchangeable when following bilabial initials. For example, the sentence final verbal negator *mu*^{33} may be pronounced as either *mu*^{33} or *mɔ*^{33}. However, these are typically contrastive in most other environments, as demonstrated in the following minimal pairs.

/u/	/ɔ/
pu^{55} – cloth	*pɔ*^{55} – to carry
tu^{33} – male genitals	*tɔ*^{33} – to shake
su^{55} – to bake	*sɔ*^{55} – to grab
ku^{21} – bottle	*kɔ*^{21} – lake
kʰu^{33} – bitter	*kʰɔ*^{33} – grain

Table 17 - minimal pairs of /u/ and /ɔ/

The most frequently occurring vowels in Southern Bai are /a/ and /ɯ/ which can occur in combination with almost every consonant, followed by /e/. The back rounded /u/ and back unrounded /ɔ/ can occur with approximately 75% of the Bai syllable inventory, although not necessarily the same ones. The high front vowel /i/ appears with about 50% of Bai syllables

and it does not co-occur with any fricatives, except the alveolo-palatal /ɕ/. This is likely an effect of the influence of Mandarin loan words on the language.

A limited hierarchy exists among some Bai monophthongs. If a consonant- vowel combination exists with /v/ acting as the vowel, then an equivalent combination also exists with the rhotic /e˞/ vowel, and therefore subsequently, the /e/ vowel. In short, /e/ is the strongest monophthong, followed by /e˞/, then /ɣ̩/. To demonstrate the phonemic contrast between /e/ and /e˞/, a minimal pair table is presented below.

/e/	**/e˞/**
pe^{21} – skin	*pe˞*^{21} – flat
p^{h}e^{55} – to tear	*p^{h}e˞*^{55} – weak
me^{21} – door	*me˞*^{21} – to cry
te^{42} – pig	*te˞*^{42} – CLF (for fruit)
ke^{35} – chicken	*ke˞*^{35} – afraid
k^{h}e^{44} – to open	*k^{h}e˞*^{44} – guest

Table 18 - minimal pairs for /e/ and /e˞/

The fricative vowel /ɣ̩/ is restricted to co-occur mostly with alveolar and velar plosives, nasals, fricatives, and affricates. It does not appear after any consonants produced at bilabial or palatal positions nor with any approximates or laterals. The bilabial restriction is reasonable as that combination would be quite difficult to produce. In addition to these combinations and as a stand-alone vowel, /ɣ̩/ may also follow /f/ and /ŋ̍/.

Table 19 (below) demonstrates the distribution of consonant and monophthong combinations found in Southern Bai.

	a	**i**	**y**	**e**	**eˇ**	**ɨ**	**ɯ**	**u**	**ɔ**	**ɣ̩**
	a		y	e	eˇ		ɯ	u	ɔ	ɣ̩
p	pa	pi		pe	peˇ		pɯ	pu	pɔ	
pʰ	pʰa	pʰi		pʰe	pʰeˇ		pʰɯ	pʰu	pʰɔ	
m	ma	mi		me	meˇ		mɯ	mu	mɔ	
w	wa	wi		we	weˇ			wu		
f	fa			fe	feˇ					fɣ̩
v	va									
t	ta	ti		te	teˇ		tɯ	tu	tɔ	tɣ̩
tʰ	tʰa	tʰi		tʰe			tʰɯ	tʰu		tʰɣ̩
n	na	ni		ne	neˇ		nɯ	nu	nɔ	nɣ̩
s	sa			se	seˇ	sɨ	sɯ	su	sɔ	sɣ̩
z	za			ze		zɨ	zɯ	zu		zɣ̩
ts	tsa			tse	tseˇ	tsɨ	tsɯ	tsu	tsɔ	tsɣ̩
tsʰ	tsʰa			tsʰe	tsʰeˇ	tsʰɨ	tsʰɯ	tsʰu		tsʰɣ̩
l	la	li		le			lɯ		lɔ	
ŋ̍	ŋ̍a	ŋ̍i		ŋ̍e			ŋ̍ɯ			ŋ̍ɣ̩
ɛ	ɛa	ɛi	ɛy							
tɛ	tɛa	tɛi	tɛy	tɛe	tɛeˇ		tɛɯ			
tɛʰ	tɛʰa	tɛʰi	tɛʰy		tɛʰeˇ					
j	ja	ji	jy	je			jɯ		jɔ	
k	ka			ke	keˇ		kɯ	ku	kɔ	kɣ̩
kʰ	kʰa			kʰe	kʰeˇ		kʰɯ	kʰu	kʰɔ	kʰɣ̩
ŋ	ŋa			ŋe	ŋeˇ		ŋɯ		ŋɔ	ŋɣ̩
x	xa			xe			xɯ	xu	xɔ	xɣ̩
ɣ							ɣɯ		ɣɔ	ɣɣ̩

Table 19 - Consonant and monophthong combinations

Following the voiced velar fricative /ɣ/, the high back vowel /ɯ/ is often fricated. This is most likely the result of perseverative articulation from related place and manner of articulation.

Occasionally, the front vowel /e/ is pronounced as the diphthong /ei/. A common example is the Bai word /pe/ '*to go'* being pronounced as /pei/ among different speakers. The spectrograms in Figure 11 and Figure 12 (below) show the difference in pronunciation for /pe/ among two female speakers.

The only vowels that follow the voiceless labiodental fricative /f/ are /a/, /e/, /eˇ/ and /v/.

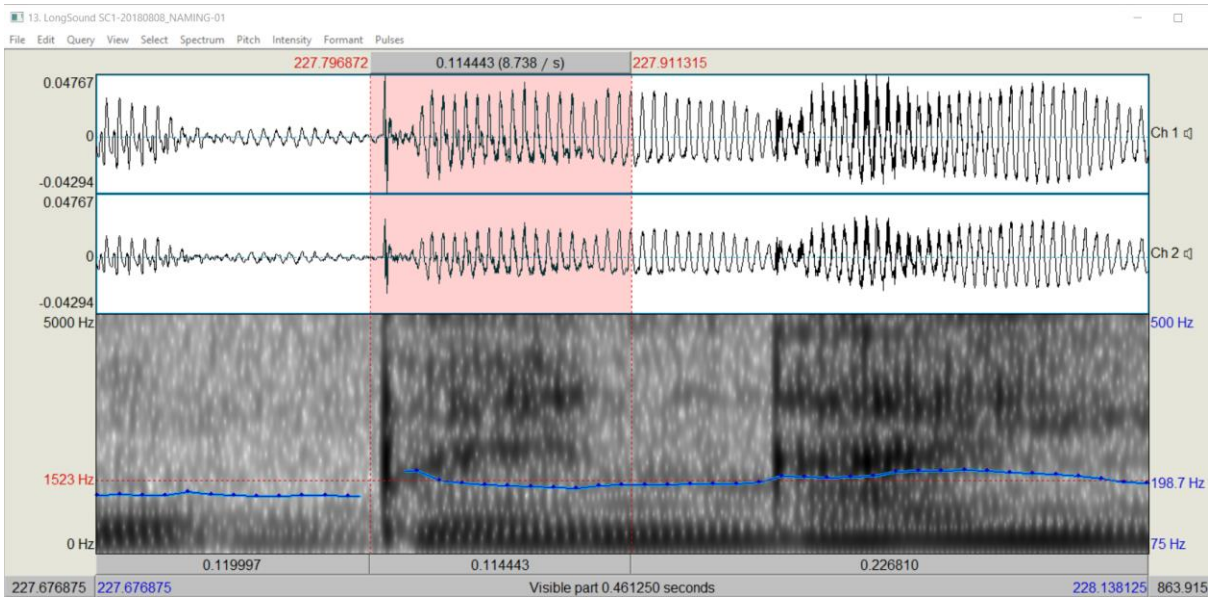


Figure 11 - F4 utterance of pe[44]
Source - Naming 3:48

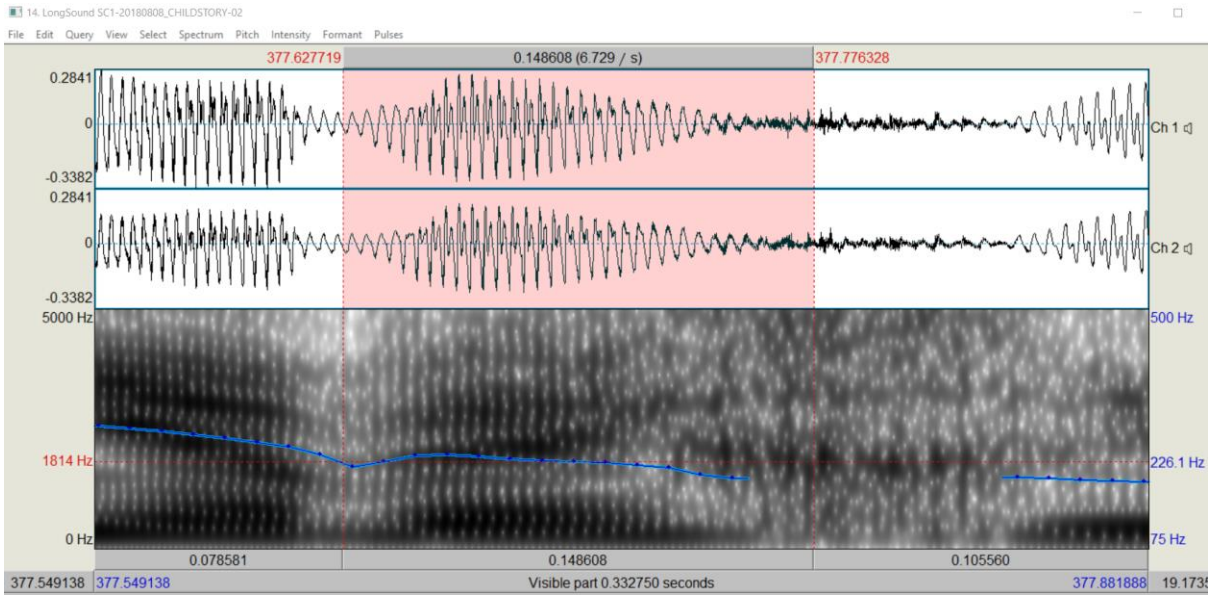
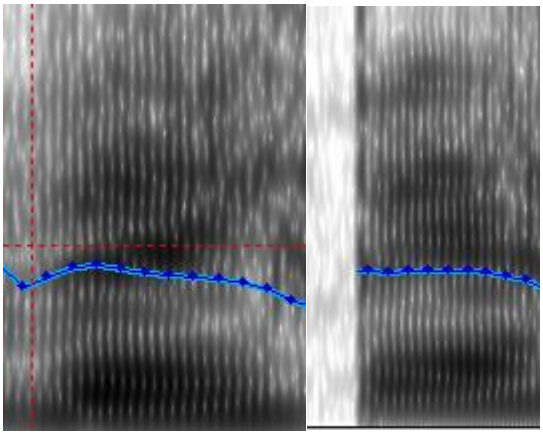


Figure 12 - F5 utterance of pei[44]
Source -Childstory-02 6:16

Note that Figure 11 contains the standard pronunciation of *pe[44]* and has a much flatter vowel contour, while Figure 12 is the diphthong pronunciation and has a more declining contour.

Further investigation revealed this variation also occurred within the same recording produced by participant F5, as shown in the figure below.



/pei^{44}/ /pe^{44}/

Source- Childstory-02 6:16 *Source - Childstory-02 6:21*

Figure 13 - Differing pronunciation of the verb 'to go' by F5

The Bai orthographic system offers a possible explanation for this variation. Both *pe^{44}* and *pei^{44}* are transcribed as *bei* in the orthography, one of the shortcomings in its design. F2, F4, and F5 are all literate in the orthography, and it is possible the ambiguity resulting from the orthography is influencing their pronunciation of the word, leading to some form of hyper-correction. Another explanation may come from the influence of the nearby Tai language where the word for ‘to go’ is also pronounced /pei/.

4.2.2. Diphthongs

Diphthongs in Southern Bai begin with either /i/, /ɔ/, or /u/. The most common diphthong in Southern Bai is /ou/ which is found to co-occur with any consonant. Only two triphthongs are found, both of which begin with the unrounded high-front vowel, /i/. These are /iao/ and /iou/.

The only single vowels found to have contrastive distribution at the beginning of a diphthong are the vowels /e/ and /e˗/, and then only in two environments, in diphthongs beginning with /i/ and /u/. This distribution is demonstrated in the table below. See section 4.4 later in this

chapter for a more detailed description of the interaction of consonants and rhyme with the Southern Bai syllable.

/e/	**/eˇ/**
kue^{32} – bad	*kue*^{35} – to close
mie^{33} – to think	*mie*^{35} name
ɕie^{32} – to wither	*ɕie*^{44} – day

Table 20 - diphthongs ending in /e/ and /eˇ/

Diphthongs beginning with /i/ are restricted and do not co-occur with any consonants produced as a fricative or in a velar position. Among nasals, they are restricted only to /n/.

Similarly, diphthongs beginning with /u/ do not co-occur with bilabial, liquid, or nasal consonants. One exception is found in the Yunnan Almanac (J. Li & Duan, 1998) which lists examples of the triphthong /uei/ proceeding the nasal /n/. However, no example of this combination was found among the data collected.

Following Bai fricatives, diphthongs beginning with either /i/ or /u/ only co-occur with /s/ and /x/. Again, this could be influenced by Mandarin Chinese where these combinations are frequent.

These findings are consistent with those found in Wiersma (2007) who stated that diphthongs in Jianchuan Bai beginning with /u/ were restricted to apical and velar initials and those beginning with /i/ are restricted to dental and apical initials. However, Southern Bai does not have a corresponding diphthong for every vowel, rather diphthongs are only found to begin with /i/, /ɔ/, and, /u/.

If a combination with a final diphthong /ɔu/ occurs with a 44 tone, then there will be a corresponding /ɔ/ monophthong. If a combination exists ending in /ua/, then an equivalent exists ending in /ɔu/. If a syllable ends with a monophthong of either /a/ or /e/, then a

corresponding syllable ending in /ɯ/ will also exist. Table 21 (below) demonstrates the phonemic contrasts of diphthongs in Southern Bai.

ia	*pia*^{44} – eight	*tɕia*^{44} – shelf	*mia*^{44} – to sprinkle	*pʰia*^{44} – to arrive	*tɕʰia*^{44} – to pinch
iɯ	*diɯ*^{33} – to withstand	*tɕiɯ*^{33} – nine	*miɯ*^{33} – to think	*niɯ*^{35} – to knead	*tɕiɯ*^{55} – to lower
ie	*tɕie*^{55} – ring	*nie*^{31} – to spin	*pʰie*^{31} – to chat	*ɕie*^{55} – cord	
ie˗	*pie˗*^{33} – flat	*mie˗*^{35} – name	*ɕie˗*^{42} – inclined	*tɕie˗*^{31} – tight; firm	pʰie˗55 – CLF for walls
iɔ	*miɔ*^{35} – spear	*niɔ*^{55} – glass	*pʰiɔ*^{55} – ladle	*ɕiɔ*^{35} – flute	
ɔu	*pɔu*^{44} – to pat	*tsʰɔu*^{44} – to rub between fingers	*tɔu*^{44} – to fall	*kɔu*^{44} – leg	*tɕɔu*^{55} – maternal uncle
ua	*sua*^{44} – year	*kʰua*^{33} – dog	*tsʰua*^{33} – to chop	*kua*^{44} – to support	*tsua*^{44} – to grab
ue	tsʰue55 – crispy	tue44 – to give up	kue31 – full	xue33 – fire	lue35 – to scald
ue˗	*tsʰue˗*^{44} – CLF for books	*kue˗*^{35} – to close	*kʰue˗*^{55} – CLF	*ɕie˗*^{44} – day	
uɔ	*tuɔ*^{33} – cannot	*kuɔ*^{32} – to pass	*suɔ*^{33} – lock	*xuɔ*^{33} – people	

Table 21 - phonemic contrasts in Southern Bai diphthongs

4.3. Suprasegmental features

Typical of languages spoken in the region, Southern Bai contains a tone system employing contour tones, or alternations on pitch and contour on the syllable coda, in combination with changes in phonation (Brunelle & Kirby, 2016).

This tone system is lexically contrastive. Therefore, a change in tones results in a different lexical meaning. This is demonstrated using syllable /pa/ in Table 22 below.

Bai	***pa*^{55}**	***pa*^{44}**	***pa*^{33}**	***pa*^{42}**	***pa*^{35}**	***pa*^{31}**	***pa*^{32}**	***pa*^{21}**
Gloss	3PL	dam	foam; bubble	breast	to help	to mix	to handle	pot; bowl

Table 22 - Examples of lexical contrast provided by tone on the syllable /pa/

The tone system of Southern Bai contains eight tones that employ combinations of two major components. These are tone contour, also referred to as *modal tone*, and additional phonation features.

Within the tones of Southern Bai there are two main phonation features — breathy voicing and creak. Breathy phonation can be found on the Southern Bai tone 31 and is described as a slight separation of the glottis that allows a 'high rate of airflow through the glottis' and sounds akin to the vowel being only partially voiced (Ladefoged & Johnson, 2011, p. 306). In contrast, creak, also referred to as laryngealisation, is produced through constriction of the glottis which results in a creaky, harsh quality in the vowel, and is found on the mid-falling 21 tone.

As Edmondson and Li (1994) argued, the mid-falling tone contour was the most likely to be affected by different voicing settings, featuring three varying voicing characteristics; modal (tone 32), breathy (tone 31), and creak[15] (tone 21). It is my position, as covered in section 4.3.1 that the creaky 21 and breathy 31 tones are phonation variants of the modal 32 tone.

4.3.1. The Tones of Southern Bai

The following sections provide a detailed description of each of the tones found in Southern Bai. While I prefer the term 'tonation' proposed by Bradley (1982) to refer to the combination of tone and phonation, I will continue to use 'tone' in this text as used in much of the literature on phonology languages of East and Southeast Asia.

The information for this section was gathered selecting 10–15 utterances of each tone by consultants F1–F4 based on transcripts corrected by a native speaker. From this data, a mean value for pitch and length was calculated. The reason only data on females is presented is that

[15] Referred to as 'harsh' in the original text.

only one male speaker was available, so an average was not able to be calculated. The numbers assigned to each tone are taken from previous research into the suprasegmental features of the Bai language family, including Xu and Zhao (1984), Edmondson and Li (1994), Allen and Su (2002), and Wáng Feng (2016) and are based on the tone numbering system devised by Chao (1930). For details on the existing research on the tone system, please refer to section 2.3.1.3.

This study found that the distribution of the breathy 31 tone appears to be more prolific than the other mid-falling tones, 32 and 21. The 21 tone occurs more frequently with nasal initials and occurs more frequently with isolated/single vowels. While the modal 32 tone occurs more commonly, both 21 and 32 occur with very similar initial and final combinations. These combinations have initial stops that are voiced or voiceless affricates and with non-rounded monophthong vowels. Some combinations include diphthongs beginning with /u/, but these are few compared to the other combinations which tend to include nasals, affricates, or glides in combination with diphthongs beginning with front vowels /a/ or /i/.

Creak can also be found prior to rhotic vowel /e˗/ when uttered in isolation with mid-low tones. For example, Erhai Lake, the name of the lake east of Dali is pronounced /e˗^{33} kɔ^{21}/ with creak evident at the commencement of the initial vowel, before returning to the purely modal mid-flat tone. Xu and Zhao (1984, p. 6) describe slight glottalisation preceding any vowel that forms a syllable on its own in Central Bai, but this pre-creak is the closest example in Southern Bai found in this study.

In addition to breathy and creaky voicing, another distinguishing factor of tones in Southern Bai is a tense/lax distinction on vowels. ‘Tense’ vowels are typically longer in duration than their lax contrast as the energy needed to keep the longer vowel stable needs a widening of the pharynx that requires tension (Clark & Yallop, 1990, p. 32; Ladefoged & Johnson, 2011,

p. 99). The vowel length can play an important part in perceiving some tones, particularly the high-flat tones that only have a slight difference in pitch.

55 tone

This is a high, flat purely modal tone at the highest pitch of the speaker's register. In female speakers of Southern Bai, the pitch of this tone is typically above 270 Hz or higher. Vowel length is shorter than tone 44, averaging 0.07ms. When the 55 tone accompanies a back vowel, it has a much shorter vowel length and a lower fundamental frequency (F0), typically around 230 - 250 Hz.

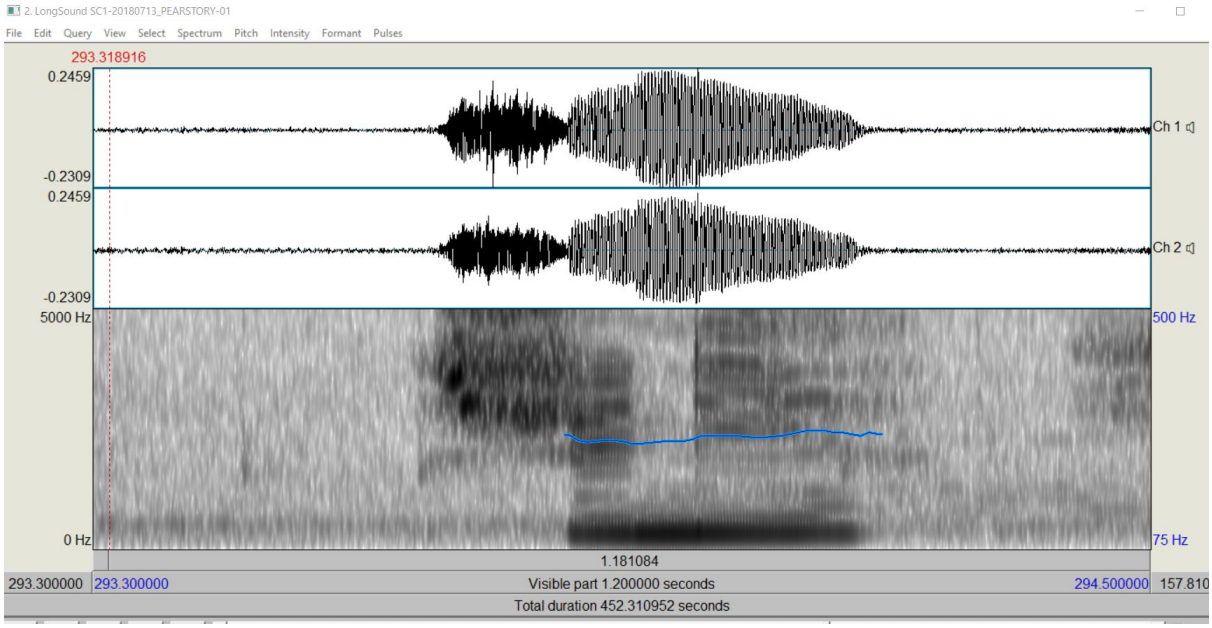


Figure 14 - Spectrogram of ɕy^{55} ni^{55} by F1
Source – Pear story (4:54)

The spectrogram in Figure 14 (above) depicts a typical 55 tone. Both lexemes have high, flat tone contours pitched around 270Hz with flat formant frequencies. The image also depicts high level sonorant activity above F^2.

The 55 tone is also commonly used in transliterations of the flat-high tone in Mandarin names, such as *a^{55} luo^{55}* (Ā luò) and *mɯ^{31} sa^{55}* (Mě sā).

44 tone

The modal contour of this tone is again flat and high, usually sitting around 210–220 Hz among female speakers. However, it may be a little higher in some speech. Vowel length is typically longer than that of the corresponding 55 tone with an average length of 0.09ms, conforming to much of the existing literature on Central Bai which describes tone 44 as being 'tense'. As observed by Ladefoged and Johnson (2011, p. 98), tense vowels tend to be longer than lax vowels.

Further evidence for a contrastive function between these tones can be illustrated by the minimal pairs presented in Table 23.

55 tone	**44 tone**
na^{55} '2PL'	*na*^{44} 'to darn'
ŋa^{55} '1PL'	*ŋa*^{44} 'to bite'
ju^{55} 'to print'	*ju*^{44} 'to eat'
pu^{55} '3GEN'	*pu*^{44} 'foolish'
ni^{55} 'question particle'	*ni*^{44} 'to enter'
ts^{h}*e*^{55} 'money'	*ts*^{h}*e*^{44} 'saw'
te^{55} 'bag'	*te*^{44} 'to tear'
t^{h}*e*^{55} 'too'	*t*^{h}*e*^{44} 'younger sibling'

Table 23 - Minimal pair table of tones 55 and 44

The spectrogram image in Figure 15 depicts two concurrent utterances with the 44 tone. Like 55, they have a flat tonal contour, but are pitched slightly lower at around 220Hz. Unlike the spectrogram for 55 tone, the sonic energy above F2 appears quite 'noisy' with formants much harder to distinguish, which is indicative of the 'tense' quality of the vowel.

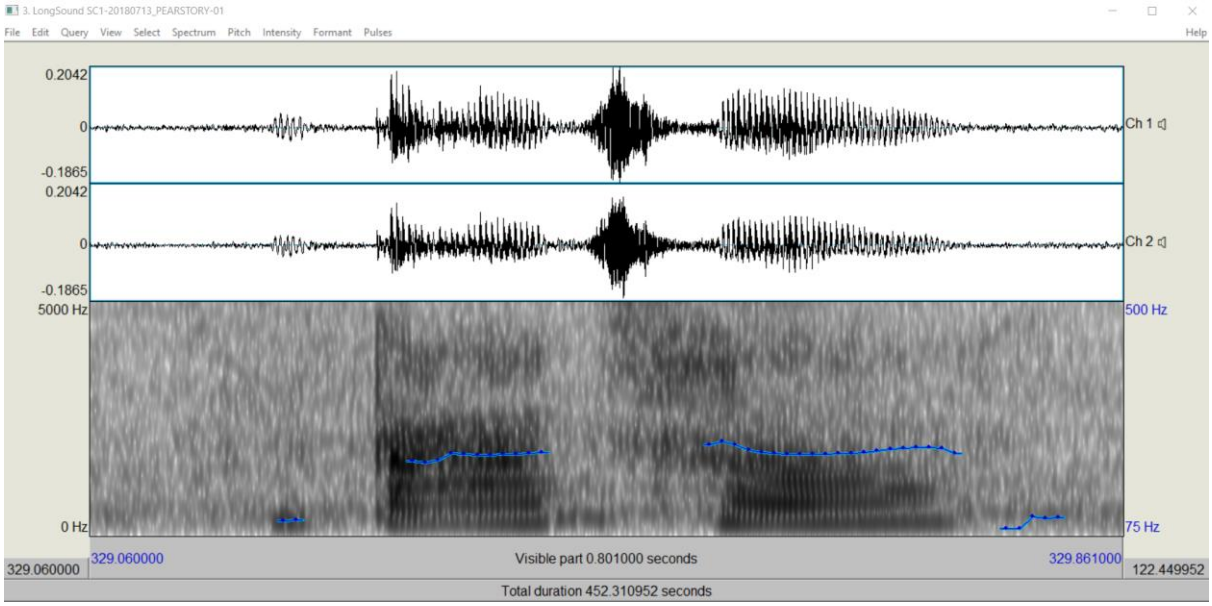


Figure 15 - Spectrogram image of ta^{44} ts^{h}e^{44} by F1
Source – Pear story (5:29)

While Allen and Su (2002) found there was a tonal drop in utterances with the 44 tone towards the end of the syllable, I found a rise in tone during a word list elicitation which can be seen in Figure 16.

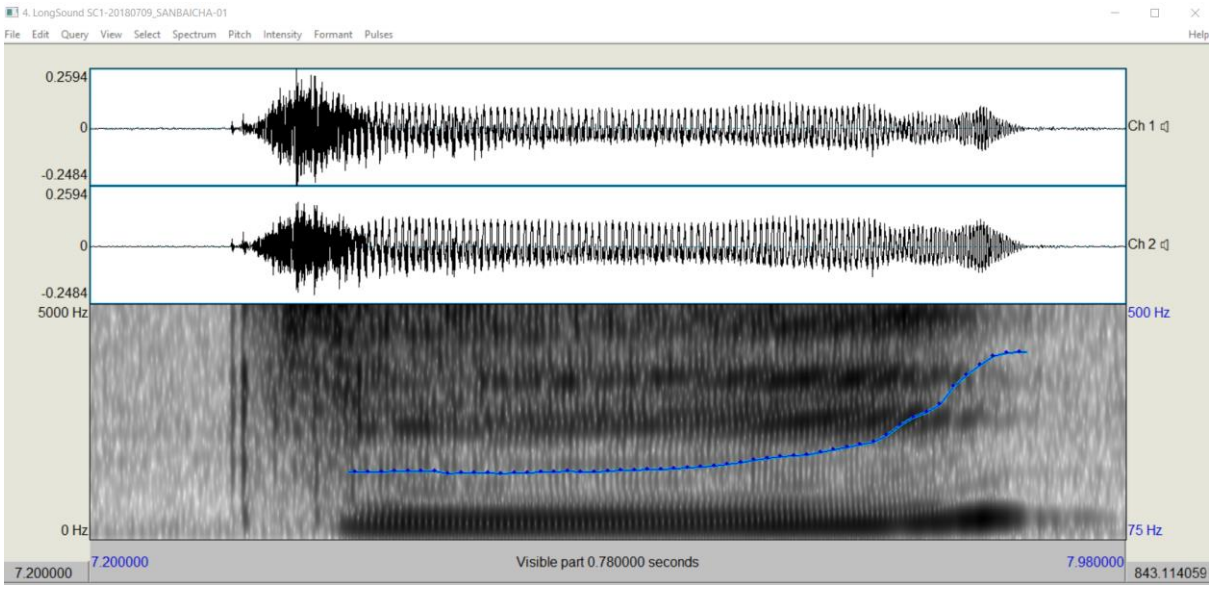


Figure 16 - F2's production of tɕi^{44}

Each of F2's utterances of the lexeme *tɕi^{44}* remain flat around 200Hz for approximately 0.3ms, then rise towards the tail of the vowel. However, this only occurred during word list

productions where each word was uttered in in isolation. The methodology of Allen and Su's study also consisted of word list elicitations.

33 tone

This is a purely modal tone with no additional phonation. The vowel has an average duration of .011ms. While typically transcribed as a mid-flat tone, this tone is audibly perceived as having a low, flat pitch. Consultant F3 confirmed this perception stating that this tone should be pitched at the bottom of your vocal register. Perhaps this is a variant of Southern Bai compared to other varieties, but they have kept the same orthographic symbol to maintain a standard across dialects. Female speakers typically pitched this tone at approximately 180 Hz. Figure 17 (below) illustrates a typical production of the 33 tone.

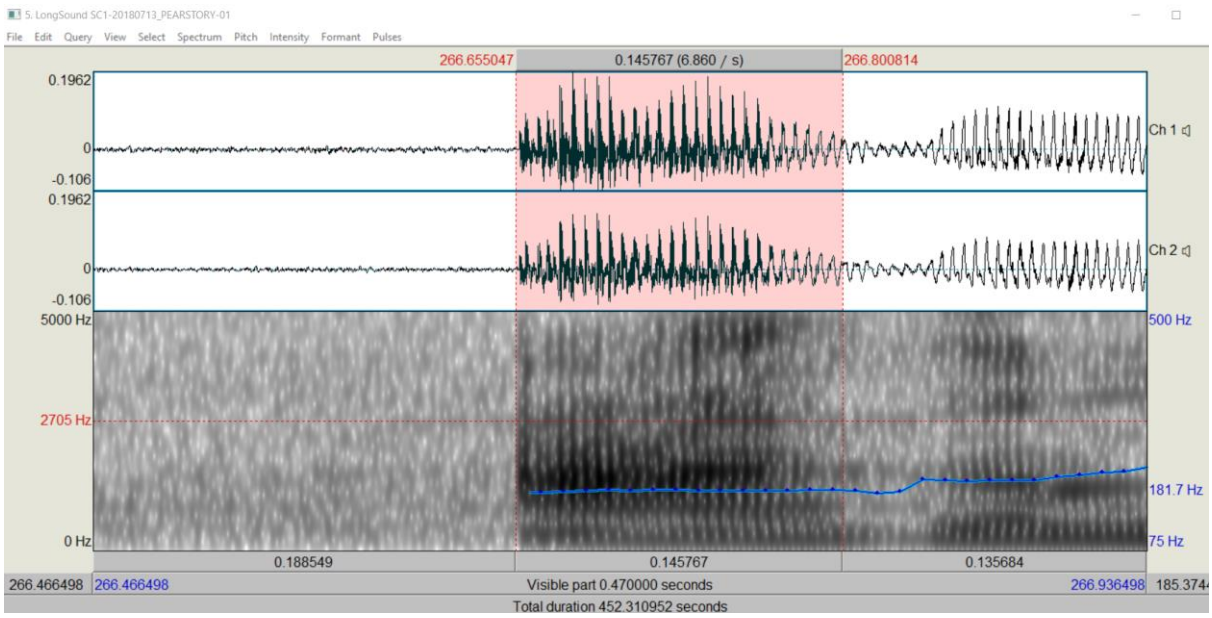


Figure 17 - Spectrogram of a^{33} by F1
Source – Pear story (4:27)

The 33 modal tone occurs much less in syllables where the initial is a voiceless stop compared with those that are voiced. However, among syllables with fricative initials, it is more evenly distributed. Among syllables that begin with affricates and glides, this tone is more likely to occur in combination with high, front vowels.

32 tone

This tone appears purely modal, realised as a mid-falling tone, transcribed in the existing literature as 32, according to Chao's scale. Typically, this tone has a short vowel.

The pitch of this tone among female participants typically begins at around 210 Hz and falls quickly to 180 Hz.

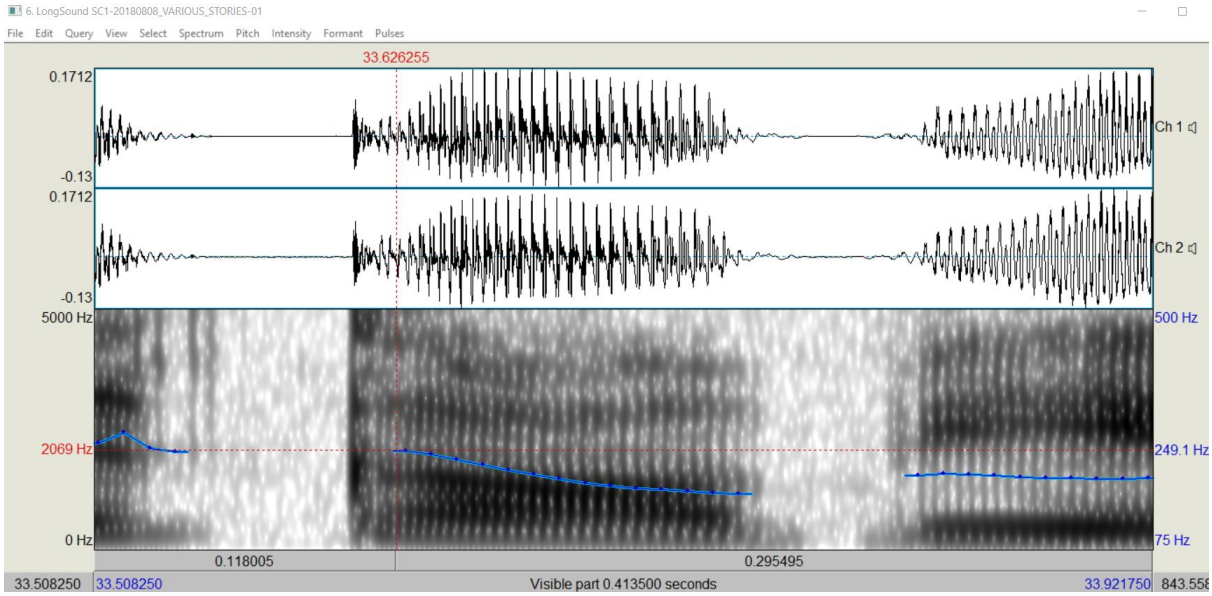


Figure 18 - Spectrogram of 32 tone by F5
Source – Various Bai stories 0:33.5

The spectrogram in Figure 18 (above) illustrates a clear falling tonal contour that begins at the speaker's mid-range. The clarity of formants F2 and F3 indicate that this tone lacks any additional phonation.

31 tone

This is a mid-falling tone with breathy phonation. In the existing literature it is represented by 31 on Chao's scale. It starts at the middle of the speaker's range and falls to the low end of the range. In carefully elicited speech, this tone is realised more like a dipping tone that dips and rises back to the middle position. This was confirmed by consultant F3 who stated that

this tone was akin to the third tone (213) in MSM. However, in regular speech it is realised as a mid-falling tone.

The pitch contour of this tone is almost identical to that of tone 32, beginning around 210 Hz and falling to around 180 Hz. In most situations, this modal tone is accompanied by breathy phonation, although Allen & Su (2002, p. 254) do state that variations in voicing is common in languages among the Tibeto-Burman family. Breathy phonation is most apparent when preceded by a syllable beginning with a voiceless, sonorant consonant. Breathy phonation often carries onto the following syllable, especially if that syllable contains a low tone. The breathy voicing is not always overtly obvious without spectrogram analysis.

Figure 19 (below) displays a typical 31 tone with the mid-falling contour and breathy voicing visible as unclear, hazy formants above F1.

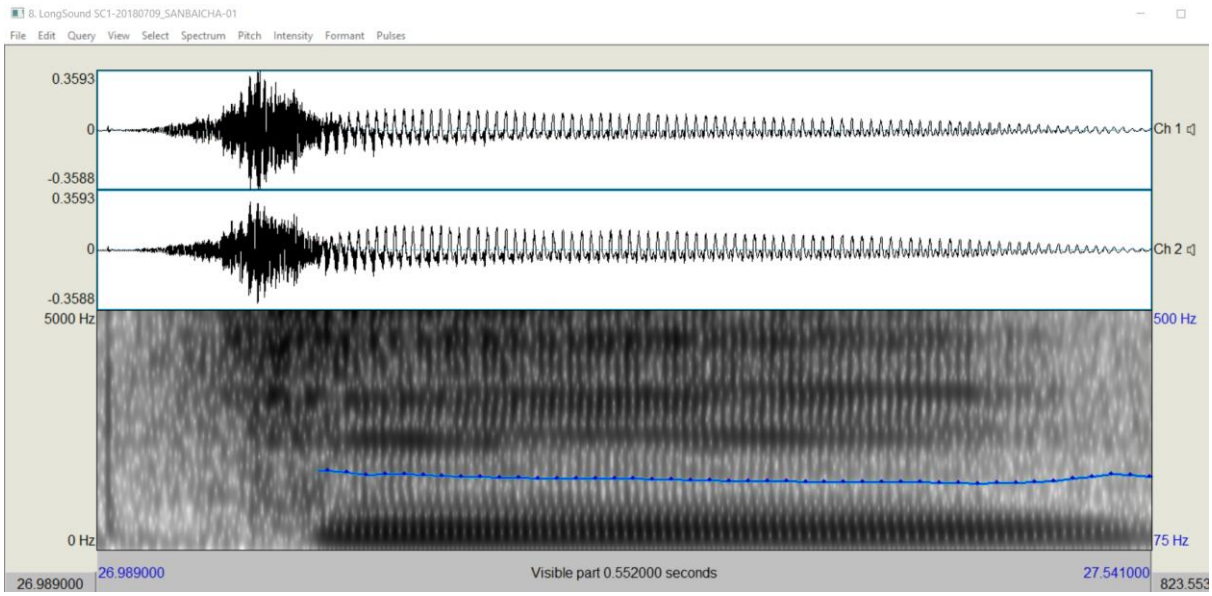


Figure 19 - Typical 31 tone
Source – utterance of tɕi^{31} by F2 (Sandaocha)

In utterances with multiple consecutive 31 tones, a tone sandhi occurs with the middle syllable being produced with modal phonation.

21 tone

This is a low-falling tone with creaky phonation, transcribed as 21 in the existing literature. The accompanying vowel is typically quite short in duration. Often anticipatory articulation occurs in speakers with creak appearing on the preceding syllable. This creak is particularly noticeable on sentence final utterances. It is visible on spectrogram images as distortion towards the end of the vowel, indicated by the red arrow in Figure 20 (below).

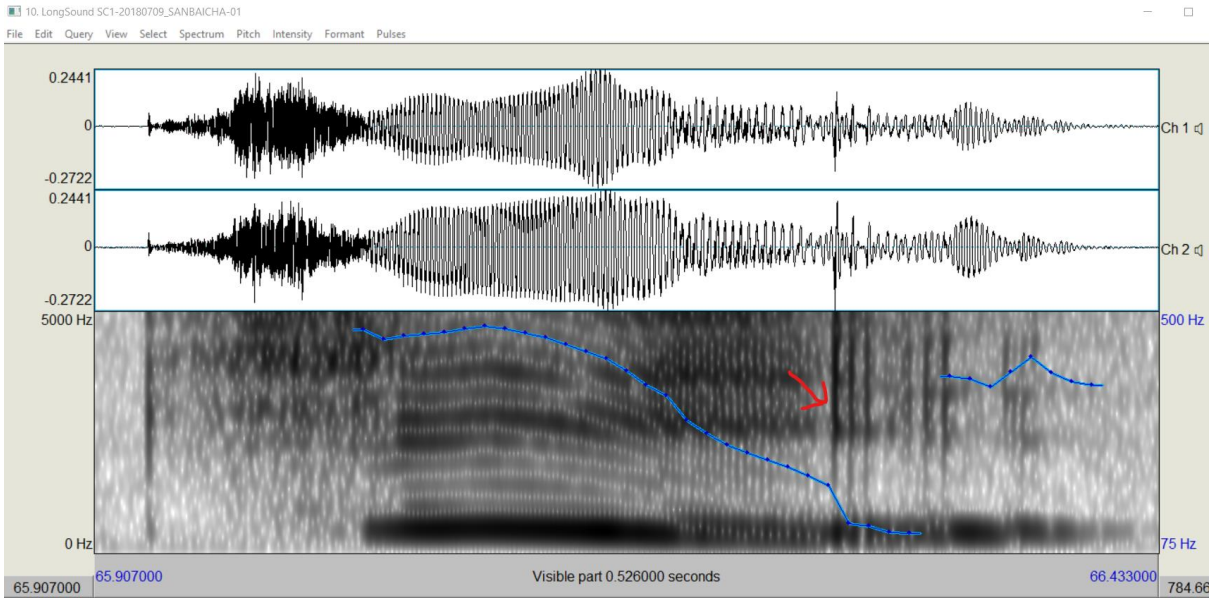


Figure 20 - Spectrogram of tɕi^{21} by F2
Source – San Dao Cha (1:10)

As the spectrogram in Figure 20 illustrates, the tonal contour descends from the low-mid range before jitter is evident as the sonorant information begins distorting and the vertical lines separate further apart.

A tone sandhi occurs when two ‘21’ tones occur concurrently where the second tone is raised and drops creaky phonation, becoming similar to a ‘44’ tone.

In their analysis of tone realisation in the Xizhou variety of Southern Bai, Allen, Su & Zhao (2002) dispute the presence of the 32 tone, claiming that it there is no audibly perceivable difference between the 32 and 31 tones. However, this study argues that 32 does indeed exist

as the modal form of the mid-falling tone. More importantly, speakers recognise a lexical difference between the three mid-falling tones. Table 24 (below) presents minimal triplets to illustrate the lexical contrast present in the three mid-falling tones.

32 tone	**31 tone**	**21 tone**
ke^{32} 'bowl'	*ke*^{31} 'to change; alter'	*ke*^{21} 'to climb'
we^{32} 'to raise'	*we*^{31} 'CLF'	*we*^{21} 'to play'
ta^{32} 'to vomit'	*ta*^{31} 'to steal'	*ta*^{21} 'peach'
puɹ^{32} 'to smear'	*puɹ*^{31} 'NEG'	*puɹ*^{21} 'to float'
tuɹ^{32} 'to wear'	*tuɹ*^{31} 'pod'	*tuɹ*^{21} 'head; CLF for animals'
tsuɹ^{32} 'to sew'	*tsuɹ*^{31} 'tree'	*tsuɹ*^{21} 'neat'
tsɔ^{32} 'stove'	*tsɔ*^{31} 'claw'	*tsɔ*^{21} 'tea'

Table 24 - Minimal triplets illustrating mid-falling contrast

The tone numbers in this set of tones appear to be illustrative only and are not intended to indicate the modal contour. I would argue that the real distinction between mid-falling tones is in the phonation rather than the tonal contour.

42 tone

This is a high-falling tone, starting at a high point of the speaker's register and falling to the low-middle range, occasionally accompanied with creaky phonation towards the tail of the vowel. The large fall in modal tone and the accompanying creaky phonation make this one of the easier tones to perceive.

Allen (2002) found that among Xizhou speakers, the initial pitch of this tone was very high, with an average pitch beginning at 400Hz (for female speakers), describing the initial pitch of this tone as 8 on Chao's five-point scale. Initial elicitations focusing purely on pitch during fieldwork replicated this data with consultant F2 pitching this tone at 420 Hz. This has been described in the existing literature as being 42 on Chao's scale. However, in natural speech, this tone typically had an initial pitch slightly higher than the 55-modal tone followed by a sharp drop.

Unlike tone 21, creaky voicing is not consistent and only apparent on approximately 1/3 of the utterances sampled. Coupe (2014) offers an explanation to this inconsistency. While documenting the Tibeto-Burman language, Khiamniungan, in eastern Nagaland and parts of Myanmar, he perceived a tonal dip on the 35 tone that was visible on a Praat spectrograph but not perceptible to native speakers of other tonal languages, such as Mandarin and Cantonese who were asked to describe the contour of the tone. He suggested this dip is the result of diminished airflow at the tail of the syllable. It is likely that the creak evident in this tone is not intentional but the result of similarly diminished airflow in producing this tone. Indeed, creak is more prominent in longer vowels and those with higher F^1 pitch.

Figure 21 (below) shows a spectrogram image of a 42 tone on the syllable /p^hi^{42}/.

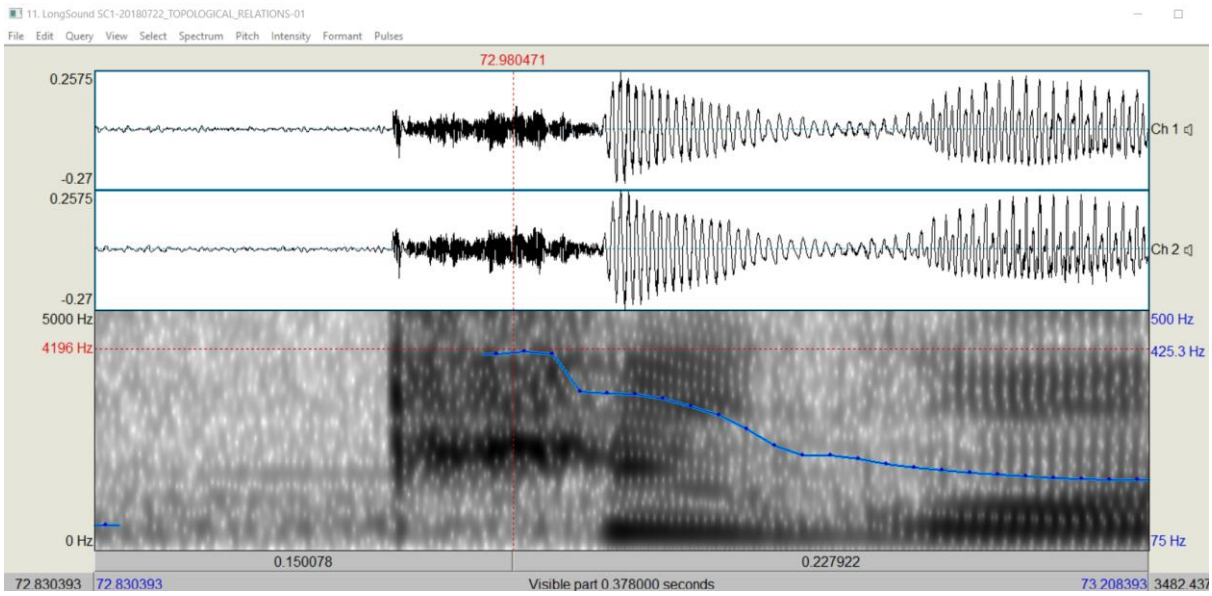


Figure 21 - Spectrogram of 42 tone on p^hi^{42}.
Source: Topological relations – 1:13

35 tone

This is the only rising tone. Typically, it is a mid-rising tone, beginning at the middle of the speaker's range. This is a purely modal tone, with typical rise around 25Hz. The duration of the vowel on this tone is among the longest, averaging 0.12ms. This tone is the most flexible

regarding how it is pitched and often produced as only a rising tone contour. This is particularly true in environments where a syllable with 35 tone is uttered between two syllables with low tones. Figure 22 (below) shows a spectrogram image of a 35 tone.

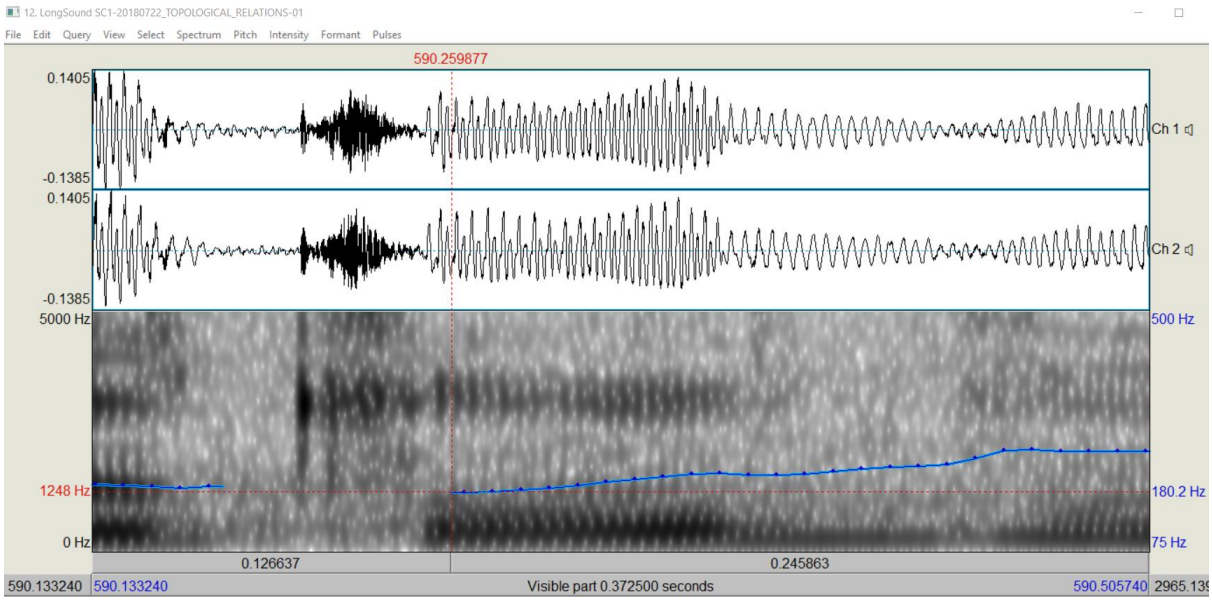


Figure 22 - Spectrogram of 35 tone on tsuo[35]
Source: Topological relations – 9:50

Average tonal specifications

Table 25 (below) outlines the average pitch and vowel length of the tones among syllable finals. The data is taken from narrative texts produced by F1, F2, and F4. Pitch contours and vowel length were calculated and tabulated via spectrogram data produced in Praat where a mean result was then calculated. The pitch information, measured in Hertz (Hz), refers to the pitch at the commencement and end of the rhyme. Duration, refers to the length of the vowel, measured in milliseconds (ms).

Tone	Pitch 1 (Hz)	Pitch 2 (Hz)	Duration (ms)	Phonation
55	270		0.07	modal
44	215		0.09	tense
42	293	253	0.07	modal/creak
35	185	209	0.12	modal
33	188		0.11	modal
31	212	190	0.09	breathy
32	210	188	0.09	modal

Table 25 - Average tone frequencies and vowel duration[16]

4.3.2. Other suprasegmental features

In addition to lexical tone, fieldwork also uncovered what I will refer to as question/surprise intonation. Southern Bai speakers often employ a sentence final modal /a/ with a high-rising tone to express surprise, uncertainty or incredulity. This tone begins and ends much higher than the 35 tone so should not be classed as such. For the purpose of distinction, I will label this as '46' tone. Additionally, the sentence or phrase preceding will have a subtle rising intonation. An example of this can be seen below.

(11) *kʰua* ^{33} *tɯ* ^{21} (A) dog
dog CLF

(12) *kʰua* ^{33} *tɯ* ^{21} *a*^{46} Is that a dog? / Why is there a dog here?[17]
dog CLF MOD
Source: Topological Relations-01; 27:38 – 28:05

Additionally, vowel length can play a pragmatic role. Typically, the vowel length on a high-flat 55 tone is quite short, averaging 0.07 ms. However, much longer examples can be found among the data. A consultation with participant F4 revealed that increasing the vowel length in this manner is used for emphasis. A recalled conversation between F4 and her son reveals this function.

[16] Pitch data for the 21 tone was unable to be obtained as the creaky phonation rendered PRAAT unable to create tone contours.

[17] Interpretation is context dependant.

(13) F4 (to husband):

ŋɯ^{55}	*ti*^{33},	qǐng	lái	bāng	wǒ	gè	máng [18]
1GEN	father	please	come	help	1SG	CLF	help

'My dad, please come and give me a hand'

Son:

bú	shì	*nɯ*^{55}	*ti*^{33},	shì	*ŋɯ*$^{:55}$	*ti*^{33}
not	be	2GEN	father	is	1GEN	father

(He) is not your dad, he's *MY* dad

Source: Personal conversation with F4

While the term '*ŋɯ*^{55} *ti*^{33}*'* 'my dad' or '*ŋɯ*^{55} *mɔ*^{33}*'* 'my mum' are pet terms often used by couples with children to each other, the son is unaware of this at the time. By increasing the vowel length on *ŋɯ*^{55}, the child is emphasising that the subject of the utterance in fact is his father, not F4's.

This concludes the discussion of the suprasegmental features of Southern Bai. The following, and final, section will introduce and discuss the construction of the syllable in Southern Bai.

4.4. The Southern Bai Syllable

This section will describe the construction of the syllable in Southern Bai. On a basic level, Southern Bai contains a (C)V + Tone syllable structure. Each syllable *must* include a vowel which can stand alone as a syllable and carries the suprasegmental information. The Southern Bai syllable is open with no final consonants. As a result, many Bai speakers drop nasal finals when speaking MSM.

Initials are optional in Southern Bai and only consonants able to behave as an initial. I have chosen to use the terms 'initial' and 'rhyme' in this text rather than 'onset' and 'nucleus' as this is the terminology often used to describe CV syllables in East and Southeast Asian

[18] Apart from the term '*ŋɯ*^{55} *ti*^{33}*'* the rest of the conversation is in Mandarin as the referent (father) does not speak Bai. Therefore, Hanyu pinyin has been used which is not italicised in order to distinguish it from the Bai words.

languages and is still often in use among phonetic descriptions of these languages (for example, see Goddard (2005) and Edmondson, Esling and Lama (2017)).

Only one consonant can occupy the initial position at a time as there are no consonant clusters. Consonants are only able to employ the initial position of the syllable with no final consonant. However, the data collected includes a small number of alveolar nasal /n/ finals among Mandarin Chinese loan words. I believe this is a function of involuntary code switching whereby the speaker is uttering a version closer to the Mandarin version of the word, rather than Bai.

The rhyme of the Southern Bai syllable is always a vowel which bears the suprasegmental information. A simple rule for the structure of the Southern Bai syllable would be — (C) V $(V)^{T}$. The minimal syllable is a stand-alone vowel. A basic rundown of the syllable is demonstrated in example (14).

(14) V *a*^{31} 'one', *e˞*^{33} 'below'
CV *pa*^{21} 'bowl', *pɔ*^{31} '1SG' *sɯ*^{33} 'hand'
CVV *pia*^{44} 'eight', *pia*^{35} 'whip'

All vowels except /i/ can function as a syllable on their own. However, rhymes are restricted with vowels unable to co-occur with all tones freely. The vowels /o/ and /y/ can only occur with tone 44. The vowels most commonly occurring alone are the rhotic /e˞/ with tones 44, 33, 35, 42, 31 and the fricative vowel /v/ that appears with 44, 33, 35, 21, and 31. Other combinations of lone vowels include /a/ which occurs with tones 55, 44, 33, and 31. The back-unrounded /ɯ/ co-occurs with tones 55, 44, and 33. The front vowel /e/ co-occurs with tones 44, 21, and 42, while /u/ can co-occur only with tones 44 and 35.

Tone 32 does not appear with any stand-alone vowels.

Only two diphthongs were found to act as syllables on their own, /ou/ and /ao/. These are also limited as to the tonal combinations with which they can co-occur. /ou/ can occur alone with tones 44, 33, 31, and 42. The diphthong /ao/ can only occur with tones 44, 21, and 32.

The remainder of this section will focus on the distribution of consonant and vowel combinations on each of the tones.

Figure 23 (below) illustrates the initial and rhyme distribution found in combination with the 55 tone. Greyed out sections indicate combinations that cannot co-occur, such /v/ + /ɣ̩/ or /k/ + /ɨ/. Those marked with '+' indicate that this particular combination was found to exist in the data. Those without marking were not found to occur in the data. However, this does not necessarily mean that the combination does not exist. Just that that combination was not found. What the following figures indicate are the likelihood of a combination occurring. For example, in Figure 23 below, one can see that velar and alveolo-palatal nasals are likely to be found in a rhyme with +[55 tone] and +[high vowel] and not common among other distributions. Similarly, fricatives are not commonly found in a rhyme with +[55 tone] and +[back vowel].

	a	ɯ	i	ɨ	e	ɛ	o	u	y	v	ia	iɯ	ie	iɛ	io	iao	iou	ei	ou	ua	ui	ue	uɛ	uo
ø	+	+																						
p		+	+				+	+			+		+											
pʰ		+			+	+	+	+						+	+									
t		+	+		+		+	+		+								+		+	+			
tʰ	+	+	+		+		+	+		+									+					
k	+	+				+		+												+		+		+
kʰ		+			+		+			+										+	+	+	+	+
m		+	+			+	+	+																
n		+	+					+					+			+			+					
ɳ	+	+									+													
ŋ																								
f		+								+														
v	+																							
s	+			+			+	+		+									+	+			
z																								
ɕ	+		+						+		+		+						+			+		
x	+	+			+	+	+	+											+	+				
ɣ																								
ts	+			+	+					+									+		+			
tsʰ	+				+	+	+		+					+					+			+		
tɕ			+		+	+	+		+		+		+						+			+		
tɕʰ			+																+			+		
w	+				+																			
j		+	+																					
l		+	+				+																	
+	indicates combination exists																							
	Combination not possible																							
	Hanloan																							

Figure 23 - Initial and rhyme distribution over 55 tone

The 55 tone tends to co-occur with mid to high and back monophthongs and diphthongs beginning with /u/ and /ɔ/. Among consonants there is a tendency to occur with consonants that are plosive and affricate. Nasals feature little among syllables with 55 tone.

The 44 tone has a strong distribution among syllables where the rhyme is an unrounded vowel and where the rhyme consists of the diphthong /ou/. This distribution is not so strong where the rhyme consists of a rounded vowel or a diphthong starting with /i/. The distribution of initial and rhyme combinations with the 44 tone is demonstrated below in Figure 24.

	a	ɯ	i	ɨ	e	ɘ	ɔ	u	y	ʏ	ia	ie	ie	iɛ	iao	iou	ei	ou	ua	ui	ue	uɛ	uo
ø	+	+			+	+			+														
p	+	+	+		+	+	+							+									
p^h	+					+					+							+					
t	+	+			+	+				+			+		+	+		+			+		
t^h	+	+			+	+				+								+			+		
k	+	+	+		+	+	+	+		+								+	+				
k^h	+	+			+	+	+			+								+	+				
m	+	+	+				+	+			+												
n	+	+	+		+		+			+						+		+					
ɳ	+	+	+		+													+					
ŋ	+						+			+								+					
f	+	+			+	+				+								+					
v																							
s	+	+		+	+	+		+										+	+		+		
z		+																+					
ɕ	+	+	+				+				+	+	+										
x		+			+		+											+	+		+		
ɣ																							
ts	+	+		+	+	+		+		+								+	+	+	+		+
ts^h		+		+	+	+				+								+	+			+	
tɕ	+	+	+		+	+			+		+			+		+					+		
$tɕ^h$	+		+								+	+											
w	+	+			+		+	+															
j	+	+	+						+									+			+		
l	+	+	+		+		+			+	+					+					+		
+ -	indicates combination exists																						
	combination not possible																						

Figure 24 - Distribution of initial and rhyme combination with 44 tone

The 33 tone co-occurs with initials that are constructed of a fricative consonant more frequently than the previous two tones and has a strong distribution among plosives. Consistent with the distribution of this tone among fricatives, it has a strong distribution among rhymes derived from the fricative vowel /v/. It has quite a low distribution among rhymes that consist of diphthongs with the strongest concentration being among diphthongs that begin with /ɔ/ or /u/. The distribution of initial and rhyme combinations with the 33 can be seen below in Figure 25.

	a	ɯ	i	ɨ	e	ɛ̝	ɔ	u	y	ʏ	ia	ie	ie̝	io	iao	iou	ou	ua	ui	ue	ue̝	uo
ø	+				+	+				+												
p	+	+	+			+							+	+	+							
pʰ		+	+			+	+															
t	+	+	+			+	+	+		+	+	+								+		+
tʰ								+														
k	+	+				+	+	+									+				+	
kʰ			+				+	+		+								+				+
m	+	+	+		+	+	+	+														
n	+						+			+	+									+		
ɳ										+												
ŋ						+				+												
f		+			+					+												
v								+														
s	+	+		+			+	+		+			+				+					
z																						
ɕ			+						+							+						
x	+	+	+				+		+											+		+
ɣ		+								+												
ts				+	+		+	+		+							+	+				
tsʰ				+	+	+		+														
tɕ			+			+						+										
tɕʰ					+	+																
w					+																	
j	+		+		+		+										+					
l					+		+				+											
+	indicates combination exists																					
	combination not possible																					

Figure 25 - Initial and rhyme combinations with 33 tone

As mentioned previously, the 35 tone is the only rising tone in Southern Bai. It displays a strong tendency to occur with initials that consist of voiceless rather than aspirated plosives. There is a low distribution among initials with labial fricatives, but a stronger distribution among other fricatives. There is a low distribution among initials formed from nasals. Among rhymes, there is a stronger distribution with rounded vowels than the flat tones. With rhymes derived from diphthongs, there exhibits a preference for initials formed from plosives and affricates. The distribution of initials and rhymes with the 35 tone is demonstrated below in Figure 26.

	a	ɯ	i	ɨ	e	e̞	ɔ	u	y	ʋ	ia	ie	ie̞	iɔ	iao	iou	ei	ou	ua	ui	ue	ue̞	uo
ø					+		+	+		+												+	
p	+	+	+		+	+	+				+		+										
pʰ								+															
t	+					+	+	+		+											+		
tʰ			+		+			+				+											+
k		+			+	+	+	+		+								+	+		+	+	
kʰ						+																	
m	+	+			+	+		+				+	+	+									
n	+				+			+			+												
ɳ																							
ŋ	+									+													
f	+				+			+		+													
v																							
s				+	+	+	+	+		+								+	+				+
z		+		+				+															
ɕ	+	+	+		+	+	+				+	+		+	+	+							
x	+		+		+		+	+	+									+	+				+
ɣ		+																					
ts	+			+		+	+	+		+								+	+		+		+
tsʰ				+		+		+															
tɕ	+	+	+			+			+		+	+	+			+		+					
tɕʰ						+							+										
w																							
j		+	+		+													+					
l	+		+				+	+															+
+	combination exists																						
	combination not possible																						

Figure 26 - Initial and rhyme combinations with 35 tone

The 21 tone co-occurs predominately with non-aspirated obstruents and affricates and approximants. This tendency is logical due to the extra pulmonary exertion needed to produce the creak, which would be difficult to produce in combination with aspiration and lower levels of voicing. Likewise, this tone co-occurs with very few fricatives. Those it does co-occur with are voiced. This tone does not co-occur with many diphthongs, tending to co-occur with monophthongs. Those diphthongs it does co-occur with, tend to also have the preferred initial. As a general rule, tone 21 prefers to co-occur with a syllable where the consonant is a –[aspirated] obstruent or +[voiced] fricative and a rhyme that is a monophthong. Figure 27 (below) illustrates the distribution of the 21 tone.

	a	ɯ	i	ɨ	e	ɐ	ɔ	u	y	ʏ	ia	ie	iɛ	iɐ	iɔ	iao	iɔu	ei	ɔu	ua	ui	ue	uɐ	uo
ø					+		+		+	+														
p	+	+	+		+	+	+							+										
pʰ																								
t	+	+	+			+	+			+		+							+					
tʰ																								
k					+	+	+	+		+									+				+	+
kʰ		+																						
m	+	+	+		+	+	+																	
n	+		+		+	+	+	+		+	+											+		
ɳ		+	+		+							+												
ŋ	+	+			+	+	+			+														
f																								
v																								
s																								
z		+					+																	
ɕ																						+		
x					+																			
ɣ		+					+																	
ts	+	+		+	+	+	+			+									+			+		
tsʰ										+														
tɕ			+		+	+							+	+	+									
tɕʰ																								
w								+																
j	+		+			+	+	+											+					
l	+				+		+	+																
+	indicates combination exists																							
	combination not possible																							

Figure 27 - Initial and rhyme combinations with 21 tone

The 31 tone co-occurs with most fricatives and affricates. Among obstruents displays a tendency to co-occur with non-aspirated forms and poor distribution among nasals, except the bilabial /m/. While it co-occurs with some approximants, the distribution is weak. There is a tendency to co-occur with back vowels with a strong distribution with /ɔ/ and diphthongs beginning with /ɔ/. Figure 28 (below) demonstrates how the 31 is distributed among initial and rhyme combinations.

	a	ɯ	i	ɨ	e	e̞	ɔ	u	y	v	ia	iɯ	ie	ie̞	io	iao	iou	ei	ou	ua	ui	ue	ue̞	uo
ø	+					+		+	+	+									+					
p	+	+			+	+	+						+			+								
pʰ			+		+								+		+									
t	+	+			+		+	+		+									+					+
tʰ	+	+								+										+		+		
k	+	+				+	+	+		+												+		+
kʰ						+				+									+					
m	+	+	+					+						+										
n		+			+		+						+				+							
ɳ																								
ŋ		+					+																	
f					+					+														
v		+																						
s		+		+	+	+	+												+					
z	+			+			+	+		+														
ɕ			+												+									
	+	+			+		+															+		+
ɣ																			+					
ts	+	+		+	+	+	+			+									+					
tsʰ	+	+		+		+		+		+									+	+				
tɕ	+	+	+		+	+							+	+	+				+					
tɕʰ	+		+				+		+				+						+					
w	+				+		+																	
j		+	+					+											+					
l		+	+				+												+					
+	indicates combination exists																							
	combination not possible																							

Figure 28 - Initial and rhyme combinations with 31 tone

The 32 tone has a very narrow distribution tending to co-occur with front nasals, voiced fricatives. Among vowels, there is a tendency to co-occur with high vowels and their associated diphthongs. There is a strong tendency to co-occur with approximant + /e/ or /e̞/ combinations. Figure 29 illustrates the distribution of tone 32 among initials and rhymes.

	a	ɯ	i	ɨ	e	e̞	o	u	y	v	ao	ia	iɯ	ie	ie̞	io	iao	iou	ei	ou	ua	ui	ue	ue̞	uo
ø	+																								
p	+	+	+		+	+																			
pʰ																									
t	+	+					+				+				+						+	+	+		+
tʰ										+															
k	+	+			+	+	+			+										+	+		+		+
kʰ					+																				
m		+	+			+					+		+		+	+		+		+	+				
n	+						+			+	+					+	+			+					
ɳ		+																							
ŋ						+				+															
f										+															
v																									
s	+	+			+		+			+										+			+		
z																									
ɕ			+			+							+												
ʑ																									
ɣ		+																							
ts					+	+				+										+			+		
tsʰ																									
tɕ		+	+		+													+		+					
tɕʰ																									
w	+					+																			
j					+	+	+													+					
l	+						+				+		+												
+	indicates combination exists																								
	combination not possible																								

Figure 29 - Initial and rhyme combinations with 32 tone

Tone 42 displays a tendency to co-occur with consonants that are fricatives, affricates, and approximants, particularly in combination with /a/. There is also a strong tendency to co-occur with combinations of monophthongs with the bilabial nasal /m/. Another tendency is to co-occur with syllables with /ou/ as a rhyme, which is interesting as there is almost no co-occurrence with the associated monophthong /ɔ/. Among obstruents, there is a tendency to co-occur with those that are non-aspirated and with a rhyme consisting of /e/ or /e̞/. Figure 30 illustrates the distribution of the 42 tone in Southern Bai.

	a	ɯ	i	ɨ	e	ɛ̝	ɔ	u	y	v	ao	ia	iɯ	ie	iɛ̝	io	iao	iou	ei	ou	ua	ui	ue	ue˧	uo
ø		+			+	+																			
p	+				+	+						+			+					+					
pʰ			+																						
t					+	+				+					+			+		+	+				
tʰ								+					+												
k						+														+	+				
kʰ						+																			
m	+	+	+		+	+																			
n	+					+					+		+	+											
ɳ		+																							
ŋ																									
f	+									+															
v					+	+																			
s	+				+																				
z	+	+								+															
ɕ															+					+					
ʐ	+						+	+																	
ɣ		+																							
ts	+	+		+	+						+									+			+		
tsʰ	+			+	+					+										+			+		
tɕ	+					+							+	+						+					
tɕʰ																		+			+				
w	+																								
j	+	+	+					+	+		+									+	+		+		
l	+						+											+							
+	indicates combination exists																								
	combination not possible																								

Figure 30 - Initial and rhyme combinations with 42 tone

Overall tonal combinations exhibit a much wider distribution among the flat tones, in particular the high-flat tones, 55 and 44. Distribution among mid-falling tones exhibits a tendency to co-occur with initials consisting of non-aspirated obstruents and voiced fricatives. The more complicated the tonal contour is, the lower the distribution and the less likely it is to co-occur with a diphthong.

4.5. Summary

This chapter has introduced and described the phonological system of Southern Bai. Overall, the findings in this project correlate strongly with much of the existing work on other dialects and topolects. There are 24 consonants over six places of articulation. The vowel system includes ten vowels, occurring mostly in high places of articulation, including a fricative vowel /v/ and a rounding distinction only on high front and back vowels.

In addition to the consonant and vowel system, Southern Bai contains a complex suprasegmental system of eight tones that cover five modal contours, a tense/lax vowel distinction, and breathy and creaky phonation.

Southern Bai is basically monosyllabic with a (C)V syllable structure. Each syllable requires a vowel and an optional initial consonant. Suprasegmental information is carried on the final rhyme. There are no final consonants or consonant clusters in Southern Bai.

The following chapter will discuss morphology and word formation in Southern Bai.

Chapter 5 - Morphology and Word Formation

The previous chapter outlined the smallest linguistic unit, the phoneme and explored the formation of the syllable. This chapter will examine the next unit, the morpheme, and how morphological and word formation processes are found in the generation of nouns, pronouns, classifiers, verbs, adjectives, and adverbs. Among the discussion will be the formation of new words through compounding, affixation, reduplication, and contraction.

5.1. Inflectional morphology

While mostly isolating, Southern Bai is a mixed language with a limited inflectional morphology system. This includes inflection on personal pronouns (section 5.1.1), phonetic alternations in the creation of new words, also referred to as word families (section 5.1.2), and a shift in the syllabic rhyme to differentiate between a limited set of static and dynamic verbs (section 5.1.2.2). The following sections will present and discuss these systems.

5.1.1. Personal pronoun inflection

As found in Central Bai (Wiersma, 2007; A. Wu, 2009; L. Xu & Zhao, 1984, p. 16), personal pronouns in Southern Bai inflect for number and genitive case. This is achieved via a shift in the initial consonant for person and a shift in the syllabic rhyme for grammatical number and genitive case.

The base for each pronoun is *ŋ-*, *n-*, and *p-* for first, second, and third person respectively, and an inflection on the rhyme for plural and genitive case. The nominative single person inflection is $-ɔ^{31}$. The plural inflection is $-a^{55}$ while the genitive inflection is $-ɯ^{55}$. Table 26 (below) outlines the Southern Bai personal pronoun system.

Number	Case	Person #			
		1st	2nd		3rd
Single		*ŋɔ*^{31}	*nɔ*^{31}	*ni*^{55} (polite)	*pɔ*^{31}
	Genitive	*ŋɯ*^{55}		*nɯ*^{55}	*pɯ*^{55}
Plural		*ŋa*^{55}		*na*^{55}	*pa*^{55}
		Inclusive *ŋ̩ia*^{55}			

Table 26 - Morphological inflection of the Southern Bai Pronoun

As mentioned previously in section 2.3.2.1, Fu (2013, pp. 216–217) has suggested that the genitive case derives from the Jianchuan locative marker *no*^{44} with a relationship derived from one object as being 'on' the locative entity. Conversely, Wu (2009) argued that genitive inflection in Bai likely evolved as a contraction of the Bai pronoun stem and some form of plural suffix similar to Loloish *-la*. Given that many other pronominal forms in Bai, such as [demonstrative] + [classifier] are subject to contraction[19] this is most likely. The difference being that [demonstrative] + [classifier] has not become fully grammaticalised yet, whereby the inflection on personal pronouns has.

5.1.2. Word families

Word families consist of groups of words with phonological alternations of either initials, rhymes, or tones to form new words with a related etymological background. While not appearing too common a feature in the language, these alternations offer insights into the lexical development of Southern Bai.

[19] See section 5.6 for more detail.

5.1.2.1. Alternation of initials

Southern Bai exhibits some evidence that an alternation of an initial consonant has been employed in the creation of new semantically related words. Examples of initial alternations are presented below.

(15) a. *pɔ*^{35} ‘male’ *mɔ*^{33} ‘female’
b. *a*^{31} ‘each’ *xa*^{31} ‘which’
c. *ja*^{31} ‘several’ *ɕia*^{44} ‘some’
d. *xɯ*^{31} ‘in’ *ɣɯ*^{33} ‘behind’
e. *tɛ*^{h}*ie*^{55} ‘green’ *ts*^{h}*e*^{44} ‘red’
f. *ke*^{55} *ɳ̩i*^{44} ‘today’ *me*^{55} *ɳ̩i*^{44} ‘tomorrow’

5.1.2.2. Alternation of rhymes

Additionally, there is some evidence that the alternation on the rhyme of a syllable has been used in the creation of new words. The following examples demonstrate how alternations in syllabic rhymes have formed varied verbal classifiers.

(16) a. *pɔ*^{21} ‘side; time/fold’
b. *pi*^{32} ‘times’
c. *pɯ*^{35} ‘a while’

The data suggests that verbal classifiers derived from the locative suffix *pɔ*^{21} ‘side’, then other verbal classifiers derived from *pɔ*^{21} through rhyme alternation.

Another examples of rhyme alternation to form new, semantically related words can be found below.

(17) a. *pi*^{35} ‘salty’ *pie*^{42} ‘bland’
b. *pou*^{33} ‘bosom’ *pɔ*^{35} ‘to embrace’
c. *ts*^{h}*a*^{55} ‘sing’ *ts*^{h}*e*^{55} ‘sound’
d. *xu*^{33} ‘good’ *xe*^{44} ‘bad; trouble’

This study also found evidence that the verb ‘to open’ exhibits a vowel alternation to express the difference between dynamic and static states. This process was also described in Duan (2002, p. 30), who found this function on the verbs ‘to open’ and ‘to roll’.

The form *kʰuu*^{55} expresses a static state akin to ‘is open’. Alternatively, the form *kʰe*^{55} is the dynamic form of ‘open’ expressing an agentive event. Example (18) demonstrates the static form, while example (19) illustrates the dynamic form.

(18) *me*^{21} *kʰuu*^{55}
door open
‘The door is open’

(19) *pe*^{44} *kʰe*^{55}
pry open
‘To pry open’

The dynamic form may also be extended to non-human actors, as in the example below.

(20) *kʰe*^{55} *xuo*^{35}
open flower
‘To bloom’

The function of shifts in a rhyme to indicate changes on a verb is not unique to Southern Bai. Small morphological shifts are indeed found among several Tibeto-Burman languages to perform a number of functions on the verb, most of which are restricted to a limited set. Khaling (Jacques et al., 2012, pp. 1105–1110) employs a change in the rhyme of a syllable to express a shift in transitivity. Lim (2003, p. 254) describes a set of verbs in Zhuokeji rGyalrong whereby a shift in the vowel of the verb stem creates a past/non-past contrast. Additionally, a shift on the aspectual morphology can create a distinction between states and events. Morey (2018) reports an alteration on the verbal stem in Pangwa Tangsa that distinguishes between verbal and nominal forms. Tribur (2019) describes an alternation on the verbal stem in Amdo Tibetan that performs aspect marking. As verbal stem alterations to perform morphological derivation on verbs seems common among Tibeto-Burman languages, whether this phenomenon of vowel alternation applies to other verbs in Southern Bai is an area worthy of future exploration.

5.1.2.3. Alternation of tone

Tonal alternation has also been used to create new semantically related words. However, it appears at this stage that these patterns are not regular. Some examples of tone alternation in Southern Bai are presented below.

(21) a. *tɕi*^{55} 'several' *tɕi*^{35} 'many'
b. *ji*^{35} 'knife' *ji*^{31} 'sharp'
c. *ŋa*^{21} 'sweat' *ŋa*^{35} 'to moisten'
d. *mɔ*^{44} 'to rub' *mɔ*^{21} 'to hone (a knife)'
e. *tɕia*^{44} 'link; join' *tɕia*^{35} 'peg; clip'

There is also some evidence of alternations in tone to express differences in word class.

(22) a. *tsʰu*^{55} 'to smell' *tsʰu*^{31} 'smelly'
b. *kv*^{35} 'to pickle' *kv*^{55} *tsʰu*^{31} 'pickles'

While example (22) is not a definitive list, it is an interesting finding. Whether there is further evidence of alternations in phonation to shift word class is an area for further investigation.

5.2. Derivation

The following sections will outline how new words are derived from existing lexical items. While lexical derivation is quite limited, it does play an important role in word formation in Southern Bai. This section will begin will an exploration on how classifiers are derived.

5.2.1. Classifier derivation

Southern Bai is a language that employs classifiers as an integral part of the noun phrase. This section will discuss how many classifiers are derived. Discussion on the function and form of classifiers in the Southern Bai noun phrase, including the position of number and quantifiers, is presented in section 6.3.

Many of the classifiers in Southern Bai are derived from nouns. These typically derive from a disyllabic noun where one of the syllables is grammaticalised to act as a classifier on subordinate level nouns. An example is the general classifier for animals, *tɯ*^{21} which is derived from the Southern Bai word *tɯ*^{21} *pɔ*^{31} 'head'. Other examples include '*kua*^{42}*'*, derived from '*kua*^{42} *kua*^{44}' 'stick' which is used as a classifier for long, thin objects.

Table 27 (below) shows some examples of Classifiers derived from other Nouns.

CLF	**CLF for**	**Original form**	**Lexical meaning**
ku^{21}	glass things	*ku*^{21} *ke*^{21}	bottle
tɯ^{21}	animals	*tɯ*^{21} *pɔ*^{31}	head
xao^{31}	some buildings	*xao*^{31} *tv*^{35}	house
kua^{42}	long, thin objects	*kua*^{42} *kua*^{44}	stick

Table 27 - Classifiers derived from nouns

There is also evidence of what Wáng (2002) referred to as 'echoed' classifiers in Southern Bai. These are classifiers that are derived from reduplication of one of the syllables of a disyllabic noun. This is evident from the classifier for person presented in example (23).

(23) *ŋ̍i*^{21} *ke*^{35} *ŋ̍i*^{21}
person CLF
'a person'

This is an example of an echoed classifier where the classifier for a noun is derived from the head noun. In this case, the classifier for people, *ŋ̍i*^{21} is derived from the Bai noun for 'people', forming a generic classifier for people. The order of this construction contradicts Wáng (2002) who argued that echoed classifiers are formed from the second syllable of a disyllabic noun while the example above is clearly being derived from the first syllable.

There are also some classifiers derived from repeating the noun, as seen in the classifier for tree, as discussed in Zhao (2005).

(24) *tsɯ*^{31} *tsɯ*^{31}
tree CLF
'a tree'

Some classifiers exhibit endocentric derivation from body parts. The classifier for animals *tɯ*^{21} is a prime example of this derivation, where the word for 'head' has been extended via metonymy into a classifier for animals.

Other forms of metonymic derivation come from verbal classifiers derived from the instrument of an event. These classifiers express the number of times the event occurs. One such instrumental verbal classifier is *tɕy*^{33}, which is a verbal classifier for biting and eating actions, derived from the word for 'mouth'. This function is demonstrated in the following examples.

(25) *ŋa*^{44} *a*^{31} *tɕy*^{33}
bite one mouth
'Takes a bite'

(26) *tsei*^{44} *jɯ*^{44} *tɯ*^{44} *a*^{33} *tɕy*^{33}
again eat DUR one mouth
'S/he takes another bite'
Source: F5 Staged events (30)

Southern Bai also contains other verbal classifiers derived from body parts. These include *tsʰui*^{55} 'fist and *kou*^{44} 'foot'. The function of these lexemes as classifiers expressing the number of times an event takes place is illustrated below.

(27) *teˇ*^{44} *pɔ*^{31} *sa*^{55} *tsʰui*^{55}
hit 3SG three fist
'Hit him/her three times'

(28) *tɕʰieˇ*^{44} *tɕʰiou*^{42} *sa*^{55} *kou*^{44}
kick ball three foot
'Kick the ball three times'

The derivation of instrumental verbal classifiers is not limited to body parts. Other verbal classifiers derived from instruments can be found in the forms of *ta*^{35} 'knife' and *kua*^{42} 'stick. Their function as verbal classifiers is demonstrated below.

(29) *tuo*^{33} *sa*^{55} *ta*^{35}
chop three knife
'Chop (it) three times'

(30) *te˅^{44}* *sa^{55}* *kua^{42}*
hit three stick
'Hit (it) three times (with a stick)'

Other verbal classifiers that express the number of times an event occurred are derived from words for side, namely *p^{h}ie˅^{55}* 'CLF for walls' and *pɔ^{21}* 'suffix for side'. This use is demonstrated in the following examples.

(31) *pou^{44}* *sɯ^{33}* *p^{h}ie˅^{55}*
clap hand VbCLF
'To clap hands'

(32) *tsue^{44}* *tsɯ^{33}* *wa^{55}* *pɔ^{21}*
pinch EXIST few side; times
'Pinched a few times'
Source: F5 Staged events (3)

Some lexical verbs also exhibit the ability to behave as verbal classifiers in Southern Bai. The examples of verbs below have been determined as classifiers as they perform a similar function to those in (33) and (34) in that they refer to the number of times an action is performed. Some examples are presented below.

(33) *a^{31}* *pu^{31}* *a^{31}* *pu^{31}* *pe^{44}*
one step one step go
'Go one step at a time'
Source: (H. Chen & Yang, 2018)

(34) *a^{31}* *ts^{h}ua^{33}* *kou^{33}* *pɔ^{21}*
one chop two half
'Chopped in half with one chop'
Source: Herl sal (11)

5.2.2. Other forms of derivation

There is some evidence of nominal derivation from verbs, or vice-versa in the language. Examples found in the study are presented below.

(35) a. *sou^{44}* 'to wind' / 'cord; string'
b. *ts^{h}ua^{33}* 'to chop' / '(a) bunch'
c. *tsɨ^{33} tɯ^{21}* 'to rest one's head' / 'pillow'

The noun *pe*^{21} ‘skin’ appears to have extended to the verbal form ‘to skin’. This sense has then been extended further to mean ‘to peel’ or ‘to shuck’.

An example of metaphoric extension can be seen in the term *ɕi*^{35} ‘firewood’ whose meaning has been extended to mean ‘thin’.

In another form of derivation, the grammatical particles *nɔ*^{44} and *muɯ*^{55} can perform a word class changing function. Placing these particles after a noun phrase or state functions as an adverbialiser. The selection of which particle to use is based on prosodic factors, which will be covered in detail later in section 9.3. An example of this function as an adverbialiser is presented below.

(36) *tɕʰiou*^{55} *tɕʰiou*^{55} ***muɯ***^{55} *ka*^{44} *mie*^{33}
good good **ATTR** think
‘Think it over well’
Source: San dao cha (56)

When questioned as to whether Southern Bai contained other derivational word changing mechanisms, such as the verb forming suffix ‘-ise’, or the comparative forming suffix ‘-en’, consultants stated that they just use the Mandarin lexemes. For example, *xua*^{44} as a suffix forming a verb from a noun (from the Mandarin *-huà -*化) and *tɕia*^{44} for a comparative forming prefix (from the Mandarin *jiā-* 加-). Furthermore, the data collected only provided one example, *xa*^{42} *xua*^{44} ‘Sinicisation’ or ‘Han-isation’ (Lit: ‘Han-ise’). This is not to say that Southern Bai does not contain derivational affixes to change word classes. The lack of evidence for this is likely a combination of elicitation techniques that were not specifically looking for these elements, and consultants either not understanding my line of questioning, or not possessing the necessary meta knowledge of the language to extract these forms.

In Southern Bai, words that attribute a quality to an entity can be formed from a subcategory of verbs[20]. This is achieved by modifying the verb with an adjectival modifier like *tɕʰiou*^{55} 'good' to form an adjective-like word related to the action, akin to 'good to X' in English. Examples (37) to (39) demonstrate this function. Three examples were found amongst the data demonstrating the formation of adjectival compounds from verbs.

(37) *tʰu*^{33} *pie*^{35} *tɯ*^{44} *xuo*^{35}, *fe*^{33} ***a***$^{\boldsymbol{33}}$ ***tɕʰiou***$^{\boldsymbol{55}}$
road beside ATTR flower very **look** **good**
'The roadside flowers are very pretty' (lit: good to look at)
Source: The greatest gift (18)

(38) *nɯ*^{55} *nɔ*^{44} *gɔ*^{31} *tsɯ*^{33} *fe*^{33} ***tɕʰie˗***$^{\boldsymbol{55}}$ ***tɕʰiou***$^{\boldsymbol{55}}$
2GEN POSS song exist very **listen** **good**
'Your song is very beautiful' (lit: very good to hear)
Source: F5 Jackal & Crow (15)

(39) *tʰe*^{55} ***jɯ***$^{\boldsymbol{44}}$ ***tɕʰiou***$^{\boldsymbol{55}}$ *nao*^{32}
too **eat** **good** EMPH
'(it's) delicious' (lit: good to eat)
Source: NP & 'ga' elicitation (240)

A noticeable trait of the [verb] + [adjectival verb] constructions described above is that they violate the [modifier] + [modified] order with the modifier appearing after the compound head. Yet, when questioned, consultants interpreted these constructions as one word. This is an interesting morphosyntactic feature of Southern Bai that offers interesting insights into compounding typology (section 5.4).

The function of adjectival verbs modifying a left-headed verb only applies to a limited set of verbs, the above examples being the only ones found amongst the data. The right-sided modifiers are limited to the adjectival verb *tɕʰiou*^{55} 'good', the adverb *fe*^{35}, 'very'. It would be of further interest to explore if this modification can be performed with any other adjectival verbs, particularly ones with negative connotations to form antonyms of the examples above.

[20] See section 6.8.2 for detailed discussion on adjectival modifiers in Southern Bai.

This is different from the construction whereby a quality is attributed to the action. These constructions are missing the attributive *nɔ*^{44} which would form a construction akin to 'does X well.' Therefore, I believe this structure, rather than modifying the verb, is forming an adjectival compound from a verbal stem.

Further evidence that these compounds are behaving as adjectives comes from adverbial modification. When modifying an adjectival verb, adverbials appear directly before the adjective, as in examples (40) and (41).

(40) *fe*^{44} *ca*^{42} *kao*^{55} *ɕie*^{55}
very happy

(41) *tʰe*^{55} *kʰv*^{33}
too bitter

Note that the word order in the above examples, the adverbs *fe*^{33} and *tʰe*^{55} appear directly before adjectival modification[21]. Considering that adverbs appear directly before adjectival modifiers, we could expect an order akin to examples (42) to (44). However, these are deemed ungrammatical.

(42) **fe*^{33} *tɕʰiou*^{55} *ju*^{44}
very good eat

(43) **fe*^{33} *tɕʰiou*^{55} *tɕʰie*^{55}
very good hear

(44) **tʰe*^{55} *tɕʰiou*^{55} *ju*^{44}
too good eat

Note the contrast in word order between (39) and (44). This demonstrates the correct construction of such compounds as being [verb] + [adjectival]. To illustrate this closer, the two examples are reconstructed below.

[21] The class of words that would typically be declared 'adjectives' in Indo-European languages are mostly performed by stative verbs in Southern Bai. For a detailed discussion on adjectival elements, see section 6.5.

(45) *tʰe*^{55} ***jɯ***^{44} ***tɕʰiou***^{55} *nao*^{32}
too **eat** **good** EMPH
‘(it’s) delicious’ (lit: good to eat)
Source: NP & ‘ga’ elicitation (240)

(46) ***tʰe***^{55} *tɕʰiou*^{55} *jɯ*^{44}
too good eat

The word order of adverbial modification and lack of attributive marking suggests that compounds such as *jɯ*^{44} *tɕʰiou*^{55} ‘tasty’, *tɕʰie*^{55} *tɕʰiou*^{55} ‘pleasant’, and *a*^{33} *tɕʰiou*^{55} ‘attractive’ are behaving as adjectival compounds in these constructions with a verbal head. That modification occurs after the compound head suggests that *tɕʰiou*^{55} ‘good’ could be another example of a word changing morpheme.

5.3. Affixation

The following section will describe the form and function of prefixation and suffixation in Southern Bai. Southern Bai contains two forms of affixes, word-forming and grammatical. Word-forming affixes function to make new words out of existing ones (Packard, 2000, p. 70). These differ from derivational morphemes used in descriptions of Indo-European languages in that they may be free morphemes on their own. Such morphemes have been documented in MSM (Packard, 2000), Tai-Kadai languages (Y. Luo, 2020), and are a common feature among Sino-Tibetan languages (Matisoff, 1991). A common example in Southern Bai is *tɯ*^{21} ‘pre-’ which is derived from the lexeme for ‘head’. The use of *tɯ*^{21} as a temporal prefix will be discussed in more detail in section 5.3.1.3.

Grammatical affixes generally have no meaning of their own and their function is purely grammatical. An example from Southern Bai includes the human unspecified plural suffix, *xuo*^{33}.

5.3.1. Prefixation

The following section will examine the prefixes found in this study. These include kinship, ordinal numbers, and time reference.

5.3.1.1. Kinship

Personal names or kinship terms often take on the prefix a^{44} to depict closeness of the interlocutor to the speaker. For example, children often add a^{44} to the base forms $mɔ^{33}$ 'mother' and ti^{33} 'father' to form $a^{44}\ mɔ^{33}$ and $a^{44}\ ti^{33}$ respectively.

In her description of the kinship system of Bai, Aiqin Li (2015) notes that with a few exemptions, particularly for distant female relatives, most kinship terms are prefixed with a^{44}. This is especially the case with closer relatives.

Fieldwork also revealed that a^{44} prefixation is common when a parent, particularly mothers, are referring to their children. For example, a child with a given name of 'Bo' would be addressed as $a^{44}\ po^{44}$ in Southern Bai as a term of endearment.

Bjöverud (1998, p. 58) describes a similar system in Lalo, a language which is geographically very close to Dali. She states that a^{44} prefixation is common among Lalo nouns for kinship terms, plants, and animals. Similarly, *a*-prefixation is common in Cantonese, Min, and other nearby languages in the expression of kinship.

5.3.1.2. Ordinal numbers

The prefix te^{31} is used to form ordinal numbers from cardinal numbers. This is demonstrated in the following table.

Cardinal	**Ordinal** [*te*^{31} + cardinal][22]
a^{31}; *ji*^{35} ‘one’	*te*^{31} *ji*^{35} ‘first’
kou^{33} ‘two’	*te*^{31} *zi*^{31} ‘second’
sa^{55} ‘three’	*te*^{31} *sa*^{55} ‘third’
ɕi^{44} ‘four’	*te*^{31} *ɕi*^{44} ‘fourth’
ŋv^{33} ‘five’	*te*^{31} *ŋv*^{33} ‘fifth’

Table 28 - Ordinal number formation through te^{31} *prefixation*

5.3.1.3. Time reference

Another form of prefixation comes in the form of time prefixes. Several time prefixes were found in the language including *ke˧*^{55} ‘current’, *tɯ*^{21} ‘previous’, *ɣɯ*^{33} ‘following’.

The prefix *ke˧*^{55} can be placed before nouns of time to express the current point in time. The examples below demonstrate *ke˧*^{55} performing this function.

(47) *ke˧*^{55} *ɳi*^{44} ‘today’
ke˧^{55} *sua*^{44} ‘this year’
ke˧^{55} *pɯ*^{33} *ke˧*^{32} ‘tonight’
ke˧^{55} *tɕʰe˧*^{33} *kɯ*^{44} ‘this morning’

In addition to functioning as a classifier for animals, *tɯ*^{21} is a word changing affix that functions as a prefix meaning ‘before’ or ‘pre-’. It has been derived from the term for ‘head’. The use of *tɯ*^{21} as a word changing morpheme is illustrated below.

(48) a. *tɯ*^{21} *ɳi*^{44} ‘the day before’
pre- day
b. *tɯ*^{21} *sua*^{44} ‘last year’
pre- year
c. *tɯ*^{21} *ɳe*^{44} *tɯ*^{32} ‘pre-midday; late morning’
pre- midday
d. *tɯ*^{21} *mɯ*^{35} ‘previously’
pre- time

[22] The ordinal forms for ‘one’ and ‘two’ are irregular. Ordinal numbers are covered more detail in section 6.2.2.

Note that *tɯ*^{21} *ŋ̍i*^{44} ‘day before’ differs from *tsv*^{21}*se*^{33} *ŋ̍i*^{44} ‘yesterday’. *tɯ*^{21} *ŋ̍i*^{44} refers to the day before an event. Similarly, *ɣɯ*^{33}, derived from the term for ‘follow; behind’ is used as a prefix meaning ‘after’ or ‘post-’.

(49) a. *ɣɯ*^{33} *ŋ̍e*^{44} *tɯ*^{32} ‘afternoon’
after noon

b. *ɣɯ*^{33} *sua*^{44} ‘next year’
after year

c. *ɣɯ*^{33} *ŋ̍i*^{44} ‘the day after’
after day

d. *ɣɯ*^{33} *te*^{31} ‘descendent’
after generation

As with *tɯ*^{21} *ŋ̍i*^{44}, *ɣɯ*^{33} *ŋ̍i*^{44} ‘the following day’ differs in meaning from ‘tomorrow’ *me*^{55} *ŋ̍i*^{44}.

An interesting note is that the prefixes *tɯ*^{21} and *ɣɯ*^{33} are derived from *tɯ*^{21} ‘head’ and the locative postposition *ɣɯ*^{33} ‘behind’. This offers possibly interesting insights into how Bai speakers perceive the direction of time.

Another time prefix *pɯ*^{55} is used as a [+1 multiplier] in expressions of time. The use of *pɯ*^{55} in year compounds is illustrated below.

(50) a. *tɯ*^{21} *sua*^{44}
previous year
‘last year’

b. *pɯ*^{55} *tɯ*^{21} *sua*^{44}
+1 previous year
‘the year before last’

(51) a. *ɣɯ*^{33} *sua*^{44}
follow year
‘next year’

b. *pɯ*^{55} *ɣɯ*^{33} *sua*^{44}
+1 follow year
‘the year after next’

5.3.2. Suffixation

Southern Bai has a limited suffixation system whose functions range from forming disyllabic nouns, expressing location, denoting biological sex, and pluralisation. This section will

discuss the suffixes found in the study, beginning with the disyllabic noun forming suffix *tsɨ*^{31}.

5.3.2.1. Generic suffix tsɨ^{31}

A common suffix found in the study was *tsɨ*^{31} [23], a generic suffix added to nouns to form disyllabic noun stems. It is likely borrowed from Mandarin Chinese as it functions almost identically as '-zi'(子) suffixation in MSM. In MSM '-zi' suffixation functions to form a disyllabic noun compound from a monosyllabic stem. Its function is mostly aesthetic. As with Mandarin, it appears that this suffix has been grammaticalised from the word for male child *tsɨ*^{44}. Most examples of *tsɨ*^{31} suffixation are loans from Mandarin. *tsɨ*^{31} suffixation may also be used to distinguish between homophones. Some examples of *tsɨ*^{31} affixation in Southern Bai are presented below.

(52) *a*^{31} *se*^{31} *ti*^{55} *tsɨ*^{31}
one small measure SUFF
'a small length'

(53) *tsʰua*^{33} *tsɨ*^{31}
CLF for bunch SUFF
'a bunch'

(54) *te*^{55} *tsɨ*^{31}
bag SUFF
'(a) Bag'

(55) *pie*^{31} *tsɨ*^{31}
biscuit SUFF
'a type of flat cake'

(56) *tsʰou*^{42} *tsɨ*^{31}
silk SUFF
'silk'

[23] It is also pronounced as *tsɨ*^{44} by some speakers.

5.3.2.2. Locative suffix pɔ^{21}

The locative suffix *pɔ*^{21} ‘side’ is another word changing affix that can be added to locative postpositions to express the side on which an object is located. Its use entails two locations with an obstruction, usually flat, in between. Using *pɔ*^{21} places the object on one side of the obstruction. The distinction between the use of *pɔ*^{21} and general locative information is often very subtle. This distinction provided by the locative suffix *pɔ*^{21} is illustrated below.

(57) a. *e˅*^{33}
under; below
‘under’

b. *e˅*^{33} *pɔ*^{21}
under SUFF
‘underneath’

(58) a. *tou*^{33}
above
‘above’

b. *tou*^{33} *pɔ*^{21}
above SUFF
‘on top of’

(59) a. *wa*^{44}
external
‘external’

b. *wa*^{44} *pɔ*^{21}
external SUFF
‘outside’

(60) a. *xu*^{31}
in
‘in’

b. *xu*^{31} *pɔ*^{21}
in SUFF
‘inside’

(61) a. *pi*^{35}
lateral
‘next’

b. *pi*^{35} *pɔ*^{21}
lateral SUFF
‘beside’

5.3.2.3. Biological sex

When speakers wish to identify the biological sex of an animal or human, suffixes are employed after the class noun. These two suffixes are *mɔ*^{33} ‘female’ and *pɔ*^{35} ‘male’. The use of these suffixes is demonstrated below.

(62) a. *ke*^{35} *mɔ*^{33}
chicken female
‘Hen’
Source: F5 NP Elicitation

b. *ke*^{35} *pɔ*^{35}
chicken male
‘Rooster’
Source: (Wáng, 2016, p. 16)

(63) a. *te*^{42} *mɔ*^{33}
pig female
‘sow’
Source: (J. Li & Duan, 1998)

b. *te*^{42} *pɔ*^{55}
pig male
‘boar’

That such modification on animals and humans does not fit the typical [modifier] + [modified] order of compounds suggests that these lexemes are in fact affixable morphemes used to indicate the biological sex of animals and humans. If these are to be treated as suffixes, this would contradict J. Tian's (2017) claim that [noun] + [gender] word order is the original word order for adjectival modification in Bai. While this finding is of interest, it is not supported in other literature. Gender modification that follows the head noun was also described in Zhaozhuang Bai (Y. Zhao, 2009, 2012), but she labels the gender modifiers as nouns. As these morphs perform a modifying function but violate the [modifier] + [modified] order that is typical of compounds, then it is my opinion that these modifiers are indeed suffixes.

Further support for this hypothesis is that the use of affixation to mark for gender is also found in other topologically related languages. Luo Yongxian (2020, p. 6) states that affixable morphemes for gender and number are found in almost all Kra-Dai languages.

5.3.2.4. Human plurality suffix, xuo[33]

Southern Bai also contains a suffix to express unspecified human plurality, *xuo[33]* 'PL'. While Xu and Zhao (1984, p. 30) claim that the Central Bai equivalent *xo[44]*, is a classifier of unspecified number for humans, Wiersma (2007, p. 667) glosses this morph as an AGGREGATE/PLURAL (HUMAN) suffix. This study shares Wiersma's stance as classifiers in Southern Bai tend to refer to a definite number rather than generic class. The function of *xuo[33]* 'PLURAL', is illustrated below.

(64) *pe˗[42]* *xuo[33]*
White PL.
'Bai people'

(65) *ŋ̩i[21]* *xuo[33]*
person PL.
'People'

(66) *ŋ̥i*^{21} *ke˞*^{35} *xuo*^{33}
people PL.
'People' (class)

(67) *tou*^{35} *mɔ*^{33} *xuo*^{33}
father mother PL.
'Parents'

(68) *kʰe˞*^{44} *xuo*^{33}
guest PL.
'Guests'

(69) *ku*^{44} *xuo*^{33}
old PL.
'Old people'

5.3.3. Infixation

This study found one example of infixation. When negating a disyllabic verb, the general negator *pɯ*^{33} functions as an infix between the two syllables. This is not a universal function and appears to only function on disyllabic verbs that are monomorphemic. The examples demonstrated have been declared monomorphemic as they were unable to be separated into other free morphemes. Conversely, there are other examples of other forms of negation, such as *kʰɯ*^{44} *kʰe*^{55} *pɯ*^{33} 'unopen eyes' which can be separated into *kʰɯ*^{44} 'open' and *kʰe*^{55} 'to open one's eyes, whereby the negator appears after the verbal compound. The examples in the following table illustrate this function.

Affirmative	**Negative**
zɯ^{33} *tɯ*^{44} 'to know'	*zɯ*^{33} *pɯ*^{31} *tɯ*^{44} 'to not know'
tsʰu^{31} *pia*^{44} 'to gamble'	*tsʰu*^{31} *pɯ*^{31} *pia*^{44} 'to not gamble'
tiao^{44} *kʰe˞*^{35} 'to carve'	*tiao*^{44} *pɯ*^{31} *kʰe˞*^{35} – 'to not carve'

Table 29 - Examples of pɯ^{31} *infixation*

5.4. Compounding

This section will present how compounds are formed in Southern Bai. Compounds tend to be disyllabic and follow the [modifier] + [modified] construction order, with the [modified]

element behaving as the head of the compound. In this sense, Southern Bai is to be considered as a right-headed language in regard to compound formation.

One of the primary criteria for interpretation of the lexemes in this section as compounds is the use of the term 合成词 *héchéng cí* ‘compound words’ in the Chinese literature describing how words are formed in other Bai dialects (e.g. Q. Dai & Zhao, 2009; Wáng, 2016; J. Zhao, 2011; Y. Zhao, 2012). Furthermore, when questioned during data collection, consultants stated these were considered one word. However, this is not a great criteria for distinguishing compounds from phrases.

While prosody and/or stress are often used as a major criterion for a compound as opposed to a phrase (for example a black bird verses blackbird in English), there was not enough evidence in the data to make judgements in this regard, and COVID-19 restrictions made it difficult to obtain recordings of sufficient quality to make any further determinations. Lieber and Stekauker (2009, pp. 11–12) suggest that one way of determining compound status, is through syntactic constraints. They suggest three syntactic criteria to help identify compounds. These are–

- no other element can be inserted between the two constituents
- the first element of the compound cannot be further modified
- the second element (head) cannot be replaced with a pro-form, such as ‘one’

Using *te4^{2} ma ^{21}* ‘pig hair’ as an example, it can be seen that the first criterion that ‘no other element can be inserted between the two constituents’, holds true. As will be demonstrated later in section 6.8.1, in Southern Bai a number is typically placed between a modifier and the head noun. Example (70)a, illustrates that when numerating *te^{42} ma^{21}*, a classifier occurs after

the compound, not before the head *ma*^{21} , which would be considered ungrammatical, as in example (70)b.

(70)a. *te*^{42} *ma*^{21} *(a33)* *ŋ̩ɯ32*
pig hair (one) CLF
'a pig hair'

b. * *te*^{42} *(a33)* *ma*^{21}
pig one hair
**'a pig hair'*

When modified with an adjectival element, the modification applies to the head noun, not the first noun. This is demonstrated in the examples below. That modification applies to the second noun suggests that *te*^{42} *ma*^{21} is a compound rather than a phrase. If it were a phrase, the modification would apply to the pig.

(71) *xe*^{44} *te*^{42} *ma*^{21}
black pig hair
'a black pig hair (the hair is black)
* 'a black pig's hair (the hair of a black pig)

(72) *tsou*^{21} *te*^{42} *ma*^{21}
long pig hair
'a long pig hair' (the hair is long)
*'a long pig's hair' (the hair of a long pig)

Additionally, as in example (72), the modifier *tsou*^{21} cannot be inserted between *te*^{42} 'pig' and *ma*^{21} which also meets the first criteria of Lieber and Stekauker (2009). That modification covers the second noun, not the first, also suggests that these examples also meet their second criteria, that 'the first element of the compound cannot be further modified'. Looking at their final criteria, replacing *ma*^{21} with a pro-form, such as *nɔ*^{44}, no longer retains the meaning of 'hair'. Therefore, *te*^{42} *ma*^{21} meets all three of Lieber and Stekauker's (2009) criteria.

In addition, to meeting these three criteria, modification takes place on the second element, rather than the first (the head), which also suggests that these are indeed compounds. Taking

this into account, the fact that the Chinese literature refers to them as such, and that consultants considered them as one word, I am confident in referring to disyllabic lexemes whereby the left element modifies the right, as compounds.

5.4.1. Subordination

This form of compounding involves two lexemes, one modifying the other. Most follow the [modifier] + [modified] word order. Such compounds tend to be endocentric with the head being of the same word class as the resulting compound, and the compound being a hyponym of the head noun. This head and hyponymy relationship can be demonstrated with the compounds featuring *te*^{42} 'pig' below. In each example, *te*^{42} modifies the head noun, forming a compound that is a hyponym of the head.

(73) a. *te*^{42} *ma*^{21} 'pig's fur'
pig hair

b. *te*^{42} *tsɨ*^{44} 'pig feed'
pig feed

c. *te*^{42} *pe*^{21} 'pig skin'
pig skin

Another illustration between headedness and modification can be seen using the word for 'vegetable', *tsʰɯ*^{31}. As a compound head, *tsʰɯ*^{31} can receive modification to form hyponyms of types of vegetables, such as *pe*^{42} *tsʰɯ*^{31} 'cabbage', *kv*^{55} *tsʰɯ*^{31} 'pickles', *tɕʰie*^{42} *tsʰɯ*^{31}, 'celery', or *tɕie*^{31} *tsʰɯ*^{31} 'greens'. Conversely, *tsʰɯ*^{31} can also modify a head noun to form a compound such as *tsʰɯ*^{31} *sua*^{35} 'vegetable garden'. In this example, *tsʰɯ*^{31} 'vegetable' no longer functions as the compound head but is rather modifying *sua*^{35} 'garden' to form a hyponym of it. Some compounds exhibit elements of exocentric modification. For example, the term *ka*^{35} 'dry' can be added to the terms *mɔ*^{33} 'mother' and *ti*^{33} 'father' to form *ka*^{35} *mɔ*^{33} 'adopted mother' and *ka*^{35} *ti*^{33} 'adopted father'. In these instances, the semantic meaning of 'dry' is extended to indicate a non-biological parental relationship.

The following sections will explore various subordinate compounds found in the language.

5.4.1.1. Noun + Noun compounds

Most nouns in Southern Bai are monosyllabic, for example, *pa*^{21} 'bowl', *fv*^{55} 'bee', *gɔ*^{21} 'sea', *tɕe*^{33} 'plum', *tsʰu*^{33} 'grass', *te*^{42} 'pig' and *me*^{21} 'door'. The language does contain some disyllabic mono-morphemic nouns that consultants were unable to break apart into separate components, such as *a*^{55} *mi*^{55} 'cat'. Conversely, some nouns may be formed using a [noun] + [noun] compound. In the generation of new words, compounded nouns tend to follow the pattern of [Modifier + Modified], as in the examples below.

(74)

Head noun	**Compound**	**Components**
ma^{21} 'hair; fur'	*tu*^{21} *ma*^{21} 'hair'	head + hair
tsv^{35} 'cup'	*tsao*^{21} *tsv*^{35} 'teacup'	tea + cup
tsu^{31} 'tree'	*ɕy*^{55} *ni*^{55} *tsu*^{31} 'pear tree'	pear + tree
kʰv^{31} 'pen'	*ke*^{35} *kʰv*^{31} 'chicken pen'	chicken + pen
kua^{35} 'pants'	*niou*^{42} *tse*^{31} *kua*^{35} 'jeans'	cowboy[24] + pant

The above compounds use a noun to modify another noun. As found in Mandarin, the first noun in each compound denotes the use, place, cause, time, or source of the second noun, which is the head of the compound (C. N. Li & Thompson, 1981, p. 49). For example, in the first compound in (74) above, the term '*ma*^{21}' refers to any hair or fur of a mammal. To derive the term known as 'human hair', *ma*^{21} is modified by the Bai term for head, *tu*^{21}, to generate a term that translates roughly as 'head hair' or 'hair on the head.' Similarly, such modification applies to the words for 'teacup' and 'pear tree'.

[24] This is a loan of the MSM niúzǎi (牛仔) 'cowboy.

5.4.1.2. Verb + noun compounds

The most common form of disyllabic verb compounds consists of combining a [verb] + [noun] where the resulting compound is a verb. Such compounds may have a morphosyntactic relationship of V-S or V-O.

Matisoff (1991, p. 485) stated that combinations of [verb] + [Object] to express an action are a common trait among Sino-Tibetan languages. Li and Thompson (1981, p. 73) state that such compounds are common in MSM, with the majority forming verbs. Table 30 demonstrates some common [verb] + [noun] compounds whereby the morphosyntactic relationship is V-O.

Construction	**Components**	**Gloss**
ɟuɯ^{44} tsʰa^{55}	eat + breakfast	'to eat'
ɟuɯ^{44} pe^{33}	eat + dinner	'to eat'
sv^{31} tuɯ^{21} pɔ^{31}	comb + hair	'to comb hair'
pe^{42} xuo^{35}	insert + flower	'to arrange flowers'
kuɯ^{21} ta^{44} tsʰeˇ^{44}	ride + bike	'to ride a bike'
ɣuɯ^{33} tsɑo^{21}	drink + tea	'to drink tea'
ke^{21} sv^{32}	climb + mountain	'to climb a mountain'
ɣuɯ^{33} tsɨ^{33}	drink + alcohol	'to drink (alcohol)'
kuo^{32} tseˇ^{35} wa^{44}	pass + New Year	'to celebrate (Chinese) New Year

Table 30 - Verb & noun compounds (V-O)

Less common are constructions that have a morphosyntactic relationship of V-S. Table 31 (below) illustrates some of these compounds.

Compound	**Components**	**Gloss**
tua^{42} tuɯ^{21} ma^{21}	fall + hair	'go bald'
kɯ^{21} mi^{42} ji^{42}	flow + tear	'to cry'

Table 31 - Verb + noun constructions (V-S)

Finally, nouns may be constructed from a [verb] + [noun] compound, as presented below in example (75).

(75) *se*^{33} *tɕy*^{33} *we*^{33} *pa*^{21} ‘wash bowl’
wash face bowl

5.4.1.3. Verb + verb compounds

In addition to [verb] + [noun] constructions, disyllabic verbs may be created using a [verb] + [verb] combination. These are much less common than [verb] + [noun] constructions. Li and Thompson (1981, pp. 68–69) refer to these compounds as Parallel Verb compounds. The constituents of such compounds must share syntactic and semantic properties, the combination of which forms a new word which is also of the same syntactic category as its constituents.

An example of a [verb] + [verb] construction can be illustrated by the verb *tue*^{35} ‘to be vertical’. This can be modified with *miou*^{32} ‘to be straight or upright’ to form *tue*^{35} *miou*^{32} ‘to be straight or erect’. Additionally, the [verb] + [verb] construction can be used to alter a static verb into a dynamic one. The static verb *kʰuu*^{44} ‘to have one’s eyes open’ can be shifted into a dynamic verb with the addition of *kʰe*^{55} ‘to open’ to form *kʰuu*^{44} *kʰe*^{55} ‘to open one’s eyes’.

While not a parallel verb compound, adjectives can also be constructed of [verb] + [verb] compounds, as demonstrated below in example (76).

(76) *tou*^{55} *tʰi*^{44} ‘moving; melodic’
to move to hear

5.4.1.4. Adjectival + Noun + compounds

Words may also be composed of an [adjectival] + [noun] compound. Adjective-noun compounds are also found in MSM (C. N. Li & Thompson, 1981, p. 82). As with [noun] + [noun] compounds, the first component modifies the head noun, creating a hyponym of the head. Such compounds tend to meet the syntactic criteria for compounding proposed by

Lieber and Stekauker (2009) outlined earlier in section 5.4. Example (77) below lists some [adjectival] + [noun] compounds[25].

(77)

Lexeme	**Components**	**Definition**
pe˗^{42} xuo^{33}	white + people	Bai people
ka^{44} ti^{33}	dry + father	Adopted father
kou^{21} ke˗^{21}	fat + meat	Fatty meat
ku^{33} ŋ̩i^{21}	old + person	Elder

The next compounding function to be discussed is coordinating compounds.

5.4.2. Coordinating compounds

This is a method of compounding two related words, often of the same word class. This method of compounding is common among the languages of East Asia (Bauer, 2009, p. 351). The words used in this form of compounding are typically not hyponyms of each other, tending to be equal elements (Bauer, 2008, p. 63). An example of this type of compound is the Mandarin word for ‘parents’ which is comprised of the words for ‘father’ and ‘mother’. The following examples illustrate coordinating compounding being used to form nouns. in Southern Bai.

(78)

a.	*pi^{35}*	*v^{33}*	‘the elements’
	wind	rain	
b.	*xe^{55}*	*tɕi^{31}*	‘the world’
	sky	ground	
c.	*tsɨ^{44}*	*ŋ̩v^{33}*	‘children’
	son	daughter	
d.	*tɕy^{33}*	*we^{33}*	‘face’
	mouth	eye	

In addition to noun formation, this study found evidence of coordinative compounding used to form verbs, as demonstrated below.

[25] Further discussion on adjectival modification in the language can be found in section 6.8.2.

(79) a. *pieˇ*^{44} *tʰu*^{33} ‘to ask for directions’
ask road

b. *tɕʰieˇ*^{55} *pieˇ*^{44} ‘to enquire’
listen ask

Some adjectival compounds may also be constructed of [adjectival] + [adjectival] lexemes. These employ a coordinating compounding system whereby one lexeme is not modifying another. As demonstrated in example (80) the adjective *ka*^{35} *tɔ*^{31} ‘large’ is produced by combining *ka*^{35} ‘tall’ with *tɔ*^{31} ‘big’. Consultants were unable to formulate a rule or order as to how word order is determined in such compounds, and they appear to be grammaticalised. Examples of adjectival coordinating compounds are illustrated below.

(80) *ka*^{35} *tɔ*^{31} ‘large’
tall big

(81) *ke*^{35} *pieˇ*^{42} ‘indifferent’
cold bland

5.4.3. Four-syllable compounds

This study found limited examples of four-word compounds, like those described by Zhao Yinpin[26] (2015b, 2016). Much like their parallel, *chéngyǔ* in Mandarin, these four-syllable compounds typically form an idiom. One construction found involved two coordinated mini verb phrases combined, as in the examples below.

(82) *pe*^{44} *na*^{21} *pe*^{44} *puu*^{44}
go south go north
‘To travel extensively’

(83) *puu*^{21} *tʰuu*^{55} *puu*^{21} *tsou*^{33}
float descend float ascend
‘To float to and fro’

Another construction comprised of two noun phrases that described a quality, as in (84) below.

[26] Labelled as 四音格词 in the literature.

(84) *pe˧*^{42} *tɯ*^{21} *pɔ*^{21} *xa*^{32} *ke˧*^{55} *v*^{33}
Bai head Han backside
'To know Mandarin (Hanyu), but unable to speak it well'
(Lit: To have a Bai head, but Han buttocks) (H. Chen & Yang, 2018)

5.5. Reduplication

Some nouns can be reduplicated to indicate plurality or mass noun status. This is illustrated in the example below.

(85) **Single form** **Reduplicated form**
ŋ̩i^{21} 'person' *ŋ̩i*^{21} *ŋ̩i*^{21} 'people'

As stated earlier in section 5.2 the second or 'echoed' element often performs the role of classifier in reduplicated noun constructions. This study only found one example of noun reduplication being used to express 'all' as stated by Wang Ya (2015). The noun *sua*^{44} 'year' can be reduplicated as *sua*^{44} *sua*^{44} to express 'year on year' or 'every year.' This use of nominal reduplication is a common feature found in Mandarin, Tai-Kadai languages, and languages that are regionally related (Cheung, 2016; Goddard, 2005; Y. Luo, 2020).Therefore the fact that this is the only example of such reduplication is likely due to the limitations of this study.

Adjectival verbs can also be reduplicated. Reduplication of adjectives functions to increase the degree or extent of the quality encoded in the adjective. Some examples are listed below.

(86) *ne˧*^{42} 'fat' *ne˧*^{42} *ne˧*^{42} 'plump'
be˧^{21} 'flat' *be˧*^{21} *be˧*^{21} 'very flat'
tɕ^{h}*ie˧*^{55} 'clear' *tɕ*^{h}*ie˧*^{55} *tɕ*^{h}*ie˧*^{55} 'crystal clear'
tɕ^{h}*iou*^{55} 'good' *tɕ*^{h}*iou*^{55} *tɕ*^{h}*iou*^{55} 'well'
tsu^{33} 'early' *tsu*^{33} *tsu*^{33} 'very early'

An example of adjectival reduplication is seen in the line of text from the narrative '*Herl Sal Caof*' below:

(87) *A*^{55} *luo*^{42} *tɕi*^{31} *xe˞*^{55} *tɯ*^{44} *xɯ*^{55}**,** *ne˞*^{42} *ne˞*^{42} *me˞*^{31} *tsɨ*^{44} *tɯ*^{21}
A Luo give birth PFV fat fat ATTR boy
'A Luo gave birth to a big, plump boy'
Source: *Herl Sal Caof* (1)

Here, *ne˞*^{42} 'fat' is reduplicated to emphasise that the baby in the story was quite plump.

Likewise, verbs may be reduplicated. Verbal reduplication in Southern Bai expresses that the event is of short duration, similar to 'do a little X' in English. This function is illustrated in the examples below.

(88) *a*^{44} *ŋ̥ia*^{55} *kɯ*^{21} *tʰɯ*^{55} *jɯ*^{35} *ɕia*^{35} *ɕia*^{35} *tsɨ*^{44} *jou*^{33}
Ah 1PL.INCL ride descend INC rest rest FILL IMP
Ah, let's get off our bikes and rest a while
Source: The greatest gift

(89) *nɔ*^{31} *ta*^{21} *ŋɔ*^{31} *se*^{33} *se*^{33} *tsɨ*^{44} *sɯ*^{33} *me*^{33}
2SG help 1SG clean clean FILL hand POL
'Wash your hands for me'
Source: NP & 'ga' elicitation (76)

According to consultant F5 during a conversation in Mandarin, Bai males will often switch to Bai when using such constructions with softened tone as such constructions are considered effeminate in Mandarin. In Bai though, these softened requests are considered neutral.

Reduplicated verbs are followed by a marker *tsɨ*^{44}. No consultant was able to offer any other explanation other than as a 'filler word'. It may simply be a morpheme occurring after reduplicated verbs.

However, Zhao Yanzhen (2013) describes a complement of degree, *tsɨ*^{55}, in Zhaozhuang Bai that has been grammaticalised from the verb 'to do; to make'. The function of this particle is to express achievement or change. It appears that *tsɨ*^{44} may be a dialectal variant also used to express achievement here as well. As verbal reduplication serves a pragmatic function to mitigate an action, *tsɨ*^{44} in this case may be expressing the degree of completion expected of the act. However, Zhao's description of this particle only places *tsɨ*^{55} after a noun, which complicates this analysis.

5.6. Contraction

Due to the [pronoun] + [classifier] construction of pronouns in Southern Bai, non-personal pronominal forms are prone to contraction in natural speech. This is most common among deictic and interrogative pronouns. This phenomenon was also described in a Bai variety near Dali in Zhaozhuan village by Dai and Zhao Yanzhen (2009, p. 40) who described pronominal contractions whereby the contracted form retains the final from the last syllable of the original form and typically the initial from the first syllable. This was also the case found in this study.

Evidence that these are contractions was confirmed by two participants, one of whom regularly wrote the full compounded form when correcting my transcriptions but persisted in using contracted forms in speech. Further confirmation was offered during word list elicitations where the full compound form was produced. However, in narrative productions, many of the pronoun forms were frequently contracted. Table 32 (below) presents several examples of contracted pronoun forms.

Compound form	**Contraction of**
nẹ^{21} 'this one'	*nɯ*^{31} *le*^{21} 'Prox. + CLF'
xẹ^{21} 'what'	*xa*^{31} *le*^{21} 'what + CLF'
nia^{21}/*nia*^{31} 'this way'	*nia*^{33} *le*^{21} 'this + CLF'

Table 32 - Contracted pronouns

Contracted forms are not restricted to pronominal forms. They were also found in some [noun] + [classifier] combinations in spoken speech. However, such contractions are more common and consistent among pronominal forms. As mentioned earlier, these contractions may possibly be on the path to grammaticalisation as monosyllabic words.

5.7. Summary

This chapter discussed the morphological inflection and word formation systems employed in Southern Bai. This study found morphological inflection occurring among personal pronouns, phonetic alternations used in the development of new words, and a rhyme alternation to express the difference between a static and dynamic form of the verb ‘to open’.

Following morphology, discussion moved on to derivational word formation. This study found that some classifiers are derived from nouns either through ‘echoing’ or reduplication. There is also evidence of verbal classifiers derived from body parts, in this case from ‘mouth’. Additionally, there is evidence that some nouns have been derived from verbs.

Affixation is not a particularly common phenomenon in Southern Bai, but there are some instances where it is employed. Kinship and closeness are expressed by the prefix a^{31} before a name or kinship term. There is also a system of word changing affixes that are grammaticalised from lexical items. Ordinal numbers are formed by prefixing cardinal numbers with te^{31}. Time prefixes, derived from tu^{21} ‘head’ and $ɣu^{33}$ ‘behind’ are placed before time nouns to indicate ‘before’ and ‘after; next’, respectively.

Suffixes were also found that are used to perform such functions as forming a disyllabic noun using $tsɨ^{31}$. The suffix $pɔ^{21}$ ‘side’ can be employed to indicate the side on which an object is located. Suffixation is also used in specifying the biological sex of an animal or human and in expressing an unspecified number of people.

Compounding is common in the language, with compounds typically taking the [modifier + modified] word order. This chapter reported that Southern Bai is typically a right-headed language in regard to compounding. Most compounds in the language form hyponyms of the compound head and compounds are used to form nouns, adjectival modifiers, and verbs.

Reduplication was found to be a tool used by speakers to increase the quality entailed in an adjective, or to mitigate or soften the meaning of a verb.

Contraction was found to be common in speech among deictic and interrogative pronouns and their associated classifiers. This results in retention of the initial of the first syllable and the rhyme from the second syllable. It is likely that these contractions may be on the path to grammaticalisation into single syllables.

The following chapter will describe and discuss the Southern Bai noun phrase.

Chapter 6 - Noun Phrase

Before introducing the Southern Bai noun phrase, it is important to introduce some of the key components. These include nouns, numerals, classifiers, pronouns, locative postpositions, adjectives, and adverbs. Once these components are introduced, this chapter will present the form and function of major noun phrase constructions. These involve numerical modification, adjectival modification, genitive constructions, and pronominal modification.

6.1. Nouns

The Southern Bai nominal lexicon contains a considerable number of loan words from Mandarin Chinese, particularly nouns related to modern technology. However, there is still a rich lexicon of its own to draw from.

The nouns of Southern Bai have been divided into the following four categories: concrete nouns, proper nouns, abstract nouns, and temporal/directional nouns. I have decided to use these categories as a reference as opposed to the categories suggested by Xu and Zhao (1984) who classified nouns based on those that are modified by classifiers and those that are not. While this is an important distinction to make, I find this system of classification to be too narrow. This distinction could more easily be established with mass vs. countable nouns.

The following section will offer a description of the four major Noun classes in Southern Bai, beginning with discussion of common nouns.

6.1.1. Concrete nouns

This group refers to material entities, such as plants, animals, or objects of daily use. This noun class can be divided into two further classes — countable and mass nouns. Countable nouns require modification by a classifier regardless of whether they are being counted. Syntactically, they can be modified by a stative verb, adjective, demonstrative or possessive

pronoun, and number. Below are some examples of countable concrete nouns categorised under major category types.

Nature

(90)	**S. Bai**	**Gloss**
	ŋ̍e^{44} *phi*^{31}	sky; sun
	wa^{44}	moon; month
	pi^{35}	wind
	sv^{32}	mountain
	tɕi^{31}	earth; ground; field

Humans

(91)	**S. Bai**	**Gloss**
	mɔ^{33}	mother
	ti^{33}	father
	ŋ̍v^{33} *ŋ̍i*^{21}	woman; daughter
	tsɿ^{44}	man; son
	pɔ^{35} *ŋ̍i*^{21}	husband
	v^{33} *ŋ̍i*^{21}	wife
	sv^{55} *tv*^{44}	child
	tsɿ^{44} *ŋ̍v*^{33}	children
	lɔ^{32} *sɿ*^{44}	teacher
	ka^{44} *se*^{44}	beggar
	ku^{44} *zɯ*^{42}	worker
	kv^{35}	soldier

Animals

(92)	**S. Bai**	**Gloss**
	a^{55} *mi*^{55}	cat
	kʰɯa^{33}	dog
	ke^{35}	chicken
	ŋ̍v^{35}	fish
	a^{44}	duck
	jɔu^{21}	sheep

Plants

(93)	**S. Bai**	**Gloss**
	tsɯ^{31} *tsɯ*^{31}	tree
	xuo^{35}	flower
	ɕy^{55} *ni*^{55}	pear
	kv^{21}	buckwheat
	ta^{21}	peach

Food and beverage

(94)

S. Bai	**Gloss**
me^{33}	rice
ɕy^{55}	water
tsɔ^{21}	tea
tsɨ^{33}	alcohol
ts^{h}*a*^{55}	breakfast

Body parts

(95)

S. Bai	**Gloss**
tɯ^{21}	head
tɕy^{33} *we*^{33}	face
ma^{21}	hair; fur
sɯ^{33}	hand
we^{33} *bao*^{31}	eye/s
ku^{44} *ne*^{21}	neck
tɕy^{33} *me*^{33}	mouth
v^{42}	stomach

Buildings

(96)

S. Bai	**Gloss**
xɔ^{31} *tv*^{35}	house
tsɯ^{21} *xɔ*^{31}	building
tsɨ^{33}	street

Clothing

(97)

S. Bai	**Gloss**
kua^{35}	pants; trousers
ŋe^{21}	shoes
ts^{h}*ue*^{42} *tsɨ*^{31}	skirt
va^{35} *tsɨ*^{31}	sock/s

By contrast, mass concrete nouns, such as tea, do not require classifier modification. Some examples of mass nouns in Southern Bai are presented below.

(98)

S. Bai	**Gloss**
tsɔ^{21}	tea
ɕy^{33}	water
ts^{h}*u*^{33}	grass

6.1.2. Proper nouns

This is a class of nouns that includes names of people, places, titles. In Southern Bai, proper nouns are typically disyllabic. Proper nouns in Southern Bai do not require the modification of a classifier.

Places

(99)

S. Bai	**Name**
tɔu^{33} *kuɐ*^{35}	Shang guan
ɐ^{33} *kao*^{21}	Erhai
te^{31} *le*^{33}	Dali
xɯ^{33} *tɕie*^{33}	Xizhou
kʰa^{55} *na*^{32}	Kanglang
jue^{42} *na*^{42}	Yunnan

Names

Typically, names are disyllabic in Southern Bai and may either be loans from Mandarin or native Bai words. An example of each is presented below.

(100)

S. Bai	**Name**
a^{44} *luɔ*^{42}	A Luo (MSM)
mɯ^{31} *sa*^{55}	Me Sa (S.Bai)

Ethnonyms

Most Ethnonyms are loan words from Mandarin Chinese with Bai pronunciation, or compounds of Mandarin loans with the Bai human pluraliser, *xuo*^{33}.

(101)

S. Bai	**Gloss**
pɐ^{42} *xuo*^{33}	Bai people
pɐ^{42} *tsu*^{35}	Bai people (Sinitic variant)
pɐ^{42} *tsu*^{35} *xua*^{44}	Bai language
ji^{42} *tsu*^{35}	Yi people
la^{44} *xu*^{55}	Lahu people
na^{55} *ɕi*^{44}	Naxi

6.1.3. Abstract nouns

This category of nouns refers to abstract or intangible concepts. According to Xu and Zhao (1984, p. 16) and Li & Duan (1998, p. 74), this class of noun does not require modification by a classifier. This fact was further confirmed by consultants. The following examples were taken from the lexical inventory in Li & Duan (1998), except *tʰu*^{42} *nie*^{42} which was taken from an elicitation by F4 about her childhood *Zuil qioul no lit vf*

(102)	**S. Bai**	**Gloss**
	tɕe^{21} *ji*^{21}	kindness
	tɕi^{44} *ɕie*^{44}	memory
	tɕy^{33} *we*^{32}	evil
	nia^{35} *ɕie*^{35}	conscience
	tʰu^{42} *nie*^{42}	childhood[27]
	tʰa^{55}	time

6.1.4. Temporal and direction

I have found the concept of directional nouns as described in some of the literature on Bai (e.g. Wiersma, 2007, p. 661; L. Xu & Zhao, 1984) and other languages such as Zoulei (J. Li et al., 2014) and Mandarin (Cheung, 2016) to be problematic for Southern Bai. The reason for this is that in Southern Bai this class of locatives such as ‘in’, ‘on’ and ‘under’ does not behave like lexical nouns. Firstly, they do not take on modification by adjectives or classifiers. Nor are they able to act as the head of a noun phrase, or as the Topic of a clause. Rather they modify nouns. Therefore, I have not included this class within my analysis of nouns. I believe this class are locative postpositions and will argue this in Section 6.6.

However, lexical items such as cardinal directions behave much more noun-like. I include cardinal directions in this class of nouns. I also include specific time relative to certain parts

[27] Most likely a Han loan of 童年 (tóng nián).

of the day, week, dates and festivals as these words tend to act more like prototypical nouns. Lexical examples are provided below.

Time

(103)

S. Bai	**Gloss**
kɛ˧⁵⁵ ŋ̍i⁴⁴	today
mɛ˧⁵⁵ ŋ̍i⁴⁴	tomorrow
tsv²¹ sɛ˧³³ ŋ̍i⁴⁴	yesterday
ŋ̍e⁴⁴ tɯ³¹	mid-afternoon
pe³³ kɛ˧³²	evening
kɛ˧⁵⁵ tsɨ⁵⁵ sua⁴⁴	this year
na²¹ tsɨ⁵⁵ sua⁴⁴	last year
ŋ̍i⁴⁴ ɕi³⁵ xɯ³¹	daytime
ɕi³⁵ sua⁴⁴	new year
tv³⁵ tɕi⁴⁴	Winter
tɕʰie⁵⁵	Autumn
ɣɔ²¹	Summer
tsʰv⁵⁵	Spring

Festivals

(104)

S. Bai	**Gloss**
fv⁴⁴ wa⁴⁴ v³¹	Torch festival
sa³³ wa⁴⁴ tsɨ³³	March festival
tsɛ˧³⁵ wa⁴⁴	Spring Festival
tsʰu²¹ tɕie˧³⁵	Spring festival (Mandarin loan)
sa⁵⁵ tao³¹ tsao²¹	Bai tea ceremony (Lit: Three rounds of tea)

Cardinal Directions

(105)

S. Bai	**Gloss**
pɯ⁴⁴	North
na³¹	South
tv³⁵	East
se³⁵	West

6.2. Numerals

6.2.1. Cardinal numbers

Table 33 below lists the basic cardinal number system of Southern Bai.

Number	**S. Bai**
1	*a*^{31}*/ ji*$^{35\,\wedge}$
2	*kou*^{33}
3	*sa*^{55}
4	*ɕi*^{44}
5	*ŋv*^{33}*/mu*$^{33\,\#}$
6	*fv*^{44}
7	*tɕ*^{h}*i*^{55}
8	*pia*^{44}
9	*tɕie*^{33}
10	*tsɿ*^{42}
11	*tsɿ*^{42} *ji*^{35}
12	*tsɿ*^{42} *ne*^{21}
13	*tsɿ*^{42} *sa*^{55}
14	*tsɿ*^{42} *ɕi*^{44}
15	*tsɿ*^{42} *ŋv*^{33}
20	*ne*^{21}
30	*sa*^{55} *tsɿ*^{42}
40	*ɕi*^{44} *tsɿ*^{42}*/ ɕi*^{21}
100	*a*^{31} *pe*^{42}
200	*kou*^{33}*tsɿ*^{42}
300	*sa*^{55} *tsɿ*^{42}
800	*pia*^{44} *tsɿ*^{42}
1,000	*a*^{31} *tɕ*^{h}*i*^{55}

^ - Sinitic variant
# - Dialectical variant (Dali & Xizhou)

Table 33 - Southern Bai cardinal numbers

In forming numbers above ten, Southern Bai adopts a base ten compounding system. The first number (1–9) prefixes the base ten number (10, 100 etc). There are, however, some exceptions. *ne*^{21} substitutes for the numeral two in any compound above 10 with numbers from 20–29 begin with *ne*^{21} and twelve being *tsɿ*^{42} *ne*^{21}. Furthermore, *ne*^{21} is the complete form for the number 20, not *ne*^{21} *tsɿ*^{42}. The other exception is forty which is pronounced *ɕi*^{21} in what appears to be a contraction of *ɕi*^{44} *tsɿ*^{42}. This form was produced by several speakers around the Dali area.

Both these exceptions are also found in the Jianchuan dialect and are described by Xu and Zhao (1984, p.25) who state both exceptions are Sinitic loans. *ne*^{21} is likely a Sinitic loan from *niàn* (廿), an archaic form of 20 in Mandarin.

After 100, many speakers shift from using *a*^{31} for the number one to the Sinitic variant, *ji*^{35}.

The list below offers some examples of compounded cardinal numbers produced by consultants in elicitation.

(106)

Number	**S. Bai**
23	*ne*^{21} *sa*^{55}
34	*sa*^{55} *tsɨ*^{42} *ɕi*^{44}
45	*ci*^{21} *ŋv*^{33} / *ɕi*^{44} *tsɨ*^{42} *ŋv*^{33}
56	*ŋv*^{33} *tsɨ*^{42} *fv*^{44}
63	*fv*^{44} *tsɨ*^{42} *sa*^{55}
101	*ji*^{35} *pe˪*^{42} *li*^{42} *ji*^{35}
110	*ji*^{35} *pe˪*^{42} *ji*^{35}

Southern Bai also contains three unspecified quantifiers — *tɕi*^{55} ‘few’, *ja*^{31} ‘several’, and *ɕia*^{44} ‘some’. These are used to express an indefinite number of an object. Examples are presented in section 6.8.1.

6.2.2. Ordinal numbers

As introduced earlier in section 5.3.1.2, ordinal numbers in Southern Bai are formed by adding the prefix *te*^{31} to the cardinal number. However, two variants were observed during fieldwork in the cardinal number formation rules.

The ordinal form of ‘first’ uses the Sinitic form *te*^{31} *ji*^{35} rather than the expected Southern Bai form *te*^{31} *a*^{31}. The ordinal prefix *te*^{31} is most likely a Sinitic loan of *dì* (第) which both performs the same grammatical function in the formation of ordinal numbers in MSM and appears in the same position, before the cardinal number. This borrowing could also be a reasonable explanation for the production of *te*^{31} *ji*^{35} rather than *te*^{31} *a*^{31} which includes the Southern Bai lexeme for the cardinal number ‘one’ — *ji*^{35} is very similar to the MSM lexeme for the number ‘one’, *ji*^{55}.

The shift in tone is likely under the influence of the local Mandarin dialect of Southwestern Mandarin. Chen (2007, p. 479) mentions that while the high-flat tone in Mandarin usually converts to low falling tones, there are some occasions where it converts to a semi-high rising tone. When placed in the Southern Bai tonal schemata, this is likely to be realised as a 35-tone contour.

Additionally, the base number for the cardinal number 'second', is substituted with *zi*^{31}, becoming *te*^{31} *zi*^{31} rather than *te*^{31} *kou*^{33}. Consultants were unable to explain why the shift in number 'two' occurs.

As with cardinal numbers, ordinal numbers require the relevant classifier to be considered grammatically correct. Typically, this is the generic classifier *le*^{21}. If a specific classifier exists for an object, then that may be used. The following table demonstrates the ordinal number system in Southern Bai using the generic classifier *le*^{21} and *tsv*^{35} 'cup'.

Cardinal	**Basic ordinal**	**+ generic CLF**	**+ 'cup'**
a^{31}*; ji*^{35} 'one'	*te*^{31} *ji*^{35} 'first'	*te*^{31} *ji*^{35} *le*^{21} 'first one'	*te*^{31} *ji*^{35} *tsv*^{35} 'first cup'
*kou*33 'two'	*te*^{31} *zi*^{31} 'second'	*te*^{31} *zi*^{31} *le*^{21} 'second one'	*te*^{31} *zi*^{31} *tsv*^{35} 'second cup'
sa^{55} 'three'	*te*^{31} *sa*^{55} 'third'	*te*^{31} *sa*^{55} *le*^{21} 'third one'	*te*^{31} *sa*^{55} *tsv*^{35} 'third cup'
ɕi^{44} 'four'	*te*^{31} *ɕi*^{44} 'fourth'	*te*^{31} *ɕi*^{44} *le*^{21} 'fourth one'	*te*^{31} *ɕi*^{44} *tsv*^{35} 'fourth cup'
ŋv^{33} 'five'	*te*^{31} *ŋv*^{33} 'fifth'	*te*^{31} *ŋv*^{33} *le*^{21} 'fifth one'	*te*^{31} *ŋv*^{33} *tsv*^{35} 'fifth cup'
fv^{44} 'six'	*te*^{31} *fv*^{44} 'sixth'	*te*^{31} *fv*^{44} *le*^{21} 'sixth one'	*te*^{31} *fv*^{44} *tsv*^{35} 'sixth cup'
tɕ^{h}*i*^{55} 'seven'	*te*^{31} *tɕ*^{h}*i*^{55} 'seventh'	*te*^{31} *tɕ*^{h}*i*^{55} *le*^{21} 'seventh one'	*te*^{31} *tɕ*^{h}*i*^{55} *tsv*^{35} 'seventh cup'
pia^{44} 'eight	*te*^{31} *pia*^{44} 'eighth'	*te*^{31} *pia*^{44} *le*^{21} 'eighth one'	*te*^{31} *pia*^{44} *tsv*^{35} 'eighth cup'
tɕie^{33} 'nine'	*te*^{31} *tɕie*^{33} 'ninth'	*te*^{31} *tɕie*^{33} *le*^{21} 'ninth one'	*te*^{31} *tɕie*^{33} *tsv*^{35} 'ninth cup'
tsɨ^{42} 'ten'	*te*^{31} *tsɨ*^{42} 'tenth'	*te*^{31} *tsɨ*^{42} *le*^{21} 'tenth one'	*te*^{31} *tsɨ*^{42} *tsv*^{35} 'tenth cup'

Table 34 - Ordinal number formation

6.2.3. Unspecified quantifiers

Southern Bai contains several quantifiers used to express an indefinite quantity. They replace the numeral in a noun phrase. These are listed below in example (107) below.

(107)	*tsɯ*^{33} *pɯ*^{31} *pɯ*^{31}	'sometimes'
	pe˗^{55}	'other'
	a^{31}	'each'
	tɕi^{55}/*ti*^{55}	'several'
	tɕi^{35}	'many'
	ɕiou^{33}	'few'

6.3. Classifiers

As is common among Sinitic languages (Ratliff, 2015, p. 47), Southern Bai uses classifiers to modify nouns according to qualities of the noun being modified. Consistent with descriptions of other Bai varieties, classifiers in Southern Bai appear after the noun they are modifying, as illustrated in this example.

(108)	*kʰua*^{33}	*tɯ*^{21}		*pʰi˗*^{42} *kuo*^{31}	*te˗*^{42}	*a*^{55} *mi*^{55}	*tɯ*^{21}
	dog	CLF		apple	CLF	cat	CLF
	(a) dog			(an) apple		(a) cat)	

As reported in Wiersma (2007) and Wáng (2002, p. 40), participants stated that a classifier must be included with a concrete noun, otherwise it is considered ungrammatical, or unnatural. This is regardless of the number of items being described. If a noun + classifier compound does not include a number, then it is interpreted as being singular. Consultants have stated that in singular form, *a*^{31}, does not need to be used. However, *a*^{31} may be included for emphasis, as in 'just one'.

As discussed in Goddard (2005, p. 97) languages in East and Southeast Asia with classifier systems typically tend to have a generic or neutral classifier that can be used with most objects (e.g. *gè* in Mandarin, *go* in Cantonese, and *cái* in Vietnamese). In Southern Bai the generic classifier is *le*^{21}/*ne*^{21}.

As discussed in section 5.2.1, Southern Bai contains a category of classifiers that have been derived from other nouns. Some of these are listed below.

(109) *te˕*^{42} CLF for fruits and vegetables
tɯ^{21} CLF for animals
ts^{h}ua^{33} CLF for bunches or handfuls
tɕi^{33} CLF for a pair

Another group of classifiers found in Southern Bai are those labelled by Wáng (2005) as 'bound classifiers.' While Wáng used the term 'bound' in reference to this group of classifiers, they are not morphologically bound to the noun but are based on inherent characteristics of the noun such as its size and shape. Some examples found in Southern Bai include:

(110) *k^{h}ui*^{55} CLF for round objects
pe˕^{21} CLF for slice, or thin slice-like objects
nie^{32} CLF for long thins, e.g. rope
tsou^{35} CLF for flat objects like paper, sheet
jao^{21} CLF for clothing
kua^{44} CLF for thin, cylindrical objects, e.g. pencil
tɕia^{44} CLF for blockish shapes, e.g. bookshelf, mobile phone

Other Classifiers may also be Sinitic loans. The Classifier for round objects, *k^{h}ue*^{55} seems to be a loan of the MSM k^{h}uai^{51} (块– lit: piece, block, chunk), also a classifier for round objects.

Unlike Zhao (2005), this study did not find any examples of classifiers being used metaphorically to refer to people. This is likely due to limitations in the elicitation of data.

6.4. Pronouns

Pronouns refer to a class of nouns capable of substituting the entire noun phrase (Kroeger, 2005, p. 46) with noun like properties and functions. As found in other Bai topolects (Fu, 2013; Wiersma, 2007; A. Wu, 2009; L. Xu & Zhao, 1984), pronouns in Southern Bai can be divided into the following classes: personal, demonstrative, and interrogative. The following sections will describe the pronoun system of Southern Bai.

6.4.1. Personal pronouns

Personal pronouns were discussed earlier in section 5.1. The table of personal pronouns in Southern Bai is presented again in Table 35 below.

Number	Case	Person #			
		1st	2nd		3rd
Single		*ŋɔ*^{31}	*nɔ*^{31}	*ni*^{55} (polite)	*pɔ*^{31}
	Genitive	*ŋɯ*^{55}	*nɯ*^{55}		*pɯ*^{55}
Plural		*ŋa*^{55}	*na*^{55}		*pa*^{55}
		Inclusive *ŋ̍ia*^{55}			

Table 35 - Southern Bai Pronouns

The pronoun paradigm in Southern Bai differs slightly from that described for the Northern and Central varieties. The Central variety has been described as having a third-person prefix of /m/ where in Southern Bai it is /p/. The first-person plural inclusive pronoun has been described as /jã^{55}/ in Central Bai, (e.g. Hefright, 2011; Wiersma, 2007, p. 666; L. Xu & Zhao, 1984), while consultants have stated it is /ŋ̍ia^{55}/ for Southern Bai. As described in Xu and Zhao (1984), a polite form of the second person singular pronoun *ni*^{55} exists in Southern Bai.

6.4.2. Demonstrative pronouns

Southern Bai has a two-way deictic distinction among demonstrative pronouns, proximal and distal. This was also found in descriptions of demonstrative pronouns found in Central Bai by Xu and Zhao (1984) which are *lɯ*^{31} ‘proximal’ and *mɯ*^{31} ‘distal’.

Consultants demonstrated a two-way variation of each form. Speakers who live closer to Dali, such as those from Wanqiao tend to produce *nɯ*^{31} as the proximal demonstrative whereby those further north produced *tɯ*^{31}. During an elicitation of pronoun paradigms, consultant M1 produced both *nɯ*^{31} and *tɯ*^{31} for the proximal demonstrative pronoun.

The two forms found for the distal demonstrative pronoun are *puɯ*^{31} and *na*^{55}.The distal demonstrative pronoun, *na*^{55} is likely an MSM loan of nà (那). Consultants F1, F4, and F5 used both *na*^{55} and *puɯ*^{31} interchangeably for the distal demonstrative pronoun during elicitation. M1 demonstrated a preference for *na*^{55}, with no use of *puɯ*^{31} for the distal demonstrative pronoun. This suggests a potential shift towards the Sinitic form. Additionally, *na*^{55} was also found as a distal demonstrative pronoun in the Zhaozhuang topolect (Y. Zhao, 2009, 2012).

Elicitations also produced a proximal demonstrative pronoun *nia*^{33}. This was often produced on its own without a corresponding classifier, suggesting it may be a contracted compound of *nɯ*^{31} with another classifier. Consultants were unable to offer any suggestion as to what that may be. I suggest it may be a compound of *nɯ*^{31} and *a*^{31} 'one'.

Demonstrative pronouns are often compounded with the generic classifier *le*^{21} to form 'this/that one'. Table 36 (below) demonstrates this function.

Single form	**+ *le*^{21}**
tɯ^{31}/ *nɯ*^{31} 'this; proximal'	*tɯ*^{31} *le*^{21}/ *nɯ*^{31} *le*^{21} 'this one'
puɯ^{31}/ *na*^{55} 'that; distal'	*puɯ*^{31} *le*^{21}/ *na*^{55} *le*^{21} 'that one'

Table 36 - Deictic pronoun + le^{21}

As discussed in section 5.6, these pronoun and classifier combinations are prone to contraction in narrative speech. For example, *nɯ*^{31} *le*^{21} frequently becomes *ne*^{21} with an audible creak. This was more prominent with speakers from Wanqiao than those from Xizhou. However, in elicitation, the full form was often retained.

Deictic pronouns may take another modifier in place of the classifier to form further pro-forms, as demonstrated in the table below. The modifier is most often another classifier.

Deictic pronoun	**+ modifier**	**Result**
puɯ^{31} 'that'	*tʰa*^{55} 'time'	*puɯ*^{31} *tʰa*^{55} 'that time; then'
	ŋ̡i^{21} 'people'	*puɯ*^{31} *ŋ̡i*^{21} 'that person'
	tuɯ^{21} 'CLF for animal'	*puɯ*^{31} *tuɯ*^{21} 'that one (animal)'
na^{55} 'that (alt)'	*ŋ̡i*^{21} 'people'	*na*^{55} *ŋ̡i*^{21} 'that person'
duɯ^{31} */ nuɯ*^{31} 'this'	*tʰa*^{55} 'time'	*duɯ*^{31} *tʰa*^{55} 'this time; now'
	ŋ̡i^{21} 'people'	*duɯ*^{31} *ŋ̡i*^{21} 'this person'

Table 37- Deictic pronoun compounds

While much of the literature (e.g. Wáng, 2016; L. Xu & Zhao, 1984; J. Zhao, 2011; Y. Zhao, 2009) place these words under the class of 指示代词 *zhǐshì dàicí* 'demonstrative pronoun', they also behave like determiners as they refer to a feature of the noun, such as number, rather than substituting for a noun. This is demonstrated in the examples below.

(111) *ke*^{35} *puɯ*^{31} *tuɯ*^{21}
chicken DIST CLF
'That chicken'
Source: NP & 'ga' elicitation (118)

(112) *se*^{31} *tsao*^{21} *tsv*^{35} *na*^{55} sa^{55} *pe*^{21}
small teacup DIST three CLF
'Those three small teacups'
Source: WeChat correspondence (3/9/19)

This is another example where word class boundaries are not so clear cut. While not quite behaving as pronouns substituting for a full noun phrase, this thesis will continue to refer to this class of words as demonstrative pronouns as this is the common terminology used in other studies of Bai. Placing demonstratives under the class of pronouns also simplifies the noun phrase rule as interrogative pronouns and demonstratives occupy the same position within the noun phrase.

6.4.3. Interrogative pronouns

The function of interrogative pronouns is to seek information in the form of questions. Like personal pronouns, they are capable of substituting for a whole noun phrase. In Southern Bai, these typically appear at the end of a construction[28].

a^{55} *na*^{44} 'which/where', is the most used interrogative pronoun. This was also described in Central Bai (Xu & Zhao, 1984). Other than *a*^{55} *na*^{44}, the interrogative pronoun system in Southern Bai differs considerably from the other dialects. *a*^{55} *na*^{44} is also the only interrogative pronoun that may appear without a classifier. Other interrogative prefixes include *xa*^{31} 'what', *a*^{31} 'each', and *wa*^{44} 'how many'.

Interrogative pronouns are formed through compounds of [Interrogative PN] + [classifier]. The classifier determines the scope of the enquiry. For example, adding the *ŋ̊i*^{21} the classifier for people to the interrogative pronoun *a*^{55} *na*^{44} 'which' 'where' or 'what' forms the interrogative pronoun *a*^{55} *na*^{44} *ŋ̊i*^{21} 'who' (Lit: what person). When there is no specific classifier, then the general classifier *le*^{21}/*ne*^{21} is used. While able to form a compound, *a*^{55} *na*^{44} is the only interrogative pronoun that does not require classifier modification. Table 38 (below illustrates the formation of interrogative pronouns in the language.

	+ modifier	**Compounded form**
a^{55} *na*^{44} 'which; where; what'	*le*^{21} 'generic CLF'	*a*^{55} *na*^{44} *le*^{21} 'which one'
	ŋ̊i^{21} 'people'	*a*^{55} *na*^{44} *ŋ̊i*^{21} 'who' (Lit: what person)
	ke^{42} 'place'	*a*^{55} *na*^{44} *ke*^{42} 'where' (Lit: what place)
xa^{31} 'what'	*le*^{21} 'generic CLF'	*xa*^{31} *le*^{21} 'what one'
	tʰa^{55} 'time'	*xa*^{31} *tʰa*^{55} 'when' (Lit: what time)
wa^{55} 'few'	*le*^{21} 'generic CLF'	*wa*^{55} *le*^{21} 'how many'
	ŋ̊i^{44} 'day'	*wa*^{55} *ŋ̊i*^{44} 'how many days?'

Table 38 - Interrogative pronoun compounding

[28] See section 8.2.1 for description on the formation of interrogative sentences.

Another interrogative pronoun found is *tɕi*^{55} *ɕiou*^{33} ‘how much/many’ which is very likely a Sinitic loan of *duō shǎo* (多少). This interrogative does not require classifier modification and is always used as an independent lexeme. It is also unable to be compounded as the other interrogative pronouns can.

6.5. Adjectival elements

Southern Bai is an adjective light language with the majority of adjectival modification performed via stative verbs. This is not a novel concept. Dixon (1982, p. 3) stated that languages like Chinese and Samoan ‘express all adjectival concepts through verbs’. Li and Thomson (1981, p. 142) argue that the majority of adjectives in Mandarin behave as verbs, being able to act as the predicate in a clause.

Adjectival verbs are also found in similar languages in the geographical region including, Lao (Enfield, 2004), Qiang (LaPolla & Huang, 2004), Cantonese (Francis & Matthews, 2005), and Newar (Genetti, 2008), a language of Kathmandu. This suggests that adjectival verbs are common among Tibeto-Burman languages, which is the stance also taken by Matisoff (1991, p. 495), who stated that having a class of verbs that can function as adjectives is common among Tibeto-Burman languages.

Looking at adjectival modifiers in Southern Bai, it becomes apparent that they too exhibit properties typical of verbs. This is evident in that most do not require a copula, suggesting they behave as a predicate head, as illustrated in the examples below.

(113) *ne*^{31} *le*^{21} *fe*^{33} *ts*^{h}*a*^{42} *kɔ*^{55} *ɕie*^{55}
that way extremely happy
‘S/he was extremely happy at that’
Source: Herl sal caof (14)

(114) *pɔ*^{31} *le*^{21}
3SG tired
‘S/he is tired’

(115) *nɔ*^{31} *fe*^{33} *puɯ*^{44}
2SG very foolish
'You're very foolish'

(116) *tsʰeˇ*^{33} *xuɯ*^{44} *pi*^{35} *sɨ*^{35} *tɔ*^{31}
morning wind big
'In the morning, the wind is strong'
Source: The greatest gift (15)

Semantically, adjectival verbs in Southern Bai could be defined as meaning 'to be quality X'.

However, there does appear to be some evidence that a separate category of adjectives does exist in the language. The major difference between regular verbs and adjectival modifiers, as demonstrated in examples (117) to (119), is that adjectival modification occurs prior to the head noun, following the [modifier + modified] word order. This differs from the adjectival verbs presented earlier in examples (113) to (116) that appear after the nominal element.

(117) *peˇ*^{42} *ke*^{35} *tɯ*^{21}
white chicken CLF
'A white chicken'
Source: NP Elicitation 27:19

(118) *ka*^{35} *ŋ̍i*^{21} *keˇ*^{35}
tall person CLF
'Tall person'

(119) *xuɯ*^{44} *kua*^{35} *jao*^{21}
black pant CLF
'(a pair of) black pants'
Source: Topological relations (162)

As mentioned in Section 5.5 reduplication of adjectives in Southern Bai performs the function of emphasizing the qualities of the modifier in relation to the Topic. This was illustrated using a line of text from the narrative '*Herl Sal Caof*'

(1)*A*^{55} *luo*^{42} *tɕi*^{31} *xeˇ*^{55} *tɯ*^{44} *xuɯ*^{55}**,** *neˇ*^{42} *neˇ*^{42} *meˇ*^{31} *tsɨ*^{44} *tɯ*^{21}
A Luo give birth PFV fat fat ATTR boy
'A Luo gave birth to a big, plump boy'
Source: *Herl Sal Caof* (1)

Conversely, consultation deemed that reduplicating words like colours when directly modifying a noun is ungrammatical.

(2) * *ts^{h}e˧^{44}* *ts^{h}e˧^{44}* *xuo^{35}* *tuo^{33}*
red red flower CLF
'A really red flower'

To achieve the semantic function that verbal reduplication produces, that being enhancement of the quality being described, colour terms require the grammatical particle *tsɨ^{55}*. This is demonstrated in the examples below.

(3) *tsɨ^{55}* *ts^{h}e˧^{44}* *xuo^{35}* *tuo^{33}*
PART. red flower CLF
'A really red flower'

(4) *tsɨ^{55}* *pe˧^{42}* *xuo^{35}* *tuo^{33}*
PART. white flower CLF
'A really white flower'

Based on morphosyntactic differences presented in the above examination, it is apparent that two different word classes exist. Both can attribute a quality to a noun, but only one class cannot be reduplicated when modifying a noun. Including only words possess this characteristic provides a set of adjectives limited only to colours and some words related to size. The adjectives found in this study are listed below.

(5)
pe˧^{42}	'white'
xɯ^{44}	'black'
ŋv^{21}	'yellow'
tɕ^{h}ie˧^{55}	'green'
ts^{h}e˧^{44}	'red'
ts^{h}ao^{55}	'dark blue/green'
tsɨ^{31}	'purple'
la^{42}	'blue'
xue^{44}	'grey'
tɔ^{31}	'big'
se^{31}	'small; young'
ku^{33}	'old'
ka^{35}	'tall'
pi^{33}	'short'
ɳv^{33}	'female (human)'
tsɨ^{44}	'male (human)'

6.6. Postpositions

Southern Bai contains a limited set of postpositions used mostly in constructions expressing locative relations between two objects. Below is a list of locative postpositions found in the language.

(120) *nɔ*^{44} 'on'
xɯ^{31} 'in'
e˧^{33} 'under'
ɣɯ^{33} 'behind'
ke˧^{44} *pie*˧^{44} 'beside; next to'
pɔ^{21} 'side'

While the above lexemes have previously been described in the literature as a subgroup of nouns (e.g. L. Xu & Zhao, 1984, p. 15), I argue that they are postpositions, since they modify and appear after a noun. This is also the stance taken by Fu and Xu (2008). These postpositions help describe the spatial relation of an object in relation to its location or Ground. As they also add further locative information to the noun, they could therefore be considered modifiers, but I prefer to refer to them as postpositions. Examples (121) and (122) illustrate the syntactic relationship with nouns in larger utterances.

(121) *sɨ*^{35} *tsʰue*˧^{44} *sɯ*^{44} *ke*^{35} *tɕi*^{31} *pe*˧^{21} *tɯ*^{21} ***nɔ*^{44}**
book CLF place at ground CLF **on**
'(S/he) placed the book on the ground'
Source: Put elicitation

(122) *tse*˧^{35} *tsɨ*^{44} ***e*˧^{33}** *tsɯ*^{33} *tɕʰiou*^{42} *te*˧^{42}
table **under** have ball CLF
'There's a ball under the table'
Source: Topological relations

(123) *ɕy*^{33} *ka*^{35} *le*^{21} ***xɯ*^{31}**
water jar CLF **in**
'In the water jar'
Source: F5 Jackal & Crow (5)

The distinction of containment between *nɔ*^{44} and *xɯ*^{31} is unclear at the time of writing. As argued by Fu and Xu (2008), *nɔ*^{44} implies surface contact with the referent object.

While *xɯ*^{31} has been translated as ‘in’, it does not necessarily imply a sense of full containment. This is demonstrated in the example below.

(124) *pɯ*^{21} *kɔ*^{21} *xɯ*^{31} *ŋe˗*^{21} *a*^{55} *na*^{44}
float sea in depart where
‘Floating to where’
Source: Youf huoyeid (4)

From this example, it is clear that *xɯ*^{31} does not entail total containment. Firstly, if the boat was ‘in’ the sea, it would not float. Secondly, the sentence was translated using the Mandarin term shàng (上), which could be translated into English as ‘on’. Similarly, this can be seen in example (125).

(125) *pa*^{42} *tsɨ˗*^{44} *xɯ*^{31} *tsɯ*^{33} *pi*^{42} *kuo*^{32} *te˗42*
plate in exist apple CLF
‘On the plate is an apple’
Source: Topological relations (19)

Figure 31 below is the stimulus for the sentence in example (125). As can be seen, there is only minimal containment depicted from the side of the plate.

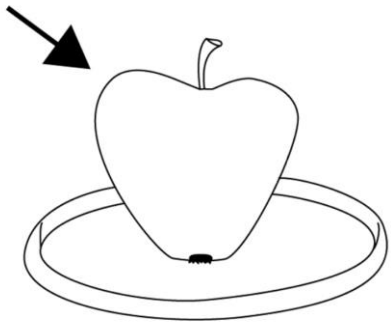


Figure 31 - BowPed elicitation material (Bowerman et al., 2004)

These examples demonstrate that *xɯ*^{31} implies only the slightest degree of submergence of the object to the location and does not entail full concealment. The distinction between surface contact of *nɔ*^{44} and where *xɯ*^{31} begins is something to be flagged for further investigation.

This concludes the discussion of postpositions in Southern Bai. The following section will introduce conjunctions before exploring the noun phrase in Southern Bai.

6.7. Conjunctions

Southern Bai contains a number of conjunctions, which function to link two nouns within a noun phrase. The most common conjunction in Southern Bai is *xɯ*^{55}. Within a noun phrase, *xɯ*^{55} links two or more objects together, as illustrated in examples (126) and (127).

(126) *pɔ*^{31} *kʰɔ*^{55} *tɯ*^{44} *niou*^{42} *tse*^{31} *ku*^{35} *jɔ*^{21} ***xɯ***$^{\mathbf{55}}$ *tʰi*^{44} *ɕue*^{35} *jɔ*^{21}
3SG wear DUR jean pant CLF **and** t-shirt CLF
'S/he is wearing jeans and a t-shirt'
Source: Topological relations (170)

(127) *tɯ*^{35} *tsa*^{31} *eˇ*^{33} *tsɯ*^{33} *xɯ*^{55} *zɯ*^{21} ***xɯ***$^{\mathbf{55}}$ *tsɨ*^{44} *tsu*^{44} *tɯ*^{21}, *wo*^{44} *liou*^{42} *tɯ*^{21}
lamp CLF under EXIST fly **and** spider CLF snail CLF
'Under the lamp, there is a fly, a spider and a snail'
Source: Topological relations (57)

As illustrated in example (127), the conjunction *xɯ*^{55} does not necessarily need to occur before the final noun in the noun phrase. In addition to linking noun phrases, *xɯ*^{55} has a variety of other functions including marking perfective aspect (see section 7.10.1) and as a marker of temporal succession (section 8.3.2.1).

Similar to this is the conjunction *xou*^{55} 'and', which only appeared in one text and sounds similar to the MSM conjunction *he*.

(128) *wu*^{44} *ya*^{44} ***xou***$^{\mathbf{55}}$ *la*^{42}
crow **and** wolf
'The crow and wolf'
Source: F5 Jackal &Crow (2)

When presenting two alternatives, the conjunction *lɔ*^{55} *ni*^{55} 'or' is placed between the two noun phrases or verb phrases to form a question.

(129) *pʰi*^{42} *kuo*^{31} ***lɔ*^{55} *ni*^{55}** *ɕy*^{55} *ni*^{55}
apple **or** pear
'Is it an apple or pear?'
Source: Topological relations

In speech, *lɔ*^{55} *ni*^{55} was typically reduced to just *ni*^{55} which was the most common form recorded, as demonstrated below in example (130).

(130) *nɯ*^{31} *te*^{21} *pʰi*^{42} *kuo*^{31} *ni*^{55} *tsɯ*^{33} *ɕy*^{55} *ni*^{55}
PROX.DEM apple or EXIST pear
'Is that an apple or pear?'
Source: Topological relations (122)

The conjunction *ta*^{44} is typically used to coordinate an NP whose referent is human with either another person or object. When using *ta*^{44}, the two events described occur simultaneously. Rather than merely coordinating the two phrases, *ta*^{44} has more of a comitative use, like 'together with'. How *ta*^{44} links two nouns is demonstrated in examples (131) to (133).

(131) *ŋɯ*^{55} *ti*^{33} ***ta*^{44}** *pa*^{55} *tsɨ*^{55} *zao*^{32} *su*^{44}
1GEN father **with** 3PL do labour
'My father worked with them'
Source: The greatest gift (103)

(132) *ŋɯ*^{55} *ti*^{33} ***ta*^{44}** *ŋɔ*^{31} *pʰie*^{31} *pʰie*^{31} *zi*^{44}
1GEN father **with** 1SG chat chat FILL
'My father would chat with me'
Source: The greatest gift (31)

(133) *pa*^{55} ***ta*^{44}** *pɯ*^{55} *ɕy*^{55} *ni*^{55} *nɯ*^{31} *tɯ*^{35} *pia*^{44} *tsou*^{33} *ta*^{44} *tsʰe˗*^{44} *tɯ*^{21} *nɔ*^{44}
3PL **with** 3GEN pear Prox. basket carry ascend bike CLF on
'With their pear basket, they got on the bicycle'
Source: Pear Story (32)

6.8. Noun Phrase constructions

The following section will describe how basic Noun Phrases are constructed in Southern Bai. As found in the other Bai dialects (see Wáng, 2016; Wiersma, 2007; L. Xu & Zhao, 1984), the basic order of the noun phrase in Southern Bai is Modifier + Head + Number + Classifier.

Typical of Tibeto-Burman languages (Goddard, 2005; Ratliff, 2015), concrete nouns require a classifier. In Southern Bai, these appear after the head noun. The relationship between concrete nouns and their associated classifiers is so tight that any concrete noun must be modified by a classifier to be deemed grammatically correct. This was also described by Wáng (2002, 2005a).

The most basic noun phrase consists of a head noun + numeral + classifier. This may be further modified by an adjective, deictic pronoun, possession, or negation. Deictic pronouns and/or number appear between the head noun and classifier. Typically, the head noun or personal pronoun always appears at the front of the noun phrase, unless modified by an adjective.

Based on the above information, a generalised rule for the Southern Bai noun phrase would be: NP → (Adj) N (PN) (#) CLF

The following section describes the major noun phrase constructions found in Southern Bai.

6.8.1. Numeric modification

This is the simplest noun phrase construction. As mentioned previously in section 6.3 countable concrete nouns are considered incomplete without their associated classifier, so the most basic noun phrase is [noun] + [classifier]. This corresponds to the word order described by Wiersma (2007) and Xu and Zhao (1984).

If the noun is modified by a numeral, it appears between the head noun and the classifier, as shown in the examples below. As mentioned previously in section 6.2.3, if no numeral appears between the head noun and classifier, then the utterance is interpreted as being singular, although the number one, '*a*^{31}*/ji*^{35}', may be used for emphasis. There is no morphological inflection for number on nouns in Southern Bai.

(134) *ke*^{35} *kou*^{33} *tɯ*^{21}
chicken two CLF
'Two chickens'

(135) *ke*^{35} *sal* *tɯ*^{21}
chicken three CLF
'Three chickens'

(136) *ke*^{35} *ɕi*^{44} *tɯ*^{21}
chicken four CLF
'Four chickens'

(137) *ke*^{35} *ŋv*^{33} *tɯ*^{21}
chicken five CLF
'Five chickens'

(138) *a*^{55} *mi*^{55} *kou*^{33} *tɯ*^{21}
cat two CLF
'Two cats'

(139) *kʰua*^{33} *sa*^{55} *tɯ*^{21}
dog three CLF
'Three dogs'

Source: F5 NP Elicitation

When the classifier is an echoed classifier, derived from the head noun, the same structure holds. The number appearing between the two, as shown in the examples below.

(140) *tsɯ*^{31} *kou*^{33} *tsɯ*^{31}
tree two CLF
'Two trees'

(141) *tsɯ*^{31} *sa*^{55} *tsɯ*^{31}
tree three CLF
'Three trees'

If the speaker wishes to refer to a class of noun with an unspecified number, then the classifier is optional and may be omitted, as demonstrated below. This is likely due to the noun in such statements no longer being considered as countable.

(142) *pɔ*^{31} *we*^{32} *ge*^{35}
3SG raise chicken
'S/he raises chickens'

(143) *ŋɯ*^{21} *pi*^{31} *te*^{42} *tɔ*^{31}
cow compare pig big
'Cows are bigger than pigs'

(144) *te*^{42} *(tɯ*^{21}*)* *pi*^{31} *kʰua*^{33} *tɔ*^{31}
pig CLF compare dog big
'Pigs are bigger than dogs'

Therefore, countable concrete nouns are considered as generic or non-specific when their associated classifier is omitted. This has ramifications on the strong claim that countable concrete nouns are considered ungrammatical without a classifier. This finding at least weakens that argument.

As noun phrases increase in complexity, they maintain their structure. Example (145) demonstrates a noun phrase with possession, deixis, and number. Note that the order of N + PN + # + CLF still holds. The only difference is that the possessor takes the same position typically taken by the adjectival modifier as it is modifying the head noun.

(145) *ŋɯ*^{55} *ke*^{35} *nɯ*^{31} *sa*^{55} *tɯ*^{31}
1POSS chick. PROX three CLF
'These three chickens (of mine)'

Numeric modification of a noun may also take the form of unspecified number. Southern Bai contains three unspecified numerals, *tɕi*^{55} 'several', *ja*^{31} 'few', and *ɕia*^{44} 'some'. There are some syntactic differences between these. Syntactically, *tɕi*^{55} occupies the same position in a noun phrase as a specific number, whereas *ja*^{31} and *ɕia*^{44} occupy the classifier slot. It is likely that *tɕi*^{55} and *ɕia*^{44} are loans of Mandarin jǐ (几) and *xiē* (些) respectively.

As with utterances with a specified number, noun phrases that are modified by *tɕi*^{55} require classifier modification, with *ne*^{21}/*le*^{21} being the generic classifier for this function.

(146) a. *tɕi*^{55} *ne*^{21}
some CLF
'Some' (an unspecified number of X)

b. *tɕi*^{55} *ɳi*^{44}
some CLF for day
'Several days'

c. *tɕi*^{55} *ɳi*^{21}
some CLF for people
'Several people'

d. *sua*^{44} *tɕi*^{55} *pe*^{21}
speak some time; fold
'Said several times'

The unspecified quantifier *ja*^{31} is likely the southern equivalent of the central quantifier *ja*^{31} described in Xu and Zhao (1984, 30). Unlike *tɕi*^{55}, *ja*^{31} takes the syntactic slot of the noun classifier, as illustrated in the example below.

(147) *ke*^{35} *na*^{55} ***ja*^{31}**
chicken dist. **some**
'Those few chickens'

Similarly, *ɕia*^{44} can perform the same function, in the same position. This form was often produced by consultants from Xizhou and Wanqiao and is likely a Sinitic borrowing of *xiē* (些) which also translates to 'some' in MSM.

The two examples below illustrate the use of *ɕia*^{44} functioning as unspecified quantifiers.

(148) *ke*^{35} *puɯ*^{31} ***ɕia*^{44}**
chicken Dist. **some**
'Those few chickens'

(149) *ke*^{35} *tuɯ*^{31} ***ɕia*^{44}**
chicken Prox **some**
'These few chickens'

6.8.2. Adjectival modification

As demonstrated earlier in section 6.5, the typical order of adverbial modification is Adj + N + CLF, where the modifier precedes the noun it is modifying. The examples below demonstrate basic adjectival modification of nouns in Southern Bai.

(150) *pe*^{42} *ke*^{35} *tuɯ*^{21}
white chicken CLF
'A white chicken'
Source: NP Elicitation 27:19

(151) *xɯ*^{44} *ke*^{35} *tɯ*^{21}
black chicken CLF
'A black chicken'
Source: F5 NP Elicitation 04:42

(152) *se*^{31} *ke*^{35} *tɯ*^{21}
small chicken CLF
'A small chicken; chick'
Source: NP Elicitation 20181127

(153) *ka*^{35} *ŋ̥i*^{21} *ke˞*^{35}
tall person CLF
'Tall person'

(154) *ku*^{33} *ŋ̥i*^{21} *xuo*^{33}
old person PLUR.
'Old people'
Source: Jackal & Crow (F5)

(155) *se*^{31} *ke*^{32} *ŋe˞*^{33}
small bowl CLF
'(a) small bowl'

(156) *to*^{31} *ke*^{32} *ŋe˞*^{33}
big bowl CLF
'(a) large bowl'

Source: WeChat correspondence (M1)

(157) *xɯ*^{44} *kua*^{35} *jao*^{21}
black pant CLF
'(a pair of) black pants'
Source: Topological relations (162)

(158) *xɯ*^{44} *nu*^{21} *ne*^{21}
black bag CLF
'(a) black bag'
Source: Topological relations (177)

As mentioned previously, countable concrete nouns and non-personal pronouns require a classifier to be deemed grammatically correct. However, not all nouns are countable, for example, tea. Examples (159) and (160) illustrate word order for adjectival modification of a non-countable noun. As demonstrated, no classifier is required.

(159) *kʰv*^{33} *tsɔ*^{21}
bitter tea
'bitter tea'
Source: San Dao Cha (2)

(160) *ga*^{35} *mi*^{44} *tsɔ*^{21}
sweet tea
'sweet tea'
Source: San Dao Cha (49)

As modification becomes more complex, so does the noun phrase order. When a noun is modified by both an adjective and number, the order is Adj + N + # + CLF, as demonstrated in examples (161) to (163).

(161) *xu*^{44} *ke*^{35} *sa*^{55} *tu*^{21}
black chicken three CLF
'Three black chickens'

(162) *xu*^{44} *nu*^{21} *sa*^{55} *te*^{42}
black bag three CLF
'Three black bags'

(163) *se*^{31} *ke*^{32} *sa*^{55} *pe*^{21}
small bowl three CLF
'Three small bowls'
Source: WeChat correspondence (M1 28/05/20)

Constructions that employ several adjectival modifiers tend to have a preferred word order. To illustrate this, the examples labelled a. in the constructions below demonstrate a preference for colours to be closest to the head noun, whereas separating the colour from the head noun in those examples labelled b. are deemed ungrammatical.

(164) a. *tɔ*^{31} *xu*^{44} *kʰua*^{33} *tu*^{21}
big black dog CLF
'A big black dog'

b. **xu*^{44} *tɔ*^{31} *kʰua*^{33} *tu*^{21}
black big dog CLF
*'A big black dog'

(165) a. *se*^{31} *xu*^{44} *kʰua*^{33} *tu*^{21}
small black dog CLF
'A small black dog'

b. **xu*^{44} *se*^{31} *kʰua*^{33} *tu*^{21}
black small dog CLF
*'A small black dog'

(166) a. *ku*[33] *xɯ*[44] *kʰua*[33] *tɯ*[21]
old black dog CLF
'An old black dog'

b. **xɯ*[44] *ku*[33] *kʰua*[33] *tɯ*[21]
black old dog CLF
*'An old black dog'

Source: WeChat correspondence with M1 (14/06/21)

While this is not a definitive explanation of word order preferences for adjectival modification within the noun phrase, it does illustrate that speakers express a preference for some adjectival modifiers to be closer to the head noun of a noun phrase. Further examination is required for different types of adjectival modifiers outside of colours and size, as well as longer strings of modification.

When the adjectival modifier is disyllabic, a nominaliser is required between the modifier and the noun. This includes reduplicated adjectival verbs, disyllabic compounds, and adverbial modification. This nominalisation is typically performed by the particle *nɔ*[44] [29], as demonstrated in the examples below.

(167) *tsui*[55] *tɕʰiou*[55] ***nɔ*[44]** *li*[31] *v*[35]
most good **ATTR** gift
'The greatest gift'
Source: The greatest gift (1)

(168) *ku*[33] *lao*[44] ***nɔ*[44]** *ji*[35] *kɯ*[44] *ku*[55] *sɿ*[55]
old **ATTR** one CLF story
'An old story'
Source: F4 Jackal & Crow (1)

(169) *lao*[32] *sɿ*[55] ***nɔ*[44]** *xɔ*[31]
old style **ATTR** house
'An old-style house'
Source: The greatest gift (6)

The following section will describe genitive noun phrase constructions.

[29] *nɔ*[44] has a variety of functions in Southern Bai. See section 9.3 for a detailed overview.

6.8.3. Genitive noun phrase constructions

Possession in Southern Bai is expressed via two methods, via morphological inflection on the personal pronoun, as discussed in section 5.1, or by using one of the possessive markers *v*^{31} 'POSS' or *nɔ*^{44} 'POSS'.

Inalienable possession requires no possessive marking and can be expressed with genitive pronoun forms alone.

(170) *ŋɯ*^{55} *sɯ*^{33} *pʰou*^{44}
1GEN hand
'my hand'

(171) *ŋɯ*^{55} *tɯ*^{21} *pɔ*^{21}
1GEN head
'My head'

(172) *ŋɯ*^{55} *kou*^{44} *pʰou*^{44}
1GEN foot
'My foot'

Inalienable possession is extended to family members and objects associated with family, such as *xɔ*^{31} *tv*^{35} 'home; family' and *xɔ*^{31} *fa*^{35} 'house'. Expressions involving extension of inalienable possession are presented below.

(173) *ŋɯ*^{55} *ti*^{33}
1GEN father
'My father'

(174) *pɯ*^{55} *si*^{44} *fv*^{44}
3GEN master
'His master'

(175) *ŋɯ*^{55} *tʰe*^{44}
1GEN younger sibling
'My younger sibling'

(176) *ŋɯ*^{55} *xɔ*^{31} *tv*^{35}
1GEN family: home
'My family; home'

(177) *ŋɯ*^{55} *xɔ*^{31} *fa*^{35}
1GEN house
'My house'

When indicating possession of an alienable object, further possessive marking is required. Typically, the marker *nɔ*^{44} is employed following the genitive personal pronoun. The use of *nɔ*^{44} as a genitive marker appears to have come from the Mandarin use of *de* which, like *nɔ*^{44}, also functions as a possessive marker, attributive marker, and adverbialiser.[30] The examples below illustrate *nɔ*^{44} as a genitive marker of an alienable referent.

(178) *ŋɯ*^{55} ***nɔ***$^{\mathbf{44}}$ *ke*^{35} *tɯ*^{21}
1GEN **POSS** chicken CLF
'My chicken'
Source: NP & 'ga' elicitation (16)

(179) *pɯ*^{55} ***nɔ***$^{\mathbf{44}}$ *ke*^{35} *tɯ*^{21}
3GEN **POSS** chicken CLF
'His chicken'
Source: NP elicitation 20181205

(180) *nou*^{55} *mi*^{42} *ŋ̍i*^{21} ***nɔ***$^{\mathbf{44}}$ *xɔ*^{31} *tv*^{35}
peasant CLF **POSS** house
'A peasant's house'
Source: F5 Jackal & Crow (4)

The word order of phrases indicating possession tends to be quite stable as utterances increase in complexity. When adding adjectival modification to a possessive phrase, an adjective is simply placed before the object being modified, following the aforementioned noun phrase rule. This is demonstrated in examples (181) and (182).

(181) *ŋɯ*^{55} *nɔ*^{44} ***pe˧***$^{\mathbf{42}}$ *ke*^{35} *tɯ*^{21}
1GEN POSS **white** chicken CLF
'My white chicken'
Source: NP elicitation 20181205

(182) *ŋɯ*^{55} *nɔ*^{44} ***xɯ***$^{\mathbf{44}}$ *ke*^{35} *tɯ*^{21}
1GEN POSS **black** chicken CLF
'My black chicken'
Source: NP & 'ga' elicitation (149)

When indicating a quantity, the number is placed between the object being quantified and its associated classifier.

[30] The multifunctionality of the particle *nɔ*^{44} will be explored in detail in section 9.3.

(183) *ŋɯ*^{55} *nɔ*^{44} *ke*^{35} ***ŋv***$^{\mathbf{33}}$ *tɯ*^{21}
1GEN POSS chicken **five** CLF
'My five chickens'
Source: NP & 'ga' elicitation

(184) *ŋɯ*^{55} *nɔ*^{44} *ke*^{35} ***kou***$^{\mathbf{33}}$ *tɯ*^{21}
1GEN POSS chicken **two** CLF
'My two chickens'

(185) *pɯ*^{55} *nɔ*^{44} *ke*^{35} ***mu***$^{\mathbf{33}}$ (31) *tɯ*^{21}
3GEN POSS chicken **five** CLF
'His/Her five chickens'
Source: NP Elicitation (F5)

While *nɔ*^{44} is the most commonly used possessive marker, another possessive marker *v*^{31} appears in some texts. In consultation, M1 confirmed that *v*^{31} expresses ownership over something. Xu and Zhao (1984) describe a possessive pronoun *va*^{42} in the Central dialect that is used in possessive clauses. Judging from the example below, it is likely that *v*^{31} is the southern variant in both phonetic form and syntactic function, and that *nɔ*^{44} is a loan, as discussed earlier. The use of *v*^{31} as a possessive marker is illustrated in the examples below.

(186) *ŋɯ*^{55} *sou*^{31} *tɕi*^{44} *tɕia*^{44} *piao*^{33}, *tse*^{33} *nɯ*^{55} *v*^{31}
1GEN mobile ph. CLF not EXIST[32] 2GEN POSS
'It is not my mobile phone, it's yours.'
Source: wordlist line 144

(187) *tsɯ*^{33} *ŋɯ*^{55} *v*^{31} *sou*^{31} *tɕi*^{44} *tɕia*^{44}
EXIST 1GEN POSS mobile CLF
'It's my mobile'

The possessive marker *v*^{31} also appears in conditional clauses, which are considered genitive in some topolects of Southern Bai. The third person genitive pronouns can be combined with other possessive markers to form *pa*^{55} *nɔ*^{44} *v*^{31} 'other people's'.

[31] Xizhou variant of the number 'five'.

[32] Existential constructions will be covered in section 7.6.

6.8.4. Pronominal modification

As mentioned in section 6.4, Southern Bai contains personal, demonstrative, and interrogative pronouns. Typically, personal pronouns can constitute a whole noun phrase or the possessor of a noun phrase. A noun phrase may also undergo pronominal modification from demonstrative pronouns.

When adding a demonstrative pronoun to a noun phrase construction modified by an adjective, the demonstrative remains between the head noun and its classifier, as found by Wáng (2002). This order is demonstrated in the examples below.

(188) *xu*^{44} *a*^{55} *mi*^{55} ***na*^{55}** *tɯ*^{21}
black cat **DIST** CLF
'That black cat'

(189) *se*^{31} *tsao*^{21} *tsv*^{35} ***na*^{55}** *pe*^{21}
small teacup **DIST** CLF
'That small teacup'
Source: WeChat correspondence (3/9/19)

As found by Wáng (2002) in his discussion on the Bai classification system, if a demonstrative pronoun modifies a noun, then the noun phrase must contain a classifier.

To add a specified quantity, the number is added between the demonstrative pronoun and the classifier, following the canonical word order.

(190) *se*^{31} *tsao*^{21} *tsv*^{35} *na*^{55} ***sa*^{55}** *pe*^{21}
small teacup DIST **three** CLF
'Those three small teacups'
Source: WeChat correspondence (3/9/19)

The generic classifier *le*^{21}/*ne*^{21} is often used in combination with demonstrative pronouns. This results in *tɯ*^{31} *le*^{21} or *nɯ*^{31} *le*^{21} 'this one' and *pɯ*^{31} *le*^{21} or *na*^{55} *le*^{21} 'that one.' As mentioned in section 6.4 the differences between the demonstrative pronouns represents regional differences between speakers from around Dali and those further north.

This aforementioned generic form can also be used to refer to a previously introduced object, as in example (191).

(191) *pɯ*^{31} *le*^{21}, *xu*^{42} *li*^{35} *tɯ*^{21} *ɕia*^{31} *jɯ*^{44}
that (one) fox CLF want eat
'That one, the fox wants to eat (it)'
Source: Jackal & Crow

As discussed earlier in section 6.4.3, Southern Bai contains several interrogative pronouns that are used to form questions. The following section will show how interrogative pronouns can be used to form an interrogative noun phrase.

The interrogative pronoun *wa*^{55} involves enquiries about quantity. It takes the same place in the noun phrase as a numeral, between the head noun and the classifier, as demonstrated in examples (192) and (193).

(192) *pʰi*^{42} *kuo*^{31} *wa*^{55} *te*^{42}
apple how many CLF
'How many apples'

(193) *kʰua*^{33} *wa*^{55} *tɯ*^{21}
dog how many CLF
'How many dogs?'
Source: Pronoun paradigm

6.9. Noun Phrase Summary

This section has used information provided in the previous chapter to describe the main noun phrase constructions found in Southern Bai. Typically, modification occurs before the noun except in constructions involving number and gender. This coincides with much of the existing literature that states that Bai is a modifier + modified language.

The Noun Phrase construction is quite stable and consistent. With the exception of gender modification of animals, most lexical items can consistently and predictably adhere to the following Noun Phrase rule:

NP → (Adj) N (PN) (#) CLF

The next chapter will focus on the Southern Bai verb phrase.

Chapter 7 - Verb Phrase

This chapter will first introduce some key elements of the verb phrase in Southern Bai before describing the verb phrase in more detail.

7.1. Verb types

The following section will discuss the different verb types found that are important to later discussion of the verb phrase and the language in general. Beginning with main verb types, discussion will then progress to two other verb types found in Southern Bai — directional coverbs, and auxiliary verbs.

Verbs in each category may be either transitive or intransitive. In some instances, verbs may be both. Verbs within each type may also vary in their telicity and agency.

7.1.1. Main verbs

The classification of Southern Bai verb types will be based on the four of States of Affairs proposed by Van Valin and LaPolla (1997). While this classification system was initially proposed for the semantic notion of states of affairs, their definitions are also appropriate for the grammatical notion of the word class of verbs. This system groups verbs according to the type of actions encoded in the verb. These are Situations, Events, Processes, and Actions.

7.1.1.1. Situations

The least dynamic verb type in the typology, situational verbs are defined as:

> "static, non-dynamic states of affairs which may involve the location of a participant (a book on the table), the state or condition of a participant (Maria is tired) or an internal experience of a participant (Fred likes Alice)" (Van Valin & LaPolla, 1997, p.83)

Examples of situation verbs in Southern Bai include: -

(194) *ta*^{35} *to*^{31} *fv*^{44} ‘to be pregnant’
kv^{32} ‘to live; dwell’
ɕia^{31} ‘to think’
niou^{44} ‘to want’
ɕi^{31} *xua*^{35} ‘to like’
tsi^{55} *tsi*^{33} ‘to feel’

7.1.1.2. Events

This type of verb has been defined by Van Valin and LaPolla (1997, p. 83) as:

> “states of affairs which seem to happen instantly, e.g. balloons popping, a glass shattering, a building blowing up.”

This class is the most telic, typically having an expected completion built into the interpretation of the action. Example (195) below lists some event type verbs in Southern Bai.

(195) *tao*^{55} ‘to pour’
tua^{42} ‘to fall’
ku^{21} ‘to buy’
tɕi^{35} ‘to close’
ke^{55} ‘to open’
k^{h}*ua*^{44} ‘to pick’
liou^{44} ‘to throw’
ne^{44} ‘to lift’

7.1.1.3. Processes

These are verbs that often involve manipulation or handling of an item and therefore are often transitive. This class is also highly telic. This type has been defined by Van Valin and LaPolla (1997, p.83) as describing actions that,

> “involve change and take place over time, e.g. a change in location (a book falling to the floor), a change in state or condition (ice melting, water freezing, clothes drying), or the internal experience of a participant (Tanisha learning Swahili).”

Some examples from Southern Bai include:

(196) *su*^{44} ‘to place; to put’
tsou^{44} ‘to put on’
je^{32} ‘to wear’
ts^{h}*i*^{55} ‘to discard’
liou^{44} ‘to throw’
pe^{31} ‘to arrange’
tsɨ^{42} ‘to pick up’
tɕy^{32} ‘to scoop’
tɕia^{35} ‘to clasp’
pe^{42} ‘to insert’
ku^{32} ‘to give’

Many verbs in this category were found in the ‘Put project’ (Bowerman et al., 2004) elicitation.

7.1.1.4. Actions

This is the most dynamic class and is defined as,

> “dynamic states of affairs in which a participant does something, e.g. Chris singing, the ball rolling, the sun shining, a fire crackling, Yolanda swimming, the ground shaking, Tyrone drinking beer (Van Valin & LaPolla, 1997, p.83)”

Example (197) below lists come common action verbs found in Southern Bai.

(197) *tɕia*^{31} ‘to tell; explain’
zv^{31} ‘to use’
ju^{44} ‘to eat’
pe^{44} ‘to go’
fv^{35} ‘to fly’
ts^{h}*a*^{55} ‘to sing’
ke^{21} ‘to climb’
sua^{44} ‘to say’
tsao^{31} ‘to speak’
pia^{44} ‘to hold; carry’
ɣu^{33} ‘to drink’

A sub-category of the action verb type are directional verbs. This sub-class describe actions of motion that are directional. As well as functioning as fully lexicalised verbs on their own,

any verbs in this class are able to function as directional coverbs in Serial Verb Constructions (SVCs) of motion events[33]. Directional verbs found in Southern Bai are:

(198) *kuo*^{32} ‘to pass’
juɯ^{35} ‘to come’
tʰuɯ^{55} ‘to descend’
tsou^{33} ‘to ascend’
ni^{44} ‘to enter’
ŋeˇ^{21} ‘to depart’

The following sections will discuss two more classes of verbs that are important in the Southern Bai verb phrase — Directional coverbs and auxiliary verbs.

7.1.2. Directional coverbs

The term coverb refers to the class of words that function somewhere between that of a verb and an English preposition. They are usually derived from verbs, but do not function as the main predicate verb. They are a distinct word class differing from full lexical verbs and nominals. This class, often behaving as ‘light’ verbs in a complex predicate, augment the main verb with further information (Baker & Harvey, 2010; C. N. Li & Thompson, 1981; Schultze-Berndt, 2007).

Several properties are shared across various definitions of coverbs in the literature. They are part of complex predicates, modifying the main lexical verb. The central participants function as core arguments of the whole construction. Most coverbs are able to function on their own as verbs or have been grammaticalised from lexical items that previously functioned as verbs (C. N. Li & Thompson, 1981; Schultze-Berndt, 2007). Those that can stand alone as full verbs often function under a different meaning when used as coverbs.

[33] Motion events will be covered in depth in Chapter 10.

In their grammar of Mandarin, Li & Thompson (1981) state their reason for choosing the term coverb to refer to this word class was to differentiate them from fully lexicalised verbs or prepositions as their function differs considerably. Syntactically, coverbs in Mandarin occur in combination with a noun phrase, typically following follow the main verb.

Based on the properties outlined above, I have chosen to label the class of words that augment extra information to the matrix verb in Southern Bai as coverbs. They are derived from full lexical verbs. They modify the main verb in complex predicates. They are a distinct word class from full verbs, nominals, and prepositions performing the function only of modifying the predicates main verb. While able to operate as full verbs, their meaning differs from their fully lexicalised form. The only coverbs found in this study are directional in nature. Therefore, I have labelled them as Directional Coverbs (DirCvb). Directional Coverbs perform an important function in encoding directional information in Serial Verb Constructions that are used in the description of motion events. These are events involving motion or movement of a figure from one place to another and will be covered in detail in Chapter 10.

Southern Bai employs several directional coverbs. These coverbs are derived from the directional verbs described in section 7.1.1.4 and are listed below.

(199) *tʰɯ*^{55} ‘down’
tsou^{33} ‘up’
ni^{44} ‘into’
kuo^{32} ‘passed’
jɯ^{35} ‘hither; go’
ŋe˗^{21} ‘thither; depart’

The main difference between directional coverbs and verbal compounds lies in the modifier/modified relationship and their function. As discussed in section 5.4.1.3, verbal compounds follow the [modifier] + [modified] order typical of compounds. This can be seen

by revisiting an earlier example. In the example below, the left-hand element, *tou*^{55} ‘to move’ modifies the head verb *t*^{h}*i*^{44} ‘hear’.

(200) *tou*^{55} *t*^{h}*i*^{44}
to move to hear
‘moving; melodic’

Conversely, directional coverbs perform modification by appearing after the lexical verb. The following examples demonstrate this order.

(201) *ke*^{21} *t*^{h}*uu*^{55}
climb ascend
‘climb up’

(202) *ke*^{21} *tsou*^{33}
climb descend
‘climb down’

The other way directional verbs differ from verbal compounds is in their function. Where verbal compounds have a derivational function in word formation, directional coverbs form part of a Serial Verb Construction that functions to add extra information regarding the direction or path of the expressed action. Serial Verb Constructions will be covered in detail in section 7.11 later in this chapter.

The next point of discussion will be Auxiliary modal verbs.

7.1.3. Auxiliary verbs

Auxiliary verbs are a sub-category of verbs. They appear directly before the main matrix verb of a predicate and like coverbs, do not function as a full lexical verb. They are semantically weaker and function to add further information about the event being described (Anderson, 2006, pp. 4–5; C. N. Li & Thompson, 1981, p. 172; Zheng, 2017, p. 48). In the case of Southern Bai, auxiliary verbs express the speaker’s epistemic understanding of the possibility

an event will occur or be completed. Syntactically, auxiliary verbs precede the main predicate verb.

Most of the auxiliaries in Southern Bai are Sinitic loans. Table 39 (below) displays equivalent verbs found in MSM and four geographically related languages, Yi, Hani, Lahu, and Naxi, based on a Yunnan language survey conducted by Li & Duan (1998).

Gloss	**Bai**	**MSM**	**Yi**	**Hani**	**Lahu**	**Naxi**
Epistemic strong (will)	*ŋ̍ou*^{44}	*jao*^{51}	*ŋɔ*^{33}	*ɔ*^{55}	*xɣ*^{54}	*ŋ̍i*^{33}
Epistemic probable (maybe)	*kʰɯ*^{31} *nɯ*^{44}	*kɯ*^{213} *nɯŋ*^{35}	*ŋ̍e*^{21} *dɔ*^{33}	(no entry) [34]	*xɛ*^{35}	*nda*^{31} *ŋgv*^{33}
Deontic (want)	*ɛia*^{44}	*ɛiaŋ*^{213}	*nọ*^{21}	*nø*^{21}	*dɔ*^{53}	*sv*^{33} *ndv*^{33} (35)
Epistemic Weak (may)	*kʰɔ*^{44} *ji*^{31}	*kʰɯ*^{213} *ji*^{213}	*do*^{21}	*ɣa*^{31} *li*^{55}	*phɛ*^{21}	*tha*^{55}

Table 39 - Modal auxiliaries in related Yunnan languages

As Table 39 demonstrates, with the exception of *ŋ̍ou*^{44} which resembles entries from Yi, Hani, and Naxi, the other auxiliary verbs in Southern Bai correspond more strongly with the MSM pronunciation with a dropped nasal final, suggesting either a loan from Sinitic, or a shared cognate. Further investigation into Li & Duan (1998) shows differences over time for most of these entries. These are exhibited in Table 40.

Gloss	**1998 data**	**2018 data**	**MSM form**
will	*ŋ̍ou*^{44}	*ŋ̍ou*^{44}	*jao*^{51}
maybe	*… tsv*^{55} *tsv*^{55} *(suffix)*	*kɯ*^{31} *nɯ*^{44}	*kɯ*^{213} *nɯŋ*^{35}
may	*…te*^{33} *nɯ*^{44}	*kʰɔ*^{44} *ji*^{31}	*kʰɯ*^{213} *ji*^{213}

Table 40 - Shift in forms for epistemic auxiliaries

[34] The Hejiang dialect has an entry *kho31 nẽ31* which also appears to be a Mandarin loan.

[35] The entry in Li & Duan (2008) appears for the MSM verb meaning ‘to think; to miss’, which is also used as an auxiliary verb ‘to want.’ While the entry in Li & Duan (1998) appears for the former meaning, I have included it here to demonstrate the phonetic correspondence to the MSM form. For this reason, I have not included it in Table 40.

This shift over the past 20 years towards the MSM forms indicates that the current forms in Southern Bai are most likely borrowings.

The most common epistemic auxiliary among the data is *ŋ̍ou*^{44} which refers to events likely to happen in the future. It functions to express the speaker or the agent's desire for an event to occur. As with auxiliary verbs in Southern Bai, it appears before the main lexical verb.

(203) *meˇ*^{55} *ŋ̍i*^{44} *ŋɔ*^{31} *ŋ̍ou*^{44} *pe*^{44} *ɕia*^{55} *kua*^{44}
tomorrow 1SG want go Xiaguan
Tomorrow, I want to go to Xiaguan

(204) *a*^{55} *mi*^{55} *tɯ*^{21} *ŋ̍ou*^{44} *ku*^{35} *tsɯ*^{31}
cat CLF want climb tree
The cat wants to climb the tree
Source: NP & 'ga' elicitation

A synonym of *ŋ̍ou*^{44} is *ɕia*^{31}, a Mandarin loan of 想 (xiǎng). As with *ŋ̍ou*^{44}, it appears directly before the lexical verb and expresses the speaker's desire for something to occur.

(205) *kəˇ*^{55} *ŋ̍i*^{44} *ŋɔ*^{31} *ɕia*^{31} *tɕia*^{31} *ku*^{55} *si*^{55}
today 1SG want tell story
Today, I want to tell a story
Source: Greatest gift

(206) *ŋɔ*^{31} *ɕia*^{31} *jɯ*^{44} *mɯ*^{44} *mi*^{32} *xeˇ*^{55}
1SG want eat noodles
I want to eat noodles
Source: NP & 'ga' (253)

Two other lexemes appeared in the data indicating a lower possibility of an event/action occurring. Both are Sinitic loans. The first is, *kʰɯ*^{31} *nɯ*^{44}, a Sinitic loan of 可能 (kě néng). Again, it appears directly before the lexical verb, but expresses a lighter epistemic possibility than *ŋ̍ou*^{44}. Example (207) (below) demonstrates how this auxiliary functions.

(207) *meˇ*^{55} *ŋ̍i*^{44} *ŋɔ*^{31} *kʰɯ*^{31} *nɯ*^{44} *pe*^{44} *ɕia*^{55} *kua*^{44}
tomorrow 1SG perhaps go Xiaguan
I may go to Xiaguan tomorrow.
Source: NP & 'ga'

The following auxiliary only appeared once in the data, following an elicitation with a young Dali speaker. It may be a shortened form of *kʰɯ*^{31} *nɯ*^{44}, but may possibly be an earlier form, prior to Sinitic influence. It was translated as being the same word in MSM.

(208) *meˇ*^{55} *ŋ̍i*^{44} *ŋa*^{55} *keˇ*^{35} *pe*^{44} *ɕia*^{55} *kua*^{44}
tomorrow 1PL may go Xiaguan
We may go to Xiaguan tomorrow
Source: Wordlist elicitation

Another Sinitic loan, *kʰɔ*^{44} *ji*^{31} is used to indicate the possibility of an event to be conducted. This is a loan of the Sinitic modal auxiliary 可以 (kě yǐ). Again, it appears directly prior to the lexical verb.

(209) *teˇ*^{44} *kʰe*^{55} *xɯ*^{55} *kʰɔ*^{44} *ji*^{31} *kɯ*^{21}
strike open after can ride
Once it is open, it can be ridden
Source: F5 staged events

In their discussion on Mandarin, Li & Thompson (1981) argue auxiliary verbs are linked syntactically with lexical verbs, appearing immediately prior to the main predicate verb and negated by *bù* (不). Likewise, auxiliaries in Southern Bai parallel those described in MSM as they can also be immediately negated by the verbal negator *pɯ*^{31} and appear immediately before the main verb. As they share many properties described by Li & Thompson for the lexical category they label as auxiliary verbs, I will also adopt this label. The following example demonstrates how the auxiliary verb is negated. The negator *pɯ*^{31} appears after the auxiliary *ŋ̍ou*^{44} and before the main lexical verb phrase *tʰe*^{55} *tsv*^{33} 'too strong'. Negation is covered in detail in section 8.1.

(210) *ŋ̍ou*^{44} *pɯ*^{31} *tʰe*^{55} *tsv*^{33}
want NEG too strong
'(You) don't want to do it too strong'
Source: Jiaz xif (11)

7.2. Pragmatic particles

Pragmatic particles form a lexical class of words that indicate the tone, attitude, or intention of the speaker's utterance (Bybee et al., 1994, p. 176; Ziegeler, 2006, p. 259). In Southern Bai, they include independent sentence final or initial lexemes that serve a pragmatic function in expressing the speaker's attitude or tone towards the utterance.

This lexical category differs from the auxiliary verbs described earlier in Section 7.1.3. Syntactically, they do not appear directly following a verb, but rather as sentence initial or final. Their scope applies to the whole sentence, and they are mostly pragmatic in function, used, for example, to soften requests or express surprise.

The majority of pragmatic particles occur in the sentence final position. Data shows only one modal particle occurring in sentence initial position which finds against Xu and Zhao's claim (1984, p. 57) which states that *all*[36] modal particles are sentence initial.

The following section will categorise the main modal particles found in Southern Bai, based on the categories proposed by Zhao Haiyan (2016). For further discussion on constructions that involve these particles and how they are used, please refer to section 8.2 in the following chapter. Several pragmatic particles were found during data collection. The most common are listed below.

(211) *ni*^{55} 'interrogative'
me^{33} 'polite imperative'
ta^{21} 'imperative'
jou^{33} 'alternative imperative'
a^{44} 'exclamative'
lɔ^{32}/*nɔ*^{32} 'emphatic'

[36] Emphasis is mine.

Those expressing the speaker's attitude including expressing surprise, incredulity, or questioning the speaker's assessment of the situation are listed in example (212).

(212) *a*^{35} 'surprise'
lɔ^{32}/*nɔ*^{32} 'emphatic'
ɯ^{32}, 'agreement'
a^{31} 'exclamation'
a^{44} 'affirmation'

The following section will offer examples of how these pragmatic particles are used.

ɯ^{32} expresses agreement with a previous utterance from an interlocutor. It is typically sentence final but may occur in isolation to just express the speaker's agreement with the previous statement. The following two examples were produced during a word list elicitation session between two Southern Bai speakers. Example (213) was produced by M1 after F6 asked him to confirm whether or not she uttered the phrase correctly. In the second, (214), M1 (B:) corrects F6's utterance, after which she repairs and offers her agreement.

(213) *ke*^{35} *na*^{55} *ja*^{31}, *ɯ*^{32}
chicken that some AGR
'Right, it's "ke^{35} na^{55} ja^{31}"'
Source: NP elicitation

(214) *A: tɕio*^{21} *tɯ*^{21} *ma*^{21}
fall hair

B: tua^{42}
fall (correction)

A: tua^{42} *tɯ*^{21} *ma*^{21}, *ɯ*^{32}
fall hair AGR

A: Go bald.
B: [correction] '*tua*^{42}'.
A: Yeah, it's '*tua*^{42} *tɯ*^{21} *ma*^{21}.'
Source: Wordlist

Example (214) is a good illustration of this pragmatic particle expressing agreement. In the second line, speaker B corrects speaker A's initial translation of the phrase 'go bald'. After

which, A offers a correction, followed by the agreement particle *ɯ*^{32} which functions to express to speaker B that he was indeed correct.

When the speaker is unsure about a statement, or to express incredulity, a speaker can use *a*^{35} in the sentence final position to elicit a response of affirmation from their interlocutor.

(215) *kʰua*^{33} *tɯ*^{21} *a*^{35}
dog CLF Q
'Is that a dog? / That's a dog!?'

(216) *ne*^{21} *tsɯ*^{33} *tsao*^{21} *tsv*^{35} *a*^{35}
This be tea cup Q
'Is this a tea cup? / This is a teacup?'
Source: Topological relations

Only one pragmatic particle was found to occupy sentence initial position. *a*^{31} was often used in narratives where the speaker was mentioning the past. It seems to be used to express a nostalgic fondness, or fondness for the material being spoken about. The breathy phonation on this lexeme helps add to the feeling of fondness.

(217) *a*^{31}, *ŋɔ*^{31} *tɕiao*^{35} *tɯ*^{44}, *tsui*^{55} *xu*^{33} *li*^{31} *v*^{35} *tsɯ*^{33}……
MOD 1SG to feel most good gift be
'Ah, I felt the greatest gift was……'
Source: The greatest gift

(218) *a*^{31} *piao*^{33} *tsɯ*^{33} *pʰi*^{42} *kuo*^{31}, *tsɯ*^{33} *ɕy*^{55} *li*^{55}
Ah! not to be apple to be pear
'Ah! That's not an apple, it's a pear'
Source: Wordlist elicitation

Zhao (2016) also describes several other sentence initial pragmatic particles expressing exclamation found in the Zhaozhuang topolect, including *to*^{42}, *la*^{42}, and *sa*^{33}. However, no examples of these particles were found in this study.

Sentences may contain more than one modal particle. A speaker can utilise place in both sentence initial and final modals to express more than one attitude, as presented in example (219) . As mentioned in section 5.5, the verb *ɕia*^{35} is reduplicated for further softening.

(219) ***a*^{44}** *ŋ̍ia*^{55} *ku*^{21} *tʰu*^{55} *ju*^{35} *ɕia*^{35} *ɕia*^{35} *tsɨ*^{44} ***jou*^{33}**
Ah 1PL.INCL ride descend INC rest rest FILL **IMP**
'Ah, let's get off our bikes and rest a while'
Source: The greatest gift

The next component of the Southern Bai verb phrase to be discussed will be adverbs.

7.3. Adverbs

Adverbs modify verbs and adjectival verbs. In Southern Bai they represent a mixed class of independent adverbs and those derived from adjectival verbs, such as *tɕʰiou*^{55} *tɕʰiou*^{55} 'well'. They modify the degree, extent, range, frequency of the event or quality. Structurally, adverbs appear before the verb they are modifying. If there is adjectival modification, then the adverb appears before the modifier, following the [modifier] + [modified] internal structure of compounds and phrases. They are distinct from other verb related classes, such as coverbs, as they appear as the furthest left of the verb phrase, whereas coverbs appear after the main verb. Additionally, adverbs, like adjectival elements, modify a quality of the verb, usually time or intensity, whereas coverbs tend to augment directional or spatial information.

Adverbs in Southern Bai have been divided into two classes, adverbs of degree and adverbs of time. Adverbs of degree appear directly before the modified element and modify the extent of the action or quality. They are also able to modify adjectival verbs.

Word order among adverbs of time is more flexible. They may also appear before the matrix verb, but also in the clause initial position. In this case, the scope of adverbs of time is over the whole clause and describes the frequency or temporal element of the event. Many adverbs in Southern Bai appear to be Sinitic loans.

The following two sections will demonstrate how the two classes of adverbs function in Southern Bai.

7.3.1. Adverbs of degree

These adverbs modify the degree or extent of the action or the quality. Typically, they follow the [modifier + modified] order and appear directly before the verb or adjectival verb they modify. Examples (220) and (221) demonstrate how syntactically adverbs modify verbs and adjectival verbs.

(220) *nɯ^{31} le^{21}* ***fe^{44} ts^{h}ɑ^{42}*** *kao^{55} ɕie^{55}*
that way **very** happy
'As a result, he was very happy'
Source: herl sal (14)

(221) *xɯ^{55} pɔ^{31} tsao^{42}* ***t^{h}e^{55}*** *k^{h}ʋ^{33} xao^{55}*
then 3SG speak **too** bitter EMPH
'Then he said: "it's too bitter"'
Source: San dao cha (32)

Example (222) below provides a list of adverbs of degree found among the Southern Bai data.

(222) *fe^{33}* 'very'
fe^{33} ts^{h}a^{42} 'extremely' (likely Sinitic loan of 非常 *fēi cháng* 'extremely')
tɕue^{55}; tsui^{55} 'most'
t^{h}e^{55} 'excessively'
pi^{31} tɕiao^{55} 'rather; quite' (likely Sinitic loan of 比较 *bǐ jiào* 'relatively')
tɕ^{h}a^{55} mu^{55} tɕi^{55} 'almost'
ji^{35} sou^{31} 'completely'
tsɯ^{42} nɯ^{42} 'approximately'

7.3.2. Adverbs of time

Adverbs of time modify the time or frequency of the event being described. Adverbs of time may appear directly before the verbs they are modifying, as demonstrated in examples (223) and (224).

(223) *tɕ^{h}i^{44} sue^{44}* ***pɯ^{31} t^{h}ɑ^{55} tsɨ^{44}*** *pe^{44} ɣu42 sɨ35*
seven age **that time** go study
'When I was seven, I went to study'
Source: The greatest gift (114)

(224) *ɣɯ*^{33} *tsao*^{21} ***ji***^{35} ***pa***^{44} *tsɯ*^{33} *sa*^{33} *tsv*^{35}
drink tea **usually** exist three cup
'When drinking tea, (they) usually have three cups'
Source: San dao cha (2)

Additionally, adverbs of time may also appear at the clause initial position, as illustrated in example (225) below.

(225) ***ŋ̍i***^{44} ***xa***^{55} ***tsɨ***^{42} *kʰua*^{33} *tɯ*^{21} *pʰao*^{31} *ŋa*^{55} *ɣɯ*^{33}
currently dog CLF run 1PL behind
'There is currently a dog chasing us'
Source: Pronoun paradigm (36)

Example (226) lists examples of adverbs of time found in Southern Bai.

(226)

pɯ^{55} *tɯ*^{21} *mɯ*^{35}	'previously'
pɯ^{55} *ɣɯ*^{33}	'later; afterwards'
pɯ^{55} *ŋv*^{44} *nɔ*^{44}	'finally'
pɯ^{31} *tʰa*^{55} *tsɨ*^{44}	'at that time'
tɯ^{21} *mɯ*^{35}	'previously'
xɯ^{55}	'after'
ji^{35} *pa*^{44}	'commonly'
tsɯ^{33} *a*^{31} *tʰa*^{55} *tʰa*^{55}	'sometimes'
ŋ̍i^{44} *xa*^{55} *tsɨ*^{42}	'currently'
ze^{35} *tɕi*^{21}	'suddenly'
tɕie^{35} *mɔ*^{33}	'often; frequently'
ɕiou^{33}	'few; seldom'
fe^{33} *ɕiou*^{33}	'rarely'
me^{35} *mu*^{33}	'not often'

This concludes the section on adverbs in Southern Bai. The following section will discuss verbal classifiers.

7.4. Verbal classifiers

As discussed in section 5.2.1, Southern Bai includes several verbal classifiers. These differ from nominal classifiers in that they indicate the number of times an event has occurred and are able to function as a predicate, as in example (228). While many of these verbal classifiers are derived from body parts, the instrument used in the event, or words for 'side', Southern Bai also contains some generic verbal classifiers. These include *pe*^{21} 'time; fold',

tɔ^{32} ‘round’ *puɯ*^{35} ‘a while’, *pi*^{32} ‘time’, *tɕia*^{21} ‘times’ and *tsy*^{32} ‘trip’. Examples of their usage are presented below.

(227) *sua*^{44} *tɕi*^{55} ***pe***$^{\boldsymbol{21}}$
speak some **time; fold**
‘Said several times’

(228) *sa*^{55} *tao*^{32} *tsɔ*^{21}
three rounds tea
‘Three rounds of tea’

(229) *tsʰa*^{55} *juɯ*^{44} *xuɯ*^{55} *pa*^{55} *ɳi*^{21} *ŋ̊ou*^{44} *ɕia*^{35} ***puɯ***$^{\boldsymbol{35}}$
breakfast eat PFL 3PL person want rest **a while**
‘After breakfast, they would rest for a while’
Source: ‘The greatest gift (30)

(230) *tɕi*^{55} ***pi***$^{\boldsymbol{32}}$
several **time**
‘several times’

(231) *te*^{44} *sa*^{55} ***tɕia***$^{\boldsymbol{21}}$
hit three **times**
‘Hit three times’

(232) *pe*^{44} *sa*^{55} ***tsy***$^{\boldsymbol{32}}$
go three **trip**
‘Go three times’

Note that the verbal classifier *tɕia*^{21} ‘times’ in example (231) does not contain information on what instrument is use in the performance of hitting. It just expresses the number of times the event occurred. In this way it differs from those hitting events examined in section 5.2.1.

This concludes the discussion of the major components of the Southern Bai verb phrase. Now they have been introduced, discussion will progress on to primary verb phrase constructions in Southern Bai.

7.5. Simple Declarative Constructions

The following section will discuss how simple declarative clauses are constructed in Southern Bai. The following section will discuss the constructions from the transitivity of the verb in each construction, beginning with section 7.5.1, which will outline how an intransitive clause

is constructed. This will be a mostly descriptive section outlining the forms of each construction, rather than analysing the grammatical relations of each construction, which will be covered in section 9.8.

Before introducing word order in relation to verbs, a quick explanation is needed. As will be argued in section 9.2, Southern Bai lacks a grammatical Subject. Therefore, for the remainder of this thesis the syntactic relations SVO will be replaced with the comparative concepts for semantic relations described in Haspelmath (2005, p. 1, 2011) of S, (sole argument of intransitive verb), A (agent-like argument of transitive verb), and P (patient-like argument of transitive verb). The analyses presented here are introductory for the purpose of introducing word order in the Southern Bai verb phrase. For a more nuanced and detailed discussion on these grammatical relations, refer to sections 9.2 and 9.8.

7.5.1. Intransitive constructions

The simplest construction involves a predicate with a matrix verb that has only one nominal argument. In an unmarked Southern Bai clause, this is a noun phrase that occurs before the matrix verb. This would typically be the agent. This construction is demonstrated in example (233).

(233) *kʰua*^{33} *tɯ*^{21} *pʰao*^{31}
dog CLF run
'The dog runs/is running'
Source: PN paradigm

The degree of completion of the action can be established by placing the relevant aspect marker directly after the matrix verb, as demonstrated in example (234).

(234) *ke*^{35} *tɯ*^{21} *fv*^{32} *xao*^{31}
chicken CLF fly RES
'The chicken flew'
Source: NP elicitation

Information indicating location or direction of the event is expressed by placing a locative noun phrase or directional coverb after the matrix verb, as in example (235).

(235) *ŋv*^{35} *tɯ*^{21} *tua*^{42} *tʰɯ*^{55} *jɯ*^{35}
fish CLF fall descend INC
'The fish fell down'
Source: F5 Jackal & Crow (21)

Adjectival verbs are also able to act as a predicate head, as demonstrated in example (236).

(236) *pɔ*^{31} *le*^{21}, *tɕi*^{55} *kʰa*^{44}
3SG tired hungry
'It was tired and hungry'
Source: F5 Jackal and Crow (14)

7.5.2. Transitive constructions

In a clause with two nominal arguments, the canonical word order in Southern Bai is AVP. This correlates with descriptions on other dialects and topolects of Bai including the Central dialect (Allen, 2007; Wiersma, 2007; L. Xu & Zhao, 1984), the Zhaozhuang topolect (Y. Zhao, 2012), the Heqing topolect (J. Zhao, 2010) and Meiba (X. Li, 2018)[37].

The simplest transitive clause contains an A-argument, a matrix verb, and a single nominal P-complement that directly follows the matrix verb, as in examples (237) to (239).

(237) *ŋɯ*^{55} *ti*^{33} *kɯ*^{21} *ta*^{44} *tsʰeˇ*^{44}
1GEN father ride bicycle
'My father rides/rode a bicycle'
Source: The greatest gift (5)

(238) *a*^{55} *mi*^{55} *tɯ*^{21} *ke*^{21} *sv*^{32}
cat CLF climb mountain
'(The) cat climbed the mountain'

(239) *a*^{55} *mi*^{55} *tɯ*^{21} *ke*^{21} *tsɯ*^{31} *tsɯ*^{31}
cat CLF climb tree
'(The) cat climbed the tree'
Source: NP & 'ga' elicitation

[37] These sources quote SVO order, but as stated in the introduction to section 7.5, these syntactic relations have been replaced with semantic ones.

If aspectual marking is required, it occurs directly after the matrix verb, before the P-argument, as in examples (240) – (242).

(240) *kʰua*^{33} *tɯ*^{21} *ŋa*^{44} *tɯ*^{44} *ŋɔ*^{31}
dog CLF bite PFV 1SG
'The dog bit me'
Source: Pronoun paradigm 2 (5)

(241) *kʰua*^{33} *tɯ*^{21} *ŋa*^{44} *tɯ*^{44} *pɔ*^{31}
dog CLF bite PFV 3SG
'The dog bit him'
Source: Pronoun paradigm 2 (14)

(242) *pɯ*^{55} *ti*^{33} *ɕia*^{44} *tɯ*$^{44\,(38)}$ *ke*^{35} *a*^{31} *tɯ*^{21}
3GEN father kill PFV chicken one CLF
'His/her father killed a chicken'
Source: Herl sal (9)

Transitive verbs require a P-argument to be grammatically complete. The P-argument may also take on further adjunct/s to add further information to the argument of the clause. Example (243) lists common transitive verbs in Southern Bai.

(243) *ɕia*^{44} 'to kill'
ɣɯ^{35} 'to call; be called'
tsui^{44} 'to follow; chase'
ŋa^{44} 'to bite'
tɕʰia^{44} 'to pinch'
pe^{31} 'to place; arrange'
pieˇ^{44} 'to ask'
ji^{21} 'to seek'

Adverbial phrases maybe embedded into the predicate to express the manner or location in which an event is conducted. These typically are embedded between the A-argument noun phrase and the main predicate.

Some are evident via the use of a weak verb like *zv*^{31} 'use' as in example (244).

[38] As argued in Luo Ziqun (2006), *tɯ*^{44} can also be used as a grammatical particle indicating completion of an action. This secondary function is likely the result of contact with neighbouring languages.

(244) *ke˘^{55} ŋ̥i^{44} ŋɔ^{31} ŋ̥ou^{44} [wu^{33} zv^{31} be˘^{35} tshu^{35} xua^{55}] tɕia^{31} kɯ^{32} nɔ^{31}*
today 1SG want [just use Bai language] tell give 2SG

tsou^{44} kuo^{35} ku^{33} lao^{44} nɔ^{44} ji^{35} kɯ^{44} ku^{55} sɨ^{55}
China old ATTR one CLF story
'Today, I want to [use the Bai language] to tell you an old Chinese story.'
Source: F5 Jackal and Crow (1)

Another method of embedding adverbial manner phrases involves the use of an adverbialiser like *nɔ^{44}* or *mɯ^{55}*, as in examples (245) and (246).

(245) *tsɯ^{33} pɯ^{55} ta^{44} lia^{33} [pei^{55} kʰɔ^{55} pei^{55}* ***nɔ^{44}]*** *tɕiao^{44} liou^{42}*
EXIST there two people [back face back **ADV]** chat
'Two people are there chatting back-to-back'
Source: F5 staged events (40)

(246) *pɔ^{31} [kou^{33} sou^{33}* ***mɯ^{55}*** *xɯ^{55}] tʰe^{42} tɯ^{44} ɕy^{55} ni^{55} nia^{33} tɯ^{35}*
3SG [two hand **ADV** PFV] lift DUR pear PROX basket
'S/he lifted the basket with two hands'
Source: Pear story (11)

In these constructions, the non-embedded main clause is independent. The intrusively embedded adverbial phrase merely adds information on the way the event was conducted.

Similarly, a locational adverb or adverbial phrase may be embedded between the A-argument noun phrase and main predicate to express the location of the event, as demonstrated below.

(247) *pa^{55} kou^{33} [tsɯ^{33} ta^{44}] we^{21} tɕʰiou^{42}*
3PL two [there] play ball
'Those two are playing ball over there'
Source: Staged events (12)

(248) *sv^{55} tv^{44} ŋ̥v^{33} [ts ɯ^{33} xɔ^{31} tv^{35}] we^{21}*
child [at house play
'The child is playing at home'
Source: F5 Staged events (7)

How spatial relations are expressed will be covered in greater detail in section 9.11.

7.5.3. Ditransitive constructions

Some verbs such as ‘to give’ require a second complement to be grammatically complete. In a prototypical ditransitive clause in Southern Bai, the second complement directly follows the first nominal complement, as expressed in example (249).

(249) *ŋu*^{55} *ti*^{33} *ku*^{32} [*ŋɔ*^{31}]$_1$ [*tsui*^{55} *tɕ*^{h}*iou*^{55} *nɔ*^{44} *li*^{31} *v*^{35}]$_2$
1GEN father give 1SG most good ATTR gift
‘My father gave me the greatest gift’
Source: The greatest gift (141)

The double argument construction is highly prone to variation. This is particularly evident in ‘*ka*^{44} constructions’ that involve manipulation of an object[39] and constructions using verbs such as ‘to give’ that undergo object fronting. Each shift exhibits subtle semantic and grammatical differences. This variability will be discussed in further detail in section 9.5.

7.6. Existential constructions

Southern Bai contains a construction using the existential verb *tsu*^{33} that expresses the existence of one entity in relation to another. The use of existential verbs is not uncommon among the world’s languages. Existential verbs have been documented in Indonesian (Sato, 2010), Russian (Fortuin, 2014) and as an important structure in Slavic languages (Paducheva, 2008).

Other Sino-Tibetan languages have been described as having existential verbs. LaPolla (LaPolla, 2007, pp. 32–33) states that existential verbs expressing existence, location, containment, or possession by a person are common among Lolo-Burmese languages. Jiang (2019) describes a number of existential verbs in the Shansu dialect of Lalo/Yi that perform the function of indicating locatedness, existence, and possession. Yu Chenlin (2018) states that standalone existential verbs can be found among several Sino-Tibetan languages spoken

[39] See section 7.12 for further analysis.

in China including Bai, as well as Lhobam (Southwest Tibet), Hani (Yunnan), Jiarong (Western Sichuan), Khatso (Yunnan), Sulong (Tibet), Tholo (Yunnan), and Karen.

Dirven et al. (2004, pp. 79–80) list existential among a schema of 'being' that languages potentially use to construct sentences to convey notions of being. The existential indicates 'the notion of mere existence' of an entity.

Existential verbs with a similar semantic and syntactic function have also been found in other Bai dialects. Zhao Jincan (2010) describes an existential verb, also pronounced as *tsɯ*^{33} with the same syntactic form as Southern Bai in the Heqing topolect. Xu and Fu (1984) also describe *tsɯ*^{33} as a copula in Central Bai with the same syntactic function as Southern Bai. Hefright (2011) also refers to the same lexeme in Central Bai as an existential verb. In her grammar on Zhaozhuang Bai, Zhao Yanzhen (2012) also translates *tsɯ*^{33} as *yǒu* (有) in Mandarin, which is often translated as both indicating possession and as an existential verb. While these grammars have used different terminology in describing this lexeme, I will henceforth use the term existential verb (EXIST) in further descriptions involving the verb *tsɯ*^{33}.

While *tsɯ*^{33} was interpreted by consultants as indicating both possessive 'to have' and as a copula 'to be', it has a wider function than just a copula linking two concepts. It refers to the existence of an entity, whether conceptually or physically, in relation to another. Examples (250) to (253) demonstrate how *tsɯ*^{33} expresses the existence of one entity in relation to another.

(250)	*wu*^{55} *ja*^{44}	*tɯ*^{21}	*tɕy*^{33} *mɯ*^{44}	*tsɯ*^{33}	*ŋv*^{35}	*tɯ*^{21}
	crow	CLF	mouth	EXIST	fish	CLF

'The crow's mouth has a fish' (Lit: crow's mouth exists a fish)
Source: Jackal & Crow F5

(251) *a*^{31} *puɯ*^{55} *ta*^{44} *tsuɯ*^{33} *tao*^{31} *kʰv*^{44} *tuɯ*^{21}
Ah! there EXIST big snake CLF
'Ah, there is big snake there' (Lit: Ah! exists at that place a big snake)
Source: NP & 'ga' elicitation

(252) *ku*^{21} *tsɨ* *kʰuu*^{44} *xuɯ*^{31} *tsuɯ*^{33} *tsou*^{42} *kʰui*^{55} *keˇ*^{31}
bottle CLF in EXIST rock CLF
'The bottle has a rock inside' (Lit: inside the bottle exists a rock)
Source: Put elicitation

(253) *jy42 kua*^{44} *xuɯ*^{31} *tsuɯ*^{33} *ŋv*^{35} *tuɯ*^{21}
fish tank in EXIST fish CLF
'There is a fish in the fish tank' (Lit: In the fish tank exists a fish)
Source: Topological relations

Existential constructions can be used to express spatial relations between two objects. [40] In such constructions, one object is expressed as existing in relation to another.

There are two basic spatial existential constructions in Southern Bai. The most common construction is [object A + EXIST [*tsuɯ*^{33}] + referent NP + (LocPP)], as illustrated in example (254).

(254) *tɕʰiou*^{42} *teˇ*^{42} *tsuɯ*^{35} *tseˇ*^{35} *tsɨ*^{44} *eˇ*^{33}
ball CLF EXIST table under
'The ball is under the table'
Correspondence with M1 (19/9/19)

Alternatively, the construction can be [referent NP + LocPP + EXIST [*tsuɯ*^{33}] + object A], as demonstrated in example (255).

(255) *tseˇ*^{35} *tsɨ*^{44} *eˇ*^{33} *tsuɯ*^{33} *tɕʰiou*^{42} *teˇ*^{42}
table under EXIST ball CLF
'Under the table is a ball'
Source: topological relations (60)

The verb *tsuɯ*^{33} has a variety of functions in Southern Bai. One of these functions is as a possessive verb, which is an extension of its function as an experiential verb. This function will be explored further in section 7.8 but an illustration is provided below.

[40] Spatial relations in Southern Bai will be covered in detail in section 9.11.

(256) *puɯ*^{55} *v*^{31} *tsuɯ*^{33} *sv*^{55} *zv*^{44} *ŋ̍v*^{33} *sa*^{33} *ŋ̍i*^{21}
3GEN POSS have child three CLF
'S/he has three children'.

Among its multiple functions *tsuɯ*^{33} also functions as a copula verb. This function will be covered in the following section, section 7.7.

7.7. Copula constructions

The previous section explored the use of *tsuɯ*^{33} as an existential verb expressing the existence of an entity. As mentioned previously in section 7.6, consultants sometimes translated *tsuɯ*^{33} as the Mandarin copula *shì* (是). Indeed, there is some evidence of *tsuɯ*^{33} performing this function, as demonstrated in the following examples. However, it is not clear that they are grammatically essential. As stated later in section 9.7, verbless constructions are common.

(257) *ne*^{21} *tsuɯ*^{33} *tsɔ*^{21} *tsv*^{35}
PROX COP. tea cup
'This is a teacup'
Source: Topological relations (146)

(258) *sv*^{55} *tv*^{44} *tsuɯ*^{33} *tɕeˇ*^{55} *tsu*^{44} *tɕiou*^{42}
child COP. kick football
'The child is kicking a football'
Source: F5 staged events (9)

Copula constructions are not limited to simple linking. Another copula function is in naming. Constructions that name an entity or referent use the copula verb *ɣuɯ*^{35} 'be called'. Its form is demonstrated in the examples below.

(259) *ŋuɯ*^{55} *mieˇ*^{33} *ɣuɯ*^{35} *ja*^{42} *tɔ*^{35}
1GEN name called Yap Daof
'My name is Ya Dao'
Source: Intros & pronoun paradigm (13)

7.8. Possessive constructions

Section 6.8.3 introduced the genitive noun phrase of Southern Bai. This is constructed using the genitive pronoun inflection and the possessive markers *nɔ*^{44} and *v*^{31}. The two major

genitive noun phrase constructions are presented in the following examples. Example (260) demonstrates inalienable possession that only employs genitive pronoun inflection to express possession where example (261) demonstrates alienable possession that utilizes both the genitive pronoun and possessor *nɔ*^{44} to mark possession.

(260) *ŋɯ*^{55} *sɯ*^{33} *pʰou*^{44}
1GEN hand
'my hand'

(261) *ŋɯ*^{55} *nɔ*^{44} *ke*^{35} *tɯ*^{21}
1GEN POSS chicken CLF
'My chicken'
Source: NP & 'ga' elicitation (16)

In addition to the genitive noun phrase, Southern Bai also contains possessive clauses, constructed using *tsɯ*^{33}. As mentioned previously in section 7.6, *tsɯ*^{33} is a very multi-functional verb. It is likely that this function as a possessive verb derived as an extension of its semantic function as an existential verb, *tsɯ*^{33}. Possessive constructions also employ the possessive marker *v*^{31} to mark the possessor. When a personal pronoun is involved, then the genitive inflected form is used, as illustrated below.

(262) ***pɯ***^{55} ***v***^{31} ***tsɯ***^{33} *sv*^{55} *zv*^{44} *ɳ̩v*^{33} *sa*^{33} *ɳ̩i*^{21}
3GEN **POSS** **have** child three CLF
'S/he has three children'.

(263) ***pɯ***^{55} ***v***^{31} ***tsɯ***^{33} *a*^{55} *mi*^{55} *sa*^{33} *tɯ*^{21}
3GEN **POSS** **have** cat three CLF
'S/he has three children'

When no pronoun is used, the possessive marker *v*^{31} is still employed to mark the possessor, along with *tsɯ*^{33} functioning as a possessive verb. The example below illustrates a possessive clause with a complex noun phrase.

(264) *na*^{55} *jɯ*^{44} *sua*^{44} *peˇ*^{42} *xɔ*^{31} ***v***^{31} ***tsɯ***^{33} *tsv*^{44} *ɳ̩v*^{33} *sa*^{33} *ɳ̩i*^{21}
DIST. village CLF Bai family **POSS** **have** child three CLF
'The Bai family in that village have three children'

7.9. Modal Auxiliary Constructions

These are constructions that use the auxiliary verbs introduced earlier in this chapter in section 7.1.3. While not exhaustive, this section will describe the syntactic structure of sentences with auxiliary verbs and demonstrate some basic semantic functions of this class of verbs.

The most commonly found modal auxiliary among the data is *ŋou*^{44} which refers to events likely to happen in the future. It is used to express a strong epistemic probability that an event will occur, or the agent's desire for an action or event to occur.

The following examples demonstrate *ŋou*^{44} functioning as the auxiliary verb. Note how *ŋou*^{44} functions to emphasise the speaker's understanding of the agent's desire to fulfil the action.

(265) *me˗*^{55} *ŋi*^{44} *ŋɔ*^{31} *ŋou*^{44} *pe*^{44} *ɛia*^{55} *kua*^{44}
tomorrow 1SG want go Xiaguan
'Tomorrow, I want to go to Xiaguan'
Source: NP & 'ga' elicitation (247)

(266) *a*^{55} *mi*^{55} *tɯ*^{21} *ŋou*^{44} *ku*^{35} *tsɯ*^{31}
cat CLF want climb tree
'The cat wants to climb the tree'
Source: NP & 'ga' elicitation (71)

In the examples above, *ŋou*^{44} is clearly not the main predicate verb. Syntactically, that position is taken by the verb *pe*^{44} 'to go' and *ku*^{35} 'to climb'. Without *ŋou*^{44}, example (265) is still grammatically correct, as demonstrated by example (267).

(267) *me˗*^{55} *ŋi*^{44} *ŋɔ*^{31} *pe*^{44} *ɛia*^{55} *kua*^{44}
tomorrow 1SG go Xiaguan
'Tomorrow, I will go to Xiaguan'
Source: NP & 'ga' elicitation (246)

The addition of *ŋou*^{44} serves to indicate the speaker's strong epistemic knowledge that the event will occur.

Unlike the other auxiliaries, *ŋ̍ou*^{44} is also able to operate as a lexical verb where it is used to express desire. Discussion with consultants confirmed that a noun can directly follow *ŋ̍ou*^{44} and that the following sentences are grammatically correct.

(268) *ŋɔ*^{31} *ŋ̍ou*^{44} *pʰi*^{42} *kuo*^{31}
1SG want apple
'I want an apple'

(269) *ŋɔ*^{31} *ŋ̍ou*^{44} *kʰua*^{33} *tɯ*^{21}
1SG want dog CLF
'I want a dog'
Source: Wechat correspondence (28/11/19)

A synonym of *ŋ̍ou*^{44} is the loan *ɕia*^{31} from the Mandarin *xiàng* (想), which also indicates a wish or desire for an event to occur.

(270) *keˇ*^{55} *ŋ̍i*^{44} *ŋɔ*^{31} *ɕia*^{31} *tɕia*^{31} *ku*^{55} *si*^{55}
today 1SG want tell story
'Today, I want to tell a story'
Source: The greatest gift

(271) *ŋɔ*^{31} *ɕia*^{31} *ju*^{44} *mɯ*^{44} *mi*^{32} *xeˇ*^{55}
1SG want eat noodles
'I want to eat noodles'
Source: NP & 'ga' elicitation (253)

ŋ̍ou^{44} expresses the speaker's belief of a high possibility that the event being described will occur. Two other lexemes appeared in the data indicating a lower possibility of the event occurring. The first, *kʰɯ*^{31} *nɯ*^{44}, is a Sinitic loan of *kě néng* (可能).

(272) *meˇ*^{55} *ŋ̍i*^{44} *ŋɔ*^{31} *kʰɯ*^{31} *nɯ*^{44} *pe*^{44} *ɕia*^{55} *kua*^{44}
tomorrow 1SG perhaps go Xiaguan
'I may go to Xiaguan tomorrow'
Source: NP & 'ga' elicitation

The following modal, *keˇ*^{35} 'may', only appeared once in the data, following an elicitation with a young Dali speaker, and is possibly an earlier form, prior to Sinitic influence, or a contracted form of *kʰɯ*^{31} *nɯ*^{44}. It was translated into MSM as the same word.

(273) *meˇ^{55} ŋ̩i^{44}* *ŋa^{55}* *keˇ^{35}* *pe^{44}* *ɕia^{55} kua^{44}*
tomorrow 1PL may go Xiaguan
'We may go to Xiaguan tomorrow'
Source: Wordlist elicitation

kʰɔ^{44} ji^{31} is used to indicate the ability of an action/event to be conducted. This is a Sinitic loan of the modal auxiliary *kě yǐ* (可以).

(274) *teˇ^{44}* *kʰe^{55}* *xɯ^{55}* *kʰɔ^{44} ji^{31}* *kɯ^{21}*
strike open after can ride
'Once it is open, it can be ridden'
Source: F5 staged events

The following section will describe the aspectual system in Southern Bai.

7.10. Aspectual marking

Southern Bai employs a system of aspectual markers to indicate the completeness of the action being described. Syntactically, these markers appear either immediately after the main predicate verb, or at the end of the predicate in events involving movement.

Bisang (2004, 2008) and Arcodia (2013) argue that a common trait among South East and East Asian languages is that aspectual markers have evolved from earlier verb forms. Due to the synchronic nature of the data, it is hard to determine whether all aspectual markers previously functioned as fully lexicalised verbs. However, a number do appear in the data that function otherwise as verbs. These include the durative aspect marker *tɯ^{44}* which has been derived from the verb 'to obtain'. Likewise, the inceptive aspect marker *jɯ^{35}* has derived from the verb 'to come' and the experiential aspect marker *kuo^{32}* from the verb 'to pass.' While the data collected cannot unequivocally confirm this, the syntactic position in combination with semantic flexibility of aspect markers such as *xɯ^{55}* suggest that aspect markers in Southern Bai also followed the same path of grammaticalisation. These will be described in detail in the following descriptions of the Southern Bai aspectual markers. Table

41 below outlines five Southern Bai aspect markers and their likely paths of grammaticalisation.

	Aspectual meaning	**Derived from**
xɯ^{55}	Perfective aspect (PFV)	then
tɯ^{44}	Durative aspect (DUR)	to obtain
tsɯ^{33}	Progressive aspect (PROG)	existential verb
jɯ^{35}	Inceptive aspect (INC)	to come
kuo^{32}	Experiential (EXP)	to pass

Table 41 - Southern Bai aspect markers

The following section will describe these five aspect markers in detail.

7.10.1. xɯ^{55} – Perfective aspect

The lexeme *xɯ*^{55} functions as a perfective aspect marker (PFV) on telic verbs. This aspect is defined as an action occurring in the past that has been seen as being completed prior to another event in a narrative (Bybee et al., 1994, p. 54). This differs from past tense in that the event is not necessarily temporally located in the past, rather it refers to the action being thoroughly completed.

While Bybee, Perkins & Pagliuca (1994, p.52) argue that the existence of perfective aspect relies on a contrast with the existence of an imperfective aspect, work on other Bai dialects describe perfective aspect without an imperfective contrast.

Li & Chen (2018, p. 64) state that perfective aspect marking is among one of the sub-functions of *xɯ*^{55} which is used to link two independent events. In her description of the Meiba topolect, Li (2018) also argues that *xɯ*^{55} functions as a perfective aspect marker. Work on the Zhaozhuang Bai topolects also includes reference to perfective aspect (Y. Zhao, 2012).

Additionally, perfective aspect marking has been described in other Sino-Tibetan languages without an imperfective contrast. These include Yi (Gerner, 2004) and Yongning Na (Lidz, 2010), languages geographically and topologically similar to Bai. Therefore, even though

Southern Bai may violate one of Bybee, Perkins & Pagliuca's (1994) criteria for the existence of a perfective aspect, evidence from other descriptions on Bai dialects and of related languages argues that this category potentially exists.

Having established the potential for this marker to exist in Southern Bai, the remainder of this section will describe how *xɯ*^{55} functions as a perfective aspect marker. The discussion will then turn to a brief look into its potential grammaticalisation path.

The examples below illustrate how *xɯ*^{55} functions as a perfective aspect marker in Southern Bai. It immediately follows the predicate verb to indicate that the action being described was conducted to completion.

(275) *ŋɯ*^{55} *ke*^{35} *a*^{31} *tɯ*^{21} *fv*^{35} ***xɯ***$^{\mathbf{55}}$
1GEN chicken one CLF fly **PFV**
'One of my chickens flew'
Source: NP & 'ga' elicitation

(276) *ka*^{44} *ji*^{35} *jao*^{21} *je*^{32} ***xɯ***$^{\mathbf{55}}$
DISP clothing CLF wear **PFV**
'(somebody) put on clothes'
Source: Put elicitation (70)

(277) *ka*^{44} *si*^{35} *tsʰue˗*^{44} *tsi*^{42} ***xɯ***$^{\mathbf{55}}$
DISP book CLF pick up **PFV**
'The book was picked up'
Source: Put elicitation (79)

In events of placement, *xɯ*^{55} still appears after the verb to indicate completion. The location is not introduced until the degree of completion of the action is known.

(278) *ka*^{44} *te*^{55} *tsɨ*^{44} *sɯ*^{44} *ke*^{35} ***xɯ***$^{\mathbf{55}}$, *ji*^{31} *tsɨ*^{44} *tɯ*^{21} *nɔ*^{44}
DISP. bag put at **PFV** chair CLF on
'The bag was placed on the chair'
Source: Put elicitation

Example (278) above offers syntactic evidence that *ke*^{35} is likely a directional verb forming part of a Serial Verb Construction with *sɯ*^{44} taking the main verb slot.

In example (279) below *xɯ*^{55} functions to indicate the nature of perfective aspect with the completion of one event dependent on the relation to others in a chain of events. Here, *xɯ*^{55} indicates the completion of lifting the apple before it is put on the shoe.

(279) *ka*^{44} *pʰi*^{42} *kuo*^{31} *te*^{42} *ne*^{44} ***xɯ***$^{\mathbf{55}}$, *ne*^{44} *ke*^{35} *ŋe*^{21} *tɕi*^{33} *tɯ*^{21} *no*^{44}
DISP. apple CLF lift **PFV** lift at shoe CLF on
'The apple was lifted and placed on the shoe'
Source: Put elicitation (82)

Following Bisang (2004, 2008) and Arcodia's (2013) argument on the grammaticalisation of aspect markers in South East Asian languages, Li & Chen (2018), propose that the function of *xɯ*^{55} as a perfective aspect marker in Bai has been grammaticalised from its function as a temporal marker linking two predicates, similar to 'then' in English. This linking function is demonstrated in examples (280) and (281) below.

(280) ***xɯ***$^{\mathbf{55}}$ *pɔ*^{31} *tsao*^{42} *tʰe*^{55} *kv*^{33} *xao*^{55}
then 3SG speak too bitter MOD
'Then he said, "Too bitter!"'
Source: San dao zaot

(281) ***xɯ***$^{\mathbf{55}}$ *ŋɔ*^{31} *tsao*^{42} *'ɕi*^{31} *xua*^{35} *nɯ*^{44} *'*
then 1SG speak like MOD
'Then I said, "I like it"'
Source: The greatest gift

From here it likely developed into a grammatical marker indicating that one event commenced after another was completed, as illustrated in example (282).

(282) *tua*^{55} *nie*^{55} *wu*^{31} *xɯ*^{55} *tsɯ*^{33} *pɯ*^{55} *ta*^{44} *tʰa*^{42} *ɕi*^{35}
exercise finish *after* at there chat
After they finished exercising, they sat there to chat
Source: Staged Events

7.10.2. tɯ^{44} *- Durative and perfective aspect*

In Southern Bai, the lexeme *tɯ*^{44} is used to mark durative aspect on an action or event.

Li & Thompson (1981, p. 217) describe durative aspect in Mandarin as signalling "the ongoing, or durative, nature of an event". While an old definition, this terminology continues to be used in the description of aspectual systems throughout the languages of Southern China, such as Southern Min, (M. Chen, 2017; Shi, 2013) and Yongshun (Peng, 2017), as well as among Kam-Dai languages (S. Y. Lin, 2013), who use the term in describing activities that are ongoing at the point of reference.

While appearing functionally similar to progressive aspect in describing an action in progress at the point of reference, it differs from most definitions of progressive aspect in one key feature. While a fundamental criterion of progressive aspect, according to Bybee, Perkins & Pagliuca (1994, p. 126) is that the action be dynamic and require a "constant input of energy to be sustained", durative aspect markers may be applied to situational verbs that do not require a stable energy source.

In Southern Bai, the durative aspect is achieved by placing the aspectual marker '*ɯɯ*^{44}' immediately after the main predicate verb, as shown in example (283).

(283) *sv*^{55} *tv*^{44} *ŋ̍v*^{33} *tsɯ*^{33} *xao*^{31} *tv*^{35} *we*^{21} ***ɯɯ***$^{\mathbf{44}}$ *se*^{31} *tɕʰi*^{42} *tsʰeˇ*^{44} *ku*^{44}
child at house play **DUR** small car CLF
'The child is playing with a small car at home'
Source: Staged Events part 1 (F5)

The following examples indicate continuity of a stative event, illustrating the major difference between durative and progressive aspect. These acts fail the Bybee criterion as they do not require constant input of energy to be sustained, thereby providing support for the inclusion of durative as one form of aspect in Southern Bai.

(284) *tsɯ*^{33} *ŋ̍v*^{33} *nia*^{33} *ŋ̍i*^{21} *te*^{32} ***ɯɯ***$^{\mathbf{44}}$ *ɕia*^{55} *nie*^{55} *lie*^{32}
EXIST female wear **DUR** necklace CLF
'There's a woman wearing a necklace'

(285) *ou*^{31} *no*^{44} *kua*^{44} ***tɯ***$^{\mathbf{44}}$ *tie*^{55} *xua*^{55} *tɕi*^{44} *e*^{21}
wall on hang **DUR** phone machine CLF
'The phone is on the wall' / 'The phone hangs on the wall'
(Lit: on the wall hangs a phone)

Source: Topological relations

The examples above conform to Luo Ziqun's (2006) description of *tɯ*^{44} as a grammatical particle appearing after the main predicate verb to indicate continuity of the action. While this work focuses mostly on the standard Central Bai dialect, I argue based on the evidence presented above that the term 'durative', is a more applicable term to refer to the function of *tɯ*^{44} than progressive.

Some older speakers also used *tɯ*^{44} to indicate perfective aspect. As stated by Luo (2006), while *tɯ*^{44} primarily expresses continuous aspect in Bai, it may also be used to indicate completion. This is likely a homophone borrowing from the MSM perfective *de* (得). Luo (2006) also acknowledges this possibility. The following examples come from a 30+ year old speaker whose speech was heavily Sinicised.

(286) *pɯ*^{55} *ti*^{33} *ɕia*^{44} ***tɯ***$^{\mathbf{44}}$ *ke*^{35} *a*^{31} *tɯ*^{21}
3GEN father kill **PFV** chicken one CLF
'His/Her father killed a chicken'
Source: Jia xif

(287) *kʰua*^{33} *tɯ*^{21} *ŋa*^{44} ***tɯ***$^{\mathbf{44}}$ *nɔ*^{31}
dog CLF bite **PFV** 2SG
'The dog bit you'

(288) *kʰua*^{33} *tɯ*^{21} *ŋa*^{44} ***tɯ***$^{\mathbf{44}}$ *pɔ*^{31}
dog CLF bite **PFV** 3SG
'The dog bit him/her'

Source: Pronoun paradigm

The following section will discuss how progressive aspect is marked.

7.10.3. Progressive aspect

Progressive aspect indicates the action being described is ongoing at the referent point of time (Bybee et al., 1994, p. 126). As mentioned earlier in section 7.10.2, that action should be dynamic and require sustained effort. The Southern Bai marker for progressive aspect is *tsɯ*^{33}.

Unlike other aspectual marking, *tsɯ*^{33} appears before the main predicate verb, as shown in the examples below.

(289) *ŋɯ*^{55} *ke*^{35} *tɯ*^{33} ***tsɯ***$^{\mathbf{33}}$ *fv*^{35}
1GEN chicken CLF **PROG** fly
'My chicken is flying'
Source NP elicitation (27/11/18)

(290) *sv*^{55} *tv*^{44} ***tsɯ***$^{\mathbf{33}}$ *tɕ*^{h}*e*^{55} *tsu*^{44} *tɕ*^{h}*iou*^{42}
child **PROG** kick football
'A child is kicking a football'
Source: Staged events

Consultants confirmed the above examples are interpreted as being in progress at the time of the event. As explained in section 7.6, *tsɯ*^{33} functions as an existential verb. It is highly likely that progressive aspect has been grammaticalised from the existential meaning.

7.10.4. jɯ^{35} *Inceptive aspect*

The inceptive aspect indicates the beginning of an action or event. The inceptive aspect marker in Southern Bai is *jɯ*^{35}. This term has been used by Li Xuan (2018) to describe the function of the same lexeme in the Meiba Bai topolect. The following section describes the syntactic and semantic function of *jɯ*^{35} and offers a potential path of grammaticalisation from the verb meaning 'to come.'

In his description of Nama, a language of Southern Papua New Guinea, Siegal (2014, p. 222) places the inceptive aspect under the umbrella of perfective aspects and describes its function as indicating "a punctual event that has just occurred, or the start of a non-punctual event."

Yang (2015, p. 4) describes the inceptive aspect as expressing the beginning of a continuous action or event, emphasising a change in state of affairs. According to Yang (2009, 2015) the inceptive aspect in MSM is achieved through the construction of Vb + qǐ + (N) + lái. As standalone verbs, *qǐ* means 'to rise' and *lái* 'to come.' In some placement events, *qǐ lai* (起来) acts as a directional coverb indicating an action of raising an object towards the speaker or referent. However, *qǐ lai* (起来)has also come to be grammaticalised from this later use into a grammatical marker indicating inception in MSM.

Conversely to Siegal (2014, 325), Yang (2009) places the inceptive aspect under the umbrella of imperfective aspect, suggesting that inceptive aspect marking indicates that the event is incomplete at the time of utterance.

On initial examination, it appears that Southern Bai follows a similar syntactic pattern to that described by Yang (2015). Several examples collected contain *tɕʰi*^{44} *jɯ*^{35} 'up come' occurring immediately after the main predicate verb. Additionally, *jɯ*^{35} also has semantic similarities to the MSM verb *lái* (来) which as a main verbal predicate, could be translated as 'to come.' Like the MSM equivalent, *jɯ*^{35} also functions as a directional coverb marking the direction of an action towards the speaker.

(291) *ka*^{44} *ta*^{32} *xuo*^{44} *tɕi*^{44} *tɕy*^{35} *tɕi*^{44} *jɯ*^{35}
DISP lighter scoop up INC
'(S/he) scoops up a lighter'
Source: Put elicitation (30)

(292) *ka*^{44} *na*^{35} *tsou*^{35} *ka*^{35} *ne*^{44} *tɕi*^{44} *jɯ*^{35}
DISP. candle CLF lift up INC
'(S/he) lifts up a candle'
Source: Put elicitation (44)

Many of these examples came from the 'Put project' elicitation developed by Bowerman, Majid & Narasimhan (2004). Several of the stimulus materials depict actions related to picking things up. Therefore, it is unclear if consultants' utterances were referring to the inception of the event, or a serial verb construction describing the action of picking things up.

The following examples provide stronger evidence of verb + *tɕi*^{44} *jɯ*^{35} as a construction indicating the beginning of an action. In the following examples the main predicate verbs, *tɕʰie*^{55} and *tao*^{55} indicate downwards movement. However, as a fully lexical verb, *tɕi*^{44} 'to lift' indicates movement in an upwards direction. This suggests a case of semantic bleaching on *tɕi*^{44} whereby its directional meaning has been weakened to one that is semantically related – whereby 'up' implies 'commencement.'

(293) *tɯ*^{21} *pɔ*^{21} *tsɯ*^{33} *tʰʏ*^{31} *xɯ*^{31} *tɕʰie*^{55} *tɕi*^{44} *jɯ*^{35}
head exist bucket in lift up INC.
'The head lifts out of the bucket'
Source: Put elicitation (51)

(294) *ka*^{44} *ɕy*^{33} *tsɯ*^{33} *ku*^{21} *xɯ*^{31} *tao*^{55} *tɕi*^{44} *jɯ*^{35}
DISP water at bottle in pour up INC.
'(S/he) pours water from a bottle'
Source: Put elicitation (33)

As serial verb constructions refer to a single event, then the function of *tɕi*^{44} cannot be used to describe the direction of the action as changing upwards. Evidence that this is describing a single event is omission of the change of action marker *xɯ*^{55}. Finally, and perhaps most importantly, discussion with a consultant confirmed that this sentence does indeed describe one motion.

In addition to the *verb* + *tɕi*^{44} + *jɯ*^{35} construction, there are other constructions ending with *jɯ*^{35} that indicate the commencement or beginning of an action whereby a directional coverb, or other aspectual marker indicating a change of action are substituted into the middle slot otherwise occupied by *tɕi*^{44}. This is demonstrated in examples (295) and (296).

(295) *wu*^{55} *ja*^{44} *tɯ*^{21} *ke*^{35} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44} *ts*^{h}*a*^{55} *xɯ*^{55} *jɯ*^{35}
crow CLF at tree on sing change INC
'The crow began singing in the tree.'
Source: Jackal & Crow F5

(296) *ka*^{44} *jie*^{31} *niao*^{55} *tsv*^{35} *tɕia*^{44} *kuo*^{32} *jɯ*^{35}
DISP beverage cup receive pass INC
'(S/he) just received a cup'
Source: Put elicitation

From these last examples, I argue that *jɯ*^{35} is the inceptive aspect marker for Southern Bai. Unlike other aspect markers, this aspect marker prefers to be part of a serial verb construction with an additional, optional syntactic slot that allows for further aspectual or directional information.

From the above descriptions a path appears for the grammaticalisation of *jɯ*^{35} as an inceptive aspect marker. Beginning as a fully lexicalised verb meaning 'to come'' *jɯ*^{35} then combined with *tɕi*^{44} to form a component of the directional serial verb construction, *tɕi*^{44} + *jɯ*^{35} used to describe a lifting event. From this meaning, further semantic bleaching occurred for the phrase to indicate event inception. Later other directional coverbs were added to the syntactic slot occupied by *tɕi*^{44}. From here, it seems that *jɯ*^{35} developed into an aspect marker able to be used independently, with speakers still preferring the serial verb construction initially developed.

7.10.5. kuo^{32} *- Experiential aspect*

The lexeme *kuo*^{32} is used as a marker of experiential aspect and is derived from the fully lexicalised verb meaning 'to pass.' It was translated by consultants to the MSM guò (过) 'to pass' which has also been described by Li & Thompson (1984) and Cheung (2016) as an experiential aspect marker. Li Xuan (2018) also states that adding *kuo*^{32} to verbs in Meiba Bai functions to express experiential aspect.

This aspect indicates that the speaker has experienced the event at some point in the indefinite past, but the event or action has since discontinued at the time of utterance (H. Xu, 2019, p. 1). Goddard (Goddard, 2005, p. 115) states that the experiential aspect functions similarly to the perfect aspect in English, with one major difference — that the event is over before the time of speech. In discussing MSM, Li and Thompson (1981, p. 226) state the experiential aspect *-guò* functions to mark that an 'event has been experienced at least once at some indefinite time, usually in the indefinite past'. In this light, a major distinction between experiential aspect and past tense is the ability to mark an event as having been experienced a number of times. Likewise, when discussing experiential aspect in MSM, H. Xu (2019) repeats the criterion for repeatability of the event, but also adds that the event must have an inherent end, or terminability. He also adds that unlike tense, experiential aspect can refer to events yet to have happened, providing there is a set referent time, akin to the English sentence 'By 2020 s/he would have gone to Beijing three times'.

Like MSM, the Cantonese aspect marker is also pronounced /kwo/ and also translates to 'to pass' as a fully lexicalised verb (Goddard, 2005, p. 115). Due to the lexical similarity to MSM and Cantonese, the syntactic similarity to the markers hitherto discussed, and that it marks an event the actor has experienced in the past, I argue that *kuo*^{32} functions as an experiential aspect marker for Southern Bai.

In Southern Bai, experiential aspect is achieved by adding *kuo*^{32} after the main predicate verb to express a previously experienced event.

(297)	*ŋɔ*^{31}	*se*^{31}	*tsɨ*^{32} *tɕa*^{44}	*tɕʰie*^{55}	*ŋu*^{55}	*ne*^{44}	*v*^{31}	*tɕia*^{31}	***kuo*^{32}**
	1SG	small	time	hear	1GEN	grandma	POSS	tell	**EXP**

'(A story) my grandmother told when I was small'
Source: Jackal & Crow (F5)

The data collected suggest a grammaticalisation path of *kuo*^{32}. The Yunnan Almanac (J. Li & Duan, 1998) lists *kuo*^{32} as a verb meaning 'to pass.' From the data, there are examples

indicating *kuo*^{32} functioning as a directional coverb in movement events where movement occurs past an object.

(298) *ŋɯ*^{55} *ke*^{35} *tɯ*^{21} *fv*^{35} ***kuo*^{32}** *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
1GEN chicken CLF fly **pass** tree on
'My chicken flew past the tree'
Source: NP & 'ga' elicitation

Following Bisang's (2004, 2008) theory that aspect markers in Southeast Asian languages are grammaticalised from a full predicate verb, the meaning of *kuo*^{32} appears to have expanded to mean 'to experience.'

(299) *ji*^{42} *tsu*^{35} *pe*$^{˧42}$ *tsu*^{35} *na*^{55} *ɕi*^{44} *tsu*^{35} *tɕi*^{44} *luo*^{55} *tsu*^{35} *la*^{44} *xu*^{55} *tsu*^{35}
Yi people Bai people Naxi people Jinuo people Lahu people

tou^{44} ***kuo*^{32}** *xuo*^{31} *pa*^{31} *tɕie*$^{˧35}$
all **experience** Torch festival

'The Yi, Bai, Naxi, Jinuo people and Lahu people all celebrate the Torch festival'
Source: Huoba Jie

From this meaning, I argue that *kuo*^{32} underwent further semantic bleaching, as currently seen in Southern Bai, into an aspectual marker expressing that the event has been experienced previously at least once.

This section has introduced and described several of the aspectual markers identified during data collection and the potential grammaticalisation path of several of these. The following section will introduce and describe Serial Verb constructions in Southern Bai.

7.11. Serial Verb Constructions

This section will describe and offer a general definition for Serial Verb Constructions, an important component in the expression of motion events in Southern Bai.

Serial Verb Constructions (SVCs) were first described among African languages, dating back to the late 19th century and have since been found among Austronesian, Sino-Tibetan, Oceanic, Semitic, and Australian languages, (Senft, 2008, p. 8; Van Staden et al., 2001, p.

21), suggesting these constructions are a common language characteristic among the world's non-European languages.

As languages tend to employ and construct SVCs differently it is difficult to create a fixed, universal definition of an SVC (Crowley, 2002, p. 22; Van Staden et al., 2001). However, there are some properties that are believed to be common in SVCs. A prototypical SVC will,

i) be constructed of multiple verbs where each verb can act independently as a fully lexicalised verb in a clause (A. Aikhenvald, 2018, p. 4; A. Aikhenvald & Dixon, 2005; Goddard, 2005, p. 17; Haspelmath, 2016; Senft, 2008; van Staden & Reesink, 2008) or as a 'verb like entity' (D. Wu, 1992, p. 77).
ii) cover a single clause, with shared argument structure, shared tense, aspect, and mood marking, and shared grammatical scope (A. Aikhenvald, 2006, 2018; Goddard, 2005, p. 17; Haspelmath, 2016; Vittrant, 2015)
iii) have no intervening conjunction or subordination between the verbs (A. Aikhenvald, 2006, 2018, p. 4; Crowley, 2002, p. 15; Goddard, 2005; D. Wu, 1992)
iv) describe a single event (A. Aikhenvald, 2006, 2018; Goddard, 2005; van Staden & Reesink, 2008, p. 22; Vittrant, 2015)

Some languages are strongly serialising, such as many Austronesian languages found in Papua New Guinea, whereas others may serialise only in certain, specific circumstances (Crowley, 2002, p. 28). I argue that Southern Bai is among the latter, only serialising in the expression of motion events involving directional movement (see example (300)) and in events of placement and taking (as in examples (301) and (302)).

(300) *a^{55} mi^{55} tɯ^{21} ke^{21} t^{h}ɯ^{55} (P) sv^{32} (G)*
cat CLF climb descend mountain
(The) cat climbed down the mountain
Source: NP & 'ga' elicitation

(301) *ka^{44} ɕia^{44} tɕiao^{44} pa^{42} sɯ^{44} t^{h}ɯ^{55} tse^{35} ts^{44} tɯ^{21} nɔ^{44}*
DISP. banana CLF put descend table CLF on
'The banana was put down on the table'
Source: Put elicitation (53)

(302) *ka*^{44} *xua*^{55} *tsou*^{35} *ne*^{44} *tʰɯ*^{55} *jɯ*^{35}
DISP painting CLF lift descend come
'(S/he) took down the painting'
Source: Put elicitation (77)

The notion of 'single event' is perhaps the most critical property of a serial verb construction, but also the most difficult to define (A. Aikhenvald, 2018; Defina, 2016; Senft, 2004; van Staden & Reesink, 2008). Often, the realisation of a 'single event' is dependent on discourse pragmatics and anthropological-linguistic analysis which varies among languages and speech communities (Senft, 2004, p. 62).

There are other commonly described properties of serial verb constructions in the literature, many of which help identify these constructions as covering a single event. Syntactic properties of the construction can help identify the construction of as a single event. The lack of subordination or a conjunction, shared morphology, shared single argument, and shared tense, aspect, and mood marking all indicate that serial verb constructions are syntactically referring to one single event. If negated, the scope of the negation covers the whole serial verb constructions, not the main/matrix verb (A. Aikhenvald, 2006, p. 22). As mentioned above in property (ii), the non-matrix verbs must share the same Subject as the matrix verb. These properties together suggest that the construction covers one event.

Prosodically, one typical property of serial verb constructions is a single intonational contour covering the utterance, without breaks in intonation or pause markers. (A. Aikhenvald, 2006, p. 7; Crowley, 2002, p. 18; van Staden & Reesink, 2008, p. 22). This intonational contour is one indicator that a single event is being described (Enfield, 2014, p. 114). Defina (2016) also found that gestures among speakers of Avatime covered the whole construction, demonstrating that the construction referred to a single event.

Therefore, generally, syntactic and morphological agreement, prosody, gesture, and cultural understanding of an event all help to determine whether a series of verbs refer to a single event or not.

Further evidence that these constructions describe a single event can be tested through the scope of negation. Foley (2010) states that if a single negative can have scope over several verbs, then the clause is describing a single event.

A simple example of a serial verb construction where multiple verbs describe a single event found in English could be the 'go and X' construction, as in;

'go and get the book' (Crowly 2002, p.12)

Here we have two verbs 'to go' and 'to get' describing a single event. However, in a true serial verb construction, as defined above, there would be no coordinator.

Example (303) below presents an utterance that contains multiple verbs but could not be considered an SVC as it expresses more than one event.

(303) *pe*^{21} *ɟɯ*^{44}
peel eat
'Peel, then eat'
(H. Chen & Yang, 2018)

While there are two fully lexicalised verbs occupying one phrase in this example, it cannot be interpreted as a serial verb construction as it is describing two unique events that are dependent on each other. In this example, the second action, eating, is dependent on the completion of the first, peeling. Therefore, this cannot be considered a serial verb construction, even though there are multiple verbs without subordination or coordination.

A good example of a directional serial verb construction can be found in MSM. The following example illustrates an example of three verbs functioning in a directional serial verb construction.

(304) *paŏ* *xià* *laí*
run descend come
'To run down (towards speaker)'
(Ji et al., 2011, p. 1045)

The three verbs above all function independently as verbs in MSM, they describe a single event, exhibit no subordination or coordination, and share the same grammatical Subject.

Among languages of Southeast Asia, SVCs are common, particularly in constructions that express direction or orientation (A. Aikhenvald, 2006; Goddard, 2005, p. 17). The most common of these are constructed of a 'major' verb followed by a 'minor[41]' verb which is "typically a verb of motion or movement with orientational semantics" (A. Aikhenvald, 2006, p. 22) that is used to refer to location or Path of event. This system is often referred to as an asymmetrical serial verb construction whereby one verb, the 'major' verb belongs to a relatively open or unrestricted class and other verb/s are chosen from a more restricted class. The verbs from the more restricted class typically perform a modifying function, most commonly imparting directional or deictic information to the event description.

In a discussion on serial verb constructions in MSM, Ji, Hendriks & Hickman (2011) describe a system of expressing motion events constructed of three possible Verbs.[42] Verb 1 (V_1) encodes the manner and cause of motion. Verb 2 (V_2) encodes the path of the motion and an optional third Verb (V_3) encodes the deictic information (such as come, go). Verbs in the second and third slots come from a limited set of verbs but can function as full verbs in a predicate.

The following example, taken from Chen & Yang (2018) illustrates this to also be the case in Southern Bai.

[41] The term 'minor' verb as used in Aikhenvald (2006), refers to a class of verbs similar to what I describe in section 7.1.2 as coverb.

[42] This study uses the term Resultative Verb Compound rather than Serial Verb Construction.

(305) *pɯ*^{21} *kuo*^{32} *jɯ*^{35}
float pass come
'To float towards'
Source: (Chen & Yang, 2018 (40))

The above example is a serial verb construction containing three verbs. The verb in the first slot (V_1) describes the Manner of motion, in this case floating. The middle slot (V_2) depicts Path information while the final slot (V_3) encodes deictic information. This is the canonical order of an SVC and is consistent throughout depictions of motion events in Southern Bai. A general rule could therefore be constructed, using the above example as an illustration.

(306)

V_1	V_2	V_3
Manner	Direction	Deixis
pɯ^{21}	*kuo*^{32}	*jɯ*^{35}
float	down	come

Serial verb constructions have also been described in expression of motion events in other languages in the Sino-Tibetan family. The Zhuang language spoken in Guangxi, China employs serial verb constructions to depict placement events that are causal and involve movement of the Figure to a new Ground (Y. Luo, 2019). South Burmese also uses SVCs in the description of motion events that consist of a major verb with minor verbs encoding further directional and deictic information from a restricted set (Vittrant, 2015, p. 616).

Like the languages mentioned above, Southern Bai also uses serial verb constructions that consist of a main lexical and coverbs in the depiction of motion events, as illustrated in the examples below.

(307) [*ke*^{21}] $_{VB}$ [*tsou*^{33}]$_{COVB}$ *ne*^{21} *lɔ*^{33}
[climb] ascend floor; level
'to go upstairs'

(308) *a*^{55} *mi*^{55} *tɯ*^{21} [*ku*^{35}]$_{VB}$ [*tsou*^{33}] $_{COVB}$ *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
cat CLF [climb] [ascend] tree on
'The cat climbed (up) the tree'

(309) *ke*^{35} *tɯ*^{21} [*fv*^{35}] $_{VERB}$ [*kuo*^{32} *jɯ*^{35}] $_{COVB}$
chicken CLF [fly] [pass come]
'The chicken flew over here (towards speaker)'

This section has provided an overview of the major components and terminology of serial verb constructions in Southern Bai. As these are a major component in the depiction of motion and placement events, further detail will be offered in Chapter Ten.

The following section will discuss another major property of motion event expressions in Southern Bai, the *ka*^{44} construction.

7.12. The ka^{44} construction

The *ka*^{44} construction is a major construction in Southern Bai that involves object raising. This construction is required in expressing the movement or manipulation of an object. In expressions involving events of placement, the *ka*^{44} construction is obligatory. If not employed the object is interpreted as having been static in that location for an unmarked length of time, rather than being dynamically placed. For further discussion on placement events, refer to section 10.2.2.

This construction consists of three major components: the disposal marker *ka*^{44}, the Figure, a movement, placement, or causal verb, and the Ground. Some constructions also include a locative postposition after the Ground indicating the relationship of the Figure to the Ground.

The general order of the construction is as follows:

(A) + *ka*^{44} + Figure + Verb + Ground + (LocPP)

This is demonstrated in the following example.

(310) *ka*^{44} [*xao*^{35} *kʰe˗*^{44}]$_{\text{FIG}}$ [*pe*^{31} *ke*^{35}]$_{\text{SVC}}$ [*su*^{44} *tɕia*^{44} *ne*^{21}]$_{\text{GND}}$ [*nɔ*^{44}]$_{\text{LOC}}$
ka [box CLF] [place at] [bookshelf CLF] [on]
'The box was placed on the shelf'
Source: NP & 'ga' elicitation (5)

As common in many constructions in Southern Bai, the A argument is optional, particularly if it can be inferred through context. This construction serves a similar function to the *ba*

particle in MSM which is used to indicate movement or manipulation of an object (C. N. Li & Thompson, 1981, pp. 468–469). Li & Thompson refer to *ba* as a 'disposal marker', a term which will be adopted here in glossing of data (DISP). As found in MSM, the disposal marker *ka*^{44} is likely derived from the lexical verb 'to grasp' or 'to handle'. This study found one example of *ka*^{44} functioning as a verb within a serial verb construction. Note the lack of object following the verb.

(311) *nia*^{55} *ka*^{44} *ne*^{44} *ta*^{32}
1PL.INCL grasp lift return
'Let's put it back'
Source: The greatest gift

Conversely, as a disposal marker *ka*^{44} precedes a physical object. The following examples of *ka*^{44} constructions were obtained during an elicitation session of the Put Project.

(312) *ka*^{44} *sɨ*^{35} *ja*^{44} *pia*^{44} *xɯ*^{55}
DISP. book CLF carry PFV
'(S/he) is carrying a book'
Source: Put project (32)

(313) *nɯ*^{31} *ɲi*^{21} *ka*^{44} *ɕiao*^{32} *mao*^{55} *tɯ*^{32} *te*^{55} *xɯ*^{55}
this person DISP. cap CLF wear PFV
'This person is wearing a hat'
Source: Put project (22)

Depictions of events involving manipulation or movement without the *ka*^{44} construction are considered grammatically correct but deemed to 'sound weird' to speakers. Consultant F4 stated that without *ka*^{44} the utterance is interpreted as the Figure always having been in that state or place. The examples below demonstrate these two constructions, with part a. in each example illustrating the correct utterance containing the *ka*^{44} construction and part b. illustrating the 'weird' variant without *ka*^{44}.

(314) a. *ka*^{44} *tsao*^{21} *tsv*^{35} *tɕia*^{44} *kuo*^{32} *jɯ*^{35}
DISP teacup receive pass INC
'S/he received a teacup'

b.? *pɔ*^{31} *tɕia*^{44} *kuo*^{32} *juɹ*^{35} *tsao*^{21} *tsv*^{35}
3SG receive pass INC teacup
? ‘S/he received a teacup’

(315) a. *ka*^{44} *sɨ*^{35} *tsʰueˇ*^{44} *niou*^{44} *ke*^{35} *tɕi*^{31} *peˇ*^{21} *tɯ*^{21} *nɔ*^{44}
DISP book CLF throw at ground CLF on
‘(S/he) threw the book on the ground’
Source: Put elicitation (47)

b.**pɔ*^{31} *niou*^{44} *sɨ*^{35} *tsʰueˇ*^{44} *ke*^{35} *tɕi*^{31} *peˇ*^{21} *tɯ*^{21} *nɔ*^{44}
3SG throw book CLF at ground CLF on
* ‘S/he threw the book on the ground’
Source: NP &’ga’ elicitation

The following utterance was produced from the Put elicitation to indicate that someone put on a hat.

(316) *nɯ*^{31} *ɳi*^{21} *ka*^{44} *ɕiao*^{32} *mao*^{55} *tɯ*^{55} *tɯɹ*^{32} *xɯɹ*^{55}
DIST person DISP hat CLF wear PFV
‘That person put on a hat’
Source: Put elicitation (22)

While grammatically correct, the example below uses example (316) to illustrate the shift in meaning that occurs if the *ka*^{44} construction is not used.

(317) *nɯ*^{31} *ɳi*^{21} *tɯ*^{32} *xɯ*^{55} *ɕiao*^{32} *mao*^{55} *tɯ*^{55}
DIST person wear PFV hat CLF
‘That person wears a hat’
Source: NP & ‘ga’ elicitation (39)

Consultant F4 stated that example (317) would be construed as the person always wearing a hat, rather than indicating that they are wearing a hat.

The *ka*^{44} construction also appears to be conditional on the agency of the moving object. As the cat is the agent of the movement in the following example, the *ka*^{44} construction is not required.

(318) *a*^{55} *mi*^{55} *tɯɹ*^{21} *ke*^{21} *sv*^{32}
cat CLF climb mountain
‘The cat climbed the mountain’
Source: NP & ‘ga’ elicitation (146)

By contrast (319) presents a good example of the function of *ka*^{44} as disposal marker. Within the example are two events. The clip begins with a person holding up a plate. To an observer, the plate existed in this state before the clip began. The durative aspect marking also suggests this. Once the person moves the plate onto the cup, the speaker uses *ka*^{44} to emphasise that the object is being manipulated.

(319) *ne*^{44} *tɯ*^{44} *pʰa*^{42} *tsɪ*^{44} *ne*^{21}, ***ka***$^{\mathbf{44}}$ *pʰa*^{42} *tsɪ*^{44} *ne*^{21} *sɯ*^{44} *ke*^{35} *tsv*^{35} *pe*^{21} *nɔ44*
lift DUR plate CLF **DISP** plate CLF put be.at cup CLF on
'A plate is being held up, then it is put on the cup'
Source: Put elicitation (10)

The purpose of this section is to provide an overview of the *ka*^{44} construction. As it is a major component in the expression of motion and placement events, more detail will be presented in Chapter Ten.

7.13. Summary

The chapter commenced by introducing some important components to the verb phrase in Southern Bai. These were different dynamic verb types, directional coverbs and auxiliary modal verbs before progressing to introduce pragmatic particles.

Discussion then expanded to simple predicate constructions over three argument structures. From there the discussion moved on to constructions involving the existential verb *tsɯ*^{33}. Examination of this verb argued that its primary function is to express the existence of an entity. From here, its meaning is extended to express possession. This study found that possessive clauses extend the meaning of the existential verb *tsɯ*^{33} to one indicating possession. The possessor in the clause is marked with the possessive marker *v*^{31} and any personal pronouns inflect to genitive case. This discussion was followed by a presentation of the use of *tsɯ*^{33} as a copula verb.

From constructions involving *tsu*^{33}, discussion progressed on to modal auxiliary constructions. The next topic covered was the five different ways Southern Bai speakers express aspect in relation to the degree of completeness of an event. The chapter concluded with two very important constructions in the language, serial verb constructions and *ka*^{44} constructions. These last two constructions will play an important role in the discussion of motion events in Chapter 10.

The following chapter will begin with a discussion on negation, then introduce more complex constructions, such as non-declarative sentences, clause linking, subordinate clauses, and comparative constructions.

Chapter 8 - Negation, Sentence and Clause Types, and Clause Combinations

This chapter will begin with Section 8.1, which will examine how negation is formed in the language. Section 8.2 will explore the formation of non-declarative constructions. Section 8.3 will discuss clause combining, which includes coordination, temporal linking, and causal linking before moving on to subordinate clauses in section 8.4. Discussion will then progress to comparative constructions in section 8.5 before the chapter is summed up in section 8.6.

8.1. Negation

Southern Bai employs four negative particles that perform various forms of negation. These vary in their position within a clause, pragmatic function, and temporality. Most negation in Southern Bai is post-head, or clause final, with only *puɯ*^{31} found to occur prior to the phrasal or clausal head and some flexibility with *piao*^{33}. The four negators are presented in Table 42.

Lexeme	Function	Position	Temporality
piao^{33}	Nominal predicate negator	post-NP	present
puɯ^{31}	General negator Negative imperative	pre-head pre-verbal	present; future
mu^{33}	Negative existential	clause final	past; present
tuo^{33}	Modal negator	clause-final	present; future

Table 42 - Southern Bai negators

While Wáng (2001b) stated that negation in Bai utilises a word order where the P-argument shifts pre-verb, this study found that the desired function and the associated particle have a greater impact on negation than word order. Furthermore, most negative constructions maintained an (A)VP word order.

Unlike Wáng (2006) and Duan (2002), this project found no evidence of negation through morphological inflection. However, this does not mean it does not exist. As stated in Wáng

and Gong (2016), negation through infixation and vowel shift was found to have a pragmatic function, mostly to indicate subjunctive mood. It is likely that this was not found due to elicitation sessions not providing the conditions required to elicit these forms.

The section below will describe and discuss the systems of negation used in Southern Bai.

8.1.1. Negation with piao^{33}

In Southern Bai, a nominal predicate can be negated by placing '*piao*^{33}'at the end of the noun phrase. The scope of negation of *piao*^{33} is over a specific entity, akin to 'It's not X'. Temporally, *piao*^{33} tends to cover present events, but may sometimes refer to past events, such as in narration.

(320) *pʰi*^{42} *kuo*^{31} *piao*^{33}
apple NEG
'(It's) not an apple'

(321) *kʰua*^{33} *tɯ*^{21} *piao*^{33}, *a*^{55} *mi*^{55} *tɯ*^{21}
dog CLF NEG cat CLF
'(It's) not a dog, it's a cat'

(322) *ŋɯ*^{55} *sou*^{31} *tɕi*^{44} *tɕia*^{44} *piao*^{33} *tsɯ*^{33} *nɯ*^{55} *v*^{31}
1GEN cell ph. CLF NEG COP. 2GEN POSS
'(That's) not my cell phone, it is yours'
Source: Wordlist elicitation

(323) *ne*^{21} *tsɯ*^{33} *ŋɯ*^{55} *nɔ*^{44} *piao*^{33}, *ne*^{21} *tsɯ*^{33} *pɯ*^{55} *nɔ*^{44}
PROX.CLF COP. 1GEN POSS NEG PROX.CLF COP. 3GEN POSS
'This one is not mine, it is hers/his'
Source: NP & 'ga' elicitation

Placement of *piao*^{33} is more flexible than with the other negators. In some instances, *'piao*^{33}*'* may appear before the verb rather than after the noun it is negating. The two examples below both appeared during data collection with consultants deeming them both grammatical. Notice the difference in the location of *piao*^{33} in these examples in contrast to those above.

(324) *na*^{55} ***piao***^{33} *tsɯ*^{33} *pʰi*^{42} *kuo*^{31}, *tsɯ*^{33} *ɕy*^{55} *li*^{55}
that **not** COP. apple COP. pear
'That's not an apple, it's a pear'
Source: Wordlist elicitation

(325) *nɯ*^{31} *ne*^{21} *tsɯ*^{33} *pʰi*^{42} *kuo*^{31} ***piao***^{33} *e˗44 sɨ44* *ɕy*^{55} *li*^{55}
this COP. apple **not** rather pear
'This isn't an apple, it is a pear'
Source: NP & 'ga' elicitation

8.1.2. Negation with pɯ^{31}

The negator *pɯ*^{33} is the most frequently occurring negator. It is a general negator that can be used before any non-nominal element. When appearing before adjectives, stative verbs, and adverbs, *pɯ*^{31} functions like the construction 'not X' in English. This is demonstrated in examples (326) and (327).

(326) *tsɨ*^{44} *ŋ̩i*^{21} *pe*^{44} *kuo*^{32} *nɔ*^{44} ***pɯ***^{31} *ɕiao*^{42} *ɕi*^{44}
male person go pass NOM **NEG** careful
'The man walked across without care'
Source: F5 Staged Events (2)

(327) *me˗*^{55} *ŋ̩i*^{44} *ŋɔ*^{31} ***pɯ***^{31} *ji*^{35} *ti*^{55} *pe*^{44} *ɕia*^{55} *kua*^{44}
tomorrow 1SG **NEG** necessarily go Xiaguan
'I may not go to Xiaguan tomorrow'
Source: NP & 'ga'

As covered in section 5.3.3, negation can be performed on disyllabic verbs that are monomorphemic by using *pɯ*^{33} as an infix. The examples of this infixation are repeated below.

(328) *zɯ*^{33} *pɯ*^{31} *tɯ*^{44} 'to not know'
tsʰu^{31} *pɯ*^{31} *pia*^{44} 'to not gamble'
tiao^{44} *pɯ*^{31} *kʰe˗*^{35} 'to not carve'

The negator *pɯ*^{31} can also be used to negate events in the potential future, as demonstrated in the examples below. Examples (329) and (330) below illustrate the temporality of *pɯ*^{31}.

(329) *ŋɔ*^{31} ***pɯ***^{31} *pe*^{44}
1SG **NEG** go
'I will not go' / 'I am not going'

(330) *pɔ*^{31} ***puɯ***^{31} *juɯ*^{35}
3SG **NEG** come
'S/he will not come' / 'S/he is not coming'

Placing *puɯ*^{31} before a verb can also form a negative imperative, as illustrated in examples (331) and (332) . Imperative constructions will be covered in further detail in section 8.2.2.

(331) ***puɯ***^{31} *suo*^{44} *mi*^{42} *xuo*^{35}
NEG speak mislead
'Don't lie' (Lit: Don't speak mistruths)
Source: F5 Jackal & Crow

(332) *ŋ̩i*^{21} *ke˧*^{35} *xuo*^{35} *ŋ̩ou*^{44} ***puɯ***^{31} *pei*^{35} *tɕʰie˧*^{55} *mi*^{35} *ji*^{42} *mi*^{42} *xuo*^{35}
person PL. want **NEG** by hear sweet talk mislead
'Don't be misled by sweet talk'
Source: Jackal & Crow

Similar to disyllabic negation, the negator *puɯ*^{31} can also be used in the formation of an A-not-A interrogative construction, as illustrated below. A-not-A constructions will be covered in further detail in section 8.2.1.4.

(333) *tɕʰie˧*^{55} ***puɯ***^{31} *tɕʰie˧*^{55} *nɔ*^{44}
hear **not** hear NOM
'Did you hear it, or not?'
Source: F5 Jackal & Crow

8.1.3. Negation with mu^{33}

The primary function of *mu*^{33} is as a clause final negator that indicates the non-actualisation of an event or non-existence of a state of affairs. The examples below introduce *mu*^{33} as a negator.

(334) *ke˧*^{55} *ŋ̩i*^{44} *ŋɔ*^{31} *pe*^{44} ***mu***^{33}
today 1SG go **NEG**
'I did not go today'
Source: NP & 'ga' elicitation

(335) *tsuɯ*^{33} *a*^{31} *tʰa*^{55} *tʰa*^{55} *yuɯ*^{44} *tuɯ*^{44} ***mu***^{33}
sometimes eat PFL **NEG**
'Sometimes (we) wouldn't eat'
Source: NP & 'ga' elicitation

The examples below illustrate the function of *mu*^{33} as indicating the non-existence of an entity or event. The first example below, (336) hints at this interpretation, suggesting the non-existence of food for several days.

(336) *pɔ*^{31} *le*^{21} *fv*^{44} *le*^{21} *tɕi*^{55} *kʰa*^{44}, *wa*^{55} *ŋ̩i*^{44} *jɯ*^{44} *tɯ*^{44} *xao*^{44} *vu*^{33} ***mu***$^{\mathbf{33}}$
3SG tired hungry few day eat DUR stuff **NEG**
'It was very tired and hungry, for (it) had not eaten anything for several days.'
Source: Jackal & Crow (F5)

(337) *zv*^{42} *kuo*^{31} *ŋu*^{55} *tɕʰie*^{44} ***mu***$^{\mathbf{33}}$ *ne*^{55} *ŋɔ*^{31} *pe*^{44} ***mu***$^{\mathbf{33}}$ *lao*^{32}
if 1GEN money **NEG** CONJ 1SG go **NEG** EMPH
'If I have no money, then I will not go'
Source: NP & 'ga' elicitation

Note here the use of the genitive pronominal form. This suggests the interpretation of *mu*^{33} as indicating the non-presence, or non-existence of the object being referred to. The above sentence could therefore be literally interpreted as "If my money does not exist…" Therefore, I argue that this morpheme could be referred to as a negative existential. Rather than merely stating that 'it is not X', or 'X didn't happen', the role of *mu*^{33} as a negator is to express the non-existence of event X when modifying a verb or the non-existence of entity X when following a noun.

The example below demonstrates the affirmative version of the negated conditional clause in example (336). Note that it employs the existential verb *tsɯ*^{33} to express the existence of money. Conditional clauses will be covered in further detail in section 8.4.1.

(338) *ŋu*^{55} *v*^{31} *ti*^{21} *tsɯ*^{33} *tse*^{21}, *ŋɔ*^{31} *niou*^{44} *pe*^{44} *kue*^{35} *ɕia*^{35}
1GEN POSS if EXIST money 1SG want go travel
'If I had money, I want to travel'
Source: 20181213_Wordlist (133)

The example below presents a simple example as evidence that *mu*^{33} indicates the non-existence of an entity.

(339) *bɯ*^{44} *tɕie*^{35} *tsɯ*^{33} *pe*^{42} *xuo*^{35} ***mu***$^{\boldsymbol{33}}$
Beijing EXIST Bai people **NEG**
'Beijing does not have Bai people' / 'There are no Bai people in Beijing'

As *mu*^{33} expresses the non-existence of an entity or event, by default it temporally negates events in the past. That is unless it is mitigated with a conditional (as in (337)) or an adverb of time, such as *me*^{55} *ŋ̍i*^{44} 'tomorrow'. The default temporality of *mu*^{33} is expressed in the following examples, note the difference in temporality and syntax from the examples of *puɯ*^{31} presented earlier in (329) and (330).

(340) *ŋɔ*^{31} *pe*^{44} *tsɨ*^{21} ***mu***$^{\boldsymbol{33}}$
1SG go time **NEG**
'I did not go' / 'I have not gone'

(341) *pɔ*^{31} *ju*^{35} ***mu***$^{\boldsymbol{33}}$
3SG come **NEG**
'S/he did not come' / 'S/he has not come'

8.1.4. Negation with tuo^{33}

The final negator to be covered is *tuo*^{33}. This appears at the end of a clause. Consultants had trouble translating this lexeme, with some saying it means 'not good' and others saying it was just a negator, like 'not'. Wiersma (2007, p. 671) lists a negative morph, *tua*^{42} in Central Bai describing it as [auxiliary][43] + [negative], glossing it as 'cannot', as illustrated in the following example.

(342) *ŋo*^{31} *a*^{31} *ŋv*^{33} *si*^{55} *no*^{33} *tɯ*^{33} *mi*^{42} ***tua***$^{\boldsymbol{42}}$
1SG Auntie SUB wait able **AUX+NEG**
'I cannot wait for Auntie'
Source: Wiersma (2007, p. 671)

This study takes the stance that *tuo*^{33} is the Southern Bai form of *tua*^{42}. The two lexemes share phonetic similarities, both appear at the end of a clause, and both have a shared semantic meaning as 'cannot'. Temporally, *tuo*^{33} refers to events that will not happen or that

[43] What Wiersma refers to as an 'auxiliary verb' is the same class this study refers to as a 'modal verb'.

the speaker believes are unable to be fulfilled. Example (343) below presents a simple construction using *tuo*^{33}.

(343) *a*^{33} *tɯ*^{44} *pɔ*^{31} ***tuo***$^{\boldsymbol{33}}$
see DUR 3SG **cannot**
'(S/he) cannot see him/her'
Source: Pear story (10)

The example below presents good evidence of *tuo*^{33} as a modal negative expressing the speaker's epistemic view of the event not being possible. The first part of the sentence establishes unfavourable conditions whereby the event, riding home, cannot be achieved.

(344) *jou*^{31} *sɨ*^{44} *xou*^{55} *tʰu*^{33} *tue*^{33} *xuo*^{35} *te*^{31} *v*^{33} *ɕi*^{44} *xuo*^{35}, *xe*^{55} *tsʰɯ*^{44} *v*^{33}
sometimes road far or rain or sky cloudy

ku^{21} *ta*^{44} *tsʰe*^{44} *pe*^{44} *ta*^{32} ***tuo***$^{\boldsymbol{33}}$
ride bike return **cannot**
'Sometimes, the distance was too far, it was raining, or cloudy, so we could not ride home.'
Source: The greatest gift (54)

Now that the negators in the language have been introduced, the following sections will discuss other forms of negation, beginning with partial negation.

8.1.5. Partial negation

To perform partial negation on a habitual action, a temporal adverb such as *tsa*^{35} *sɨ*^{35} 'often' is added prior to the predicate verb in a negative existential construction, as in the examples below.

(345) *pɔ*^{31} *tsa*^{35} *sɨ*^{35} *tɕi*^{21} *kv*^{44} ***mu***$^{\boldsymbol{33}}$
3SG often sing song **NEG**
'S/he does not usually sing'

(346) *pɔ*^{31} *tsa*^{35} *sɨ*^{35} *ju*^{44} *kua*^{44} *mi*^{44} ***mu***$^{\boldsymbol{33}}$
3SG often eat noodles **NEG**
'S/he does not usually eat noodles'

(347) *pɔ*^{31} *tsa*^{35} *sɨ*^{35} *tsɨ*^{55} *tsuo*^{32} *sɯ*^{33} ***mu***$^{\boldsymbol{33}}$
3SG often do labour **NEG**
'S/he does not usually do labour'

In events occurring in the past or present, partial negation can also be performed using a quantifying adverb such as *tsa*^{55} ‘whole’ with the specific negator *piao*^{33}. This is demonstrated in the example below.

(348) *tsa*^{55} *kɐ*^{21} *tsɨ*^{44} *pe*^{44} *tsɨ*^{21} ***piao*^{33}**
whole people -zi go time **NEG**
‘Not everyone went’

As *mu*^{33} expresses the non-existence of an event, then it is typically employed to express total negation. This contrast with partial negation is illustrated below.

(349) *a*^{33} *ŋi*^{21} *pe*^{44} ***mu*^{33}**
one person go **NEG**
‘No one went’

8.1.6. Double negation

Southern Bai contains a construction that allows for the expression of double negatives, whereby the use of the two negatives results in an affirmative or sometimes imperative interpretation. These are typically used to indicate that the Agent of an expression *must* conduct the action being discussed. This is constructed using two of the aforementioned negators, *mu*^{33} ‘not have’ and *tuo*^{33} ‘cannot’ after the predicate verb. The construction for expressing double negation is [Agent] + [verb] + *mu*^{33} + *tuo*^{33}. This is demonstrated in the examples below.

(350) *pɔ*^{31} *pe*^{44} *mu*^{33} *tuo*^{33}
3SG go not cannot
‘S/he must go’ / ‘S/he cannot but go’

(351) *ŋɔ*^{31} *tsɨ*^{55} *mu*^{33} *tuo*^{33}
1SG do not cannot
‘I must do it’ / ‘I cannot but do it’

(352) *nɔ*^{31} *sua*^{44} *mu*^{33} *tuo*^{33}
2SG speak not cannot
‘You must tell’ / ‘You cannot but tell’ / ‘You have to tell’

This concludes the discussion of negation in Southern Bai.

8.2. Interrogative, Imperative, and Exclamative sentences

Most non-declarative constructions in Southern Bai involve the use of the pragmatic particles introduced earlier in section 2.3.2.3 and explored further in section 7.2. Others are also formed using negation, or interrogative pronouns. The following section will demonstrate the construction and function of three types of constructions – interrogative, imperative, and exclamative.

8.2.1. Interrogative sentences

There are several ways to form an interrogative sentence in Southern Bai. The first employs the interrogative pronouns discussed earlier in section 6.4.3. The other method involves the use of some of the negators discussed earlier in section 8.1. This section will discuss how three types of interrogatives are formed, polar questions, special questions, and alternative questions.

8.2.1.1. Polar questions

This type of interrogative construction is designed to elicit a yes-no answer from an interlocutor. The simplest construction is to add the negator *mu*^{33} to the end of a declarative clause. This form functions similarly to the English constructions "… or not?" or …isn't it?". This function is derived from its use as a negative existential particle. Zhao (2012) states that *mu*^{33} functions as an interrogative modal particle in Zhaozhuang Bai. Examples (353) and (354) demonstrate the use of *mu*^{33} as an interrogative particle.

(353) *a*^{31} *ju*^{33} *pe*^{33} *ju*^{44} *xu*^{55} *mu*^{33}
grandfather dinner eat PFV NEG
'Have you had dinner, grandpa?'
Source: Intros & pronoun paradigm (6)

(354) *nɔ*^{31} *tsɯ*^{35} *xao*^{31} *tv*^{35} *mu*^{33}
2SG EXIST house NEG
'Are you at home?'
Source: Topological relations (207)

As the agent of a sentence is not required, but can be inferred through context, an interrogative predicate may be formed simply by adding *mu*^{33} to a verb, as exhibited in example (355).

(355) *se*^{33} *mu*^{33}
wash NEG
'Have you washed up?'
Source: NP & 'ga' elicitation (68)

Another variation on the declarative + *mu*^{33} formula is to add *ni*^{55} *mu*^{33} to the end of the clause, forming an alternative question construction similar to the English '… or not?'.

(356) *nɔ*^{31} *pe*^{44} *ni*^{55} *mu*^{33}
2SG go or not
'Are you going, or not?'
Source: NP & 'ga' elicitation (61)

(357) *nɔ*^{31} *ju*^{44} *ni*^{55} *mu*^{33}
2SG eat or not
'Are you going to eat, or not?'
Source: NP & 'ga' elicitation (64)

These two constructions form a closed form question that is typically answered either in the affirmative, by repeating the matrix verb, or in the negative with the negator *mu*^{33}.

A question tag construction can also be added by adding *mu*^{33} or *piao*^{33} to a previously uttered statement, when trying to correct an interlocutor. The following utterances came from an elicitation session aimed at obtaining various classifier and deictic pronoun paradigms with three university students. After answering my questions, a student would occasionally check their response with each other, or correct another's incorrect responses with '…. *mu*^{33}' questions.

(358) a: *ke*^{35} *na*^{55} *ja*^{31} *mu*^{33}
chicken that some NEG

b: *ke*^{35} *na*^{55} *ja*^{31}, *ɯ*^{32}
chicken that few AGR

A: 'Isn't it "ke^{35} na^{55} ja^{31}?'
B: 'Yeah, it's "ke^{35} na^{55} ja^{31}'
Source: NP Elicitation

(359) *tɕ^{h}i*^{44} *k^{h}ue*^{55} *ni*^{55} *piao*^{33}
seven CLF Sugg NEG
'Isn't it "tɕ^{h}i^{44} k^{h}ue^{55} ni^{55}?'
Source: NP elicitation

8.2.1.2. Content questions

These are a more open class of interrogative than polar questions and share a semantic similarity with wh- questions in English. The typical formation of a special question is to place an interrogative pronoun in situ of the P argument or adjunct of the verb. There is no shift in word order. Basic interrogative clause formation using interrogative pronouns is demonstrated below.

(360) *a*^{31} *le*^{33} *pe*^{44} *a*^{55} *na*^{44}
Aunty go where
'Where are you going, Aunty'
Source: Intros & pronoun paradigm (3)

(361) *tsɯ*^{33} *pɯ*^{55} *ta*^{44} *tɕiao*^{44} *jɯ*^{44} *tɯ*^{44} *xa*^{31} *le*^{21}
exist there roast eat DUR what
'What are they cooking up?'
Source: F5 Staged events (24)

Where the content in question is the S or A argument, an interrogative pronoun is again placed in situ of the original argument's NP slot. This construction is demonstrated in the examples below.

(362) *a*^{55} *na*^{44} *ŋ̍i*^{21} *ŋ̍ou*^{44} *ŋe*^{21} *E*^{33} *kue*^{35}
which person want depart Xiaguan
'Who wants to go to Xiaguan'

(363) *a*^{55} *na*^{44} *ŋ̍i*^{21} *ŋ̍ou*^{44} *jɯ*^{44} *kua*^{44} *mi*^{44}
which person want eat noodles
'Who wants to eat noodles?'

When questioning an amount or degree of an action, an interrogative pronoun, such as *tɕi*^{55} *ɕiou*^{33} 'how many' is placed in situ of NP's numeral slot. This is demonstrated in example (364).

(364) *A*^{31} *Luo*^{42} *jɯ*^{44} *xɯ*^{55} *tɕi*^{55} *ɕiou*^{33} *pi*^{42} *guo*^{31} *te*^{42}
A Luo eat PFV how many apple CLF
'How many apples did A Luo eat?

8.2.1.3. Truncated Questions

The modal *ni*^{55} can be added to a second or third person pronoun, or name of a referent to form what Li and Thompson (1981, p. 306) refer to as a 'truncated question'. A truncated question links back to a previous utterance and requests that the interlocutor respond with their thoughts, similar to 'what about X?' or 'and X?' in English. This is not to be confused with *ni*^{55} 'or' which is a truncated form of *lao*^{55} *ni*^{55} 'or'. The easiest way to differentiate each is that the truncated *ni*^{55}, 'or' occurs between two elements, setting them up as alternatives. This pragmatic question particle *ni*^{55} only occurs at sentence final position. Unlike *mu*^{33}, *ni*^{55} cannot be used to form an interrogative sentence from a declarative. The form and function of *ni*^{55} is demonstrated in the examples below.

(365) *nia*^{55} *pe*^{44} *jɯ*^{44} *tie*^{44}, *pɔ*^{31} *ni*^{55}*?*
1PL.INCL go eat 3SG Q
'We're going to eat, what about him/her?'
Source: *NP & 'ga' elicitation (250)*

(366) *ŋɔ*^{31} *ɕia*^{31} *jɯ*^{44} *mɯ*^{44} *mi*^{32} *xe*^{55}, *nɔ*^{31} *ni*^{55}*?*
1SG want eat noodles 2SG Q
'I want to eat noodles, how about you?'
Source: *NP & 'ga' elicitation (255)*

Compared to the interrogative sentences formed with *mu*^{33} this sentence type requests a more open response. However, it is not so open as to initiate discourse. Its function is to ascertain the interlocutor's opinion regarding the initial statement.

8.2.1.4. Alternative questions

An alternative question takes the form of an A-not-A question. In the case of Southern Bai, the form is constructed by repeating either a main predicate verb or auxiliary verb with the negator *puɯ*^{31} between them. This produces a question asking whether the interlocutor can or is willing to perform the action/event being described. Much like the *mu*^{33} sentence type, the *verb-puɯ*^{31}*-verb* construction elicits a closed response, typically responding with just the [verb] for the affirmative or *puɯ*^{31} + [verb] for the negative. The examples below, from a Jackal & Crow session, demonstrate auxiliary *puɯ*^{42} being used in this construction.

(367) *nɔ*^{31} ***nɯɯ***^{42} ***puɯ***^{31} ***nɯɯ***^{42} *tsʰa*^{55} *kɯɯ*^{32} *ŋɔ*^{31} *tɕʰie*^{55}
2SG **able not able** sing give 1SG listen
'Can you sing for me, or not?'
Source: F5 Jackal & Crow

(368) ***tɕʰie***^{55} ***puɯ***^{31} ***tɕʰie***^{55} *nɔ*^{44}
hear not hear NOM
'Did you hear it, or not?'
Source: F5 Jackal & Crow

This ends the discussion of interrogative sentence constructions in Southern Bai. This section has introduced three ways in which speakers may construct interrogative sentences. Those eliciting closed responses are declarative + *mu*^{33} and the verb-*puɯ*^{31}-verb construction. For a more open response, there is the declarative + pronoun + *ni*^{55} construction.

The next section will investigate the form and function of imperative sentences.

8.2.2. Imperative sentences

Southern Bai employs several methods in the formation of imperative sentences. These include negation and the use of sentence final pragmatic particles explored in section 7.2. The following section will outline the syntactic placement of these particles and illustrate their pragmatic function.

The polite imperative *me*^{33} is sentence final and is a gentle, polite speaker-oriented suggestion for an action to occur. It is a softer form of imperative, interpreted as a polite suggestion. The basic construction of an imperative using *me*^{33} is illustrated in example (369).

(369) (*nɔ*^{31}) *kv*^{32} *tʰɯ*^{55} *me*^{33}
(2SG) sit descend IMP
'Sit down, please'

Elicitation produced several instances of this sentence, some with a 2SG Agent, some without, hence the brackets in example (369) above. That speakers can either explicitly state the Agent or omit it suggests that it is optional in imperative constructions.

Below are further examples of imperatives formed using the particle *me*^{33}.

(370) *pe*^{44} *me*^{33}
go IMP
'Let's go!'

(371) *na*^{55} *pe*^{44} *me*^{33}
2PL go IMP
'You guys go (I'll stay)'

(372) *se*^{33} *se*^{33} *tsɪ*^{44} *me*^{33}
wash wash FILL IMP
'Wash up'
Source: NP & 'ga' elicitation

A stronger imperative can be found in the form of *ta*^{21}. While the illocutionary force of this modal is stronger than *me*^{33}, it is still considered polite.

(373) *ŋa*^{55} *pe*^{44} *ta*^{21}
1PL go IMP
'Let's go'

(374) *ŋ̍ia*^{55} *pe*^{44} *juɯ*^{44} *pe*^{33} *ta*^{21}
1PL.INCL go eat dinner IMP
Let's go eat dinner!

Source: Wordlist elicitation

Another imperative is *jou*^{33}. This particle has a similar meaning with a similar illocutionary force to *ta*^{21} and consultants were unable to provide any distinction.

(375) *ŋ̍ia*^{55} *pe*^{44} *juɯ*^{44} *pe*^{33} *jou*^{33}
1PL.INCL go eat dinner IMP
'Let's go eat dinner!'
Source: Wordlist elicitation

An imperative construction may also be formed using the auxiliary verb *ŋ̍ou*^{44}, akin to 'should' in English. The following examples demonstrate *ŋ̍ou*^{44} used as an imperative.

(376) *pe*^{44} *tɯ*^{21} *mɯ*^{35} *ŋ̍ou*^{44} *tsɯ*^{33} *suo*^{33} *me*^{21}
go before want exist lock door
'Lock the door before you go'
Source: NP & 'ga' elicitation

(377) *juɯ*^{44} *pe*^{33} *puɯ*^{55} *tɯ*^{21} *mɯ*^{35} *ŋ̍ou*^{44} *se*^{33} *sɯ*^{33}
eat dinner before want wash hand
'Wash your hands before dinner'
Source: Wordlist elicitation

As mentioned in section 8.1.2, a negative imperative can be is formed by placing the general negative particle *puɯ*^{31} before the verb, as illustrated in example (378). This is also produced using an auxiliary verb, like *ŋ̍ou*^{44} 'want', as in example (379).

(378) *puɯ*^{31} *suo*^{44} *mi*^{42} *xuo*^{35}
NEG speak mislead
'Don't speak mistruths'
Source: F5 Jackal & Crow

(379) *ŋ̍ou*^{44} *puɯ31* *pe44*
want NEG go
'Don't go!"

8.2.3. Exclamative sentences

Exclamative sentences are exclusively formed using pragmatic particles. Their function is to express surprise, incredulity, or to add emphasis to a statement.

The modal expressing affirmation, *a*^{44}, is sentence final and is employed to emphasise a statement.

(380) a. (Interviewer) What were you doing today?[44]

b. *ke˘*^{55} *ŋ̥i*^{44} *tsɯ*^{35} *xao*^{31} *tv*^{35} *a*^{44}
Today EXIST house AFF
'I was *at home* today!'
Source: Intro & pronoun paradigm

(381) *pe˘*^{42} *ŋ̥i*^{21} *ke˘*^{35} *tsui*^{55} *zɯ*^{35} *nao*^{42} *tɕie˘*^{35} *zi*^{35} *a*^{44}
Bai person most lively holiday AFF
'(It) is the liveliest holiday for the Bai people!'
Source: Huot bat jierf

a^{44} can also be used express incredulity, as in example (382).

(382) *nɯ*^{31} *ne*^{21} *tsɯ*^{33} *pʰi*^{42} *kuo*^{31} *piao*^{33} *a*^{44}
this one exist apple not AFF
'That's not an apple!!'
Source: NP & ga

Exclamative sentences may also be formed using the emphatic particle *lɔ*^{32}*/nɔ*^{32}. This particle is placed after a declarative sentence to emphasise the speaker's stance. This construction is demonstrated in examples (383) – (385).

(383) *ŋɔ*^{31} *pe*^{44} *mu*^{33} *lɔ*^{32}
1SG go NEG EMPH
'I'm not going!'

(384) *tʰe*^{55} *jɯ*^{44} *tɕʰiou*^{55} *nɔ*^{32}
too eat good EMPH
'That's so tasty!'

[44] Question was originally posed in Mandarin.

(385) *zɯ*^{44} *tɯ*^{44} *nɔ*^{32}, *zɯ*^{44} *tɯ*^{44} *nɔ*^{32}
know EMPH know EMPH
'I know! I know!'

Source: NP & 'ga' elicitation

In example (385) above, *nɔ*^{32} is employed for the speaker to express their frustration at the interlocutor's repetition. The emphasis here is akin to expressing 'I know (so please stop nagging)'.

8.2.4. Other prosodic functions

During a conversation with a consultant, I was introduced to two prosodic particles, *ɯ*^{21} and *tsao*^{33}, used by speakers to express increasing frustration with an interlocutor. These are similar to 'yeah' and 'I know' in English. The consultant stated that these two elements are very colloquial and tend to be used in a particular order to express increasing frustration on behalf of the speaker. Example (386) below is a hypothetical conversation provided by consultant F4 between her and her son that demonstrates the use of these elements[45].

(386) a. *a*^{55} *pɔ*^{44}, *kuo*^{32} *tʰu*^{33} *ŋ̍ou*^{44} *ɕiao*^{42} *ɕi*^{44}
Bo pass road want careful
'Bo, be careful crossing the road'

b. *ɯ*^{21}
'Yep'

(next day)

a. *a*^{55} *pɔ*^{44}, *kuo*^{32} *tʰu*^{33} *ŋ̍ou*^{44} *ɕiao*^{42} *ɕi*^{44}
Bo pass road want careful
'Bo, be careful crossing the road'

b. *ɯ*^{21}, *ɯ*^{21}
'Yep, yep'

(next day)

a. *kuo*^{32} *tʰu*^{33} *ŋ̍ou*^{44} *ɕiao*^{42} *ɕi*^{44}
pass road want careful
'Be, careful crossing the road'

[45] a. refers to F4 while b. refers to her son whose name has been anonymised.

b. *tsao*^{33}
'I know'

(next day)

a. *a*^{55} *pɔ*^{44}, *kuo*^{32} *tʰu*^{33} *ŋ̍ou*^{44} *ɕiao*^{42} *ɕi*^{44}
Bo pass road want careful
'Bo, be careful crossing the road'

b. *ɯ*^{21} *tsao*^{33}
'Yeah, I know!'

(next day)

a. *kuo*^{32} *tʰu*^{33} *ŋ̍ou*^{44} *ɕiao*^{42} *ɕi*^{44}
pass road want careful
'Be careful crossing the road'

b. *ɯ*^{21} *tsao*^{33}, *ɯ*^{21} *tsao*^{33}!
'Yeah, I know, I know!!'

Source: NP & 'ga' elicitation (72-76) [46]

The prosodic element *ɯ*^{21} can also be used to express agreement, as in example (387).

(387) a. *tʰe*^{55} *jɯ*^{44} *tɕʰiou*^{55} *nɔ*^{32}
too eat good MOD
'That's so good!'

b. *ɯ*^{21}
'Yeah'

Reduplicating *ɯ*^{21} functions to emphasise the agreement.

(388) a. *tʰe*^{55} *jɯ*^{44} *tɕʰiou*^{55} *nɔ*^{32}
too eat good MOD
'That's so good!'

b. *ɯ*^{21}, *ɯ*^{21}
'Yeah!'

However, *ɯ*^{21} *tsao*^{33} cannot be used in this way. The function of *ɯ*^{21} *tsao*^{33} is only to express frustration.

[46] The original recording initially had the mother speaking Mandarin which has subsequently been translated into Bai.

(389) a. *tʰe*^{55} *jɯ*^{44} *tɕʰiou*^{55} *nɔ*^{32}
too eat good MOD
'That's so good!'

b. * *ɯ*^{21} *tsao*^{33}
'Yeah'

8.3. Clause linking

In Southern Bai, two clauses may be linked via the conjunctions discussed in section 6.7 that link a noun or noun phrase, or via a clausal conjunction, such as *ta*^{55} *sɨ*^{55} 'however; but'. The majority of these are loans from Mandarin, so they display much of the same word order and syntax. Common clause linking devices found in Southern Bai are listed in Table 43 (below). Definitions of each linking type is based on Dixon (2009, p. 2).

Conjunction	**Gloss**	**Linking Type**	**Function**
xɯ^{55}	'then'	Temporal succession	Performs temporal linking
xou^{55}	'and'	Unordered addition	Connects two nouns
ta^{55} *sɨ*^{55}	'however/but'	Contrast	Connects two clauses where the second contradicts the first
lɔ^{55} *ni*^{55}	'or'	Disjunction	Connects constituents to form a question
ji^{35} *wei*^{55}	'because'	Cause	Connects two clauses where the second offers an explanation of the first
ta^{44}	'with'	Unordered addition	Connects two referents, one of which is human
suo^{32} *ji*^{31}	'therefore'	Result	Introduces consequence or entailment
xa^{35}	'while'	Same-even addition	Links two events simultaneously

Table 43 - Common Southern Bai conjunctions

Now that the common Southern Bai clause linking devices have been introduced, the following sections will describe how they are employed in clausal linking. The following sections will discuss three forms of clause linking found in Southern Bai, coordination, temporal, and casual linking.

8.3.1. Coordination

8.3.1.1. Conjunction free coordination

When linking clauses, coordination can be performed without overt marking with conjunctions. This is particularly the case when the two events are simultaneous. This form of coordination is illustrated in the example below.

(390) [*tsɯ*^{33} *wu*^{35} *ja*^{44} *nia*^{33} *tɯ*^{21}] [*ŋa*^{44} *tɯ*^{44} *ŋv*^{35} *tɯ*^{21}]
[exist crow Prox. CLF] [bite DUR. fish CLF]
'There is this crow and it is biting a fish'
Source: Jackal & Crow F7 (1).

8.3.1.2. Coordination of noun phrases

When linking a noun or noun phrase, conjunctions are typically employed. The following section describes the form and function of two coordinating conjunctions used with nouns, *lɔ*^{55} *ni*^{55} 'or' and *sɨ*^{55} *mu*^{35}.

The conjunction *lɔ*^{55} *ni*^{55} (or its truncated form *ni*^{55}) can be used to coordinate two nouns where an option is available. This function is demonstrated example (391).

(391) *tɕie*^{42} *pɯ*^{55} *xɯ*^{31} [*la*^{35} *tsɨ*^{31}] *ni*^{55} [*ji*^{21} *tɕiou*^{35}]
scatter 3GEN in [chilli] or [Sichuan pepper]
'Scatter chili or Sichuan pepper on them'
Source: jiaz xif vx (15)

Another coordinating construction used in Southern Bai is '*sɨ*^{55} *mu*^{35} *(A)… sɨ*^{55} *mu*^{35} *(B)*…. This is similar to 'either…or…' in English. The form of the construction is demonstrated in example (392).

(392) *nɯ*^{31} *ne*^{21} [*sɨ*^{55} *mu*^{35} *tsɯ33* *pʰi*^{42} *kuo*^{31} *ne*$^{21(47)}$] [*sɨ*^{55} *mu*^{35} *tsu*^{33} *ɕy*^{55} *ni*^{55}]
PROX.DEM [either COP. apple PROX] [either COP. pear]
'This is either an apple or a pear'
Source: NP & 'ga' elicitation (208)

[47] As mentioned in section 5.6, this is a compounded version of *nɯ*^{31} *ne*^{21}.

This construction can also be used to form questions of choice, with the addition of *na*^{44}, as is illustrated below in example (393).

(393) *ŋ̩ia*^{55} [*sɿ*^{55} *mu*^{35} *na*^{44} *me˗*^{55} *ŋ̩i*^{44} *pe*^{44}], [*sɿ*^{55} *mu*^{35} *na*^{44} *a*^{21} *tsv*^{21} *ŋ̩i*^{44} *pe*^{44}]
1PL.INCL [either tomorrow go] [either day after go]
'Shall we go either tomorrow, or the day after'
Source: NP & 'ga' elicitation (212)

Consultants stated that this construction cannot be used as a statement to indicate that the speaker is unsure what an object is, instead they stated that the *lao*^{55} *ni*^{55} 'or' construction should be used, as in example (130). However, there was evidence in the data suggesting this construction can have this function, as seen in example (394) below.

(394) *nɯ*^{31} *ne*^{21} [*sɿ*^{55} *mu*^{35} *pʰi*^{42} *kuo*^{31}], [*sɿ*^{55} *mu*^{35} *tsɯ*^{33} *ɕy*^{55} *ni*^{55}] *nɔ*^{31}
This [either apple] [or COP. pear] MOD
'This is either an apple or a pear'
Source: NP & 'ga' elicitation (198)

8.3.2. Temporal linking

As with coordinating two simultaneous events, temporal linking may be performed without overt marking. The following examples demonstrate linking two events without any overt marking.

(395) [*pa*^{55} *kou*^{33} *ŋ̩i*^{21} *tsɯ*^{33} *pɯ*^{55} *ta*^{44} *ɣɯ*^{33} *tsɔ*^{21}],
[3PL two person exist there drink tea]

[*tao*^{55} *tɯ*^{44} *tsɔ*^{21} *tsv*^{35}]
[pour DUR tea cup]
'Two people are there drinking tea, (then) someone pours a cup (of tea)'
Source: F5 Staged Events (10)

(396) [*nue*^{35} *ji*^{35} *kou*^{55}], [*tsou*^{44} *ŋe*^{21} *tɕie*^{33}]
[remove clothing CLF] [put on shoe CLF]
'(S/he) removed the item of clothing then puts it on the shoe'
Source: Put elicitation (64-65)

Example (395) contains two events — one of people drinking tea and the other of a cup of tea being poured. The agents in both events are the same and it is clear from the context that this is so[48]. However, there is no particle linking the two events.

Similarly, example (397) contains two chronological events without any overt linking.

(397) [*sɯ*^{33} *le*^{21} *tɕy*^{35} *ni*^{44} *kua*^{35} *lu*^{21} *xɯ*^{31}], [*ne*^{44} *xao*^{44} *vu*^{33} *yɔ*^{21}]
[hand CLF scoop into pocket in] [lift thing MOD]
'The hand reaches into the pocket and pulls something out'
Source: Put elicitation (73)

(398) *ka*^{44} *pɯ*^{55} *nɔ*^{44} *tsuo*^{44} *tie*^{44} *le*^{21} *sɯ*^{35} *tsou*^{33} *jɯ*^{35},
DISP. 3GEN POSS bike seat CLF rise ascend INC.
kʰe^{33} *si*^{31} *kʰou*^{44} *ji*^{31} *ku*^{21}
begin can ride
'Once her seat is lifted, then she can ride'
Source: F5 Staged events (16-17)

Additionally, temporal linking may be expressed through a temporal marker that links two events while expressing the order in which they occurred or will occur. The temporal markers found in Southern Bai are listed below in Table 44 with definitions based on the typology proposed by Dixon (2009, p. 2). According to this typology, the two types of clauses that are temporally marked may be the Focal clause which refers to the central activity and/or the Supporting clause which establishes the temporal conditions for the Focal clause (Dixon, 2009, p. 3). 'Temporal succession' describes two events that occur in the same order as the clauses. 'Relative time' involves a supporting clause that places the event in a temporal perspective, which may be a point in time, or a length in time; or something in the past or future, or at the same time as the focal clause (Dixon, 2009, pp. 9–10).

[48] This text was from a Staged Events elicitation, so context could be garnered from the video clip.

Lexeme	Expresses	Marks	Gloss
xɯ^{55}	Temporal succession	Focal clause	‘then’ ‘and then’
tse^{44}	Temporal succession	Focal clause	‘again’ ‘once more’
tɯ^{21} *mɯ*^{35}	Relative time	Supporting clause	‘before’
pɯ^{31} *tʰa*^{55} *tsɨ*^{44}	Relative time	Supporting clause	‘when’ ‘while’ ‘at that time’
xa^{35}	Relative time	Supporting clause	‘while’

Table 44 - Temporal markers

8.3.2.1. Temporal succession

As illustrated in Table 44 there are two methods to express temporal succession, either through *xɯ*^{55} ‘and then’ or *tse*^{44} ‘again’. *xɯ*^{55} links two clauses in the order the events occurred. It is likely that the function of *xɯ*^{55} as a marker of temporal succession is grammatically derived from its function as a perfective aspect marker (see section 7.10.1). As perfective aspect marks the completion of an event in time, the sense of *xɯ*^{55} could have developed from linking the completion of the first event before the second commences, then becoming grammaticalised into temporal succession. It is possible that *xɯ*^{55} is still functioning as an aspect marker, thereby creating two events where one occurs after the completion of the other. For example, (399) (below) could be interpreted as ‘exercise finished. chatting exists’. However, speakers translated *xɯ*^{55} in such examples into 然后 *ránhòu* ‘then; afterwards’. The prosody and intonation of such utterances also suggests that they are one sentence. The use of *xɯ*^{55} marking temporal succession is demonstrated in the examples below.

(399) *tua*^{55} *nie*^{55} *wu*^{33} *xɯ*^{55} *tsɯ*^{33} *pɯ*^{55} *ta*^{55} *tʰa*^{42} *ɕi*^{35}
exercise finish then EXIST there chat
‘After exercising, they are chatting.’
Source: F5 Staged events (3)

(400) *te˗⁴⁴ kʰe⁵⁵ xɯ⁵⁵ tsɯ³³ kʰou⁴⁴ ji³¹ kɯ²¹*
hit open then be able ride
'Once it is unfolded, then it can be ridden'
Source: F5 Staged events (19)

When the second clause involves manipulation of an instrument, then the conjunction *ka⁴⁴ xɯ⁵⁵* is used. This is a combination of the disposal marker *ka⁴⁴* and the temporal succession marker *xɯ⁵⁵*. Like *ka⁴⁴*, *ka⁴⁴ xɯ⁵⁵* appears directly before the object that is being manipulated. Its function is to indicate that the two events are linked, i.e. have the same AGENT while marking that the following event involves use of an instrument. The function of the disposal linkage device could be described as ['then' + manipulation of instrument]. This is illustrated in the following examples. As this marker is formed of the disposal marker and its function to indicate temporal succession, it will be glossed as (DISP.LINK)

(401) *pɔ³¹ tɛʰe˗⁵⁵ tɯ⁴⁴, ka⁴⁴ xɯ⁵⁵ ɕiao³² mɔ⁵⁵ ne⁴⁴ kɯ³² pɔ³¹*
3SG hear PFV DISP.LINK cap lift give 3SG
'After he$_i$ heard, he$_i$ gave him$_j$ the cap'
Source: Pear story (40)

(402) *a²¹ tsɯ⁵⁵ la⁴² tɯ²¹ ka⁴⁴ ŋv³⁵ tɯ²¹ ŋ̍ou⁴⁴ jɯ⁴⁴*
then wolf CLF DISP fish CLF want eat

ka⁴⁴ xɯ⁵⁵ ŋv³⁵ tɯ²¹ jɯ⁴⁴ xɯ⁵⁵
DISP.LINK fish CLF eat PFV
'The wolf wanted to eat the fish, and then ate the fish'
Source: F7 Jackal & Crow (11-13)

The disposal linker *ka⁴⁴ xɯ⁵⁵* can be used to link several clauses as having the same AGENTS, as demonstrated in the following example.

(403) *pɯ⁵⁵ ti³³ tsui³¹ pe⁵⁵ tɯ⁴⁴ a³¹ se³¹ ti⁵⁵, ji³⁵ li⁴² mi³¹ tsɯ⁴² xɯ⁵⁵ kua⁴² kua⁴⁴*
3GEN father prepare PFV one small length one cm approx. pole

ka⁴⁴ xɯ⁵⁵, kua⁴² kua⁴⁴ tsʰua³³ a³¹ tsʰua³³ kou³³ bɔ²¹
DISP.LINK pole chop one chop two half

ka⁴⁴ xɯ⁵⁵ kua⁴² kua⁴⁴ ne⁴⁴ ni⁴⁴ ke³² le²¹ xɯ³¹
DISP.LINK pole lift enter bowl CLF in

'His/her father prepared a small pole, approximately 1 cm long, then (he) chopped the pole in two, then (he) placed the pole into a bowl.'
Source: Herl sal (10-13)

Adding a gradable adverb, like *tsui*^{55} ‘most’, before *xɯ*^{55} functions to convert that occurrence to be the final event in the sequence, as demonstrated in the following example. That *xɯ*^{55} can be modified by a temporal adverb suggests that it is no longer functioning as an aspect marker, as this function does not appear with other aspect markers.

(404) *tsui*^{55} *xɯ*^{55} *jɯ*^{44} *tɯ*^{44} *ŋa*^{44} *ji*^{35} *tɕy*^{33}
most then eat PFV bite one mouth
‘Finally, takes one last bite’
Source: F5 staged Events (34)

Another way temporal succession is expressed is by linking two events with *tse*^{44} ‘again’. This is a narrative device that expresses that the Agent of the narrative has repeated an action. In this construction, *tse*^{44} is placed before the matrix verb, as the following example illustrates.

(405) *pɔ*^{31} ***tse*^{44}** *a*^{33} *kɯ*^{32} *tsɯ*^{31} *tsɯ*^{31} *xɯ*^{55}
3SG **again** look give tree PFV
‘S/he looked at the tree again’
Source: Pear story (9)

Consultant F7 used the conjunction *a*^{21} *tsɯ*^{55} ‘and then’ in her depiction of the Jackal and Crow story to link two events. Once the scene was established, she began the next sentence with *a*^{21} *tsɯ*^{55} ‘and then’ to link that utterance to the previous one, effectively linking them together. The consultant ran through the narrative very simply, without much embellishment. As a result, most of her recitation of the story began this way with each new event introduced with *a*^{21} *tsɯ*^{55}. The use of *a*^{21} *tsɯ*^{55} is demonstrated in the example below.

(406) *tsɯ*^{33} *wu*^{35} *ja*^{44} *nia*^{33} *tɯ*^{21}, *ŋa*^{44} *tɯ*^{44} *ŋv*^{35} *tɯ*^{21},
EXIST crow PROX CLF bite DUR fish CLF
a^{21} *tsɯ*^{55}, *fv*^{35} *ke*^{35} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44},
then fly at tree on
a^{21} *tsɯ*^{55}, *la*^{42} *nia*^{33} *tɯ*^{21} *tsɯ*^{33}
then wolf PROX. CLF exist
‘There is a crow, it is biting a fish. Then it flies onto a tree. Then there is a wolf’
Source: F7 Jackal & Crow (1-3)

Often, the Topic may be omitted in a clause that expresses a repeated event. As example (407) demonstrates, both agent and main verb may be omitted, using only the verbal classifier in the repeated clause to express the action if both verb and agent are clear from the context. In this case, context for the action is entailed in the verbal classifier itself.

(407) *tɯ*^{31} *ɳi*^{21} *nie*^{44} *jɯ*^{44} *tɯ*^{44} *ɕia*^{44} *tɕao*^{44} *pe*^{21}
PROX person CLF eat DUR banana CLF

ŋa^{44} *jɯ*^{44} *xɯ*^{55} *ji*^{35} *tɕy*^{33}
bite eat PFV one mouth

***tse*^{44}** *jɯ*^{44} *tɯ*^{44} *ji*^{35} *tɕy*^{33}
again eat DUR one mouth

'This person is eating a banana. S/he takes a bite, then takes another bite.'
Source: F5 staged events (28 & 30)

Depending on context, *tse*^{44} can also be used in an imperfective utterance to refer to events to be repeated in the future, as demonstrated in example (408).

(408) *nɔ*^{31} *ɕi*^{31} *xua*^{35} *ŋɔ*^{31} ***tse*^{44}** *kɯ*^{32} *nɔ*^{31}
2SG like 1SG **again** give 2SG
'If you like it, I'll give you another'
Source: The greatest gift (19)

As with coordinating clauses, temporal succession may not contain any overt linking device. The following example uses aspectual marking on the first clause to form a construction 'once X, then Y'.

8.3.2.2. Relative time

One way that relative time is expressed is by linking two events with *tɯ*^{21} *mɯ*^{35}. The Supporting clause establishes the conditions which are to be met for the Focal clause to successfully occur and is marked by *tɯ*^{21} *mɯ*^{35}. The Supporting clause should be completed before the event in the Focal clause, which occurs first in the construction. This construction is demonstrated in the following examples.

(409) *pe*^{44} *tɯ*^{21} *mɯ*^{35} *suo*^{33} *me*^{21}
go before lock door
'Before you go, lock the door'
Source: NP & 'ga' elicitation (185)

(410) *jɯ*^{44} *pe*^{33} *tɯ*^{21} *mɯ*^{35} *ŋ̍ou*^{44} *se*^{33} *sɯ*^{33}
eat dinner before want clean hand
'Before eating dinner, wash your hands.'
Source: Word elicitation (115)

(411) *pɔ*^{31} *pe*^{44} *tɯ*^{21} *mɯ*^{35} *suo*^{33} *me*^{21}
3SG go before lock door
'S/he locked the door before s/he left'

As a marker of relative time, *tɯ*^{21} *mɯ*^{35} can also refer to an event that occurred previously. This is demonstrated in the following examples.

(412) *pɯ*^{31} *tɯ*^{21} *mɯ*^{35} *ku*^{33} *te*^{31} *ŋ̍i*^{21} *xuo*^{33} *tsʰue˧*^{42} *suo*^{44} *ne*^{44}
PROX before old generation person PL. legend CLF
'This is a legend from generations before'
Source: F5 Jackal & Crow (3)

(413) *ɕi*^{44} *tsɨ́*^{42} *sua*^{44} *tɯ*^{21} *mɯ*^{35}
four ten year before
'Forty years ago'
Source: The greatest gift (4)

To express an associate relative time, *pɯ*^{31} *tʰa*^{55} *tsɨ*^{44} 'while; then; at that time' is used to link the two events. This expresses that one event occurred during the time another event was already ongoing, although not necessarily having a simultaneous commencement. This construction is illustrated below.

(414) *pɔ*^{31} *ku*^{21} *pɯ*^{31} *tʰa*^{55} *tsɨ*^{44} *pɯ*^{55} *tui*^{32} *mi*^{32} *ku*^{21} *kuo*^{32} *jɯ*^{35} *se*^{31} *ŋ̍v*^{33} *na*^{33} *ŋ̍i*^{21}
3SG ride when 3GEN opposite ride pass INC. small woman CLF
'While he was riding, a young woman rode past opposite him'
Source: Pear story (21)

(415) *tɕʰi*^{55} *sue*^{44} *pɯ*^{31} *tʰa*^{55} *tsɨ*^{44} *pe*^{44} *ɣɯ*^{42} *sɨ*^{35}
seven year when go study
'When I was seven, I went to study'
Source: The greatest gift (114)

To express simultaneous relative time, clauses are linked via *xa*^{35} ‘while’. This can be used to link two or more events together, as expressed in the example below. In such constructions, the first clause establishes the point in time with which the subsequent clauses are situated. Placing *xa*^{35} before each subsequent event indicates they occurred simultaneously with the first clause. This construction is demonstrated here in example (416).

(416) *ŋɯ*^{55} *ti*^{33} *kɯ*^{21} *ta*^{44} *ts*^{h}*e*^{44} [***xa***^{35} *ŋɔ*^{31} *kɯ*^{21}, ***xa***^{35} *ta*^{44} *ŋɔ*^{31} *p*^{h}*ie*^{31}]
1GEN father ride bicycle [**while** 1SG ride **while** with 1SG chat]
‘While riding his bicycle, my father would chat with me as I rode along’
Source: The greatest gift (14)

8.3.3. Causal linking

To express a consequence or cause, a bi-clausal construction is employed, one that establishes the reason for the event or activity, and one that describes the resulting activity. The two clauses are linked via a conjunction that helps determine the order of events and indicates causality. These are all are disyllabic. With the exception of *niou*^{44} *tsɯ*^{33} ‘therefore’, which includes the existential/copula *tsɯ*^{33}, the others cannot be broken down further into other Southern Bai lexemes. This is likely due to them being MSM loans and likely borrowed as one lexical unit.

Referring back to Dixon’s (2009, p. 17) typology, the Supporting clause in these constructions establishes the reason for the activity or state outlined in the Focal clause which is typically the first clause in the construction. The Focal clause outlines the consequent action. In the following example, it is introduced by the conjunction *niou*^{44} *tsɯ*^{33} ‘therefore; so’. The example below is broken down into Supporting clause (SC) and Focal clause (FC).

(417) [*ɕy*^{55} *ni*^{55} *te*^{44} *pi*^{31} *tɕiao*^{55} *ka*^{35} *tɔ*^{31}]$_{\text{SC}}$
[pear tree quite tall]

[***niou***^{44} ***tsɯ***^{33} *zv*^{31} *nɯ*^{21} *tsɨ*^{21} *t*^{h}*e*^{55} *k*^{h}*ua*^{44}]$_{\text{FC}}$
[therefore use ladder pick]
‘The pear tree is quite tall, so they used a ladder to pick (the fruit)’
Source: Pear story (3)

Another method of expressing causation utilises *ji*^{35} *we*^{44} … *suo*^{44} *ji*^{21} construction**.** This is a loan from MSM that shares phonetic similarity with 因为…所以 *yīnwèi...suǒyǐ* and the same word order. In this construction, *ji*^{35} *we*^{44} 'because' introduces the Supporting clause that outlines the reason for the event in the Focal clause, which is introduced with '*suo*^{44} *ji*^{21} 'therefore'. The following example demonstrates this construction, broken down into the Supporting clause and Focal clause.

(418) [***ji*^{35} *we*^{55}** *xɔ*^{31} *tv*^{35} *ŋu*^{55} *tsɯ*^{33} *ŋ̍v*^{33} *tʰe*^{44} *ŋ̍i*^{21}]$_{SC}$
[**because** house 1GEN exist younger sister CLF]

[***suo*^{44} *ji*^{21}** *ŋa*^{55} *xɔ*^{31} *tv*^{35} *wu*^{33} *tsɯ*^{33} *tsou*^{35} *ŋo*^{31} *nɔ*^{44} *a*^{31} *ŋ̍i*^{21} *mu*^{33}]$_{FC}$
[**therefore** 1PL house NEG exist care 1SG ATTR one person NEG]

'There was no one at home to look after me, because I had a younger sister,'
Source: The greatest gift (8)

A Supporting clause can also be used in a conditional clause to outline the reason for the outcome of the second clause. The following example illustrates how a Supporting clause explains the outcome of a conditional clause. Conditional clause construction will be examined in detail in section 8.4.1.

(419) [*zv*^{42} *kuo*^{31} *ŋɔ*^{31} *pe*^{44} *ɕia*^{55} *kua*^{44} *mu*^{33},
if 1SG go Xiaguan NEG

neˇ^{55} [*ŋɔ*^{31} *we*^{21} *a*^{33} *tɯ*^{44} *ŋu*^{55} *pʰɯ*^{42} *jou*^{31} *ŋ̍i*^{21} *tuo*^{33}]$_{FC}$]$_{CC}$
JOIN 1SG play see DUR 1GEN friend person cannot

[***ji*^{35} *we*^{55}** *pɔ*^{31} *tsɯ*^{33} *ɕia*^{55} *kua*^{44}]$_{SC}$
[**because** 3SG EXIST Xiaguan]
'If I don't go to Xiaguan, then I won't be able to see my friends, [because they're in Xiaguan]'
Source: NP & 'ga' elicitation (272)

Another way to link clauses and express causality is to link the Supporting and Focal clauses with the conjunction *neˇ*^{44}. The example below demonstrates this construction.

(420) [*tsv*^{21} *se˧*^{33} *ŋ̍i*^{44} *ŋɔ*^{31} *pe*^{44} *kuo*^{32} *ɕia*^{55} *kua*^{44}]$_{SC}$ ***ne˧***^{44}
yesterday 1SG go EXP Xiaguan **LINK**

[*ke˧*^{55} *ŋ̍i*^{44} *ŋɔ*^{31} *pe*^{44} *mu*^{33}]$_{FC}$
today 1SG go NEG
'Yesterday, I went to Xiaguan, (so) I won't go today'
Source: NP & 'ga' elicitation (257)

This concludes the discussion of clause linking in Southern Bai. The following section will discuss Southern Bai subordinate clauses.

8.4. Subordinate clauses

A subordinate clause is a dependent clause that augments or adds information to another, independent clause. The subordinate clause cannot be understood alone and relies on the independent clause to be understood and semantically complete.

Two types of subordinate clauses were commonly found among the data in Southern Bai. The first to be discussed is the conditional clause. The other is the relative clause.

This section will describe the structure and subordinating strategies of subordinate clauses in Southern Bai.

8.4.1. Conditional clause

The conditional clause construction consists of two clauses which will be referred to as the antecedent and the consequent based on Douven et al (2018) and Evans and Over (2004).. The antecedent clause is a subordinate clause that establishes the condition to be met. The consequent clause is syntactically independent and expresses the desired outcome should the conditions established in the antecedent clause be met. The construction of the conditional clause in Southern Bai is:

conditional clause => [antecedent clause] + [consequent clause]

While the consequent clause is syntactically independent, it is conditional on the first clause being fulfilled. Examples (421) and (422) illustrate the structure of the conditional clause in Southern Bai. Note that, as the antecedent clause is possessive, then the head pronoun is in the genitive form and contains the possessive marker *v*^{31}.

(421) *ŋɯ*^{55} *v*^{31} *ti*^{21} *tsɯ*^{33} *tse*^{21}, *ŋɔ*^{31} *niou*^{44} *pe*^{44} *kueˇ*^{35} *ɛia*^{35}
1GEN POSS if have money 1SG want go travel
'If I had money, I want to travel'
Source: 20181213_Wordlist (133)

(422) *ŋɯ*^{55} *v*^{31} *ti*^{21} *tsɯ*^{33} *tɕ*^{h}*ie*^{44},[49] *ŋɔ*^{31} *pe*^{44} *kueˇ*^{35} *ɛia*^{35}
1GEN POSS if have money 1SG go travel
'If I had money, I would travel'
Source: 20181213_Wordlist (126)

If we break down example (421) into clauses, clause one [C_1] is dependent on the second clause [C_2] to be understood. C_2 can be understood as an independent clause, 'I want to travel'. However, the condition in C_1 must be fulfilled for C_2 to be truthful.

(423) [*ŋɯ*^{55} *v*^{31} *ti*^{21} *tsɯ*^{33} *tse*^{21}]$_{C1}$ [*ŋɔ*^{31} *niou*^{44} *pe*^{44} *kueˇ*^{35} *ɛia*^{35}]$_{C2}$
[1GEN POSS if have money] [1SG want go travel]

As mentioned earlier, the conditional clause is constructed of a subordinate antecedent clause and a syntactically independent consequent clause. The antecedent clause (AC) itself contains three elements: the head noun (HN), conditional marker *ti*^{21}, and the condition (C). The consequent clause (CC) establishes the outcome of the conditions set in the AC being met. Example (424) below uses example (421) to break down each element. Note that the conditional marker *ti*^{21} appears after the head noun and introduces the condition to be fulfilled.

(424) [[*ŋɯ*^{55} *v*^{31}]$_{HN}$ *ti*^{21} [*tsɯ*^{33} *tse*^{21}]$_{C}$]]$_{AC}$, [*ŋɔ*^{31} *niou*^{44} *pe*^{44} *kueˇ*^{35} *ɛia*^{35}]$_{CC}$
[[1GEN POSS if [have money]] [1SG want go travel]
'If I had money, I want to travel'
Source: 20181213_Wordlist (133)

[49] This is an MSM loan of qián (钱)

As evidenced in example (421) the consequent clause can also be used to express an epistemic desire for an event, evident with the inclusion of the auxiliary modal.

To express the opposite, whereby the condition is not met, the antecedent clause is negated with the negative existential, *mu*^{33}, and the consequent is negated with the modal auxiliary negative, *tuo*^{33}. As the antecedent clause is negated via the negative existential, verbs are optional. The negative form of example (422) is illustrated in the example below.

(425) *ŋɯ*^{55} *v*^{31} *ti*^{21} *tse*^{21} *mu*^{33}, *ŋɔ*^{31} *kueˇ*^{35} *ɕia*^{35} *tsɿ*^{21} *tuo*^{33}
1GEN POSS if money NEG 1SG travel do cannot
'If I have no money, I can't travel'
Source: Wordlist (140)

Counterfactual conditionals, whereby the consequent clause is false due to the conditions in the subordinate clause not being met (J. S. B. T. Evans & Over, 2004, p. 13) are also expressed using this construction. This is particularly the case if the outcome in the consequent clause is positive. The following examples present counterfactual conditionals.

(426) *nɔ*^{31} *ti*^{21} *sua*^{44} *kɯ*^{32} *ŋɔ*^{31} *mu*^{33}, *ŋɔ*^{31} *tsɯ*^{33} *zɯ*^{33} *pɯ*^{31} *tɯ*^{44} *lɔ*^{32}
2SG if speak give 1SG NEG 1SG be not know EMP
'If you didn't tell me, I wouldn't know'
Source: WeChat correspondence

(427) *nɔ*^{31} *ti*^{21} *ta*^{21} *ŋɯ*^{55} *pɔ*^{21} *nɔ*^{44}, *ŋɔ*^{31} *tsɯ*^{33} *tsɿ*^{55} *tɕʰieˇ*^{55} *tuo*^{33} *lɔ*^{32}
2SG if help 1GEN business POSS 1SG be do clear cannot EMPH
'If not for your help, I would not be able to finish'
Source: WeChat correspondence

The examples below demonstrate a Sinicised form of the conditional clause. The differences in this construction as opposed to the one above is the use of *zv*^{42} *kuo*^{31} 'if' coming from the Mandarin *rú guǒ* and a shift in word order with the conditional marker appearing before the head noun in the antecedent clause. This construction also includes another linking element, *neˇ*^{55} which could be a loan of the MSM nà''then' (那). Interestingly, pronouns still maintain the genitive form. The Sinicised conditional structure is presented in the below examples.

(428) ***zv^{42} kuo^{31}*** *ŋu^{55}* *tsuɯ^{33}* *tɕ^{h}ie^{44}* *ne^{44}* *ŋɔ^{31}* *pe^{44}* *ny^{35} jou^{42}*
if 1GEN have money LINK 1SG go travel
'If I had money, then I'd travel'
Source: NP & 'ga' elicitation (191)

(429) ***zv^{42} kuo^{31}*** *ŋu^{55}* *tɕ^{h}ie^{44}* *mu^{33}* *ne^{44}* *ŋɔ^{31}* *pe^{44}* *mu^{33}* *lɔ^{32}*
if 1GEN money NEG LINK 1SG to go not EMPH
'If I don't have money, then I won't travel'
Source: NP & 'ga' elicitation (193)

The MSM equivalent conditional clause word order is illustrated below for comparison.

(430) *rú guǒ* *wǒ* *yǒu* *qián,* *nà* *wǒ* *qù* *lǚyóu*
if 1SG have money then 1SG go travel
'If I had money, then I would travel'

The Sinitic version of this construction was the most common construction being produced by two of the consultants. It seems to not be age specific with one consultant being a university student, the other a teacher. Region also does not explain this difference with both the Bai form and the Sinitic form being uttered by two people from nearby regions in Dali. Nor is it an example of code switching with all consultants displaying a clear preference for the forms they produced. This selection of the Sinicised form over the Bai form is a feature worth further investigation.

The next point of discussion will be on relative clauses.

8.4.2. Relative clause

A relative clause is a clause that is embedded in a larger utterance modifying the head noun of a noun phrase (Kroeger, 2005, p. 260).

Typically, relative clauses are marked with a relativiser. As found in studies on other dialects (see section 2.3.2.2), relativisation in Southern Bai is marked using the nominaliser *nɔ^{44}*. The use of a nominaliser as a marker of subordination has been described in Mandarin (C. N. Li & Thompson, 1981) and Qiang, Lahu, and Chantyal (Huang, 2008, p. 735). Matisoff (1982,

p. 360) also describes a similar particle in Lahu, *ve*, that is used to connect relative clauses to a head noun.

As found in several languages in the Sino-Tibetan family, for example in Qiang (Huang, 2008), Rawang (LaPolla, 2008), and Mandarin (Li & Thompson, 1981) the relative clause in Southern Bai is not marked for tense, aspect, or mood.

Prenominal relative clauses in Southern Bai display verb-object word order, as found in Comrie (2008, p. 723). This is an uncommon feature among Sino-Tibetan languages.

The following relative clause constructions in examples (431) – (432) were taken from a Jackal & Crow elicitation. The attributive *nɔ*^{44} is used to indicate that the noun 'fish' is being modified by an embedded clause, in this case 'the one inside the crow's mouth'. I have placed square brackets around the relative clause in the Bai text. Just as in Lahu, the nominaliser *nɔ*^{44} is connecting the relative clause to the head noun.

(431) *tɕeˇ*^{55} *mɯ*^{55} *ka*^{44} *xɯ*^{55} [*wu*^{55} *ja*^{44} *tsɯ*^{33} *tɕy*^{33} *mɯ*^{44} *nɔ*^{44}] *ŋv*^{35} *tɯ*^{21}
how grasp PFV [crow EXIST mouth ATTR] fish CLF
'How can I get the fish that's in the crow's mouth'
Source: F5 Jackal & Crow (10)

(432) *pɔ*^{31} *ɕia*^{31} *jɯ*^{44} *mɯ*^{44} [*tɕy*^{33} *mɯ*^{44} *nɔ*^{44}] *ŋv*^{35} *tɯ*^{21}
3SG want eat PART. [mouth ATTR] fish CLF
'S/he wants to eat the fish in the crow's mouth'.
Source: F5 Jackal & Crow (26)

The following examples illustrate how *nɔ*^{44} functions to nominalise the relative clause within a noun phrase. The two examples differ slightly as to who is the Agent. Note that there is no inflection marking the P-argument of the clause. The relativization is performed by word order and marked with *nɔ*^{44}.

(433) *nɯ*^{31} *tɯ*^{21} *tsɯ*^{33} [*ŋɔ*^{31} *tsɨ*^{21} *seˇ*^{33} *ɳi*^{44} *a*^{33} *kuo*^{32} *nɔ*^{44}] *ɳi*^{21} *keˇ*^{35} *ɳi*^{21}
PROX. CLF COP. [1SG yesterday see EXP. ATTR] person CLF
'This is the person [that I saw yesterday]'

(434) *nɯ*^{31} *tɯ*^{21} *tsɯ*^{33} [*tsɨ*^{21} *se*^{33} *ŋ̍i*^{44} *a*^{33} *kuo*^{32} *ŋɔ*^{31} *nɔ*^{44}] *ŋ̍i*^{21} *ke*^{35} *ŋ̍i*^{21}
PROX. CLF COP. yesterday see EXP. 1SG ATTR person CLF
'This is the person [that saw me yesterday]'

This concludes the discussion of subordinate clause constructions in Southern Bai. The following section will introduce comparative constructions in the language.

8.5. Comparative constructions

Dixon (2008) proposes that prototypical comparative constructions consist of five elements, Comparee, Index, Parameter, Mark, and Standard. As an example, take the sentence 'Jane is more intelligent than John'. There are two participants, Jane is the Comparee, or referent being compared, 'John' is the Standard, or participant being compared against. The Parameter of the sentence is the unit of comparison, in this case 'intelligent'. The Index is 'more' with the Mark being 'than'.

When comparing the quality of two different entities, speakers of Southern Bai use a comparing conjunction *pi*^{31}'compared to', which functions as the Mark of the construction. The Mark, *pi*^{31} is placed between two noun phrases with the Comparee preceding and the Standard following. The quality being compared, or Parameter, is then placed after the Standard. Southern Bai does not make use of an Index in prototypical comparative constructions. There is a set pattern in the prototypical comparative construction which is [Comparee] + *pi*^{31} + [Standard] + [Parameter]. The prototypical comparative construction is demonstrated in examples (435) to (438).

(435) *ŋɔ*^{31} *pi*^{31} *ŋɯ*^{55} *tʰe*^{44} *tɔ*^{31} *kou*^{33} *sua*^{44}
1SG compare 1GEN younger sibling big two year
'I am two years older than my sister'
Source: The greatest gift (7)

(436) *ŋɯ*^{55} *ni*^{44} *sua*^{44} *pi*^{31} *pɔ*^{31} *tɔ*^{31}
1GEN age compare 3SG big
'I am older than s/he' (Lit: My age compared to theirs is big)

(437) *ŋɯ*^{55} *ni*^{44} *sua*^{44} *pi*^{31} *pɔ*^{31} *se*^{31}
1GEN age compare 3SG small
'I am younger than s/he' (Lit: My age compared to theirs is small)

Source: WeChat correspondence

(438) *a*^{31} *ɳi*^{44} *pi*^{31} *ɳi*^{44} *tɕʰiou*^{55}
one day compare day good
'One day better than the other'
Source: (H. Chen & Yang, 2018)

The Parameter in such constructions may be a noun phrase modified by an adjective, as in example (435), or an adjective or adjectival verb, as in example (438).

When a property such as a skill or ability are being compared between two entities, the construction is relatively the same, with a verb appearing before the index. Personal pronouns sometimes take on genitive inflection, which suggests that some abilities, like speaking a language, are perceived as being properties. Comparative constructions involving skills and abilities are demonstrated in the examples below.

(439) *nɯ*^{55} *xa*^{32} *ja*^{44} *sua*^{44} *tɯ*^{44} *pi*^{31} *ŋɯ*^{55} *v*^{31} *xu*^{33}
2GEN Mandarin speak ATTR compare 1GEN POSS good
'You speak Mandarin better than I'

(440) *nɔ*^{31} *pi*^{31} *ŋɔ*^{31} *ɣɯ*^{42} *ŋeˇ*^{21} *tɕie*^{31}
2SG compare 1SG read quick
'You read faster than I'

(441) *nɔ*^{31} *pi*^{31} *ŋɔ*^{31} *ɣɯ*^{42} *pʰi*^{42}
2SG compare 1SG read slow
'You read slower than I'

When speakers wish to express a comparison with only one participant, but comparing two entities, the word order remains fairly consistent with the prototypical construction. The difference from the examples above are the addition of the participant before the two entities being compared and an Index, in this case *meˇ*^{35} 'more'. This is demonstrated below.

(442) *ŋɔ*^{31} *ɕi*^{31} *xua*^{35} *xeˇ*^{55} *zɨ*^{31} *pi*^{31} *kua*^{44} *mi*^{44} *meˇ*^{35}
1SG like rice compare noodles more
'I like rice more than noodles'

Consultation revealed that in the following structurally ambiguous sentence, the term *ɕi*^{31} *xua*^{35} 'like' has scope over the whole clause.

(443) *ŋɔ*^{31} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44} *pi*^{31} *ɕiao*^{32} *wa*^{42} *me˞*^{35}
1SG like noodles compare Xiao Wang more
'I like noodles more than (I like) Xiao Wang'

If a speaker desires to express that 'I like noodles more than Xiao Wang (likes noodles)' then *ɕi*^{31} *xua*^{35} 'like' must be applied to both entities, as illustrated in the example below.

(444) *ŋɔ*^{31} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44} *pi*^{31} *ɕiao*^{32} *wa*^{42} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44} *me˞*^{35}
1SG like noodles compare Xiao Wang like noodles more
'I like noodles more than Xiao Wang (likes noodles)'

In the case of one participant comparing two properties, the same construction is used, with each quality appearing before and after the mark *pi*^{31}, as opposed to the two participants. Again, personal pronouns may take on the genitive form. This construction is demonstrated in the examples below.

(445) *ŋɯ*^{55} *pe˞*^{42} *ja*^{22} *pi*^{31} *xa*^{32} *ja*^{22} *sua*^{44} *nɔ*^{44} *xu*^{33}
1GEN Bai lang. compare Mandarin speak ATTR good
'My Bai is better than my Mandarin'

(446) *nɯ*^{55} *xa*^{32} *ja*^{44} *sua*^{44} *tɯ*^{44} *pi*^{31} *ŋɯ*^{55} *v*^{31} *xe*^{44}
2GEN Mandarin speak PRT compare 1GEN POSS bad
'Your Mandarin is worse than mine'

(447) *ŋɯ*^{55} *pe˞*^{42} *ja*^{44} *sua*^{44} *tɯ*^{44} *pi*^{31} *xa*^{32} *ja*^{44} *xe*^{44}
1GEN Bai lang. speak PRT compare Mandarin bad
'My Bai is worse than my Mandarin'

In the instance a speaker wishes to compare two qualities over two participants, the participant that exhibits a greater degree of the Parameter appears before the mark *pi*^{31}. The second participant appears after the mark, followed by the Parameter. This construction is presented below.

(448) *nɔ*^{31} *we˞*^{42} *nɔ*^{44} *pi*^{31} *ŋɔ*^{31} *ɣɯ*^{42} *ŋe˞*^{21} *tɕie*^{31}
2SG write NOM compare 1SG read fast
'You write faster than I read' (Lit: You're writing is faster than I read)

Other than the prototypical comparative construction, which states that one entity is 'more' or 'less' quality X, many languages also use comparatives to express that two entities share a similar characteristic, which Dixon (2008, p. 805) refers to as the 'same as' construction[50]. This construction is found in Southern Bai and is demonstrated in the following examples.

(449) *pɔ^{31}* *ni^{55}* *ŋɔ^{31}* *ka^{35} ts^{h}ʏ^{31}* *a^{31}* *jou^{32}*
3SG or 1SG height one type
'He is the same height as me'

(450) *pɔ^{31}* *ni^{44} sua^{44}* *ta^{44}* *ŋu^{55}* *nɔ^{44}* *a^{31}* *tɕi^{33}*
3SG age with 1GEN POSS one place
'He is the same age as me'

The negative form of the construction is found in example (449) below.

(451) *ŋɔ^{31}* *ka^{35} ts^{h}ʏ^{31}* *pɔ^{31}* *mu^{33}*
1SG height 3SG NEG
'I'm not as tall as s/he' (Lit: I don't have the height s/he does)

When there is no Standard to compare to, the mark used is *pi^{31} tɕiɔ^{55}* 'comparatively'. This construction functions to state that one entity has a greater degree of quality X than most. The Parameter of such a construction appears be restricted to only adjectives and adjectival verbs. This construction is illustrated below.

(452) *xuo^{31} pa^{31} tɕie˗^{35}* *pi^{31} tɕiɔ^{55}* *we^{35} ni^{44}*
Torch festival comparatively lively
'The torch festival is quite lively'
Source: Huot bat jierf (6)

(453) *ɕy^{55} ni^{55} te^{44}* *pi^{31} tɕiɔ^{55}* *ka^{35} tɔ^{31}*
pear tree comparatively tall
'The pear tree is quite tall'
Source: Pear story (3)

Superlative comparative constructions, such as 'of the three, s/he is the tallest' can be found in Southern Bai. These are formed by placing the entities to be compared at the beginning of

[50] Also referred to as 'equative' comparatives.

the clause, then stating which of the entities possess the most/least of the quality expressed in the parameter. The entities may or may not be coordinated with a conjunction, such as *ni*^{55} 'or' or a spatial postposition such as *xɯ*^{31} 'in'. To express that one entity possesses the greatest degree of the quality being compared, the adverb *ma*^{31} 'most' or the MSM loan *tsui*^{55} 'most' occur before the quality.

(454) *kua*^{44} *mi*^{44} *ni*^{55} *xeˇ*^{55} *zi*^{31} *ŋɔ*^{31} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44}
rice or noodles 1SG like rice
'Among rice or noodles, I like rice'

(455) *peˇ*^{35} *tɕie*^{44} *sa*^{55} *xe*^{31} *kua*^{31} *tsou*^{44} *sɯ*^{33} *tsɯ*^{55}
Beijing Shanghai Guangzhou Shenzhen

peˇ^{35} *tɕie*^{44} *nɔ*^{44} *fa*^{42} *tɕia*^{55} *tsui*^{55} *keˇ*^{32} *tɔ*^{31}
Beijing POSS house-price most expensive
'Of Beijing, Shanghai, Guangzhou, and Shenzhen, Beijing's house prices are the highest'

(456) *pa*^{55} *ŋv*^{33} *kʰɔ*^{55} *xɯ*^{31} *pɯ*^{55} *ni*^{44} *sua*^{44} *ma*^{31} *se*^{31}
3PL five lean in 3GEN age most small
'Among those five, s/he is the youngest'

Correlative comparative constructions such as 'The more things change, the more they stay the same' whereby two situations change in relation to each other use a construction using *jy*^{35} 'more' before each element being compared. This construction is similar to the *yuè X, yuè Y* (越 X, 越 Y) 'the more X, the more Y' pattern found in MSM. The Southern Bai construction is demonstrated below.

(457) *xɑo*^{44} *v*^{33} *jy*^{35} *keˇ*^{32} *tɔ*^{31} *meˇ*^{32} *nɔ*^{44} *jy*^{35} *ɕiou*^{33}
things more expensive buy ATTR more few
'The more expensive things become, the less people buy them'

8.6. Summary

This chapter has discussed the form and function of different sentence and clause types and how they may be combined. The discussion began with the various methods of the four ways

in which negation is performed in Southern Bai. This involved four negators, *piao*^{33} which negates nominal predicates, the negative existential *mu*^{33}, the general negator *pɯ*^{31}, and the auxiliary negator *tuo*^{33}. Also discussed under the banner of negation were ways in which speakers can perform partial negation and how double negation expresses that the agent of the sentence *must* perform an action.

This was followed by examining the formation of interrogative, imperative, and exclamative sentences using pragmatic particles, negators, and interrogative pronouns. This was followed by an analysis of how speakers link clauses together. In addition to coordination, clauses may be linked via a Supporting Clause that outlines the reason for an event, expressed in a Focal clause, or locates the Focal clause temporally.

The next area to be examined were subordinate clauses. Two types of subordinate clauses were discussed, conditional and relative. Conditional clauses involve two clauses, an antecedent and consequent clause. The antecedent clause uses the conditional particle *ti*^{21} after a nominal head and establishes the condition/s to be met. This is followed by an independent consequent clause. Relative clauses modify a head noun within a noun phrase using the attributive *nɔ*^{44}.

Discussion on clause types was followed by description and analysis of the formation of comparative constructions. This study found and described several comparative constructions in the language, from the prototypical comparative that compares one quality between two people, to comparatives that compare two qualities over one person, two qualities over two people, superlative comparisons, and correlative comparisons.

The following chapter will examine grammatical relations in Southern Bai.

Chapter 9 - Grammatical Relations

This chapter will discuss several aspects of grammatical relations in Southern Bai. The first point of discussion, section 9.1, will cover semantic roles in Southern Bai. Section 9.2 will argue that Southern Bai does not contain a grammatical Subject, and rather should be considered a Topic prominent language. From there, section 9.3 will introduce the function of two important grammatical particles, *nɔ*^{44} and *mɯ*^{55}. The following sections, sections 9.4 and 9.5, will discuss anaphor and referent tracking before moving on to benefactive constructions in section 9.6. The next point of discussion (section 9.7) will introduce verbless constructions. This will be followed by an outline of transitivity in section 9.8, double object constructions in section 9.9 and the passive *pei*^{44} in section 9.10. This chapter will conclude with a discussion of how speakers in Southern Bai express spatial relations (section 9.11).

9.1. Semantic roles

Data collected during fieldwork found evidence of the following semantic roles in Southern Bai — AGENT, THEME/PATIENT, INSTRUMENT, LOCATION, GOAL, and PATH. Definitions for these roles, based on Löbner (2002, p. 113), are provided below.

Role	**Description**
AGENT	performs the action expressed by the verb
THEME	undergoes the action/event/change expressed by the verb
PATIENT	undergoes a change of state caused by the verb
INSTRUMENT	an instrument, or cause, by which the event comes about
LOCATIVE	a location
GOAL	goal of a movement
PATH	path of movement

Table 45 - Thematic roles in Southern Bai

The AGENT in Southern Bai, will typically be the nominal argument before the verb. An example of an utterance with an AGENT is expressed in example (458).

(458) [*nɯ*^{55} *ti*^{33}]$_{\text{AGENT}}$ *ŋe˪*^{21} *ke˪*^{44} *ŋv*^{35}
[2GEN father] depart fishing
'Your father has gone fishing'
Source: Loul loul lerx (3)

Most dynamic events involve an AGENT. However, the AGENT may not always be overtly referred to if it is inferable through context.

The THEME or PATIENT role is often identifiable as an animate object of a transitive verb, as illustrated in the example below.

(459) *kʰua*^{33} *tɯ*^{21} *ŋa*^{44} *tɯ*^{44} [*ŋɔ*^{31}]$_{\text{PAT}}$
dog CLF bite PFV [1SG]
'The dog bit me'
Source: Pronoun paradigm (8)

The INSTRUMENT is the element or cause that results in an event. In Southern Bai, this can be most easily identified by the verb *zv*^{31} 'to use', as illustrated in the following examples.

(460) [*pɔ*^{31}]$_{\text{AGENT}}$ *zv*^{31} *tɯ*^{44} [*nɯ*^{21} *tsɨ*^{21} *tʰe*^{55}]$_{\text{INST}}$ *kʰua*^{44}
[3SG] use DUR [ladder] to pick
'S/he is using a ladder to pick'
Source: Pear story (2)

(461) *zv*^{31} *tɯ*^{44} [*tɕia*^{35} *tsɨ*^{44} *le*^{21}]$_{\text{INST}}$ *tɕia*^{35} *xɯ*^{55} *ɕia*^{44} *tɕiao*^{44} *tɯ*^{21}
use DUR [peg CLF] clip PFV banana CLF
'(S/he) uses a peg to clip the banana'
Source: Put elicitation (13)

The role of LOCATION is often indicated as the noun phrase element following the existential verb *tsɯ*^{33} as seen in the example below.

(462) *pʰi*^{42} *kuo*^{31} *te˪*^{42} *tsɯ*^{33} [*pa*^{21} *xɯ*^{31}]$_{\text{LOC}}$
apple CLF exist [bowl in]
'The apple is in the bowl'
Source: Topological relations (3)

When the action involves an event of placement, the LOCATION can be identified as the nominal after the main verb, as in example (463).

(463) *ka*^{44} *pʰa*^{42} *tsɨ*^{44} *le*^{21} *su*^{44} *ke*^{35} [*tsv*^{35} *pe*^{21} *tu*^{21} *nɔ*^{44}]$_{\text{LOC}}$
DISP plate CLF place be.at [cup CLF on]
'(S/he) placed the plate on the cup'
Source: Put elicitation (10)

The GOAL is the end result of an action. It can often be identified as the element following a semantically 'light' verb such as *ŋe*^{21} 'depart, *pe*^{44} 'go', or *tsɨ*^{55} 'do' as illustrated in examples (464) to (466) below.

(464) *me*^{55} *ɳi*^{44} *ŋɔ*^{31} *pe*^{44} [*ɕia*^{55} *kua*^{44}] GOAL
tomorrow 1SG go [Xiaguan]
'I will go to Xiaguan tomorrow'
Source: NP & 'ga' elicitation (246)

(465) *nu*^{55} *mɔ*^{33} *ŋe*^{21} [*tsɨ*^{55} *tsɨ*^{33}] GOAL
2GEN mother depart [market]
'Your mother is going to the market'
Source: loul loul lerx (10)

(466) *tsɨ*^{55} [*tsuo*^{35} *nie*^{35}] GOAL
do homework
'To do homework'
Source: Topological relations (136)

The GOAL of a sentence may not necessarily be nominal. The following example illustrates a verbal goal.

(467) *nu*^{55} *ti*^{33} *ŋe*^{21} [*ke*^{44} *ŋv*^{35}]$_{\text{GOAL}}$
2GEN father depart [fishing]
'Your father has gone fishing'
Source: Loul loul lerx (3)

Like that of GOAL, the role of PATH typically follows a verb of motion. In Southern Bai this typically follows a serial verb construction consisting of manner and path verbs, and/or aspect marking[51]. An example of a typical path in Southern Bai is presented below.

(468) *a*^{55} *mi*^{55} *tu*^{21} *ku*^{35} *tsou*^{33} [*tsu*^{31} *tsu*^{31} *nɔ*^{44}]$_{\text{PATH}}$
cat CLF climb ascend [tree on]
'The cat climbed up the tree'
Source: NP Elicitation (61)

[51] For a detailed description of motion events, see Chapter 10.

These roles will be incorporated into discussion of grammatical relations in the remainder of this chapter.

9.2. Subject and Topic

Li & Thompson (1976) first argued that Mandarin Chinese does not possess a grammatical Subject, rather sentences exhibit Topic prominence. Since then Topic prominence has been found to be a common trait among many languages spoken in East and Southeast Asia (Goddard, 2005, p. 128). This section will present evidence that word order in Southern Bai is assigned through discourse and pragmatic considerations rather than syntactic or grammatical ones. As mentioned in section 7.5, while there is a preference for Agent-like arguments to appear before the predicate verb and patient-like arguments to appear after the verb in transitive sentences, this is a preference based on discourse considerations, rather than grammatical ones. Furthermore, these agent-like arguments do not meet many of the cross-linguistic criteria for Subject, such as case marking and fixed word order. Therefore, I will argue that Southern Bai be considered a Topic prominent language.

The following sections will argue this case based on a number of conditions, starting with the argument that Southern Bai lacks case marking on nominal elements.

9.2.1. Case marking

Grammatical Subject is a concept developed from the description of Indo-European languages to represent relations between entities in a sentence and their relationship within predicates. These relationships are determined mostly on the basis of syntax and morphology. In English, for example, this is determined by such notions as word order, pronominal case marking, verbal agreement, and substitution with question tags (Kroeger, 2005, p. 51).

As Southern Bai is predominately an isolating language, many of these properties do not apply. As with many isolating languages of East and Southeast Asia, Southern Bai tends to rely on a system of Topic prominence rather than grammatical Subject. Rather than determined through morphosyntactic relationships between a noun phrase and predicate, topic prominence is determined on discourse and semantic properties of the utterance (Goddard, 2005, p. 128).

Among the syntactic evidence suggesting that Southern Bai lacks a grammatical Subject is the absence of case marking on personal pronouns for in the S/A or the P-argument of a clause. The only morphological inflection that occurs in the language is on personal pronouns which only inflect for genitive case and number.

Further evidence can be gained through looking at the verbal morphology of Southern Bai. Verbs in the language do not inflect for case or number, as illustrated in examples (469) to (473).

(469) *kʰua*^{33} *tɯ*^{21} ***pʰao*^{31}** *ŋa*^{55} *ɣɯ*^{33}
dog CLF **run** 1PL behind
'The dog chased us'
Source: Pronoun paradigm (25)

(470) *ŋa*^{55} ***pʰao*^{31}** *kʰua*^{33} *tɯ*^{21} *ɣɯ*^{33}
1PL **run** dog CLF behind
'We chased the dog'
Source: Pronoun paradigm (25)

(471) *kʰua*^{33} *tɯ*^{21} ***pʰao*^{31}** *pa*^{55} *ɣɯ*^{33}
dog CLF **run** 3PL behind
'The dog chased them'
Source: Pronoun paradigm (30)

(472) *pa*^{55} ***pʰao*^{31}** *kʰua*^{33} *tɯ*^{21} *ɣɯ*^{33}
3PL **run** dog CLF behind
'They chased the dog'
Source: Pronoun paradigm (32)

(473) *kʰua*^{33} *tɯ*^{21} ***pʰao*^{31}** *na*^{55} *ɣɯ*^{33}
dog CLF **run** 2PL behind
'The dog chased you (pl)'
Source: Pronoun paradigm (29)

As demonstrated in examples (469) to (473) there no change to the verb *pʰao*^{31} ‘run’ regardless of the person or number of the noun phrase following it, suggesting that verbs do not inflect for a grammatical Subject. This is consistent among all verbs in Southern Bai. When another verb is substituted, the result is the same: the verb displays no indication of morphological case marking for Subject, as illustrated in examples (474) through to (478).

(474) *ŋɔ*^{31} ***tsui***^{44} *kʰua*^{33} *tɯ*^{21} *ɣɯ*^{33}
1SG **follow** dog CLF behind
‘I followed the dog’
Source: Intros & PN paradigm (76)

(475) *kʰua*^{33} *tɯ*^{21} ***tsui***^{44} *ŋa*^{55} *ɣɯ*^{33}
dog CLF **follow** 1PL behind
‘The dog followed us’
Source: Intros & PN paradigm (83)

(476) *ŋa*^{55} ***tsui***^{44} *kʰua*^{33} *tɯ*^{21} *ɣɯ*^{33}
1PL **follow** dog CLF behind
‘We followed the dog’
Source: Intros & PN paradigm (86)

(477) *kʰua*^{33} *tɯ*^{21} ***tsui***^{44} *na*^{55} *ɣɯ*^{33}
dog CLF **follow** 2SG behind
‘The dog followed you’
Source: Intros & PN paradigm (88)

(478) *na*^{55} ***tsui***^{44} *kʰua*^{33} *tɯ*^{21} *ɣɯ*^{33}
2SG **follow** dog CLF behind
‘You followed the dog’
Source: Intros &PN paradigm (89)

Note also that the personal pronouns and the noun phrase for ‘dog’ do not alter regardless of where they appear in relation to the verb. This again suggests the lack of case marking. Examples of intransitive sentences also show no case marking on the agent, suggesting that there is also no ergative case marking system. Examples (479) to (481) below are samples of intransitive sentences in Southern Bai. Note that ‘dog’ remains as *kʰua*^{33} *tɯ*^{21} as in examples (469) to (478). Consultant M1 confirmed the following are grammatically correct.

(479) ***kʰuɑ³³*** *tɯ²¹* *pʰao³¹*
dog CLF run
'The dog runs'

(480) ***ŋɔ³¹*** *pʰao³¹*
1SG run
'I run'

(481) ***nɔ³¹*** *pʰao³¹*
2SG run
'You run'

Source: M1 WeChat correspondence (14/09/20)

Finally, as stated in section 8.4.2, there is no inflectional marking on either AGENTS or PATIENTS within a relative clause construction. This is demonstrated in the following examples, taken from the previous chapter.

(482) ***nɯ³¹*** *tɯ²¹* *tsɯ³³* [***ŋɔ³¹*** *tsɨ²¹ seˇ³³ ɳi⁴⁴* *a³³* *kuo³²* *nɔ⁴⁴*] ***ɳi²¹ keˇ³⁵*** *ɳi²¹*
PROX. CLF COP. [**1SG** yesterday see EXP. NOM] **person** CLF
'This is the person [that I saw yesterday]'

(483) ***nɯ³¹*** *tɯ²¹* *tsɯ³³* [*tsɨ²¹ seˇ³³ ɳi⁴⁴* *a³³* *kuo³²* ***ŋɔ³¹*** *nɔ⁴⁴*] ***ɳi²¹ keˇ³⁵*** *ɳi²¹*
PROX. CLF COP. yesterday see EXP. **1SG** NOM **person** CLF
'This is the person [that saw me yesterday]'

Note the form of *ke³⁵ tɯ²¹* 'chicken' in the following intransitive sentences. Again, there is no case marking evident on the agent.

(484) *ke³⁵* *tɯ²¹* *fv³⁵* *xɔ³¹*
chicken CLF fly RES
'the chicken flew'
Source: F5 NP elicitation (29)

(485) *ke³⁵* *a³¹* *tɯ²¹* *fv³⁵* *xɯ⁵⁵*
chicken one CLF fly PFV
'the chicken flew'
Source: NP & 'ga' elicitation (145)

Examples (484) and (485) exhibit no morphological inflection or affixation on the noun phrase to indicate a relationship to the matrix verb. If we add an adjunct to the same noun phrase and verb, it can be seen there is no change to the verb from the intransitive form nor any morphological inflection on any of the nouns.

(486) *ke*^{35} *tɯ*^{21} *fv*^{35} *kuo*^{32} *ŋɔ*^{31}
chicken CLF fly pass 1SG
'The chicken flew past me'
Source: NP elicitation 20181205 (36)

Likewise, as seen in earlier examples, there is no evidence of morphological inflection or affixing of 'chicken' when it appears as the P-argument of a transitive sentence.

(487) *pɯ*^{55} *ti*^{33} *ɛia*^{44} *tɯ*^{44} *ke*^{35} *a*^{31} *tɯ*^{21}
3GEN father kill PFV chicken one CLF
'his/her father killed a chicken'
Source: Herl sal caof (9)

That there is no verbal agreement on referents or case marking on either noun phrase of a transitive sentence, nor on the AGENT of an intransitive sentence illustrates that Southern Bai does not contain a morphological system for marking grammatical case. As stated previously, this is a major component of marking grammatical Subject among Indo-European languages. However, as stated in Chapter One, Southern Bai is a Sino-Tibetan language. Therefore, further evidence is needed to establish the argument that the language lacks a grammatical Subject.

9.2.2. Word Order

Lack of case marking is but one piece of evidence against the inclusion of grammatical Subject. In his argument against the notion of Subject in Mandarin Chinese, LaPolla (1993) outlines a number of further criteria that suggest a lack of grammatical Subject. Essentially, these can be narrowed down to restrictions on the use of sematic relations. The more that semantic relations are restricted, the more likely that the language contains a grammatical Subject. The less restrictions that are placed on semantic relations, the more that semantic relations control interpretation of an utterance, and the less likely that the language contains a grammatical Subject.

One of the first areas explored is that of word order. Stative locative constructions in Southern Bai present the best evidence of word order variation between the Figure and the Ground. Examples (488) and (489) both demonstrate the variable word order available to shift the Topic of a phrase.

(488) *tɕʰiou*^{42} *te˧*^{42} *tsɯ*^{33} *tse˧*^{35} *tsɿ*^{44} *e˧*^{33}
ball CLF EXIST table under
'The ball is under the table'
Correspondence with M1 (19/9/19)

The converse word order is also considered grammatical.

(489) *tse˧*^{35} *tsɿ*^{44} *e˧*^{33} *tsɯ*^{33} *tɕʰiou*^{42} *te˧*^{42}
table under EXIST ball CLF
'Under the table is the ball'
Source: Topological relations (60)

Both constructions express the fact that the ball is under the table. By fronting the noun or NP, example (488) sets the ball as the focus whereas example (489) sets the table as the focus of the sentence. Again, there is no change to either noun regardless of where it is placed in relation to the verb, nor any marking on the verb. Rather than being grammatical, the shift in word order is one of focus on either the ball or table. This suggests that the leftmost element is Topic of the sentence.

There are also examples whereby a P-argument has been made prominent and therefore could be considered the Topic. The most common of these is the *ka*^{44} construction. The function of *ka*^{44} is not just to indicate manipulation of an object (as discussed in section 7.12), but also to front the P-argument to the front of the clause. This changes the focus of the sentence making the P-argument the more sentient entity. As demonstrated in the example below, the typical P-argument of the placement event, *xao*^{35} *xao*^{35} 'parcel' is fronted and made the Topic.

(490) *ka*^{44} *xao*^{35} *xao*^{35} *k*^{h}*e*$^{˪44}$ *pe*^{31} *ke*^{35} *su*^{44} *tɕia*^{44} *ne*^{21} *nɔ*^{44}
DISP parcel CLF place at bookshelf CLF on
'(S/he) placed the parcel on the bookshelf'
Source: NP & 'ga' elicitation (2)

Below is another example of fronting the P-argument before the verb to make it more topical. The literal translation into English would be 'The roadside ones, S/he picked for me'. The word order change brings the P-argument into focus. This suggests that information structure controls word order more than the notion of 'subject'.

(491) *t*^{h}*u*^{33} *pie*^{35} *nɔ*^{44} *ne*^{44} *kɯ*^{32} *ŋɔ*^{31}
road beside ATTR lift give 1SG
'(S/He) picked the ones by the road for me'
Source: The greatest gift (22)

Further evidence against the notion of Subject is that it is possible to have an intransitive verb without an S-argument. This is demonstrated in the following examples.

(492) *se*^{33} *mu*^{33}
wash NEG
'Have you washed up?'
Source: NP & 'ga' elicitation (68)

(493) *pe*^{44} *me*^{33}
go IMP
'Let's go!'

Constructions are also possible without a P argument. Where a language like English would require a dummy Object, it is not required in Southern Bai. Examples (494) and (495)(495)(495) (495)(495)(495)lack both S and P arguments. Example (496) lacks a P-argument that is left to be interpreted by context.

(494) *tɕ*^{h}*iou*^{55} *tɕ*^{h}*iou*^{55} *mɯ*^{55} *ka*^{44} *mie*^{33}
good good ATTR think
'Think it over well'
Source: San dao cha (56)

(495) *tɕ*^{h}*ie*$^{˪55}$ *pɯ*^{31} *tɕ*^{h}*ie*$^{˪55}$ *nɔ*^{44}
hear not hear NOM
'Did you hear it, or not?'
Source: F5 Jackal & Crow

(496) *nia*^{55} *ka*^{44} *ne*^{44} *ta*^{32}
1PL.INCL grasp lift return
'Let's put it back'
Source: The greatest gift

9.2.3. Anaphor and comparative structures

LaPolla (1993, p. 773) argues that if a language shows no restriction on zero pronoun in a cross-clause reference (e.g. S-role in the first clause, as in English), then that language should be considered to be not grammatically constrained, but rather constrained by pragmatic or semantic variables. There is some evidence that this may also be the case for Southern Bai. As seen in section 9.4, while there may be a preference for the controlling argument to be agent-like in a cross-clause reference, other semantic roles may control the anaphoric element. The two examples below demonstrate anaphor being controlled by the semantic roles of THEME and LOCATION.

(497) *[tɕ^{h}ie^{55} tɕ^{h}iou^{55} nɔ^{44}]$_{THEME}$ tou^{31} tsɯ^{33} ne^{21} tsɯ^{33} niou^{44} xe^{44} nɔ^{31}*
[hear good NOM] all be that way exist want harm 2SG
'Things that are good to hear are all meant to harm you'
Source: F5 Jackal & Crow (39)

(498) *[tsu^{33} tsu^{33} mɯ^{55} tsɯ^{33}]$_{THEME}$ tɕ^{h}ie^{55} nɔ^{44} Ø*
[early early ADV exist] hear NOM Ø
'(something) heard long ago'
Source: F5 Jackal & Crow (36)

(499) *[t^{h}ɯ^{33} pie^{35} tɯ^{44} (52)]$_{LOC}$ xuo^{35} fe^{33} a^{33} tɕ^{h}iou^{55}*
[road beside NOM] flower very look good
'The roadside flowers are very beautiful'
Source: The greatest gift (18)

These examples demonstrate that control over anaphor is not restricted to the semantic role of AGENT but can also be controlled by other semantic roles. According to LaPolla (1993), this is evidence that a language does not contain a grammatical Subject.

[52] Mandarin variant of *nɔ^{44}*.

Section 8.5 earlier discussed comparative sentences that would be ambiguous in English, with interpretations that are determined by the verb, rather than any syntactical relation on any of the entities. In the examples below (reproduced from earlier), it is the direct object of the verb *ɕi*^{31} *xua*^{35} 'like' that determines what the agent likes, rather than a syntactic pivot on the first actor. Therefore, the verb must be repeated.

(500) *ŋɔ*^{31} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44} *pi*^{31} *ɕiao*^{32} *wa*^{42} *me*$^{\cdot 35}$
1SG like noodles compare Xiao Wang more
'I like noodles more than (I like) Xiao Wang'

(501) *ŋɔ*^{31} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44} *pi*^{31} *ɕiao*^{32} *wa*^{42} *ɕi*^{31} *xua*^{35} *kua*^{44} *mi*^{44} *me*$^{\cdot 35}$
1SG like noodles compare Xiao Wang like noodles more
'I like noodles more than Xiao Wang (likes noodles)'

According to LaPolla (1993, p. 783), this restriction that requires that the verb *ɕi*^{31} *xua*^{35} 'like' be repeated in such constructions indicates that the function on comparatives is "not a function of 'subject' control, but is due to the nature of information structure and the class of verbs used in a comparative construction".

Another argument for the Topic-Comment structure, according to LaPolla (1993), is the use of NPs that are a time or place in comparative expressions. A great example of a time NP being used in a comparative can be seen in the following example from the earlier discussion in section 8.5.

(502) *a*^{31} *ɳ̩i*^{44} *pi*^{31} *ɳ̩i*^{44} *tɕ*^{h}*iou*^{55}
one day compare day good
'One day better than the other'
Source: (H. Chen & Yang, 2018)

This sub-section shows that comparative constructions in Southern Bai have qualities that do not follow the typical notions of subject control. Rather, some comparative constructions illustrate that word order is determined by information structure and pragmatics. This

presents another argument for the consideration of Southern Bai as a Topic-Comment language.

This section has argued that Southern Bai lacks a grammatical Subject and that word order is often determined by pragmatic over grammatical factors. That the referent noun phrase is moveable and exhibits no morphological inflection upon movement suggests that Southern Bai lacks a grammatical case marking (9.2.1). The language also meets some of the criteria argued by LaPolla (1993) for the lack of a subject, such as flexible word order (9.2.2) and few restrictions on the semantic roles that can control anaphor and comparatives (9.2.3). I am positive that a larger corpus would yield further examples that meet his criteria. Therefore, as word order seems to be determined by pragmatic concerns and information structure, I argue that Southern Bai, like many languages in the region, should be classified as a Topic prominent language.

9.3. Grammatical particles *nɔ^{44}* and *mɯ^{55}*

This section will discuss two grammatical particles found in Southern Bai, *nɔ^{44}* and *mɯ^{55}*. These are the Central Bai equivalents to the particles *no^{33}* and *ŋv^{55}* described by Fu and Xu (2008). The particle *nɔ^{44}* has already been described as possessive marker in section 6.8.3 and *mɯ^{55}* as an adverb forming particle in section 5.2.2. However, these particles play a much larger role in Southern Bai. This section will examine the various functions of these particles. Table 46 (below) outlines their form and function.

Particle	Function	Form
nɔ^{44}	locative 'on'	postposition [location] + *nɔ*^{44}
	possessive	attributes possession to second entity [possessed] + *nɔ*^{44} + [possessor]
	nominaliser	nominalises a quality or state [quality] + *nɔ44*
	attributive (monosyllabic quality)	attributes a quality to an entity [quality] + *nɔ*^{44} + [entity]
	adverbialiser (indefinite agent)	turns a state into an adverb [state] + *nɔ*^{44} + [verb]
mɯ^{55}	locative 'near'	postposition [location] + *mɯ*^{55}
	attributive (reduplicated quality)	attributes a quality to an entity (when quality is reduplicated) [state state] + *mɯ*^{55} + [entity]
	adverbialiser (definite agent)	turns a state into an adverb [state] + *mɯ*^{55} + [verb]

Table 46 - Functions of nɔ^{44} *and mɯ*^{55}

That Southern Bai may have one form that can perform nominalisation, genitivisation, and relativisation functions is not controversial among Tibeto-Burman languages. Having one isomorph to perform these functions has been described as far back as Matisoff (1972) who described the particle *ve* performing the same functions in Lahu.

Like their Central Bai equivalents, these grammatical particles derived from locative particles (Fu & Xu, 2008, p. 122). As a locative particle, *nɔ*^{44} expresses contact with the referent object. Similarly, *mɯ*^{55} acts to express general proximity near the referent object. As stated by Fu and Xu (2008 p.136), *mɯ*^{55} is a 'locative devoid of meaning'. Examples (503) to (505) below illustrate these particles functioning as locative postpositions.

(503) *ji*^{35} *jɔ*^{21} *kua*^{44} *ke*^{35} *ji*^{35} *tɕia*^{44} *tɯ*^{21} ***nɔ*^{44}**
clothes CLF hang be.at cloth line CLF **on**
'The clothes are hanging on the line'
Source: Topological relations (9)

(504) *tɕie*^{55} *tsɨ31* *te*^{55} *ke*^{35} *sɯ*^{33} ***nɔ*^{44}**
ring CLF wear be.at hand **on**
'The ring is worn on the hand'
Source: Topological relations (10)

(505) *a*^{31} *ŋ̍i*^{21} *tsɯ*^{33} *tɯ*^{44} *jɯ*^{44} *tsao*^{44} *tie*^{21}, *kv*^{32} *ke*^{35} *ke*^{42} ***mɯ***^{55}
one person EXIST DUR eat breakfast sit be.at ground **near**
'A person is eating breakfast on the ground'
Source: F5 staged events (8)

Like *nɔ*^{33} described in Central Bai by Xu and Zhao (1984), Zhao (2013), Zhao and Li (2005), and Dryer (2002), the Southern Bai grammatical particle *nɔ*^{44} performs several grammatical functions. As found in Wu (2015), this study found evidence of *nɔ*^{44} functioning as a locative, a possessive, an attributive particle, a particle to form adverbs from verbs or verb phrases, and a verbal complementiser. At this point, there is no strong evidence for the use of *nɔ*^{44} as an indirect object maker or human oblique marker, but there is evidence of *mɯ*^{55} functioning as an indirect object marker. The particle *mɯ*^{55} also has many of the same functions but differs in when it can be used. The following section will explore the functions and applications of *nɔ*^{44} and *mɯ*^{55}.

As mentioned in section 6.8.3, *nɔ*^{44} can act as a possessive particle, as illustrated in the following examples.

(506) *ŋɯ*^{55} *nɔ*^{44} *ke*^{35} *tɯ*^{21}
1GEN POSS chicken CLF
'My chicken'
Source: NP elicitation (16)

(507) *pa*^{55} *nɔ*^{44} *ke*^{35} *tɯ*^{21}
3PL POSS chicken CLF
'Their chicken'
Source: NP elicitation (22)

(508) *nou*^{55} *mi*^{42} *ŋ̍i*^{21} *nɔ*^{44} *xao*^{31} *tv*^{35}
peasant person POSS house
'(a) peasant's house'
Source: F5 Jackal & Crow (4)

When following an adjective, *nɔ*^{44} can function as an attributive marker linking the quality encoded in the adjective to the noun or noun phrase, as demonstrated in examples (509) to (511).

(509) *lao*^{32} *sɨ*^{55} ***nɔ***$^{\mathbf{44}}$ *xɔ*^{31}
old style **ATTR** house
'An old-fashioned house'
Source: The greatest gift (6)

(510) *fe*^{33} ***nɔ***$^{\mathbf{44}}$ *kou*^{44} *tsuo*^{35}
good **ATTR** job
'(a) good job'
Source: Wordlist elicitation (135)

(511) *tsui*^{55} *tɕ*^{h}*iou*^{55} ***nɔ***$^{\mathbf{44}}$ *li*^{31} *vf*^{44}
most good **ATTR** gift
'The greatest gift'
Source: The greatest gift (1)

Section 8.4.2 introduced a function of *nɔ*^{44} as a nominaliser. In relative clauses, *nɔ*^{44} marks the embedded clause that restricts the head noun of the independent clause. This is demonstrated from the following example reproduced from section 8.4.2.

(512) *pɔ*^{31} *ɕia*^{31} *jɯ*^{44} *mɯ*^{44} [*tɕy*^{33} *mɯ*^{44} *nɔ*^{44}] *ŋv*^{35} *tɯ*^{21}
3SG want eat PART. [mouth ATTR] fish CLF
'S/he wants to eat the fish in the crow's mouth'.
Source: F5 Jackal & Crow (26)

In the example below, *nɔ*^{44} is nominalising the verb *tɕie*^{55}. This effectively performs what would be the dummy Object 'it' in English.

(513) *tɕ*^{h}*ie*^{55} *pɯ*^{31} *tɕ*^{h}*ie*^{55} *nɔ*^{44}
hear not hear NOM
'Did you hear it, or not?'
Source: F5 Jackal & Crow

As will be discussed in the next section, 9.4, nominalisation of location or quality is an important function in anaphora in Southern Bai. Nominalising an element helps determine what the anaphor is referring to. This is demonstrated in the example below.

(514) *t*^{h}*u*^{33} *pie*^{35} *nɔ*^{44} Ø *ne*^{44} *kɯ*^{32} *ŋɔ*^{31}
road beside ATTR Ø lift give 1SG
'(He) picked the ones by the road for me'
Source: The greatest gift (22)

As introduced earlier in section 5.2.2 the grammatical particles *nɔ*^{44} and *muɯ*^{55} can perform a word class changing function. Placing these particles after a state, adjectival verb, or noun phrase functions as an adverbialiser. Prosodic factors determine the selection of which particle is used. The function of these particles as adverbialisers and the selection criteria of their use will be explored below.

In a clause whereby the agent or actor is unknown or indefinite, *nɔ*^{44} is used as an adverbialiser. In the following example, *nɔ*^{44} indicates that the state 'back-to-back' is modifying the manner of the event. Note that the agents of the sentence are indefinite, referred to *lia*^{33} 'two people' who are unknown.

(515) *tsɯ*^{33} *pɯ*^{55} *ta*^{44} *lia*^{33} *pei*^{55} *kʰɔ*^{55} *pei*^{55} ***nɔ*^{44}** *tɕiao*^{44} *liou*^{42}
EXIST there two people back face back **ADV** chat
'Two people are there chatting back-to-back'
Source: F5 staged events (40)

Conversely, if the referents are known or definite then *muɯ*^{55} is the chosen adverbialiser. In example (516), the agent is a personal pronoun, indicating someone already introduced into the discourse. As the agent is known, then *muɯ*^{55} is used to shift *kou*^{33} *sou*^{33} 'two hands' to indicate the manner of the action.

(516) *pɔ*^{31} *kou*^{33} *sou*^{33} ***muɯ*^{55}** *xɯ*^{55} *tʰe*^{42} *tɯ*^{44} *ɕy*^{55} *ni*^{55} *nia*^{33} *tɯ*^{35}
3SG two hand **ADV** PFV lift DUR pear PROX basket
'S/he lifted the basket with two hands'
Source: Pear story (11)

When modifying an adjectival verb that is in reduplicated form, then *muɯ*^{55} is the chosen adverbialiser. This is demonstrated in the examples below. In example (518) , *tui*^{55} functions as an allative marker indicating the recipient of the action. This differs from benefactive marking, which is discussed in section 9.7.

(517) ***tɕʰiou⁵⁵*** ***tɕʰiou⁵⁵*** ***mɯ⁵⁵*** *kɑ⁴⁴ mie³³*
good **good** **ATTR** think
'Think it over well'
Source: San dao cha (56)

(518) *ŋɔ³¹* *ŋ̍ou⁴⁴* ***ni⁴⁴*** ***ni⁴⁴*** ***mɯ⁵⁵*** *tui⁵⁵* *ŋɯ⁵⁵* *ti³³* *tɕʰiou⁵⁵*
1SG want **well** **well** **ATTR** ALL. 1GEN father be.good
'I should be good to my father'
Source: The greatest gift (138)

(519) ***tsu³³*** ***tsu³³*** ***mɯ⁵⁵*** *tsɯ³³* *tɕʰiɐ˞⁵⁵* *nɔ⁴⁴*
early **early** **ATTR** exist hear ATTR
'(something) heard long ago'
Source: F5 Jackal & Crow (36)

If a clause involves both attribution and possession, then the definite/indefinite agent rule in regards to adverbialization, as described above, determines which grammatical particle is assigned to which element. In example (520) below, the agent, the crow is represented by a personal pronoun and therefore known to the speaker. The definite/indefinite rule determines that *mɯ⁵⁵* is the selected particle for known referents. Therefore, *mɯ⁵⁵* behaves as the possessive marker and *nɔ⁴⁴* then acts as the nominaliser used to refer back to the anaphoric element, in this case, the song. Referent tracking will be explored further later in this chapter in section 9.5.

(520) *nɯ⁵⁵* ***mɯ⁵⁵*** *kɔ³¹* *sɯ⁴⁴* *tsɯ³³* *tɕue⁵⁵* *me⁴⁴ li³⁵*, *tɕue⁵⁵* *tou⁵⁵* *tʰi̍⁴⁴* ***nɔ⁴⁴***
2GEN **POSS** song sound be most beautiful most moving **NOM**
'Your song is the most beautiful and moving'
Source: F5 Jackal & Crow (17-18)

9.4. Anaphora

According to Goddard (2005, p. 129) ellipsis is a common feature among East and Southeast Asian languages due to the lack of a grammatical Subject. Southern Bai is no exception. This phenomenon, also referred to as 'zero anaphora', is a grammatical process whereby one entity in a sentence is not explicitly referred to. This section will present several ways anaphor is an element in Southern Bai speech, particularly in narrative productions.

One way that zero anaphora occurs in Southern Bai is the omission of a previously introduced AGENT. The following two examples demonstrate agentless constructions.

(521) Ø *ka*^{44} *xɯ*^{55} *ɕiao*^{31} *mɔ*^{55} *ne*^{44} *kɯ*^{32} *pɔ*^{31}
Ø then cap lift give 3SG
'Then (s/he) lifted the cap for him/her'
Source: Pear story (40)

(522) Ø *ka*^{44} *xao*^{35} *xao*^{35} *kʰeˇ*^{44} *pe*^{31} *ke*^{35} *su*^{44} *tɕia*^{44} *ne*^{21} *nɔ*^{44}
Ø DISP parcel CLF place at bookshelf CLF on
'(S/he) placed the parcel on the bookshelf'
Source: NP & 'ga' elicitation (2)

Agentless constructions are not the only way anaphor is employed in Southern Bai. A noun phrase in Southern Bai can be subjected to anaphor using the attributive particle *nɔ*^{44}. As mentioned earlier in section 9.3, *nɔ*^{44} can be employed to attribute a quality to a noun or nominal phrase. This occurs when a sentence Topic has already been introduced. Once introduced, the referent to which the quality is being attributed need not be produced again and is subject to ellipsis. Through context, it is clear what entity the described qualities are being attributed to. This is demonstrated in example (523).

(523) *nɯ*^{55} *mɯ*^{55} *kɔ*^{31} *sɯ*^{44} *tsɯ*^{33} *tɕue*^{55} *me*^{44} *li*^{35}, *tɕue*^{55} *tou*^{55} *tʰi*^{44} *nɔ*^{44} Ø
2GEN POSS song sound be most beautiful most moving ATTR Ø
'Your song is the most beautiful and moving'
Source: F5 Jackal & Crow (17-18)

The Topic of the sentence in example (523) is introduced at the beginning of the sentence as *nɯ*^{55} *mɯ*^{55} *kɔ*^{31} 'your song', establishing context. Therefore, it need not be repeated at the end of the sentence. A syntactically complete sentence would be expected to end with *tɕue*^{55} *me*^{44} *li*^{35}, *tɕue*^{55} *tou*^{55} *tʰi*^{44} *nɔ*^{44} ***kɔ***^{44} 'the most beautiful and moving song'. However, as the crow's song has already been established as the Topic of the sentence, the noun slot in the attributive construction can be left empty. The attributive *nɔ*^{44} serves to back-track the reference to the aforementioned Topic, the crow's song. Example (524) illustrates how the anaphoric element

may be interpreted. As *nɔ*^{44} in this instance is functioning as the attributer, then *mɯ*^{55} is employed to perform the possession marking on *nɯ*^{55} *kɔ*^{31} ‘your song’.

(524) [*nɯ*^{55} *mɯ*^{55} *kɔ*^{31} *sɯ*^{44}]$_i$ [*tsɯ*^{33} [*tɕue*^{55} *me*^{44} *li*^{35}, *tɕue*^{55} *tou*^{55} *tʰi*^{44} *nɔ*^{44} ___$_i$]]$_{VP}$
[2GEN POSS song sound] [be most beautiful most moving ATTR]
[Your song]$_i$ [is the most beautiful and moving ___$_i$]

Example (525) below comes from a recording of Jackal & Crow by consultant F4. After introducing the story, she continues discussing how her grandmother used to tell her this story when she was young. From the context, the Topic of the discussion is still ‘the tale her grandmother told when she was young’. This example again demonstrates how the noun slot after *nɔ*^{44} is interpreted from context.

(525) *ŋɔ*^{31} *se*^{31} *tsɨ*^{21} *tɕia*^{44} *tɕʰie*^{55} [*ŋɯ*^{55} *ne*^{44} *v*^{31} *tɕia*^{31} *kuo*^{32}]$_i$
1SG small time hear [1GEN grandma POSS tell EXP]$_i$
tsu^{33} *tsu*^{33} *mɯ*^{55} *xɯ*^{31} *tsɯ*^{33} *tɕʰie*^{55} *nɔ*^{44} [___$_i$]
early early ATTR in EXIST hear ATTR[___$_i$]
‘My grandma told me this story when I was young. I heard it from very early on’
Source: F4 Jackal & Crow (36)

Undetermined referents akin to ‘ones’ or ‘things’ in English can also be subjected to anaphor, as demonstrated below. After telling the tale of Jackal & Crow, F5 produced this utterance sharing the moral of the tale.

(526) *tɕʰie*^{55} *tɕʰiou*^{55} *nɔ*^{44} *tou*^{31} *tsɯ*^{33} *ne*^{21} *tsɯ*^{33} *niou*^{44} *xe*^{44} *nɔ*^{31}
hear good NOM all be that way exist want harm 2SG
‘Things that are good to hear are all meant to harm you’
Source: F5 Jackal & Crow (39)

(527) *tsu*^{33} *tsu*^{33} *mɯ*^{55} *tsɯ*^{33} *tɕʰie*^{55} *nɔ*^{44} Ø
early early ADV exist hear NOM Ø
‘(something) heard long ago’
Source: F5 Jackal & Crow (36)

Example (528) below illustrates how a previously introduced element can be the subject of anaphor in a later utterance. After introducing *tʰu*^{33} *pie*^{35} *tɯ*^{44} *xuo*^{35} ‘the roadside flowers’ in line 18, the nominal element *xuo*^{35} ‘flower’ can be omitted in the second sentence following *nɔ*^{44}.

(528) *tʰu*^{33} *pie*^{35} *tɯ*$^{44\ (53)}$ *xuo*^{35} *fe*^{33} *a*^{33} *tɕʰiou*^{55}
road beside NOM flower very look good
'The roadside flowers are very beautiful'
Source: The greatest gift (18)

(529) *tʰu*^{33} *pie*^{35} *nɔ*^{44} *Ø* *ne*^{44} *kɯ*^{32} *ŋɔ*^{31}
road beside NOM Ø lift give 1SG
'(He) picked the ones by the road for me'
Source: The greatest gift (22)

Example (529) is interesting as it is an example that presents anaphor of the AGENT, and both fronting of the P-argument and nominalisation of the location.

Nominal ellipsis need not be so overt as being marked by an attributive marker. In example (530) below, the nominal complement of the verb *kʰua*^{44} 'pick' is also omitted. However, as the referent *ɕy*^{55} *ni*^{55} 'pear tree' is clear, then the interlocutor can infer from the context that what is being picked is the fruit of said tree. Therefore, no complement is needed for the verb *kʰua*^{44} 'to pick' in this instance.

(530) *ɕy*^{55} *ni*^{55} *te*^{44} *pi*^{31} *tɕiao*^{55} *ka*^{35} *tɔ*^{31} *niou*^{44} *tsɯ*^{33} *zv*^{31} *nɯ*^{21} *tsɨ*^{21} *tʰe*^{55} *kʰua*^{44} *Ø*
pear tree quite tall therefore use ladder pick Ø
'The pear tree is quite tall, so they used a ladder to pick (the fruit)'
Source: Pear story (3)

From the data collected, it appears that only nominal elements are subject to anaphor. There is no evidence collected to suggest that a verbal element can be subjected to anaphor. Whether this is possible is an avenue for further investigation.

Interrogative pronouns may also function as an anaphoric element in a relative-correlative construction. In the following example, *a*^{55} *na*^{44} performs two functions. In the first line, *a*^{55} *na*^{44} functions as a pronoun effectively meaning 'where my father goes to do X'. The second line refers to the speaker and links back to the previous sentence. This is a common practice

[53] Mandarin variant of *nɔ*^{44}.

among Tibeto-Burman languages that use interrogative pronouns rather than relative pronouns in such constructions (Coupe, 2018).

(531) *ŋɯ*^{55} *di*^{33} *pe*^{44} *a*^{55} *na*^{44} *tsɨ*^{55} *tsao*^{32} *sɯ*^{44}, *ŋɔ*^{31} *pe*^{44} *a*^{55} *na*^{44}
1GEN father go where make labour. 1SG go where
'Wherever my father would go to work, I would go'
Source: The greatest gift (10)

As this use is common among Tibeto-Burman languages, then it would be expected that the same anaphoric function should occur with other interrogative pronouns. However, no other examples were observed in the data. Further investigation should be made to establish whether this is the case or if *a*^{55} *na*^{44} is the only interrogative pronoun that can perform this function.

This concludes the discussion of anaphor in Southern Bai. As the two processes are related, the following section will examine referent tracking.

9.5. Referent tracking

The Jackal and Crow elicitation provided some good examples of how referent tracking functions for speakers of Southern Bai. This section will discuss how the third person singular pronoun is used by Southern Bai speakers to refer to a previously introduced referent and argue the case that speakers employ a switch referent tracking system in narratives.

Typically, once a referent is introduced it is typically co-referenced by a third person pronoun. The following example demonstrates a simple construction using a third person pronoun to track a reference.

(532) *tsɯ*^{33} *tsɨ*^{44} *a*^{31} *ŋ̍i*^{21} *tsɯ*^{33} *xɯ*^{55} *kuo*^{31} *jue*^{42} *hɯ*^{31} *k*^{h}*ua*^{44} *ɕy*^{55} *ni*^{55}
exist male one person there fruit garden in pick pear
'There is a person in an orchard picking pears'

pɔ^{31} *zv*^{31} *tɯ*^{44} *nɯ*^{21} *tsɨ*^{21} *t*^{h}*e*^{55} *k*^{h}*ua*^{44}
3SG use DUR ladder pick
'S/he uses a ladder to pick them'
Source: Pear story (1-2)

The examples below are selected from one speaker, F5 and show how she used the third person pronoun to keep the listener aware of who the agent of the action is. Example (533) illustrates how F5 uses the third person singular pronoun *pɔ*^{31} to refer back to the AGENT, in this case, the jackal.

(533) **la**^{42} **tɯ**^{21} nie^{35} pɔ^{31} sɨ$^{44\,(54)}$ xa^{55} tɯ^{44} wu^{55} ja^{44} tɕy^{33} mɯ^{44} tsɯ^{33} ŋv^{35} tɯ^{21}
wolf **CLF** side 3SG is see DUR crow mouth exist fish CLF
'By its side, the jackal saw a crow with a fish in its mouth'

pɔ^{31} se^{44} mi^{33}, tɕe^{55} mɯ^{55} ka^{44} hɯ^{55} wu^{55} ja^{44} tsɯ^{33}
3SG at think how grasp PFV crow exist

tɕy^{33} mɯ^{44} nɔ^{44} ŋv^{35} tɯ^{21}
mouth ATTR fish CLF
'It is thinking how to get the fish in the crow's mouth'

sua^{44} t^{h}a^{55} jɯ^{44} **pɔ**^{31} ɕia^{31} jɯ^{44}
say that time eat **3SG** want eat
'Then, the jackal wanted to eat it.'

pɔ^{31} le^{21} fv^{44} le^{21} tɕi^{55} k^{h}a^{44}
3SG tired link tired hungry

wa^{55} ŋ̍i^{44} jɯ^{44} tɯ^{44} xao^{44} vu^{33} mu^{33}
several day eat PFV thing NEG
'It was tired and hungry for it had not eaten anything for days'
Source: F5 Jackal & Crow (9-12)

Even though three entities are referred to in the first line, the jackal, the crow, and the fish, *pɔ*^{31} is interpreted as referring to the jackal[55].

While not the Topic of the first sentences, the jackal is the most salient entity as it is the first mentioned. As the EXPERIENCER of the event the jackal is also the most agentive, even though

[54] Southwestern pronunciation of Mandarin copula shì (是).

[55] Speakers referred to the jackal as a 'wolf'.

it may not be the AGENT, per se. As the patient of the event, the crow is less agentive. Using a third person pronoun to refer to a previously introduced entity, displays a strong tendency to refer to the most agentive role within that event.

Example (534) below shows what happens when the sentence Topic is changed. In the second line, the Topic changes from the jackal to the crow. As seen in example (533) earlier, once the new referent is introduced in the second line, *pɔ*^{31} is again used to refer back to the crow.

(534) *la*^{42} *tɯ*^{21} *ka*^{44} *xɯ*^{55} *ŋv*^{35} *tɯ*^{21} *tiao*^{44} *xɯ*^{55}
wolf CLF DISP.LINK fish CLF hold in mouth PFV
'Once the jackal had the fish in his mouth'

wu^{55} *ja*^{44} *fa*^{31} *sɨ*^{44},
crow reflect
'The crow reflected'

pɔ^{31} *ji*^{35} *tsɨ*^{31} *mi*^{33} *hou*^{55} *xue*^{21}
3SG one moment feel regret
'In a moment, he was regretful'

Source: F5 jackal & crow (27-28)

As demonstrated earlier, not only is the crow the most recently introduced element, as the EXPERIENCER of the event, it is also the most agentive.

If the Topic of the sentence is not animate or abstract, then a deictic pronoun compound *tɯ*^{31} *le*^{21} 'this one' or *nɯ*^{31} *le*^{21} 'that one' performs referent tracking function, as demonstrated in the example below. Here *tɯ*^{31} *le*^{21} is functioning to inform an interlocutor that the Topic or 'lesson' of the following sentence is that of the previous one.

(535) *sua*^{44} *ke*^{44} *nɔ*^{44} *qie˘*^{55} *qie˘*^{55} *nɔ*^{44} *tsʰu*^{55} *xuo*^{33} *nɔ*^{44},
speak CLF ATTR hear hear ATTR praise people ATTR

tɯ^{31} *ŋ̩i*^{21} *tsɯ*^{33} *sɨ*^{44} *xɯ*^{31} *nɔ*^{44} *ji*^{35} *pei*^{44} *tsɨ*^{44}
Prox. person exist is in ATTR lifetime
'Those people that praise you will harm you for a lifetime'

***tɯ*^{31} *le*^{21}**	*tsɯ*^{33}	*ku*^{33}	*ŋ̟i*^{21}	*xuo*^{33}	*kɯ*^{32}	*ŋa*^{55}	*nɔ*^{44}
this way	exist	old	people	PLUR.	give	1PL	POSS

ji^{35}	*kɯ*^{44} (56)	*ku*^{55} *ɛy*^{42}	*ɔ*^{31}
one	CLF	lesson	MODAL

'This is a lesson given to us from our elders'
Source: F5 Jackal & Crow (48-49)

9.6. Benefactive constructions

In many event descriptions, speakers of Southern Bai employ a benefactive marker to indicate the RECIPIENT of an action or event. Benefactive marking is common among Tibeto-Burman languages and is the term used by LaPolla (2007, p. 33) for an auxiliary verb typically derived from the verb 'to give' that indicates for whom the action is intended. In Southern Bai, this is performed by *kɯ*^{32}, which is also derived from the verb 'to give'.

The most common construction involving benefactive marking is (agent) + verb + *kɯ*^{32} + benefactor [Object$_1$] + (Dative [Object$_2$]). The examples below offer an illustration of benefactive constructions in Southern Bai. As with many constructions in the language, the AGENT can be omitted if it is clear from the context.

(536) *pɔ*^{55} *sua*^{44} *kɯ*^{32} *pɯ*^{55} *sɨ*^{44} *fv*^{44} *tsɔ*^{42}
3SG speak give 3GEN master speak
'He said to his master'
Source: San dao cha (23)

(537) *ka*^{44} *xɯ*^{55} *ɛiao*^{31} *mɔ*^{55} *ne*^{44} *kɯ*^{32} *pɔ*^{31}
then cap lift give 3SG
'Then lifted the cap for him/her'
Source: Pear story (40)

Word order in dative benefactive constructions appears slightly more flexible than most constructions. Example (538) below was taken from an elicitation on Bai traditions.

(538) *tʰou*^{33} *kɯ*^{32} *pa*^{55} *ɛy*^{31} *kuo*^{31} *nu*^{21}
hold give 3PL fruit bag
'(S/he) held a bag of fruit for them'
Source: jiaz xif (24)

[56] Mandarin generic CLF.

The following variations on the above example were deemed to be correct by a consultant, although seldom used. A consultant also deemed example (540) to be an event that occurred in the past.

(539) *kɯ*^{32} *pa*^{55} *tʰou*^{33} *ɛy*^{31} *kuo*^{31} *nu*^{21}
give 3PL hold fruit bag

(540) *tʰou*^{33} *ɛy*^{31} *kuo*^{31} *nu*^{21} *kɯ*^{32} *pa*^{55}
hold fruit bag give them

'(S/he) held a bag of fruit for them'

What can be seen by the above examples is that the benefactor and the benefactive auxiliary *kɯ*^{32} move together. This suggests that the benefactive noun phrase of the event is syntactically connected to the benefactive auxiliary.

However, this flexibility does not hold for all benefactive constructions. Example (541) below was provided during an elicitation session. The second example, example (542) was construed by consultants as being grammatically correct but sounding unnatural. The third, example (543), was deemed outright incorrect.

(541) *tʰu*^{33} *pie*^{35} *nɔ*^{44} *ne*^{44} *kɯ*^{32} *ŋɔ*^{31}
road beside ATTR lift give 1SG
'(S/he) picked the ones by the road for me'
Source: The greatest gift (22)

(542) *?ne*^{44} *kɯ*^{32} *ŋɔ*^{31} *tʰu*^{33} *pie*^{35} *nɔ*^{44}
lift give 1SG road side ATTR

(543) **kɯ*^{32} *ŋɔ*^{31} *ne*^{44} *tʰu*^{33} *pie*^{35} *nɔ*^{44}
give 1SG lift road side ATTR

Consultants were unable to state why the above examples were either incorrect or questionable, but an assumption can be made that the anaphoric element complicates the ability to vary the word order in such expressions.

The following sentences also provide an illustration of a benefactive construction and an unacceptable word order variation.

(544) *nɔ*^{31} *nɯ*^{42} *bɯ*^{31} *nɯ*^{42} *ts*^{h}*a*^{55} *kɯ*^{32} *ŋɔ*^{31} *tɕ*^{h}*ie*^{55}
2SG able not able sing give 1SG hear
'Can you sing for me?'
Source: F5 Jackal & Crow (19)

(545) **nɔ*^{31} *nɯ*^{42} *bɯ*^{31} *nɯ*^{42} *kɯ*^{32} *ŋɔ*^{31} *ts*^{h}*a*^{55} *tɕ*^{h}*ie*^{55}
2SG able not able give 1SG sing hear

Consultants could not define why example (545) is ungrammatical, but there are two possible reasons. It has been demonstrated that the benefactor can be freely moved before the matrix verb. Examples (543) and (545) offer an explanation. In these examples the matrix verbs *ne*^{44} 'lift' and *ts*^{h}*a*^{55} 'sing' have been moved, fronting the benefactive marker *kɯ*^{32} into the slot for the matrix verb. Consequently, having *ne*^{44} appear before the recipient while *ts*^{h}*a*^{55} 'sing' follows it would violate canonical word order of (A)VP.

From this discussion, it is apparent that only dative benefactive constructions exhibit flexible word order. However, if that construction contains an anaphoric element, then the flexibility of the word order becomes compromised. Speakers tend to prefer utterances whereby the benefactor directly follows the benefactive auxiliary *kɯ*^{32} and the matrix verb should appear somewhere before the benefactor.

This concludes the section on benefactive marking in Southern Bai. The next construction to be discussed will be verbless constructions.

9.7. Verbless constructions

Southern Bai contains a small number of declarative constructions that are verbless. The most common verbless constructions are negated noun phrases, as demonstrated in the examples below.

(546) *k*^{h}*u*^{33} *tɯ*^{21} *piao*^{33}
dog CLF NEG
'That's not a dog'
Source: Wordlist elicitation (144)

(547) *ŋɯ*^{55} *sou*^{31} *tɕi*^{44} *tɕia*^{44} *piao*^{33}
1GEN cell phone CLF NEG
'That's not my cell phone'
Source: Wordlist elicitation (141)

9.8. Transitivity

Earlier, section 7.5.1 discussed intransitive predicates. A prototypical example of such a predicate is an act of running.

(548) *kʰua*^{33} *tɯ*^{21} *pʰao*^{31}
dog CLF run
'The dog runs/is running'
Source: PN paradigm

Such verbs that can form a grammatically complete construction without a complement are considered intransitive. Other intransitive verbs found among the data include *fv*^{32} 'fly', *kv*^{32} 'sit', and *tou*^{44} 'fall'.

As mentioned previously, an intransitive verb can take on aspectual marking to indicate the degree of completeness of the event as demonstrated in examples (549) and (550).

(549) *ke*^{35} *tɯ*^{21} *fv*^{32} *xao*^{31}
chicken CLF fly RES
'The chicken flew'
Source: NP elicitation

(550) *ɕy*^{55} *ni*^{55} *tɯ*^{21} *tou*^{44} *xao*^{31}
pear CLF fall RES
'The pear fell'
Source: Pear story

Additionally, locative information or prepositional phrases may be placed after the matrix verb to indicate the place where the event occurred, as demonstrated in examples (551) and (552).

(551) *a*^{21} *tsɯ*^{55} *fv*^{35} *ke*^{35} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
then flew at tree on
'and then (it) flew onto the tree'
Source: F7 Jackal & Crow (2)

(552) *kv*^{32} *ke*^{35} *ke˗*^{42} *muɯ*^{55}
sit be.at ground source
'sitting on the ground'
Source: Staged Events (8)

Finally, an intransitive verb can be the matrix verb of a directional serial verb construction, as in examples (553) to (554).

(553) *kv*^{32} *tʰɯ*^{55} *me*^{33}
sit descend POL.
'sit down' (polite)
Source: NP & 'ga' (206)

(554) *ke*^{35} *ŋv*^{33} *tɯ*^{21} *fv*^{35} *kuo*^{32} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
chicken five CLF fly pass tree on
'five chickens flew past the tree'
Source: NP & 'ga' elicitation (148)

Such constructions do not require a nominal complement to follow the verb and therefore are not to be considered transitive. In summary, intransitive verbs can take on locational phrases or be the matrix verb in a directional serial verb construction. However, they do not require a direct nominal argument to be grammatically correct. Common intransitive verbs in Southern Bai are listed below.

(555) *tua*^{42} 'to fall'
tsʰe˗^{33} 'to sleep; lie'
pʰao^{31} 'to flee; run'
fv̩^{35} 'to fly'

Conversely, as discussed in section 7.5.2, there exists a class of verbs that are transitive. Such verbs require a nominal complement for the clause to be considered grammatical. Some typical examples of transitive clauses are illustrated below in the examples below.

(556) *pɔ*^{31} *kɯ*^{21} *ta*^{44} *tsʰe˗*^{44}
3SG ride bicycle
'S/he rides a bicycle'
Source: Pear story

(557) *a*^{55} *mi*^{55} *tɯ*^{21} *ke*^{21} *sv*^{32}
cat CLF climb mountain
'(The) cat climbed the mountain'

Without a P-argument, such verbs are considered ungrammatical, as demonstrated in the following ungrammatical examples from above.

(558) * *pɔ*^{31} *kɯ*^{21}
3SG ride

(559) * *a*^{55} *mi*^{55} *tɯ*^{21} *ke*^{21}
cat CLF climb

Southern Bai also contains a class of verbs that are ambitransitive. These are primarily transitive verbs that can be used intransitively. As a result, they may seem to be intransitive as they may appear without a P-argument. However, the Object is often implied. Two ambitransitive verbs are listed below.

(560) *jɯ*^{44} 'to eat'
tɕ^{h}*ie*^{55} 'to hear; to listen'

The verb *jɯ*^{44} 'to eat' is a good example of this class. As demonstrated below in example (561), *jɯ*^{44} may appear without a P-argument.

(561) *ŋɔ*^{31} *ɕia*^{31} *jɯ*^{44}
1SG want eat
'I want to eat'

jɯ^{44} may also appear in a declarative sentence receiving modification only from an adjective or adverb or aspect marker, but no P-argument.

(562) *t*^{h}*e*^{55} *jɯ*^{44} *tɕ*^{h}*iou*^{55} *nɔ*^{32}
too eat good Emph.
(That's) so good (to eat)!

However, *jɯ*^{44} may take on a nominal complement that completes the description of the event as demonstrated in example (563).

(563) *jɯ*^{44} *p*^{h}*i*^{42} *kuo*^{31} *te*^{42}
eat apple CLF
'eat an apple'

While the inclusion of the apple adds further information regarding the act being described, it is not grammatically mandatory.

While a verb like *pʰao*^{31} 'run' is considered a prototypically intransitive verb, it may also take adjuncts. The examples below demonstrate this form.

(564) *kʰua*^{33} *tɯ*^{21} *pʰao*^{31} *ŋa*^{55} *ɣɯ*^{33}
dog CLF run 1PL behind
'The dog is chasing us'
Source: Pronoun paradigm (19)

(565) *ŋa*^{55} *pʰao*^{31} *kʰua*^{33} *tɯ*^{21} *ɣɯ*^{33}
1PL run dog CLF behind
'We chased the dog'
Source: Pronoun paradigm (26)

The above examples demonstrate *pʰao*^{31} behaving more like the verb 'to chase' rather than 'to run'. It is possible that this is an example of valency shift whereby an intransitive verb behaves as though transitive. However, this is likely an example of ambitransitivity. Futher research would help determine this.

9.9. Double object

As discussed in section 7.5.3 the second argument of a prototypical double object construction immediately follows the first nominal argument. However, double object constructions are very prone to word order variations. The following section will discuss canonical word order in double object constructions and when word order shift occurs.

A prototypical verb requiring two Objects is an act of giving. Example (566) illustrates a typical double object construction using an event of giving.

(566) *ŋɯ*^{55} *ti*^{33} *kɯ*^{32} *ŋɔ*^{31} *tsui*^{55} *tɕʰiou*^{55} *nɔ*^{44} *li*^{31} *v*^{35}
1GEN father give 1SG most good ATTR gift
'My father gave me the greatest gift'
Source: The greatest gift (141)

Consultants have stated that this word order cannot be varied. Thus, it can be stated that the canonical double Object construction consists of:

(agent) + verb + [RECIPIENT] + [THEME]

In an event of giving, the THEME is the object being given, whether it be concrete or abstract. The following will break down example (566) into each of its constituents.

(567)	[*ŋɯ*^{55}	*ti*^{33}] AGENT	*kɯ*^{32}	[*ŋɔ*^{31}]REC	[*tsui*^{55}	*tɕ^{h}iou*^{55}	*nɔ*^{44}	*li*^{31} *v*^{35}] THEME
	[1GEN	father]	give	[1SG]	[most	good	ATTR	gift]

Placement events also offer good examples of double object constructions. Prototypically, placement events require a direct object and a locative that indicates where the direct object is placed. Placement events are the constructions most prone to word order variation.

As placement events involve manipulation, they typically employ the *ka*^{44} construction. As mentioned in section 7.12, a *ka*^{44} construction fronts the primary THEME before the verb. Therefore, the THEME can be identified as the noun or noun phrase appearing directly after the disposal marker *ka*^{44}, as illustrated in example (568) .

(568)	*ka*^{44}	*xao*^{35} *xao*^{35}	*k^{h}e*$^{˧44}$	*pe*^{31}	*ke*^{35}	*su*^{44} *tɕia*^{44}	*ne*^{21}	*nɔ*^{44}
	DISP	parcel	CLF	place	at	bookshelf	CLF	on
	‘(S/he) placed the parcel on the bookshelf’							
	Source: NP & ‘ga’ elicitation (2)							

As is evident, the word order here differs from that illustrated in example (566). As placement events require the movement or manipulation of one of the entities, the *ka*^{44} construction is required. As a result, the THEME , *xao*^{35} *xao*^{35}*k^{h}e*$^{˧44}$ ‘box’, has been shifted prior to the verb and does not immediately follow it, as it occurs in example (566). It is also identifiable as the closest noun phrase to the disposal marker *ka*^{44}. The locative complement clause now immediately follows the matrix verb *pe*^{31} with the LOCATION *su*^{44} *tɕia*^{44} *ne*^{21} at its head.

Example (569) breaks down example (568) into its syntactic components.

(569) *ka*^{44} [*xao*^{35} *xao*^{35} *kʰe˗*^{44}]$_{\text{THEME}}$ [*pe*^{31} *ke*^{35} [*su*^{44} *tɕia*^{44} *ne*^{21} *nɔ*^{44}]$_{\text{LOC}}$]$_{\text{VP}}$
DISP [parcel CLF] [place at [bookshelf CLF on]]
'(S/he) placed the parcel on the bookshelf'

As is evident, Southern Bai speakers may employ a word order shift when expressing placement events. Employing the *ka*^{44} construction allows for the THEME to be fronted prior to the matrix verb while also indicating that manipulation of the THEME has taken place. A syntactic rule for expressing such events would be following construction:

(agent) + *ka*^{44} + THEME + verb + LOCATION

This concludes the discussion of double object constructions. The following section will explore passive constructions in Southern Bai.

9.10. Passive

Passive constructions are marked by the passive marker *pei*^{44}. The construction is like that found in MSM whereby the *patient* role or entity affected by the action is fronted to the beginning of the clause.

Semantically, the Southern Bai passive construction contains the following elements, the EVENT, a PATIENT or EXPERIENCER, and the INSTRUMENT causing the event. Like many constructions in Southern Bai, the agent can be implied from context.

The passive marker *pei*^{44} appears before the verbal predicate and is usually accompanied by a modal auxiliary verb. As found in MSM by Li & Thompson (1981), passive constructions using *pei*^{44} function to express an adverse situation. In the case of the examples presented, the passive construction functions to highlight an adverse situation that is to be avoided. Example (570) below demonstrates a passive construction with an overt EXPERIENCER, people.

(570) *ŋ̊i*^{21} *keˇ*^{35} *xuo*^{33} *ŋ̊ou*^{44} *pɯ*^{33} *pei*^{44} *tɕʰieˇ*^{55} *mi*^{35} *ji*^{42} *sua*^{44} *mi*^{42} *xuo*^{35}
person PLUR. want NEG PASS. hear sweet talk speak mislead
'People should not be misled by sweet talk'
Source: F5 Jackal & Crow (24)

Conversely, example (571) illustrates a passive construction with an implied PATIENT.

(571) *pɯ*^{31} *nɯ*^{42} *pei*^{44} *piao*^{44} *ɕia*^{31} *nɔ*^{44} *tʰie*^{44} *je*^{42} *mi*^{35} *jy*^{42} *sua*^{44} *mi*^{42} *huo*^{35}
NEG able PASS. superficial NOM. sweet talk speak mislead
'Don't be misled by superficial sweet talk'
Source: F5 Jackal & Crow (33)

9.11. Spatial relations

Spatial relations are expressed with the use of the existential construction together with the locative postpositions outlined in section 6.6. The locative postpositions found in Southern Bai expressions of spatial relations are listed in (572) below.

(572) *nɔ*^{44} 'on'
xɯ^{31} 'in'
eˇ^{33} 'under'
ɣɯ^{33} 'behind'
keˇ^{44} *pieˇ*^{44} 'beside; next to'
pɔ^{21} 'side'

The majority of data in this section is produced from the Topological relations elicitation (Bowerman & Pederson, 1992). As most of this data is derived from one elicitation, it is unclear whether the preference for existential constructions when expressing spatial relations is due to incorrect execution of the elicitation or whether it is actually a psycholinguistic preference for Southern Bai speakers. I will assume the latter.

There are two constructions used in the expression of spatial relations in Southern Bai. The first construction is [Topic + *tsɯ*^{33} + LOCATION + LocPP]. This is demonstrated in the following example.

(573) *pʰi*^{42} *kuo*^{31} *teˇ*^{42} *tsɯ*^{35} *pa*^{21} *xɯ*^{31}
apple CLF EXIST bowl in
'The apple is in the bowl'
Source: Topological relations (3)

This construction can also incorporate aspect marking, as illustrated in the examples below.

(574) *kʰua*^{33} *tɯ*^{21} *tsɯ*^{33} *xɯ*^{55} *kʰua*^{33} *kʰv*^{31} *xɯ*^{31}
dog CLF exist PFV dog bed in
'The dog is in the dog bed'
Source: Topological relations (50)

(575) *a*^{55} *mi*^{55} *tɯ*^{21} *tsɯ*^{33} *xɯ*^{55} *tie*^{55} *tsɿ*^{44} *yɔ*^{21} *nɔ*^{44}
cat CLF exist PFV rug CLF on
'The cat is on the rug'
Source: Topological relations (46)

Another construction used in expressions of spatial relations can be found with the LOCATION fronted. Fronting the locative referent functions to shift the LOCATION as the focus of the expression. This construction is devised of [LOCATION + LocPP + *tsɯ*^{33} + Topic]. This construction expresses a notion akin to '(on/in) location A there is an X' Such constructions are demonstrated in the examples below.

(576) *tsɛ˧*^{35} *tsɿ*^{44} *tɯ*^{21} *tsɯ*^{33} *tɕʰie*^{33} *pi*^{35} *kua*^{44}
table CLF EXIST pencil CLF
'There's a pencil on the table'
Source: Topological relations (67)

(577) *jy*^{42} *kua*^{44} *xe*^{31} *tsɯ*^{33} *ŋv*^{35} *tɯ*^{21}
fish tank in EXIST fish CLF
'The fish tank has a fish in it'
Source: Topological relations (30)

(578) *tsɛ˧*^{35} *tsɿ*^{44} *ɛ˧*^{33} *tsɯ*^{33} *kʰua*^{33} *tɯ*^{21}
table under EXIST dog CLF
'There's a dog under the table'
Source: Topological relations (28)

(579) *pa*^{42} *tsɿ*^{44} *xɯ*^{31} *tsɯ*^{33} *pi*^{42} *kuo*^{32} *tɛ˧ 42*
plate in exist apple CLF
'On the plate is an apple'
Source: Topological relations (19)

This construction appeared more frequently in the data. Therefore, it appears to be the preferred construction in expressing stationary spatial relations among speakers of Southern Bai.

Having a construction with an existential verb and an object placed in relation to another referent does not necessarily constitute a spatial relation expression. While still an existential construction, the example (580) below expresses that a woman is wearing a necklace, not expressing the spatial relationship of the necklace to the woman.

(580) *tsɯ*^{33} *ŋ̩v*^{33} *nia*^{33} *ŋ̩i*^{21} *te*^{55} *tɯ*^{44} *ɕia*^{55} *nie*^{55} *lie*^{32}
EXIST young female wear DUR necklace CLF
'There is a woman (who is) wearing a necklace'
Source: Topological relations (54)

In this example, the elicitation technique employed failed to make the consultant fully understand the purpose of the exercise[57]. However, it did allow for the collection of different construction types.

Examples (581) and (582) demonstrate the variable word order and the change in foci. Both examples are grammatically correct and express that the tree is beside the house. In example (581) the tree is the focus in reference to the LOCATION.

(581) *tsɯ*^{31} *te*^{44} *tsɯ*^{33} *xao*^{31} *keˬ*^{44} *pieˬ*^{44}
tree CLF EXIST house side
'The tree is at the side of the house'
Source: topological relations (53)

By changing the word order, as in example (582), the focus of the sentence changes to the house.

(582) *xao*^{31} *keˬ*^{44} *pieˬ*^{44} *tsɯ*^{33} *xɯ*^{55} *tsɯ*^{31} *te*^{44}
house side there is tree CLF
'At the side of the house is a tree'
Source: topological relations (52)

The same can be seen in examples (583) and (584) below. Changing the word order of the sentence functions to change the focus, and therefore the Topic, of the utterance.

[57] The exercise was attempting to elicit a construction like 'the necklace is on the woman's neck.

(583) *tɕʰiou*^{42} *te˞*^{42} *tsɯ*^{35} *tse˞*^{35} *tsɨ*^{44} *e˞*^{33}
ball CLF EXIST table under
'The ball is under the table'
Source: Correspondence with M1 (19/9/19)

(584) *tse˞*^{35} *tsɨ*^{44} *e˞*^{33} *tɯ*^{33} *tɕʰiou*^{42} *te˞*^{42}
table under EXIST ball CLF
'Under the table is a ball'
Source: topological relations (60)

In addition to use of the existential construction, a stative or posture verb may also be employed. Such constructions employ a serial verb construction consisting of a stative or posture verb describing the manner of the LOCATION plus the locative existential *ke*^{35}. I have adopted this term for *ke*^{35} based on LaPolla (2007, p. 33) who lists locative existential as one of the multiple existential verbs possible in Sino-Tibetan languages, and gloss it as 'be.at'. Word order in stative or posture constructions present a preference for [Topic + verb + *ke*^{35} + LOCATION + locative PP], although location can appear first, as illustrated in example (588). Example (588) also demonstrates that stative or posture constructions may contain aspectual marking, which is not present in existential spatial constructions. These constructions will be covered in further detail in section 10.2.2, but some examples are presented below.

(585) *sou*^{44} *nie*^{32} *zou*^{44} *ke*^{35} *tsɯ*^{31} *te*^{44} *nɔ*^{44}
rope coil be.at tree CLF on
'The rope is wound on the tree'
Source: Topological relations (64)

(586) *ji*^{35} *jɔ*^{21} *kua*^{44} *ke*^{35} *ji*^{35} *tɕia*^{44} *tɯ*^{21} *nɔ*^{44}
clothing CLF hang be.at clothing shelf CLF on
'The clothes are hanging on the clothes rack'
Source: Topological relations (9)

(587) *ŋ̥i*^{21} *ke˞*^{35} *ŋ̥i*^{21} *tsɯ*^{31} *ke*^{35} *xɯ*^{55} *xɔ*^{31} *tɯ*^{21} *nɔ*^{44}
person CLF stand be.at PFV house CLF on
'The person is standing on the house'
Source: Topological relations (32)

(588) *ou*^{31} *nɔ*^{44} *kua*^{44} *de*^{44} *tie*^{55} *xua*^{55} *tɕi*^{44} *e*^{21}
wall on hang DUR. phone machine CLF
'The telephone is hanging on the wall' (Lit: On the wall hangs a telephone)
Source: topological relations (46)

An alternative spatial construction can also be developed using a compound *tsɯ*^{33} *pɯ*^{55} *ta*^{44} ‘there’ that is formed from the existential verb *tsɯ*^{33} and a form derived from the third person genitive pronoun *pɯ*^{55} to mean ‘that’ or ‘then’. This compound is often shortened to *tsɯ*^{33} *pɯ*^{55}.

This compound can appear in two positions. The first appears in the same syntactic position as the existential constructions. This compound can also appear clause initially. These two constructions are outlined in the examples below.

(589) *kʰua*^{33} *tɯ*^{21} ***tsɯ***$^{\mathbf{33}}$ ***pɯ***$^{\mathbf{55}}$ *kʰua*^{33} *kʰv*^{31} *xao*^{31}
dog CLF **exist** **that** dog bed house
‘The dog is in the kennel’
Source: Topological relations (50)

(590) ***tsɯ***$^{\mathbf{33}}$ ***pɯ***$^{\mathbf{55}}$ *kuo*^{31} *jye*^{42} *xɯ*^{31} *pɔ*^{31} *kʰua*^{33} *ɕy*^{55} *ni*^{55}
exist **that** garden in 3SG pick pear
‘In the garden, s/he picks fruit’
Source: Pear story (4)

The phrase *tsɯ*^{33} *pɯ*^{55} *ta*^{44} ‘there’ can also be used to refer to a non-specific LOCATION. It is typically used when action is in progress during the narrative.

(591) *kou*^{33} *ŋ̍i*^{21} ***tsɯ***$^{\mathbf{33}}$ ***pɯ***$^{\mathbf{55}}$ ***ta***$^{\mathbf{44}}$ *tʰa*^{42} *ɕi*^{35}
two people **exist** **there** chat
‘Two people chat there’; ‘There are two people chatting there’
Source: F5 Staged events (41)

(592) *pa*^{55} *kou*^{33} *ŋ̍i*^{21} ***tsɯ***$^{\mathbf{33}}$ ***pɯ***$^{\mathbf{55}}$ ***ta***$^{\mathbf{44}}$ *ɣɯ*^{33} *tsao*^{21}
3PL two person **exist** **there** drink tea
‘Those two are drinking tea’

(593) *pei*^{55} *kʰao*^{55} *pei*^{55} *no*^{44} ***tsɯ***$^{\mathbf{33}}$ ***pɯ***$^{\mathbf{55}}$ ***ta***$^{\mathbf{44}}$ *tɕiao*^{44} *liou*^{42}
back lean back ATTR **exist** **there** chat
‘Speaking back-to-back ‘
Source: Staged events

In this context, *tsɯ*^{33} *pɯ*^{55} *ta*^{44} can also be used to as an anaphoric element to refer to a LOCATION previously mentioned.

(594) *tsɯ^{33}* *a^{31}* *ŋ̩i^{21}* *tsɯ^{33}* *xɯ^{55}* *kuo^{31} jye^{42}* *xɯ^{31}*
exist one person exist PFV garden in

tsɯ^{33} *pɯ^{55} ta^{44}* *kʰua^{44}* *ɕy^{55} ni^{55}*
exist there pick pear
'There is a person in the garden. (S/he) is picking pears there.
Source: Pear Story (1)

(595) *pe^{44}* *pʰia^{44}* *xɯ^{55},* *jou^{44} sɨ^{44} xou^{44}* *tsɯ^{33}* *pɯ^{55} ta^{44}* *ju^{44}* *tsao^{31} die^{31}*
go arrive PFV sometimes exist there eat breakfast
'Once we had arrived, we'd sometimes eat breakfast there'
Source: The greatest gift (25)

As examples (596) and (597) further show, locative marking often occurs between the existential *tsɯ^{33}* and the locative phrase *pɯ^{55} ta^{44}*.

(596) *tsy^{31} pe^{44}* ***tsɯ^{33}*** *ke^{35}* *xɯ^{55}* *tsɯ^{31} tsɯ^{31}* *nɔ^{44}* ***pɯ^{55} ta^{44}*** *ju^{44}*
prepare **exist** at PFV tree on **there** eat
'(It) prepares to eat it there in the tree'
Source: F5 Jackal & Crow (7)

(597) *tsou^{44}* *tɯ^{21}* ***tsɯ^{33}*** *xɯ^{55}* *tsɯ^{31} kua^{42}* *kua^{44}* ***pɯ^{55} ta^{44}***
bird CLF **exist** PFV tree trunk hang **there**
'The bird is on the tree trunk, hanging there'
Source: Topological relations (85)

The following examples illustrate *pɯ^{55} ta^{44}* 'there' functioning independently. Again, the function is to indicate an unspecified location.

(598) *a^{31}* ***pɯ^{55} ta^{44}*** *tsɯ^{33}* *tɔ^{31} piao^{44}* *kʰv^{44}* *tɯ^{21}*
Ah! **there** EXIST big snake CLF
'Ah! There's a big snake (there)'
Source: NP & 'ga' elicitation (51)

(599) *tsou^{44}* *tɯ^{21}* *tsɯ^{33} xɯ^{55}* *tsɯ^{31} kua^{42}* ***pɯ^{55} ta^{44}***
bird CLF at tree trunk **there**
'The bird is on the tree trunk'
Source: Topological relations (83)

In non-agentive events, the meaning of *pu^{55} ta^{44}* can be extended to indicate the event as on-going or in progress, as illustrated below.

(600) *me^{21}* *kʰu^{55}* ***pɯ^{55} ta^{44}***
door open **there**
'The door is open'
Source: Topological relations (70)

This concludes the discussion of grammatical relations in Southern Bai. The following section will summarise the findings presented in this chapter before progressing to the final empirical chapter of this study.

9.12. Summary

This chapter began with section 9.1 and a description of some of the semantic roles in Southern Bai. The next section, 9.2 argued the case that Southern Bai does not contain a grammatical Subject and should be considered a Topic prominent language. From there, discussion progressed on to the multi-functional grammatical particles *nɔ*^{44} and *mɯ*^{55}. The functions of these particles include locative marking, genitive marking, attributive marking, adverbialiser, indirect object marker, and verbal complementiser.

The next area of discussion was how anaphor is performed in the language, finding that AGENTS are often omitted when they are clear from the context and attributive marking is often a marker of anaphoric nouns. This was followed by an examination on how speakers perform referent tracking in narratives. This study found that this is usually done using the third person pronoun which refers back to the most agentive entity that was previously introduced.

After referent tracking, discussion progressed to benefactive constructions. Benefactive constructions were found to use a marker derived from the verb 'to give' *kɯ*^{32} to mark the RECIPIENT of the expressed action and also have a more flexible word order than many other constructions.

Discussion then moved on to grammatical relations as they pertain to verbal complements, beginning with section 9.7 on verbless constructions. The next point of discussion was on transitivity covering intransitive, transitive, and ambitransitive verbs. This was followed by section 9.9 which covered double object constructions.

Finally, this chapter discussed spatial relations and how for speakers of Southern Bai this involves two constructions. One construction expresses these relations with the use of the existential verb *tsu*^{33}. The other employs a stative or posture verb + the locative existential verb *ke*^{35}, or aspectual marking.

The following chapter will discuss how speakers of Southern Bai express motion and placement events.

Chapter 10 - Motion and Placement Events

This chapter will describe how motion events are expressed in Southern Bai based on elicitation of the Max Planck stimulus exercises ‘Put project’ (Bowerman et al., 2004), ‘Topological relations’ (Bowerman & Pederson, 1992), and ‘Staged Events’ (Van Staden et al., 2001). These materials were designed by the Max Planck Institute of Psycholinguistics to help elicit data on semantic relations during field data collection.

This chapter also aims to address the question of whether Southern Bai is Satellite-framed, Verb-framed, or Equipollently framed, according to the typologies proposed by Talmy (1985, 2000, 2007) and Slobin (2004, 2006).

Section 10.1 will introduce the major theories and terminology around the expression of motion events. This discussion will revolve around Figure and Ground concepts introduced by Talmy (1985), Satellite-framed, Verb-framed and Equipollently-framed languages and the debates surrounding this typology.

Using data collected from the Max Planck elicitation materials, the following section (10.2) will introduce and describe how Southern Bai expresses and constructs motion events. Using this data, section 10.3 will argue that Southern Bai should be considered a predominately Satellite-framed language.

10.1. Key terms and concepts

This section aims to outline some of the key concepts involved in descriptions of motion events and engage in the debates around the topic. It will begin with key terms around motion events, introducing Talmy’s (1985, 2000, 2000) typology and some of the debates around this theory since its introduction, before moving on to key concepts involved in the description of motion events in Southern Bai — coverbs and Serial Verb Constructions.

In his highly influential works, Talmy (1985, 2000) developed a typology regarding how languages lexically organise motion events. Talmy (Talmy, 1985, p. 61, 2000, p. 25) defines a motion event as an event where one object (the Figure) is moving or located with respect to another (the Ground). Under his definition, motion events contain four major components — Figure (F), Ground (G), Motion, and Path (P). The Figure of the event is the movable, or conceptually movable object. The Ground is the reference frame with regard to the Figure's path or location (Talmy 1985, 2000, 2007). In contrast to the Ground, the Figure is dependant on the Ground as a point of reference, considered more salient, geometrically simpler, often smaller, and the more recently introduced object (Talmy 2000). Path concerns the route followed or the site occupied by the Figure in respect to the Ground (Talmy 1985, p. 61). Motion refers to the presence of motion or the locatedness of the event (Talmy 2007, p. 70). In Talmy's typlology, locatedness is a subcategory of motion that is expressed as an event of [being] + [location]. Examples of events of locatedness includes such events as 'lay' and 'be at'.

Another important term that needs defining is that of Manner of motion (M). Manner refers to how the movement is internally represented by the verb. In other words, how the motion or locatedness took place. In English this is represented in verbs such as 'run', 'walk', 'roll', 'fly', 'climb', or 'lay'.

Talmy (1985) first proposed a three-way typology of how languages tend to encode Motion, Path, and Figure information. The first event type in the typology is referred to as 'Motion + manner/cause'. Such events encode the fact that Motion is present along with Manner (agentive) or Cause (non-agentive) information regarding the Motion. In the second type, labelled 'Motion + Path', Motion and Path information are encoded in the verb root. In the final event type 'Motion + Figure', verbs express Motion and information about the Figure.

This typology was later revised to a two-way typology (Talmy 2000), Verb-Framed and Satellite-framed languages based on the syntactic constituents of the verb root and its satellite. This revised typology focuses on how languages encode the Path information of the event. For Verb-framed languages, such as many Romance languages, Path information is embedded in the verb root. Conversely, Satellite-framed languages, such as English, encode Path information in a satellite of the Verb, which is defined by Talmy (2000, p. 102) as a "grammatical category of any constituent other than a noun-phrase or prepositional-phrase that is in a sister relation to the verb root."

In English, this is usually achieved through post-verb prepositions encoding directional information, such as *on, in, onto, into, through, above*, etc. Additionally, Path descriptors are optional. [(F) - Figure, (G) – Ground, (M) – Manner, (P) – Path]

i. The man (F) jumped (M) (Manner only)
ii. The man (F) jumped (M) on (P) the bed (G) (Manner + Path + Ground)

Whether Ground is required is dependent on the encoded manner of the verb.

iii. * The man climbed
iv. The man (F) climbed (M) the tree (G) ([Manner + Path] + Ground)
v. The man (F) climbed (M) up (P) the tree (G) (Manner + Path + Ground)

In English, both Path and Manner information are encoded in the verb '*to climb*.' However, as exhibited in (v.), further Path information can be included.

It is important to note that the Figure is not always encoded as the Subject of the sentence, or the most agentive entity, but can also be encoded as the object being moved.

vi. The man (Subj) pushed (M) the trolley (F) up (P) the ramp (G)

Conversely, Path information in a Verb-framed language, such as Spanish, is encoded in the verb.

vii.La botella (F) entró (P) a la Cueva (G)
the bottle MOVED in to the cave
'The bottle entered the cave'
Source: Talmy (2000, p. 49)

It has been argued that Verb-framed languages pay less salience to the Manner of the event but are still able to express that information with a satellite verb.

viii.La botella (F) entró (P) a la cueva (G) flotando (M)
the bottle MOVED in to the cave floating
'The bottle floated into the cave'

Yet so called Satellite-framed languages also make use of Motion + Path verbs. Take the following English example:

ix.The man (F) entered (P) the house (G)

The main lexical verb in this sentence, *entered*, encodes both fact of Motion and Path information.

While an 'apparently exhaustive typology' (Talmy 1985, p. 74), Talmy's work was heavily Euro and North American-centric, only including one Sino-Tibetan language, Mandarin Chinese. This has led to much criticism and revision in following years.

Indeed Talmy (1985, p. 75) himself acknowledges shortcomings in the initial typology demonstrating that even English contains verbs, such as 'to scale', that express Motion and Ground information. Therefore, it seems reasonable to take Slobin's (2004) assertion that no language uses one system to encode motion events and that the typology is a system to describe what preferences a language demonstrates for these events.

While Slobin (2004) acknowledges Talmy's contribution to studies on the typology of motion events, he suggests his approach is insufficient and is critical of his dichotomy of path expressions. By focusing more on the expression of Manner, rather than Path as was Talmy's

focus, Slobin (2004) suggests a cline of manner salience as a better way of categorising how languages encode motion events. Languages with higher levels of manner salience, argues Slobin (2004), have greater recourse to express manner ranging from a greater number of syntactic slots to express manner, use of ideophones and onomatopoeia, and increased gesture use.

Slobin (2004, 2006) proposes an additional third category to Talmy's dichotomic typology — Equipollently-framed languages. Equipollently-framed languages are those that frame Path and Manner information in a way where both have 'roughly equal morphosyntactic status' (Slobin 2006, p. 63).

This proposal was based on languages such as Mandarin Chinese and Thai where lexemes encoding path information, previously considered to be Satellites, should not be considered as such, argued Slobin, as they can function independently as full verbs in a predicate. Equipollently-framed languages, suggests Slobin, can be broken down further into three sub-categories depending on how this information is presented syntactically: serial verb languages, where the 'main' verb is not always clear; bi-partite languages that utilize verbs consisting of two morphemes, of equal weight, to encode both manner and path information; and generic verb languages that employ 'function verbs' in combination with a fixed set of verbs to encode information to express deictic or aspectual information. Slobin (2004) includes Sino-Tibetan languages under the Equipollently-framed category.

At present, debate surrounds whether languages that utilise Serial Verb Constructions in depictions of motion events, particularly South-East Asian languages, should be classified as Satellite-framed or Equipollently-framed languages.

Recent work has begun to focus on MSM as an example of how Southeast Asian languages encode motion events. Zhao and Hu (2018) experimented with MSM speakers to see if

encoding of motion events was affected by priming. They found that priming did indeed affect word order and constructions employed. Their experiment demonstrated that speakers could be made to violate canonical word orders. This, they claimed, provided evidence that each component of a motion event construction was equal, and that MSM should be classified as an Equipollently-framed language. However, I disagree with their conclusion, due to the fact that many of the non-canonical examples elicited tended to be marked (evident by the use of commas in the glossed text). Even in the examples that violated the canonical word order, word order was an important factor as Path information could not occur before Manner. Therefore, I would argue that these elements are in fact not equal, which is a key component of the argument for an Equipollently-framed language class.

Ji, Hendricks, and Hickmann (2011) are also skeptical of Talmy's typology. They argue that much of the study on Verb/Satellite-framing only proved 'fruitful' primarily because they relied on investigation and description of languages heavily weighted in the Indo-European language family, largely ignoring serial verb languages, such as MSM. Additionally, they indicate that Indo-European languages do not contain any equivalent of the 'ba' construction (Ji et al., 2011, p. 1047). They state that this difference is something that could potentially skew interpretations of the lexical constructions. As discussed in section 7.12, Southern Bai has an equivalent construction, using the disposal marker *ka*^{44}.

Peyraube (2006) argues that MSM is a Satellite-framed language, suggesting that secondary verbs in Mandarin serial verb constructions are directional complements. These directional complements have been grammaticalised over several centuries from fully lexicalised verbs into function words that have had some of their original meaning watered down to indicate direction of action only in these constructions.[58]

[58] A process I believe that has also occurred in Southern Bai, although this could also be a result of language contact with Mandarin.

Chen & Guo (2009) analysed depictions of motion events in modern Chinese novels of the twentieth and twenty-first century. From their analysis, they found that MSM adheres to neither Satellite-framed or Verb-framed typologies and should therefore be classified under a third type, declaring it to be Slobin's Equipollently-framed class — a classification I dispute as their only justification for this classification seems to be that MSM constructions don't fit in either Verb-framed or Satellite-framed categories.

Looking at Burmese and other languages of Southeast Asia, Vittrant (2015) argues that the Equipollently-framed language category is insufficient as a descriptor for Southeast Asian languages. Her argument for this is that the verbs found in serial verb constructions within these languages are often not of equal status — an argument that will be applied to Southern Bai later in section 10.3. Vittrant (2015) argues that Southeast Asian languages encode motion events in ways that "do not fit easily into Talmy's proposal" (p. 592) and therefore require an adjustment of Talmy's typology in order to fit.

This section has offered a brief overview of the key concepts, terminology and debates surrounding the typology of how motion events are described. The following section will describe how motion events are expressed by Southern Bai speakers.

10.2. Motion Events in Southern Bai

Motion events in Southern Bai involving directional movement of the agent or causation are constructed using Serial Verb Constructions (SVCs) whereby a matrix verb (V_1) depicts the Manner (M) of the motion, augmented by directional coverbs in the V_2 & V_3 positions that encode Path (P) and deixis (D), respectively. Where change of location of the Figure is expressed, a *ka*^{44} construction (see section 7.12) is typically used, unless the Figure is the agent of the motion.

The following sections will provide an in-depth description of how motion events are expressed in Southern Bai. Directional motion events are those which involve movement of an actor or instrument in a particular direction. Placement events involve caused movement of an instrumental Figure in relation to a fixed Ground. Each of these different event types have slightly different approaches as to how these events are syntactically and semantically constructed.

In a clause depicting a motion event, the main matrix verb typically encodes information on the Manner of the motion (M), with satellites depicting information on the Path of the motion (P), Deixis in relation to the direction of the movement towards the speaker or subject (D), and location of the Figure in relation to the Ground (L).

Using example (318) from section 7.12, the simplest motion event construction depicts only Figure, Manner, and Ground.

(601) *a*^{55} *mi*^{55} *tɯ*^{21} (F) *ke*^{21} (M) *sv*^{32} (G)
cat CLF climb mountain
'(The) cat climbed the mountain'

In the above example, the cat is the Figure of the event (F), the mountain acts as the reference, or Ground (G). The Manner (M) of the event is the head verb of the predicate, *ke*^{21} 'climb'.

The above example arguably does not contain information regarding the Path, although it may be argued that Path information may be encoded in the verb *ke*^{21} itself, insofar as a default interpretation would be that the cat is ascending the mountain. By adding further directional information, speakers can emphasise or clarify the direction the Figure is taking in relation to the Ground.

(602) *a*^{55} *mi*^{55} *tɯ*^{21} (F) *ke*^{21} (M) *tʰɯ*^{55} (P) *sv*^{32} (G)
cat CLF climb descend mountain
'(The) cat climbed down the mountain'
Source: NP & 'ga' elicitation

Here we can see the verb *tʰɯ*^{55} describing the directional information of the event, the Path, via a serial verb construction. Therefore, it can be said that *ke*^{21} is encoding the Manner of the event/action and a subsequent directional coverb encodes the Path information of the event.

Conversely, we can change the directional coverb in V_2 (P) position to change the direction the cat is climbing.

(603) *a*^{55} *mi*^{55} *tɯ*^{21} (F) *ku*^{35} (59) *tsou*^{33} *sv*^{32} *nɔ*^{44}
cat climb ascend mountain on
'The cat climbed up the mountain'
Source: NP elicitation (20181205) (100)

If the second verb in the construction expresses directional information, then the third slot is reserved for expressing deixis. The verbs in the second and third slots could be described as the path components of the construction. This is illustrated in the following example from the Put project elicitation session.

(604) *ka*^{44} *xao*^{35} *tsɿ*^{44} *kʰeˇ*^{44} *ne*^{44} *tʰɯ*^{55} *jɯ*^{35}
DISP box CLF lift descend towards
'(S/he) put the box down (towards her/himself)'
Source: Put elicitation (46)

The above example is a serial verb construction containing three verbs. The verb in the first slot (V_1) describes the Manner of motion, in this case *ne*^{44} 'lift'. The middle slot (V_2) depicts Path information, *tʰɯ*^{55} 'descend' while the final slot (V_3) encodes deictic information, *jɯ*^{35} 'come; towards'. This is the canonical order of a serial verb construction and is consistent

[59] This is a dialectal variant. Speakers from Wanqiao tended to say /ke^{21}/ where Xizhou and more northern speakers pronounced /ku^{35}/.

throughout depictions of motion events in Southern Bai. A general rule could therefore be constructed, using the above example as an illustration.

(605)

V_1	V_2	V_3
Manner	Direction	Deixis
ne^{44}	*tʰɯ*^{55}	*jɯ*^{35}
lift	descend	come

Verbs that can take each slot become more restricted as they move towards the right. Verbs in the leftmost slot (V_1) are the least limited being restricted only to those describing manner of motion in a motion event or the manner of placement. Examples of verbs that can occupy the V_1 slot are listed below.

(606)

Manner verb	**Placement verb**
ŋe^{21} 'to depart'	*sɯ*^{44} 'place; put'
pe^{44} 'to walk; to go'	*ne*^{44} 'lift'
fv^{35} 'to fly'	*tɯ*^{32} 'to wear; put on'
ɳi^{44} 'to enter'	*niou*^{44} 'throw'
tsu^{44} 'to jump'	*tɕy*^{35} 'scoop'
ka^{32} 'to roll'	*pe*^{31} 'place; arrange'
ku^{35} 'to climb'	*pao*^{55}*/pia*^{44} 'carry'

Verbs that fit into the V_2 slot are limited to a set of directional coverbs that are listed below.

(607)

Lexeme	**Gloss (Verb: coverb)**
tʰɯ^{55}	descend: down
tsou^{33}	ascend: up
ni^{44}	enter: into
kuo^{32}	pass: passed
ke^{35}	be.at

Verbs that can occupy the V_3 slot are limited even further to the following two deictic coverbs.

(608)

Lexeme	**Gloss (Verb: Coverb)**
jɯ^{35}	come: hither
ŋe^{21}	to: thither

The restricted nature of the verbs available for each slot demonstrates that Southern Bai employs an asymmetrical composition system in the construction of SVCs for motion events.

Grammaticalised from the original lexical meaning ‘to come’, using *ɹɯ*^{35} in a directional serial verb construction indicates movement towards the speaker or subject. As this chapter is focusing on motion events, *ɹɯ*^{35} will henceforth be described in its function as a directional coverb of deixis.

As with *ɹɯ*^{35}, verbs used in the V_2 and V_3 slot in the serial verb construction no longer retain their full lexical meaning, instead operating as coverbs that add further directional and/or deictic information to the description of the event. As stated in Aikhenvald (2006, p. 23), verbs from these classes retain their full lexical meaning outside the serial verb construction.

Evidence of this difference between full lexical meaning and directional coverb can be seen in the verbs *ŋe˗*^{21} and *tsou*^{33}.

Like other directional coverbs used in serial verb constructions describing motion events, *ŋe˗*^{21} functions as a fully lexicalised verb. As a full verb, *ŋe˗*^{21} expresses departure, as indicated in the examples below.

(609) *nɯ*^{55} *ti*^{33} *ŋe˗*^{21} *ke˗*^{44} *ŋv*^{35}
‘2GEN father depart fishing
‘Your father is going fishing / has gone fishing’
Source: Lou lou lerx (3)

(610) *pɯ*^{21} *kɔ*^{21} *xɯ*^{21} *ŋe˗*^{21} *a*^{55} *na*^{44}
‘float sea in depart where’
‘Where is it floating to?’
Source: Youf huoyeid (4)

Yet in many motion and placement events, *ŋe˗*^{21} depicts action away from the deictic centre.

(611) *ka*^{44} *ɕiao*^{32} *mao*^{55} *tɯ*^{21} *ne*^{44} *kuo*^{32} *ŋe˗*^{21}
DISP. cap CLF lift pass depart
‘(S/he) passed the cap over’
Source: NP & ‘ga’ elicitation (38)

(612) *pɔ*^{31} *tɕia*^{44} *kuo*^{32} *tsao*^{21} *pe*^{21} *ŋe˗*^{21}
3SG receive pass teacup depart
‘S/he passed over the teacup’
Source: NP & ‘ga’ elicitation (44)

Another example of the dual function of verbs can be found in the verb *tsou*^{33}. In example (613) below, *tsou*^{33} is functioning as a full verb.

(613) *tsou*^{33} *na*^{21} *tsou*^{33} *pɯ*^{44}
ascend south ascend north
'travel far and wide'
Source: The greatest gift (101)

In this example, *tsou*^{33} is behaving as the main lexical verb, meaning to travel in a specified direction. In this case, however, the meaning is extended metaphorically to just mean to travel. Interestingly, another example appeared in Chen & Yang (2018) using the verb *ŋe*^{21} replacing *tsou*^{33}. This interchangeability suggests that these two belong to the same word class.

Here are examples of *tsou*^{33} functioning as a directional coverb, indicating only direction.

(614) *ke*^{21} ***tsou*^{33}** *ne*^{21} *lɔ*^{33}
climb **ascend** level
'To go upstairs'
Source: NP & 'ga' elicitation (171)

(615) *a*^{55} *mi*^{55} *tɯ*^{21} *ku*^{35} ***tsou*^{33}** *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
cat CLF climb **ascend** tree on
'The cat climbed up the tree'
Source: NP Elicitation (80)

The following example demonstrates *ke*^{21} acting as a full verb suggesting it can act alone as a verb and neither *tsou*^{33} nor *tʰɯ*^{55} are required.

(616) *ke*^{21} *nɯ*^{21} *tsɨ*^{21} *tʰe*^{55}
climb ladder/stair
'To climb the stairs'
Source: NP & 'ga' elicitation (154)

Now the general rules have been introduced, the following section will focus specifically on the description of directional motion events.

10.2.1. Directional motion events

As mentioned in the introduction, directional motion events involve directional motion of the Figure in relation to the Ground or the speaker.

When describing events involving directional motion, Southern Bai employs Serial Verb Constructions to describe the Manner, Path, and/or Deixis of the action. The use of serial verb constructions in expressing directional motion events have been described in many of the languages of China and Southeast Asia (Bisang, 1995), including MSM, Khmer, Hmong, Thai, Lao (Goddard, 2005). Serial Verb Constructions expressing directional motion events have also been documented in several languages of Southwest China, including Lahu (Matisoff, 1982), (J. Li et al., 2014), Zhuang (Y. Luo, 2019), Rgyalrong (Jacques, 2013), Cantonese (Matthews, 2005), Lakkja (Fan, 2019) and Mandarin (C. N. Li & Thompson, 1981; Slobin, 2004).

These constructions make use of the three-part serial verb construction where the first verb encodes Manner of movement with the second and third verbs encoding Path and/or Deixis. As with other motion event depictions, the verbs in the second and third slots have been 'bleached' of part of their original semantic meaning, behaving as a verbal satellite expressing directional information of the event. This quality has been described as common among Satellite framed languages (Talmy 1985; Bisang 1995).

As most of these constructions involve agentive action on behalf of the Figure, the *ka*^{44} construction is not required.

A general construction rule for the expression of directional motion events in Southern Bai is:

(Subj) + V_1 (M) + V_2 (P) + V_3 (D)

(617) *ke*^{35} *tɯ*^{21} (F) *fv*^{35} (M) *kuo*^{32} (P) *jɯ*^{35} (D)
chicken CLF fly pass come
'The chicken flew over (here); The chicken flew towards me'
Source: NP elicitation 20181127 (65)

In depictions of directional motion, the slots for V_2 and V_3 are optional and are only required to depict directional information of the action. Example (618) shows a simple motion construction depicting only Manner of motion and aspect. Note the lack of Path or directional information.

(618) *ke*^{35} *tɯ*^{21} *fv*^{35} *xɔ*^{31}
chicken CLF fly PFV
'The chicken flew'
Source: NP elicitation (29)

In order to express motion toward or away from the speaker, a deictic coverb can be employed. The coverbs available in this function are limited to *ŋe*^{21} 'thither' or *jɯ*^{35} 'hither'. Typically, these occupy the V_3 slot. If the V_2 slot is empty, then the deictic coverb may take the second slot in the SVC. Returning to the chicken, example (619) illustrates the Manner, Path, and Deixis of the chicken's movement.

(619) *ke*^{35} *tɯ*^{21} *fv*^{35} *kuo*^{32} *jɯ*^{35}
chicken CLF fly pass come
'The chicken flew towards (me)'
Source: NP elicitation 20181127 (65)

Using this construction method, Southern Bai can combine several verbs in each syntactic slot to create more detailed description of the motion.

Thus far, none of the examples of directional motion events have included a Ground. When a Ground is involved, the construction changes slightly. As there is no deictic element, the Ground information appears after the first directional coverb depicting Path information, as in the examples below. Note that these constructions often require a locative postposition after the Ground to indicate the Figure's spatial relationship to it.

(620) *ŋɯ*^{55} *ke*^{35} *tɯ*^{21} *fv*^{35} *kuo*^{32} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
1GEN chicken CLF fly pass tree on
'My chicken flew past a tree'
Source: NP & 'ga' elicitation (147)

(621) *a*^{55} *mi*^{55} *tɯ*^{21} *ku*^{35} *tsou*^{33} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
cat CLF climb ascend tree on
'The cat climbed up the tree'
Source: NP Elicitation (61)

(622) *a*^{55} *mi*^{55} *kou*^{33} *tɯ*^{21} *ku*^{35} *tsou*^{35} *tsɯ*^{31}*tsɯ*^{31} *nɔ*^{44}
cat two CLF climb ascend tree on
'Two cats climbed up the tree'
Source: NP Elicitation (79)

(623) *ku*^{35} *tsou*^{33} *sv*^{32} *nɔ*^{44}
climb ascend mountain on
'climb up the mountain'
Source: NP Elicitation

While some examples were produced without the directional coverb *tsou*^{33}, participants indicated that it felt more natural to have it included.

In events where the movement of the event is away from the speaker, the verb *ŋe*^{21} occupies the deictic verbal slot in a serial verb construction (V_3), as in the example below.

(624) *ka*^{44} *ɕiao*^{32} *mao*^{55} *tɯ*^{21} *ne*^{44} *kuo*^{32} *ŋe*^{21}
DISP. cap CLF lift pass depart
'(S/he) lifted the cap off'
Source: NP & 'ga' elicitation (37)

In this example, *ŋe*^{21} is functioning as a directional coverb expressing that the action of the movement is occurring away from the speaker, or in this case, the Subject of the sentence.

10.2.2. Placement events

This section will describe how placement events are constructed in Southern Bai. Most of the examples in this section have been collected using the framework established by the 'Put project' (Bowerman et al., 2004) and 'Staged events' (Van Staden et al., 2001) elicitation stimulus materials.

Like directional motion events, placement events use a serial verb construction to indicate manner and direction of the motion. However, placement events differ from directional motion events in several ways. Firstly, as they involve the manipulation or handling of the Figure, a *ka*^{44} construction is required. Without this construction, the interpretation of the utterance is commonly interpreted as the Figure always having previously been placed in that location.

Placement events are typically di-transitive and require a Ground as the second grammatical Object. Unlike the three-verb serial verb construction used for motion events, placement event constructions typically only require two verbs — a verb of manner and a directional or locational coverb. Finally, they usually require that a locative postposition is placed after the Ground object to express the spatial relation of the Figure to the Ground.

Placement events often have an anaphoric agent, with the Figure object taking the role of Topic of the sentence. The two most common verbs used are either *sɯ*^{44} or *pe*^{31}. *sɯ*^{44} is a generic transitive placement verb meaning ‘to place something somewhere’, as illustrated below in example (625) .

(625) *ka*^{44} *me*^{33} *ja*^{33} *sɯ*^{44} *ni*^{44} *pʰa*^{42} *tsɪ*^{44} *xɯ*^{31}
DISP rice some place into plate in
‘(S/he) put some rice on the plate’
Source: Put elicitation (28)

pe^{31} suggests careful placement or arrangement, as demonstrated in the example below.

(626) *ka*^{44} *xao*^{35} *xao*^{35} *kʰeˇ*^{44} *pe*^{31} *ke*^{35} *su*^{44} *tɕia*^{44} *nɔ*^{44}
DISP box CLF place at bookshelf on
‘(S/he) Put the box on the shelf’
Source: Put elicitation (17)

Other common placement verbs found during the ‘Put Project’ are listed below.

(627)

Bai	**Gloss**
tɕʰie^{55}	‘to lower’
tao^{55}	‘to pour’
kua^{44}	‘to hang’
niou^{44}	‘to throw’
tua^{42}	‘to drop’
tɕia^{35}	‘to clip’
tɕʰia^{44}	‘to adhere/stick’
pe^{42}	‘to insert’
tsou^{44}	‘to put on’

The manner verb in a placement event is then followed by a directional coverb such as *tʰɯ*^{55} ‘descend’, *ni*^{44} ‘into’, or the locative existential[60] *ke*^{35} ‘be.at’.

Following the Ground object, a locative postposition indicates the spatial relation of the Figure to the Ground. This term has been adopted following Fu & Xu (2008) and Li & Chen’s (2018) descriptions classifying *no*^{44} and *xɯ*^{55} as postpositions. Other literature has described this class of words as ‘locational nouns’ (for example Li et al, 2014). However, this class of words does not function as nouns typically would. As discussed in the noun phrase rules described in Chapter 6, section 6.8, modification occurs after a noun in the Southern Bai Noun Phrase. Additionally, locative postpositions behave similarly to English prepositions, instead occurring after the noun they are modifying. I will henceforth refer to this class of words as a locative postposition (LocPP). The most common locational postpositions are *nɔ*^{44} ‘on’, *e*^{33} ‘under’, and *xɯ*^{31} ‘in’.

The canonical order for a placement event is described in example (628) below.

(628) (Subj) + ka^{44} + Fig + $V_{1\ [MANNER]}$ + $V_{2\ [PATH]}$ + Ground + LocPP

The examples below demonstrate the typical word order for placement events in Southern Bai.

[60] As per the terminology used in LaPolla (2007, p. 32).

(629) *ka*^{44} *xao*^{35} *xao*^{35} *kʰeˇ*^{44} ***pe*^{31}** ***ke*^{35}** *su*^{44} *jia*^{44} *ne*^{21} ***nɔ*^{44}**
DISP. box CLF **place** **be.at** bookshelf CLF **on**
'(S/he) put the box on the bookshelf'
Source: Put elicitation (17)

(630) *ka*^{44} *pʰi*^{42} *kuo*^{31} *teˇ*^{42} ***niou*^{44}** ***ni*^{44}** *te*^{55} *tsɨ*^{31} ***xɯ*^{31}**
DISP apple CLF **throw** **enter** bag **in**
'(S/he) put the apple into the bag'
Source: Put elicitation (19)

(631) *ka*^{44} *ɕia*^{44} *tɕiao*^{44} *pa*^{42} ***sɯ*^{44}** ***tʰɯ*^{55}** *tseˇ*^{35} *tsɨ*^{44} *tɯ*^{21} ***nɔ*^{44}**
DISP. banana CLF **put** **descend** table CLF **on**
'The banana was put down on the table'
Source: Put elicitation (53)

Looking at the examples above, the verb phrase of the placement event exhibits a set pattern. There is a serial verb construction consisting of a manner verb and a path verb. This is followed by noun phrase consisting of a nominal Ground and a locative postposition expressing the spatial relation of the Figure to the Ground, for example *nɔ*^{44} 'on' or *xɯ*^{31} 'in'.

If the placement occurs 'on' a location, then speakers employ a set construction comprised of $V_{[MANNER]}$ + *ke*^{35} + Ground + *nɔ*^{44}, as demonstrated earlier in example

(629). The following sentences offer further examples of this construction.

(632) *ka*^{44} *sou*^{44} *nie*^{32} *sɯ*^{44} *ke*^{35} *tsɯ*^{31} *tsɯ*^{31} *nɔ*^{44}
DISP rope CLF put be.at tree on
'(S/he) put the rope on the tree'
Source: Put elicitation (68)

(633) *ka*^{44} *pʰa*^{42} *tsɨ*^{44} *le*^{21} *sɯ*^{44} *ke*^{35} *tsv*^{35} *be*^{21} *tɯ*^{21} *nɔ*^{44}
DISP plate CLF put be.at cup CLF on
'(S/he) put the plate on the cup'
Source: Put elicitation (10)

Aspectual information may follow the serial verb construction in the verb phrase, as can be seen in the example below.

(634) *ka*^{44} *te*^{55} *tsɨ*^{44} *sɯ*^{44} *ke*^{35} *xɯ*^{55} *ji*^{31} *tsɨ*^{44} *tɯ*^{21} *nɔ*^{44}
DISP bag CLF put be.at PFV chair CLF on
'(S/he) put the bag on the chair'
Source: Put elicitation (81)

The lexeme *ke*^{35} cannot substitute for the existential *tsɯ*^{35}, which is an existential verb expressing that one object exists in one form or another. Conversely, the locative existential *ke*^{35} expresses specific locational relationship between two objects. Furthermore, *ke*^{35} is only found in serial verb constructions of stationery placement, whereby *tsɯ*^{33} appears as a solitary matrix verb. However, *ke*^{35} can be used in conjunction with *tsɯ*^{33}, as in the following example.

(635) *ka*^{44} *sɨ*^{35} *tsʰueˇ*^{44} *tsɯ*^{33} *ke*^{35} *tɕi*^{31} *peˇ*^{21} *tɯ*^{21} *nɔ*^{44}
DISP book CLF exist be.at ground CLF on
'The book is on the ground'
Source: NP & 'ga' elicitation (11)

When expressing placement into another object, then the coverb *ni*^{44} 'enter; into' occupies the V_2 [Path] slot of the serial verb construction in combination with locative postposition *xɯ*^{31} 'in', as demonstrated earlier in example (630). The locative postposition *xɯ*^{31} typically expresses the locative information in relation to the ground. The examples below further illustrate this construction.

(636) *ka*^{44} *tɯ*^{21} *bɔ*^{21} *tɕʰie*^{55} *ni*^{44} *tʰv*^{31} *xɯ*^{31}
DISP head lower enter bucket in
'(S/he) lowered their head into the bucket'
Source: Put elicitation (49)

(637) *ka*^{44} *me*^{33} *sɯ*^{44} *ni*^{44} *pʰa*^{42} *tsɨ*^{44} *xɯ*^{31}
DISP rice put enter plate CLF in
'(S/he) put the rice on[61] the plate'
Source: Put elicitation (28)

(638) *ka*^{44} *xɯ*^{55} *kua*^{42} *kua*^{44} *me*^{21} *ne*^{44} *ni*^{44} *ge*^{32} *le*^{21} *xɯ*^{31}
DISP.LINK pole CLF lift enter bowl CLF in
'Then (S/he) lifted the pole into the bowl'
Source: Jiaz xif (53)

(639) *nɯ*^{31} *ŋ̩i*^{21} *ka*^{44} *ɕy*^{33} *tao*^{44} *ni*^{44} *ku*^{21} *tsɨ*^{44} *kʰeˇ*^{44} *xɯ*^{31}
DIST person DISP water pour enter bottle CLF in
'That person is pouring water into the bottle'
Source: Put elicitation (34)

[61] As discussed previously in section 6.6, *xɯ*^{31} does not entail total containment and may be used with anything with a lip that would typically be translated into English as 'on'.

There are more combinations possible for placement events in Southern Bai that do not involve these set bundles. However, the construction of *ka*^{44} + Fig + $V_{1\ [MANNER]}$ + $V_{2\ [PATH]}$ + Ground + LocPP still holds. The following examples illustrate different placement events using other verb combinations and further illustrate the set pattern of placement events in Southern Bai.

(640) *ka*^{44} *sɨ*^{35} *tsʰuɐ̆*^{44} *niou*^{44} *tʰɯ*^{55} *tɕi*^{31} *pɐ̆*^{21} *tɯ*^{21} *nɔ*^{44}
DISP book CLF throw descend ground CLF on
'(S/he) threw the book on the ground'
Source: Put elicitation (47)

(641) *ka*^{44} *hua*^{55} *tʰie*^{35} *tɕʰia*^{44} *ke*^{35} *ou*^{33} *le*^{21} *nɔ*^{44}
DISP painting CLF adhere be.at wall CLF on
'(S/he) placed the painting on the wall'
Source: Put elicitation (9)

(642) *ka*^{44} *xuo*^{35} *tuo*^{33} *pe*^{42} *ke*^{35} *tɯ*^{21} *ma*^{21} *ja*^{33} *xɯ*^{31}
DISP flower CLF insert be.at hair some in
'(S/he) inserts a flower into their hair'
Source: Put elicitation (78)

Omission of *ka*^{44} in a placement event has the effect of expressing a stationary placement event, whereby the Figure has been placed at some point of time in the past. This is demonstrated in the following two examples.

(643) *ji*^{35} *jɔ*^{21} *kua*^{44} *ke*^{35} *ji*^{44} *tɕia*^{55} *tɯ*^{21} *nɔ*^{44}
clothing CLF hang be.at cloth line CLF on
'The clothes are hanging on the line'
Source: Topological relations (9)

Compare the construction in example (643) with the dynamic version below. In this example, the *ka*^{44} construction is required as the event involves a change in location.

(644) *ka*^{44} *ji*^{35} *jɔ*^{21} *kua*^{44} *ke*^{35} *ji*^{44} *tɕia*^{55} *tɯ*^{21} *nɔ*^{44}
DISP clothing CLF hang be.at cloth line CLF on
'(S/he) hung the clothes on the line'

Stationary placement events have maintained a similar structure with the serial verb construction and locative postposition. However, these utterances are semantically interpreted by speakers as the Figure having been placed in its location at some previous time.

(645) *si*^{35} *tsʰue˞*^{44} *sɯ*^{44} *ke*^{35} *tse˞*^{35} *tsɨ*^{44} *tɯ*^{21} *nɔ*^{44}
book CLF put be.at table CLF on
'The book was placed on the table'
Source: Put elicitation (55)

This construction can also be extended to stationary events and in descriptions of spatial relations. Descriptions of events such as 'wearing', 'standing' are again constructed using a verb depicting Manner of event, such as standing, wearing, plus the verb *ke*^{35} 'be.at' in the V_2 slot.

(646) *tɕie*^{55} *tsɨ*^{31} *te*^{55} *ke*^{35} *sɯ*^{33} *nɔ*^{44}
ring wear be.at hand on
'The ring is on the hand'
Source: Topological relations (10)

(647) *ŋ̥i*^{21} *ke˞*^{35} *ŋ̥i*^{21} *tsɯ*^{31} *ke*^{35} *xɯ*^{55} *xao*^{31} *tɯ*^{21} *nɔ*^{44}
person CLF stand be.at PFV house top on
'A person is standing on top of (a) house'
Source: Topological relations (32)

In summary, dynamic placement constructions employ disposal marker *ka*^{44} and a serial verb construction implying movement of the Figure from one location to another. Semantically, they entail an agent conducting the movement of the Figure. Such constructions would also traditionally be considered as di-transitive.

Conversely, stationary events do not entail an agent. The Topic of these events is the Figure. These would be considered transitive with the Figure being the Topic of the sentence.

Stationary placement events differ from expressions of spatial relations that express 'X is on Y' in that they express the manner in which the Figure was placed onto the Ground. The difference between the two is demonstrated in the examples below.

(648) *tɕʰiou*^{42} *te˞*^{42} ***tsɯ***^{35} *tse˞*^{35} *tsɨ*^{44} *e˞*^{33}
ball CLF **EXIST** table under
'The ball is under the table'
Source: Correspondence with M1 (19/9/19)

(649) *tɕʰiou*^{42} *teˇ*^{42} ***suɹ***$^{\mathbf{44}}$ ***ke***$^{\mathbf{35}}$ *tseˇ*^{35} *tsɨ*^{44} *eˇ*^{33}
ball CLF **place** **be.at** table under
'The ball was placed under the table'
Source: Correspondence with M1 (19/9/19)

These constructions differ in subtle ways. Example (648) simply expresses the spatial relation of the ball to the table. On the other hand, example (649) also expresses the manner in which the ball was positioned under the table.

Events of taking in Southern Bai syntactically resemble motion events employing a serial verb construction describing the manner and direction/deixis of the action. Some common manner verbs in events of taking include *ne*^{44} 'lift, *tɕy*^{33} 'scoop' and *tɕʰi*^{42} 'pick up'.

As taking events do not involve placement onto an object, Southern Bai speakers often do not incorporate a location into the expression of the event. This could be because the location is not considered to be important in such expressions. However, the omission of a location could also have been the result of the stimulus materials used with the consultants not explicitly requiring a location to be identified.

Commonly used taking verbs are listed below.

(650) *ne*^{44} 'to lift'
tɕy^{35} 'to scoop'
pia^{44} 'to carry'
tɕia^{44} 'to receive'
tɕʰi^{42} 'to pick up'

Expressions of taking events have more flexibility in word order than placement events. One order is to express the event first via a serial verb construction, then introduce the Figure, as in typical (S)VO word order. This is demonstrated in example (651) below.

(651) *ne*^{44} *tɕʰi*^{44} *juɹ*^{35} *tɕy*^{35} *tsɨ*^{31} *teˇ*^{42}
lift up come mandarin CLF
'Lifting up a mandarin'
Source: Put elicitation (57)

The other order is to use the *ka*^{44} construction and place the Figure at the front of the utterance, followed by the serial verb construction describing the manner and path of the event. This is illustrated in example (652).

(652) *ka*^{44} *xao*^{35} *tsɿ*^{44} *kʰeˇ*^{44} *ne*^{44} *tʰɯ*^{55} *jɯ*^{35}
DISP. box CLF lift descend come
'(S/he) is taking down a box'
Source: Put elicitation (46)

Consultants were unable to offer a difference in interpretation between the two constructions. It is likely that this is the result of Topic fronting.

Further examples of taking events in Southern Bai can be seen below.

(653) *ka*^{44} *sou*^{44} *nie*^{32} *ne*^{44} *kuo*^{32} *jɯ*^{35}
DISP. rope CLF lift passed come
'(S/he) lifted the rope over'
Source: Put elicitation (42)

(654) *ka*^{44} *xua*^{55} *tsou*^{35} *ne*^{44} *tʰɯ*^{55} *jɯ*^{35}
DISP painting CLF lift descend come
'(S/he) took down the painting'
Source: Put elicitation (77)

(655) *ka*^{44} *sɿ*^{35} *tsʰueˇ*^{44} *tsɿ*^{42} *xɯ*^{55}
DISP book CLF pick up PFV
'(S/he) picked up the book'
Source: Put elicitation (79)

Interestingly, the verb *tsɿ*^{42} 'pick up' in example (655) displays properties of a verb encoding both manner and path information. Consultants translated this sentence as *把书拾起 bǎ shū shí qǐ* 'pick up the book' with deixis clearly marked with the directional verb *起 qǐ* 'to raise'. However, the construction in example (655) omits any directional coverbs or deixis, suggesting that the path information is encoded within the verb itself.

A contrasting placement verb also exists, *tsou*^{44} 'put down' which also expresses both manner and path information in the same lexeme. This is illustrated in the following example.

(656) *nue*^{35} *ji*^{35} *kou*^{55}, *tsou*^{44} *ŋe*^{21} *tɕie*^{33}
remove clothing CLF put on shoe CLF
'(S/he) removed the item of clothing and put it on the shoe'
Source: Put elicitation (64-65)

That these two verbs exist should not be considered problematic to the typological description of Southern Bai. As stated by Croft et al. (2010), Talmy's typology should only be considered a guide to the tendency for how a language depicts such events.

When the Ground of a taking event is mentioned, it is fronted to the beginning of the sentence, as in example (657) below.

(657) *te*^{55} *tsɨ*^{44} *nia*^{21} *xɯ*^{31} *ne*^{44} *tɕ*^{h}*i*^{44} *jɯ*^{35} *xua*^{55} *kua*^{44} *diou*^{42}
bag CLF in lift rise come cucumber CLF
'(S/he) lifted a cucumber from the bag'
Source: Put elicitation (16)

The following example describes two consecutive events. The first clause establishes the place from where the object is being taken, while the second illustrates a taking event, with the verb *ne*^{44}.

(658) *sɯ*^{33} *le*^{21} *tɕy*^{35} *ni*^{44} *kua*^{35} *lu*^{21} *xɯ*^{31}, *ne*^{44} *xao*^{44} *vu*^{33}
hand CLF scoop enter pocket CLF in lift thing
'A hand reaches into a pocket and lifts out something'
Source: Put elicitation (73)

There is a strong correlation between taking and dynamic placement events. Both require the use of the *ka*^{44} construction. Additionally, both employ serial verb constructions that express the manner and path of the event.

One major difference in structure between a placement and taking event in Southern Bai is illustrated by the following examples. Example (659) from earlier is a typical taking event, 'taking the painting off the wall'. From this example it is evident that the Ground, or wall, is not expressed. As a result, there are no locatives. Additionally, the serial verb construction is

a three-way directional construction expressing manner, path, and deixis, whereas dynamic placement events typically only express manner and path.

(659) *ka*^{44} *xua*^{55} *tsou*^{35} *ne*^{44} *tʰɯ*^{55} *jɯ*^{35}
DISP painting CLF lift descend come
'(S/he) took down the painting'
Source: Put elicitation (77)

The inverse placement event involving the placement of the painting on the wall, distinctly expresses the location the painting is being placed. The serial verb construction in this utterance only expresses manner and path of the action.

(660) *ka*^{44} *xua*^{55} *tʰie*^{35} *tɕʰia*^{44} *ke*^{35} *ou*^{33} *le*^{21} *nɔ*^{44}
DISP painting CLF adhere be.at wall CLF on
'(S/he) placed the painting on the wall'
Source: Put elicitation (9)

In summary, Table 47 below presents an outline of the constructions found among depictions of motion events in Southern Bai.

Event type	**Construction**
Directional motion	(agent) + $V_{[MANNER]}$+ $V_{[PATH]}$+ $V_{[DEIXIS]}$
Dynamic placement	(agent) + ka^{44} + Figure + $V_{[MANNER]}$ + $V_{[PATH]}$ + Ground + LocPP
Stationary placement	FIG + $V_{[MANNER]}$ + $V_{[PATH]}$ + Ground + LocPP
Stationary spatial	Figure + *tsɯ*^{33} + Ground + LocPP; Ground + LocPP + *tsɯ*^{33} + Figure
Taking	(Ground) + $V_{[MANNER]}$ + $V_{[PATH]}$ + ($V_{[DEIXIS]}$) + Figure (Ground) + *ka*^{44} + Figure + $V_{[MANNER]}$ + $V_{[PATH]}$ + ($V_{[DEIXIS]}$)

Table 47 - Breakdown of event constructions

Following the description of the various constructions found among motion event depictions in Southern Bai, the next section will discuss where the language sits in the language typology of motion event depictions discussed earlier in the chapter. The argument to follow is that Southern Bai is to be considered as typically a Satellite-framed language.

10.3. Southern Bai as a Satellite language

As outlined in the introduction of this chapter, this section will address the question of where Southern Bai sits among the typology of motion event depictions. As based on the typologies developed by Talmy (1985, 2000, 2004) and Slobin (2004, 2006) and using the findings presented earlier in this chapter, the argument of this section is that Southern Bai is primarily a Satellite-framed language.

As mentioned earlier, Slobin (2004, 2006) states that languages that use serial verb constructions in their depictions of motion events should be considered Equipollently-framed as each component of the Manner/Path expression has equal value in the construction. However, the descriptions from this study suggest that Southern Bai should be assessed as a predominately Satellite-framed language as the components in serial verb constructions are not equal. On the other hand, evidence from Southern Bai also concurs with Slobin (2004) and Ji, Hendrick & Hickman (2011) that Talmy's typology should be viewed as a useful tool in the description of methods and preferences a language uses in depictions of motion event. Furthermore, languages should perhaps be described on their own merits rather than a typological generalisation that covers a language as a whole.

The first argument against Southern Bai being an Equipollently-framed language comes from the verb *ke*^{35}. While *ke*^{35} syntactically behaves as verb in depictions of motion events, there is no evidence outside of these constructions that *ke*^{35} can stand alone as a lexical verb. In serial verb constructions depicting placement, *ke*^{35} behaves as a link between the placement verb and the Ground, meaning FIG + place + 'be.at.' + Ground, as shown in the earlier example.

(661) *si*^{35} *tsʰue*$^{˗44}$ ***sɯ***$^{\mathbf{44}}$ ***ke***$^{\mathbf{35}}$ *tɕi*^{31} *pe*$^{˗21}$ *tɯ*^{21}
book CLF **put** **be.at** ground CLF
'The book was placed on the ground'
Source: Put elicitation (55)

However, *ke*^{35} cannot stand alone to indicate ‘be.at’ for which speakers consistently chose the existential *tsɯ*^{33}.

(662) *tseˇ*^{35} *tsɨ*^{44} *eˇ*^{33} *tsɯ*^{33} *kʰua*^{33} *tɯ*^{21}
table under EXIST dog CLF
‘There’s a dog under the table’
Source: Topological relations (28)

(663) *pʰi*^{42} *kuo*^{31} *teˇ*^{42} *tsɯ*^{35} *pa*^{21} *xɯ*^{31}
apple CLF EXIST bowl in
‘The apple is in the bowl’
Source: Topological relations (3)

Conversely, *ke*^{35} can be found in stationary constructions alongside *tsɯ*^{33}, as can be seen in the example below.

(664) *ka*^{44} *sɨ*^{35} *tsʰueˇ*^{44} *tsɯ*^{33} *ke*^{35} *tɕ*^{31} *peˇ*^{21} *nɔ*^{44}
DISP book CLF exist be.at ground on
‘The book is on the ground’
Source: NP & ‘ga’ elicitation (11)

With no evidence that it can stand alone as a verb, the function of *ke*^{35} therefore fails one of the fundamental criteria of Equipollently framed constructions— that all elements of the serial verb construction must be able act independently as fully lexical verbs.

Furthermore, while Southern Bai does employ serial verb constructions in the description of most motion events, the verbs within the construction do not hold equal status.

As mentioned previously in section 10.2.1, the verbs employed in slots V_2 and V_3 have specific functions being limited to expressing only direction and/or deixis. Furthermore, the further to the right a slot is, the choice of verbs available becomes more limited.

While the verbs occupying the V_2 and V_3 slot behave as verbs, they do not behave semantically in the same way as their fully lexicalised form, specifically expressing direction and deixis. Verbs in the V_3 slot can only express deixis.

Verbs in the V_2 and V_3 slots are not seen as the main verb. When questioned, speakers stated they do not see V_2 or V_3 as describing the action. These verbs do not have scope over the clause but do augment information presented in the main verb. It is only the Manner verb in slot V_1 that has scope over a clause.

Perhaps the strongest evidence of inequality between the verbs in each slot is that they are not interchangeable. Verbs in slots V_2 and V_3 cannot be swapped into another slot without being either grammatically incorrect or changing the meaning of the utterance altogether.

The examples below exhibit the set order of each syntactic slot. Variation is considered ungrammatical. Firstly, the correct order is Manner > Path> Deixis.

(665) *ke*^{35} *tɯ*^{21} *fv*^{35} *kuo*^{32} *jɯ*^{35} Manner – Path – Deixis
chicken CLF fly pass come
'The chicken flew over here'

The following variations are considered ungrammatical.

(666) * *ke*^{35} *tɯ*^{21} *fv*^{35} *jɯ*^{35} *kuo*^{32} * Manner + Deixis + Path

(667) * *ke*^{35} *tɯ*^{21} *jɯ*^{35} *fv*^{35} *kuo*^{32} * Deixis +Manner + Path

(668) * *ke*^{35} *tɯ*^{21} *kuo*^{32} *fv*^{35} *jɯ*^{35} * Path + Manner + Deixis

A word order within the serial verb construction that is not interchangeable suggests an inequality between the verbs in each syntactic slot.

While one of the syntactic slots may be omitted, the canonical order must be retained.

For example, the deixis slot, V_3, can be omitted with the sentence still being grammatically correct.

(669) *ke*^{35} *tɯ*^{21} *fv*^{35} *kuo*^{32} Manner + Path
chicken CLF fly pass
'The chicken flew past'

However, the order cannot be inverted.

(670) * *ke*^{35} *tu*^{21} *kuo*^{32} *fv*^{35} * Path + Manner
chicken CLF pass fly

A verb indicating deixis can appear directly after the Manner verb, but the order of the verbs cannot be inverted.

(671) *ke*^{35} *tu*^{21} *fv*^{35} *ju*^{35} Manner + Deixis
chicken CLF fly come
'The chicken flew over'

(672) * *ke*^{35} *tu*^{21} *ju*^{35} *fv*^{35} * Deixis + Manner
chicken CLF come fly

A directional verb may occupy the main verb slot, but another directional verb cannot follow. Note the shift in meaning in the following sentence. In example (673) the Manner of the action is not specified, only that the Figure passed by.

(673) *ke*^{35} *tu*^{21} *kuo*^{32} *ju*^{35} Path + Deixis
chicken CLF pass come
'The chicken passed by'

As the verbs used in the serial verb constructions provided in the examples above are not interchangeable without affecting the grammaticality of the utterance, it can be argued that they are not of equal status within the SVC.

As they are not of equal status, I therefore, agree with Vittrant (2015), Peyraube (2006), and Ji, Henricks, and Hickman (2011) that as with many Southeast Asian languages, Southern Bai cannot be classified as an Equipollently-framed language in regards to how it encodes motion events, rather it is predominately Satellite-framed. This is mainly because the verbs and coverbs within a directional or placement SVC are not of equal status. Indeed, as found in Peyraube (2006) the secondary verbs in serial verb constructions are adding directional complementation to the manner verb, having been grammaticalised from their fully lexicalised meaning. I also disagree with Slobin's (2006) assertion that the 'main' verb is not

clear. In such constructions, the main verb can be defined as the manner first due to it appearing first in the serial verb construction and the inability for its position in the SVC to be changed.

10.4. Summary

This chapter has described how motion and placement events are expressed in Southern Bai. The chapter began by introducing important concepts in the typological description of motion events beginning with Talmy's (2000, 2007) typology of Satellite vs verb-framed languages and key terminology commonly used in these descriptions, the Figure, Ground, Path, and Manner of the event.

This study has found that in depictions of motion events, speakers use a three-part serial verb construction to express the manner, path, and deictic information of the event. In expressing placement events, speakers use a two-part serial verb construction that expresses manner and path, followed by the Ground consisting of the location and a locative postposition that indicates the spatial relation of the figure to the ground.

Using the Talmy typology as a framework, this chapter has also demonstrated that Southern Bai is a Satellite-framed language in the expression of motion and placement events. While some have argued that the use of serial verb constructions constitutes an Equipollently-framed system, the verbs are unequal in their syntactic weight and cannot be freely moved. Therefore, I have argued that this inequality denotes that Southern Bai cannot be considered Equipollently-framed.

While I have argued that Southern Bai is a satellite-framed language, the language does contain two verbs, *tsɨ*^{42} 'pick up' and *tsou*^{44} 'put down' that exhibit qualities of being verb-framed, i.e., that the path information is encoded within the verb and they do not require directional coverb to express this information.

This is the last empirical chapter of this thesis. The following chapter will sum up the findings of the study and offer conclusions.

Chapter 11 - Conclusions

This thesis offers the first substantial investigation into the phonological, morphological, and grammatical systems of Southern Bai, the southern dialect of the Bai language. Prior to this study, much of the research on the Bai language has focused on the Central dialect, spoken in Jianchuan and the surrounding regions.

This conclusion will provide a summary of each chapter, an overview of the key findings, contributions, and limitations of this study. This chapter will end with a discussion on potential future directions for research on the language.

11.1. Chapter Summary

Chapter One provided an overview of the project beginning with some key terminology to be used. From there, there was an overview of the Bai people, a discussion of the status of the language within the community and a brief introduction to the language, including key features discussed in the literature. After introducing the language and its speakers, discussion progressed on to the current debates surrounding the genetic classification of Bai. From there, the chapter offered an overview of the aims and key questions of this study before providing an outline of each thesis chapter.

Chapter Two offered an overview of the existing linguistic research on the Bai language. This began by introducing some general works on the language, such as Xu and Zhao (1984), Li and Wang (1998), Wiersma (2007), and Wáng (2016) as well as an overview of some works on specific topolects, including the Heqing variety (J. Zhao, 2011) and Zhaozhuang Bai (Y. Zhao, 2012). Discussion then progressed on to works on more specific linguistic features found in Bai from works on Bai phonology, word classes, and various works on the Bai grammatical system. The chapter ended with an introduction and history of the Bai orthographic system, which was most recently revised in 1993.

Chapter Three provided an overview and justification of the methods employed during this study. This ranged from choice of field site, consultant recruitment, methods of data collection and language elicitation, choice of equipment, data analysis and data management.

Chapter Four was the first chapter to introduce and discuss empirical findings of the study, examining the phonological system of Southern Bai. This chapter presented evidence that Southern Bai contains 24 consonants produced over six areas of articulation (bilabial, labiodental, alveolar, alveolo-dental, palatal, and velar) with six manners of production (plosive, nasal, fricative, affricate, approximate, and lateral). The language also contains ten vowels with nine cardinal vowels, /i/, /y/, /e/, /e̽/, /ɨ/, /ɯ/, /u/, /ɔ/, and /a/ and a fricative vowel /ɣ/. Diphthongs are found beginning with /i/, /ɔ/, and /u/. The suprasegmental system of Southern Bai contains five modal contour tones with a three-way phonation contrast on mid-falling vowels of modal, breathy, and creak. The syllable in Southern Bai is comprised of compulsory vowel and a non-mandatory initial consonant. The syllabic vowel also functions as the syllabic rhyme, carrying the suprasegmental features of tone and phonation. This study found no final consonants in Southern Bai.

Chapter Five outlined the morphological and word formation systems found in Southern Bai. Discussion opened with an overview of the morphological system among Southern Bai personal pronouns that inflect for both plural and genitive case. Another potential form of inflection was found on the verb ‘to open’ to distinguish between static and dynamic actions. The next section discussed how classifiers may be derived from nouns either through meaning or by echoing one morpheme from a disyllabic noun. There were also some examples of how the meaning of words can be extended to create a word in another class. For example, the word for ‘cord; string’ has derived from the verb *sou*^{44} ‘to wind’.

While mostly an isolating language, Southern Bai does contain some affixation. This study found three functions for prefixes. The first uses *a*^{44} to express kinship and closeness. Ordinal numbers are formed by adding the prefix *te*^{31} to cardinal numbers. Finally, there are three prefixes which attach to nouns of time to express 'current', *ke*^{55}, 'before' *tɯ*^{21}, and 'after' *ɣɯ*^{33}, the final two being derived from 'head' and 'follow'. Suffixes were found to form disyllabic nouns, *tsɨ*^{44}, to express a side in locative expressions, *pɔ*^{21}, express biological sex among humans and animals, *pɔ*^{55} 'male' and *mɔ*^{33} 'female', and to express an unspecified number of humans, *xuo*^{33}.

Discussion then progressed on to the word formation systems found in Southern Bai, beginning with an overview of the compounding system. This study found that compounds are typically right-headed and follow the word order rule of [modifier] + [modified], except for compounds constructed from [noun] + [adjectival] and [verb] + [adjectival] elements which are left-headed. Most compounds are endocentric, forming hyponyms of the phrasal head. However, coordinative compounds are also common. Discussion on word derivation ended with the description of word families formed through alternations in either initial, rhyme or tone.

The next section discussed the functions of reduplication which include increasing the quality of an adjective and softening the illocutionary force of a verb. The chapter ended with a discussion of contractions between pronouns and their associated classifiers.

Chapter Six introduced the Southern Bai noun phrase. This began with an introduction to and classification of several key components to the noun phrase which include, nouns numerals, classifiers, pronouns, adjectival elements, locative postpositions, and conjunctions. Once these elements were introduced, four common noun phrase constructions were outlined.

These were the numeric modification of nouns, adjectival modification, genitive constructions, and pronominal modification.

Chapter Seven was a discussion on the Southern Bai verb phrase and some common predicate constructions. Like Chapter Six, this chapter began by introducing some key elements found among predicates in Southern Bai. This opened with the introduction of four categories of dynamic verbs: situations, events, processes, and actions. Other verb types in the form of directional coverbs and auxiliary verbs were then introduced before discussion moved on to declarative constructions in the form of Intransitive, Transitive, and Ditransitive constructions. From there, discussion progressed to constructions using the existential verb *tsɯ*^{33}, existential constructions, copula constructions, and possessive constructions. This was followed by an examination of the function and form of constructions using auxiliary verbs. An examination of the aspectual marking system in the language followed. This study found five aspectual marking systems expressed in Southern Bai, perfective, durative, progressive, inceptive, and experiential.

Following these discussions, two very important constructions in Southern Bai were presented, Serial Verb Constructions and those involving the disposal marker *ka*^{44}. Serial verb constructions are a major component in expressions of motion events in the language. Speakers express Manner, Path, and Deictic information of motion events via a structured pattern comprised of verbs and directional coverbs. This pattern is composed of $V_{1\ [MANNER]}$ + $V_{2\ [PATH]}$ and an optional $V_{3\ [DEIXIS]}$. The *ka*^{44} construction is used in events involving disposal or manipulation of an object. In such constructions, the P-argument of the sentence is fronted and proceeded with *ka*^{44}, which both marks the P-argument and emphasises movement or manipulation. Sentences where fronting of the P-argument has occurred but not marked with *ka*^{44} indicate stationary placement.

Chapter Eight discussed the form and function of different sentence types and other more complex constructions. This began with by describing the four ways in which speakers of Southern Bai perform negation through the use of four negators. These were, *piao*^{33} which negates nominal predicates, the negative existential *mu*^{33}, the general negator *puᵘ*^{31}, and the auxiliary negative *tuo*^{33}. Double negative constructions tend to use two negators *mu*^{33} 'not have' and *tuo*^{33} 'cannot' that appear after the main verb.

Progressing from declarative sentences discussed in the previous chapter, the next section covered how interrogative, imperative, and exclamative sentences are formed using pragmatic particles and negators.

This was followed by analysis of how speakers of Southern Bai use conjunctions to link clauses. This section examined coordination of clauses, temporal clauses, and causal clauses. Discussion then moved on to two types of subordinate clauses, conditional and relative clauses. Conditional clauses involve two clauses, an antecedent clause, which uses the conditional particle *ti*^{21} after the nominal head that establishes a condition to be met, and a consequent clause that expresses the outcome should those conditions be met. Relative clauses modify a head noun within a noun phrase using the nominaliser *nɔ*^{44}. The chapter concluded with an overview of the formation of comparative constructions.

Chapter Nine discussed grammatical relations in Southern Bai and began with a description on the syntactic forms of semantic roles in the language. After introducing these roles, the study provided evidence to argue that Southern Bai does not contain a grammatical Subject and should be considered a Topic prominent language due to the lack of any case marking or verbal inflection, word order variation in stationary placement events, an optional S-argument in intransitive sentences, and few restrictions on the semantic role that controls anaphor and comparatives.

The next point of discussion was the forms and functions of two grammatical particles, *nɔ*^{44} and *mɯ*^{55}. Like their counterparts in Central Bai, *no*^{33} and *ŋv*^{55}, these particles perform several functions ranging from locatives, genitive markers, nominalization, and attribution.

The section that followed introduced the conditions under which nominal anaphor may occur in Southern Bai. This was followed by an examination on how speakers perform referent tracking while the next section covered benefactive marking, which uses a semantically bleached form of the verb 'give', *kɯ*^{32} to mark the recipient of an action.

This was followed by an examination of grammatical relations in regard to verbal complements. These sections covered verbless constructions, transitivity, and double object constructions. This was followed by a discussion on the *pei*^{44} passive construction in Southern Bai.

The chapter ended with a description of how spatial relations are expressed in Southern Bai. These are formed using locative postpositions in conjunction with the existential construction to express the spatial relationship of one object to another.

Chapter Ten described how motion and placement events are expressed in Southern Bai. The data showed that speakers express path information in motion and placement events via a three-part serial verb construction. The first verb in the construction expresses the Manner in which the motion was conducted, e.g., *ke*^{21} 'climb', *fv*^{35} 'fly'. The second and (optional) third verbs express information on the path and deixis of the motion. Dynamic and stationary placement events differ in the use of the *ka*^{44} construction. Dynamic placement events employ the disposal marker *ka*^{44} to emphasise the manipulation of an object, which is omitted when expressing a stationary placement event. The data also showed the difference between placement and taking events. Taking events typically employ a three-way serial verb construction expressing Manner, Path, and Deixis and often do not express the location from

which the object was taken. Conversely, placement events require a location and typically employ a two-part serial verb construction expressing Manner and path.

That was the final chapter to introduce any empirical data found in the study. The following section will discuss limitations of the study.

11.2. Limitations

While the size, scope and findings of this project are significant, the study is not without its limitations.

The outbreak of what came to be known as COVID-19 in late-November 2019 unfortunately stifled a third planned Dali trip aimed to transcribe and translate any remaining recordings and consolidate the existing data. This shortcoming was able to be mostly overcome by using WeChat and a Bluetooth microphone/speaker to correct and transcribe previously recorded materials and ask further questions. As the requirement for high-fidelity recordings was deemed no longer necessary, this became an effective, although time consuming, work-around to be able to continue transcription and translation. This method presents possibilities for future language documentation projects in the post-COVID world. However, the effect on this study is not insignificant. Anecdotal evidence suggests that the final stages of fieldwork yield a high proportion of important data, mainly due to being more familiar with the language, the consultants, and the process of data collection. Therefore, a third in person trip may be expected to have yielded richer data.

Several elicitations did not always obtain the desired results. This was due to varying factors, from not following the directions of the stimulus entirely correctly or not implementing them correctly, lack of consistency from myself when presenting multiple stimulus materials, over-repetition, cognitive overload on both researcher and consultant/s, or errors in my

methodology. While not always obtaining the desired sentence structure or form, this did mean that the study was able to obtain a variety of different structures and expressions.

While this study has provided quite a substantial description of Southern Bai, time and space limitations have meant that this study was unable to present an overview as comprehensive as James Matisoff's 'The Grammar of Lahu', which took him over ten years to complete. The aim of this study was to provide a general overview of common features and functions that are found within the language and how speakers use their language day to day. However, this does form a foundational study of the language and allows for the possibility of more substantive research and description over time.

Unfortunately, several of the elicitation sessions remain untranscribed due to time limitations. This would have provided further in-depth, richer data to work with and analyse. While it would be preferred that these were available for this study, it does provide an opportunity for further investigation.

11.3. Key findings

This section will present the key findings of this thesis under three key themes. Firstly, how they coincide with existing research on Bai and the similarities the language displays with Modern Standard Mandarin (MSM). Then, how the language differs from MSM and other dialects of Bai. Finally, it will present the key contributions this thesis has made to typology and offer methodological implications for conducting similar research in the future when access to the field may be restricted due to the COVID-19 pandemic.

Many findings of this study coincide with existing research on the other dialects and topolects of the language. Southern Bai contains ten of the eleven word classes described by Xu and Zhao (1984) for the Central dialect. These are nouns, pronouns, numerals, classifiers, verbs, adjectives, adverbs, conjunctions, grammatical particles, and pragmatic particles. Rather than

prepositions, this study found postpositions, specifically locative postpositions used in expressions of spatial relations. In addition to these classes, Southern Bai contains adjectival verbs that are employed in the modification of nouns (see section 6.8.2). Adjectival verbs are also capable of behaving as a predicate head.

Southern Bai shares a similar phonetic system to that of Central Bai and both dialects are mostly isolating with a predominately mono-syllabic lexicology. While *mostly* isolating, both dialects contain a morphological inflection system on personal pronouns.

The canonical word order in Southern Bai for simple declarative sentences is (A)VP as described in the Central dialect as described by Xu and Zhao (1984) and Wáng (2001b, 2016). However, word order is variable in certain semantic and syntactic conditions, the most common being the *ka*^{44} construction which fronts the P-argument to emphasise a change in location and in benefactive constructions. Events of placement or taking are also flexible and both use two grammatical particles that function as genitive markers, locatives that express contact and general location, attributive marking, adverbialiser, indirect object marking, and verbal complementiser. Descriptions of placement events also exhibited a preference for object fronting.

As described in earlier research on Central Bai, the only part of a clause in Southern Bai that is necessary is the predicate. Southern Bai does contain verbless predicates, typically in the form of negated noun phrases. Verbless clauses can also be found in negated conditional clauses and in comparative clauses.

Similarities to Zhaozhuang Bai include the use of *a*^{44} prefixation and *tsɨ*^{31} suffixation on nouns. They also share gender modification after the head noun on animals and people, whereby adjectival modification typically occurs before the head noun. They also share the same personal pronoun system. Another common trait found was the contraction of deictic

and interrogative pronouns with their corresponding classifiers. It is likely that this phenomenon exhibits a potential path of grammaticalisation of pronominal compounds into monosyllabic lexemes.

Southern Bai also shares many similarities with Modern Standard Mandarin (MSM). Southern Bai shares a large lexicon and several parallel grammatical structures with MSM (see Chapter Two). Expressions that involve the manipulation or movement of an object require the *ka*^{44} construction. Such utterances may be agentless. The disposal marker *ka*^{44} is a grammatical particle that has been grammaticalised from the verb meaning 'to grasp'. The order of the construction is (agent) + *ka*^{44} + THEME + Verb + LOCATION + (LocPP). The *ka*^{44} construction is syntactically similar to the MSM *ba* 'disposal' construction which fronts a sentence's P-arguement in a translocational utterance. Like MSM, motion events are expressed in a set Verb + Satellite construction in order of Manner + [Path + Deixis]. Another similarity is the formation of ordinal numbers through a similar prefix on cardinal numbers. Another similarity is the passive construction formed using the passive marker *pei*^{44} 'by'. This passive marker shares a phonetic and syntactic similarity with MSM is also used to present an adverse situation to be avoided.

While there are considerable lexical and grammatical similarities with Chinese, there are still many features of Bai that distinguish the language. The phonation features of breathy and creaky voice found in Southern Bai also share more in common with Loloish languages than with Mandarin. The double negative construction [Agent] + [verb] + *mu*^{33} + *tuo*^{33} differs considerably from MSM which has a construction of [Agent] + bù + [Auxiliary verb] + bù + [verb].

Regarding its contribution to typology, this thesis argues for a weakening of the strong stance that previous research has taken regarding the grammaticality of nouns without classifiers.

Where previous research has declared that classifiers must be a part of the noun phrase, this study found classifier omission common among non-concrete and non-countable nouns. Furthermore, classifier omission from countable concrete nouns can be grammatical when referring to a generic class.

Southern Bai does not contain a grammatical Subject and should be considered a Topic prominent language, as argued in section 9.2. This is a view that is consistent with many of the descriptions of East and Southeast Asian languages.

There are several ways in which speakers form words. As found in studies of other varieties of the Bai language, compounds tend strongly to be right headed and follow the word order of [Modifier] + [Modified]. The exception to this being adjectival compounds formed from verbs which tend to be left headed. Left headedness is also found in expressions of spatial relations whereby the modifying element is a postposition appearing after the nominal head found in the following example.

(674) *tseˇ^{35} tsɿ^{44}* *tu^{21}* *nɔ^{44}*
table CLF on
'on the table'.

Word order among in the noun phrase was found to be consistent. A rule to describe the ordering of the noun phrase rule is:

NP → (Adj) N (PN) (Num) CLF.

Utterances that do not contain numeric modification are considered to be singular. Those without a classifier are interpreted as referring to a class of objects.

Southern Bai lacks a system of morphological tense, instead containing a rich system of aspect markers that are employed to indicate the state or level of completeness of the event.

Typical of languages of the region, the majority of aspect markers have been derived from verbs.

Referent tracking is most commonly performed by using the third person personal pronoun. The most important factor in this usage is that the pronoun refers to the most agentive-like referent in the previous part of the narrative. The disposal marker *ka*^{44} can also be combined with the temporal succession marker *xɯ*^{55} 'then' to link two clauses where the second clause involves the manipulation of an instrument by the agent of the first clause.

This is the first study to discuss the form and function of double negatives in any Bai dialect. Section 8.1.6 demonstrated that double negatives in Southern Bai are formed by placing *mɯ*^{33} + *tuo*^{33} after a verb. This function forms an emphatic affirmative and/or imperative statement.

This study has made a considerable and novel contribution to research on the expression of motion and placement events. This is the first study on the Bai language to contribute to this typological field. In expressing motion events, speakers employ a three-way directional serial verb construction whereby the verb in the first slot expresses information on the manner of the movement and the two following verb slots, occupied by directional coverbs, express the path and deixis of the movement. Taking events are expressed using a three-way serial verb construction depicting manner, path, and deixis. The Ground object in taking constructions is optional, but when included it is fronted.

The difference between stationary and dynamic placement events lay in the employment of *ka*^{44}. As a dynamic placement events emphasises the movement or manipulation of an object, it requires the disposal marker *ka*^{44}. While retaining the same word order, the nature of the stationary placement event does not require the disposal marker and it is therefore omitted. When describing spatial relations, word order can vary according to whether the speaker's focus is the Figure or Ground. This is achieved by fronting the object of focus.

Based on the constructions expressing motion events, this thesis argues that Southern Bai should be considered a predominately Satellite-framed language, as per Talmy's (2000, 2007) typology. The basis of this assessment was that path information in motion event constructions is expressed by directional coverbs within the second and third verb slots of a serial verb construction which are of unequal status.

The shared lexicon and grammatical structures with MSM, together with increased Sinification does support the claim that Bai could be a mixed language. However, it is beyond the scope of this study to speculate any further in regards to the genetic affiliation of the Bai language. While not one of the primary aims of this project, the data and descriptions provided in this study may offer some valuable insights to further contribute to this debate. With this in mind, this study maintains the status quo that Bai is a Tibeto-Burman language, with an increasing lexicon of Chinese loans.

The contributions of this study are not all theoretical. Due to the onset of COVID-19, transcriptions of the collected data had to pivot to online. As discussed in section 3.3.2, transcription and translation were performed by playing ELAN segments over a Bluetooth speaker to a consultant over WeChat, with the correspondence being played back over the speaker/microphone and being recorded on a separate digital recording device, a Zoom H4n. I believe the method employed in this stage of data collection has the potential for significant impact in fieldwork and linguistic data collection in the post-COVID world. As the technology is steadily increasing in quality, the use of Bluetooth speakers and social media to record elicitation sessions could become a useful elicitation technique for non-phonetic data, which requires recordings of higher fidelity.

11.4. Future Directions

There are several areas covered in this thesis that could benefit from a greater corpus. Primarily, the performance of negation would benefit in regarding the grammaticality of *piao*^{33} in difference positions (section 8.1.1) and the performance of *puɹ*^{31} infixation on disyllabic verbs (sections 5.3.3 & 8.1.2). A greater corpus would also help strengthen the argument against a grammatical Subject in the language.

As discussed in section 7.5.1 on intransitive predicates, intransitive verbs often received resultative aspectual marking to be considered complete. Whether intransitive verbs are considered grammatical without resultative aspectual marking is an area that would require further investigation. Meanwhile, this study found only five forms of aspectual marking. Based on existing research into other Bai topolects and related languages, it is highly likely that more exist.

This study found that while the locative postposition *xuɹ*^{31} was translated as 'in', it did not entail full containment, instead being employed with any Ground object from those having a lip, or slight submersion, all the way to full containment. The point at which Southern Bai speakers find the boundary between *xuɹ*^{31} 'in' and *nɔ*^{44} 'on' is an area that would make for interesting further investigation.

As described in section 6.4.2, speakers produced two variants of the deictic demonstrative pronouns, *nuɹ*^{31} */ tuɹ*^{31} 'proximal' and *na*^{55} */ puɹ*^{31} 'distal'. Where native speakers draw the line as to their preference, and whether there is a clear distinction between the two forms, for example if one form is 'further distal', is an area worth investigating in the future.

Among interrogative pronouns, *a*^{55} *na*^{55} was found to be the only one functioning with anaphor. Further investigation is warranted to identify whether the other interrogative pronouns can perform this function, as would be expected.

This study found the use of genitive pronoun forms with possessor marking in conditional constructions. The only explanation offered for this was that genitive forms should precede postpositions. However, an explanation as to why this occurs and whether it occurs in other constructions is yet to be fully explored.

As described in Duan (2002), this study found morphological inflection, in the form of tonal shift, to differentiate between agentive and stationary meanings on the verb ‘to open’. Whether this is a feature among other verbs is an opportunity for further exploration.

The word families discussed in Chapter Five demonstrated alternations in initial, rhyme, and tone employed to form new words. Further investigation into this system can potentially offer insight into the diachronic process of word formation in the language.

Section 5.1.2 described the possibility that tone alternation occurs to express differences in word class. Whether this was the result of a tone sandhi or a legitimate process in itself is an area that should be investigated further.

Data showed the conditional clause in Southern Bai exhibited considerable syntactic difference from that of MSM. However, speakers showed a preference for an order that resembled that of MSM and a conditional particle that seems to be a loan. This preference is an area worth following up on to investigate whether speakers are showing an increased tendency to use the MSM form and whether there is gradual Sinicisation of such syntactic forms.

Section 5.3.1 discussed time prefixes that have been derived from *tɯ*^{21} ‘head’ and *ɣɯ*^{33} ‘behind; follow’. This derivation offers interesting insights regarding how Southern Bai speakers may perceive the direction of time. Further investigation into depictions of time could provide interesting information into these perceptions as well as providing information into a psycholinguistic typology of time.

Finalising the transcription and translation of the recorded materials, particularly the diapix, would offer a greater depth to the data collected. This is a task that would greatly enhance the research already undertaken. Being a more naturalistic elicitation style, transcribing and translating these materials could prove very beneficial in further description and analysis of grammatical and pragmatic particles, and aspectual marking in the language.

A researcher at Dali University has also expressed interest in cooperating in a documentation project to record, translate, and transcribe into Mandarin the wealth of Bai folk stories. Unfortunately, most of these are only known by elderly speakers and are at risk of being lost if not documented.

Languages are complex and changing entities. Describing a language is potentially a never-ending task. This is merely the tip of the iceberg in the description of how Southern Bai speakers use their language and I, by no means, stake claim to this description being comprehensive. This study has potential to contribute to the growing typological knowledge that we, as humans, are developing regarding our greatest achievement, language.

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