

TESTING FOR SITUATION TYPES IN THAI SIGN LANGUAGE

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Abstract

Situation types are defined according to three temporal features: dynamism, duration, and telicity. The inherent temporal features of a predicate can be uncovered using test frames with simple sentences. The current study presents a series of such tests and applies them to a set of Thai Sign Language (ThSL) predicates. Based on the test results, five situation types are identified in ThSL: states, activities, accomplishments, achievements, and semelfactives.

Keywords: sign language, Thai Sign Language, situation types, aktionsart, event structure, lexical aspect

ISO 639-3 codes: tsq, tha

1 Introduction

This article presents a systematic investigation of situation types in Thai Sign Language (ThSL). These situation types are identified by running ThSL predicates through a series of tests. The study identifies tests that work effectively in ThSL, which situation types are lexicalized in the language, and to which situation type the selected predicates belong. The study uses both lexical and classifier predicates.

Rathmann (2005) presents the only other systematic examination of situation types in a sign language, leaving a cross-modal disparity which this study helps to fill. Some of the tests used in Rathmann (2005) have been adopted or modified for use in the current study.

The temporal features related to situation types have generally been treated as covert lexical properties. However, recent studies (Grose, Wilbur & Schalber 2007; Wilbur 2008) have proposed that sign languages morphologically mark two of these features: duration and telicity. The proposal, known as the Event Visibility Hypothesis (EVH), observes phonological movement patterns that appear to correlate with these features. However, external tests are not used to verify the hypothesis, an omission that leads to circular reasoning (Davidson et al. 2018). For example, the EVH proposes that the presence of the “Endstate morpheme” determines the telic value of the predicate, then uses the telic value of the predicate to establish the meaning of the Endstate morpheme. Thus, this approach of assigning featural values to phonological forms is not used in the current study.

The present investigation instead uses a systematic, test-based approach to identifying featural values. The phonological forms of the predicates and any semantic correlates they encode are beyond the scope of the study. However, once tests have been used to show the featural values of predicates objectively, it paves the way for future studies to do such morphological analyses. The identification of featural values done in the current study also provides a basis for subsequent investigation of grammatical aspects (i.e., perfective and imperfective aspect). The co-occurrence patterns of these aspects with different situation types vary across languages (Smith 1997).

The study here begins with an introduction to situation types in section 1.1. Section 1.2 provides a brief introduction to sign languages. Section 2 then describes the methodology used in the study, and section 3 examines the results of testing ThSL predicates. Section 4 concludes the study with a summary of the test results and areas for further research.

1.1 Situation types

The classification of situation types is often traced back to Vendler (1957), who observed the distinct ‘time schemata’ (temporal features) inherent in English verbs. Many semanticists have built on this seminal work. However, Smith’s (1997) emphasis on the binary featural values that distinguish situation types is the most conducive approach for using test frames. Thus her analysis is used as the framework for this study.

The binary features that distinguish situation types are dynamism, duration, and telicity (Smith 1997). Since these temporal features are inherent to the predicate, they are often referred to as lexical aspect.

The first feature, dynamism, separates states from events. States have [-dynamic] value and include situations such as *be sick*, *own a car*, and *live in Istanbul*. An essential characteristic of states is their ability to be maintained without an ongoing input of energy. In addition, states exist in undifferentiated form through time. Thus, situations such as *Sarah owns a car* are true at any moment during which the state holds. States can be divided into permanent, individual-level states such as *be Hmong* or *be tall* and temporary, stage-level states such as *be sick* or *be happy*. For this study, only the latter category is considered.

Situations that are [+dynamic] require an ongoing input of energy to be maintained. Thus, dynamic situations are often characterized by agency, activity, and change (Smith 1997:29). Typical events include *walk*, *melt*, and *explode*. These events may consist of multiple or single stages. For example, *walk* can be broken down into individual steps, with each step representing a stage of the event. Alternatively, *explode* consists of a single stage – transitioning from intact to in pieces. Finally, events are characterized by real or perceived motion (Smith 1997:28), a feature that can be utilized to test for situation types.

Duration is the second featural value of situation types. Durative events, such as *walk*, *bend*, and *build a boat*, have successive stages that unfold over time. The stages of these durative events may be homogenous (repetitions of identical cycles), such as each step in *walk*, or heterogeneous, such as each phase in *build a boat*. In contrast, instantaneous events (also called punctual events) such as *knock* and *pop* consist of a single stage. Smith (1997:29) notes that the instantaneous nature of these events is idealized (i.e., they may technically take several milliseconds). However, a distinction between durative and instantaneous events is still reflected in many languages (Comrie 1976:43; Smith 1997:30).

The final temporal value is telicity. Events that are [+telic], such as *melt*, *bend*, or *explode*, have inherent endpoints that result in a change of state. For example, the participant may transition from solid to liquid, from straight to bent, or from intact to in pieces. Events that are [-telic] lack an inherent endpoint and do not involve a change of state, for example, *walk*, *paint*, and *swim*. Some atelic events, such as *the light flashed*, appear telic since they have a predictable termination. However, although the event terminates, no change of state takes place. For example, the state of a light before and after it flashes is the same (i.e., the light is off). Instead, the termination of the event is a product of its instantaneous nature. The distinction between telic and atelic termination is evidenced by the fact that instantaneous, atelic events are repeatable (*the light flashed and flashed and flashed*). In contrast, instantaneous telic events are not repeatable (**the house exploded and exploded and exploded*).

Telic situations can be categorized into incremental theme verbs, verbs of directed motion, and degree achievements (Kennedy & Levin 2008). For simplicity’s sake, only predicates from the final category were used in the current study.

The situation types, according to their temporal values, are given in Table 1. The English examples in the far-right column illustrate each type.

Table 1: Featural values of situation types (Smith 1997:30).

	Static	Durative	Telic	English examples
State	+	+	n/a	<i>be sick, be angry, be tall, be in limbo</i>
Activity	-	+	-	<i>draw, swim, meditate, spin, dream, run</i>
Accomplishment	-	+	+	<i>bend, straighten, dry, melt, untangle</i>
Achievement	-	-	+	<i>explode, vanish, die, find, pop, drop</i>
Semelfactive	-	-	-	<i>knock, clap, flash, blink, jump, tap</i>

The predicates in Table 1 are organized by their basic situation type. However, adding constituents can coerce the overall aspectual value of a clause. Consider the situations shown in (1).

- (1) a. John ran.
 b. John ran to the park.
 c. Sally knocked.
 d. Sally knocked for five minutes.

In (1a) *ran* is an activity (dynamic, durative, atelic). However, the addition of *to the park* in (1b) adds an endpoint and makes the event telic. Likewise, while *knock* in (1c) is instantaneous, the addition of *for five minutes* in (1d) creates an iterative interpretation of the predicate, changing the overall durative value of the clause. Smith (1997:36) refers to clauses like those in (1a) and (1c) as basic-level situation types. The situations in (1b) and (1d) are derived situation types. In derived situation types, the featural values of adverbials override the value of predicates in predictable ways (Smith 1997:53). Since the current study focuses on the featural values of predicates, such complex clauses are avoided. Instead, basic-level constructions are used that allow the featural values of the predicates themselves to come to light.

1.2 Sign Languages

The Ethnologue (Fennig & Simons 2018) lists 142 distinct sign languages. These sign languages are not manually-coded versions of local spoken languages; they are both grammatically and lexically independent.

The most significant difference between spoken and signed languages lies in their modality. While spoken languages use an oral-aural modality, sign languages use a visual-gestural one. Specifically, sign languages are articulated by the hands, face, and body of the signer. The signer's hands form the manual component of the sign, which is defined according to the hands' shape (e.g., fingers spread or closed), location (e.g., the space in front of the signer or on the signer's body) orientation (e.g., palms facing up or down) and movement (e.g., up, down, arching). Figure 1 illustrates these features.

Figure 1: *ThSL sign SLOW* – illustration of the phonological parameters of a sign



Figure 1 shows the ThSL sign *SLOW*. In each of the frames, the shape of the signer's right hand is a pointed index finger, and his left hand is held in a fist. The right palm faces down while the other palm faces left (orientation). The sign is articulated along the inside of the signer's left forearm (location). The signer's right hand is placed on the inside of his opposite wrist, as seen in the first frame. It is then drawn down along the forearm and comes to a stop at the inside of his elbow (movement), where it is shown in the second frame.

The face and body comprise the non-manual components of a sign. These features include the aperture of the eyes (e.g., wide, neutral), eyebrows (e.g., raised or lowered), mouth (e.g., puckered or flat), cheeks (e.g., puffed or pulled-in), the position and movement of the head (e.g., tilted or nodding), and posture (e.g., leaning forward or to the side). For example, in Figure 1, the signer's eyes are slightly squinted, his eyebrows lowered and drawn together, his mouth slightly open, and his chin tilted downward.

Thai Sign Language is the focus of the current study. Over the last several decades, multiple studies have been published on linguistic features of the language. These include Collins-Ahlgren (1990) and Wallace (2019) on ThSL spatial predicates, Lumtjen (1997) on word-order, Pradapwattanangune (1998) on negation, Wudthayagorn (1998) on yes-no questions, Kullavanijaya & Thepkanjana (2001) on forming entity-denoting signs, and Niwatapant & Tumtavitikul (2008) on ThSL syllable and word structure. Additional studies have also contrasted ThSL and Thai (Niwatapant 2006; Niwatapant & Tumtavitikul 2005; Tumtavitikul, Niwatapant & Dill 2009). Finally, Danthanavanich's (2008) dissertation on ThSL grammar covers a wide variety of topics. However, none of these studies have investigated situation types. The methodology employed in this first examination of situation types in ThSL is described in section 2.

2 Methodology

For this study, multiple tests were attempted before a set was identified that worked well in ThSL. This process and the tests ultimately chosen are described in section 2.1. The selection of predicates is discussed in section 2.2. The data elicitation process is reviewed in section 2.3.

2.1 Test selection

Two tests were sought to identify each featural value of ThSL predicates: two tests to identify dynamism, two for duration, and two for telicity. Smith (1997:47) notes that, rather than working on a syntactic level, tests that identify featural values produce either semantically well-formed or semantically ill-formed constructions, depending on the featural values of the predicate.

Where possible, the tests identified for this study were based on those used in studies of other languages. However, several tests used in other languages did not work well into ThSL. First, as noted by Van Valin (2005:33), compatibility with manner adverbials such as *violently*, *vigorously*, *actively*, *strongly*, or *energetically* can be used to identify a predicate's dynamic value. For example, *the tree shook violently* is acceptable (and hence dynamic) while *the tree was green violently* is semantically ill-formed (and hence static). However, in ThSL manner is most often communicated by modifying the form of the verb instead of adding an independent adverbial sign (Danthanavanich 2008:85). A test using the independent adverbial STRONG was still attempted. However, it proved to be ineffective due to limited collocational distribution.

Another test for dynamism, also suggested by Van Valin (2005:33), is compatibility with the question 'what happened?' In English, events such as *the woman fainted* can be used in answer to this question while states, such as *the woman is kind*, sound odd. Two ThSL signs were tried in an attempt to replicate this test. However, the first sign for HAPPEN was identified as a loan sign from ASL that was not widely known or used. The second sign had the more specific meaning *happened for the first time*, which made it incompatible with ordinary events. This test, then, was also unusable.

Rathmann (2005:67) proposes embedding the situation under a verb of perception as an additional test for dynamism. For example, *Henry saw the tree shaking* is acceptable while *Henry saw his Dad knowing history* is not. However, while this test can work to identify individual-level states, such as *know history*, it does not identify stage-level states. Because of this restriction, this test was also discarded.

A third test, based on the volitional nature of many events (Smith 1997:42), was adaptable to ThSL. This volitional quality allows dynamic situations to be embedded under verbs of force or persuasion, such as *go buy milk* or *please sit down*. In contrast, entry into a state is non-volitional. Hence, *go be sick* and *please be tall* sound strange. Rathmann (2005) utilized this feature in his study of situation types in American Sign Language (ASL) using the signs GO.AHEAD and DO.YOU.MIND. There is no direct equivalent to these signs in ThSL. Instead, requests use CAN or PLEASE while GO is used with commands. Figure 2 shows these signs.

Figure 2: CAN (frame 1), PLEASE (frame 2), GO (frame 3)



In Figure 2, the first frame shows the sign CAN. The forward lean, facial expression, and mouthing used in the sign mark it as a question (e.g., *can you help Grandma?*). Such a question is odd with states (e.g., **can you be beautiful?*). Two signs with articulations similar to CAN have the meanings *can* as in *you can help Grandma* and *good* as in *it is good for you to help Grandma*. These signs are compatible with states (e.g., *you can be beautiful*, *it is good for you to be beautiful*). This factor makes the second two forms ineffective for testing. However, due to the close phonological form of the three signs, informants would subconsciously switch them in and out during testing. This shifting made the test CAN difficult to work with and it was ultimately discarded. The sign in the second frame, PLEASE, was judged to be too polite for most situations and was also discarded.

The sign in the final frame of Figure 2, the command GO, accompanied by a firm head nod, worked more effectively. Alternatively, a command can be formed by only using a firm head nod as the predicate is articulated. Thus, both the sign GO and articulating a firm head nod with the predicate were used as the first test for dynamism. Note that since the head nod occurs with the predicate at the end of the clause, it is transcribed using the convention VERB_{NOD} where NOD indicates the head nod.

A second test was still needed, and so the test INTERRUPT was introduced. This test is also based on the premise of volition. However, while command forms focus on the inability to force entry into a state, interruption focuses on the inability to force exit out of the state. Hence, it acceptable to say, *he was buying milk when interrupted by a friend* but odd to say *she was sick when interrupted by a friend*. Figure 3 shows the sign used for this test.

Figure 3: INTERRUPT in ThSL



The sign INTERRUPT in Figure 3 occurs at the end of the clause and is followed by the reason for the interruption. This test proved useful for distinguishing states from events. It could also distinguish durative events from instantaneous ones. Specifically, since instantaneous events are too short to be interrupted, INTERRUPT must attach to the process leading up to the event rather than to the event itself. In contrast, for durative situations, the event can be interrupted as long as it is portrayed as uncomplete. For example, *Superman was bending Captain America's vibranium shield when interrupted by Lois Lane* is acceptable since the event is portrayed as ongoing. In contrast, *Superman bent Captain America's vibranium shield when interrupted by Lois Lane* is no longer acceptable since the event is portrayed as completed and can no longer be interrupted. Thus, INTERRUPT can identify the dynamic value of situations as well as their durative value.

Tests designed to identify duration were also sought. First, a test using manner morphemes, which had been successfully used by Rathmann (2005) to identify duration, was attempted. However, while ASL has at least two such manner morphemes (meaning *carelessly* and *in a regular manner*) that are co-articulated with the verb, no similar morphemes have been identified in ThSL. In addition, the study sought to find tests that did not require modification of the predicate itself. The reason for this was that alteration of the form can change the situation type of the predicate (see Klima & Bellugi 1979: chap. 11). Instead, a separate adverbial sign NO.FEELING was attempted. The sign, however, was found to have too many collocational restrictions to be used effectively.

Another test used by Rathmann (2005:76) was compatibility with durative adverbials such as *all day* or *one hour*. As long as the duration specified was sensitive to pragmatic norms, this test worked well in ThSL. Figure 4 shows two of the durative adverbials that were used.

Figure 4: DAY-THREE (left), MINUTE-FIVE (right)



In Figure 4, the first set of frames shows the sign *three days* DAY-THREE. The second set shows the sign *five minutes* MINUTE-FIVE. These signs, along with other adverbials of temporal extent, were used as the first test for duration.

The second test for duration was based on Van Valin's (2005:36) observation that instantaneous events are odd with pace adverbs such as *slowly*. Initially, this test had been rejected since sign languages often encode pace by modifying the speed at which the predicate is articulated instead of adding a separate adverb. However, in the absence of an alternative test, compatibility with SLOW was chosen as the second test for duration. The sign is shown in Figure 5.

Figure 5: SLOW in ThSL



The sign SLOW shown in Figure 5 is formed by placing the index finger of one hand on the inside of the opposite wrist, as shown in the first frame. The finger is then pulled backward and comes to a stop at the inside of the elbow, where it is shown in the second frame. When this sign was used with predicates, the articulation of the predicate was often slowed down as well. However, slowing down the articulation of an instantaneous predicate such as EXPLODE coerces the instantaneous nature of the event and makes it durative (i.e., creates a slow-motion or drawn-out interpretation of the event). Because of this potential for coercion, the slowly-articulated form was avoided.

In addition to identifying durative events, pace adverbs can also indicate dynamism. Specifically, since dynamic events involve motion, the movement can be said to occur quickly or slowly. In contrast, states lack motion, making them incongruous with pace adverbs. Thus, tests like SLOW can serve the double function of identifying a situation's dynamism as well as its duration.

Finally, potential tests for telicity were explored. First, Smith (1997:54) points out that atelic events in English occur with *for an hour/month/year* while telic events occur with *in an hour/month/year*. However, ThSL does not use adpositions to express either form, and signs such as ONE.HOUR can be used with both telic and atelic events.

Another test, identified by Smith (1997:43) and adapted by Rathmann (2005) for use in ASL, is the co-occurrence of *spend* with atelic events (*I spent an hour writing*) and *take* with telic events (*it took an hour to write the report*). Again, this contrast is not used in ThSL, and a similar distinction could not be identified.

An additional test used by Rathmann (2005), compatibility with *still*, was then tried with ThSL. The test is based on Loebner's (1989) and Krifka's (2000) observations that *still* indicates a sentence is still true at the time of utterance, making it incompatible with situations that include a change of state. In his study, Rathmann (2005:79) used this test in the statement-question frame reproduced in (2) and (3).

- (2) a. JOHN RUN
'John ran.'
- b. STILL RUN?
'Is he still running?'
- (3) a. JOHN PUBLISH PAPER
'John published a paper.'
- b. *STILL PUBLISH

‘Is he still publishing?’

In (2) and (3), the ASL sign STILL is used to identify telic situations. The atelic situation in (1a) is compatible with the question in (1b) since no change of state has occurred. However, the change of state included with the telic situation in (2a) makes the question in (2b) semantically ill-formed.

Since ThSL does not have a direct equivalent to the ASL sign STILL, alternative signs were sought. First, the sign CONTINUE was tried. However, it proved to have discourse-level implications with the meaning *and from x continued to y*, rather than *continued x’ing*. Next, the sign STILL.THERE, which has both durative and locative meaning, was attempted. Two variations of this sign, which is equivalent to the phrase, *still there doing x*, is shown in Figure 6.

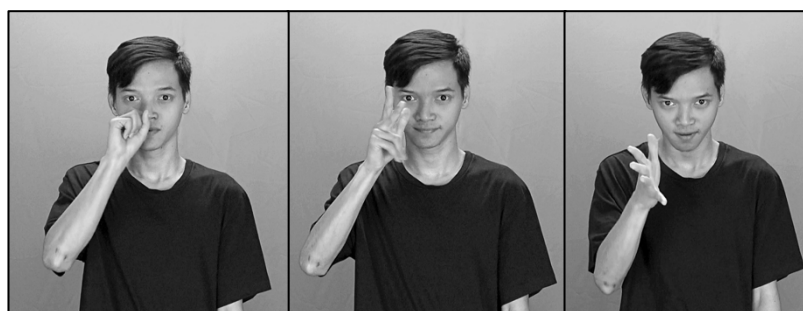
Figure 6: Two variations of STILL.THERE in ThSL



The first frame of Figure 6 shows the variation of the sign STILL.THERE that is used when the referent is present. The signer rounds his lips and places the bent index finger of one hand against his chin. The second frame shows a variation of the sign in which the signer’s second hand points in the idealized direction of the referent.

As well as indicating the continuation of the event, it is possible that STILL.THERE is a type imperfective aspect marker in ThSL. However, an imperfective viewpoint can also be recruited as a test for telicity. For example, the phrase *the ice cube melted and is melting still* is semantically odd. The oddity is due to the completed portrayal of the telic event (conveyed by the simple past tense *melted*) being followed by an imperfective form of the same event (conveyed by the progressive form *melting*) with a specific participant (the ice cube). Thus, although its grammatical function has not been determined, the sign STILL.THERE was chosen as the first test for telicity. However, instead of placing the test in a statement-question frame, it was placed in a statement frame for simplicity.

A second test for telicity was found in Van Valin’s (2005:38) observation that a semelfactive (atelic) event can be repeated with the same referent. In contrast, achievements (the telic counterpart of semelfactives) can only be repeated with a new participant since the original participant has already undergone a change of state. Several studies (Pelkey 2004; Phillips & Thiengburanathum 2007) have used this feature to distinguish the telicity of instantaneous situation types (i.e., semelfactives and achievements) by using the frame *just now ... three times* (e.g., *just now the nurse knocked three times*). In ThSL, the sign *three times* appears to be minimally distinguished from the sign *a third time*. Because of this, when used with *just now*, informants would often reinterpret the sign *three times* to mean *a third time* in order to make the clause acceptable. For example, *the student just now passed the test three times* was rephrased to mean *the student just now passed the test a third time* and was thus judged to be acceptable. The sign was changed subconsciously when the clause was signed back, which made it a confounding factor for eliciting consistent judgments. An alternative sign, which cannot shift into an ordinal meaning, was used instead. This sign, MANY.TIMES, is shown in Figure 7.

Figure 7: *MANY.TIMES* in ThSL

The sign in Figure 7 is formed by placing a closed fist near the side of the nose, then simultaneously twisting the wrist and moving the hand forward while the fingers spread open. This sign was selected as the second test for identifying telicity in ThSL predicates. It was also found that by dropping *just now* the test could be used to distinguish the telicity of both durative and instantaneous events.

Table 2 presents the tests that worked well with ThSL predicates in this study.

Table 2: Tests used to identify the featural value of ThSL predicates

		States	Activities	Accomplishments	Achievements	Semelfactives
GO, <i>firm headnod</i>	<i>Tests for: dynamic vs. static</i> <i>Quality: volition allows events to embed under imperatives</i>	x	✓	✓	✓	✓
INTERRUPT	<i>Tests for: dynamic vs. static; durative vs. instantaneous</i> <i>Quality: volition and duration allow interruption</i>	x	✓	✓	✓	✓
SLOW	<i>Tests for: dynamic vs. static; durative vs. instantaneous</i> <i>Quality: motion and duration allow pace modification</i>	x	✓	✓	x	x
MINUTE-FIVE, DAY-THREE, etc.	<i>Tests for: durative vs. instantaneous</i> <i>Quality: duration allows temporal extent to be specified</i>	✓	✓	✓	x	x
STILL.THERE	<i>Tests for: telic vs. atelic</i> <i>Quality: events that specify a change of state cannot continue with the same participant once the change has occurred</i>	✓	✓	x	x	✓
MANY.TIMES	<i>Tests for: telic vs. atelic</i> <i>Quality: events that do not cause a change of state can be repeated with the same participant(s).</i>	✓	✓	x	x	✓

In the first column of Table 2, the ThSL sign used for each test is shown. In the second column, the first line in each cell indicates which featural value (or values) the test identifies. The second line explains the underlying quality on which the test is based. In the subsequent columns, an “X” indicates incompatibility with the test while a checkmark shows compatibility. The predicates used with these tests are discussed in section 2.1.

2.1 Predicate selection

Two ThSL predicates were chosen to represent each situation type. In the selection process, only single-sign predicates were chosen. Predicates that used a complex construction (e.g., the clause *the teacher is Hmong* used the phrase BORN HMONG DNA ABSORB to express ethnicity) or ones that used serial verbs (e.g., CAT HEART.STOP DIE *the cat's heart stopped and it died*) were omitted. Uniformity was also sought in the transitivity of the predicate pairs for each situation type and in the type of arguments (count vs. mass) with which they occurred, since these factors affect the telicity of the clause (Smith 1997:54). Finally, since several

tests depended on the agency of the subject, predicates which take animate, volitional subjects were chosen over those that took non-volitional ones. Table 3 shows the predicates used in this study.

Table 3: *Predicates used to test for situation types in ThSL*

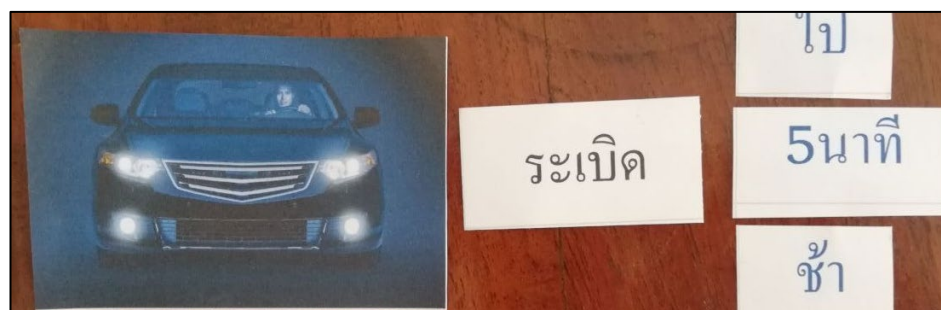
Situation type	ThSL Predicate
States	SICK, ANGRY
Activities	SWIM, PAINT
Accomplishments	BEND.BAR, STRAIGHTEN.BAR
Achievements	ERASE (i.e., uninstall), TURN.OFF.LIGHT
Semelfactives	CLAP, KNOCK.ON.DOOR

In Table 3, the predicates chosen for the study are given in the second column. The situation type for each predicate is given in the first column. Each predicate is a single sign in ThSL, although compound glosses have been used for some (BEND.BAR, STRAIGHTEN.BAR, TURN.OFF.LIGHT, and KNOCK.ON.DOOR) to express their meaning more clearly in English. Note that the ThSL sign ERASE can be used in various contexts. For this study, it was used in the context of removing the social media application Line from a phone. These predicates were each run through the tests shown in Table 2, a process that is described in section 2.3.

2.3 Data elicitation

In the first elicitation session, cards with the selected predicates (written in Thai) were first divided between three native signers of ThSL. The informants then chose arguments for their predicates from a set of pictures. The test frames, also written in Thai on a set of cards, were lined up vertically next to the clause the signer had created. The signer could then “move” their clause down the line of tests to sign it in each frame. The setup is illustrated in Figure 8.

Figure 8: *Example of picture and text prompts used to elicit predicates in test frames*



In the picture shown in Figure 8, the informant chose CAR as the argument for EXPLODE (Thai ระเบิด). He then signed the clause with each of the test frames, three of which can be seen on the far-right side of the image.

Several days after filming the clauses, the videos were shown to the same informants and discussed. As well as eliciting judgments on the acceptability of the clause, the discussion provided valuable insight into patterns of derived situation types that the tests themselves caused. These patterns predominantly aligned with those predicted by Smith (1997). However, while Smith (1997:56) states that it is the interpretation of the predicate that is coerced in these situations, it was found that in ThSL the inherent features of the predicate can affect the meaning of the adverbial (see section 3.2).

Finally, it was found that many clauses are more natural if a reactionary sign (e.g., TIRED, BORED) is added to the end, as illustrated in (4).

- (4) GRANDMA FROG SELL ALL.DAY ONE.DAY TIRED
 ‘Grandma sold frogs all day and is tired.’

In (4), the sign TIRED provides a reason, pragmatically, for why the clause was uttered (i.e., to explain why grandma is so tired). Appending signs like this to clauses made them more natural and did not affect the

temporal value of the situation. Thus, they were allowed in the data. The results of testing the selected predicates are described in section 3.

3 Testing for situation types in Thai Sign Language

The following discussion is arranged according to test-type. First, the results of testing predicates for their dynamic values are given in section 3.1, then for their durative values in section 3.2, and for their telic values in section 3.3.

3.1 Testing for dynamism

The two tests used to identify the dynamic value of predicates were 1) compatibility with command forms and 2) compatibility with INTERRUPT. Dynamic situations are compatible with both tests; static situations are incompatible.

The results for testing each of the predicates with a command form are shown in (5) through (14). Semantically well-formed clauses are unmarked while an asterisk precedes ill-formed clauses.

- (5) *SICK GO
'Go be sick!'
- (6) *ANGRY GO
'Go be angry!'
- (7) SWIM GO
'Go swim!'
- (8) PAINT GO
'Go paint!'
- (9) STRAIGHTEN.BAR GO
'Go straighten the bar!'
- (10) BEND.BAR GO
'Go bend the bar!'
- (11) LINE ERASE_{NOD}
'Erase your Line app!'
- (12) LIGHT TURN.OFF.LIGHT GO
'Go turn off the light!'
- (13) SOM MODEL CLAP_{NOD}
'Som is modeling, clap (for her)!'
- (14) TIME ALREADY KNOCK.ON.DOOR GO
'It's time already, go knock (on the patient's door)!'

The first two examples, (5) and (6), use GO with the predicates SICK and ANGRY, respectively. The incompatibility of the command forms with these predicates indicates they are [-dynamic]. The well-formedness of the clauses in (7) through (14) indicates that the remaining predicates are [+dynamic]. Table 4 captures the results for this test.

Table 4: Test results for the dynamic value of ThSL predicates using command forms

Predicate	Compatible with command form	Indicated value
SICK	X	[-dynamic]
ANGRY	X	[-dynamic]
SWIM	✓	[+dynamic]
PAINT	✓	[+dynamic]
BEND.BAR	✓	[+dynamic]
STRAIGHTEN.BAR	✓	[+dynamic]
ERASE	✓	[+dynamic]
TURN.OFF.LIGHT	✓	[+dynamic]
CLAP	✓	[+dynamic]
KNOCK.ON.DOOR	✓	[+dynamic]

The second test for dynamism, INTERRUPT, can also identify the durative value of the predicate. First, it is incompatible with states since they are non-volitional, as shown in (15) and (16).

(15) *GRANDMA SICK INTERRUPT
‘Grandma was sick when interrupted by ...’

(16) *TEACHER ANGRY INTERRUPT
‘The teacher was angry when interrupted by ...’

The clauses in (15) and (16) are infelicitous, indicating that SICK and ANGRY are [-dynamic]. In contrast, INTERRUPT occurs felicitously with the first set of dynamic predicates, activities, as shown in (17) and (18).

(17) GRANDPA SWIM INTERRUPT
‘Grandpa was swimming when he was interrupted by ...’

(18) GRANDMA PAINT INTERRUPT
‘Grandma was painting when she was interrupted by ...’

The felicitous occurrence of INTERRUPT with SWIM in (17) and PAINT in (18) indicates that the predicates are [+dynamic]. Since the event itself is interrupted, the predicates are also shown to be [+durative].

The sign INTERRUPT is also felicitous with accomplishment predicates if the event is portrayed as uncompleted (i.e., the result state has not yet been reached). Kuhn (2017:19) observes that in ASL completed movement of the predicate indicates the result state has been reached; incompleting movement indicates that it has not. This form-meaning correlation was also true of the ThSL predicates tested. Thus, a shortened form of the accomplishment predicates was used to test with INTERRUPT. The clauses are shown in (19) and (20).

(19) SUPERMAN METAL BAR STRAIGHTEN.BAR_{UNCOMPLETED} INTERRUPT
‘Superman was straightening the metal bar when he was interrupted by ...’

(20) SUPERMAN METAL BAR BEND.BAR_{UNCOMPLETED} INTERRUPT
‘Superman was bending the metal bar when he was interrupted by ...’

In (19) and (20), both STRAIGHTEN.BAR_{UNCOMPLETED} and BEND.BAR_{UNCOMPLETED} occur felicitously with INTERRUPT, indicating that the predicates are [+dynamic]. In addition, since it is the event itself that is interrupted, the predicates are shown to be [+durative].

In contrast, when INTERRUPT is used with instantaneous ThSL predicates, it is the process leading up to the event that is interrupted. The clauses in (21) through (24) illustrate.

- (21) FRIEND LINE ERASE INTERRUPT
 ‘My friend was kept from erasing the application Line (from his phone) by ...’
- (22) MOTHER LIGHT TURN.OFF.LIGHT INTERRUPT
 ‘Mother was kept from turning off the light by ...’
- (23) CLAP INTERRUPT
 ‘(I) was kept from clapping by ...’
- (24) NURSE HOSPITAL KNOCK.ON.DOOR INTERRUPT
 ‘The hospital nurse was kept from knocking on the door by ...’

In examples (21) through (24), the presence of INTERRUPT indicates that the event was kept from occurring (at least temporarily). The fact that the events themselves cannot be interrupted indicates they are [-durative], while the well-formedness of the clauses indicates they are [+dynamic]. The results of testing the selected ThSL predicates with INTERRUPT are shown in Table 5.

Table 5: *Test results for the featural values of ThSL predicates using INTERRUPT*

Predicate	Compatible with INTERRUPT	Indicated value
SICK	X	[-dynamic]
ANGRY	X	[-dynamic]
SWIM	✓	[+dynamic], [+durative]
PAINT	✓	[+dynamic], [+durative]
BEND.BAR _{uncompleted}	✓	[+dynamic], [+durative]
STRAIGHTEN.BAR _{uncompleted}	✓	[+dynamic], [+durative]
ERASE	✓	[+dynamic], [-durative]
TURN.OFF.LIGHT	✓	[+dynamic], [-durative]
CLAP	✓	[+dynamic], [-durative]
KNOCK.ON.DOOR	✓	[+dynamic], [-durative]

As shown in Table 5, the predicates SICK and ANGRY did not occur felicitously with INTERRUPT, indicating they are [-dynamic]. In contrast, INTERRUPT is acceptable with dynamic predicates. First, with durative predicates, INTERRUPT indicates that the event is interrupted. If the event is also telic, a shortened form of the sign must be used to indicate that the change of state involved in the event has not yet occurred. With instantaneous predicates, it is the process leading up to the event that is interrupted, not the event itself. This phenomenon reflects their [-durative] value. The durative values of dynamic predicates are further illustrated in section 3.2.

3.2 Testing for duration

Two tests were used to identify the durative value of the selected predicates. These were 1) compatibility with temporal extent adverbs such as MINUTE-FIVE and 2) compatibility with SLOW. The results of using the first test with durative predicates are shown in (25) through (30).

- (25) GRANDMA SICK DAY-TWO
 ‘Grandma was sick for two days.’

- (26) TEACHER ANGRY MINUTE-FIVE CALM.DOWN
 ‘The teacher was angry for five minutes and then calmed down.’
- (27) SWIM MINUTE-THIRTY
 ‘(I) swam for thirty minutes.’
- (28) GRANDMA PAINT MINUTE-THIRTY
 ‘Grandma painted for thirty minutes.’
- (29) SUPERMAN METAL BAR STRAIGHTEN.BAR MINUTE-FIVE
 ‘Superman straightened the metal bar in five minutes.’
- (30) SUPERMAN METAL BAR BEND.BAR MINUTE-FIVE
 ‘Superman bent the metal bar in five minutes.’

In (25) through (30), the predicates SICK, ANGRY, SWIM, PAINT, STRAIGHTEN.BAR, and BEND.BAR occur felicitously with adverbials of temporal extent, indicating they are [+durative]. In contrast, ERASE and TURN.OFF.LIGHT are incompatible with such adverbs, as shown in (31) and (32).

- (31) *FRIEND LINE ERASE MINUTE-FIVE
 ‘My friend erased the application Line (from his phone) for five minutes.’
- (32) *MOTHER LIGHT TURN.OFF.LIGHT MINUTE-FIVE
 ‘Mother turned off the light for five minutes.’

In (31) and (32), ERASE and TURN.OFF.LIGHT are semantically ill-formed with MINUTE-FIVE, indicating they are [-durative] events. The final two predicates, when used with MINUTE-FIVE, were interpreted as iterative events, as seen in (33) and (34).

- (33) CLAP MINUTE-FIVE
 ‘(I) clapped for five minutes.’
- (34) KNOCK.ON.DOOR MINUTE-FIVE
 ‘(I) knocked for five minutes.’

In (33) and (34), the presence of MINUTE-FIVE causes a coerced, iterative interpretation of the predicates. This coercion aligns with Smith’s (1997:56) principle of external override that states that the featural value of the adverbial overrides the value of the predicate. This same phenomenon is seen in English, where the addition of a phrase like *for five minutes* causes a durative interpretation of atelic, instantaneous events. However, by adding the sign ONE.TIME to the ThSL clauses, this interpretation is blocked, as shown in (35) and (36).

- (35) *CLAP ONE.TIME MINUTE-FIVE
 ‘(I) clapped one time for five minutes.’
- (36) *KNOCK.ON.DOOR ONE.TIME MINUTE-FIVE
 ‘(I) knocked one time for five minutes.’

In (35) and (36) the additional specification of ONE.TIME prevents the iterative interpretation of the predicates CLAP and KNOCK.ON.DOOR that would otherwise occur in the presence of a durative adverbial. With this interpretation blocked, the clause becomes infelicitous and makes the instantaneous nature of the events

apparent. The results of using temporal extent adverbs to identify the durative value of predicates are summarized in Table 6.

Table 6: Test results for the durative value of ThSL predicates using temporal extent adverbs

Predicate	Compatible with temporal extent	Indicated value
SICK	✓	[+durative]
ANGRY	✓	[+durative]
SWIM	✓	[+durative]
PAINT	✓	[+durative]
BEND.BAR	✓	[+durative]
STRAIGHTEN.BAR	✓	[+durative]
ERASE	X	[-durative]
TURN.OFF.LIGHT	X	[-durative]
CLAP	X	[-durative]
KNOCK.ON.DOOR	X	[-durative]

In Table 6, the first six predicates, SICK, ANGRY, SWIM, PAINT, BEND.BAR, and STRAIGHTEN.BAR are compatible with temporal extent adverbs, indicating they are [+durative]. In contrast, ERASE and TURN.OFF.LIGHT are incompatible and thus [-durative]. Finally, if ONE.TIME is added to the test when it is used with CLAP and KNOCK.ON.DOOR, it prevents an iterative interpretation. The predicates are then incompatible with the test frame, indicating they are [-durative].

The second test for duration identifies both dynamism and duration. First, since states do not involve motion, they cannot be said to occur slowly. This fact should prevent SLOW from occurring felicitously with states. However, when used with static predicates, SLOW was reinterpreted to mean *for a long time*, a temporal extent adverbial. This shift is shown in (37) and (38).

(37) GRANDMA SICK SLOW
 ‘Grandma has been sick for a long time.’

(38) TEACHER ANGRY SLOW
 ‘The teacher was angry for a long time.’

In both (37) and (38), the meaning of SLOW, when used with static predicates, is reinterpreted to mean *for a long time*. This re-interpretation of the adverbial indicates the predicates are incompatible with pace adverbials, reflecting a [-dynamic] value.

On the other hand, activities and accomplishments involve both motion and duration. They are, thus, compatible with pace adverbials, as shown in (39) through (42).

(39) GRANDPA SWIM SLOW
 ‘Grandpa swam slowly.’

(40) GRANDMA PAINT SLOW
 ‘Grandma painted slowly.’

(41) SUPERMAN METAL BAR STRAIGHTEN.BAR SLOW
 ‘Superman straightened the metal bar slowly.’

(42) SUPERMAN METAL BAR BEND.BAR SLOW
 ‘Superman bent the metal bar slowly.’

In (39) through (42), the predicates SWIM, PAINT, STRAIGHTEN.BAR, and BEND.BAR form semantically well-formed clauses with the pace adverbial SLOW, indicating they are [+durative] predicates.

The next three predicates take on an ingressive interpretation when used with SLOW. This interpretation focuses on the preliminary stages of the event, as shown in (43) through (46).

- (43) FRIEND LINE ERASE SLOW
 ‘My friend was slow to erase the application Line (from his phone).’

- (44) MOTHER LIGHT TURN.OFF.LIGHT SLOW
 ‘Mother was slow to turn off the light.’

- (45) CLAP SLOW
 ‘(I) was slow to clap.’

- (46) NURSE HOSPITAL KNOCK.ON.DOOR SLOW
 ‘The hospital nurse was slow to knock on the door.’

In (43) through (46), the use of SLOW with the predicates ERASE, TURN.OFF.LIGHT, CLAP, and KNOCK.ON.DOOR causes an ingressive interpretation of the event. This ingressive interpretation indicates that the events are [-durative] and cannot occur slowly. The same coerced interpretation occurs with instantaneous events in English (Smith 1997:46) and is in line with Smith’s (1997:56) principle of external override. Table 7 shows the results for testing the durative values of the predicates with SLOW.

Table 7: Test results for the durative value of ThSL predicates using SLOW

Predicate	Compatible with SLOW	Indicated value
SICK	✓	[+durative][-dynamic]
ANGRY	✓	[+durative][-dynamic]
SWIM	✓	[+durative]
PAINT	✓	[+durative]
BEND.BAR	✓	[+durative]
STRAIGHTEN.BAR	✓	[+durative]
ERASE	X	[-durative]
TURN.OFF.LIGHT	X	[-durative]
CLAP	X	[-durative]
KNOCK.ON.DOOR	X	[-durative]

When used with the first two predicates in Table 7, SICK and ANGRY, the sign SLOW is reinterpreted to mean *for a long time*. The shift indicates that the predicates are incompatible with pace adverbials. This result is expected for stative predicates since they lack the underlying quality of motion. On the other hand, SWIM, PAINT, BEND.BAR, and STRAIGHTEN.BAR are both dynamic and durative, as seen by their felicitous co-occurrence with SLOW. Finally, the ingressive interpretation of ERASE, TURN.OFF.LIGHT, CLAP, and KNOCK.ON.DOOR with SLOW shows they are instantaneous.

The final tests used in the study identify the telic values of predicates. The results of these tests are presented in section 3.3.

3.3 Testing for telicity

Each predicate was run through two tests to identify their telic value, 1) compatibility with STILL.THERE and 2) compatibility with MANY.TIMES. The first test is based on the fact that atelic situations do include a result

state. Thus, even when presented as bounded events, they may continue.¹ This feature makes atelic events compatible with STILL.THERE. Telic events, on the other hand, cannot be said to continue once they have reached completion since completion entails a change of state. The results of using STILL.THERE with the ThSL predicates in (47) through (52) indicate they are atelic events since the clauses are semantically well-formed.

- (47) GRANDMA SICK STILL.THERE
 ‘Grandma is still sick.’
- (48) TEACHER ANGRY STILL.THERE
 ‘The teacher is still angry.’
- (49) GRANDPA SWIM STILL.THERE
 ‘Grandpa is still there swimming.’
- (50) GRANDMA PAINT STILL.THERE
 ‘Grandma is still there painting.’
- (51) SOM CLAP STILL.THERE
 ‘Som is still there clapping.’
- (52) NURSE HOSPITAL KNOCK.ON.DOOR STILL.THERE
 ‘The hospital nurse is still there knocking on the door.’

The stative predicates SICK and ANGRY in (47) and (48), and the dynamic predicates SWIM, PAINT, CLAP, and KNOCK.ON.DOOR in (49) through (52), are compatible with STILL.THERE, indicating they are [-telic].

In contrast, the remaining predicates shown in (53) through (56) are incompatible with STILL.THERE. Note that, in the examples, the full movement of the predicates is used, indicating the event has been completed (see Kuhn 2017:19).

- (53) *SUPERMAN METAL BAR STRAIGHTEN.BAR STILL.THERE
 ‘Superman straightened the metal bar and is still straightening it.’
- (54) *SUPERMAN METAL BAR BEND.BAR STILL.THERE
 ‘Superman bent the metal bar and is still bending it.’
- (55) *FRIEND LINE ERASE STILL.THERE
 ‘My friend erased the application Line (from his phone) and is still erasing it ...’
- (56) *SOM LIGHT TURN.OFF.LIGHT STILL.THERE
 ‘Som turned off the light and is still turning it off ...’

In (53) through (56), the predicates STRAIGHTEN.BAR, BEND.BAR, ERASE, and TURN.OFF.LIGHT are incompatible with STILL.THERE. This incompatibility is due to the completed change of state encoded by the predicates. Once this change of state has occurred, the event can no longer be said to continue. The results of testing the predicates with STILL.THERE are shown in Table 8.

¹ See (2) and (3) where this feature is illustrated for American Sign Language.

Table 8: Test results for the telic value of ThSL predicates using STILL.THERE

Predicate	Compatible with STILL.THERE	Indicated value
SICK	✓	[-telic]*
ANGRY	✓	[-telic]*
SWIM	✓	[-telic]
PAINT	✓	[-telic]
BEND.BAR	X	[+telic]
STRAIGHTEN.BAR	X	[+telic]
ERASE	X	[+telic]
TURN.OFF.LIGHT	X	[+telic]
CLAP	✓	[-telic]
KNOCK.ON.DOOR	✓	[-telic]

*Technically, telicity does not apply to static situations

As shown in Table 8, the predicates SICK, ANGRY, SWIM, PAINT, CLAP, and KNOCK.ON.DOOR are compatible with STILL.THERE, indicating they are atelic situations. The incompatibility of the remaining predicates, BEND.BAR, STRAIGHTEN.BAR, ERASE, and TURN.OFF.LIGHT, indicates they are telic.

The second test for telicity is MANY.TIMES. The test is based on the fact that a telic event cannot be repeated unless it occurs with a different participant (e.g., *Superman bent the bar and then bent **another bar***) or if the change of state is first reversed (e.g., *Superman bent the bar, **straightened it**, and bent it again*). In English, this reversal does not need to be explicitly stated, as demonstrated in (57).

- (57) a. Superman had bent the bar many times.
b. I have erased the Line application from my phone many times.

In (57a), it is implied that the bar was straightened each time it was bent. Likewise, in (57b), it is implied that Line was reinstalled each time it was erased. However, this implication of reversal was not present in the ThSL predicates tested. This caused the clauses shown in (58) through (61) to be semantically ill-formed.

- (58) *SUPERMAN METAL BAR STRAIGHTEN.BAR MANY.TIMES
'Superman straightened the bar many times.'

- (59) *SUPERMAN METAL BAR BEND.BAR MANY.TIMES
'Superman bent the bar many times.'

- (60) *FRIEND LINE ERASE MANY.TIMES
'(My) friend erased the application Line (from his phone) many times ...'

- (61) *SOM LIGHT TURN.OFF.LIGHT MANY.TIMES
'Som turned off the light many times ...'

In (58) through (61), the predicates STRAIGHTEN.BAR, BEND.BAR, ERASE, and TURN.OFF.LIGHT are incompatible with MANY.TIMES. For a multiple-event to be expressed with these predicates, either a new participant had to be indicated or else reversal of the event had to be explicitly expressed. In contrast, SWIM and PAINT could occur freely with MANY.TIMES, as seen in (62) and (63).

- (62) SWIM MANY.TIMES ALREADY
'(I) have swam many times already.'

- (63) GRANDMA PAINT MANY.TIMES BORED ALREADY
 ‘Grandma painted many times and is already tired of it.’

The compatibility of SWIM in (62) and PAINT in (63) with MANY.TIMES indicates they are atelic. Since no change of state is expressed, the event can be repeated without indicating a reversal of the event or specifying a new participant.

The states SICK and ANGRY were not grammatical with MANY.TIMES in their basic form, as shown in (64) and (65).

- (64) *GRANDMA SICK MANY.TIMES ALREADY
 ‘Grandma was sick many times already.’

- (65) *TEACHER ANGRY MANY.TIMES AFRAID
 ‘The teacher has been angry many times, (so I am) afraid (of him).’

The clauses in (64) and (65) use a single iteration of the predicates SICK and ANGRY. In this form, they are incompatible with MANY.TIMES. However, if the predicate is repeated, the clause is acceptable, as shown in (66) and (67).

- (66) GRANDMA SICK-SICK MANY.TIMES ALREADY
 ‘Grandma has been sick many times already.’

- (67) TEACHER ANGRY-ANGRY MANY.TIMES AFRAID
 ‘The teacher has been angry many times, (so I am) afraid (of him).’

The repetition of the predicates in (66) and (67) allows a multi-event reading that is blocked if the predicate is only signed once. However, a new participant does not need to be specified, nor does the event need to be explicitly reversed in the clause before it can be used with MANY.TIMES, indicating the situations are atelic.

The same phenomenon occurs with CLAP and KNOCK.ON.DOOR. With a single iteration of the predicate, the clauses are ill-formed when used with MANY.TIMES, as shown in (68) and (69). If the predicate is reduplicated, as in (70) and (71), they can then occur felicitously with the test.

- (68) *CLAP MANY.TIMES ALREADY
 ‘(I) have clapped many times already.’

- (69) *KNOCK.ON.DOOR MANY.TIMES ALREADY
 ‘(I) have knocked on the door many times already.’

- (70) CLAP-CLAP MANY.TIMES ALREADY
 ‘(I) have clapped many times already.’

- (71) KNOCK.ON.DOOR-KNOCK.ON.DOOR MANY.TIMES ALREADY
 ‘(I) have knocked on the door many times already.’

In (68) and (69), the predicates CLAP and KNOCK.ON.DOOR are only signed once, making them incompatible with MANY.TIMES. By repeating the predicates in (70) and (71), a multi-event interpretation is created that is acceptable with MANY.TIMES. As with SICK and ANGRY, however, reversal of the event does not need to be specified, and a new participant does not need to be involved. The results indicate that CLAP and KNOCK.ON.DOOR are [-telic]. A summary of the results for the testing of the telic value of ThSL predicates using MANY.TIMES is given in Table 9.

Table 9: Test results for the telic value of ThSL predicates using MANY.TIMES

Predicate	Compatible with MANY.TIMES	Indicated value
SICK	✓	[-telic]*
ANGRY	✓	[-telic]*
SWIM	✓	[-telic]
PAINT	✓	[-telic]
BEND.BAR	X	[+telic]
STRAIGHTEN.BAR	X	[+telic]
ERASE	X	[+telic]
TURN.OFF.LIGHT	X	[+telic]
CLAP	✓	[-telic]
KNOCK.ON.DOOR	✓	[-telic]

*Technically, telicity does not apply to static situations

Table 9 shows the compatibility of SICK, ANGRY, SWIM, PAINT, CLAP, and KNOCK.ON.DOOR with MANY.TIMES, indicating they are atelic situations. The remaining predicates, BEND.BAR, STRAIGHTEN.BAR, ERASE, and TURN.OFF.LIGHT, are incompatible with this adverbial, indicating they are telic.

4 Summary and discussion

This study has presented a set of tests for identifying the featural values of predicates in ThSL. The first test, compatibility with command forms, was used to distinguish states from events. The test is based on the tendency for events to be volitional, and hence compatible with commands. States are non-volitional and incompatible with this test. However, events that have non-volitional subjects also fail this test, limiting how widely it can be applied. The second test for dynamism was based on the fact that states, as non-volitional situations, cannot be interrupted. This feature makes them infelicitous with the test INTERRUPT. In addition, the test INTERRUPT can be used to identify the durative value of an event. Specifically, for durative events INTERRUPT indicates the event itself is interrupted while, for instantaneous events, it is the process leading up to the event that is interrupted. Thus, the test also serves to identify the durative value of events.

The third test, compatibility with adverbs of temporal extent, worked well to identify the durative value of situations. Durative events were compatible with such adverbials. Instantaneous telic events (achievements) were incompatible and instantaneous atelic events (semelfactives) were given coerced, durative interpretations. By adding ONE.TIME to the test frame this coerced interpretation was blocked, and the instantaneous nature of the semelfactives was brought out. Finally, states were also compatible with adverbs of temporal duration, indicating their inherent, durative value.

In contrast, states were expected to be incompatible with the fourth test, pace adverbials, since states lack the premise of motion. Instead, the sign SLOW was reinterpreted to mean *for a long time* when it was used with these predicates. This phenomenon brought out both the durative and static value of the predicates. Events also occurred felicitously with SLOW. With durative events, the sign kept the meaning *slow*. However, when used with instantaneous events, SLOW created an ingressive reading, *slow to x*. This same ingressive interpretation is seen in other languages and is predicted by Smith's (1997) principle of external override.

The final two tests assessed a predicate's telicity. First, STILL.THERE is compatible with atelic events, but incompatible with completed, telic events, which involve a change of state. Thus SICK, ANGRY, SWIM, PAINT, CLAP, and KNOCK.ON.DOOR occurred felicitously with STILL.THERE. The remaining predicates STRAIGHTEN.BAR, BEND.BAR, ERASE, and TURN.OFF.LIGHT were incompatible with the test. Second, MANY.TIMES was compatible with the activities SWIM and PAINT. It was also compatible with ANGRY, SICK, CLAP, and KNOCK.ON.DOOR if the predicates were signed twice, allowing a multi-event interpretation. The co-occurrence of the predicates with this test indicates they are atelic. In contrast, MANY.TIMES could not be used with STRAIGHTEN.BAR, BEND.BAR, ERASE, or TURN.OFF.LIGHT unless a new participant or a reversal of the change of state was indicated. The requirement brings to light the telic nature of these predicates.

With the set of tests developed in this study, theories regarding the morphological marking of telicity and duration can be objectively examined in ThSL. Such investigations should examine both the manual and non-manual parameters of the predicate. Further, languages vary cross-linguistically in how grammatical aspects interact with situation types (Smith 1997). Thus, having a set of tests to identify the situation types of predicates allows patterns of co-occurrence with grammatical aspects to be explored.

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