

Direct Evidentials, Case, Tense and Aspect in Tibetan: Evidence for a General Theory of the Semantics of Evidentials¹

The Tibetan evidential system seems to defy systematic analysis. Each evidential category comprises multiple morphemes, and the semantic distinctions that these morphemes encode are often so subtle that native speakers have difficulty explaining them and are often surprised when shown that pairs of morphemes are not intersubstitutable. Nonetheless, careful analysis of these subtle distinctions reveals a surprisingly coherent system, with implications beyond the description of Tibetan. In this paper we sketch that system, focusing on the multiple markers of direct evidentiality. Our account of the Tibetan direct evidential system provides striking support for a theory in which evidence is not a semantic primitive and evidentials encode not evidence type or information source per se, but relations between situations.

It is generally agreed that post-verbal morphemes in Tibetan mark three basic distinctions among evidence types. Direct evidentials ((1)a) indicate that the speaker witnessed the event, Indirect evidentials ((1)b) indicate that the speaker infers from indirect evidence and Ego evidentials ((1)c) indicate that the speaker is reporting immediate reflexive knowledge. Tibetan also has neutral evidentials ((1)d), which indicate nothing about evidence source.²

- (1) a. *Ama lags kha lag bzos kyī* **‘dug.**
Mother (HON) food make (present continuous) **DIRECT**
Mother is cooking. (witnessed)
- b. *A ma lags thab tsang nang la yod kyī red*
mother (HON) kitchen in(LOC) is **INDIRECT**
‘Mother is in the kitchen (speaker knows through general inference)’
- c. *Nga lha sar bsdad kyī yod*
I Lhasa(LOC) stay pres. **EGO**
‘I live in Lhasa’
- d. *Khog slob phrug red*
he student **NEUTRAL**
‘He is a student’ (neutral statement of fact)

Beyond these basic facts there are many subtle distinctions. Some of these distinctions are described in quite different ways by different authors, and others have received little attention. For example, there are three direct evidential morphemes (*‘dug*, *shag* and *song*), shown in (2), which are often but not always interchangeable.

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² We use the standard Wylie (1959) transliteration system for the Tibetan examples.

- (2) a. *kha sang khong 'khrom la slebs 'dug*
 yesterday he market (LOC) arrived 'DUG
 'Yesterday he arrived at the market' (and the speaker witnessed the event')
- b. *kha sang khong 'khrom la slebs shag*
 yesterday he market (LOC) arrived SHAG
 'Yesterday he arrived at the market' (and the speaker witnessed the event')
- c. *kha sang khong 'khrom la slebs song*
 yesterday he market (LOC) arrived SONG
 'Yesterday he arrived at the market' (and the speaker witnessed the event')

The three most thorough treatments of Tibetan evidentials, Agha (1993), Tournadre and Dorje (2003) and Garrett (2001), differ on the nature of these distinctions, and only Tournadre and Dorje discuss *shag* in any detail. (This is surprising, given that *shag* is probably the most frequently used direct evidential in spoken Tibetan.) We will argue that careful study of these distinctions reveals that evidentials, contrary to most theories, do not encode evidence type *per se*. Instead, we will claim, they encode a *relation* between the situation being reported by the speaker and the situation within which evidence was acquired. This approach turns out not only to provide an accurate characterization of the different direct evidentials, but also to predict a number of other, seemingly unrelated, restrictions on their syntactic distribution. The distribution of these direct evidentials hence provides strong support for the proposal of Speas (2010) that evidentials of all categories encode relations among situations.

The account we defend in turn explains an otherwise mysterious phenomenon, viz., the surprisingly small inventory of evidential categories across languages. As Aikhenvald (2006) has shown, markers of evidentiality rarely distinguish among more than four evidential categories, and the categories are strikingly consistent across languages. This restriction and its uniformity puzzling, given the wide range of types of evidence to which speakers might appeal, the many ways evidence might be classified in an epistemology, and the tremendous intercultural variation in naïve epistemology (see Speas 2004). While it would seem that explaining this phenomenon should be an important desideratum for a theory of evidentiality, most recent analyses of evidential morphemes do not predict that the inventory of morphemes should be either small or crosslinguistically uniform. The Tibetan evidential system is a *prima facie* counterexample to Aikhenvald's claim, given the large number of morphemes that it comprises. Nonetheless, as we shall see, the range of meanings these morphemes encode is consistent with a theory that predicts the kinds of limitations that Aikhenvald observes.

Early research on evidentials generally took the position that evidential systems vary widely from language to language, and some researchers continue to take this

position (see Chafe and Nichols 1986). Faller (2006)³ remarks, “What stands out when perusing this literature is the enormous variety of evidential systems at all levels: the morpho-syntactic shape of evidentials, the number of evidentials in a system, the meanings expressed by evidentials, etc.” Although Aikhenvald’s (2006)’s extensive survey shows some variation in the boundaries of categories and much variation in the terminology and focus of various researchers, the distinctions made in languages with grammaticized evidentials rarely (if ever) involve categories other than indirect, direct, hearsay and personal (ego) experience (see also Willett 1988). More recent studies have focused on whether evidentials operate at the propositional/modal level or the illocutionary level, but have generally left open the question of how (or even whether) to restrict the inventory of such operators. We address this theoretical lacuna.

After a brief overview of the Tibetan language and its evidential system, we begin by establishing that Tibetan evidentials operate at the illocutionary level. In Section 3, we present the three Tibetan direct evidentials, *‘dug*, *shag* and *song*. We argue that all three indicate that the speaker witnessed the reported situation, but they differ in how that witnessing situation was related to the reported situation. Although the evidentials operate at the illocutionary level, their meanings are part of a coherent and constrained system. In Section 4 we formalize the meanings of *‘dug*, *shag* and *song* in terms of inclusion relations between situations, and we show that this analysis provides an explanation for an otherwise random-seeming set of descriptive properties. In Section 5 we explain why situations rather than locations or times are the appropriate relata for evidential meanings. Finally, in Section 6 we suggest how our analysis of direct evidentials can be extended to the other evidential categories (indirect, ego, hearsay).

1. Tibetan Evidentials

1.1 The Tibetan Language

Tibetan is a Tibeto-Burman language spoken by about six million people on the Tibetan plateau, the Himalayan region and in Tibetan exile communities, principally in India, Nepal and Bhutan. The language comprises a number of major dialects, many of which are mutually unintelligible due to phonological and lexical differences, but which are grammatically very similar. The research reported in this paper is on the Lhasa dialect, which is the dialect most widely understood, and is the native dialect of the lead author. Despite the fact that it is, like all Tibetan dialects, a minority dialect, Lhasa Tibetan is often regarded as “Standard Spoken Tibetan.”

Tibetan spoken dialects all differ from modern literary Tibetan, which differs again from classical literary Tibetan. The classical literary language does not represent evidentiality, and the evidential system of the modern literary language is significantly less rich than that of spoken dialects. Many of the morphemes that have evidential meanings in modern spoken Tibetan exist in the classical language but have different

³ Since Faller’s paper came out the same year as Aikhenvald’s book, she may simply have been expressing the general view at that time.

meanings. Although historically the majority of speakers of Tibetan have been illiterate and literary Tibetan has never been a spoken language, literary forms are often taken by educated contemporary speakers as normative. The data in this paper are all taken from the Lhasa dialect of contemporary spoken Tibetan.

Tibetan is an SOV language, with case particles distinguishing genitive, instrumental/agentive⁴, locative and ablative cases. Nominative case is unmarked. It is not a topic-prominent language, although like English it allows optional overt topics and focus. Although there is no person or number agreement, Tibetan does allow the subject to be dropped in contexts where the subject is clear, and also allows the object to be dropped in some contexts.

Evidential morphemes are generally obligatory for assertions, and occur at the end of the sentence. In cases where the predicate is non-verbal, this morpheme functions as the copula as well as the evidential marker.

(3) a. verb + evidential:

bKra shis kyis yi ge bris kyi 'dug
Tashi AG/IN letter ACC write pres DIRECT

'Tashi is writing a letter (and the speaker is witnessing it)

b. copular evidential:

kha sang 'khrom la mi mang po 'dug
yesterday market (LOC) person many DIRECT

'Yesterday there were a lot of people at the market (and the speaker saw them)'

As mentioned above, most contemporary scholars agree that Tibetan has morphemes expressing three categories of evidence, 'ego', 'direct' and 'indirect,' as well as morphemes that are neutral as to evidence type. Within each of these categories, there are several different morphemes. The morphemes marking these categories are shown in (4).

(4) ego: *yin, yod*

direct: *'dug, song, shag*

indirect: *red, yod kyi red, yod sa red, yin sa red*

neutral: *red, yod red*⁵

We will focus on the three direct evidentials, although in Section 6 we will suggest how our analysis can be extended to the other categories.

⁴ Some authors, eg. Agha 1993, analyze this as ergative.

⁵ Although these obviously have morphemes in common, there does not at this time exist a compositional analysis of the different meanings, so we will adopt the traditional approach and consider these to be distinct lexical items.

1.2 Direct Evidentials

In languages that have grammatical markers of evidentiality, the distinction between direct and indirect evidence is the most fundamental. Some languages mark only this distinction. Direct evidentials in general are used to report eventualities that the speaker knows from having witnessed the eventuality with one of his senses. DeHaan (1999) characterizes direct evidence in general as involving events that are “in the same deictic sphere” as the speaker.

- (5) *bkra shis stod gos sngon po zhig gyon 'dug*
 Tashi shirt blue a wear DIRECT.
 ‘Tashi is wearing a blue shirt-‘dug (and the speaker sees it)

Indirect evidentials are used to report eventualities that the speaker knows from having made an inference from some independent state of affairs.

- (6) *sGrol ma lags gshi ka rtse la phebs yin sa red*
 Dolma HON Shigatse LOC go INDIRECT
 ‘Dolma went to Shigatse (the speaker infers from specific evidence)

Much of the literature on the semantics of evidentials focuses on the level at which they operate and their relationship to epistemic modality. We will discuss these issues in Section 2 but since our primary interest is in the different types of direct evidentials in Tibetan, our treatment of evidential paradigms is potentially independent of the level at which they operate. Let us consider five different proposals for the formal semantics of direct evidentials. Recent proposals by Murray, Faller, Matthewson et al., Garrett and Chung characterize direct evidentials as shown in (7). We have highlighted the portion of each definition that distinguishes direct evidentials from other evidential categories.

- (7) a. Murray (2009), for Cheyenne:

$$\text{co}[(\text{Floyd sang-direct})] = \{w \mid \exists g \exists p \exists D_{\text{st}}(\lambda v_0: (11b)^{\text{M:g}}(w) = \{p\})\}$$

$$= \{w \in \text{co} \mid \llbracket \text{CRT} \rrbracket^{\text{M}}(w)(\llbracket i \rrbracket^{\text{M}})(\llbracket \lambda w. \text{sang}(w, \text{Floyd}) \rrbracket^{\text{M}}) = 1\}$$

$$= \text{C}_1$$
- b. Faller (2002), for Quechua:
 speaker asserts p, believes p, has **Best Possible Grounds** for p
adds Bpg(s, Bel(s, p)) to sincerity condition, increases strength to +1.
- c. Matthewson et al. (2006), for St’at’imcets:
 $\llbracket \text{-an} (f)(B)(w)(\phi) \rrbracket$ is only defined if for all worlds w' , $w' \in B(w)$ iff **the perceived evidence** in w holds in w' , and f is a choice function of type $\langle \text{st}, \text{st} \rangle$ such that $f(B(w)) \subseteq B(w)$.
- d. Garrett (2001), for Tibetan⁶:
 $\llbracket \exists i \rrbracket \llbracket \text{Dem}(i) \wedge \text{eat}(i, \text{Tashi}) \rrbracket$

⁶ In Garrett’s analysis the meaning of direct evidentials also includes that the speaker knows p.

- e. Chung (2007), for Korean:⁷
 $[[\emptyset]]^c = \lambda P. \lambda L. \exists e [P(e) \wedge L \subseteq \mathbf{e}\text{-trace}(e)]$

Each of these proposals is of course part of a larger theory of evidentiality and/or epistemic modality. We will not consider the relative merits of the proposals in (7) here, but will focus on the part of each theory that distinguishes direct evidence from other evidence types. This is summarized in (8).

(8)

Author	what distinguishes the category of direct evidence
Murray	CRT (“speaker is certain”)
Faller	BPG (“speaker has the best possible grounds”)
Matthewson et al.	“the perceived evidence”
Garrett	$\exists I \text{ DEM}(I)$ (“there is a demonstrative location”)
Chung ⁸	$L \subseteq \mathbf{e}\text{-trace}(e)$ (“Location perceived by speaker is included in event-trace.”)

For our purposes, there are two important distinctions among these theories. First, Murry, Faller and Matthewson treat *CRT*, *BPG*, and “perceived evidence,” respectively, as semantic primitives. Chung does not include such a primitive in the definition of direct evidentials. For her, directs differ from indirects in that for indirect evidentials, the location is included in the “v-trace,” which Chung defines using an operator **EVIDENCE-FOR**, as in (9).

- (9) $v\text{-trace}(e) = \{ \langle t, l \rangle \mid \exists v [\mathbf{EVIDENCE-FOR}(v, e) \wedge \text{AT}(v, t, l)] \}$ $\text{AT}(v, t, l)$ is true iff evidence v for the occurrence of the eventuality e appears at a location l at time t .

There is no way to know whether *CRT*, *BPG*, “perceived evidence,” or **EVIDENCE-FOR** are the same primitives with different labels or correspond to three different evidence types. This is a serious problem because the denotation of “evidence” cannot be identified independent of that for which it is evidence; anything in the universe could be evidence for something. A state of affairs is only evidence insofar as it bears some relation to the thing for which it is evidence. For example, an empty bowl might be evidence that Mary ate cereal, or that Bob bought new tableware, or that the culprit is a potter, or it might not be evidence for anything at all. A theory of evidence must therefore be a theory of relations, i.e., how the state of affairs that counts as “evidence” is related to the state of affairs that it is evidence for. We will focus on developing a theory that defines “evidence”, both direct and indirect, as a relation between two situations. We will draw on some of the insights of Chung’s analysis, but will not employ

⁷ Chung points out in fn. 37, p. 207 that this formula is a simplification of the formula in (i), based on the fact that if the e-trace includes the location, they must be temporally overlapping, and “the v-trace always includes the e-trace since every event itself can be its own evidence”(2007:207)

(i) $[[\emptyset]]^c = \lambda P. \lambda L. \exists e [P(e) \wedge \tau(L) \subseteq \tau(e) \wedge L \subseteq v\text{-trace}(e) \wedge \mathbf{e}\text{-trace}(e) \cap P\text{-trace}(s_c) \neq \emptyset]$

⁸ In Chung’s analysis, the evidential readings arise from the interaction of “spatial deictic tenses” with certain aspect or mood morphemes.

a primitive **EVIDENCE-FOR** operator. Our proposal will also differ from hers in that we will argue that the appropriate relata for evidentials are not times, locations, and/or speaker's perceptual traces, but situations, thus harmonizing the analysis of evidentials with analyses in situation semantics of phenomena such as propositional attitude predicates. (Barwise and Perry 1983, Barwise 1981, 1988, Barwise & Etchemendy 1987, a.o.)

The second distinction among the above proposals is that Murray, Matthewson et al. and Chung assign the different evidential categories (direct, indirect, etc.) denotations of essentially the same semantic type (modulo the highlighted differences), while in the proposals of Faller⁹ and Garrett the different categories of evidentials have denotations of distinct semantic types. Obviously whether the different evidentials are of the same or different semantic types is ultimately an empirical issue, but we believe that a theory in which they are variants of the same semantic type makes clearer and more correct predictions about how the denotations of evidentials can vary crosslinguistically.

2. Tibetan evidentials operate at the illocutionary level

It is common to take illocutionary force to constitute a broad, relatively unconstrained category, but as mentioned above the inventory of evidentials is small and cross-linguistically uniform. Standard tests show that Tibetan evidentials operate at the illocutionary level. Although the import of these tests is not always clear (see Matthewson 2010), we include them to underscore the point that establishing the level at which evidentials operate is only the first step in determining what kinds of semantic values they have.

2.1 Subject and case

The first test distinguishes evidentials and modals from attitude verbs: Attitude verbs license a Subject, and assign instrumental/agentive case, but evidentials do not.¹⁰

- (10) a. *bsTan 'dzin gyis mog mog de tsho zhim po 'dug za/bsams/shes.*
 Tenzin instru momos those delicious DIRECT says/thinks/knows
 'Tenzin says/thinks/knows that those momos are delicious'
 b. *Mog mog de tsho zhim po yod sa red*
 momos those delicious INDIRECT
 'Those momos are delicious' (speaker infers)

⁹ Although Faller analyzes Quechua evidentials as illocutionary operators, they are of different semantic types in the sense that the ways in which the different evidentials change sincerity conditions are not related or part of a constrained system. The direct specifies that the assertion is based on "best possible grounds," the indirect introduces a modal operator and specifies that the assertion is based on reasoning and the hearsay introduces an additional ASSERT predicate and distinct speaker.

¹⁰ Modals in Tibetan also do not license a subject.

- c. *Mog mog de tsho zhim po 'dug*
 momos those delicious DIRECT
 'Those momos are delicious' (speaker tasted them)
- d. **Ngas mog mog de tsho zhim po yin sa red*¹¹
 I momos those delicious INDIRECT
 intended: 'I infer that those momos are delicious'
- e. **Ngas mog mog de tsho zhim po 'dug*
 I momos those delicious DIRECT
 intended: 'I see/taste that those momos are delicious'

For this reason we conclude that the evidentials are distinct from the attitude verbs such as *za (say) bsams (think) shes /ha go know*), and that there is no grammaticized hearsay evidential in Tibetan. As in English, hearsay is expressed using a full verb with an impersonal Subject.¹²

2.2 Felicity under known truth/falsehood

As has been pointed out by Faller (2000), Papafragou (2000), Garrett (2001), Matthewson et al. (2006) and Peterson (2009), evidentials in certain languages differ from epistemic modals in that *modal+p* is not felicitous if the speaker knows that *p* is true or false while *evidential+p* can be felicitous in such contexts.¹³

Evidential+p in Tibetan is felicitous when the speaker knows that *p* is true. In fact, evidentials are felicitous only when the speaker believes that *p* is true and they are often *mandatory*. Moreover, unlike epistemic modals, evidentials do not weaken an assertion. For this reason, sentences like those in (11) in which the speaker asserts *evidential+p* and then claims uncertainty about the truth of *p*, are ill-formed.¹⁴

- (11) a. **Bbkra shis stod gos sngon po zhig gyon 'dug*
 Tashi shirt blue one wear DIRECT
yin na yang ngas khong gis de gyin pa ha go gi med
 however I-instr he instr it wear know IMPERF NEG
 'Tashi is wearing a blue shirt but I don't know he's wearing it.'

¹¹ This sentence might be grammatical if *ngas* were interpreted as the subject of an implicit verb of speech, but it *cannot* be interpreted as governed by the evidential marker.

¹² Subjects may be null in Tibetan, so sentences with attitude predicates may resemble sentences with evidentials. However, impersonal subjects are in general null pronouns in Tibetan, so there is no reason to treat attitude predicates as markers of evidentiality, which cannot occur with overt Subjects.

¹³ Note that this test doesn't necessarily rule out evidential + *p* where the speaker *does not know* whether *p* is true or false. A reviewer points out that *yod gi red* is felicitous if the speaker has some uncertainty. The test simply does not distinguish modals from illocutionary operators in such cases.

¹⁴ According to Murray, hearsay evidentials are deniable in Cheyenne but this is at least unusual, and it may be that these are in fact disguised attitude ascriptions with null subjects. This requires further study.

- b. **sGrol ma lags gshi ka rtse la phebs yin sa red*
 Dolma HON Shigatse LOC go INDIRECT
yin na yang khong pha gir phebs pa red bsam gyi med.
 But I INST she INST There Go PAST BELIEVE NEG.
 ‘Dolma went to Shigatse (the speaker infers from specific evidence) but I don’t believe she went there. (Impossible to say.)’

Thus we see that Tibetan evidentials are also distinct from epistemic modals in that they do not weaken assertoric force and are felicitous when the speaker knows the sentence asserted to be true. Attempts to cancel commitment to the asserted content lead to Moore’s paradox (Chan 2010), unlike attempts to cancel commitment to modalized sentences.

2.3 Deniability/Assent

Many note that it is possible to deny or agree with the appropriateness of a modal, but this is impossible for evidentials in some languages, and in particular in Tibetan. That is, disagreement with a sentence governed by a modal could either be disagreement with the matrix sentence or disagreement with the felicity of the modal operator. Denial of a sentence containing an evidential, however, can *only* be interpreted as denial of the asserted content, not of the felicity of the evidential.

- (12)a. Tashi: *nga la kang pa yod*
 I house have EGO
 ‘I have a house (and I know from my personal experience)’
 Dorje: #*Yod ma red. Nga tshos kyed rang la di hob te nyos pa yin.*
 be neg COP we-INSTR you loc it surprise bought EGO
 #‘That’s not true – we just got it for you as a surprise.’
- b. Tashi: *sGrol mas mog mog zas song*
 Dolma momo ate DIR
 ‘Dolma ate the momos (and I witnessed it)’
 Dorje: #*Ma song. Khyed rang gis mo mthong med pa.*
 neg DIR you INSTR she see neg
 #‘That’s not true – you didn’t see it.’
- c. Tashi: *sGrol ma gshis ka rtse la phyin yod sa red*
 Dolma Shigatse LOC went INDIRECT
 ‘Dolma went to Shigatse (I have indirect evidence)’
 Dorje: #*Yod sa ma red. Khyed rang la khungs skyel ra sprod med pa.*
 be neg COP you LOC evidence maintain NEG
 #‘That’s not true – you don’t have that kind of evidence!’

2.4 Summary

In summary, unlike attitude verbs, Tibetan evidentials do not license subjects

or instrumental/agentive case. Unlike epistemic modals, Tibetan evidentials are felicitous when the speaker knows that the proposition itself is true, do not weaken assertoric force, and cannot be denied or assented to as part of the at-issue meaning of the sentence. All and only the morphemes we treat as evidentials in Tibetan pass all of these tests, and hence constitute a category distinct from both attitude predicates and modals.

The tests that we have applied in this section are designed to distinguish categories that contribute to the truth-conditional meaning of the sentence (predicates, modals) from those that do not (illocutionary operators). We have established that Tibetan evidentials pattern with the latter group. Whether we classify evidentials as presuppositional (Izvorski 1998, Chung 2005), illocutionary (Faller 2002), as introducing conventional implicatures (Potts 2005) or something else, the question we raise above regarding their restricted inventory is the central one. Illocutionary adverbs and parentheticals, for example, both introduce conventional implicatures in Potts' sense, but they can be used to convey an unlimited range of meanings, and they are always optional. Similarly, it is not obvious whether there are any inherent limits on what kinds of illocutionary operators can exist (but see Speas and Tenny 2003). Evidentials in languages like Tibetan, on the other hand, are often obligatory. In other words, evidentials in Tibetan are *grammaticized*, and hence their values are part of a restricted paradigm. The theory that we will develop below explains these restrictions by treating evidentials as encoding relations among situations in much the same way that tense encodes relations among times.

3. Tibetan direct evidentials

3.1 'dug, shag and song

The three Direct evidentials of Tibetan are repeated in (13).

- (13) a. *kha sang khong 'khrom la slebs 'dug*
 yesterday he market (LOC) arrived 'DUG
 'Yesterday he arrived at the market' (and the speaker witnessed the event')
- b. *kha sang khong 'khrom la slebs shag*
 yesterday he market (LOC) arrived SHAG
 'Yesterday he arrived at the market' (and the speaker witnessed the event')
- c. *kha sang khong 'khrom la slebs song*
 yesterday he market (LOC) arrived SONG
 'Yesterday he arrived at the market' (and the speaker witnessed the event')

Direct evidentials are used to report anything that the speaker knows through

having directly witnessed it. The witness can involve any of the six senses.¹⁵

- (14)a. vision: *bKra shis stod gos sngon po zhig gyon 'dug.*
 Tashi shirt blue a wear DIR
 'Tashi is wearing a blue shirt-'dug (and the speaker sees it)
- b. hearing: *dKun dg'as gzhas gtang gi 'dug.*
 Kunga (agent/ instrumental case) song sing impf DIR.
 Kunga is singing.(and the speaker hears it)
- c. touch: *lug gi bal ' di 'jam po 'dug*
 sheep (agent) wool this soft DIR
 This sheep's wool is soft. (and the speaker feels it)
- d. taste: *ja la tsha min 'dug*
 tea (oblique case)salt negative DIR
 'There is no salt in the tea.' (and the speaker tastes it)
- e. smell *spos de dri ma zhim po 'dug*
 incense this smells good DIR
 'This incense smells good.' (and the speaker smells it)
- f. internal *nga 'gyod pa skyes kyi 'dug*
 I guilt feel impf DIR
 'I feel guilty' (and the speaker feels it)

In some contexts *'dug*, *shag* and *song* seem to be virtually interchangeable, as in (13). For example, if the speaker was at the market yesterday and saw someone arrive, the speaker could say any of the sentences in (13).

Existing descriptions of these morphemes differ substantially, and most do not discuss all three. The chart in (15) summarizes how distinctions among the three Tibetan direct evidentials have been described in the most extensive discussions, by Agha (1993), Garrett (2001) and Tournadre and Dorje (2003).^{16, 17}

¹⁵ In Tibetan culture (and Buddhist culture in general) there are six senses: vision, hearing, touch, taste, smell and the introspective sense that yields knowledge of one's own inner states, such as thoughts, emotions and sensations. See for example Bodhi (2000).

¹⁶ See also DeLancey (1986,1990), who suggests that different evidentials indicate that the speaker has knowledge of different links of the causal chain of an event.

¹⁷ Garrett actually discusses occurrences of *'dug* both with and without the imperfective *-gi*.

(15) Existing characterizations of ‘*dug*, *shag* and *song*:

	‘ <i>dug</i>	<i>shag</i>	<i>song</i>
Agha 1993	imperfective evidential		perfective evidential
Garrett 2001	Existential/loc/poss/attributive direct		
	perfect direct		
Tournadre and Dorje 2003	present testimonial	revelatory	past testimonial
	imperfective past testimonial	past perfect	
		perfect inferential	

There is widespread agreement that the distinction between ‘*dug* and *song* is primarily temporal. Garrett and Tournadre and Dorje characterize this as a distinction between non-past (‘*dug*) and past (*song*). However, as we can see in (13), all three direct evidentials can occur in past tense contexts. We will follow Agha (1993) in treating ‘*dug* as imperfective and *song* as perfective.

Beyond this there is little agreement, and neither Agha nor Garrett goes into detail about *shag*. In Tournadre and Dorje’s description, *shag* has at least three homophonous but related variants. In its revelatory guise, *shag* indicates that the speaker has just now learned the reported information. However, sentences with *shag* do not in general express surprise, so we would disagree that the morpheme is semantically revelatory. Sentence (13)b can be used in contexts where the speaker simply saw the arrival. Tournadre and Dorje’s claim that *shag* is (or can be) past perfect or perfect inferential is based on the observation that “the speaker may use it to emphasize the enduring presence of past action,” (2003:165) or to indicate that the speaker is making an inference from results of the action.¹⁸

Although we will show below that *shag* isn’t a marker of perfect aspect and doesn’t always indicate witness of result or “enduring presence,” Tournadre and Dorje’s observations form a good starting point, because their treatment of *shag* as both “revelatory” and inferential perfect raises several important points about the relationship between perceptual evidence and inference. In many cases the relationship between a result and the event it resulted from is so obvious that we wouldn’t normally think it requires an inference to make the connection. For example, the existence of vase pieces entails that the vase broke in all but rather bizarre worlds. In other cases one can witness not just a result but an event in its entirety and still need to make an inference. Garrett and Bateman (2007) showed that Tibetan speakers use indirect evidentials to report events that they clearly witnessed but were unable to interpret. For example,

¹⁸ The interaction of evidentiality and tense seems to be different in Tibetan than in Sherpa as described by Woodbury (1986). In Sherpa, the nonpast direct evidential (-*nok*) expresses evidence acquired in the present, so when this morpheme is used with past tense, it takes on a meaning of inference based on some presently relevant result.

subjects who were shown a series of videos of a man making hand gestures used an indirect evidential to say “He is signing.”¹⁹ Although they witnessed the signing, it took an inference to interpret what it was that they were witnessing. Similarly, consultants reported that if a speaker who is relatively unfamiliar with Tibetan butter tea watched someone making butter tea, he could say, “She is making butter tea-indirect,” despite the fact that the activity was in full view.

Finally, as Aikhenvald (2001) and Chung (2005) point out, vision and other senses are in fact used to gather indirect evidence. As we noted above, the distinction between direct and indirect evidence isn’t a matter of whether visual perception or other senses were used in gathering the evidence, but in how the evidence is related to the reported event. (see also Speas 2002, 2004, 2010.) These considerations along with the fact that Tournadre and Dorje describe *shag* as revelatory or past perfect or inferential perfect make it clear that we need a more explanatory account of evidential meanings.

As mentioned above, *song* is used with sentences in the perfective while ‘*dug* and *shag* are used with the imperfective. Although ‘*dug* and *shag* are sometimes interchangeable, they differ in (at least) ten ways:

- (16) a. Sometimes ‘*dug* indicates that speaker witnessed the entire event/state while *shag* indicates that speaker witnessed the result or end state of the event. But sometimes *shag* can be used when the speaker witnessed the event itself.
- b. Some predicates allow only ‘*dug* or only *shag* but there is to date no clear classification of these predicates.
- c. In the present tense, *shag* but not ‘*dug* requires a special auxiliary.
- d. Agentive/instrumental Case on the Subject sometimes triggers inferential or focus readings with ‘*dug* or *shag*
- e. ‘*dug*, but not *shag*, can appear in the antecedent of a conditional.
- f. ‘*dug*, but not *shag*, can appear in a question.
- g. ‘*dug*, but not *shag*, can appear in the scope of negation.
- h. *Shag*, but not ‘*dug*, can be used in supplication.
- i. In a future tense construction, ‘*dug* indicates speaker certainty, whereas *shag* indicates personal assurance.
- j. ‘*dug*, but not *shag*, can be used in demonstratives.

This is, to say the least, a puzzling set of properties, but we will propose that these distinctions all follow from a simple difference. Roughly stated, we will argue that ‘*dug* is felicitous the speaker witnessed the whole eventuality and *shag* means that the speaker witnessed part of the eventuality. We will further argue that this difference is not primitive, but instead follows from a more abstract and explanatory difference

¹⁹ It is clear in Garrett and Bateman’s discussion that the fact that consultants saw videos rather than real-life situations was not relevant to the choice of evidential.

regarding how the situation being reported is related to a reference/topic situation. Hence, the denotations of evidentials do not include “witness,” “testimonial,” “direct evidence” or the like as primitives, but rather are more familiar semantic values - relations between situations.

3.2 ‘dug vs. shag: witness of whole vs. witness of part

As mentioned above, Tournadre and Dorje (2003) point out that *shag* is used to report eventualities that the speaker knows of through seeing a result. For example, ‘dug would be used if the speaker saw a pot break, while *shag* would be used if the speaker saw only the *result* of the breaking, for example the broken pieces of the pot.

- (17) a. *chags ‘dug*
 broke ‘dug
 ‘It broke/was broken’ (and the speaker saw it break)’
 b. *chags shag*
 broke SHAG
 ‘It broke/was broken’ (the speaker sees the pieces but did not see it break)²⁰,

However, there are limits on when *shag* can be used by a speaker who has witnessed a result. Suppose the speaker sees lots of footprints and trash at the marketplace. She still would not use *shag* as in (18)b.

- (18) a. *kha sang ‘khrom la mi mang po slebs yod sa red.*
 yesterday market (LOC) person many INDIRECT
 ‘Yesterday there were a lot of people at the market (and the speaker knows from indirect evidence)’
 b. *#kha sang ‘khrom la mi mang po slebs shag*
 yesterday market (LOC) person many SHAG
 ‘Yesterday there were a lot of people at the market (and the speaker saw the result of this)’

Moreover, some types of events cannot be reported at all using *shag*. For example, (19)b is ill-formed, whether the speaker heard Tashi snoring or saw some result, such as Tashi’s annoyed and exhausted roommate.

- (19) a. *mdangs dgong bKra shis sngur pa rgyabs kyi ‘dug*
 ‘Last night Tashi was snoring pres (‘dug)’
 b. **mdangs dgong bKra shis sngur pa rgyabs shag*
 ‘Last night Tashi was snoring (*shag*)’

There is a difference between sentence (17)b, where *shag* indicates that the speaker witnessed a result state, and (18) or (19): The predicate in (17), *chags* ‘break’, is telic, and as such has the result state as an inherent part of its meaning. Snoring or there being large number of people at a market can certainly have results, but nothing

about the meaning of these predicates requires a result. So in order for *shag* to be felicitous when the speaker witnessed a result, the result must be an inherent part of the eventuality denoted by the predicate.

However, we cannot simply say that *shag* can be used if the speaker witnessed an inherent result, because there are cases where it is felicitous when the speaker witnessed some portion of the event other than the result state. For example, in all of the scenarios in (20) *shag* would be felicitous.

- (20)a. Speaker went into the kitchen, watched Mom mixing dough for momos, but left while she was still just stirring. A little while later, reports what Mom was doing:

Ama lag kyis mog mog zos bsdad shag
 Mother (instrumental) momo make continuous/progressive SHAG
 ‘Mother was making momos - *shag*’

- b. Speaker was on the bridge as the train was entering the station, and saw part of the train going under the bridge.

Me ‘khor slebs shag
 train arrived SHAG
 ‘The train arrived - *shag*’

- c. Speaker watched part of a slow motion video in which a vase was very slowly breaking. She missed the beginning and saw only the part where cracks were beginning to form in the vase.

chags shag
 broke SHAG
 ‘It broke/was broken’

The use of *shag* indicates not that the evidence is a result/enduring presence, but that it is an inherent part of the event.²¹ That is, *shag* is used if the speaker’s source of information is a sub-part of the reported eventuality, while ‘*dug* and *song* are felicitous if the speaker witnessed the whole eventuality. In the following section we will present an analysis that formalizes these part-whole relations in terms of relations between situations: ‘*dug* and *song* are felicitous if the situation in which the speaker came to know p contains the situation of which p is true, and *shag* is felicitous if the situation in which the speaker came to know p is contained in the situation of which p is true. We will further argue that the fact that the relevant situation is one of “witness” will follow from basic pragmatic principles. We will occasionally use the term “witness” to simplify the exposition, but ultimately we believe that evidentials (at least in Tibetan) express abstract relations rather than specific features such as “witness” or “visual/sensory information.”

²¹ The auxiliary *bsdad* as in (20a) is obligatory with *shag* in the present tense. In Section 4.2.1 we will show that the reason for this does not pertain directly to result states.

We now have a way to explain why *'dug* and *shag* seem in some cases to be interchangeable. If the speaker came to know of an eventuality that includes sub-parts, she can use either evidential: *'dug* if she came to know it through witnessing the entire eventuality, or *shag* if she came to know it through witnessing a sub-part. We correctly predict that the two will be seen to be synonymous whenever it is difficult to distinguish witnessing part from witnessing the whole. A predicate like 'arrive' denotes an achievement, i.e. a simple change of state. The beginning and end of an arrival can be virtually simultaneous, so *'dug* or *shag* would be often appear to be synonymous with such predicates. If *shag* is used, the speaker is emphasizing that she saw only part, such as the train coming under the bridge, but the real-world contexts in which *'dug* or *shag* are felicitous with such predicates will largely overlap.

Why can't *shag* be used to report that Tashi was snoring (example (19)), even if the speaker saw Tashi snoring for just part of the night? We suggest that the reason for this is that predicates like *snore* are *non-quantized* (Krifka 1989). Non-quantized predicates are those for which sub-parts of the eventuality denoted are instances of the same kind of eventuality as each other and as the whole. If you see Tashi snoring between 11pm and 11:15pm, you've seen the same kind of eventuality as if you had seen him snoring from 3:15am to 3:20am, or all night. Quantized predicates, like 'break' or 'make momos' are those for which sub-parts of the event denoted are not instances of the same kind of eventuality. If you see broken pieces of a vase, or a person bumping into a vase, or a crack beginning to form, you haven't actually seen a breaking event. If you see mother mixing dough, you've seen a different kind of event than if you see her putting the momos into a steamer, or if you've seen the entirety of the momo cooking.

Shag is used only if the speaker witnesses a part of the eventuality that is not the same as the whole eventuality. This is because witnessing part of a non-quantized eventuality is equivalent to witnessing the whole. Note that quantization is a property of the denotations of predicates, not of times or of predicates plus times. The parts of an eventuality are distinct from the parts of the time span over which it takes place. Thus, we claim that *shag* cannot be used with predicates denoting non-quantized eventualities because all cases in which the speaker has witnessed part of such an eventuality will also be instances of witnessing the entire eventuality.

Our approach correctly predicts that *'dug* is felicitous with non-quantized predicates even if the speaker witnessed only a portion of the temporal duration of the eventuality, because witnessing a part "counts" as witnessing the whole eventuality. As we show below, these facts provide strong support for an abstract relational analysis of these evidentials rather than one in which *'dug* simply means "speaker witnessed the whole eventuality" and *shag* means "speaker witnessed part of the eventuality."

So far we have claimed (still informally at this point) that *'dug* and *shag* are both felicitous if the speaker was a witness, but that *'dug* indicates that the witnessing situation includes the situation witnessed while *shag* indicates that the situation

witnessed includes the witnessing situation. What about *song*? Recall that *song* is the perfective direct evidential. According to Filip (2000:42), “The perfective aspect restricts the denotation of any eventuality description to total (or complete) events.” Imperfective aspect does not impose a restriction of this type.²² So *song* is the perfective equivalent of *dug*: It is felicitous if the speaker witnessed the perfective event. Since perfective restricts the denotation to total event, there cannot be a perfective equivalent of *shag*.

4. Evidential Situations

We claim that *dug* and *shag* are felicitous when a witnessed eventuality is reported in the imperfective aspect. *Dug* is used if the speaker witnessed the whole eventuality and *shag* is used if the speaker witnessed a sub-part. *Song* is felicitous when a witnessed eventuality is reported in the perfective aspect. In this section we will present a more precise analysis of these morphemes, in which direct evidentials express a part/whole or inclusion²³ relation of inclusion between the situation being reported and the situation through which the speaker acquired the knowledge²⁴. Because the direct evidentials express an inclusion relation, their felicity conditions often require some event/situation that has sub-parts or is in some sense extended. We will argue that the difference in meaning between *dug* and *shag* is the direction of the inclusion relation. We will show that the entire range of puzzling phenomena noted above can be neatly explained by this analysis.

In situation semantics, a situation is part of a world. A central idea in situation semantics is that assertions are about particular situations. For example, Klein (1994) describes a witness in a trial testifying about the scene of the crime. The witness says “There was a book on the table. It was in Russian.” Klein points out that asserting that the book was in Russian in the past tense ought to be odd, since the book is presumably still in Russian at the speech time. He explains that these statements are not odd because they are true *of the situation in the past* to which the speaker was a witness. In other words, the witness is being asked not about the properties of the book but about its properties within the particular situation under discussion. In Klein’s analysis the past tense indicates that the Topic Time precedes the time of utterance.

Situations - unlike worlds - may be partial or even inconsistent; they comprise just what is relevant to the content of the expression. Proponents of situation semantics point out that the truth of a given proposition does not depend on irrelevant aspects of the worlds in which it is true. In the example above, the truth of the propositions does not depend on whether a cat is in the room, whether the witness likes Burmese food,

²² Progressive aspect in English might impose a non-quantized interpretation on quantized predicate, but imperfective does not.

²³ Strictly speaking the relation is probably part/whole rather than inclusion in the set-theoretic sense, since the parts of an eventuality cannot necessarily be treated as a set. We will use the terms “includes” or “contains” interchangeably with “is part of”, in order to highlight the parallels between evidentials and tense/aspect markers.

²⁴ An account of the distinction between direct and indirect evidentials based on relations between situations can be found in McKenzie 2007.

whether New York is adjacent to Connecticut, etc. Moreover, the truth of a proposition can crucially depend on which part of a given set of worlds the statement is about. Barwise and Perry (1983) cite the example of a sleep researcher whose experiment requires constant monitoring of the subjects. If the researcher says to the monitor “Everyone is asleep now” it could be true despite the fact that in all worlds where the experiment takes place, the monitor and the researcher are in fact awake. The statement is about the particular situation comprised of the sleeping subjects, not about the possible worlds in which the statement is true. In this sense, situations may be incomplete parts of worlds.

In the situation semantics literature the situation about which an utterance is made has been variously called “topic situation”, “reference situation”, “focus situation” “described situation.” The terminological variation reflects in part an ambiguity that arises in the translation from topic times to topic situations. In Klein’s example, at the topic time the book was on the table and also the witness saw the book on the table. In situation semantics we need to distinguish the situation of which “the book was on the table” is true from the situation of which “Ms. W saw the book on the table” is true. The former is Speas (2010)’s ES, which we will call the Evaluation Situation and the latter is Speas’ Reference Situation, which we will call the Information Situation, to avoid connotations raised by the term “reference.” Suppose the next person to testify is a detective who came to the scene of the crime after the fact. Although he saw only a dust imprint of the book, he is able to deduce that at the time of the crime, the book was on the table. The detective’s statement “The book was on the table” is intended to be true of the very same situation that the eyewitness’s statement is true of. Thus, the Evaluation Situation, i.e. the *minimal* situation of which “The book was on the table” is true, consists of only the table and the book on it.

If Klein’s witness and our detective were Tibetan speakers, they would use different evidentials in making their statements. The witness would use a direct evidential and the detective would use an indirect evidential. The situation of which the statement is true would be the same in either case, but the Information Situation would be different.

- (21) a. Witness: *Cog tse gang la deb zhig ‘dug.*
 table on LOC book INDEF DIRECT
 ‘There was a book on the table’
 b. Detective: *Cog tse gang la deb zhig yod sa red.*
 table on LOC book INDEF INDIRECT
 ‘There was a book on the table’

The ambiguity discussed above arises in the case of the witness: both the witnessing and the event itself took place at Topic time, so we need to make it clear that the Evaluation Situation is just the book on the table while the Information Situation is the witnessing situation. In the case of the detective, it is clear that the statement is

about the book on the table, the Evaluation Situation, which is temporally and situationally distinct from whatever the Information Situation was.

In the following section we will present our analysis of *'dug* and *shag*, along with a brief discussion of *song*. Then in Section 5 we will explain why we believe that the meanings of evidentials involve relations between situations rather than relations between events, times, locations, or speakers's perceptual traces.

4.1 A Situation-theoretic analysis of Tibetan direct evidentials

Our analysis of Tibetan direct evidentials adopts the proposal of Speas (2010) that all grammaticized evidentials encode relations between situations. Her claim is that the meanings of evidential paradigms are parallel to the meanings of tense/aspect paradigms, differing only in that the relata for evidential paradigms are situations rather than times, and situations bear accessibility rather than precedence relations to other situations. In this theory, evidentials encode relations of inclusion or accessibility between a Reference Situation and the situation of which the statement is true, which Speas calls the Evaluated Situation, and between the Reference Situation and the Discourse Situation:

(22)	<i>Direct</i>	RS includes ES	
		RS is accessible from DS	
	<i>Indirect</i>	RS is accessible from ES	
		RS includes DS	
	<i>Personal experience(ego)</i>	RS includes ES	
		RS includes DS	
	<i>Hearsay</i>	RS is accessible from ES	
		RS is accessible from DS	(Speas 2010)

In Speas' theory, direct and indirect evidentials are distinguished in two ways. First, when one witnesses a situation, that situation is included in the witnessing situation, whereas when one sees indirect evidence, this situation "leads to" but does not include the situation for which it is evidence. Hence, direct evidentials indicate that RS includes ES, while indirect evidentials indicate that RS is accessible from ES. Second, having witnessed a situation does not incorporate information in the common ground. If something in the common ground changes knowledge gained in this way (for example, discovering that you were hallucinating), it no longer counts as actual witness and so could not be reported using a direct evidential. The Reference Situation is thus accessible from but does not include the Discourse Situation. Inference from indirect evidence, on the other hand, takes into account not only the indirect data that the speaker has but also the current state of affairs, accumulated wisdom and powers of reason, and sometimes, as von Stechow and Gilles (2005) point out, the distributed knowledge of the discourse participants. Thus, the Reference Situation for Indirect Evidentials includes the Discourse Situation.

Speas' theory aimed to explain the restrictions on the categories of possible evidentials: Languages with paradigms of grammaticized evidential morphemes never seem to mark more than about four different categories, and the categories are more or less the same across diverse languages. Speas claims that the inventory is restricted because evidentials can encode inclusion or accessibility relations and nothing else. One problem with this claim is that Speas assumes a particular direction for the inclusion relations, but if we allow cases where ES includes RS, the inventory is no longer restricted to four categories. There should be languages that have a direct morpheme that means ES includes RS and another that means RS includes ES.

Tibetan is just such a language. The two imperfective direct evidentials '*dug* and *shag* encode an inclusion relation between two situations, and differ only in the direction of the relation. It is beyond the scope of this paper to show conclusively how Speas' theory applies to all of the evidential categories in Tibetan, although in Section 5 we will briefly outline some reasons for believing such an approach to be quite promising. In this section we focus on how such an approach can explain the properties of the Tibetan direct evidentials.

As explained above, "The book was on the table-DIRECT" and "The book was on the table-INDIRECT" are both true of some particular situation involving a book and a table, which we refer to as the "Evaluation Situation." It is the situation for which the truth of the proposition is evaluated, i.e., the minimal situation of which *p* is true, and it is the same whether the evidential is direct or indirect. Following Speas (2010), we claim that direct evidentials encode an inclusion relation between the Evaluation Situation and another situation, namely the situation that constitutes the relevant evidence. We call this the "Information Situation"²⁵. In (23) we give an informal definition of these two situations. As we proceed we will see that the denotations of evidentials do not actually specify anything about "evidence." As in the theory of Chung (2005), "evidence" is defined relationally.

- (23) Evaluation Situation(ES): the situation of which *p* is true
Information Situation(IS): the situation that constitutes evidence for *p*

We claim that direct evidentials in Tibetan convey a relation of inclusion between these two situations, and that '*dug* and *shag* differ only in the direction of the inclusion relation. As discussed above, *song* is the equivalent of '*dug* for sentences with the perfective aspect.

- (24) a. '*dug, song* ES \subset IS
b. *shag*: IS \subset ES

Incorporating this semantic content into a more complete semantic representation gives

²⁵ See Section 6 below and Speas 2010 for discussion of the accessibility relation encoded by indirect evidentials.

us (25). Since choosing a particular theory of the semantic representation of aspect is beyond the scope of this paper and not relevant to the data at hand, we use the features [+imperfective] and [+perfective] as shorthand.²⁶

- (25) a. $[[P \text{ 'dug}]]^c = \lambda P[+\text{imperfective}]. \lambda s. \exists s' [P(s) \wedge s \subset s']$
 b. $[[P \text{ shag}]]^c = \lambda P[+\text{imperfective}]. \lambda s. \exists s' [P(s) \wedge s' \subset s]$
 c. $[[P \text{ song}]]^c = \lambda P[+\text{perfective}]. \lambda s. \exists s' [P(s) \wedge s \subset s']$

Note that these representations do not specify “witness” or “speaker’s perception.” They simply say that the proposition is true of a situation (s) and there is another situation that either includes or is included in s. This representation may seem at first glance to be vacuous: every situation could in principle be part of some other situation. However, once we have argued for the inclusion relations in the above representations, we will explain how the interpretations of witness or perception arise. Following Chung (2005), we rely on the Gricean principles that restrict assertions to information that the speaker knows, believes and considers to be informative.

4.1.1 ‘dug: Evaluation Situation is included in Information Situation

In the literature on evidential morphemes, it has often been observed that direct evidentials express some kind of deictic, temporal or spatiotemporal overlap between the reported event and either the speaker or some event or location involving the speaker. (De Haan 1999, Garrett 2001, Nikolaeva 1999, Faller 2002, 2004, Chung (2005), Speas (2003, 2004, 2010), a.o.²⁷.) Jakobson (1957)’s original definition of evidentiality explains that it is a category “which takes into account three events – the narrated event, the speech event and the narrated speech event (E^m), namely the alleged source of information about the narrated event.” (1971[1957]:135.) Our analysis of ‘dug simply encodes this longstanding observation in terms of situations. Here we will outline the basic analysis, and then in Section 5 we will explain why situations are the appropriate relata, not times or locations.

For example, suppose a speaker utters (26).

- (26) *bKra shis yi ge 'bri kyi 'dug*
 Tashi letter write PRES.DIR
 ‘Tashi is writing a letter’ (and the speaker is witnessing the act)

The use of ‘dug is felicitous when the speaker comes to know p via a situation that

²⁶ In a more complete representation, the aspect will of course have a lower scope than the level of the proposition, but our shorthand abstracts away from this. Crucially, evidentials have scope over aspect.

²⁷ De Haan observes that direct evidence involves events that are “in the same deictic sphere” as the speaker. Garrett (2001) proposes that direct evidentials project a situation that is locatable and known by the speaker. Nikolaeva (1999) proposes that tenses in Ostyak project situation variables, and that direct evidential meanings arise from overlap between situations. Faller (2002, 2004) and Chung (2005) distinguish direct from indirect evidentials in terms of whether the “speaker’s perceptual trace” coincides with the location of the reported event at Reference(Topic) time.

includes p. In this case, the Evaluation Situation is the situation of Tashi writing a letter. The Information Situation is the situation within which the speaker learned that Tashi is writing a letter. The use of the evidential ‘dug’ adds the information that the relation between IS and ES is one of inclusion. ‘dug’ updates the common ground with:

‘dug: $ES \subset IS$

Thus, the assertion will be *true* if and only if Tashi is writing a letter, but *felicitous* only if Tashi is writing a letter and ES is included within IS. In the case of sentence (26), what is conveyed is that *Tashi is writing a letter* is true of a situation that is contained in the situation where the speaker acquired her knowledge.

(27)



The contribution of the evidential is to indicate the relation between the IS and the ES, not to assert anything about the ES. This explains the fact that evidentials do not contribute to the truth conditions of sentences; simply saying that they are illocutionary operators merely redescibes that fact. Our approach to evidentials does not add any new primitives to the grammar, and it eliminates the need to include specific reference to “witnessing” “learning through seeing” “learning through senses” or the like to the linguistic representation. The logical form of sentence (26) would be schematically as in (28).

(28) $\lambda p[p = \lambda s[\text{writing}[+imperfective](s, \text{a letter}, \text{Tashi})]$
 $\wedge \exists s' [s \subset s']$

It is important to note that the inclusion relation holds between situations, not events, times or worlds. This correctly predicts a difference between quantized and non-quantized predicates: With quantized predicates like ‘write a letter,’ it’s true that the use of ‘dug’ entails that the witnessing situation includes the entire timespan of the witnessed situation, but this follows from the properties of quantized predicates and so should not be stipulated as part of the semantic representation for ‘dug’. As discussed above, *dug* may be used with non-quantized predicates if the witnessing situation lasts for only some portion of the witnessed situation’s timespan. The complete (non-schematic) logical form for sentence (26) will of course include temporal information, but this

information is not part of the meaning of the evidential.²⁸

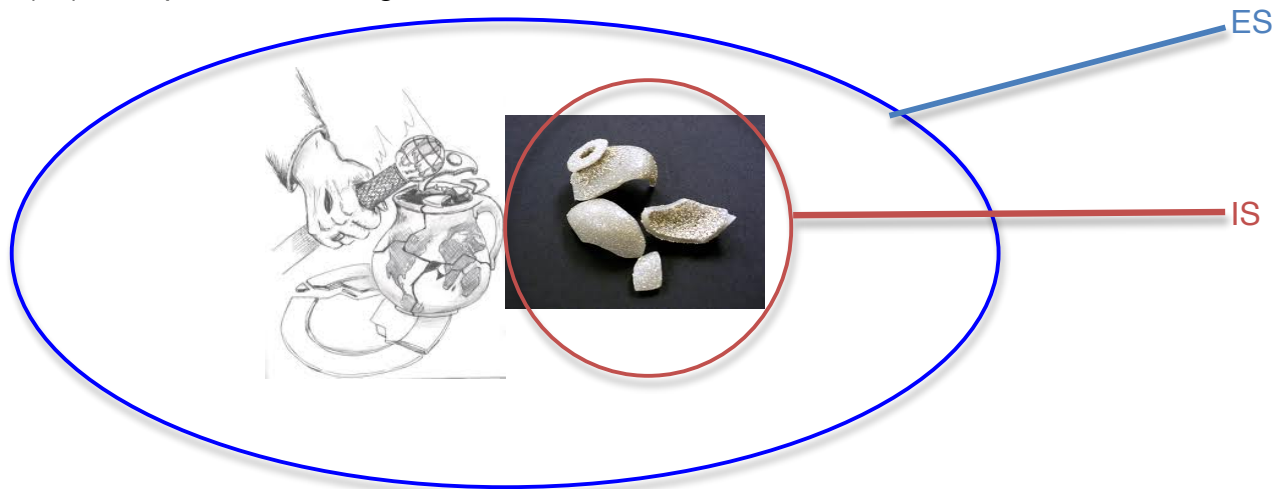
If our approach is on the right track, we might expect to find an evidential in some language that encodes inclusion, but in the other direction. That is, we might expect to find an evidential indicating that the Evaluation Situation includes the Information situation. *Shag* is that evidential.

4.1.2 *Shag*: Information Situation is included in Evaluation Situation

If a speaker witnesses the broken pieces of a pot, this situation is only a part of the breaking event. That is, the E- situation (the pot breaking) includes the Information situation (broken pot pieces). We propose that ‘dug and shag both express a relation of inclusion between the IS and the ES, but they differ in the direction of the relation:

‘dug: ES \subset IS
shag: IS \subset ES

(29) The pot broke - shag



Notice that the Information Situation here does not include the witness. The information situation is a sub-part of the breaking situation, which does not necessarily include the speaker. In fact, the inclusion of the witness in the diagram for ‘dug above is not technically necessary.

In the examples so far, it seems that when IS includes ES (‘dug), the speaker is part of IS, whereas when ES includes IS, the speaker is not part of IS. Actually, we will see in Section 4.2 that this is not always so, but for the default cases this can be explained as follows: When IS includes ES (‘dug), IS must be minimally larger than ES.

²⁸ Some theories of non-quantized eventualities might treat the timespan of the representative portion as the relevant timespan, in which case the timespan of the witnessing situation would in fact include the timespan of the witnessed situation, but the point is that evidentials do not introduce any information about times.

Adding the speaker and nothing else creates a minimally larger situation. When IS is part of ES, nothing is added; IS is simply part of ES. The reason it's the speaker rather than some other random object that is added when IS includes ES has to do with pragmatic principles, as explained in the following section.

4.1.3 Restricting the Information Situation

We claim that evidentials encode a relation between the Evaluation Situation and another situation, and no other specific information. How, then, do we restrict the relevant other situation to the one through which the speaker came to know that *p* is true of the Evaluation Situation? Assuming the universe is infinite, every situation is included in some other situation, so why don't Tibetan speakers end every declarative sentence with '*dug*? We must find a way to restrict the Information Situation to just the right one. In fact, there will turn out to be cases where the IS is something other than the situation in which the speaker acquired the knowledge, so we cannot simply stipulate the nature of the IS. Instead, we argue that the IS is contextually-determined and Gricean principles generally determine that it will be the situation through which the speaker acquired the knowledge.

Assuming Gricean principles, the common ground of every discourse, and in particular any discourse involving an assertion of *p*, includes the following assumptions (among others):

- (30) a. The speaker believes *p*. (Quality)
 b. The speaker has adequate evidence that *p*. (Quality)²⁹
 c. The speaker is being as informative as required. (Quantity)
 d. The speaker is being relevant. (Relevance)
 e. The speaker is being clear. (Manner)

We may raise all of the well-known philosophical and linguistic questions about what exactly constitutes "belief," "relevance," "adequate evidence," etc., but the point is that these assumptions are present (or being flouted for illocutionary purposes) in every well-formed discourse. If the speaker is being as informative as required and introduces no specifics about the IS other than that it includes the Evaluation Situation, then the IS must be something already identifiable from common ground and must include no superfluous components. If the speaker is being relevant, then IS must be identifiable from the common ground. Since the assumption of adequate evidence³⁰ is always part

²⁹ See Davis et al. 2007 for a formal approach to the way in which evidentials affect the "quality threshold" for an utterance.

³⁰ For the sake of concreteness, let us assume Kratzer (1976)'s description of knowledge ascriptions:
 S knows *p* if and only if
 (i) There is a fact *f* that exemplifies *p*,
 (ii) S believes *p de re* of *f*, and
 (iii) S can rule out relevant possible alternatives of *f* that do not exemplify *p*. (Kratzer 1976:15)

of the common ground, it is a default value for IS.³¹

4.2 The differences between ‘*dug* and ‘*shag*

In Section 3.1 we listed pre-theoretically the various ways in which ‘*dug* and ‘*shag* differ, repeated in (31).

- (31)
- a. Sometimes ‘*dug* indicates that speaker witnessed the entire event/state while ‘*shag* indicates that speaker witnessed the result or end state of the event. But sometimes ‘*shag* can be used when the speaker witnessed the event itself.
 - b. ‘*dug* and ‘*shag* seem to differ with respect to what kinds of predicates they can be used with.
 - c. In the present tense, ‘*shag* but not ‘*dug* requires a special auxiliary.
 - d. Agentive/instrumental Case on the Subject sometimes triggers inferential or focus readings with ‘*dug* or ‘*shag*
 - e. ‘*dug*, but not ‘*shag*, can appear in the antecedent of a conditional.
 - f. ‘*dug*, but not ‘*shag*, can appear in a question.
 - g. ‘*dug*, but not ‘*shag*, can appear in the scope of negation.
 - h. ‘*Shag*, but not ‘*dug*, can be used in supplication.
 - i. In a future tense construction, ‘*dug* indicates speaker certainty, whereas ‘*shag* indicates personal assurance.
 - j. ‘*Dug*, but not ‘*shag* can be used in demonstratives.

Our analysis accounts straightforwardly for the first two differences. We have shown that the meaning of ‘*shag* does not have to do specifically with results, but rather with parts of the eventuality. If some other part of the eventuality is witnessed, ‘*shag* can also be used. Moreover, in order for the Information Situation to be part of the Evaluation Situation, the Evaluation Situation has to be something that could have distinct parts. ‘*Shag* cannot be used with predicates that denote non-quantized eventualities. The following sections explain how our analysis predicts the remaining differences between ‘*dug* and ‘*shag*.

4.2.1 The Auxiliary ‘*bsdad*

When reporting an event in the present, ‘*shag* cannot be used without the auxiliary ‘*bsdad*. When this auxiliary is included, the sentence indicates that the speaker witnessed the event itself and not some result. This auxiliary is always required when reporting events in the present, and is required with certain verbs in the past.

(iii) corresponds to the informal “has adequate evidence.”

³¹ It may be that we cannot leave it at that, and must specify that evidentials contribute information about the “adequate evidence.” We might, for example, follow Davis et al. (2007)’s proposal that evidentials update the “quality threshold.” Our claim is that this update is not based on primitives such as “direct evidence,” “indirect evidence,” “hearsay”, etc.

- (32)a. *Ama lags kha lag bzos kyi 'dug.*
 Mother (HON) food make pres DIR('dug)
 Mother is cooking. (witnessed)
- b. *Ama lags kha lags bzos bsdad shag.*
 Mother (HON) food make (pres) AUX DIR(shag)
 Mother is cooking. (witnessed)
- c. **Ama lags kha lags bzos shag.*
 Mother (HON) food make (pres) DIR(shag).
 Mother is cooking. (witnessed)

A speaker could say (32)b if she observed Mother cooking even if she had not seen the resulting food. Moreover, (32)c is impossible. If *shag* simply meant that the speaker witnessed an inherent result, we would expect (32)c to be possible if for example the speaker sees Mother taking the food out of the oven and putting it on the table. Why can't *shag* be used by itself in the present tense if the speaker witnessed part of an eventuality?

We believe that this has to do with the relationship between present tense and quantization. Filip (2000:39) notes, "The semantics of perfectivity, but not the semantics of imperfectivity, is directly related to the property of quantization. If a given state of affairs is represented by a verbal predicate in its totality, there must be some limits imposed on its (temporal or spatial) extent, and consequently, it must be quantized." This is why there is only one perfective direct evidential.

Consider a statement about an eventuality taking place in the present and expressed in the imperfective. Although imperfective does not impose a limit on the temporal extent of the predicate, present tense does: An eventuality described in the present using the imperfective cannot yet have occurred in its totality.³² If we use imperfective to report on an eventuality in the past, it is possible (although not obligatory) that the entire event has now taken place. This is not possible for an imperfective report about the present. This fact affects the quantization properties of predicates in the present tense. It is possible for an English speaker say to (33)a if she has seen the whole event including all of the finished momos, but the speaker who says (33)b cannot yet have seen all of the finished momos.

- (33) a. I saw that Mother was making momos.
 b. I see that Mother is making momos.

Because the endpoint of the eventuality is in effect removed in a present tense report, present imperfectives are necessarily non-quantized.³³ We saw above that *shag* cannot be used in the past with non-quantized predicates, because witnessing a part

³² Or more accurately, the pragmatics of statements about the present.

³³ This isn't currently a consensus among semanticists on the exact role of quantization, imperfectivity and telicity in the interpretation of present tense, so our explanation here is necessarily speculative.

would “count” as witnessing the whole.

The word *bsdad* can occur as a main verb meaning *to sit, to stay, or to remain*, as shown in (34). As an auxiliary verb in the present tense, it has a meaning that is sometimes called the present continuous, and is sometimes translated into English as present perfect. This use of *bsdad* is shown with the neutral evidential in (35), which contrasts minimally with sentence (36) without *bsdad*.

(34) *Nga a ri la bsdad kyi yod.*

I America LOC stay pres is (EGO).

I live in America.

(35) *bKra shis slob sbyong byed nas bsdad yod red*

Tashi study do ABL AUX IS EVID

‘Tashi continues to study/ has been studying’

(36) *bKra shis slob sbyong byed kyi yod red*

Tashi study do pres IS

‘Tashi is studying’

The present perfect in English has been analyzed as introducing a presupposed relevant resultant state, (see McCoard 1978, Klein 1992, Kamp and Reyle 1993 and Portner 2003, a.o.) so it might be suggested that the use of *bsdad* with *shag* supports the view that *shag* means that the speaker witnessed a result. In fact, although Tournadre (1991) classifies *shag* as an “inferential perfect,” this cannot be right for several reasons. First, the meaning of *bsdad* as a main verb does not in general contribute a presupposed result, so that the translation into English as a simple present perfect sentence is misleading. Sentence (37)a means that Tashi was continuously in Delhi, and it is not clear that it carries any presupposition about a resultant state. In order to get a present perfect meaning, an additional auxiliary must be added, as in (37)b.

(37)a. *bKra shis sdili la bsdad kyi yod red*

Tashi Delhi LOC stay pres INDIRECT

‘Tashi is in Delhi (speaker has indirect evidence)’

b. *bKra shis dili la bsdad bdad yod red*

Tashi Delhi LOC stay perf INDIRECT

‘Tashi has been to Delhi.(speaker has indirect evidence)’

Second, *bsdad + shag* generally cannot be used to report states, but there is no such restriction on the English present perfect.

(38) * *bKra shis skyid po bsdad shag*

Tashi happy bsdad DIRECT

intended: ‘Tashi has been happy’

(38) is not a possible way to say ‘Tashi has been happy’. Thus, an analysis of *shag* as conveying that the speaker witnessed a result of the event is tempting but problematic.

This is where the auxiliary *bsdad* comes in. The auxiliary *bsdad* has the effect of changing the evaluation situation to include a bounded reference situation. This is similar to the way in which the present perfect can carve out part of an unbounded eventuality.

- (39) a. ??Mary lives here for two years.
 b. Mary has lived here for two years.

The standard way of treating the non-quantization of present imperfectives is to treat the Reference Time as an interval that may extend past the moment of discourse, and which therefore includes the event time. Extending this to situations, in the present tense *'dug* is used when the speaker comes to know of an eventuality via a situation that includes that eventuality. Given the non-quantization of present imperfectives, the Information Situation will always include the Evaluation Situation.

bsDad adds the presupposition of a bounded sub-situation, which is included within the Evaluation situation. The extension need not necessarily involve a result. What is important is that *bsdad* “carves out” a bounded situation within which the speaker comes to know about the eventuality. Thus, with the addition of the auxiliary *bsDad*, the IS is included within the ES, and so *shag* is the appropriate evidential.

Consider the scenario in (40), which is the present tense version of the scenario discussed as example (20)a. At the time of the utterance, Mother is making momos but has not finished the activity. As the momo-making is ongoing, witnessing part of it counts as witnessing the whole thing, as long as what you witnessed makes it clear what the activity is. For example, seeing Mother get out a particular steamer and put the ingredients on the table is an instance of seeing Mother making momos, as is seeing her roll out momo dough or put a steamer of momos on the stove.³⁴ Thus, *'dug* is felicitous but *shag* by itself is not.

(40) Scenario A:

You have been with Mother all day. You watched her get out the ingredients and begin to make momos, and you have been watching her cook all along. Your brother calls into the kitchen and says he's hungry. You report what is happening by saying.....

preferred: *Ama lags kha mog mog bzos kyi 'dug.*
 Mother (HON) momos make (present continuous) DIR('dug)
 Mother is making momos. (witnessed)

If the speaker wants to emphasize that she gained her knowledge by witnessing only part of the cooking of the momos, she used *bsdad* plus *shag*.

³⁴ This example illustrates that, as Landman (1992) has pointed out, such interpretations are intensional, so for example seeing mother get out ingredients that the speaker can't identify as momo ingredients won't license the use of a witness evidential.

(41) Scenario B:

You go into the kitchen, and see briefly that Mother is making momos. You go into the living room, and your brother asks what is going on. You can report that Mother is cooking by saying (40), or the following:

Ama lags kha mog mog bzos bsdad shag.
Mother (HON) mog mog make(pres) AUX DIR(shag)
'Mother is making momos.' (witnessed)

The use of *bsdad shag* suggests that the speaker has witnessed some sub-part of the cooking. In other words, *bsdad* introduces a sub-part of the eventuality. '*Dug* is preferred if the speaker intends to report witnessing the entire event, and *shag* is used if the speaker wants it to be clear that she is basing her report just on the part she witnessed.

If *bsdad* introduces a sub-part of an otherwise non-quantized event, we would expect to find it plus *shag* also in reporting about eventualities in the past. Although to our knowledge this has never been stated in the literature, it turns out to be true. Since the present generally entails non-quantization, the fact that *shag* can't occur in the present without *bsdad* is more salient in describing Tibetan, but sentences like (42) are fine:

(42) bKra shis chu brgal bsdad shag
Tashi water swim (aux) shag
'Tashi was swimming'

4.2.2 Agentive/Instrumental case and focus

Tibetan has an agentive/instrumental case that is sometimes termed "ergative" (Agha 1993). It marks agentive Subjects. Agentive Subjects in sentences with perfective aspect obligatorily bear this case. Agentive Subjects in sentences with other aspects optionally bear this case. Agha points out that when this case marker is used in the optional cases, it triggers a focus interpretation. As he puts it, such sentences imply that the subject is being picked out from a larger set of people who might have performed the action. He further explains, "In other words, from a discourse point of view, [the sentence "Tashi sent the letter" with agent case] *presupposes* that somebody sent the letter, and asserts that (from among all the possible people who might have sent it) it was Tashi, in particular, who did it."

It turns out that when the subject of the sentence bears the optional agentive/instrumental case, '*dug* is no longer restricted to contexts in which the speaker was a witness, *shag* seems to involve some kind of inference and *song* retains the same meaning as in other contexts.

- (43) a. *bsTan dzin gyis* *kha lags bzas 'dug.*
 Tenzin (agent/instrumental case) food ate DIRECT('dug)
 Tenzin ate the food. (speaker knows it's Tenzin)
- b. *bsTan dzin gyis* *kha lags bzas shag.*
 Tenzin (agent/instrumental case) food eaten DIRECT (*shag*)
 Tenzin ate the food. (speaker saw crumbs, empty plate, etc.)
- c. *bsTan dzin gyis* *kha lags bzas song.*
 Tenzin (agent/instrumental case) food eaten DIRECT(*song*)
 Tenzin ate the food (speaker saw him do it)

The use of *shag* here is consistent with what we have said so far: the speaker came to know that Tashi ate the food via a situation that is part of the situation in which Tashi ate the momos. The only reason it seems to involve inference is that seeing crumbs or an empty plate does not entail seeing Tenzin. As before, *shag* is felicitous only if the speaker saw part of the eating event, not if she saw some other tangible result such as Tashi's satisfied smile, the Eater of the Year award on Tashi's shelf, etc.³⁵

Focus makes 'dug felicitous even if the speaker did not see the reported event. (43)b can be used if Tenzin told the speaker that he ate the food, or if some other state of affairs allowed the speaker to determine that Tenzin, and not someone else, ate the food. We claim that this is precisely the sort of context alluded to in Section 4.2.3, where the IS includes the ES, but the IS does not involve witness, and in fact is not necessarily the situation in which the speaker acquired knowledge. The IS triggered by focus is a contextually-relevant set of situations that contains the situation of which the proposition is true. Thus, the IS in this context is not the default "adequate evidence," but the independently-introduced contextually-relevant set of situations. In this particular example, the IS is the presupposed set of potential momo-eating situations, one of which is Tashi eating.³⁶ The ES is the situation among all those possible ones of which 'Tashi ate the momos' is true. Hence, the Information Situation includes the Evaluation Situation and 'dug is felicitous, independent of whether the speaker witnessed the reported eventuality. This confirms that the semantic values of evidentials are not evidence primitives, but rather relations between situations. This is illustrated in (44).

³⁵ Interesting questions arise about the extent to which one can determine independent of context whether one situation is part of another. In this particular case, it seems reasonable to suppose that since food is an inherent part of any eating situation, pieces of the food (crumbs) can be considered part of the eating situation. Our analysis predicts that there should be some flexibility in what can be treated as part of a situation within a given context. We do not think that this undermines our proposal, although it does raise the question of the relative contributions of lexical semantics and context in determining the composition of the relevant situations.

³⁶ We think that the same effect holds with focused objects, but we haven't tested a wide enough range of predicate types to be sure.

(44)



4.2.3 Reports about the Future

It is impossible to have already witnessed an event that hasn't yet taken place. Therefore it is surprising under any analysis that treats direct evidentials as meaning "speaker witnessed the event" that *'dug* and *shag* can occur at all with statements about the future. Our analysis predicts that evidentials can be used with reports about the future in cases in which there is an inclusion relation between IS and ES. As we see in (45) both *'dug* and *shag* do occur with future statements, and in both cases they lack the meaning of "witness." When *'dug* occurs in a statement about the future, it indicates the speaker's certainty. *Shag*, on the other hand, is a marker of personal endorsement like, "I assure you that..."

- (45)a. *sGrol ma 'khrom la 'gro yas red 'dug.*
 Dolma market (locative case) go (future) NEUT DIR.
 '(I know that) Dolma is going to the market.'
- b. *sGrol ma 'khrom la 'gro yas red shag.*
 Dolma market (locative case) go (future) AVOWAL.
 '(I assure you that) Dolma is going to the market.'

Notice that both of these future sentences include the neutral evidential *red* in addition to the direct evidential. These are therefore not simplex sentences. Rather, the sentence with the neutral evidential is embedded under *'dug* or *shag*. Denwood (1999:160) writes that "the form *red. 'dug* may be thought of as combining the assertive nature of the verb *red*, relating to an innate[sic] quality, with the "witnessed discovery" sense of the auxiliary particle *'dug*. Some such English expression as "I see that..." may often be used in translation." (see also Garrett 2001:91) In sentences like those in (45), the speaker is essentially observing his or her own knowledge of the event rather than observing the event itself. In other words, the ES for these sentence includes something about the speaker's epistemic state as well as Dolma on the way to the market. Thus, *'dug* and *shag* indicate the nature of the evidence not for the future event

or result itself, but for the speaker's current knowledge state about the event or result.

Looking first at (45)a, the Evaluation Situation is the one expressed by 'sGrol ma 'khrom la 'gro yas red,' not just the one expressed by sGrol ma 'khrom la 'gro yas.' The Evaluation Situation is factive. The IS is a minimally larger part of the speaker's epistemic state, which contains the speaker's knowledge of the fact that Dolma is going to market. Thus, (45)a indicates that the speaker is explicitly reporting his own knowledge that Dolma will go to the market, something he is in a position to witness introspectively.

In (45)a b the ES seems to be the same as in (45)a a. Notice, however, that the translation includes the second person recipient of the assurance. This suggests that (45)b would only be felicitous in contexts where there is a presupposition that the hearer doesn't think Dolma is going to the market or isn't sure that Dolma is going to the market. In other words, there is a kind of contrastive focus involved ("Dolma IS going to the market") Suppose that the ES for (45)b includes the alternatives made salient by the focus. In this case, the IS is the speaker's knowledge of just the fact being reported. As with the cases of agentive focus discussed above, the presence of presuppositions makes the relevant ES larger. Because IS is included in this enlarged ES, *shag* is felicitous here.

Lest it seem that the ES and IS we are describing are ad hoc, in these cases it is actually the presence of *shag* and 'dug that are triggering the presuppositions. If we are right that 'dug means that IS included ES and *shag* means that IS is included in ES, we would expect that they could be used to trigger presuppositions having to do with these inclusion relations rather than specifically with sensory evidence. Our proposal hence elegantly explains this subtle semantic difference, as well as the *prima facie* puzzling use of these direct evidentials to make statements about the future.

4.2.4 Conditionals

In the antecedent of a conditional in Tibetan, 'dug is possible but loses its 'witness' connotations, and *shag* is impossible.

- (46) a. bum pa chags 'dug na bstan 'dzin red.
vase PERF break DIR if Tenzin IND
'If the vase broke ('DUG), it was Tenzin'
- b. * bum pa chags **shag** na bstan 'dzin red.
*'If the vase broke (SHAG), it was Tenzin.'
- (47) a. Tsam pa zhim po 'dug na mang tsam za.
Tsampa delicious DIR If more eat
'If the tsampa is delicious ('DUG) more will be eaten.'

- b. *Tsam pa zhim po *shag* na mang tsam za.
 Tsampa delicious DIR If more eat
 *'If the tsampa is delicious (SHAG), more will be eaten.'

The reason that *'dug* but not *shag* can appear in the antecedent of a conditional is that the antecedent of a conditional supplies information about a situation that is a sub-part of the topic situation. Discussing sentences like (48), Kratzer (2007) points out that "The crucial feature of any analysis of donkey sentences within a situation semantics is that quantification is over minimal situations that satisfy conditions imposed by the antecedent of the conditional." (1990:17) She argues that quantification in such cases is "over parts of a contextually salient topic situation. The antecedents of the conditionals tell us more about what those parts are." (1990:24).

For example, in (48)a the topic situation is one that Kratzer calls "Donkey Parade." Sentence (48)b does not involve quantification, but could be about the same topic situation. Kratzer explains that the situations that *whenever* quantifies over are "precisely those substitutions of Donkey Parade that are minimal situations in which a donkey appeared. The claim is that all those situations are part of situations where the donkey was greeted enthusiastically." (1990:16) Similarly, although (48)b does not involve quantification, the topic situation (IS) is donkey parade and the ES for the 'if'-clause is a situation in which the first donkey walks slowly, which is a sub-part of donkey parade.

- (48) a. Whenever a donkey appeared, it was greeted enthusiastically.
 b. If the first donkey walks too slowly, you should jingle his harness.

In other words, the ES for the antecedent of a conditional is a sub-part of a larger contextually-salient situation, which in our analysis is the IS. Since the basic semantics of conditionals dictate that IS includes ES but not vice-versa, *'dug* is possible and *shag* is not possible.³⁷

As discussed above, our theory predicts that we should find direct evidentials in some contexts indicating that there is some situation that includes or is included in the ES, but not carrying the connotation of 'witness.' The antecedent of a conditional is just subh a case. There is a situation that includes ES, but the conditional semantics override any pragmatic principles that would provide a witnessing situation as a default. Thus, *'dug* occurs but loses its connotations of witness.

4.2.5 Questions

Kratzer explains that "... (A)nswers to questions are always understood as claims about the actual situations that exemplify the question extension. Via their exemplifying situations, then, question extensions determine possibly multiple topic situations that answers are understood to make claims about." (1990:30) In other words, the denotation of a question involves a set of potential topic situations, and the answer

³⁷ See Garrett (2003) Chapter 7 for an interesting discussion of the distinctions between direct and ego evidentials in conditionals.

is that subset which are actual situations that are true. Questions, then, are another construction where the topic situation (IS, in our terms) contains the Evaluation Situation in virtue of the semantics of the construction. Since it is not possible in a question for ES to contain IS, we should find that we can use *'dug* but not *shag* in Tibetan questions. This prediction is correct.

- (49) a. *bum pa chags 'dug gas?*
 vase break DIR Q
 'Did the vase break ('DUG)?'
 b. **bum pa chags shag gas?*
 *'Did the vase break (SHAG)?'

The question can be asked with *'dug* but cannot be asked with *shag*, and this is because ES cannot contain IS in the question.

4.2.6 Negation

For negative sentence, the Evaluation Situation is one in which a given proposition does not hold. The minimal situation that makes a negative sentence true is a completely empty situation. The Information Situation will not be empty. In set-theoretic terms, the null set cannot contain any other sets, but other sets can contain the null set. So, IS for a negative assertion can contain ES (=the null set), but ES cannot include IS.

Consider a sentence like (50). The minimal situation of which this sentence (like any negative sentence) is true is one where nothing happens and nothing exists. The Information Situation is non-null. Perhaps it minimally consists of the intact vase. Negation is a phenomenon for which situation semantics is useful: If I assert "The vase didn't break," this would be true in all kinds of irrelevant worlds; moreover I'm not asserting "Nothing happened." But in a theory where such a sentence is true of a contextually-restricted Topic Situation, we don't run into the problem of being unable to distinguish "The vase didn't break" from "Nothing happened." In our terms, the Topic Situation is what we're calling the Information Situation. This indeed contains the situation in which nothing happened. On the other hand, this IS is not contained within the situation in which nothing happens. Thus, we predict that *'dug* should be possible on negative assertions, but *shag* should be impossible. Once again, this prediction is correct.

- (50) a. *bum pa chags min 'dug.*
 vase break neg DIR
 'The vase didn't break ('DUG)'
 b. **bum pa chags min 'shag.*
 *'The vase didn't break (SHAG)'

Since ES cannot contain IS in negatives, *shag* is impossible.

4.2.7 Demonstrative/Presentational Sentences and Supplication

In sentences like those in (51), it is possible to use *'dug* but it is not possible to use *shag*. Such uses of *'dug* are sometimes referred to as “performative” uses.

- (51)a. *bsTan dzin 'dug ga*
Tenzin DIR terminative
'That's Tenzin!'
b. *gyag 'dug ga.*
Yak DIR terminative.
'A yak!' ('Look at that yak!')

We suggest that there is a straightforward reason for this difference: In order to be demonstrating a state of affairs, the speaker must be at some remove from it. Thus, IS necessarily contains ES and not vice-versa.

Although *shag* cannot be used for demonstrative/presentational sentences, it has a so-called “performative” use. These are sentences such (52), which have a connotation of supplication, meaning “May it be the case that...”

- (52) *khyed rang sku gzugs bde po yin shag*
you (HON) body (HON) comfortable EGO SHAG
'May you be well!'

We suggest that in such cases the IS is the current state of affairs and the ES is a larger state of affairs that also includes the addressee being well. Supplication involves expressing a wish that the current situation would become augmented by the wished-for situation. Of course, supplications aren't evaluated, but they can be satisfied. In this case the satisfaction conditions for the supplication would be the addressee being well, which is the larger state of affairs. The supplication conditions play the same role as ES does in assertions. Thus, in this “performative” use of *shag*, ES includes IS. As we predict, *shag* is felicitous, *'dug* is not.

5. Situations, times and locations.

As we noted earlier, it has often been observed that direct evidentials involve some kind of overlap between the reported event and the witnessing. This overlap has been modeled by Garrett (2001) and Chung (2005, 2006) in terms of spatiotemporal locations. In this section we will explain why we do not think that the denotations of *'dug*, *shag* and *song* should be stated in terms of either temporal or locational overlap.

First, we have already observed that the use of *'dug* does not require that the speaker have seen the entire duration of the eventuality, so it cannot be the case that *'dug* means that the timespan of the IS includes the timespan of the ES. Rather, the situation observed includes the situation reported.

Second, recall that the felicitous use of a direct evidential requires not only that the speaker's perception overlap with the location or time of the reported eventuality, but

that the speaker be able to identify the eventuality as such. The Garrett and Bateman (2007) examples discussed in Section 3.1 were cases where the speaker's "perceptual trace" (Chung 2005, Faller 2001) overlaps with the event location and timespan, yet the direct evidential is not used because from the speaker's perspective it is not clear that the situation witnessed minimally contains a situation of the type reported. If a speaker has to supply additional information to know that a person waving his hands around is using sign language, he does not use a direct evidential despite the fact that his perception is clearly focused on what is going on at that location. If evidentials instead encode relations between situations and the speaker's perceptual trace is not part of the semantic representation, this problem does not arise. Normally to be a witness you do have to be in the same place at the same time as the thing you witness, but we argue that what is crucial is that from the speaker's perspective the situation of perceiving contains (or is contained in) the situation perceived.

A further reason for treating direct evidentials in terms of situations rather than locations or times is a prediction made by Garrett (2001)'s proposal that the meaning of *'dug* includes a "spatiotemporal demonstrative predicate" (p. 52) This proposal predicts that Tibetan Direct Evidentials should be compatible only with stage-level predicates, and we do not think that this prediction is correct.

The spatiotemporal predicate, which Garrett calls *Dem*, binds a spatiotemporal argument, so the semantic representation of 'Tashi is eating' + *'dug* is as in (53).

(53) $[\exists l][Dem(l) \wedge eat(l, Tashi)]$ (2001:57)

The meaning contributed by *'dug* in Garrett's theory is that the relevant situation took place at a spatiotemporal location that can be demonstratively identified. This is similar to Chung's proposal, but it doesn't require that the speaker actually be in the same place as the event. It just requires that the location be demonstratively identifiable. The assumption is that generally in order for a speaker to demonstratively identify a location, s/he must be at that location. Hence, *'dug* is usually used to report information that took place in roughly the same location as the speaker. However, if there are more remote ways to demonstratively identify a location, as in the TV watching scenario, then the speaker need not have been in the same location as the event.

Garrett's theory predicts that *'dug* can only occur with stage-level predicates, because these are the predicates that project a spatiotemporal argument. In cases where it looks like *'dug* is being used with an individual-level predicate, he suggests that an individual level predicate has been coerced into a stage-level predicate.

The problem is that *'dug* occurs with predicates of color, possession and generic attributes, all of which would generally be considered to be individual-level predicates.³⁸

³⁸ Garrett suggests that color predicates with *'dug* are rare, but we do not think this is true.

- (54) a. *dmar.po* 'dug
 red dir
 'It's red.' (Garrett 2001:68)
- b. Psangs la dpar chas zhig 'dug.
 Pasang Locative camera a DIR
 'Pasang has a camera.' (Agha 1993:167, cited in Garrett 2001:75)
- c. Americai mi tsos kha lag mang po za gi 'dug³⁹
 America people food much eat DIR
 'Americans eat too much'
- d. Ipad de tso zhe drag yang po 'dug
 Ipad are very light DIR
 'Ipads are very light.'
- e. Chu sring la so rnon po 'dug
 alligators locative sharp DIR
 'Alligators have sharp teeth.'

Garrett suggests that in such cases the individual level predicate is coerced so as to be restricted to a specific contextually-specified spatiotemporal location. But these sentences can be used in contexts where the speaker wishes to convey a general property. Garrett's claim is that because 'dug projects the DEM operator, which binds a spatiotemporal variable, these predicates are coerced into a stage-level reading.

But why would the speaker use 'dug, inducing a stage-level meaning, if she intends to express a general property? In discussing generics, Garrett quotes Goldstein (1984)'s observation that "There are many cars in America-'dug" could only be said by someone who had recently discovered this general truth, implying that this assertion would be about some specific situation. However, what the speaker is conveying is that she discovered a general truth, not just that she observed lots of cars at a particular time and location. The difference between the above sentences with 'dug (direct) and the same sentences with *red* (neutral) is that 'dug indicates that the speaker *came to know* of the relevant information by seeing some specific instance or instances.

The speaker who uses the sentences in (54) is not asserting that in this particular spatiotemporal location the pen is red/Pasang has a camera/Americans eat too much etc. Rather, she is making an assertion about individual level properties based on having seen the relevant property at some specific time or location. In fact, even if the speaker is only talking about the pen today in this room she can still be conveying the information that the pen has the individual-level property of being red. It is entirely possible to restrict the

³⁹ It is beyond the scope of this paper to determine how the semantics of genericity interacts with evidentials. A generic situation is represented by its instances. The IS for such sentences would be observation of a set of instances. This IS includes a representative instance.

situation of which a sentence is true but still be making an individual-level claim about that situation, as in the examples in (55).

- (55) a. In France in the 19th century, linguists knew German.
 b. In this polluted area, frogs have three legs.
 c. Before the fire department lowered its standards, firemen were intelligent.

Support for the claim that the examples in (54) involve restricted topic situations rather than stage-level predication comes from the fact noted by Garrett that coercion does not make it possible for individual level predicates in English to occur in constructions that disallow individual-level predicates. For example, if asked the question in (56)a, one could not answer with (56)b, although (56)c would be fine.

- (56) a. Q: What was it like in the department that day that all the linguists drank the temporary brain stimulant?
 b. #There were linguists intelligent for 8 hours.
 c. For 8 hours in that building, linguists were intelligent. (Then everything went back to the way it was before.)

This shows that restricting individual level predicates to a contextually-specified spatiotemporal location does not turn them into stage level predicates.⁴⁰ A predicate need not include a spatiotemporal argument to be true of a contextually-specified topic situation, just as the individual of which a proposition is true need not be identified with a syntactic argument.⁴¹ Thus, the fact that Tibetan Direct Evidentials freely occur with predicates generally thought to be individual level suggests that the interpretation of the evidentials is not crucially dependent on a spatiotemporal argument.

Finally, Garrett's discussion of the fact that *'dug* is restricted to predicates that are not only locatable but also observable suggests to us that observability has to do with situations rather than with times or locations. He notes that internal state predicates such as 'hungry' might be locatable but still not amenable to being witnessed by others. For example, (57) is odd with a direct evidential because generally we can't witness someone else's hunger.

- (57) **kho/*khyed.rang grod.khog ltog-gi-'dug* (Garrett's (22), p. 81)⁴²
 he/you stomach hunger-pres-dir
 intended: 'You're hungry'/'He's hungry.'

He points out, however, that a sentence like (58) in fn. 21, p. 80) is possible.

⁴⁰ And the spatiotemporal argument is what distinguishes the stage-level and individual-level readings, so we cannot say that coercion introduces the argument without a stage-level interpretation.

⁴¹ For example, "The medication seems to be working" would generally be true of some situation involving the individual taking the medication.

⁴² Garrett glosses the morpheme *gi(kyi)* as imperfective. Since all of the sentences with *'dug* and *shag* are apparently imperfective, we gloss it as *pres* for present (continuous).

- (58) *deng sang kho grod.khog mang.po ltogs-gi-'dug*
 thesedays he stomach much hunger-[pres-dir]
'dra.mi. 'dra za-gi-'dug
 various things eat-[pres-dir]
 'These days he's very hungry. He eats so many different things.'

Garrett suggests that a predicate like hungry "may become an observable predicate if it projects a situation which is stretched out over time," and claims that sentences like are ungrammatical.

- (59) *da lta kho grod khog ltogs gi 'dug.* (* for Garrett)
 now he hungry pres DIR
 'He is hungry now just now -dug'

However, sentences like (59) are actually possible even if the reported situation is not stretched out over time. The reason for this is that what is important is not the nature of hunger, or any other property, but the nature of the situation the speaker based on which the speaker knows of the hunger.

Consider the kinds of contexts in which sentences like those in (57) or (58) would be appropriate⁴³.

Context A:

Over the past few weeks the speaker has often seen the dog rummaging in garbage dumps, following tourists with food around, trying to take food away from other dogs and gulping down any food it is fed.

For this context, sentence (60) is appropriate:

- (60) *deng sang kho grod khog ltogs gi 'dug.*
 these days he hungry pres DIR
 'He is hungry these days - 'dug'

Context B:

The speaker sees the dog right now rummaging around in the garbage dump, following tourists with food around, trying to take food away from other dogs and gulping down any food it is fed.

For this context, sentence (61) is appropriate:

- (61) *da lta kho grod khog ltogs gi 'dug.*
 now he hungry pres DIR
 'He is hungry now??? just now -dug'

As we see, the temporal difference is irrelevant to whether ‘*dug*’ can be used. Context A is simply a context in which the speaker observes the dog’s behaviour “these days,” while Context B is a context in which the speaker observes the dog’s behavior right now. What is important is that the contexts described both involve behavior that we take to be typical of a hungry dog. The direct evidential can be used because the situation of the dog being hungry is included in the situation of the dog rummaging around in the garbage dump, etc. Insofar as observing a situation typical of an internal state can count as observing the internal state, ‘*dug*’ can be used.

Even in English witnessing a physical manifestation that exemplifies an internal state licenses us to talk as if we had witnessed the internal state, as in “I have seen John angry.” As Wittgenstein writes:

We *see* emotion—as opposed to what?—We do not see facial contortions and *make the inference* that he is feeling joy, grief, boredom. We describe the face immediately as sad, radiant, bored, even when we are unable to give any other description of the features—Grief, one would like to say, is personified in the face. This is essential to what we call “emotion.” (PI 570)

What these examples show is that Garrett’s observability criterion is better explained in terms of situations than in terms of times or locations.

6. The other evidential categories

Our analysis of Tibetan direct evidentials adopts the proposal of Speas (2010) that all grammaticized evidentials encode relations between situations. She proposes that direct evidentials encode a relation of inclusion between the IS⁴⁴ and ES, whereas indirect evidentials encode a relation of accessibility.⁴⁵ These two categories are further differentiated in terms of the relation between IS and the Discourse Situation.

(62)	<i>Personal experience</i>	IS includes ES
		IS includes DS
	<i>Direct</i>	IS includes ES
		IS is accessible from DS
	<i>Indirect</i>	IS is accessible from ES
		IS includes DS
	<i>Hearsay</i>	IS is accessible from ES
		IS is accessible from DS

⁴⁴ She uses the term “Reference Situation” (RS).

⁴⁵ Speas further suggests that accessibility is equivalent in situational terms to precedence in temporal relations, as is reflected by our use of expressions like “follows from” or “leads to” in describing inferences.

Her theory is an attempt to explain the restrictions on the categories of possible evidentials: The inventory is restricted because evidentials can encode inclusion or accessibility relations and nothing else. However, it is not clear what would restrict the direction of these relations. One would therefore expect to find languages in which a direct morpheme means that ES includes IS. Tibetan is such a language.

It is beyond the scope of this paper to show conclusively that a reversal of the direction of inclusion relations can also account for the different ego and indirect morphemes in Tibetan. However, in this section we will briefly outline some reasons for believing such an approach to be quite promising.

There are distinct indirect evidentials in Tibetan depending on whether the speaker inferred from general information or from specific perceptual signs.

- (63) a. *A ma lags thab tsang nang la yod kyi red*
 mother HOM kitchen in(LOC) is INDIRECT
 ‘Mother is in the kitchen (speaker knows through general inference)’
- b. *A ma lags thab tsang nang la yod sa red*
 mother HON kitchen in(LOC) is INDIRECT
 ‘Mother is in the kitchen (speaker infers from concrete evidence)’

(63)a could be used if the speaker knows that Mothers cook at this time everyday, knows that Mother rarely leaves the kitchen, etc. (63)b would be used if the speaker saw that Mother’s apron was not on the peg, heard dishes being rattled, smelled the aroma of cooking, etc.

According to Speas, the relevant inclusion relation for indirect evidentials is that between the IS and the Discourse Situation. For indirect evidentials the IS includes the Discourse Situation. Can we capture the difference between the two indirect evidentials in (63) in terms of whether the common ground includes or is included in the IS? Indeed we can.

Let us begin with general inference. General information is by definition information that is widely known. Despite the fact that a felicitous assertion requires that the asserted information not be known to the addressee, it is perfectly felicitous to make an assertion using a general inference evidential. The contexts in which such an assertion would be appropriate would be similar to the contexts in which an English speaker would say “Everyone knows that *p*.” If the addressee indeed does know, then the assertion would be informative, so appropriate contexts are those in which the addressee does not know that *p* and the speaker wishes to contribute both *p* and *everyone knows p* to the common ground. In other words, the speaker is ensuring that the common ground (DS) for *p* includes *everyone knows p*. Thus, we may say that an

evidential conveying inference from general information means that the Discourse Situation includes the Information Situation.

Inference from specific evidence is based on both information in the common ground and any additional information that the speaker has. Note that it is not felicitous to make an assertion based on inference that ignores information in the common ground.⁴⁶ For example, A could felicitously utter (63)b (with *yod sa red*) in context 1 below, but not in context 2. Some sort of qualifier such as *gcig byas na* (maybe) must be used.

(64) CONTEXT 1: A knows that mother wears her apron when she cooks, and hangs it on a hook outside the kitchen when she is not cooking. A and B approach the kitchen and see that mother's apron is not on the hook.

CONTEXT 2: A knows that mother wears her apron when she cooks, and hangs it on a hook outside the kitchen when she is not cooking. A and B approach the kitchen and see that mother's apron is not on the hook and also see that mother's coat is gone and the babysitter's coat is hanging in the closet.

Hence, specific perceived evidence supporting an inference is made up of the DS and also any additional information that the speaker has. In other words, IS includes DS.

Turning now to the ego evidentials, the two forms *yin* and *yod* are generally classified as equative and existential, respectively. Both are used to report information known to the speaker through unique personal experience, and hence they are generally restricted to sentences with at least one first person argument.

(65) a. *nga la kang pa yod*
 I house have EGO
 'I have a house'

 b. *nga dge.rgan yin*
 I teacher EGO
 'I am a teacher'

A few peculiar properties of *yin* and *yod* suggest that a more abstract approach might be fruitful. First of all, in the future and past, *yin* must be used regardless of whether the predication is equative or existential. This fact is sometimes attributed to some feature of volitionality associated with *yin*, but as Garrett (2001) points out, sentences like (65)b don't involve volitionality. Second, the first-person requirement is weaker for present tense sentences than it is for past or future. Third, it's not clear that the

⁴⁶ In English it's possible to explicitly ignore information in the common ground. For example, in Context 2 a speaker could say something like "Well, I infer that Mother is cooking, despite appearances". Evidentials differ from verbs in that an assertion of p+evidential is always an assertion of p.

existential/equative distinction is correct. The sentences in (66) do not seem to differ in regard to whether they're existential or equative, yet (66)a requires *yin* and (66)b requires *yod*.

- (66) a. *nga'i 'di gsar.pa yin*
 my this new [ego cop]
 'These of mine are new.'
- b. *nga'i bu.mo snying.rje.po yod*
 my girl beautiful [ego ELPA]
 'My daughter is beautiful.' (Garrett 2001:208)

Consider what the Information situations might be for these sentences. One would come to know that an item is new through the experience of having bought it, but coming to know that one's daughter is beautiful involves making an internal judgment. So the IS for (66)a would be something like the situation in which I bought the shoes and they were new plus the short time span from then to now. Since ES is the situation in which the shoes are new, this IS includes ES. For (66)b ES involves a property of my daughter that holds over time. IS would be some instance or instances of this property holding. Thus, ES includes IS.

Speas (2010) claims ego evidentials encode the same kind of inclusion relation between IS and ES and are differentiated from direct evidentials by the relation that holds between the IS and the Discourse Situation. In short, the IS for an ego evidential is simply the speaker herself, so there is an inclusion relation between IS and DS⁴⁷. It is not clear whether the distinction between *yin* and *yod* should be stated in terms of ES and IS as we have above, or in terms of IS and DS. We hope, however, to have briefly demonstrated that an approach in terms of inclusion relations is promising.

7. Conclusion

We have argued that direct evidentials in Tibetan express a relation of inclusion between the Evaluation Situation, i.e. the situation of which the proposition is true (ES) and another contextually-relevant situation, which we term Information Situation (IS). Pragmatic principles generally determine that IS is the situation in which the speaker learned that *p* is true, but we have shown that direct evidentials are used in cases where the IS is established in some other way and hence is not necessarily the situation constituting "evidence" for the proposition. We have further shown that Tibetan has two morphemes for this inclusion relation that differ only in the direction of inclusion. '*Dug*' is used when IS includes ES, while *shag* is used when ES includes IS. The third direct evidential morpheme, *song*, is used with sentences in the perfective aspect, and the

⁴⁷ Speas proposes that IS includes DS. It may be more accurate to say that the Discourse Situation includes the IS, although this might rule out knowledge based on experiences of the speaker that are temporally or locationally removed from the current discourse.

semantics of perfective rule out the possibility of ES including IS. This approach systematizes what heretofore has appeared to be a haphazard collection of puzzling facts about Tibetan evidentials. We have suggested that such an approach could fruitfully be developed for the indirect and ego evidentials as well.

Although Tibetan evidentials operate at the illocutionary level, their inventory is restricted in ways that resemble tense/aspect paradigms rather than other non-assertoric devices, such as parentheticals. The kind of information that evidentials add might appear to be information directly about the source or kind of evidence for the utterance at issue, but in fact they encode a different kind of information, information about the relation of the situation being reported to the situation in which information was acquired. Only this more abstract understanding of their meaning allows us to make sense of the range of phenomena we have noted. The information they are generally taken to convey is merely a consequence of this more abstract semantic function.

We conclude with a suggestion. It is common to take operators like evidentials to contribute to meaning at an illocutionary level in at least some languages, contributing not to the truth conditions of the sentences in which they occur, but rather implicating information that is not explicitly asserted. Illocutionary force is then contrasted by some with semantic contribution, in virtue of the broadly Fregean prejudice that semantics is primarily concerned with truth conditions. It is also common to take illocutionary force to constitute a broad, relatively unconstrained category. We take ourselves to have shown that evidentials (at least Tibetan evidentials) do make specifically illocutionary contributions, but also that these contributions are systematic and are constrained in a systematic way by their semantics. If our analysis is correct—or anywhere near correct—it may provide a template for understanding the semantics of illocutionary operators, as well as renewed support for situation semantics as an approach to semantic theory more generally. By taking situations to be the direct semantic values of matrix sentences, and adopting approaches that enrich our semantic vision to encompass discourse, information, and perhaps a range of other relevant situations, we may arrive at a more general approach to constraining the range of possible illocutionary contributions and to explaining those constraints. We conclude that illocutionary force is best modeled not as a feature of situations per se, but rather as a relation between relevant situations.

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