

From classifier construction to scalar construction: the case of the Japanese *N hitotu V-nai* and *N 1-numeral classifier V-nai* constructions

OSAMU SAWADA

University of Chicago

1. Introduction¹

In Japanese, when we count things, a numeral classifier is attached to the numeral. The shape or nature of the thing to be counted determines the numeral classifier to be attached. In this sense, Japanese numeral classifiers are morphemes which are similar to *sheet* in the phrase *a sheet of paper* or *cup* in the phrase *a cup of coffee* in English. Observe (1) below:

- (1) Taro wa kuruma o ni- dai ka-tta.
Taro Top car Acc two-NCL (vehicle) buy-Past
'Taro bought two cars.'

In (1), the classifier *dai* (vehicle) is attached to the numeral *ni* 'two'. *Dai* is used because the classifier semantically agrees with *kuruma* 'car.' The Japanese numeral classifiers appear in various syntactic environments.²

¹ I am very grateful to Naomi McGloin, Mutsuko Endo Hudson, Yoshiko Matsumoto, Chris Kennedy, Anastasia Giannakidou, Keiko Yoshimura, Brent de Chene, Kojiro Nabeshima, Alan Yu, Harumi Sawada, Jun Sawada and the participants at the 15th J/K Linguistics Conference for their valuable comments and suggestions.

However, there are two types of construction that contain numeral classifiers that are not used for counting things and are only used with the negative *nai* ‘not’. This paper focuses on these two types of Japanese scalar constructions, the N *hitotu* V-*nai* and N 1-numeral classifier V-*nai* constructions. The paper examines () what kinds of syntactic, semantic, and pragmatic characteristics each construction possesses and () the process of grammaticalization from a numeral classifier to a scalar particle in the two constructions.

Typical examples of the N *hitotu* V-*nai* construction and the N 1-numeral classifier V-*nai* construction are illustrated in (2) and (3), respectively (Scalar Prt stands for a scalar particle and NCL stands for a numeral classifier).

- (2) Taro wa biiru *hitotu* nom- e- *nai*.
 Taro Top beer Scalar Prt drink can not
 ‘Taro cannot even drink beer.’ (event scale)
- (3) Taro wa biiru i- *ppai* nom- e- *nai*.
 Taro Top beer one NCL (cup) drink can not
 ‘Taro cannot even drink beer.’ (event scale)
 ‘Taro cannot drink beer at all.’ (emphasis of negation)

As I argue below, although the N *hitotu* V-*nai* construction (=2) and the N 1-numeral classifier V-*nai* construction (=3) share some characteristics, they must be regarded as different constructions (Fillmore et al. 1988; Goldberg 1995; Kay 1990) in terms of multifunctionality and degree of grammaticalization.

From the viewpoint of multifunctionality, the former construction has only one function ‘event scale’, as shown in (2). The latter construction, on the other hand, has (maximally) two functions ‘event scale’ and ‘emphasis of negation’, as shown in (3).³

From the standpoint of grammaticalization, I will argue that the N *hitotu* V-*nai* construction is more grammaticalized than the N 1-numeral classifier V-*nai* in terms of decategorization. More specifically, I will argue that *tu* of *hitotu* in the former construction (=2) has totally lost its function as a

² The syntactic environments of numeral classifiers are usually classified into the following three construction types: pre-nominal, post-nominal, and appositive (Mizuguchi 2004: 62-63).

³ The ‘event scale’ function is, roughly, a function that forces the hearer to posit contextually relevant events other than the text proposition, as in the case of the Japanese scalar adverb *sae* or the English one *even*. The ‘emphasis of negation’ function, on the other hand, emphasizes the negativity of the text proposition, which can be paraphrased by a Japanese negative polarity expression, such as *zenzen...nai* or an English one such as *not...at all*.

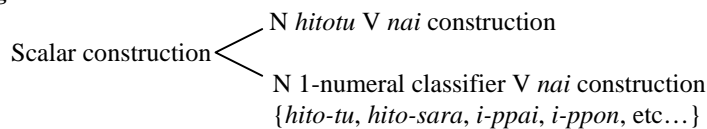
numeral classifier to become a new scalar particle, *hitotu* ‘even’ by combining with the minimal numeral *hito* ‘one.’ (The numeral classifier *tu* can count things that are inanimate and separable, but not animate or inseparable things.) The classifier *ppai* in *i-ppai* in the latter construction (=3), on the other hand, still retains the characteristics of a numeral classifier.

It is important to notice that the *tu* in *hitotu* can also function as a numeral classifier, as in the following sentence (INANI stands for inanimate).

- (4) Kono doresu ni wa simi hito-tu nai.
 This dress in Top stain one-NCL (INANI, separable) not-exist
 ‘There is not even a stain in this dress.’ (event scale)
 ‘There is not a stain in this dress at all.’ (emphasis of negation)

In (4), the morpheme *hito-tu* is the same as *i-ppai* in the sense that it is one of the many numeral classifiers. In other words, (4) is parallel to (3). This means that while (2) belongs to the N *hitotu* V-*nai* construction, (4) belongs to the N 1-numeral classifier V-*nai* construction. The two constructions that I analyze here can be classified as follows:

Figure 1



2. Previous analyses of the N *hito-tu* V *nai* construction

Nabeshima (2003) and Sakamoto (2002) base their analyses on the presupposition that the pair of sentences (2) and (3) belong to the same construction, viz., the N *hito-tu* V-*nai* construction. They seem to regard *hito-tu* as just a representative of various cases of **one+numeral classifier** constituent (Sakamoto 2002: 30). It is important to notice that what they call the N *hito-tu* V *nai* construction corresponds to what I call the N 1-numeral classifier V *nai* construction.⁴

Nabeshima (2003: 88-90) states within the framework of construction grammar (Fillmore et al. 1988; Kay 1990; Kay and Fillmore 1999) that N *hito-tu* V-*nai* construction should be considered as an independent construction (form-meaning pairing) because it possesses the following five unique characteristics:

- (5) (a) No case marker appears in this construction.

⁴ Nabeshima (2003) actually calls the construction as the ‘...*hito-tu*...*nai*’ construction. The first variable corresponds to N and the second variable corresponds to V. It is the same construction as the ‘N *hito-tu* V *nai*’ construction which Sakamoto (2002) posits.

- (b) This construction is always used in a negative environment.
- (c) Scalarity is involved in this construction.
- (d) Even activities (e.g. *aisatu* ‘greeting’) can be counted by *hito-tu* in this construction.
- (e) This construction has a (pragmatic) meaning of ‘terrible!’ or ‘wonderful!’

The following examples illustrate these five characteristics (note that (d) is only for the example of *hito-tu*).

(6) *Kare wa kakezan hito-tu deki-nai.* (Nabeshima 2003: 89)
 He Top multiplication one NCL can not
 ‘He cannot even multiply.’

(7) *Sakana i-ppiki sabak -e -nai.* (Nabeshima 2003: 83)
 Fish one NCL cook -can-not
 ‘You cannot even cook fish.’

Sakamoto (2002) points out that there are two interpretations in the *hito-tu V-nai* construction, viz., the ‘modal’ and the ‘absolute negation’ interpretations.⁵ She further argues that the basic meaning of the construction lies in the modal interpretation, whereas the interpretation of absolute negation interpretation is peripheral, as in the following examples.

(8) *Heya no katazuke hito-tu sunde inai.*
 Room Gen clearance one NCL finish not
 ‘I haven’t even finished clearing up the room.’

(9) *Otya i-ppai dasi-tekure-naka-tta.*
 tea one NCL (cup) serve give not PAST
 ‘He (she) didn’t even serve me tea.’
 ‘He (she) didn’t serve me a cup of tea at all.’ (Sakamoto 2002: 30)

According to Sakamoto (2002), in (8) there is only one interpretation, i.e. the modal interpretation, while in (9) there are two interpretations: the modal interpretation and the absolute negation interpretation.⁶ She concludes from this fact that the modal interpretation is more basic than that of the absolute negation.⁷

⁵ ‘Modal interpretation’ corresponds to my notion of event scale function.

⁶ It seems that there is no absolute negation interpretation in (9) because of the pragmatic condition, which I consider in section 6.

⁷ It seems that this is not necessarily the case, because there are examples that have only what she calls “the absolute negation” interpretation, as I will argue in section 6.

Although previous analyses posit only one construction, I will argue that each of the pairing of the sentences (2)-(3), (6)-(7), and (8)-(9) belongs to a different construction from each other in terms of multifunctionality and the degree of grammaticalization. The former examples (=2), (6), and (8)) belong to the N *hitotu* V-*nai* construction and the latter (=3), (7), and (9)) belong to the N 1-numeral classifier V-*nai* construction.

3. The similarities between the two constructions

This section argues that the N *hitotu* V-*nai* (=2) and the N 1-classifier V-*nai* (=3) constructions share four constructional characteristics that are essentially different from ordinary numeral classifier constructions such as (1).

3.1. Occurrence of minimal number

The first characteristic is concerned with the fact that in the two constructions, the number is limited to one, *hito* or *iti*, as in the following examples:

- (10) a. *Hanako wa syatu {iti-/*ni-} mai ka- e- nai.
 Hanako Top shirt one/ two NCL (thin flat) buy can not
 ‘Hanako cannot even buy two shirts.’
- b. *Hanako wa syatu {hito-/*futa-} tu ka- e- nai.
 Hanako Top shirt one/ two NCL (inanimate) buy can not
 ‘Hanako cannot even buy two shirts.’

3.2. Negativity

The second characteristic is concerned with the fact that the two constructions can only appear in a negative environment, as in (11). This means that *hitotu* and ‘1-classifier’ are negative polarity items (NPIs).

- (11) a. Anata wa otya {hitotu / i-ppai} dasa-nai.
 You Top tea Scalar Prt / one-NCL (cup) serve not
 ‘You do not even serve tea.’
- b. *Anata wa otya {hitotu /i- ppai } dasu.
 You Top tea Scalar Prt /one classifier (cup) serve
 ‘(lit.)You even serve tea.’

It is important to notice that these two characteristics, the existence of a minimum number and the negativity, are correlated with each other from the standpoint of function (Israel 2001). As Israel (2001: 302) argues, a lexical item that denotes a minimum value in scale tends to become an emphatic NPI.

3.3. Appearance of noun without determiner

The third characteristic is concerned with the fact that syntactically, the noun followed by a classifier in the two constructions is a noun without determiner:

- (12) Jiro wa biiru {i- ppai / hitotu} dasa-nai.
Jiro top beer one NCL (cup)/ Scalar Prt serve not
'Jiro does not even serve beer.'
- (13) *Jiro wa sono biiru {i- ppai / hitotu} dasa-nai.
Jiro Top the beer one NCL(cup)/ Scalar Prt} serve not
'Jiro does not even serve the beer.'

Example (13), but not (12), is ill-formed because the noun *biiru* 'beer' is preceded by the determiner *sono* 'the'.

3.4. Non-existence of case markers

The fourth characteristic is concerned with the fact that neither the nominative case marker *ga* nor the accusative case marker *o* appears in the two constructions. If either is inserted, the sentence becomes ungrammatical, as shown in (14b) and (15b).

- (14) a. Taro wa biiru {hitotu / i-ppai} nom -e -nai.
Taro Top beer Scalar Prt/ one NCL (cup) drink can not
'Taro cannot even drink beer.'
- b. *Taro wa biiru o {hitotu / i-ppai} nom -e -nai.
Taro Top beer ACC Scalar Prt / one NCL (cup) drink can not
'Taro cannot even drink beer.'
- c. Taro wa biiru o itt-pai mo nom -e -nai.
Taro Top beer ACC one-NCL (cup) even drink can not
'Taro cannot drink even one glass of beer.'
- (15) a. Tiri hito-tu nai.
Dust one NCL not-exist
'There is not even a dust.' / 'There is not a dust at all.'
- b. *Tiri ga hito-tu nai.
Dust Nom one NCL not-exist
'There is not even a dust.' / 'There is not a dust at all.'
- c. Tiri ga hito-tu mo nai.
Dust Nom one NCL even not-exist
'There is not even one dust.'

Sentence (14b) and (15b), but not (14a) and (15a), are ungrammatical because the nominative case marker *o* or *ga* appears in it. (14c) and (15c) are

acceptable because the sentences belong to an ordinary numeral classifier construction.

The above discussion suggests that the two syntactic characteristics analyzed in sections 3.3 and 3.4 are motivated by **meaning**: the noun without a determiner or a case marker in the two constructions does not denote **instance** but **type**, in the sense of Langacker (1991: 55ff.).

4. The differences between the N *hitotu* V-*nai* and N 1-numeral classifier V-*nai* constructions

This section discusses the difference between the N *hitotu* V-*nai* and N 1-classifier V-*nai* constructions mainly from a semantic viewpoint.

4.1. The semantics of the N *hitotu* V-*nai* construction

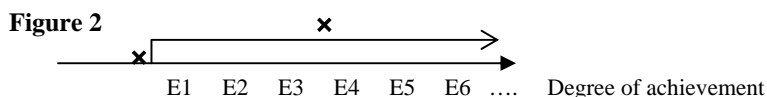
The following examples belong to the N *hitotu* V-*nai* construction:

- (16) Saikin isogasii node sanpo hitotu deki-nai.
 These days busy because walk Scalar Prt can not
 ‘Because I am busy these days, I cannot even take a walk.’
- (17) Hanako wa ryoori hitotu deki -nai.
 Hanako Top cooking Scalar Prt do-can-not
 ‘Hanako cannot even cook.’
- (18) Ano fuufu wa kodomo hitotu manzoku-ni sodate rare-nai.
 That coupleTop child Scalar Prt well bring up can not
 ‘That couple cannot even bring up a child well.’
- (19) Saikin no wakamono wa aisatu hitotu deki-nai.
 These days Gen young people Top greeting Scalar Prt can not
 ‘These days, young people cannot even offer a greeting.’

These examples show that the N *hitotu* V-*nai* construction has the following function:

- (20) The N *hitotu* V-*nai* construction is a construction which shows that even the lowest-ranked event (=E1) is not realized among various contextually related events that are ordered on the same scale.

According to scalar entailment, if the lowest ranked event is not realized, all the other events which are higher than the E1 are not realized either, as shown in Figure 2:



I refer to this function as an **event scale** function, because the event in question (=E1) is construed relative to other related events (E2, E3, E4...).

As I discuss below, *tu* in this construction has lost its function of numeral classifier and become the independent scalar particle *hitotu* by combining with the minimum numeral *hito* 'one'. It is possible to take the view that *tu* in (16)–(19) is not a numeral classifier because when it does serve as such, it is never used for counting activity nouns, such as *sanpo* 'walking', *aisatu* 'greeting', *ryoori* 'cooking' and *uta* 'song.'

4.2. The semantics of the N 1-numeral classifier V-*nai* construction

The following examples belong to the N 1-classifier V-*nai* construction:

- (21) Taro no fudebako ni wa enpitu itt- pon nai.
 Taro Gen pencil box in Top pencil one NCL (elongated) not-exist.
 'There is not even a pencil in Taro's pencil case.'
 'There is not a pencil in Taro's pencil case at all.'
- (22) Kanojo wa ryoori itt- pin tukur-e -nai.
 She Top dish one NCL (food) make can not
 'She cannot even cook.'
 'She cannot cook at all.'

The above examples demonstrate the hypothesis that the N 1-classifier V-*nai* construction has the following multiple functions:

- (23) The N 1-numeral classifier V-*nai* construction has the functions of **event scale** and **emphasis of negation**.

The following examples must be regarded as the N 1-numeral classifier V-*nai* construction, because in (24) we can find the function of emphasis of negation, in which the quantity of N is involved:

- (24) Kanojo no kao ni wa simi hito-tu nai.
 She Gen face to Top blemish one NCL (INANI, separable) not-exist
 'There is not even a blemish on her face.' (event scale)
 'There is not a blemish on her face at all.' (emphasis of negation)

5. Two kinds of semantic functions and their scalarity

In the previous section, I argued that the N *hitotu* V-*nai* construction has only one function, viz., the function of event scale, while the N 1-classifier V-*nai* construction has (potentially) two functions, i.e. the function of event scale and that of emphasis of negation. How can we explain this asymmetry in terms of scalarity? I argue that while the N *hitotu* V-*nai* construction can only posit a qualitative scale, the N 1-classifier V-*nai* construction can posit both a qualitative scale and a quantitative scale simultaneously. The qualita-

tive scale is based on pragmatic information, while the quantitative scale is based on semantic information, as shown in the following figures:

Figure 3

The N *hitotu* V-*nai* construction
<difficulty of action>

drink Whisky
drink Sake
drink beer

Figure 4

The N 1-NCL V-*nai* construction
<difficulty of action>

drink Whisky
drink Sake
drink beer

↑
→
one cup, two cups,...<quantity>

The relation between the two functions and their scalarity can be summarized as follows:

- (25) The function of event scale has a qualitative (or pragmatic) scale, which is sensitive to context.
- (26) The function of emphasis of negation has a quantitative (or semantic) scale, which is based on the number of N.

Which of these two functions a sentence serves can be determined by the following tests:

- (27) Test 1: The sentence has the function of event scale if the constituent 1-NCL can be replaced by *mo* or *sae* 'even.'
- (28) Test 2: The sentence has the function of emphasis of negation if the constituent 1-NCL can be followed by *mo* or *sae* 'even.'

For example, the above tests predict that sentence (2) has a function of event scale, but not the function of emphasis of negation:

- (29) Taro wa biiru {mo /?**hitotu* mo} nom- e- nai.
Taro Top beer Scalar Prt (even)/ Scalar Prt Scalar Prt drink-can-not
'Taro cannot even drink beer.'

6. The functional distribution of the N *hitotu* V-*nai* and the N 1-numeral classifier V-*nai* constructions

Table (30) shows the possible distribution patterns of the two constructions:

(30)	Event scale	Emphasis of negation
(Type A) N <i>hitotu</i> V- <i>nai</i> construction	YES	NO
(Type A) N 1-NCL V- <i>nai</i> construction	YES	NO
(Type B) N 1-NCL V- <i>nai</i> construction	YES	YES
(Type C) N 1-NCL V- <i>nai</i> construction	NO	YES

It is possible to observe the following two points from the above table. First, the N *hitotu* V-*nai* construction has only one function, whereas the N 1-numeral classifier V-*nai* construction is multifunctional. Second, although the N *hitotu* V-*nai* construction can have two functions as a constructional meaning, it sometimes can have only one function, as shown in Type A and Type C. This is because there are the following well-formedness conditions for the two functions:

- (31) Plural events condition: In order to have the function of event scale, there must be the presupposition that relevant plural events must be posited.
- (32) “To some quantity” condition: In order to have the function of emphasis of negation, there must be a presupposition that the speaker can pragmatically posit many (or some) Ns.

Let us now look at each of the three types. In Type A the reading of event scale is acceptable, but the reading of emphasis of negation is not:

- (33) Kare wa aisatu hitotu deki-nai. (Type A)
 He Top greeting Scalar Prt cannot
 ‘He cannot even offer a greeting.’ (event scale)
 ‘*He cannot offer a greeting at all’ (emphasis of negation)
- (34) Hanako no heya ni wa rajio iti-dai nai. (Type A)
 Hanako Gen room to Top radio one NCL (flat object) not-exist
 ‘There is not even a radio in Hanako’s room.’ (event scale)
 ‘*?There is not a radio at all in Hanako’s room.’ (emphasis of negation)

The reason why (34) has only the function of event scale is due to the violation of the well-formedness condition in (32).

In Type B, the reading of event scale and that of the emphasis of negation are both acceptable:

- (35) Ziro wa syatu iti- mai ka- e- nai. (Type B)
 Ziro Top shirt one NCL (sheet-like) buy can not
 ‘Ziro cannot even buy a shirt.’ (event scale)
 ‘Ziro cannot buy a single shirt at all’ (emphasis of negation)

In Type C, the reading of the emphasis of negation, but not that of event scale, is acceptable:

- (36) Sora ni wa kumo hito-tu nai. (Type C)
 Sky to Top cloud one NCL not-exist
 ‘*There is not even a cloud.’ (event scale)
 ‘There is not a single cloud at all.’ (emphasis of negation)

The reason why (36) has only one function is due to the violation of the well-formedness condition in (31).

7. From classifier to scalar construction: the process of grammaticalization

In this section we will consider the difference between the N *hitotu* V-*nai* construction and the N 1-numeral classifier V-*nai* construction from the viewpoint of the following process of grammaticalization:

(37) Although the N 1-classifier V-*nai* construction is grammaticalized to some extent to be a scalar construction, the function of classifier partially remains. The N *hitotu* V-*nai* construction, on the other hand, is **de-classified** to become an independent scalar construction. There is no morphological boundary between *hito* and *tu* and the word *hitotu* becomes a single scalar adverb.

For example, *tu* in the N *hitotu* V-*nai* construction (=2) has totally lost the function of numeral classifier to become the independent scalar particle *hitotu* 'even' by combining with the minimum numeral *hito* 'one', while *ppai* in the N 1 numeral classifier V-*nai* construction (=3) still retains the characteristic of numeral classifier, because there still remains a semantic agreement between the noun *beeru* 'beer' and *ppai* 'cup.'

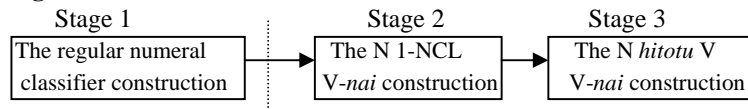
(37) is also supported by the fact that the N 1-numeral classifier V-*nai* construction can have not only an event scale reading but also an emphasis of negation reading. The N *hitotu* V-*nai* construction, on the other hand, has only an event scale reading.

8. Conclusion

In this paper I argued that while the N *hitotu* V *nai* construction has only the function of event scale, the N 1-numeral classifier V-*nai* construction can have two functions of event scale and emphasis of negation. I showed that in terms of scalarity, the event scale function posits a qualitative scale and the function of emphasis of negation posits a quantitative scale. I also argued that the difference of multifunctionality between the two constructions is due to the degree of grammaticalization.

Why can only *hitotu* be decategorized from a numeral classifier to a scalar particle? Probably, this is because *tu* is the most abstract numeral classifier in Japanese. The numeral classifier *tu* can count any kind of things or objects which are inanimate and separable. From the viewpoint of grammaticalization, it is possible to consider that *tu* is the most likely to lose the function of a numeral classifier. The following figure shows the grammaticalization from the classifier construction to the scalar constructions.

Figure 5



References

- Fillmore, C.J., P. Kay, and M.C. O'Connor. 1988. Regularity and Idiomaticity in Grammatical Constructions: The Case of 'Let Alone'. *Language* 64: 501-538.
- Goldberg, A. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.
- Hopper Paul. J. and E. C. Traugott. 2003. *Grammaticalization* (second edition). Cambridge: Cambridge University Press.
- Israel, M. 2001. Minimizers, Maximizers and Rhetoric of Scalar Reasoning. *Journal of Semantics* 18: 297-331.
- Kay, P. 1990. Even. *Linguistics and Philosophy* 13: 59-111.
- Kay, P. and C. J. Fillmore. 1999. Grammatical Constructions and Linguistic Generalizations: the What's X Doing Y Construction. *Language* 75: 1-33.
- Langacker, R. W. 1991. *Foundations of Cognitive Grammar. Vol.2. Descriptive Application*. Stanford: Stanford University Press.
- Matsumoto, Y. 1993. Japanese Numeral Classifiers: A Study on Semantic Categories and Lexical Organization. *Linguistics* 31: 667-713.
- Mizuguchi, S. 2004. Nihongo no ruibetusi no tokusei (The Characteristics of Japanese Numeral Classifiers). *Ruibetusi no taisyo* (Contrastive Analyses of Classifiers) eds. Y. Nishimitu and S. Muzugichi, 61-77. Tokyo: Kuroshio Publisher.
- Nabeshima, K. 2003. "Hitotu V nai" koobun ni tuite: nihongo ni okeru kobun bunpoo no itirei to site. (On the "...hitotu V nai" construction: as one of the example of the Construction Grammar approach) *Nihongo bunpo gakkai dai 4kai taikai happyo ronbun syuu* (Proceedings of the fourth conference of the Society of Japanese Grammar): 83-92.
- Sakamoto, T. 2002. Suryosi 'hitotu' no imi to yoho; 'N hitotu V nai' koobun o tyusin ni. (Meaning and use of numeral quantifier *hito-tu*: focusing on the 'N hitotu V nai' construction. *Conference handbook of the 12th general meeting of Linguistic Society of Japan*: 30-35.
- Sawada, O. 2005. The possible semantic diversity of the comparative constructions in English and Japanese: a construction-based approach. Paper presented at the 9th International Cognitive Linguistics Conference, Yonsei University.
- Sawada, O. In Press. The Multi-functionality of English and Japanese Scalar Distance Constructions: A semantic map approach. *Papers from the 40th annual meeting of the Chicago Linguistic Society*.