

A Frame-based Account of Lexical Polysemy in Taiwanese*

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This paper provides a frame-based account of lexical polysemy exhibited in four commonly used words, viz. *koa*ⁿ² 趕, *thau*³ 透, *tau*³ 鬥 and *chio*³ 照, in Taiwanese. It aims at arguing that frame semantics can make up for the deficiency of traditional lexicographic works.

Sense extension as a source of lexical polysemy is reflected in various syntactic realizations and it can be demonstrated in the case under discussion as a result of the operation of metaphor and metonymy. In this paper conceptual frames are set up to capture in an economic way the semantic relatedness within each polysemous word. In-depth analyses of these four words are made to motivate frame semantics for dealing with the problems of lexical polysemy in Taiwanese.

Key words: frame-based, polysemy, Taiwanese

1. Introduction

In the light of frame semantics (Fillmore 1982, 1985, Fillmore and Atkins 1992, 1994) this paper attempts a frame-based analysis to account for the problem of lexical polysemy in Taiwanese Southern Min or Taiwanese for short. A conceptual frame is made up of a cluster of related schemas. An independent level of conceptual frames is motivated to establish a link among multiple senses associated with a lexeme and considerably reduce the overloading of lexical meanings. In this paper we will examine four polysemous words: *koa*ⁿ² 趕, *thau*³ 透, *tau*³ 鬥 and *chio*³ 照 and show that setting up conceptual frames can achieve a greater measure of economy and generality.¹ In

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¹ The spelling of Taiwanese in this paper is chiefly based on Church Romanization codified in Douglas (1873). I have made some modifications. For example, the diacritic tone marks have

spite of a great variety of syntactic realization there is a much simpler underpinning of conceptual frames. Our approach explains the existence of lexicalization patterns in tandem with syntactic constructions. Let us examine these four apparent or true polysemous words one by one with respect to the conceptual frames involved.

The frame for *koa*ⁿ² 趕 can be identified by an event structure with respect to a time limit. The event can be a DOING event or a GOING event. In each case not only should the event be accomplished in time, it must be done more quickly than usual. There is therefore a scalar schema involved with an implicit norm. The mapping of conceptual frame to syntactic forms is a selection through shading and profiling; only salient elements will surface and occupy syntactic position available with understood elements backgrounded, as in *koa*ⁿ² *he*²-*chhia*¹ 趕火車 ‘hurry to catch a train’ [GOAL], *koa*ⁿ² *lo*⁷ 趕路 ‘hurry to one’s destination’ [PATH], *koa*ⁿ² *sin*¹-*bun*⁵ 趕新聞 ‘dash off one’s report’ [WORK], *koa*ⁿ² *sa*ⁿ¹ *tiam*² *poa*ⁿ³ 趕三點半 ‘hurry to get somewhere/something done before 3:30 p.m.’ [TIME], and *koa*ⁿ² *chia*⁸ 趕食 ‘hurry one’s meal’ [EVENT].

The whole frame for *thau*³ 透 encompasses a cluster of interrelated schemas: a spatial schema [pass through], as in *thau*³ *Sin*¹-*tek*⁴ 透新竹 ‘lead to Hsinchu’, an aspectual schema [completion], as in *thak*⁸ *thau*³ 讀透 ‘finish reading’, and a scalar schema [thoroughness leading to polarity], as in *thau*³ *cha*² 透早 ‘early in the morning’. The sense extension as shown in a shift from spatial through aspectual to scalar schema can be explained in terms of the principle of metaphor based on a similarity between the primary referent and the second referent of a linguistic form.

*Tau*³ 鬥, denoting an event of a tenon and mortise linkage, runs the gamut of a frame ranging from assembly schema, as in *tau*³ *bin*⁵-*chhng*⁵ 鬥眠床 ‘to put together a bed’, through reciprocation schema, as in *tau*³ *tin*⁷ 鬥陣 ‘get along/together’, to competition schema, as in *che*⁷ *tau*³ *ku*² 坐鬥久 ‘to outstay’, and fabrication schema, as in *gau*⁵ *tau*³ 敖鬥 ‘fond of telling lies’. The reciprocation schema has a non-reciprocation epischema as a spin-off in *tau*³ *kha*¹-*chhiu*² 鬥骹手 ‘give help’.

The verb *chio*³ 照 as well as the verb *khua*ⁿ³ 看 in Taiwanese involves a complex frame encompassing light, source of light, target of light, reflector, image and observer. The frame is basically realized as a cluster of interrelated schemas with further extension to epischemas: (1) schema A covering such elements as source of light and target of light, as exemplified by *chio*³ *he*² 照火 ‘to warm oneself at a fire’, *chio*³ *kng*¹ 照光 ‘to shine, to reflect light’, and *chio*³ *jit*⁸ 照日 ‘to be illuminated by the sun’,

been abandoned in favor of numerical superscripts. No distinction is made between *ch*, *chh* and *ts*, *tsh*. Taiwanese is taken in its broad sense to include its predecessors in Mainland China. For the data on Taiwanese I have drawn on a wide range of extant literature including Douglas (1874), Ogawa et al. (1931-32), Kao (1976), Embree (1984), Chen (1991) and Hu (1994) as well as native speakers’ intuition.

and (2) schema B with an array of five elements such as source of light, target of light, reflector (e.g. mirror), image and observer, as in *chio³ bin⁷* 照面 ‘to look (at oneself) in a mirror’ and *chio³ kiaⁿ³* 照鏡 ‘to look (at oneself) in a mirror’. When *chio³* 照 ‘shine’ is taken as a synonym of *khoaⁿ³* 看 ‘look’ in Schema B, it has become a shorthand expression metonymically standing for the whole optical event. An epischema for Schema B can be set up to account for an extension of the range of the reflector to cover such transparent matter as the glass, as in *chio³ ham3-kiaⁿ³* 照泛鏡 ‘to look with a microscope’, and still another one can be formulated by analogy to provide a basis for expressions like, *chio³ ho.⁷ i¹ chun²* 照與伊準 ‘take good aim’, *bak⁸-be² chio³ chit⁸ e tloh⁸ chat¹* 目尾照一下著知 ‘to understand by a single side glance’ where ‘to fling a line of vision’ or more idiomatically ‘to cast glances’ is likened to ‘to send a beam of light’.

We can see from the above somewhat sketchy observation that a conceptual frame may be quite self-contained without undergoing sense extension, as in *koaⁿ²* 趕, although admittedly it could be a semantic extension from its congener in *koaⁿ² gu⁵* 趕牛 ‘drive cattle’. The other three words all involve complex frames encompassing schemas with sense extension. While the semantic shift in *thau³* 透 and *tau³* 鬥 is roughly of a metaphoric nature, *chio³* 照 as a plain counterpart of its causative cognate *chhio⁷* 照 is a bona fide case of metonymic extension showing how a complex frame can emerge as a full-fledged shorthand expression.

In this paper a separate level of conceptual frames and schemas is proposed to account for sense relations in a lexical item and among a set of words in Taiwanese. The proposal can be taken as a new point of departure to avoid or at least pare down the unwieldy burden of lexical senses. A perhaps more engaging point is the way in which it may force us to rethink how meanings are organized in our mental lexicon. It may also have implications for lexicographic practice, language acquisition, translation theory and contrastive study.

Apart from Introduction and Closing Words the main bulk of the paper is organized as follows: (2) Field semantics and frame semantics, (3) the deficiency of traditional lexicographic works, (4) Semantic frame and lexical polysemy, (5) the *koaⁿ²* 趕 frame, (6) the *thau³* 透 frame, (7) the *tau³* 鬥 frame, and (8) the *chio³* 照 frame. Sections (2), (3) and (4) sketch some theoretical underpinnings in preparation for explorations of semantic frames of four polysemous lexical items in question.

2. Field semantics and frame semantics

In field theories the lexical meanings are characterized in terms of syntagmatic and paradigmatic relationships held among a network of lexical items sharing a semantic

domain or domains. The central concern of lexical semantics based on the field concept is to establish such structural relationships that underscore a set of lexical items with related senses.² In contrast, frame semantics is based on the assumption that one cannot fully understand and do full justice to word meanings solely in terms of such interitem structural relationships; rather they should be reckoned with in terms of the conceptual frames or schemas. In such a framework word meanings can be teased out with reference to the background structure of the world including our experience, belief, imagination, practice and so on.³

3. The deficiency of traditional lexicographic works

In traditional lexicographic practice a polysemous word or rather lexeme is described as having a set of sememes (viz. lexical meanings).⁴ The listing of lexical senses is based on the substitutability principle in that the definition given should be compatible with the entry defined in parts of speech. Traditional dictionaries are also hampered by the necessity of repeating definitions of the word occurring in different parts of speech, such as transitive and intransitive, even though senses realized in different grammatical categories are closely related. A good example is 透 *thau*³, which can be used as a verb (*thau*³ *Kan*¹-*tau*⁷ 透關渡 ‘lead to Kan-tau’)⁵, as a preposition (*thau*³ *cha*² 透早 ‘early in the morning’), and as a complement in a verb-complement construction (*thak*⁸ *thau*³ 讀透 ‘read through’). As will be made clear later, a unified account based on frame semantics can be provided to capture the commonality of meanings of a word played out in various syntactic realizations.⁶

² See Cruse (1995) for a representative work on lexical semantics studied in terms of field theories. Lexical semantics could be a neutral cover term encompassing a range of approaches including the two under discussion. Attention to lexical semantics has been scanty until recently. There are an upsurge of interest now at home exemplified by works such as Huang and Chang (1996), Chen (1997, 1998), Chiu (1998), Hsieh (1997), Hsieh (1998), Huang (1997, 1998) and Lien (1997, 1998).

³ This is the line of inquiry pursued in Fillmore (1982, 1985, 1994) and Fillmore and Atkins (1992, 1994) on which the main ideas of the present paper are based.

⁴ See Lamb (1964) for a detailed treatment of form-meaning relation with respect to the notion of sememes.

⁵ *Kan*¹-*tau*⁷ variably written as 干豆, a place next door to *Pak*⁴-*Tau*⁵ 北投, is believed to be a Chinese rendition of a sinicized Formosans’ toponym (See Abe 1938).

⁶ Weinreich (1962, 1964) represent earlier reflections on the problem of lexical polysemy treated in traditional dictionaries. Recently Ruhl (1989) proposes the theory of monosemy to deal with the problem of lexical polysemy.

4. Semantic frame and lexical polysemy

A semantic frame is the conceptual representation or structuring of our experience or our perception of the world. It is constructed of a finite set of arguably universal and abstract semantic elements linked by predicates. In a sense it expresses intertextual relationships and can be arrived at by the lexical decomposition of semantic complicated words. Under such an assumption word meanings can be parceled out into more basic and recurrent primes out of which frames can be constructed to capture in a principled way the intralexical or interlexical relationships. Since word meanings also feature the family resemblance phenomenon (Wittgenstein 1958:31-32), a set of interrelated but not mutually reducible schemas have to be set up in a network subsumed under a common frame.

Whereas a full specification of semantic elements in a frame is a theoretical necessity, speed and simplicity are an indispensable feature of efficient interpersonal communication which can be encapsulated as a kind of meaning-form transfer. Language has developed an important strategy of converting a fairly complicated frame into shorthand expressions through a process of selection based on the information structure. Profiling and shading are a pair of complementary devices maneuvering the alignment of information content.⁷

Lexical polysemy is a prevalent phenomenon in natural language resulting from sense extension. There are basically two kinds of sense extension: (1) sense extension involving different syntactic realization, and (2) sense extension explainable in terms of metaphor and metonymy. Sense extension based on syntactic realization can be accounted for in terms of the framework of semantic frames which can capture the meaning relatedness among various syntactic realizations of a lexical item. A fuller and thorough account is impossible without evoking the mechanism of metaphor and metonymy. They are two important frames of reference in our attempt to grapple with the issues of lexical semantics unraveled in the four unique polysemous words in Taiwanese.

5. The *koa*ⁿ² 趕 frame

When encountering syntactic variations shown by a single lexical item the standard treatment is to regard it as containing as many senses as there are syntactic structures it is associated with. Such a traditional approach does not provide an adequate and unified account for the semantic unity among various syntactic constructions governed by a

⁷ See Goldberg (1995) for the notion of profiling and shading.

lexical item. Let us take the following example as a point of departure to illustrate our point.

The modal auxiliary *e⁷-hiau²* 會曉 ‘can, be able to’ usually co-occur with verb phrases, as in *e⁷-hiau² siu⁵ chui²* 會曉泅水 ‘know how to swim’, but, as shown in the follow table, more often than not it can be followed directly by a noun phrase without being mediated by a verb given in parentheses.⁸

- (1) I¹ e⁷-hiau² (kong²) Tek⁴-bun⁵ 伊會曉 (講) 德文.
He knows German.
- (2) I¹ e⁷-hiau² (ien²-chau³) bai¹-o.²-lin² 伊會曉 (演奏) ㄅㄞˊ ㄌㄧㄣˊ .
He knows how to play violin.
- (3) I¹ e⁷-hiau² (khia⁵) khong³-ming⁵-chhia¹ 伊會曉 (騎) 孔明車.
He knows how to ride a bike.
- (4) I¹ e⁷-hiau² (pun⁵) phin²-a² 伊會曉 (歎) 品仔.
He is good at playing flute.
- (5) I¹ e⁷-hiau² (phah⁴) tien⁷-nau² 伊會曉 (拍) 電腦.
He is good at computer.
- (6) I¹ e⁷-hiau² (i⁷) khe¹-chi²-bang² 伊會曉 () ㄏㄜˊ ㄔㄧˊ ㄅㄤˊ .
He knows how to play cards.

There must be a way to account for the semantic relatedness of the full sentence and its counterpart with a missing verb. An intriguing account for this phenomenon is provided in the framework proposed by Pustejovsky (1991, 1993, 1995) in particular concerning the mechanism of type coercion. In short, the missing verb given in parentheses in the above table can be coerced by the detailed specification of the object noun. Similarly, as will be discussed shortly, the hidden verb associated with the *koaⁿ²* 趕 construction can be coerced by the semantic specification of the object noun.

Koaⁿ² 趕 is a polysemous word, and an expression like *koaⁿ² chhia¹* 趕車 is ambiguous between two salient senses: (1) ‘to drive the carriage’, and (2) ‘to hurry to catch the train/bus’. The first sense can be rephrased in terms of such semantic primes as ‘to cause the carriage to move’. Here the object ‘carriage’ is the theme that undergoes movement. The argument structure in its crudest terms is something like

⁸ There are admittedly cases where the verb can not be dispensed with. For example, absence of the verb *siu⁵* 泅 ‘swim’ in *I¹ e⁷-hiau² siu⁵ chui²* 伊會曉泅水 ‘know how to swim’ will make it ungrammatical. As insightfully pointed out by an anonymous reviewer, the inmissibility of verbs may have to do with the prosodic constraint that a disyllabic verb like *e⁷-hiau²* 會曉 cannot be followed by a monosyllabic word. All the acceptable sentences given do not violate such a constraint.

this: CAUSE [AGENT [MOVE [THEME]]]. By contrast, *koaⁿ²* 趕 in its second sense involves making the event of catching the train (or the bus) happen quickly. In other words, *koaⁿ²* 趕 is basically a causative verb meaning ‘to hasten’ synonymously or, to use a more abstract and yet-to-be-lexicalized metalanguage, ‘to cause something to happen quickly’, that is, ‘to bring about an event within an implicit time frame or according to an understood timetable’. The event in question can involve a change of state or a goal-oriented movement. Viewed in crudest terms it is a predicate that takes the event as its argument. But on closer range it is in fact a lexicalized predicate which can be further decomposed into a more primitive and abstract composite structure consisting of a causative verb and an implicit time frame. Its argument structure would be like: CAUSE [AGENT, EVENT]. The event should be anchored at an implicit time frame. It is a dynamic entity denoting an activity that will reach culmination according to an understood schedule. To have a proper interpretation of a *koaⁿ²* 趕 construction a coercion device will be evoked to tease out the hidden verb on the basis of co-composition of the meanings of *koaⁿ²* 趕 and its object. Just as the semantics of *want*, *begin*, *finish*, and *enjoy* in English each necessarily involves an event, even though it can be followed by a nominal expression as well as infinitives or gerunds, so *koaⁿ²* 趕 in Taiwanese is a verb that occurs with a head noun as its object. Nevertheless, it is a causative verb on the level of conceptual structure that takes an event as its argument. A paradox presents itself: while *koaⁿ²* requires an eventish phrase, there is no verb to satisfies the requirement. A solution is to evoke the mechanism of type coercion proposed in Pustejovsky (1995a) which is defined as follows:

A semantic operation that converts an argument to the type which is expected by a predicate, where it would otherwise result in a type error.

The semantic type of the expression that the predicate *koaⁿ²* 趕 expects denotes an event, but the head noun that it takes, as in *koaⁿ² po³-ko³* 趕報告 ‘to hurry with one’s report’⁹, does not satisfy the type in question. In this case the predicate then coerces the noun into an event denotation, which can be spelt out in terms of its qualia structure. An object in the qualia structure is proposed to make up of four semantic roles: (1) constitutive role, (2) formal role, (3) telic role, and (4) agentive role.¹⁰ As a result of type coercion the hidden verb shown in the parentheses can be figured out, as in *koaⁿ² sia² po³-ko³* 趕 (寫) 報告. For example, *po³-ko³* 報告 means ‘report/term paper’. In

⁹ *Sit⁴* 穡 has a specific meaning ‘farm work’ for a variety of Taiwanese or more generally ‘work’.

¹⁰ Constitutive role indicates part-whole relationship, formal role involves what identifies the object in a larger domain, telic role deals with the purpose and function of the object, and the agentive role concerns factors involved in the creation of the object.

terms of the constitutive role it has as its subparts such as introduction, body, conclusion, reference, footnotes, appendix, etc. It also constitutes an integral part of the whole scenario of fulfilling course requirements. The purpose (i.e. its telic role) of the object ‘report’ is for the instructor to read in order to make an evaluation. The report as a physical object is brought about as a result of the student’s writing based on his research endeavor and this exemplifies the agentive role of the object in question. The coaxing of the hidden verb *sia*² 寫 ‘write’ can be explained in terms of the agentive role in the qualia structure of the head noun *po*³-*ko*³ 報告 ‘report’ in conjunction with the meaning of *koa*ⁿ² 趕 ‘to hasten’. *koa*ⁿ² *po*³-*ko*³ 趕報告 ‘rush with one’s reports’ can also be taken to mean (though less likely) (i.e. for the instructor) ‘to hasten reading the report’. In that case, the telic role of the noun (i.e. the report is made to be read) can be evoked to account for such an less likely albeit equally plausible interpretation.

The meaning of nominals in terms of the thesis of enriched lexicon (Pustejovsky 1991, 1995b) can be considerably elaborated on such that a more detailed event structure can be coaxed. For example, *chok*⁴-*giap*⁸ 作業 ‘homework assignment’ is a task assigned to be done at home. Thus, one can induce from *koa*ⁿ² *chok*⁴-*giap*⁸ 趕作業 ‘to dash off one’s homework assignment’ the hidden verb *cho*³ 做 ‘to do’ to set up an accomplishment event. In contrast, *he*²-*chhia*¹ 火車 is a public vehicle that we can travel on. So it will evoke the verb *tah*⁴ 搭 or *che*⁷ 坐 ‘to take’ or less likely *cho*³ 做 ‘to make’. The more probable computed meaning for *koa*ⁿ² *he*²-*chhia*¹ 趕火車 would therefore be ‘hurry to catch the train’ rather than ‘hurry to make the train’.

The *koa*ⁿ² 趕 construction implies that the event should be accomplished within the limit of an implicit time frame. As shown in the following table, the hidden verb given in parentheses which is coerced by the composite meaning of *koa*ⁿ² and the object noun should be an activity verb and the whole aspectual situation is best depicted as an accomplishment. The whole event should also be telic, that is, have a set boundary.

Examples	Elements Profiled
(1) <i>koa</i> ⁿ² (<i>tah</i> ⁴) <i>he</i> ² - <i>chhia</i> ¹ 趕 (搭) 火車 hurry to catch a train	goal
(2) <i>koa</i> ⁿ² (<i>kia</i> ⁿ⁵) <i>lo</i> ⁷ 趕 (行) 路 hurry to one’s destination	path
(3) <i>koa</i> ⁿ² (<i>sia</i> ²) <i>sin</i> ¹ - <i>bun</i> ⁵ 趕 (寫) 新聞 dash off one’s report	thing
(4) <i>koa</i> ⁿ² (<i>choe</i> ³) <i>kang</i> ¹ 趕 (做) 工 hurry one’s work	thing
(5) <i>koa</i> ⁿ² <i>sa</i> ⁿ¹ - <i>tiam</i> ² - <i>poa</i> ⁿ³ 趕三點半 a. hurry to get somewhere before 3:30 p.m. b. hurry to get something done before 3:30 p.m.	time

The elements in the conceptual structure of the *koa*ⁿ² 趕 construction will surface through a context-dependent selection process (i.e. shading and profiling) (Goldberg 1995). In terms of information structure the element constituting the focus of attention will surface or rather be profiled whereas the element out of focus will remain hidden or rather be shaded. The object position is usually occupied by the argument role such as goal, path, thing, as shown in examples (1) to (4) in the above table, but it can also be taken by an adjunct like time, as in example (5). When the time frame emerges on the surface and occupies the object position, the event will be shaded and can be teased out in terms of the co-composition of the main verb *koan*² and the temporal expression. Two eventish interpretations (as shown in the above table) can be obtained for example (5) *koa*ⁿ² *sa*ⁿ¹- *tiam*²- *poa*ⁿ³ 趕三點半 in terms of two schemas (the movement schema and the act schema) proposed in this paper.¹¹

Let us return now to the two salient senses of the *koa*ⁿ² 趕 construction, viz. (1) ‘to cause something to move’, and (2) ‘to hasten (i.e. cause to happen quickly) an event’. Both interpretations involve a causal relation which can be factorized as two events: event 1 and event 2. Event 1 denotes what the agent does, and his action yields Event 2 (Parsons 1990:109-111). The difference between these two senses is that in the first interpretation Event 2 is realized by a one-place predicate with theme (viz. the object in motion) as the only thematic role, whereas in the second interpretation the verb *koa*ⁿ² 趕 is predicated of a hidden event, functioning very much like an adverb. Due to lexical competition between synonyms *koa*ⁿ² 趕 in its first sense (viz. ‘to drive’) seems to be on the way out and eclipsed by its synonym *sai*² 駛, as in *sai*² *chhia*¹ 駛車 ‘drive’ rather than *koa*ⁿ² *chhia*¹ 趕車, which is most liable to be construed as meaning ‘hurry to catch the train/bus’. However, it is more accurate to say that only a portion of its second sense in particular concerning the vehicle that needs steering or operating has yielded ground to *sai*² 駛. There are still examples where the second sense is very much in evidence, as in *koa*ⁿ² *ah*⁴-*a*² 趕鴨仔 ‘feed the ducks’¹² and *koa*ⁿ² *ho*⁷-*sin*⁵ 趕胡蠅 ‘fan off the flies’.¹³ Other than nouns in the construction that have been elaborated on *koa*ⁿ² 趕 can occur with a verb, as in 趕食 *koa*ⁿ² *chia*⁸ ‘hurry one’s meal’, equally

¹¹ An intriguing alternative account suggested by an anonymous reviewer is that *sa*ⁿ¹- *tiam*²- *poa*ⁿ³ 三點半 ‘3:30 p.m.’ can be taken as a noun with a metonymic meaning of the closing time for transactions at the bank.

¹² Of course, ‘drive the ducks’ would be a more literal translation, but when the purpose of the action is taken into consideration the rendition given is still defensible.

¹³ It is perhaps not entirely fortuitous that ‘to cause to move’ is often connected to ‘to cause to move away’, and there seems to be a link between ‘to go after and try to catch; to pursue’ and ‘to cause to move away’, as exemplified in *koa*ⁿ² 趕 and *chase* in English which are alike in bearing both senses.

explicable in terms of the semantic frames proposed for its second sense. In contrast, *koaⁿ²-kin²* 趕緊 is a full-fledged adverb that requires the presence of a predicate rather than a noun phrase denoting a hidden event, as in *koaⁿ²-kin²sau² tho.⁵-kha¹* 趕緊掃塗骹 ‘Hurry up and clean the floor!’ where the expression missing the verb *sau²* 掃 ‘to sweep’ will be ill-formed.

6. The *thau³* 透 frame

Thau³ 透 in its core meaning involves a movement schema in which a theme moves from the beginning on the one side of a territory to the end on another side. Evoking “time as space” metaphor, a theme can travel through time with the implication that the full territory of time has been covered. For example, *thau³* 透 + durational noun, as in *thau³ jit⁸* 透日 ‘the whole day’, *thau³ ni⁵* 透年 ‘the whole year’, *thau³ po.¹* 透晡 ‘entire half day’ and *thau³ si³-lang⁵* 透世儂 ‘throughout one’s life, a lifetime’, denote the whole range of the temporal territory. If the temporal noun is taken as denoting a point of time, then *thau³* + noun exemplified by *thau³ cha²* 透早 literally ‘reach as far as morning’ and more idiomatically ‘early in the morning’ denotes the end point of time (that is, metaphorically the end of a temporal path). *Thau³ mi⁵* 透暝 is ambiguous between ‘whole night’, as in *thau³ mi⁵ bo⁵ kun³* 透暝無暝 ‘stay up all night’, and ‘late at night, that very night’, as in *thau³ mi⁵ koaⁿ² tng²-khi³* 透暝趕轉去 ‘rush home late at night’.¹⁴ We can see the interpretation of *thau³ mi⁵* 透暝 varies with the context. It can denote the whole range of the temporal territory as well as its very end point leading to an implication of the absolute degree. *Thau³ tiong¹-tau³ phah⁴ na⁵-kiu⁵* 透中晝拍籃球 ‘play basketball at high noon, play basketball in spite of high noon’.

Thau³ 透 also has the function of converting the noun phrase *thau³ ho.⁷* 透雨 ‘continue (action) through the rain, brave the rain’ into a subordinate construction or an adjunct, as in *thau³ ho.⁷ khi³ liah⁸ mng⁵-hoe⁷* 透雨去掠毛蟹 ‘be out catching crabs in spite of rain’. However, it is not like *than³* 趁, which means ‘take advantage of’ and can occur in an expression like *than³ sio¹ chiah⁸* 趁燒食 ‘eat while it is hot’. However, **thau³ sio¹ chiah⁸* 透燒食 is not acceptable, since it denotes the extremity of a scale.

¹⁴ Here the *thau³* 透 construction is analogous to the *very* construction in English in taking on an additional metalinguistic function. The example in question, *thau³ mi⁵ koaⁿ² tng²-khi³* 透暝趕轉去, in fact means ‘rush home that very night (than other nights)’ over and above the more literal sense given. The *thau³* 透 construction involves a linguistic comment on the appropriate of words used. See Brugman (1984) for an insightful study of the metalinguistic use of the word *very* in English.

*Thau*³ 透 can also be used in a scalar schema based on a “quantity as space” metaphor, as in *thak*⁸ *thau*³ 讀透 ‘finish reading’, *khod*ⁿ³ *thau*³ 看透 ‘to see through (a person)’, and *pat*⁴ *thau*³ 別透 ‘know thoroughly’¹⁵; know everybody’.¹⁶ All these examples take on the verb + complement construction. 看 *khod*ⁿ³ ‘look’, *thak*⁸ 讀 ‘read’ and *pat*⁴ 別 ‘know, be acquainted with’ can be termed cognitive verbs since they involve in various degrees cognition based on direct observation and participation. There is always a full coverage of the territory. For example, for *thak*⁸ *thau*³ 讀透 the activity of reading *thau*³ 讀 behaves as if it were a thing in motion traveling through a bounded area (viz. *sio*²-*soat*⁴ 小說 ‘novel’ taken metaphorically as a bounded area) from the beginning to the end. Thus, *sio*²-*soat*⁴ *thak*⁸ *thau*³ a 小說讀透啊 would mean ‘finish (reading) the novel’. The area to be covered can be construed as a variable to which a context-dependent value is to be assigned. Take *pat*⁴ *thau*³ 別透. If the area to be fully covered by the act of knowing is a whole set of persons, then the interpretation will be ‘know everybody’. If the characteristics of a single person are likened to an area to be covered exhaustively by the act of knowing, then the reading of ‘seeing through a person’ will result.

7. The *tau*³ 鬥 frame

*Tau*³ 鬥 means ‘to put parts together into a whole’. It expresses in essence a part-whole relationship. In terms of semantic roles there are basically two types of composition: (1) *tau*³ 鬥 (agent, theme_{set}), and (2) *tau*³ 鬥 (agent/theme_{set}). In (1) the agent causes a set of themes to be with each other to form a whole. In (2) a set of agents act together, and we can see that the actors are both agents and themes at once. To be more exact, the first type encompasses two situations: (1a) the agent causes a part to be inside another part, as in *tau*³ *pi*ⁿ³ 鬥柄 ‘set a handle in’, *tau*³ *po*¹ -*le*⁵ 鬥玻璃 ‘fit a pane into’, and (1b) the agent causes parts to be together and form a whole, as in *tau*³ *pio*⁵ -*a*² 鬥錶仔 ‘fit together a watch’, *tau*³ *ke*¹ -*khi*³ 鬥機器 ‘assemble a machine’, and *tau*³ *oe*⁵ 鬥鞋 ‘to make shoes by putting together the several parts’. If we ignore the external argument, viz. the agent, and concentrate on the internal argument, it is quite obvious that (1a) has a theme and goal relationship, and the theme is profiled as the

¹⁵ Or *bat*⁴ 別 in the Zhangzhou variety of Taiwanese. *Know* in English corresponds to *e*⁷-*hiau*² 會曉, *chai*¹-*ia*ⁿ² 知影, and *pat*⁴ 別 in Taiwanese. *Pat*⁴ 別 and *chai*¹-*ia*ⁿ² 知影 roughly mean *kennenlernen* and *wissen* in German respectively.

¹⁶ Metaphor can be defined as the change of semantic category linked by iconicity between two terms, whereas metonymy involves a part-for-whole relationship defined in terms of contiguity between two terms (See Jakobson 1971 for discussion of metaphor and metonymy in terms of the relation between the signifier and the signified in Peircian semiotics).

object noun, whereas the goal is shaded as a background element. Likewise, (1b) has a theme and goal relationship, but in conjunction with a part-whole relationship. The themes are parts which are put together to form a whole (viz. the goal), and it is the whole that is profiled whereas parts are shaded and implied. In short, (1a) takes on a change of state sense, and (1b), a creation sense. Both cases subsumed under Type (1) in the following table¹⁷ involve an assembly schema in which parts are fit into a whole.

Examples	Schemas involved
(1) <i>tau</i> ³ <i>bin</i> ⁵ - <i>chng</i> ⁵ 鬥眠床 put together a bed	assembly
(2) <i>i</i> ¹ <i>kah</i> ⁴ <i>hit</i> ⁴ <i>e</i> <i>cha</i> ¹ - <i>bo</i> ² <i>te</i> <i>tau</i> ³ 伊合許兮查某著鬥 He is intimate with the woman.	reciprocation
(3) <i>tau</i> ³ <i>kha</i> ¹ - <i>chhiu</i> ² 鬥骹手 give help	Non-reciprocation
(4) <i>gau</i> ⁵ <i>tau</i> ³ 敖鬥 be good at telling lies	fabrication
(5) <i>che</i> ⁷ <i>tau</i> ³ <i>ku</i> ² 坐鬥久 outstay	competition

In Type 2 shown above agents are also themes since based on the notion of self-agency we can contrive it to mean ‘the agents cause themselves (viz. the themes) to be with each other or interact’. Thus, there is reciprocation involved. The way of fitting together varies with the context, and there are as many relationships such as cooperation, as in *In*¹ *nng*⁷ *e* *lang*⁵ *boe*⁷ *tau*³ *le* 因兩兮儂袂鬥兮 ‘They cannot get along’, and partnership, as in *i*¹ *kah*⁴ *hit*⁴ *e* *cha*¹-*bo*² *te* *tau*³ 伊合許兮查某著鬥 ‘He is intimate with the woman’, as dictated by the situations.

Recall that *tau*³ 鬥 in Type 1 means ‘to put parts together into a whole’. It appears that the parts dealt with so far are concrete, but they are not necessarily so. Parts can shift from a concrete domain to a more abstract domain, as in (4) *gau*⁵ *tau*³ 敖鬥 literally ‘be good at putting together (things)’ or put simply, ‘make up’. It can be construed as involving a ‘parts-as-words’ metaphor in the sense that words are put together to form texts often leading to an implication of making up for the purpose of deception. That is, the culprit tries to mislead the addressee by performing a linguistic

¹⁷ The following table gives a set of schemas on which the verb *tau*³ 鬥 is based.

act of putting words together. It seems to be based on the “to make is to fabricate” metaphor¹⁸, and constitutes the fabrication schema.

Many V-O constructions subsumable under Type 1 have shifted in their external function. For example, (3) *tau³ kha¹-chhiu²* 鬥骹手 literally ‘to put feet and hands together’ has undergone a change from the V-O construction to an intransitive verb. Likewise, the V-O construction *tau³ tin⁷* 鬥陣 literally ‘assemble a group of people’ or more idiomatically ‘to unite in a procession’ has shifted to an intransitive disyllabic expression meaning ‘to do things together’ and even ‘have a sexual relation’ given a proper context. But more often than not it functions as an adverb meaning ‘together’, as in *tau³ tin⁷ chiah⁸ png⁷* 鬥陣食飯 ‘eat together’.

The core meaning of 鬥 *tau³* denotes reciprocation. But it has taken on a unidirectional sense especially in the V-V constructions, as in *tau³ khoaⁿ³* 鬥看 ‘help look after’ and *tau³ chhoe³* 鬥做 ‘help to do’ as well as other constructions, as in (5) *tau³ kha¹-chhiu²* 鬥骹手 ‘help, lend a hand’ and *tau³ lau⁷-jiet⁸* 鬥鬧熱 ‘join in/cause trouble’. Thus, such examples illustrate the non-reciprocation schema.

There is still a schema involving competition between two parties which are remotely related to assembly schema, reciprocation schema and fabrication schema. This is exemplified by (4) *che⁷ tau³ ku²* 坐鬥久 ‘outstay’.

8. The *chio³* 照 frame

There is a variety of frames associated with the *chio³* 照 ‘shine’ construction showing the family resemblance phenomenon (Wittgenstein 1958:31-32). As will be elaborated on below, there is a constellation of schemas associated with the *chio³* 照 frame, but they cannot be reduced to a single schema sharing a core common feature, even though there is an interrelationship among them.

The word *chio³* 照 ‘shine’ means that the source of light causes light to move to a target. For example, the sun causes its light to travel to the earth as its target. A simple frame of the *chio³* 照 simply reflects such a situation that includes source of light, light and target of light as its basic semantic elements. As shown in the V-O constructions in the following table, it is evident that not all semantic elements can be realized as surface object, and syntactic realization depends on the information structure. For example, the object may be occupied by light, as in (1a,b), source of light, as in (2a,b), or target of light, as in (3):

¹⁸ Many words in connection with falsehood used to mean ‘to do’, as in ‘forge’, ‘fabricate’, ‘affect’ as well as 偽 ‘to be false’ as a semantic development of 爲 ‘to do’.

Examples	Elements Profiled
(1)a. <i>chio</i> ³ <i>kng</i> ¹ 照光 to shine, to reflect light	light
b. <i>chio</i> ³ <i>tien</i> ⁷ - <i>kong</i> ¹ 照電光 take an X-ray	light
(2)a. <i>chio</i> ³ <i>he</i> ² 照火 to illuminate, as by lamp or candle	source of light
b. <i>chio</i> ³ <i>jit</i> ⁸ 照日 to be illuminated by the sun	source of light
(3) <i>chio</i> ³ <i>bin</i> ⁷ 照面 to illuminate the face, to look in a mirror ¹⁹	target of light

One may build into the above frame an additional semantic element of image to account for following examples:

(4)a. <i>chio</i> ³ <i>lang</i> ⁵ - <i>ia</i> ⁿ² 照儂影 to reflect a man's figure in water; to cast a man's shadow, as a lamp	image
b. <i>chio</i> ³ <i>chui</i> ² - <i>ia</i> ⁿ² 照水影 to reflect (as one's self) in the water	image

Here the image reflected in the reflector can emerge as the surface object.

A much more complicated situation that incorporates an element of vision (i.e. the act of looking) will involve such additional semantic elements as the reflector, image and the eye. Take *chio*³ *kia*ⁿ³ 照鏡 'look oneself in the mirror', as in (5):

(5) <i>chio</i> ³ <i>kia</i> ⁿ³ 照鏡 ²⁰ to look in a mirror	reflector
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It denotes a pretty complicated scenario: the source of light sends light to the target of light (viz. the observer) that in turn sends the light onto the mirror. The mirror as a reflector forms an image of the observer in it and sends back the light to the observer. To be more exact, the light carrying the image is sent back to the eyes of the observer. The reflection forms an image in the lens that is converted into chemical and nervous signals mediated by the retina which are relayed to the brain to be decoded. Thus, *chio*³

¹⁹ The second sense 'look in a mirror' will be discussed later on.

²⁰ It is worth noting that *glare* as a verb of light emission (Levin 1993:233-234) also means 'stare in a fierce or angry look'.

*kia*ⁿ³ 照鏡 literally ‘shine-mirror’ is a shorthand expression metonymically standing for a much fuller and complicated sequence of events. Here it is the reflector (viz. the mirror) that gets realized with all other elements implied. Similarly, in (3) *chio*³ *bin*⁷ 照面 when taken to mean ‘look in a mirror’ characterizable by the same frame it is the target of light that surfaces as the object.

The schema that has been just set up can also apply to (6a) and (6b) with some modification. Here the target of light is the object other than the observer himself. The image that is formed on the lens of the tool is in turn reflected on the lens of the observer’s eye.

- | | |
|---|-----------|
| (6a) <i>chio</i> ³ <i>chhien</i> ¹ - <i>li</i> ² <i>kia</i> ⁿ³ 照千里鏡 | reflector |
| to look with a telescope | |
| b. <i>chio</i> ³ <i>ham</i> ³ - <i>kia</i> ⁿ³ 照泛鏡 | reflector |
| to look with a microscope | |

The discrepancy between the surface representation and its underlying frame is quite striking in the example *chio*³ *chhing*³ 照銃, as shown in (7) below. The verb *chio*³ 照 ‘shine’ refers to the act of sending light to the target, and the object noun *chhing*³ 銃 ‘gun’ involves shooting as one of its functions. They seem to represent two separate unrelated events. It is difficult to arrive at the compositional sense from the meanings of its constituents. A simple and plausible account could be based on the schema coupled with the mechanism of metaphor, a schema involving light, source of light and target of light introduced at the onset of this section. The pointing of the gun at the target is likened to the projecting of a beam of light to it, tantamount to an act of shining. Example (8) shown below is amenable to a closely-related interpretation. The whole expression means that if a single side glance is cast (at the target), one can understand it right away. The sight is like a beam of light that can be projected to the target.²¹

- | | |
|---|-----------------|
| (7) <i>chio</i> ³ <i>chhing</i> ³ 照銃 | source of light |
| aim the gun at (the target) | |
| (8) <i>bak</i> ⁸ - <i>be</i> ² <i>chio</i> ³ <i>chit</i> ⁸ <i>e</i> <i>tioh</i> ⁸ <i>chai</i> ¹ 目尾照一下著知 | source of light |
| to understand by a single side glance | |

Similarly, the following sentence literally means that the buffaloes are aiming their horns at each other in preparation for fighting. Here the horn is taken as a beam of light to be cast onto the target.

²¹ In both cases the eye is the source of light; note that the eye is implied in (7).

(9) *Gu⁵ chio³ kak⁴* 牛照魚

target of light

The buffaloes are staring fixedly at each other.

9. Closing words

We have attempted an account of the four unique polysemous words *koaⁿ²* 趕, *thau³* 透, *tau³* 鬥 and *chio³* 照 in Taiwanese in terms of frame semantics as well as the mechanism of metaphor and metonymy. A frame with the computed meaning of ‘hasten’ + a hidden event suffices to provide a unified account for the meaning relatedness among various syntactic realizations of the apparent polysemy of the word *koaⁿ²* 趕 ‘hasten an event’. We suggest that the two salient senses of the word in question (1. ‘cause something to move’, and 2. ‘hasten an event’) are intimately related since they both denote a causal event. In terms of semantic roles and the predicate-argument relationship the shift from sense 1 to sense 2 is a change of predicate [entity] to predicate [event]. In other words, the latter structure is a predicate to predicate function. *koaⁿ²* 趕 in this sense has acquired an adverb-like function.

The *thau³* 透 frame is schematized in terms of spatial movement to capture its core meaning. The other meanings that emanate from various syntactic realizations are linked in terms of the operation of metaphor. A metalinguistic function is also identified as one of its newly rising senses. A set of schemas such as assembly, reciprocation, non-reciprocation, fabrication and competition are set up to capture the semantic linkage among the apparent polysemous word *tau³* 鬥 with the aid of metaphor. It must be admitted that the competition schema seems to be more remotely related. The *chio³* 照 frame represents a fairly complicated event consisting of a scenario that has been teased out. The *chio³* 照 constructions furnish striking examples of shorthand expressions explainable in terms of the mechanism of metonymy, a part-for-whole coding strategy amply exploited in language.²²

In short, we have tried to establish conceptual frames unshackled by the lexicographical definition in terms of synonym as well as far-flung syntactic diversification. The main purpose of such an endeavor is to ferret out the recurrent patterns of sense extension²³ and ultimately generalize the principles underlying the intralexical and interlexical semantic unity of apparent polysemous words. A clearer picture regarding how lexicon is framed is very instructive to a range of other branches

²² Chinese seems to show unmistakable evidence of relying on metonymy for its expressions. See, for example, Huang (1994) and Wang (1991) among many others.

²³ The discussions regarding recurrent patterns of sense extension emerge under such cover names as regular polysemy (Apresjian 1972), logical polysemy (Pustejovsky 1995b) and systematic polysemy (Nunberg 1995).

of studies such as lexicographic practice, language acquisition and the theory of translation.

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