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# Word-based morphology–syntax interdependencies: Thai passives[1]

LESLIE LEE

*National University of Singapore*

FARRELL ACKERMAN

*University of California, San Diego*

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In this article, we argue that insights concerning the word-based nature of morphology, especially the hypothesis that periphrastic expressions are cross-linguistically common exponents of lexical relations, permit a novel lexical constructional analysis of periphrastic predicates that preserves the restriction of morphosyntactic mapping operations, such as passive, to the lexicon. We do this in the context of the periphrastic Thai *thuuk* passive, justifying in detail the monoclausal status of the construction, its flat phrase structure, the semantics of affectedness associated with it, and its paradigmatic opposition with other passive constructions in the language. Building on the proposal of Bonami & Webelhuth (2013) and Bonami (2015) that a periphrase relies on a form of the main verb that selects collocationally for an auxiliary element, we develop an analysis of Thai periphrastic passives in which the surface syntax of these predicates is mediated by appropriate lexical representations. Crucially, the rearrangement of arguments in the passive is done lexically, via lexical rule, rather than in the syntax. The resulting analysis is consistent with the classical tradition of Word and Paradigm morphology, which posits periphrastic expression as one of several encoding strategies for the realization of morphosyntactic information within words.

KEYWORDS: lexicalism, morphology–syntax interface, periphrasis, Word and Paradigm, Thai

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## 1. INTRODUCTION

Cross-linguistic research reveals variability in the surface encoding of passive predicates.[2] Sometimes, the predicate is a synthetic word containing passive morphological marking and sometimes it is realized by independent elements that co-occur in the clause, e.g. a lexical verb appearing together with a particle or another verb. Thus, synthetic exponence, as in (1b), and multi-word, or periphrastic, exponence, as in (2b), can be equivalently characterized by the lexical schemata for mapping semantic roles to grammatical relations in (3).

(1) *Mansi* (Kálmán 1976: 58–59)

(a) totəsl$^{u}$m — ACTIVE – SYNTHETIC
bring.PAST.1SG
'I brought him.'

(b) totwes — PASSIVE – SYNTHETIC
bring.PASS.PAST.3SG
'He was brought.'

(2) *Thai* (Prasithrathsint 2006: 118)

(a) mɛɛ tii luuk — ACTIVE – SYNTHETIC
mother hit child
'Mother hit her child.'

(b) luuk thuuk (mɛɛ) tii — PASSIVE – PERIPHRASTIC
child THUUK mother hit
'The child was hit (by his/her mother).'

(3) (a) *Active lexical schema*

| V | <ACT | PAT> |
|---|---|---|
| | \| | \| |
| GR | SUBJ | OBJ |

(b) *Passive lexical schema*

| V | <ACT | PAT> |
|---|---|---|
| | \| | \| |
| GR | (OBL) | SUBJ |

In (3a), the active lexical schema associates its ACTor argument with a SUBJect grammatical relation (GR) and its PATient argument with an OBJect, while the same semantic arguments are re-aligned with grammatical relations in (3b): the ACT becomes an optional OBLique and the PAT is associated with the SUBJ. The lexical schema in (3a) can be used to account for (1a) and (2a), while (3b) accounts

[2] The theoretical importance of these different strategies of surface exponence is the basis for the proposals developed in Ackerman & Webelhuth (1998), referred to as REALIZATION-BASED LEXICALISM in Blevins (2001). We limit our discussion to passive constructions involving transitive active predicates, and leave aside those formed from intransitives as well as impersonals. For details on the differences between passives and impersonals, see Blevins (2003) and references therein.



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for (1b) and (2b).[3,4] The different surface encodings correspond to a uniformity in the passive alignments of semantic roles with grammatical relations: the subject of the passive predicate corresponds to the object of the active transitive variant.

While morphologists and lexicalist syntacticians[5] agree that a voice distinction such as passive is morphological, there is disagreement on whether passive should be treated as inflection or derivation. Most of the contemporary morphology literature assumes it to be inflectional (e.g. S. Anderson 1992; Börjars, Vincent & Chapman 1997; Sadler & Spencer 2001; Stump 2002, 2006; Hippisley 2007), with a few dissenting voices (Kiparsky 2005, Walther 2013); on the other hand, the syntactic lexicalist literature uniformly takes passive to be derivational, since Bresnan (1982a) and Pollard & Sag (1987). What is clear, however, is that in diverse lexicalist analyses, active and passive verbs need to have distinct lexical representations, given the valence-changing and grammatical relation reassigning properties of passive. In this paper, we adopt the working assumption that passive is derivational, although nothing in the analysis hinges crucially on this assumption.

The observation that passive represents a derivational relation between active and passive variants of a verb conforms to conventional assumptions within such lexicalist frameworks as Head-driven Phrase Structure Grammar (HPSG; Pollard & Sag 1994) and Lexical Functional Grammar (LFG; Bresnan 2001) concerning the postulation of a lexical rule that constrains the observed correspondences between these verbal variants: as a relation-changing and valence-affecting operation, it falls within what Ackerman, Stump & Webelhuth (2011: 326) refer to as the PRINCIPLE OF LEXICAL MODIFICATION:

> The lexical properties (meaning, argument structure, grammatical function inventories, and case government patterns) associated with a lexeme are fully determined by lexical stipulation together with rules of lexeme derivation and cannot be altered by items of the syntactic context in which a realization of that lexeme appears.

The idea informing this principle corresponds in some fashion to Kaplan & Bresnan's (1982: 32) hypothesis of DIRECT SYNTACTIC ENCODING, which states that syntactic operations may not alter the subcategorization requirements of

[3] Prasithrathsint's original gloss for *tii* is 'beat'. However, as we shall see from other examples later, it has also been glossed as 'hit'. We assume that both are appropriate and use 'hit' throughout, primarily for consistency, but also to highlight that passive verbs need not be morphologically marked cross-linguistically.

[4] There are many different conventions for representing the semantic roles of arguments. For our purposes, it is sufficient to employ the general labels ACT and PAT to refer to the roles standardly assumed with transitive verbs. For a detailed discussion of mapping theories, see Levin & Rappaport Hovav (2005), and for a view of mapping compatible with the present construction-theoretic approach, see Primus (1999), Ackerman & Moore (2001) and Beavers (2006).

[5] Or at least some – see following text for discussion.



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a predicate, and is an assumption that is challenged in treatments of multiword complex predicates in which various properties of predicates are effected as they combine in the syntax (e.g. Abeillé, Godard & Sag 1998 and Kathol 1994 within HPSG and Alsina 1996 and Butt 1995 within LFG). On these latter views, the realignment of grammatical relations with semantic roles in periphrastic expressions of passive can be specified as the pieces of the relevant predicate combine in syntactic structure. Crucially, there is no single lexical representation associated with a synthetic wordform in which all of the information associated with the passive alignment is specified prior to its placement in the syntax: in this respect, the lexical specification of information differs between synthetic and periphrastic expressions on these accounts.

The recognition that different types of surface encodings, e.g. synthetic vs. periphrastic, can correlate with uniform grammatical effects was observed to raise an analytic paradox for these frameworks in Nash (1982): the hypothesis that lexical operations are restricted to a morphology consisting solely of synthetic words is challenged by multiword predicates, if these are interpreted as morphological. This type of phenomenon raises two analytic options for its resolution:

A. Permit the possibility of morphological periphrasis, and if evidence suggests a distinction between these and purely syntactic constructions, develop a morphological (or morphosyntactic) analysis for it.
B. Exclude the possibility of morphological periphrasis *a priori* and develop a syntactic analysis whenever multiword expressions are encountered.

The selection of either option requires appealing to criteria that are independent of synthetic or periphrastic expression itself, since it is precisely the status of such surface encodings that needs to be established.[6] As pointed out earlier, researchers within lexicalist frameworks have developed variants of option B, with the consequence that both morphology and certain areas of syntax can alter the properties originally hypothesized to be restricted to the lexicon.[7] It is assumed that synthetic expressions are the sole objects of morphology: morphology is the study of words and words are hypothesized to occur only as synthetic expressions.

[6] Bonami & Samvelian (2015) represents an exemplary exploration of how to examine these issues within the domain of Persian complex predicates.

[7] This option is recently elaborated in Müller & Wechsler (2014), which does not explore the consequences of adopting option A for lexically-oriented theories.



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From the perspective of morphology, such proposals adopt what Ackerman et al. (2011: 330) refer to as the SYNTHETIC REALIZATION PRINCIPLE:

> Where lexeme L belongs to category X and $\sigma$ is a set of morphosyntactic properties associated with L, the realization w of the pairing $\langle$L, $\sigma\rangle$ is synthetic and w may be inserted as the head of XP.

As argued in Ackerman et al. (2011), the alternative adoption of option A permits the preservation of LEXICAL MODIFICATION and is consistent with the classical tradition of Word and Paradigm morphology (Robins 1959; Matthews 1970, 1991; Jackendoff 1975; Bochner 1993; Blevins 2015), which posits periphrastic expression as one of several cross-linguistic encoding strategies for the realization of morphosyntactic information within words. Ackerman et al. (2011: 331) refer to this as the PERIPHRASTIC REALIZATION PRINCIPLE:

> Where lexeme L belongs to category X, $\sigma$ is a set of morphosyntactic properties associated with L, and the realization w1 w2 of the pairing $\langle$L, $\sigma\rangle$ is periphrastic, w1 and w2 may be inserted as the heads of the respective phrases XP and YP. Language-specific stipulations may require XP and YP to form a nested constituent [$_{\text{XP}}$ X YP] or may allow them to be independent and discontinuous from one another.

If periphrasis can be the realization of morphosyntactic properties[8] and performs the same task that is usually performed by synthetic morphology, as presented above, then there is a theoretical challenge concerning the morphology–syntax interface: What are the principles that constrain both synthetic and periphrastic expressions in their surface syntactic encodings?

In this article, we argue that insights concerning the word-based nature of morphology, especially the hypothesis that periphrastic expressions are cross-linguistically common exponents of lexical relations, permit a novel lexical constructional analysis of passives that departs from the analyses circumscribed within option B. In particular, we develop an analysis of Thai periphrastic passives in which the surface syntax of these predicates is mediated by appropriate lexical representations:[9] this preserves the restriction of morphosyntactic and morphosemantic mapping operations to the lexicon, where the former are responsible for alternations in semantic role to grammatical encodings without semantic alteration, while the latter apply when related lexemes display differences in meaning.

[8] The status of some periphrastic expressions as morphological was a basic assumption among classical grammarians and has recently generated increased attention as evident from numerous articles and books devoted to this phenomenon as well as the formulation of several alternatives concerning the morphology–syntax interface in theories which countenance multiword morphological entities (Haspelmath 2000, Booij 2005, Chumakina & Corbett 2013, Popova & Spencer 2013, *inter alia*). This article is, thus, a contribution to this growing trend.

[9] In doing so, we are challenging the presupposition that 'analytic' languages do not have morphology because they do not resemble European or other languages with synthetic marking.



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Crucially, these lexical representations participate in morphological relations that yield a periphrastic surface expression.[10] This maintains the basic word-based morphological assumption that periphrasis is a legitimate and expected form of expression for a lexical representation: given language-specific conditions, any lexeme can be expressed by either synthetic or periphrastic exponence. We focus here on the simplifying consequences of adopting these assumptions within lexicalist and construction-theoretic frameworks (specifically HPSG and Sign-Based Construction Grammar (SBCG; Sag 2012)) and leave it to advocates of other formal approaches to identify the effects of making analogous assumptions within their respective frameworks.

Most of the arguments for the morphological status of periphrastic structures in renascent word-based models derive from the examination of languages with indisputable (complex) morphology. Results from these languages concerning the need to recognize the morphological status of periphrasis and to develop the appropriate theoretical constructs raises the surprising possibility that periphrastic morphology may be found in analytic languages, such as Thai, which are generally assumed to possess no morphology. The analytic and theoretical problem that arises in this domain is that two basic intuitions come into conflict when we think about periphrasis, as noted by Bonami & Samvelian (2015): the intuition that morphology is the component of grammar responsible for expressing lexical relatedness and the realization of lexemes, and the intuition that morphology deals with words defined as syntactic atoms. To avoid introducing confusion, we adopt the terminological distinction proposed by Bonami & Samvelian (2015: 330):[11]

> We define INFLECTION as the component of grammar responsible for the realization of lexemes in context. That realization may use morphological means and take the form of a word (we call this SYNTHETIC INFLECTION), or it may use a combination of morphological and syntactic means and take the form of a combination of multiple words; we call this PERIPHRASTIC INFLECTION, and we call the combination of words a PERIPHRASE. Note that under this definition, the term 'inflectional morphology' is not synonymous with 'inflection', but rather denotes the use of morphology for the expression of inflection.

On this definition, periphrasis performs the same task that is usually performed by synthetic morphology (expression of grammatical content in the case of inflection; expression of lexical relatedness in the case of derivation), but through means that rely partly on syntax (although, cross-linguistically and specifically in Thai,

[10] As reviewer D points out, while it may be disputed whether a periphrastic analysis is unavoidable, this article shows that it is certainly viable and hence makes an original contribution to an existing research tradition.

[11] We thank reviewer D for this suggestion.



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it is something demonstrably different than ordinary syntax), rather than via morphological marking alone.[12]

In Section 2, we present the essential features of the so-called '*thuuk* construction' in Thai. We argue that it is a monoclausal construction with flat surface constituency. In Section 3, we introduce the analytic assumptions that we will adopt: these are based on independently motivated assumptions for periphrastic tense-aspect-mood (TAM) constructions developed in Bonami & Webelhuth (2013) and Bonami (2015). In Section 4, we demonstrate how the evidence adduced for the passive status of the *thuuk* construction and its phrase structure constituency are straightforwardly handled in this new approach to treating the morphology–syntax interface. We also demonstrate how a construction-theoretic approach provides a representational means of relating three independent passive constructions in Thai. In Section 5, we summarize our results.

## 2. *THUUK* + VERB = PASSIVE?

Thai has a transitive lexical verb *thuuk*,[13] as illustrated in (4) (example from Prasithrathsint 2006: 122):

(4) khaw thuuk yaaphit
3 be.affected.by poison
'S/he was affected by poison.' = 'S/he was poisoned.'

Informally, we can define the argument structure of the verb *thuuk* in (4) as follows: it is a transitive predicate that selects for PAT and SOURCE arguments, which are realized as the subject and object respectively.

The verb *thuuk* also occurs in constructions containing other verbs, as exemplified in (5b) and (6b):

(5) (a) phɔɔ tii dɛɛŋ
father hit Dang
'Father hit Dang.'

(b) dɛɛŋ thuuk (phɔɔ) tii
Dang THUUK father hit
'Dang was hit (by father).'

(6) (a) phɔɔ pɛɛt cotmaay khɔɔŋ dɛɛŋ
father open letter GEN Dang
'Father opened Dang's letter.'

(b) dɛɛŋ$_i$ thuuk (phɔɔ) pɛɛt cotmaay (khɔɔŋ khaw$_i$)
Dang THUUK father open letter GEN 3
'Dang was affected by (father) opening (her) letter.'

[12] On this view, lexical rules take place in the morphological component of grammar but need not result in morphological marking.

[13] The verb *thuuk* is polysemous. Its other senses include 'touch', 'cheap', and 'correct'.



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Sudmuk (2003) proposes an LFG analysis of these constructions in which both (5b) and (6b) are instantiations of a single *thuuk* construction: by hypothesis, there is a single biclausal construction that involves an anaphoric relation between the subject of the main clause and a covert element in a dependent clause located (in principle) an unbounded distance away. On her analysis, the *thuuk* in the single *thuuk* construction is a lexical verb that means 'suffer' and subcategorizes for a sentential complement (SCOMP). In addition, there is a condition that the SUBJ of *thuuk* be identified with the TOPic of the SCOMP, which in turn is co-indexed with an (potentially deeply) embedded SUBJ or OBJ. All of these properties are specified in the lexical representation for *thuuk* in (7) (adapted from Sudmuk 2003: 420):

(7) *thuuk*: (↑ PRED) = 'suffer ⟨(↑ SUBJ), (↑ SCOMP)⟩'
(↑ SUBJ) = (↑ SCOMP TOP)
(↑SCOMP TOP) = (↑ SCOMP* SUBJ|OBJ)

The conventions associated with such a lexical representation for *thuuk* ensure that its matrix SUBJ is identified with the SCOMP's TOP, as indicated in the second line, while also restricting this TOP to being identified with either the SUBJ or OBJ of an embedded clause, as indicated in the third line. On Sudmuk's analysis, the *thuuk* construction involves the grammatical processes of functional control and topicalization. Figure 1 shows LFG's Functional-structure representation for the sentence in (8) (example and F-structure adapted from Sudmuk 2003: 421).

(8) dɛɛŋ thuuk mɛɛ tii
Dang THUUK mother hit
'Dang$_i$ suffered (from the experience that) mother hit (her$_i$).'

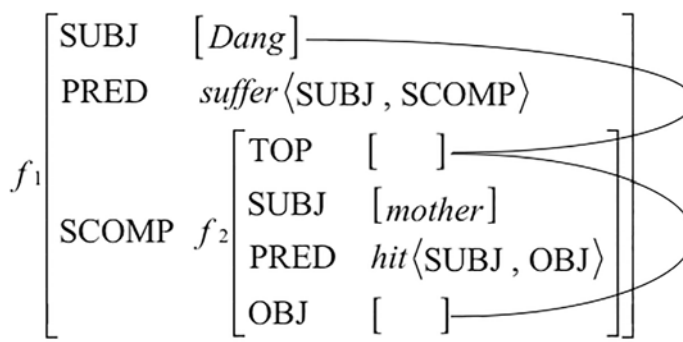



*Figure 1*
Sudmuk's proposed F-structure for (8).

As indicated in this F-structure, the matrix clause is headed by *thuuk* and its SUBJ is anaphorically identified with both the TOP and the OBJ of the embedded clause:



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this renders the meaning as 'Dang$_i$ suffered (from the experience that) mother hit (her$_i$)'. This is an active sentence in which the relevant lexical representation for *thuuk* is necessarily associated with the anaphoric possibilities typified in (7). Since Sudmuk's proposal specifies a biclausal structure for this variant of the *thuuk* predicate, it (i) entails the attendant anaphoric relations, and (ii) predicts the absence of monoclausal behaviors from this construction. In contrast, an alternative analysis of *thuuk* as a simple Thai reflex of ordinary passive predicates would be consistent with monoclausal properties and would not necessarily entail positing anaphoric relations associated with its lexical representation for this use.

In fact, Lee (2006) argues that while (5b) and (6b) are surface similar, they are actually instances of two different constructions: on this hypothesis, Sudmuk's proposal conflates these distinct constructions into a single *thuuk* construction. Lee argues that (5b) is a single clause that should be treated as the passive counterpart of (5a), while (6b) is a biclausal construction in which *thuuk* is a matrix verb that takes an SCOMP and the matrix SUBJ is a possessor 'raised' from the lower clause. As mentioned previously, the analysis of sentences typified by (5b) as passive raises an analytic paradox: on the one hand, the passive interpretation is signaled by the presence of *thuuk*, which is categorically separate from the verb; on the other hand, passives, in HPSG and LFG, are a valence-changing operation, and hence, lexical, in accordance with the PRINCIPLE OF LEXICAL MODIFICATION and the hypothesis of DIRECT SYNTACTIC ENCODING. The challenge for standard lexicalist approaches can be stated cogently: How can the lexicality of the passive be maintained if its expression is periphrastic rather than synthetic?[14]

In order to address this larger theoretical question, we first demonstrate that one variant of the *thuuk* construction is indeed a passive. We show, using evidence from reflexive binding and disjoint reference, that sentences such as (5b) and (8) above have the properties of a monoclausal passive construction: these are constructions whose PAT argument is the only subject in the construction. A straightforward application of the PRINCIPLE OF LEXICAL MODIFICATION and DIRECT SYNTACTIC ENCODING entails that the passive predicate is a lexical item, and since it is the obligatory co-occurrence of *thuuk* and the verb that signals the passive,[15] the passive predicate represents an instance of periphrasis with discontinuous syntactic exponence. Following the demonstration of monoclausality, we provide empirical evidence for the constituency of the passive *thuuk* construction in order to identify the specific syntactic realization of this discontinuous multiword expression.

[14] One way to retain a lexicalist analysis is to specify two variants of a synthetic verb, one as active and the other as passive, and to stipulate that the passive variant occurs in a syntactic complementation relation with the passive auxiliary (see Müller & Wechsler 2014 for a proposal in this spirit).

[15] The claim that *thuuk* is part of a periphrastic passive has analogues in other languages, as discussed in Ackerman & Webelhuth (1998), among others.



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### 2.1 *Evidence for the monoclausality of the passive* thuuk *construction*

On conventional cross-theoretical assumptions, the object of an active transitive clause is realized as the subject of the passive variant. Within HPSG, this is analyzed in terms of a rearrangement of arguments within ARG-ST, an ordered list specifying the arguments selected by the verb: the PAT, associated with the second member on the ARG-ST of the active verb, is associated with the first member on the ARG-ST (loosely speaking, the subject) in the passive variant (e.g. Pollard & Sag 1987, Kathol 1994, Koenig 1999, Davis & Koenig 2000, Abeillé & Godard 2002, Müller 2002, *inter alia*). With respect to (5b), these alignments between semantic roles and syntactic arguments could arise in two distinct ways, as schematized in Figures 2 and 3.

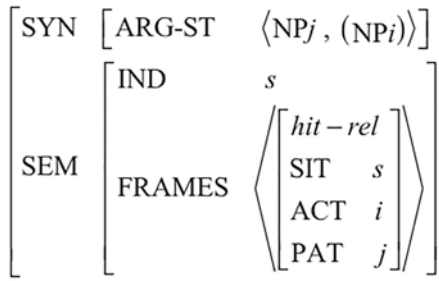



*Figure 2*
Monoclausal passive analysis of (5b).

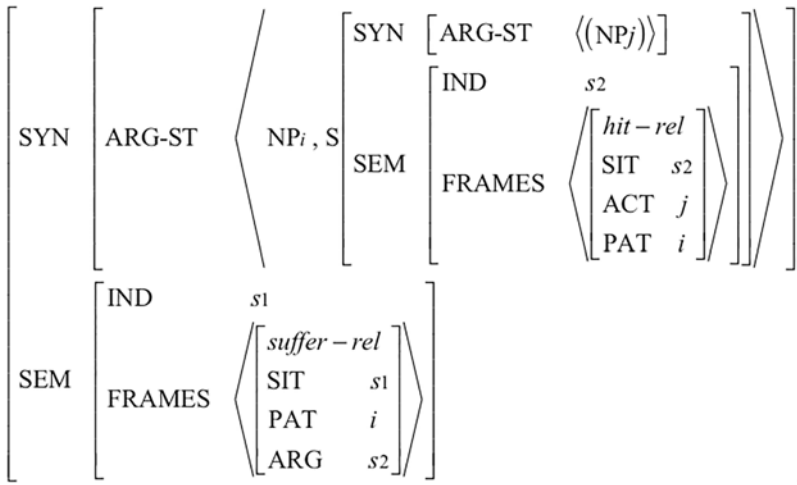



*Figure 3*
Biclausal complementation analysis of (5b).



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On a passive analysis, the PAT *dɛɛŋ*, which corresponds to the second argument of the active verb, is the first argument of the passive verb ($NP_j$ in Figure 2), while *phɔɔ* 'father' represents the ACT as an optional second argument ($NP_i$). The construction is monoclausal with both *dɛɛŋ* and *phɔɔ* being co-arguments in the ARG-ST list of the passive predicate. On Sudmuk's analysis, the structure of (5b) is quite different: it is an active construction in which the matrix verb *thuuk* 'suffer' selects for two arguments, the first of which corresponds to the PAT *dɛɛŋ* ($NP_i$ in Figure 3), while *phɔɔ* is an optionally appearing argument ($NP_j$) of the complement clause headed by *tii* 'hit'. The complement clause also contains a covert PAT co-indexed with the first argument of the matrix verb.

Since both of these proposals account for several evident properties of this construction concerning semantic roles and syntactic arguments, it is crucial to identify behavioral properties that distinguish these alternatives. The most obvious point of difference concerns any syntactic behaviors relating to the mono- vs. biclausal status assumed by each proposal. In particular, while the passive analysis assumes that there is a single subject in (5b), Sudmuk must assume that there are two distinct subjects: *dɛɛŋ* is the subject of the matrix clause and *phɔɔ* is the subject of the complement clause. If there is more than one subject, then the construction contains a complex clause and cannot be a passive. The basic competition between these analyses can then be stated in terms of the status of the post-*thuuk* constituent: on the passive analysis, it is an optional oblique argument, while on Sudmuk's analysis, it is a subject. Accordingly, we will test the status of the post-*thuuk* NP by appealing to two diagnostics for subjecthood in Thai: reflexive binding and disjoint reference. Both of these phenomena are diagnostic of the mono- vs. biclausality of the domains in which they operate.

### 2.1.1 *Reflexive binding*

Hoonchamlong (1991) observes that the reflexive *tuaʔeeŋ* must be bound by a subject, and is thus a subject-oriented anaphor (examples from Hoonchamlong 1991: 55):

(9) (a) $nit_i$ kliat tuaʔeeŋ$_i$
Nit hate REFL
'Nit hates self.'

(b) $nɔy_i$ khuy kap $nit_j$ rɨaŋ tuaʔeeŋ$_{i/*j}$
Noi chat with Nit about REFL
'Noi talked to Nit about self (Noi/*Nit).'

The reflexive *tuaʔeeŋ* can also occur as the subject of an embedded clause, in which case, its antecedent is located in the higher clause. The subject-orientation property is retained, as shown in (10) (examples from Hoonchamlong 1991: 56):



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(10) (a) nɔy$_i$ khit waa [tuaʔeeŋ$_i$ may naaca plian ŋaan ləəy]
Noi think COMP REFL NEG should change job at.all
'Noi thinks that self (Noi) shouldn't have changed jobs at all.'

(b) nɔy$_i$ bɔɔk nit$_j$ waa [tuaʔeeŋ$_{i/*j}$ may naaca plian ŋaan ləəy]
Noi say Nit COMP REFL NEG should change job at.all
'Noi told Nit that self (Noi/*Nit) shouldn't have changed jobs at all.'

When preceded by more than one subject, the antecedent can only be the closest subject. This is true whether *tuaʔeeŋ* occurs as non-subject, as in (11a), or subject, as in (11b) (examples from Hoonchamlong 1991: 57–58):

(11) (a) nɔy$_i$ bɔɔk waa [nit$_j$ chɨa tuaʔeeŋ$_{j/*i}$ maak kwaa khray]
Noi say COMP Nit believe REFL more than someone
'Noi said that Nit believes self (Nit/*Noi) more than anyone else.'

(b) nɔy$_i$ plɛɛkcay thii [nit$_j$ khit waa [tuaʔeeŋ$_{j/*i}$ may naaca plian ŋaan]]
Noi surprise COMP Nit think COMP REFL NEG should change job
'Noi is surprised that Nit thinks that self (Nit/*Noi) should not have changed jobs.'

Within HPSG, *tuaʔeeŋ* can be construed as an A-SUBJECT-ORIENTED ANAPHOR that must be bound by the closest A-SUBJECT, where an A-SUBJECT is an entity that is first on some ARG-ST list (Manning & Sag 1999). When *tuaʔeeŋ* occurs as a subject (i.e. it is the first member on its ARG-ST list), it takes as its antecedent the A-SUBJECT of the immediately higher clause: when *tuaʔeeŋ* is not a subject (i.e. it is not the first member on its ARG-ST list), its interpretation is clause-bounded and it can only take as its antecedent the A-SUBJECT of its minimal clause (i.e. the first member on its ARG-ST list).

Given the binding conditions for the reflexive *tuaʔeeŋ*, it can serve as a useful diagnostic for the status of the post-*thuuk* NP in the *thuuk* construction: if this NP can bind a reflexive that follows, then it must be a subject; if only the pre-*thuuk* NP is capable of being the antecedent of a reflexive that follows the post-*thuuk* NP, then the pre-*thuuk* NP must be the closest subject, which entails that the post-*thuuk* NP cannot be a subject. Consider (12):

(12) (a) nit$_i$ phuutwaanlɔɔm nɔy$_j$ waa [tuaʔeeŋ$_{i/*j}$ naakliat]
Nit convince Noi COMP REFL ugly
'Nit convinced Noi that self (Nit/*Noi) is ugly.'

(b) nɔy$_i$ thuuk nit$_j$ phuutwaanlɔɔm waa [tuaʔeeŋ$_{i/*j}$ naakliat]
Noi THUUK Nit convince COMP REFL ugly
'Noi was convinced by Nit that self (Noi/*Nit) is ugly.'

In (12a), we have a biclausal active sentence in which the embedded reflexive in subject position takes the matrix subject as its antecedent. In the *thuuk*



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construction in (12b), the reflexive also takes the pre-*thuuk* NP as its antecedent, suggesting that this NP is the closest subject preceding it: given its inability to serve as a potential binder, the post-*thuuk* NP, in contrast, is not construable as a subject. Therefore, Sudmuk's treatment of the post-*thuuk* NP as a subject in sentences such as (12b) seems unsupportable. The binding effects are only consistent with a monoclausal interpretation, and hence, provide evidence consistent with the hypothesis that *thuuk* is part of a passive predicate construction in this use.[16]

### 2.1.2 *Disjoint reference*

In Thai, a pronoun cannot take a co-argument NP within the same minimal clause as its antecedent (examples (13a–b) from Hoonchamlong 1991: 33):

(13) (a) $\text{nit}_i$ chɔɔp $\text{khaw}_{j/*i}$
Nit like 3
'Nit likes him/her (*Nit).'

(b) $\text{nɔy}_i$ bɔɔk waa [$\text{nit}_j$ chɔɔp $\text{khaw}_{i/k/*j}$]
Noi say COMP Nit like 3
'Noi said that Nit likes him/her (*Nit).'

(c) $\text{nɔy}_i$ plɛɛkcay thii [$\text{nit}_j$ khit waa [$\text{khaw}_{i/j/k}$ may naaca
Noi surprise COMP Nit think COMP 3 NEG should
plian ŋaan]]
change job
'Noi is surprised that Nit thinks that s/he (Noi/Nit/someone else) should not have changed jobs.'

When a pronoun occurs as an object, it cannot take the subject of its clause as its antecedent, as shown in (13a). When the pronoun occurs as an object of an embedded transitive clause, as in (13b), the only NP that cannot serve as its antecedent is the subject of its minimal clause. (13c) shows that arguments of the higher clause can serve as the antecedents of the pronoun even when the pronoun occurs as the subject of the lower clause. Therefore, there is a negative constraint on pronominal binding: an argument pronoun cannot take a clause-mate (i.e. an argument on the same ARG-ST list as itself) as its antecedent.

Given the clause-mate condition on pronominal binding, we can test whether the *thuuk* construction is mono- or biclausal by inserting a pronoun into the post-*thuuk* NP position. If this pronoun (assuming that it is an argument of the predicate) can take the pre-*thuuk* NP as its antecedent, then the construction must

[16] As pointed out by reviewer D, (12b) also precludes the possibility of an analysis such as that presented in Kathol (1994) for German and Bonami & Samvelian (2015) for Persian, where the main verb has the ARG-ST associated with the active verb and the auxiliary rearranges the arguments: on such an analysis, *nit* would be the closest A-SUBJECT and should therefore serve as the antecedent for the reflexive, which is not the case.



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be biclausal; if the pronoun cannot take the pre-*thuuk* NP as its antecedent, then we have evidence for monoclausality. (14) shows that the latter is indeed the case.

(14) dɛɛŋ$_{i}$ thuuk khaw$_{j/*i}$ tii
Dang THUUK 3 hit
'Dang was hit by him/her (*Dang).'

The pronoun in (14) cannot take the pre-*thuuk* NP as its antecedent, suggesting that the two NPs are clause-mates. Therefore, evidence from disjoint reference supports the monoclausal analysis of this variant of the *thuuk* construction, and contrary to Sudmuk's analysis, the post-*thuuk* NP is such sentences is not the subject of an embedded clause.

One might wonder if the binding facts in (14) could instead be attributed to a paradigmatic contrast between reflexives and pronouns when they occur as the subject of an embedded clause. On this hypothesis, the pronoun in (14) is the subject of an embedded clause, and it cannot take the pre-*thuuk* NP as its antecedent because the intended meaning can be expressed with a reflexive in the same position, as in (15):

(15) dɛɛŋ$_{i}$ thuuk tuaʔeeŋ$_{i}$ tii
Dang THUUK REFL hit
'Dang was hit by self (Dang).'

However, note the minimal pair formed by (12b) and (13c), which respectively involve a reflexive and a pronoun occurring as an embedded subject. The fact that both the reflexive in (12b) and the pronoun in (13c) can be bound by the immediately preceding subject shows that the hypothesized paradigmatic contrast does not exist.

Sudmuk presents the example in (16), which seems to contradict our claim that the passive *thuuk* construction is monoclausal (example from Sudmuk 2003: 409):

(16) dɛɛŋ$_{i}$ thuuk mɛɛ tii khaw$_{i}$/dɛɛŋ$_{i}$
Dang THUUK mother hit 3/Dang
'Dang suffered (from the experience that) mother hit her (Dang)'

Sudmuk argues that since the pronoun in (16) can take the pre-*thuuk* NP as its antecedent, the two NPs cannot be clause-mates and thus, (16) supports the biclausal analysis of the variant of the *thuuk* construction that we argue to be a passive. However, all the speakers we consulted[17] categorically rejected the sentence in (16). We hypothesize that for speakers who may allow such sentences, the final NP does not have an argument status, but is instead an adjunct serving an emphatic/resumptive purpose. This would be consistent with Sudmuk's reference to the pronoun in (16) as a 'resumptive pronoun' (Sudmuk 2003: 409).

[17] We consulted nine self-identified native speakers of Bangkok Thai, one of whom was a trained linguist.



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With the exception of the sentence in (16), Sudmuk does not provide evidence for the biclausal nature of the *thuuk* construction. She shows that the post-*thuuk* NP cannot be an object, because unlike objects, it cannot undergo complex NP shift (Sudmuk 2003: 412–413). She suggests that it is instead a subject, because this NP can occur with a relative complement, as shown in (17) (example from Sudmuk 2003: 413):

(17) dɛɛŋ thuuk [mɛɛ thii khɔɔ khaw maa liaŋ] tii
Dang THUUK mother REL ask 3 come raise hit
'Dang suffered (from the experience that) the mother who adopted her hit (her).'

This claim, however, does not address the possibility that the relativized NP is an oblique argument. In fact, there is no *a priori* reason to believe that only subjects in Thai take relative complements, and as we show in (18d) below, there is empirical warrant to suggest that oblique arguments can, indeed, do so.

In summary, since evidence from reflexive binding and disjoint reference converge on the same conclusion, we conclude that there is empirical motivation to consider the hypothesis that the passive *thuuk* construction represents a simple clause. Moreover, given that in all the examples of the passive *thuuk* construction that we have seen, the ACT is omissible but optionally expressible, while the PAT is realized as subject, we have reason to extrapolate that the passive *thuuk* construction exemplifies the cross-linguistic passive type where ACTs are oblique arguments (or adjuncts). This, too, is consistent with the evidence that the post-*thuuk* argument is not a subject.

## 2.2 *Family of passives*

Further evidence that the *thuuk* construction should be treated as a passive can be found in the paradigmatic contrast it exhibits with another passive construction in the language. In this connection, it has traditionally been noted that the passive *thuuk* construction is associated with adversity (Prasithrathsint 2006: 123):

> It is used only with verbs that have unfavorable meanings. A sentence that contains this type of *thùuk* normally has an animate subject, which is unfavorably affected by the action represented by the verb that follows *thùuk*. This limitation has caused the construction to be marginal and results in its being labeled 'the so-called passive' in Thai.

In this regard, the *thuuk* passive recalls the semantic effects of the indirect passive in Japanese, which also carries negative connotations (Tsujimura 1996): it is not, however, similarly analyzable in terms of its grammatical behaviors. In addition to the adversative *thuuk* passive, Thai also has a neutral passive construction that does not contain *thuuk* and does not convey a sense of adversity, as illustrated in (18b) (example (18b) from Iwasaki & Ingkaphirom 2005: 316).



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(18) (a) khɨkrit pramoot khian naŋsɨ̌ lem nii
Kukrit Pramoot write book CL this
'Kukrit Pramoot wrote this book.'

(b) naŋsɨ̌ lem nii khian dooy khɨkrit pramoot
book CL this write by Kukrit Pramoot
'This book was written by Kukrit Pramoot.'

(c) *naŋsɨ̌ lem nii thuuk khɨkrit pramoot khian
book CL this THUUK Kukrit Pramoot write
Intended: 'This book was written by Kukrit Pramoot.'

(d) naŋsɨ̌ lem nii khian dooy [nakkhian thii chan chɔɔp
book CL this write by author REL 1 like
maakthiisut]
most
'This book was written by my favorite author.'

The examples in (18a–b) represent an active–passive alternation: the PAT and ACT are realized as subject and object respectively in the active variant in (18a), whereas the PAT is realized as subject in the *dooy* passive in (18b), where the demoted ACT is obligatorily expressed in a 'by'-phrase and the construction contains a synthetic passive expression of the verb. Unlike the examples of the *thuuk* construction that we have seen thus far, the subject of (18b), 'this book', is not interpreted as having been adversely affected by its writing. This is in contrast with the attempt to create a *thuuk* passive in (18c), which requires an adversative interpretation in order for it to be even marginally acceptable. There is, thus, a paradigmatic opposition between the *thuuk* passive and the *dooy* passive: only the *dooy* passive is compatible with a neutral interpretation. This can be straightforwardly accommodated within a morphological interpretation of lexical constructions, where paradigmatic oppositions are commonplace: the two homophonous variants of the verb are simply associated with active and passive mappings between semantic roles and syntactic arguments. Additionally, we see in (18d) that the NP introduced by *dooy*, which on standard analyses of passives would be considered an oblique argument, can take a relative complement. This contrasts with Sudmuk's previously discussed supposition that relative complementization is restricted to subjects.

Prasithrathsint (2006: 124) notes that since the latter half of the 20th century, the meaning of the adversative passive marker *thuuk* has been generalized for some speakers, who now allow the *thuuk* passive to be used in a neutral, non-adversative manner:

> Semantically, the *thùuk* neutral passive marker is different from the *thùuk* adversative passive marker in that the neutral one has no sense of adversity. Syntactically, unlike the adversative one, the neutral passive marker occurs with any transitive verb. Furthermore, it occurs more often without an agent.



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Interestingly, if the agent of the neutral *thuuk* passive construction is expressed, it tends to occur at the end of the sentence in the form of a prepositional phrase introduced by *dooy*, rather than before the verb as in the adversative *thuuk* construction (ibid.). This is illustrated in (19) (example from Prasithrathsint 2006: 124):

(19) rook chanit nii thuuk khonphop dooy nakwittayaasaat chaawciin
disease kind this THUUK discover by scientist Chinese
'This kind of disease was discovered by a Chinese scientist.'

In (19), the discovery of the disease to considered to be a positive event and the construction as a whole does not convey any adversity. Unlike the instances of the *thuuk* construction that we initially encountered, where the demoted ACT is expressed between *thuuk* and the verb, the ACT in (19) occurs within a 'by'-phrase, after the collocation of *thuuk* and the main verb. It appears that in co-opting the preposition *dooy*, used in the neutral *dooy* passive, the *thuuk . . . dooy* passive has also inherited its neutrality.

Therefore, the adversative *thuuk* passive appears to be in paradigmatic opposition with the passive constructions containing *dooy*: while the adversative *thuuk* passive is reserved for use in situations that connote a sense of negative affect, the other two passive constructions that use *dooy* are neutral in this regard. From a functional point of view, the adversative *thuuk* passive, the *dooy* passive, and the *thuuk . . . dooy* passive appear to form a family of passive constructions in Thai, and the monoclausal *thuuk* construction can be appropriately analyzed as an adversative passive within this class of 'allo-constructions' (Pike 1962: 236). In a sense to be further developed in our analysis of these related constructions in Section 4, these are paradigmatically contrasting instances of passive diathesis with different exponences. This is a domain where Word and Paradigm morphological assumptions naturally account for the interdependence between morphology and syntax.

### 2.3 *Evidence of constituency for the* thuuk *passive*

Having established that one variant of the *thuuk* construction is indeed a passive, the surface discontinuity of *thuuk* and the verb calls into question the lexicality of the passive: since it is the obligatory co-occurrence of *thuuk* and the verb that signals the passive, the passive predicate, in Word and Paradigm based terms, represents an instance of periphrasis with discontinuous syntactic exponence. In this section, we provide empirical evidence for the constituency of the passive *thuuk* construction in order to identify the specific syntactic realization of this discontinuous periphrastic predicate.



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### 2.3.1 *Coordination*

Consider some of the coordination facts of the adversative *thuuk* passive:

(20) (a) dɛɛŋ [[thuuk tii] lɛ [thuuk te]]
Dang THUUK hit CONJ THUUK kick
'Dang was hit and kicked.'

(b) dɛɛŋ [[thuuk mɛɛ tii] lɛ [thuuk phɔɔ te]]
Dang THUUK mother hit CONJ THUUK father kick
'Dang was hit by mother and kicked by father.'

(c) *dɛɛŋ thuuk [[tii] lɛ [te]]
Dang THUUK hit CONJ kick
Intended: 'Dang was hit and kicked.'

(d) *dɛɛŋ thuuk mɛɛ [[tii] lɛ [te]]
Dang THUUK mother hit CONJ kick
Intended: 'Dang was hit and kicked by mother.'

(e) *dɛɛŋ thuuk [[mɛɛ tii] lɛ [phɔɔ te]]
Dang THUUK mother hit CONJ father kick
Intended: 'Dang was hit by mother and kicked by father.'

Example (20a) shows that when the ACT is not expressed, two sequences of *thuuk* and a verb can be coordinated. (20b) shows that two sequences of *thuuk*, the ACT, and the verb can also be coordinated. In contrast, the unacceptability of (20c) indicates that the presence of *thuuk* in both conjuncts is necessary for coordination of two passive verbs to take place, while (20d–e) show that the presence of the ACT does not salvage the unacceptability of not repeating *thuuk* in the second conjunct. This evidence from the distributions of coordination suggests that the elements after the subject in the adversative *thuuk* passive form a constituent to the exclusion of the subject. Furthermore, thus must be a flat constituent with no internal hierarchy, as it is possible to coordinate subordinated constituents elsewhere in the language:

(21) (a) dɛɛŋ khit waa [[nɔy ŋɔɔ] lɛ [nit chalaat]]
Dang think COMP Noi stupid CONJ Nit smart
'Dang thinks that Noi is stupid and Nit is smart.'

(b) dɛɛŋ ca [[pay suansat] lɛ [biip chaaŋ]]
Dang will go zoo CONJ pinch elephant
'Dang will go to the zoo and pinch elephants.'

In light of the sentences in (21), which show that subordinated constituents can be coordinated, the unacceptability of (20c–e) would be surprising if *thuuk*, the ACT, and the verb do not form a flat constituent. Thus, it is reasonable to conclude that the periphrastic passive predicate targets this constituent for its realization.



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### 2.3.2 *Topic constructions*

Evidence from Thai topic constructions independently confirms the constituency we identified on the basis of coordination. Consider the examples in (22) ((22b) from Hoonchamlong 1991: 85):

(22) (a) nɔy bɔɔk waa [nit chɔɔp phuuchaay khon nan]
Noi say COMP Nit like man CL that
'Noi said that Nit likes that man.'

(b) [phuuchaay khon nan]$_i$, [nɔy bɔɔk waa [nit chɔɔp ___$_i$/khaw$_i$]]
man CL that Noi say COMP Nit like 3
'That man, Noi said that Nit likes (him).'

The sentence in (22a) is a canonical declarative. Hoonchamlong observes, as shown in (22b), that the object NP from the lower clause can be fronted, and leave either a gap or an overt pronoun in its original position. Now, compare this with the English examples in (23) (from Hoonchamlong 1991: 78):

(23) (a) This book, I really like ___.

(b) As for this book, I think you should read it.

In languages such as English, a distinction is made between topicalization, where a gap occurs in the original position, as in (23a), and left dislocation, which involves the presence of an overt pronoun, as in (23b) (e.g. Chomsky 1977, Baltin 1982, Lasnik & Uriagereka 1988). First, extraction from an embedded clause is possible in topicalization but not left dislocation. Second, while topicalization observes island constraints, left dislocation does not. Therefore, these authors argue that topicalization involves *wh*-movement, but left dislocation is base-generated in the topic position. In other words, the front element in (23a) is regarded as an argument of the verb, while the fronted element in (23b) is a non-argument that is related to the clause in an 'aboutness relation'.

One therefore wonders whether a similar distinction exists in Thai, and if the example in (22b) conflates two distinct topic constructions. Hoonchamlong argues that topicalization and left dislocation are not distinct in Thai. Since Thai is a *pro*-drop language, the gap may simply be an empty pronoun, in which case the distinction between the presence or absence of the pronoun is only a matter of optional *pro*-drop. Moreover, referring to phenomena that have been used to argue for the distinct statuses of topicalization and left dislocation, Hoonchamlong (1991: 86–99) shows that the presence or absence of the pronoun does not affect the grammatical behavior of topic constructions in Thai: both constructions can occur in a root clause or an embedded clause, and they do not obey the Subjacency Condition (Chomsky 1973).

There is, additionally, evidence that the fronted element in a Thai topic construction does not always have argument status. (24) shows that the topic need not syntactically bind any argument in the clause that follows it (example from Hoonchamlong 1991: 89–90):



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(24) [ŋaan tɛɛŋŋaan nɔy], nit tokloŋ ca tittɔɔ rɨaŋ cat
event wedding Noi Nit agree will contact matter arrange
dɔɔkmaay
flower
'As for Noi's wedding, Nit agrees to make arrangements for the flowers.'

Such sentences suggest that the topic need not be an argument of the clause from which it is extracted, and that the relation between the topic and the clause is instead a looser 'aboutness relation'. On such an analysis, the gap that appears in (22b) is really an instance of *pro*-drop. We will not pursue the issue of topicalization vs. left dislocation any further, but simply note that in a Thai topic construction, the presence of a gap is indicative of *pro*-drop.

Now, let us consider the types of elements that can be fronted in a Thai topic construction. In Thai, only phrasal constituents can occur as topics. (25) illustrates this with PPs ((25a) from Hoonchamlong 1991: 132):

(25) (a) [bon toʔ nan]$_i$, chan waaŋ cɛɛkan (thii nan)$_i$ may day
on table that 1 place vase at there NEG can
'On that table, I cannot put the vase (there).'

(b) *[bon] na, chan waaŋ cɛɛkan (thii) toʔ nan may day
on TM 1 place vase at table that NEG can
Intended: On, I cannot put the vase (at) the table.

(c) [toʔ nan] na, chan waaŋ cɛɛkan bon man may day
table that TM 1 place vase on it NEG can
'As for that table, I cannot put the vase on it.'

Example (25a) shows that an entire PP can occur as a topic, while (25b) shows that the preposition alone cannot. Yet, the NP within the PP as occur as topic in (25c), as NP is a phrasal constituent. It should be pointed out that the pronoun *man* 'it' is obligatory in (25c); *pro*-drop is not an option here. This is probably because the language in general does not allow PPs to occur without an overt dependent NP:

(26) *chan waaŋ cɛɛkan bon __ may day
1 place vase on NEG can
Intended: 'I cannot put the vase on.'

Hoonchamlong notes that when a VP appears as topic, a proform is required in the main clause. This is reminiscent of the *do-so* phrase in English. The proform for VPs headed by stative verbs is *pen* 'be', as in (27a), while that for active verbs is *tham* 'do' (27b) (examples from Hoonchamlong 1991: 108):

(27) (a) [son mɨan liŋ]$_i$, chan khit waa [luuk chan *(pen$_i$)]
naughty like monkey 1 think COMP child 1 be
'Naughty like a monkey, I think that my child is so.'



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(b) [tii dek]$_i$, chan khit waa [khaw *(tham$_i$) may day]
hit child 1 think COMP 3 do NEG can
'As for hitting the child, I think that he cannot do.'

The lexical verb *tii* 'hit' alone cannot occur as topic as it does not constitute a phrase on its own:

(28) *[tii]$_i$, chan khit waa [khaw (tham$_i$) dek may day]
hit 1 think COMP 3 do child NEG can
Intended: 'As for hitting, I think he cannot (do to) the child.'

On the basis of what we have seen so far, one might be inclined to think that the restriction on topicalization can be cast in terms of headedness: phrasal heads cannot occur as topics. This, however, is not true. Consider (29):

(29) [luuk]$_i$, chan khit waa [khruu tii (khaw$_i$) may day
child 1 think COMP teacher hit 3 NEG can
'As for the child, I think that the teacher cannot hit (him/her).'

In (29), the NP within a VP occurs as the topic. Since this is a simple NP headed by the noun *luuk* 'child', this shows that phrasal heads can occupy the topic position in Thai. The head of a complex NP, however, cannot:

(30) (a) khaw sɨɨ [dɔɔkmaay sii dɛɛŋ] mɨawaannii
3 buy flower color red yesterday
'S/he bought red flowers yesterday.'

(b) [dɔɔkmaay sii dɛɛŋ]$_i$ na, khaw sɨɨ (man$_i$) mɨawaannii
flower color red TM 3 buy it yesterday
'Red flowers, s/he bought (them) yesterday.'

(c) *[dɔɔkmaay]$_i$ na, khaw sɨɨ (man$_i$) sii dɛɛŋ mɨawaannii
flower TM 3 buy it color red yesterday
Intended: 'Flowers, she bought red (them) yesterday.'

The sentence in (30a) is a canonical declarative with a complex NP object. As (30b) shows, the entire NP can be fronted. However, the head of this complex NP cannot occur on its own as a topic because, unlike *luuk* 'child' in (29), *dɔɔkmaay* 'flower' in (30c) is not a phrasal projection. Therefore, the restriction on topics is that they must form a phrasal constituent; heads alone cannot be topics, unless the head exhaustively dominates the phrase.

Let us now consider how topicalization works in the adversative *thuuk* passive. We first consider if individual elements can be fronted. If individual elements can be fronted, they must be phrasal constituents.

(31) (a) dɛɛŋ thuuk phɔɔ tii mɨawaannii
Dang THUUK father hit yesterday
'Dang was hit by father yesterday.'



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(b) *[thuuk]$_i$ na, dɛɛŋ tham$_i$/pen$_i$/___$_i$ phɔɔ mɨawaannii
THUUK TM Dang do/be father yesterday

(c) *[tii]$_i$ na, dɛɛŋ thuuk phɔɔ tham$_i$/pen$_i$/___$_i$ mɨawaannii
hit TM Dang THUUK father do/be yesterday

(d) [phɔɔ]$_i$ na, dɛɛŋ thuuk *(khaw$_i$) tii mɨawaannii
father TM Dang THUUK 3 hit yesterday
'Father$_i$, Dang was hit by him$_i$ yesterday.'

The sentence in (31a) is our example of the adversative *thuuk* passive. (31b) shows that *thuuk* alone cannot occur as a topic. Because we do not know the exact status of *thuuk*, we included the proforms *tham*/*pen* in the example so as not to exclude the possibility of *thuuk* being a VP; all other phrasal categories allow a gap. Therefore, *thuuk* alone cannot be a phrasal constituent. The verb *tii* 'hit', too, cannot occur as topic, as shown in (31c). Thus, the verb in the adversative *thuuk* passive does not constitute a phrase on its own. (31d) shows that the ACT can occur as topic, suggesting that the ACT is a phrasal constituent, which is consistent with the analysis of this construction as a passive: the ACT is indeed an NP in the active clause – the subject.

Note that the pronoun in the main clause is obligatory when the ACT appears as topic. As we saw earlier, the only time that an obligatory pronoun is required in place of a topicalized NP is if that NP is part of a PP. This suggests that *thuuk* may be a preposition, and that *thuuk* and the ACT form a 'by'-phrase. However, this is not tenable because we also know that PPs in Thai cannot occur without an NP, and yet the expression of the ACT is optional. Furthermore, as (32a) below shows, negation can occur before *thuuk*. Given that negation is a common diagnostic for verbhood in Thai (Jenks 2011: 26), this suggests that *thuuk* is a verb.

Next, we consider if sequences of two or more words that appear after the subject can be topics.

(32) (a) phɔɔ may thuuk luuk tii rɔɔk[18]
father NEG THUUK child hit PART
'Father will not be hit by his child.'

(b) [thuuk luuk tii]$_i$, phɔɔ may ___$_i$ rɔɔk
THUUK child hit father NEG PART
'As for getting hit by his child, father will not.'

(c) [thuuk tii]$_i$, phɔɔ may ___$_i$ rɔɔk
THUUK hit father NEG PART
'As for getting hit, father will not.'

[18] *Rɔɔk* is a particle used when making a contradiction.



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(d) *[thuuk luuk]$_i$, phɔɔ may ___$_i$ tii rɔɔk
THUUK child father NEG hit PART

(e) *[luuk tii]$_i$, phɔɔ may thuuk ___$_i$ rɔɔk
child hit father NEG THUUK PART

The sentence in (32a) is an example of the adversative *thuuk* passive. (32b) shows that *thuuk*, the ACT, and the verb can together occur as topic, suggesting that this sequence of words forms a phrasal constituent. In (32c), we see that when the ACT is left unexpressed, *thuuk* and the verb, too, can occur as a topic, and thus constitute a phrasal constituent. However, as the unacceptability of (32d–e) indicates, neither *thuuk* and the ACT, nor the ACT and the verb form a phrasal constituent, suggesting a lack of internal hierarchy within the topic phrase in (32b). Thus, topicalization informs us of two facts concerning the constituency of the passive *thuuk* construction: (i) the ACT is a phrasal constituent, and (ii) *thuuk*, the ACT, and the verb together form a flat constituent.[19]

In sum, these empirical facts are best analyzed by assuming a flat structure. We assume that the category of this constituent is a VP. Figure 4 illustrates the constituency of (5b).

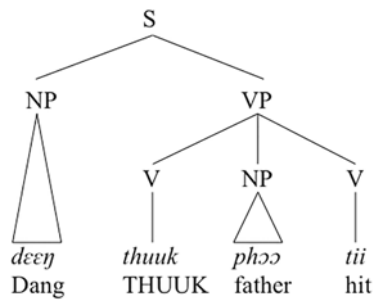



*Figure 4*
Constituency of (5b).

The topicalization facts in (31) above suggest that the lexical verb in the adversative *thuuk* passive does not project its own verb phrase: only phrasal constituents can be topics, but the verb in the adversative *thuuk* passive cannot be a topic. Further evidence that this verb does not constitute a phrasal constituent can be adduced by comparing the adversative *thuuk* passive to other constructions in Thai that share the identical sequence of elements on the surface – what Muansuwan (2002) refers to as Thai aspectual constructions[20] in (33a) and the resultative construction in (33b) (example (33b) from Muansuwan 2002: 226):

[19] It is worth pointing out that although topic VPs require a resumptive in their default position, as we saw in (27), neither *tham* 'do' nor *pen* 'be' can occur in place of the gaps in the sentences in (32b–c). While there is no question that the constituent containing *thuuk*, the ACT, and the verb is a VP, this anomaly is probably due to the fact that this VP is headed neither by an active verb nor a stative verb.

[20] For a syntactic and semantic analysis of Thai aspect markers, see Koenig & Muansuwan (2005).



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(33) (a) piti tham ŋaan set
Piti do work finish
'Piti finished working.'

(b) nikorn paw thian dab
Nikorn blow candle extinguished
'Nikorn blew the candle out.'

Like the adversative *thuuk* passive in (5b), the aspectual and resultative constructions in (33) consist of the linear sequence V NP V after the subject.

Muansuwan observes that raising verbs can occur before either verb in the aspectual construction. (34) illustrates with the raising verb *kəət* 'happen' (examples from Muansuwan 2002: 151):

(34) (a) piti kəət tham ŋaan set
Piti happen do work finish
'Piti happened to finish working.'

(b) piti tham ŋaan kəət set
Piti do work happen finish
'Piti happened to finish working.'

Because raising verbs take VP complements, and *kəət* 'happen' can occur before the second verb in the aspectual construction, Muansuwan argues that the second verb in the aspectual construction projects its own VP. (35a–b) below show that preverbal TAM markers such as *tɔŋ* 'must' share the same distribution as the raising verb *kəət* 'happen', suggesting that preverbal TAM markers, too, take VP complements, while (35c) demonstrates that *tɔŋ* 'must' can also precede the second verb in the resultative construction, suggesting that this verb, too, projects a VP (example (35c) from Muansuwan 2002: 227):

(35) (a) piti tɔŋ tham ŋaan set
Piti must do work finish
'Piti must finish working.'

(b) piti tham ŋaan tɔŋ set
Piti do work must finish
'Piti must finish working.'

(c) nikorn paw thian tɔŋ dab
Nikorn blow candle must extinguished
'Nikorn blew the candle and it must have been extinguished.'

Now, since the raising verb *kəət* 'happen' and the preverbal TAM marker *tɔŋ* 'must' take VP complements, we would expect these verbs to be able to precede the second verb in the *thuuk* passive if this verb does indeed project its own VP. The data in (36) show that this is not borne out.



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(36) *piti thuuk phɔɔ kɛ̀ɛt/tɔŋ tii
Piti THUUK father happen/must hit
Intended: 'Piti happened to/must be hit by father.'

Since VP complement-taking verbs cannot precede the second verb in the passive *thuuk* construction, we must conclude that this verb does not project its own VP. Hence, the constituency in Figure 4 above.

Therefore, even though the word order in the adversative *thuuk* passive is identical to that in the aspectual and resultative constructions, the constituent statuses of their second verbs are different.

## 3. Periphrasis and the morphology–syntax interface

Having provided empirical evidence to establish the passive status of one of the *thuuk* constructions and identified the syntactic constituency for its surface syntactic realization, we turn to an analysis of the interface between morphological periphrases and their surface syntactic exponence. We adapt the treatment of inflection for periphrastic TAM morphology developed in Bonami & Webelhuth (2013) and elaborated in Bonami (2015) to a morphosyntactic relation-changing operation that relates active and passive predicates. Before presenting the details of our extension, we introduce the analytic assumptions we will adopt.

### 3.1 *Inflection and the morphology–syntax interface*

As observed in Bonami & Webelhuth (2013) and Bonami (2015), languages differ concerning whether they employ synthetic vs. periphrastic expressions for particular tense, aspect and mood distinctions of lexemes. For example, English uses periphrasis to express the present perfect tense, as exemplified in (37):

(37) Paul has left the room.

Following the tradition in word-based morphology (Robins 1959; Matthews 1970, 1991; Jackendoff 1975; Bochner 1993; Blevins 2015; *inter alia*) that such periphrastic expressions are realizations of lexemes in context, Bonami (2015) develops a formal treatment that permits this type of expression to receive the surface encoding reflective of independently motivated syntactic structures in specific languages.

Bonami's proposal is guided by several insights. First, the paradigm cells defined by the combination of morphosyntactic properties such as tense, aspect and mood with a lexeme can be realized synthetically or periphrastically. Second, inflected words are simply variants of a shared lexeme, which can be expressed synthetically or periphrastically. This means that the challenges for addressing the periphrastic expression type are to ensure that (i) it is construed as a particular morphosyntactic variant of a single (class of) lexeme, just like its synthetic forms, and (ii) its pieces are placeable in appropriate, empirically motivated syntactic positions. Bonami proposes that words can carry a REVERSE-SELECTION requirement, which specifies that the word must occur in the local syntactic context of



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a particular lexeme that selects for that word (or one of its projections). Reverse selection is defined in (38):

(38) *Reverse selection* (Bonami 2015: 87)
A reverse selection requirement $\varphi$ carried by a word $\omega_1$ is satisfied if and only if $\omega_1$ is syntactically selected by a word $\omega_2$ and $\omega_2$ verifies property $\varphi$.

On this account, the collocational quality of the syntactic realization of periphrastic predicates, such as *has left*, is ensured by requiring that one piece of the predicate, here *left*, reverse-selects for the other, *has*: the auxiliary *has* displays ordinary syntactic selection to co-occur with a verbal complement, while the reverse-selection requirement on *left* ensures that it will co-occur with the selecting auxiliary.[21] The rule of periphrastic exponence for the English present perfect can then be informally stated as in (39) (Bonami 2015: 87):

(39) To realize the perfect of lexeme *l*, use a word whose form is that of the past participle of *l*, and which carries a reverse-selection requirement for the tense, finiteness and appropriately agreeing form of the auxiliary *have*.

The basic syntactic representation of (37) can be represented schematically as in Figure 5, where *left*, the past participle of LEAVE, reverse-selects for the auxiliary *have* in the present third singular, which selects, as it usually does, for a VP complement.

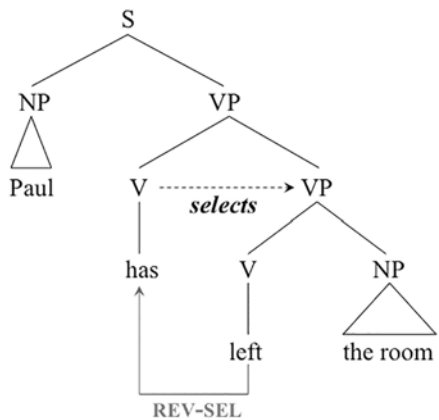



*Figure 5*
Selection and reverse selection (Bonami 2015: 88).

[21] Similar types of collocational selection have been proposed in e.g. Sailer (2000) and Richter & Sailer (2003, 2010); see Bonami (2015) for discussion.



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As Bonami (2015: 91) points out, periphrasis, on this view, is not literally syntactic exponence: rather it is the exponence of a morphosyntactic feature by a reverse-selection requirement. The requirement for the main verb to co-occur with the auxiliary is specified on the main verb, just as the requirement for a verb to appear in a certain form is specified on the verb in the case of synthetic morphology. Thus, both synthetic and periphrastic inflection rules play the same role of partially constraining the relation between the morphosyntactic features expressed by words and the realizations of those words. The only difference is that synthesis expresses the features locally on the word, whereas periphrasis expresses them as conditions on the context of occurrence.

This treatment of TAM has the desired effects of (i) unifying the analysis of inflectional information, independent of language-particular synthetic vs. periphrastic expression type, as properly morphological, while (ii) accounting for the syntactic distribution of the relevant pieces of expression in a manner that conforms to independent evidence concerning the diverse syntactic constituency configurations found in different languages. On Bonami's account, periphrastic TAM constructions in e.g. English, French and German, have different syntactic encodings from each other, but in each instance, the specific encoding parallels that found in each language's verb syntax. It is important to emphasize that the genuine appeal of this proposal resides in making explicit the relation between independent syntactic structure and the way that periphrasis is encoded. In particular, it proposes that the syntactic expression of periphrasis is constrained by the independently attested syntactic phrasal structure of a language: in default of such a constraint, the syntactic expression of periphrastic constructions could be stipulated to occur in many different ways (as it is in Ackerman & Webelhuth 1998).

In Section 4, we extend some aspects of this proposal for the morphology–syntax interface so that it can account for a morphosyntactic relation-changing operation that relates active and passive predicates. Another result of this extension will be the delineation of a more comprehensive cross-linguistic taxonomy for the syntactic realization of periphrastic predicates, one in which periphrastic predicates can sometimes receive syntactic encodings that are otherwise unattested in other languages.

### 3.2 *Lexical representations*

As mentioned earlier, within lexicalist and some construction-theoretic proposals, the active–passive relation is interpreted as a type of lexeme-altering or derivational relation: this assumes that manipulations of argument structure – semantic role alignments are one of several ways in which verbs can vary. For active–passive pairs, the lexical semantics remains essentially constant, while there are different mappings between the semantic roles and syntactic arguments. Given that such manipulations are, by hypothesis, independent of the ways in which the resulting verbs can be expressed, it is predicted that, as with inflection,



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languages could differ with respect to the use of synthetic vs. periphrastic encoding strategies. In this respect, the variation in the actual surface expression of words is a language-particular and historically contingent phenomenon: there is little reason to assume that any particular encoding provides more or less insight into essential cross-linguistic aspects of morphological organization or that it constitutes a default on the cross-linguistic morphology–syntax interface. In the aggregate, all of the attested variation provides the range of possible encoding types that natural languages present for theoretical analysis.

Since a lexeme-altering relation such as passive affects the alignment of semantic roles and syntactic arguments, certain aspects of lexical representations are especially relevant. We adopt the lexical representations of HPSG and SBCG, where a linguistic sign minimally consists of PHONological, SYNtactic and SEMantic dimensions of information. Consider the lexical representation in Figure 6 below for the synthetic form *leaves* of the lexeme LEAVE.[22] The PHON attribute stipulates the phonological shape of the word. The SYN attribute contains information concerning CATegory and ARGument-STructure. A number of different features of syntactic relevance are contained in CAT. CAT in Figure 6 identifies *leaves* as the lexical category of type *verb*. Major lexical categories such as verbs and nouns are associated with a core lexical identity: this is designated by the LID attribute, which will be of particular significance for the purposes of our analysis. Each lexeme has a LID value, which uniquely identifies a lexeme in the lexicon and allows for selectors to identify lexemes (Sag 2012). A lexeme, the words that realize it, and the phrases headed by such words all share the same LID value: it is the attribute by which distinct wordforms are specified as being variants of a single lexeme. CAT also contains the attribute MORSYN, which encodes morphosyntactic information concerning, e.g. TAM, V(erb)FORM and AGReement properties of the verb. In addition to CAT, SYN also contains an ARG-ST attribute that stipulates the syntactic arguments with which the verb co-occurs. The fact that *leaves* contains one NP argument indicates that this is an intransitive verb. We will assume that the order of elements in ARG-ST represents an obliqueness hierarchy determining syntactic relation status,[23] where the leftmost argument

[22] We use the intransitive variant of LEAVE for simplicity, though we will need to use transitive verbs in the analysis of Thai passives below.

[23] There are numerous ways to represent grammatical relations in lexicalist and construction-theoretic frameworks. For HPSG valence and obliqueness, see Pollard & Sag (1994). We choose the present strategy because it simplifies the presentation given the sort of representations we have used. In principle, our proposal is compatible with other interpretations of grammatical relations and mapping assumptions, where grammatical relations are primitives and semantic roles are construable in terms of Dowtian proto-properties (e.g. Primus 1999, Ackerman & Moore 2001, Beavers 2006).



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is subject, the next is object, with increasing obliqueness rightward (Keenan & Comrie 1977, Pullum 1977). As referenced by the indices, the NP argument is linked to the semantic role, ACT, specified in the FRAMES attribute required by the SEM attribute. Finally, the lexical representation for *leaves* represents a semantic relation designated by *leave-rel*.

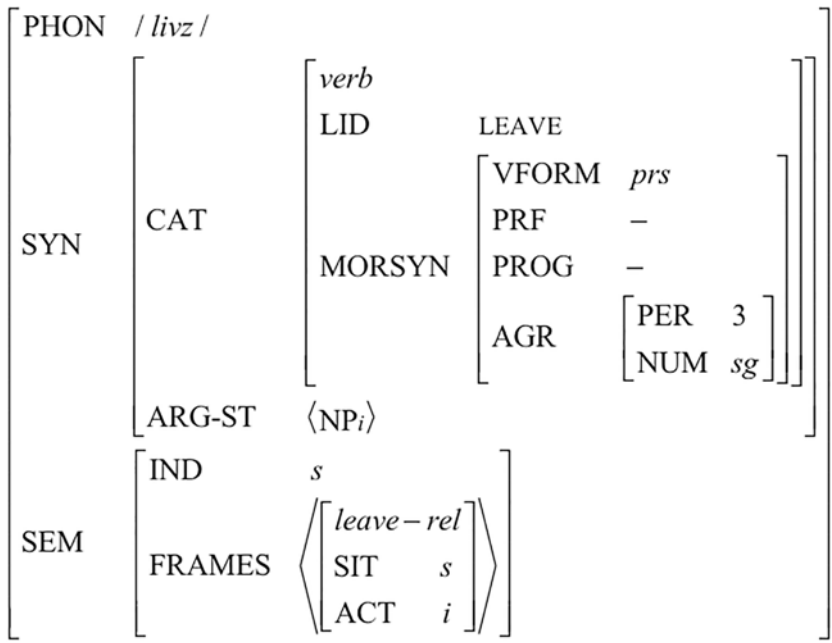



*Figure 6*
Lexical item for 3rd person singular *leaves*.

## 4. ANALYSIS OF THAI PASSIVES

### 4.1 *Adversative* thuuk *passive*

Recall the Thai active form of the verb 'hit', repeated from (2a) as (40), whose lexical representation can be given as in Figure 7 below.

(40) mɛɛ tii luuk
mother hit child
'Mother hit her child.'



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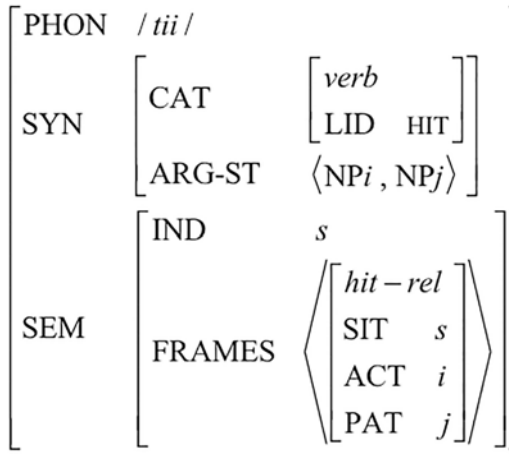



*Figure 7*
Lexical entry for *tii* 'hit'.

As an independent verb, *tii* 'hit' has its own distinct LID. The shared indices between the NPs in ARG-ST and the semantic role values of FRAMES specify that the ACT will be subject and the PAT will be object.

Let us reconsider the passive variant in (2b), repeated as (41).

(41) luuk thuuk (mɛɛ) tii
child THUUK mother hit
'The child was hit (by his/her mother).'

When the lexical verb co-occurs with *thuuk*, it is associated with the passive grammatical relation alignment. The passive alignment cannot be associated solely with the lexical verb *tii*, since that would mandate an active mapping, given the lexical representation in Figure 7. On the other hand, it cannot be associated with the independent verb *thuuk* either, since this verb does not have the appropriate semantic role inventory for the correct mapping. To see why this is so, consider the representation for the independent verb *thuuk* in Figure 8. This is the active variant of *thuuk*, with a unique LID, that occurs in a clause such as (42), repeated from (4) above.

(42) khaw thuuk yaaphit
3 be.affected.by poison
'S/he was affected by poison.' = 'S/he was poisoned.'



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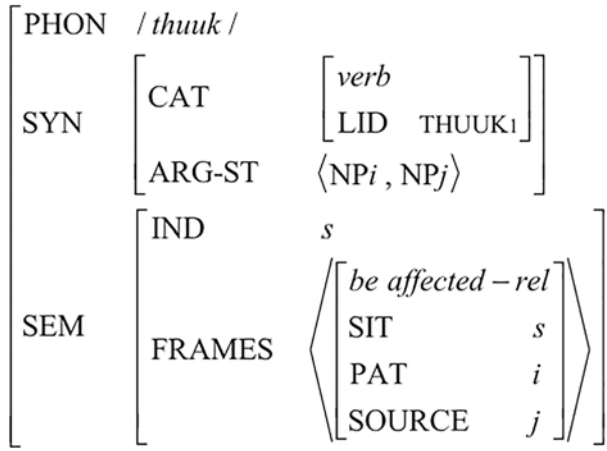



*Figure 8*
Lexical entry for independent verb *thuuk* (THUUK$_1$).

As shown in Figure 8, the semantic role inventory of the independent verb *thuuk* does not match the semantic role inventory of the passive verb in (41), given that the lexical semantics in FRAMES remains constant in active–passive pairs. Hence, the combination of the two independent active verbs, *thuuk* and *tii*, cannot result in a passive, if both retain their own semantic roles and correlative active grammatical relation assignments.

On standard lexicalist assumptions, the passive verb merits a lexical item of its own that is distinct from that of the active variant, such that the assignment of semantic roles to syntactic arguments is altered and the syntactic expression of the ACT argument is optional. In addition, for Thai adversative passives, the verb is also constrained to co-occur with *thuuk* which, as observed in (42) and Figure 8, conveys a sense of affectedness. To ensure this, we propose that the passive verb contains a REVerse-SELection requirement to co-occur with *thuuk*. The passive variant of *tii* 'hit' can thus be represented as in Figure 9. It is specified in its VFORM as a passive verb, and even though its FRAMES value is identical to that of the active variant, the assignment of semantic roles to syntactic arguments is different, as indicated by the indexing of the arguments. Also unlike the active verb, the second NP, now associated with the ACT, is optionally expressed in the syntax. In addition, *thuuk* must occur in the local syntactic context of this passive verb, due to the REV-SEL constraint in the lexical representation of the latter.



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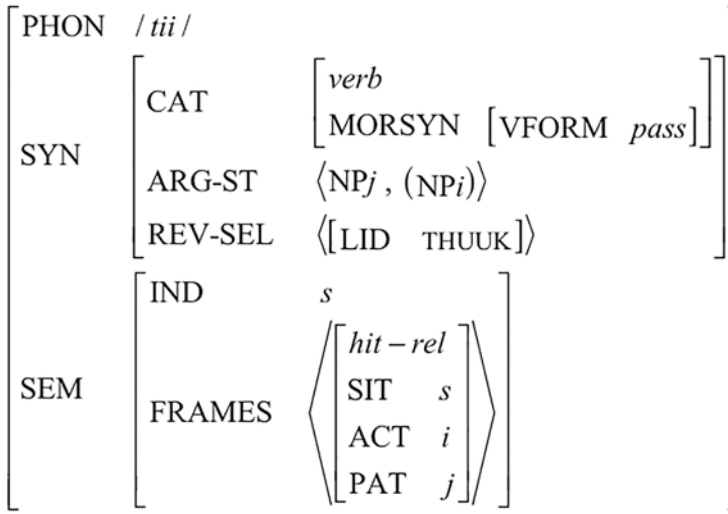



*Figure 9*
Preliminary lexical item for passive *tii* 'hit'.

Now, the *thuuk* that is reverse-selected by the passive verb in the adversative *thuuk* passive cannot be the same lexical verb as that represented in Figure 8, since that lexical verb contains its own ARG-ST requirements, as well as semantic roles to syntactic argument assignments that, as we saw, are incompatible with the passive verb. Hence, we posit a separate lexical entry for *thuuk*, with a different LID value, $\text{THUUK}_2$, shown in Figure 10. Unlike $\text{THUUK}_1$ in Figure 8, this version of *thuuk* subcategorizes for a verb and inherits the arguments of that verb, as indicated by the tag 2. The subcategorized verb is constrained to (i) being a passive verb and (ii) reverse-selecting for this version of *thuuk*, as indicated by the tag 1. $\text{THUUK}_2$ also differs from $\text{THUUK}_1$ in its semantics: even though this version of *thuuk* retains its semantics of affectedness, it, unlike $\text{THUUK}_1$, contains only one semantic argument, which is constrained to be token-identical to the PAT of the passive verb, and predicates of this argument that it be affected. Hence, despite being independent lexical entries in the lexicon, the two *thuuk*s are nonetheless related phonologically and semantically.



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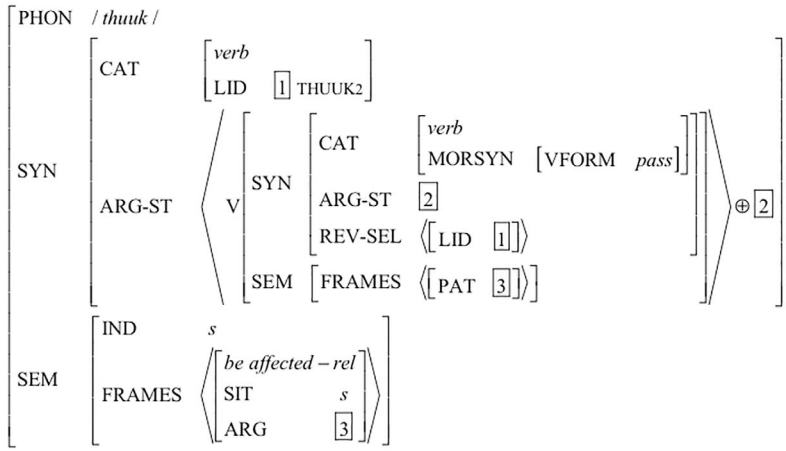



*Figure 10*
Lexical entry for *thuuk* in the adversative passive (THUUK$_2$).

We can now update our lexical item for the passive *tii* 'hit' so that it reverse-selects specifically for THUUK$_2$ by referencing the LID of this latter verb, as shown in Figure 11. The resulting predicate is expressed by two categorical verbs, the first of which, THUUK$_2$, selects for a passive verb, which in turn reverse-selects for THUUK$_2$.

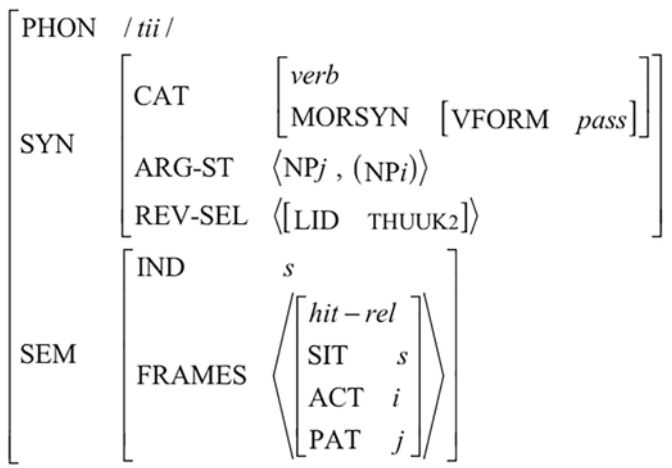



*Figure 11*
Updated lexical item for passive *tii* 'hit'.

On this analysis, the collocational quality of the adversative *thuuk* passive is due to requirements on both THUUK$_2$ and the passive verb to co-occur with each other.



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The lexical rule deriving such passive verbs is shown in Figure 12. By convention, information that is identical in the input and output is neither stated in the input nor the output: the rule only makes reference to information that is different. Here, the output is stipulated to be of passive VFORM and to reverse-select for $\text{THUUK}_2$. Additionally, the order of elements within ARG-ST has been rearranged such that what was the first argument on the ARG-ST list of the active verb is the last (and optional) argument on the ARG-ST list of the passive verb.

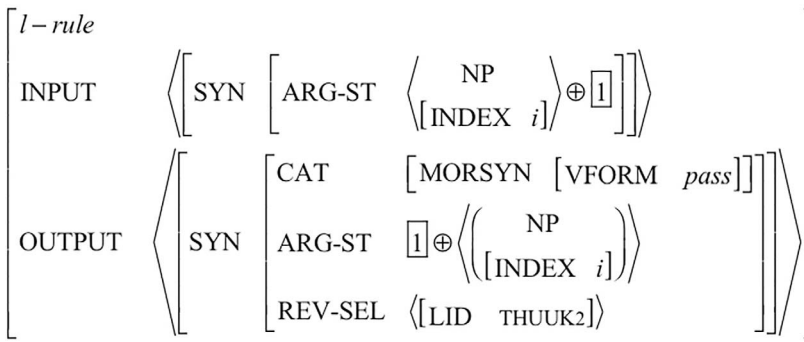



*Figure 12*
Adversative *thuuk* passive lexical rule.

Our analysis of the adversative *thuuk* passive extends Bonami's proposal by incorporating lexical semantics and the mapping between semantic roles and syntactic arguments. Unlike the auxiliary in periphrastic TAM constructions, $\text{THUUK}_2$ has its own semantics, specifying that its sole semantic argument be token-identical with the PAT of its subcategorized verb. However, $\text{THUUK}_2$ does not specify the passive alignment of PAT with subject and ACT with an oblique. Instead, it is combined with another verb that has these properties: consistent with the PRINCIPLE OF LEXICAL MODIFICATION and DIRECT SYNTACTIC ENCODING, the passive mapping between semantic roles and syntactic arguments that obtain in the adversative *thuuk* passive is associated solely with the passive verb and is not effected in the syntax.

In the remainder of this section, we consider some consequences of $\text{THUUK}_2$'s semantics of affectedness and discuss the peculiar phrase structure of this construction. We also consider the relationship between the adversative *thuuk* passive and the other two passive constructions.

### 4.1.1 *Affectedness*

As presently formulated, the adversative *thuuk* passive derives its semantics of affectedness from the presence of $\text{THUUK}_2$. For (2b)/(41), this is straightforwardly produced by a combination of $\text{THUUK}_2$ with the lexical verb *tii* 'hit', which is compatible with $\text{THUUK}_2$'s requirement that its sole semantic argument be



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identified with the PAT of *tii*, since hitting someone, in most cases, negatively affects them. In contrast, if one uses a verb such as 'love', it is predicted that the positive affect of this verb would clash with the adversative constraint set by $\text{THUUK}_2$: the contradictory predications of $\text{THUUK}_2$ and 'love' would lead to unaceptability. As expected, only the negated variant of 'love' can appear in this passive construction. The relevant data are presented in (43) (example (43b) from Jenks 2011: 26).[24]

(43) (a) *dek thuuk mɛɛ rak
child THUUK mother love
Intended: 'The child was loved by his/her mother.'

(b) dek thuuk mɛɛ may rak
child THUUK mother NEG love
'The child isn't loved by his mother.'[25]

Since a mother's love is intrinsically positive, the active sentence *mɛɛ rak dek* 'mother loves child' cannot be cast as an adversative *thuuk* passive, as shown in (43a), since this would create a semantic clash: the PAT of *rak* 'love' would have to be interpreted as both positively and negatively affected. On the other hand, since being UNloved by one's mother is a negative situation, the adversative *thuuk* passive is acceptable: the PAT of *may rak* 'unloved' can suitably be identified with the affected semantic argument of $\text{THUUK}_2$. Thus, the composition of passive predicates must address two distinctive encoding options for the lexical verb: (i) a simple verb, when the PAT of the verb can be naturally identified with the affected semantic argument of $\text{THUUK}_2$, and (ii) a negative variant of the verb, when the affect of the affirmative is not compatible with the semantics of $\text{THUUK}_2$.

Further inquiry into Thai reveals that it is also possible to construct examples of the adversative *thuuk* passive in which neither of the two options is satisfied. In particular, the lexical verb can be a simple verb that is not typically compatible with negative affect, but yet occurs in the adversative *thuuk* passive in the absence of negation. The examples in (44) illustrate this phenomenon.

(44) (a) nit thuuk khaw kɔɔt
Nit THUUK 3 hug
'Nit was hugged by him/her.'

(b) nit thuuk khaw cuup
Nit THUUK 3 kiss
'Nit was kissed by him/her.'

[24] Jenks employs the negative example in (43b) to illustrate a different and simpler point, namely that only verbs can be negated in Thai. The possibility of negating the lexical verb argues for its verbal status, as we pointed out earlier.

[25] 'The child is unloved by his/her mother' might serve as a better translation for this example, suggesting that lexical negation is a part of Thai grammar, and that negation operates over both VPs and Vs.



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(c) nit thuuk khaw chuan
Nit THUUK 3 invite
'Nit was invited by him/her.'

Each of the examples in (44) contains a lexical verb whose PAT is not plausibly construed as being negatively affected. Yet, they occur felicitously in the adversative *thuuk* passive without any negation.

Crucially, such examples can only be given an adversative interpretation, e.g. Nit was hugged/kissed by someone disgusting whom she dislikes, or Nit was invited and had to attend a party against her wishes. We argue, following Bresnan's (1994) analysis of locative inversion, that examples such as those in (44) are licensed by constructional coercion.[26] As observed in Bresnan (1994), the restriction on locative inversion in English (and Chichewa) reflects a core theme–locative argument structure, as illustrated in (45) (examples from Bresnan 1994: 75):

(45) (a) A lamp was in the corner.
(b) In the corner was a lamp.

Yet, extending around this core 'is a penumbra of intransitive verbs whose lexical argument structures DO NOT MATCH THE CORE PATTERN BUT CAN BE ASSIMILATED TO IT IN CERTAIN CONTEXTS' (Bresnan 1994: 84, emphasis added). An example is given in (46), where the inverted subject is the agent, rather than theme, of *shoot* (example from Bresnan 1994: 84).

(46) Through the window on the second story was shooting a sniper.

As Bresnan notes (ibid., emphasis added),

> Inversion is possible just when the shooting through the window serves to LOCATE the sniper – in other words, just when location is predicated of the subject and THE SITUATION CAN BE ASSIMILATED to the core theme–locative generalization isolated above. In such examples a theme–locative predication appears to be OVERLAID ON THE BASIC PREDICATION OF THE VERB[.]

Although not described in these terms by Bresnan, we can interpret the theme–locative predication as a CONSTRUCTION, and the overlay of this predication on the basic predication of the verb as CONSTRUCTIONAL COERCION, given the appropriate context.

In a similar vein, we argue that the condition of the application of the adversative *thuuk* passive are lexical, as is the case in English and Chichewa locative inversion, but that the construction becomes associated with negative

[26] Goldberg (1995: 154–160) suggests a similar analysis for the unexpected participation of certain verbs in English caused-motion constructions.



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evaluation, thus licensing unexpected predicates to participate, given the appropriate contexts. Thus, even though the passive verbs in the examples in (44) do not have PATs that are naturally interpretable as being affected, the interpretation of affectedness is licensed by the particular construction: since the construction itself is associated with negative affect, it can coerce an otherwise semantically inappropriate passive verb into a negative affect reading. From a pragmatic perspective, listeners encountering such constructions cooperatively impose an adversative interpretation, by, for instance, providing a suitable context in which an adversative interpretation would be felicitous. In this connection, Goldberg (1995: 159) observes that '[t]o the extent that the occurring lexical items can be coerced by the construction into having a different but related interpretation, the entire expression will be judged grammatical'.[27]

An obvious consequence of our approach is that a suitable grammatical characterization of this construction can also explain principled deviations from it: the approach, therefore, provides a means to account for the evident synchronic dynamics of the construction. This aspect of our analysis permits us in Section 4.2 below to address various aspects of synchronic syntactic encodings and their relation to the diachronic development of the family of Thai passive constructions. Before discussing this, however, we conclude the present section with some brief comments about the surface encoding of these periphrastic constructions.

From the perspective of syntactic encoding, the lexical item for the passive verb in Figure 11 can be interpreted as accounting for the syntactic relation between the component verbs of the adversative *thuuk* passive. In particular, as mentioned previously, THUUK$_2$ selects for the passive verb, while the passive verb selects an NP functioning as a subject and an optional oblique NP, while reverse-selecting for THUUK$_2$. These specifications facilitate the syntactic realization of this lexical construction within the empirically motivated structures identified in Section 2. Thus, in order to complete this analysis, these lexical representations must be set in correspondence with the constituency relations previously demonstrated for Thai, as illustrated in Figure 13. THUUK$_2$ selects for a passive verb and inherits the arguments of this verb, while requiring that its sole semantic argument is identified with the PAT of the passive verb. The passive verb *tii* 'hit', is an ideal candidate, since its PAT can suitably be interpreted as an affected argument. This latter verb, the output of the adversative *thuuk* passive lexical rule in Figure 12 above, is specified with the passive alignment and reverse-selects for THUUK$_2$.

[27] See Briscoe & Copestake (1999) for an analysis of coercion within HPSG using lexical rules that apply to the main verb.



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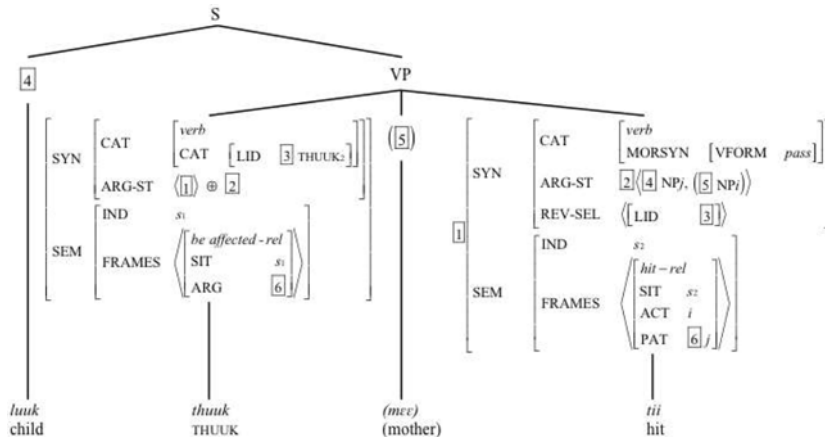



*Figure 13*
Analysis of (41).

As discussed in Section 2.2, Thai adversative *thuuk* passives are not realized in independently attested syntactic structures, but within a VP structure unusual for the language. In particular, despite displaying a surface linear order that resembles Thai aspectual and resultative constructions, specifically [NP V NP V], the final V does not project a VP in the passive. Accordingly, the structure in Figure 13 reflects the empirically motivated constituency of Thai passives.[28]

### 4.2 *Neutral passives and the grammaticalization of* thuuk

Having provided an analysis for the adversative *thuuk* passive, we now turn our focus to the neutral passives in Thai, namely the *dooy* passive and the *thuuk* . . . *dooy* passive. The relevant examples are (18b) and (19), repeated in (47).

(47) (a) naŋsi̶̶ lem nii khian dooy khi̶krit pramoot
book CL this write by Kukrit Pramoot
'This book was written by Kukrit Pramoot.'

(b) rook chanit nii thuuk khonphop dooy nakwittayaasaat
disease kind this THUUK discover by scientist
chaawciin
Chinese
'This kind of disease was discovered by a Chinese scientist.'

[28] With respect to the relative order of the two verbs in this construction, it is worth speculating that this may reflect the residue of an antecedent state, parallel to modern aspectual constructions discussed above, in which the first verb selects for a lexical verb heading a VP constituent.



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The analysis of the *dooy* passive in (47a) is straightforward: as a synthetically expressed predicate,[29] it has no reverse-selection requirement. The lexical rule relating the active and passive variants of *khian* 'write' can be represented as in Figure 14, and the respective lexical items are shown in Figure 15. The two lexical items contain identical FRAMES, but differ in how the semantic roles in these FRAMES map onto the syntax. In the active, the ACT maps onto the first NP in the ARG-ST list, while the PAT maps onto the second NP: in the passive, it is the PAT that maps onto the first NP, while the ACT is obligatorily expressed by a PP. As indicated by the empty list value of the REV-SEL attribute of the passive verb, passive verbs formed by the rule in Figure 14 do not reverse-select for THUUK$_2$

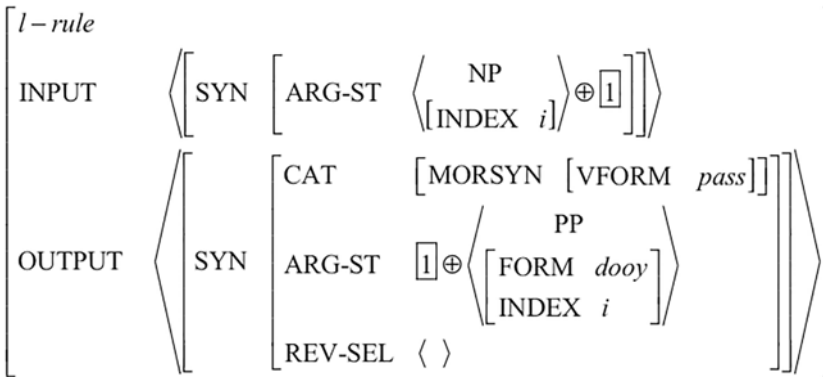



*Figure 14*
*Dooy* passive lexical rule.

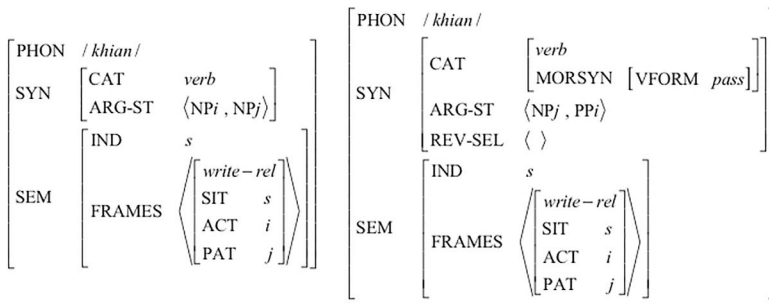



*Figure 15*
Active (left) and passive (right) *khian* 'write'.

[29] Note that we are not claiming that there is synthetic (albeit unpronounced) morphological marking on the passive predicate. Rather, we are suggesting that a morphomic stem (Aronoff 1994) exists for both active and passive, i.e. a single form is associated with both active and passive lexical representations. This is also true for English passive and perfective and past participles with *have* and *is* and adjectival forms (e.g. *an eaten carrot*).



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and this passive construction is thus not associated with adversity. Note that the need to associate the passive alignment with the (sole) verb in the *dooy* passive, and hence the requirement for creating a separate passive lexical item, lends support for our treatment of the adversative *thuuk* passive, where the grammatical relation assignments for the periphrastic passive are similarly associated only with a passive variant of a verb, as opposed to, say, the co-occurring *thuuk*: given that a lexical rule that operates on a single verb to change its grammatical relation assignments is independently required for creating the synthetic *dooy* passive, it is all the more plausible that the periphrastic adversative *thuuk* passive is created via a similar lexical rule, as we have proposed.

Unlike the *dooy* passive in (47a), the passive in (47b) does contain *thuuk*. On present assumptions, this means that the passive verb in (47b) must reverse-select for *thuuk*. Yet, like the *dooy* passive in (47a), and unlike the adversative *thuuk* passive, the passive in (47b) does not convey a sense of negative affect. This appears to create a challenge for our analysis of the adversative *thuuk* passive: if *thuuk* contributes the semantics of affectedness when reverse-selected by the passive verb, how can we explain the acceptability of (47b), which is not conceivable as expressing negative affect?

In this connection, it is important to highlight that the *thuuk . . . dooy* passive in (47b) is a recent innovation in Thai. The fact that it does not receive an adversative interpretation in the presence of *thuuk*, and that the ACT, when expressed, is introduced by *dooy* suggests that the *thuuk . . . dooy* passive is interpretable as a convergence of the two pre-existing passive constructions. Like the adversative *thuuk* passive, it contains the formal exponent *thuuk*; like the *dooy* passive, introduces the demoted ACT by *dooy*. In inheriting the properties of the other two passives, however, the *thuuk . . . dooy* passive also needs to reconcile their conflicting properties: (i) the *thuuk* passive is adversative whereas the *dooy* passive is not, and (ii) the syntactic expression of the demoted ACT is optional in the *thuuk* passive but obligatory in the *dooy* passive. This means that it is not possible for the *thuuk . . . dooy* passive to replicate all the properties of either construction. This being the case, it should not come as a surprise that *thuuk*, as used in the *thuuk . . . dooy* passive, is not the same *thuuk* as that used in the adversative *thuuk* passive. Recall that Prasithrathsint (2006) refers to this *thuuk* as a 'neutral passive marker'. As a neutral marker, it does not possess the semantics of negative affect, and therefore needs to be listed as a separate lexical entry, as represented in Figure 16. In contrast to $\text{THUUK}_2$ in Figure 10, $\text{THUUK}_3$ in Figure 16 does not contain the semantics of affectedness: it is semantically empty. Like $\text{THUUK}_2$, however, $\text{THUUK}_3$ selects for a passive verb that reverse-selects for it, and inherits the arguments of the passive verb. The lexical item for the passive verb *khonphop* 'discover' in (47b) can then be represented as in Figure 17. The verb selects for a subject NP that is associated with the PAT, and optionally, a PP associated with the ACT; it also reverse-selects for $\text{THUUK}_3$. The *thuuk . . . dooy* passive lexical rule is given in Figure 18.



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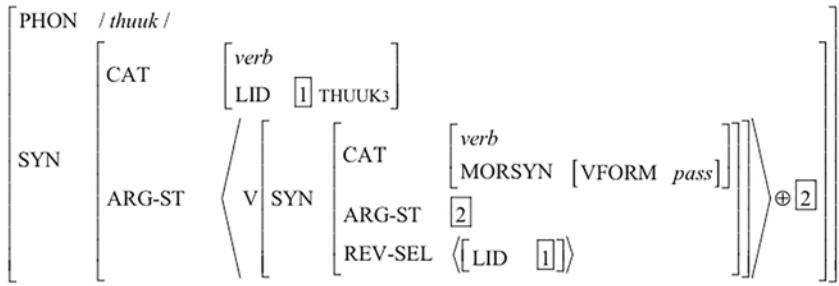



*Figure 16*
Lexical entry for *thuuk* in the neutral *thuuk . . . dooy* passive (THUUK3).

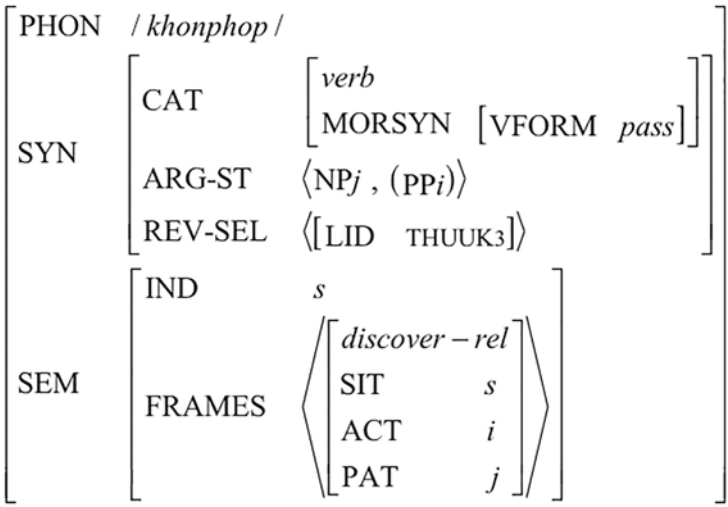



*Figure 17*
Lexical item for passive *khonphop* 'discover'.



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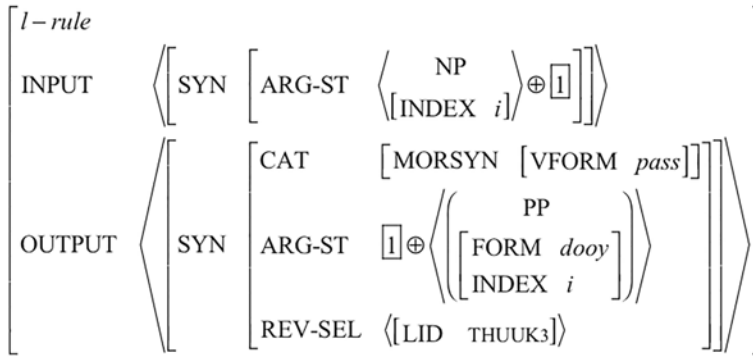



*Figure 18*
*Thuuk . . . dooy* passive lexical rule.

While positing multiple synchronic lexical entries for the phonological form *thuuk* may seem like an unprincipled proliferation of lexical representations, the specific relations between these lexical entries actually reflects the grammaticalization of *thuuk* as a passive auxiliary, as documented by Prasithrathsint (2006). The diachronic trajectory is, thus, reflected in the synchronic relations among these lexical entries. As Prasithrathsint (2006: 125) argues, the adversative *thuuk* passive is relatable to a variant of the active verb where the subject is essentially a PAT, such as in (4)/(42) – this is our $\text{THUUK}_1$. Over time, as a frequent collocate in syntactic expressions of negative affect, it acquired new ARG-ST requirements as a participant in the periphrastic adversative passive construction – this is $\text{THUUK}_2$. Though distinct from $\text{THUUK}_1$, $\text{THUUK}_2$ retains its semantics of affectedness, requiring its sole semantic argument to be identified with the PAT of its complement verb. Finally, the verb loses its semantics and becomes a purely formal auxiliary marker of the passive, i.e. $\text{THUUK}_3$. Here, it is semantically bleached and simply retains its participation in the periphrastic passive construction. This development can be similarly understood in terms of Harris & Campbell's (1995) proposal to refine appeals to grammaticalization into several interacting and distinct processes. In particular, the adversative *thuuk* passive can be seen as combining the processes of REANALYSIS, whereby surface expression belies an underlying change in the relations among component parts, and ACTUALIZATION, whereby the underlying changes are gradually reflected in the surface expression of the construction. Another aspect of their proposal that seems important for the present data is the simultaneous existence of related constructions, rather than the replacement by an innovative construction of its source.

G. Anderson (2011) observes in a discussion of cross-linguistic auxiliary verb constructions that semantic ambiguity of the sort exemplified by *thuuk* is 'in fact an expected consequence of the grammaticalization process, where original and derived interpretations are expected to co-exist, and may do so for a very long



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time in a given language', and that this overlap 'underscores the fact that grammaticalization is a process with a diachronic dimension with expected periods of potential ambiguity' (2011: 817–818). The diachronic dimension concerning the development from an independent verb to an auxiliary in a periphrastic lexical construction further enhances relations with languages containing periphrastic passives such as German and Hungarian, discussed in Ackerman & Webelhuth (1998), among others.

G. Anderson also observes that the course of grammaticalization does not simply end when a lexical verb comes to be used as an auxiliary. He presents the following developmental path, demonstrating that verbal affixes may be derived from former auxiliary verb structures (2011: 818):

(48) Lexical verb > Auxiliary verb > Affix > (ø)

Though this is a less likely trajectory in a classically 'isolating' language like Thai, there is some evidence that *thuuk* sometimes does evince affixal behavior: Prasithrathsint (2006: 125) observes that there are some neutral passives such as *thuuk thaam* 'to be asked' and *thuuk pit* 'to be closed', where nothing can be inserted between the component verbs. She suggests that *thuuk* and the verb have become morphologically synthetic in these cases, where *thuuk* has, in effect, become a prefix. While such fixed formations are consistent with the general trend we observe for Thai, there is no evidence to suggest that this is a productive process. Moreover, given the probabilistic nature of grammar change and the essentially isolating profile of the Thai grammar system, we cannot predict that Thai will ever trace the full trajectory in (48) and reach a state in which prefixal passive formations become the norm.

### 4.3 *Synthesis, periphrasis and syntax*

The analysis that we have developed locates the adversative *thuuk* passive construction in the partial taxonomy of constructions found in natural languages shown in Table 1. The space defined in this identifies a classification from purely syntactic combinations through periphrastic constructions to synthetic words. As can be seen, when a matrix verb simply selects for a complement, this is expressed by familiar syntactic verbal complementation constructions. When there is both syntactic selection by a verb and a co-occurring verb with reverse-selection specification, this entails language-particular variants of periphrastic predicates: as demonstrated by Bonami & Webelhuth (2013), the selected complement is a VP in English TAM constructions, but a verbal complex in German and a lexical verb in French. Finally, when there is neither a syntactic complementation requirement nor a lexical stem that specifies syntactic co-occurrence, this is realized by the familiar complex synthetic word. It remains to be observed that these interactions define a space that can be populated by a great variety of reflexes in natural languages. Some of the nuances of these realizations are presented in G. Anderson (2011), Steever (1993) and Wagner-Nagy (2011), among others.



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| Selection | Reverse selection | Example |
|---|---|---|
| + | – | Ordinary verbal complementation |
| + | + | English, French, German TAM; Thai periphrastic passive |
| – | – | Synthetic morphology |

*Table 1*
Cross-classification of selection and reverse selection.

## 5. Conclusion

We have argued that the basic analysis proposed by Bonami (2015) provides the type of morphological and syntactic assumptions for dealing with the morphology–syntax interface in a manner that permits appropriate adaptations to address cross-linguistic variety in the realization of both inflectional and derivational periphrasis. In accordance with construction-theoretic and lexicalist approaches to grammar analysis, the proposal provides explicit formal mechanisms for dealing with strong parallelisms between ordinary syntactic expression and periphrastic syntactic expression when this is empirically motivated: it also allows language-particular specification for realizations of lexical constructions when no such evidence is available.

In summary, on this account of the Thai adversative *thuuk* passive, the novelty of the proposal resides in the explicitness with which it facilitates the interaction between periphrastic morphology and syntax; it is conservative, however, from a word-based morphological perspective, in reflecting the basic assumption that periphrastically derived lexemes are lexical constructions (see Ackerman & Webelhuth 1998). In this respect, it is distinguishable from lexicalist proposals such as Kathol (1994), Butt (1995), Alsina (1996) and Abeillé et al. (1998), in which grammatical relation assignments are effected in the syntax where the pieces of the relevant elements have access to one another. This renders periphrastic compositions as having a purely syntactic status, without a joint morphological status: while this permits morphology to remain exclusively the domain of synthetic words, these proposals do not participate in the exploration of morphology–syntax interfaces that seek to relate the periphrastic predicates familiar from Word and Paradigm morphological analyses to their realization in phrasal syntax. These two types of approaches, syntactic composition vs. morphological formation, often account equally well for the relevant data, so they are sometimes not clearly distinguishable in their descriptive scope.



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However, they reflect commitments to quite different perspectives on morphological theory and, thereby, lead to different research questions.[30]

As with inflection, derivation expressed by periphrasis can be interpreted as LEXICALIZED SYNTACTIC EXPONENCE (Bonami & Webelhuth 2013). Both obvious and sometimes subtle differences between inflection and derivation should not obscure certain essential similarities across these two morphological types. First, as observed in traditional morphological literature (Robins 1959; Curme 1960; Matthews 1970, 1991), they can both be expressed by synthetic and periphrastic expressions. This, of course, is not surprising since both are the result of diachronic development, whereby the auxiliary verbs are often transparently related to independent verbs in the language: this is as true for inflection as for the derivational instances examined here. In effect, our proposal reflects the assumption that the Thai passive construction is a reuse of old parts for new purposes, and that this has parallels in many construction types cross-linguistically. In particular, the component pieces of the constructions are independently attested lexical/morphological entities that get recombined in ways that produce more than would be expected (or even permitted) by a simple composition of all the information associated with them individually: new constructions emerge via the recombination of independent elements within the grammar system.[31] Moreover, from the perspective of Thai, it is worth observing that the periphrastic predicate fits into the general system of predicate expression types attested in the language: there are many other periphrastic expressions of predicates other than passive, but in each case, one must be careful to distinguish periphrasis from syntactic combination.[32] Second, the lexical constructions associated with periphrasis in both inflection and derivation can be straightforwardly interfaced with language-specific phrasal constituency. An analysis along these lines raises a large typological question that we cannot address here, namely, what the actual taxonomy of constraints on the realization of periphrastic predicates look like. While it is clear that there is a class of languages where the constraints on realization reflect ordinary syntax, the nature of constraints on syntactic encoding and the ensuing effects on the variety of possible syntactic realizations are far less clear in languages where this does not obtain. On the other hand, adoption of this perspective on the morphology–syntax interface encourages further empirical investigation into additional variation as well as the development of theoretical analyses that can account for the resulting typology.

[30] This is an issue explored in Haspelmath (2000), Ackerman & Stump (2004), Spencer (2006), Brown et al. (2012) and Chumakina (2012), *inter alia*. See Blevins (2015) for discussion.

[31] The guiding assumption that grammars are dynamic systems of cooperating constructions is explored in Kathol (2003), Malouf (2003) and Ackerman & Nikolaeva (2014), *inter alia*.

[32] See Ackerman & Stump (2004) and Spencer (2006) for criteria to distinguish these distinct forms of expression.



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*Authors' addresses:* *(Lee)*
*Department of English Language and Literature,*
*National University of Singapore, AS5, 7 Arts Link,*
*Singapore 117570, Singapore*
*ellleel@nus.edu.sg*

*(Ackerman)*
*Department of Linguistics, University of California, San Diego,*
*9500 Gilman Drive, La Jolla, CA 92093-0108, USA*
*fackerman@ucsd.edu*



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