To be not or to not be:

A Behavioral Profile approach to the semantics of Chitimacha negation

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1 Introduction

This paper aims to describe the semantic features conditioning an alternation between two related but behaviorally-distinct negation constructions in Chitimacha, an isolate language of the Southeast U.S. linguistic area. These constructions are interesting in the study of Chitimacha grammar and the Southeast generally because the two constructions stem from the same diachronic root, and mark out two poles of a grammaticalization chain: a fully-inflected main verb on the one hand, and an immutable negation particle on the other, with a large degree of constructional variation in between. Indeed, their respective distributional behaviors overlap and vary to such an extent that, going by impressions from a visual inspection of the corpus alone, the choice of one construction over another seems completely random. With the use of frequency data and corpus techniques for linguistic analysis, however, some clear patterns emerge. In order to draw these patterns out, here I adopt a Behavioral Profile (BP) approach for coding and analyzing data from my corpus, following (Gries 2006; Gries & Divjak 2009; Gries 2010). This technique is well-suited to the application of statistical techniques over corpus data, whether the techniques used are relatively straightforward monofactorial methods, or more complex multifactorial ones. A few such simpler techniques will be applied here.

This paper is organized as follows: §2 provides background on the Chitimacha language, the data used for this study, and the nature and method of preparation of the corpus. §3 then describes what is currently known regarding negative constructions in Chitimacha, and what makes them an interesting object of study. §4 briefly details the method for this study – namely how the data was coded – and §5 then discusses the results and concludes.

2 Background & Data

Chitimacha (ctm) is a linguistic isolate known to have been spoken along the coast of Louisiana from the time of French contact in 1699 until 1940, when the last fluent speaker of the language passed away. While unrelated to either Muskogean or the numerous other isolates in the area, Chitimacha does participate in a number of linguistic features known to be diagnostic of the Southeast U.S. as a linguistic area. One of those criteria – the existence of a tripartite auxiliary system coding the distinction between 'sit', 'stand', and 'lie', (Campbell

1997:341–344; Mithun 1999:319–320) is of relevance to the present paper, because one of the two primary constructions for conveying negation in Chitimacha is the negative auxiliary verb *gay-* 'be not'. This verb interacts with the three-way auxiliary system in Chitimacha in often complex ways, and to understand its functions and history would therefore contribute to understanding the development of the auxiliary system in the Southeast more generally.

From 1930–1934, then-graduate student Morris Swadesh visited the Chitimacha reservation in Charenton, Louisiana, and collected approximately 200 pages of typed stories from the last two fluent speakers, as well as 16 notebooks of field notes. Based on these materials, he prepared a Boasian trifecta of a grammar, dictionary, and text collection on the language, but these were never published, and today are provenanced at the American Philosophical Society Library in Philadelphia, PA (Swadesh 1953a). It is Swadesh's unpublished but nearly-complete text collection which constitutes the data for the present study (Swadesh 1953b), provided courtesy of the Chitimacha Tribe and the American Philosophical Society Library.

The data were originally digitized as PDF scans, and then manually typed into a word processor by the author, using the tribe's modern practical orthography for convenience, and were then transliterated back into Swadesh's phonemic orthography. This data was then transferred to JavaScript Object Notation (JSON: http://json.org/) for easy scripting, text processing, and searching using JavaScript. Each step of this process of preparing the corpus introduced different types of errors, however the overall fidelity of the corpus to the originals is nonetheless high. Moreover, seven years of working on the grammar of Chitimacha have allowed me to spot and correct any errors that may turn up in the results of corpus searches.

The resulting corpus consists of 88 texts by one speaker, Benjamin Paul (chief of the tribe from 1903 until his death in 1934), comprised mainly of traditional narratives, but also some procedural and expository texts. Texts from the second speaker, Benjamin Paul's niece Delphine Ducloux, have not yet been digitally transcribed, and so could not be included in this study. The resulting corpus contains 7,744 sentences and 32,503 tokens of 4,461 types. The most frequent lemma in the corpus, the demonstrative *wey* 'that one', occurs at least 1,496 times. The number of lemmas is currently unknown, but an estimate from Swadesh's dictionary manuscript (Swadesh 1953c) would be approximately 3,000 for the entirety of the collection.

3   Negation in Chitimacha

Chitimacha has two primary means for signaling negation, which I will refer to as the AUXILIARY CONSTRUCTION and the PARTICLE CONSTRUCTION respectively, where the terms *auxiliary* and *particle* should be understood as morphological categories specific to the grammar of

Chitimacha.[1] For present purposes, a robust definition of their morphological class is relatively unimportant. Instead, the key difference between the two constructions is the locus of person marking. In the auxiliary construction, the main lexical verb appears as a participle or gerund uninflected for person, and is immediately followed by the negative auxiliary *gay-*, which can take either agent or patient person markers. This is shown in (1). In the particle construction the locus of person marking is reversed: the main verb exhibits agent or patient person markers, while negation is conveyed by an invariant postpositional particle *gan*. This is illustrated in (2).

(1) *we qaxinjadi   cuntk   hi waytm   kaakwi   gay-ik.*[2]   *auxiliary construction*
     old man   about   more   know.GER   NEG-1SG
     'I do not know any more about the old man.'   (5.26)

(2) *waqax   qam   haanaa   ne   kaakw-iki   gan.*   *particle construction*
     others   what   they happen   even   know-1SG   NEG
     'I do not know what happened to the others.'   (A3.56)

Additional examples of both types are given in (3)–(4).

                                                                              auxiliary construction

(3)   *weyjiigx   qamquc   weyjaaxnaqa   ni   wopmpi   gay-ki.*
       thus   why   they do such   DTRZR   ask-GER   NEG-1SG.P
       'Consequently I did not ask why they did that.'   (2.31)

(4)   *qix   poo   gapti   gay-cu-ki-x,*   *nuupcuking.*   *auxiliary construction*
      1SG   medcine   take-GER   NEG-FUT-1SG.A-COND   I must die
      'If I do not take medicine, I must die.'   (3.3)

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[1] Roughly, auxiliary verbs in Chitimacha are those which may immediately follow a main verb and take person marking, and particles are invariant and uninflecting postpositions. Neither of these characterizations is meant to be a precise definition however.

[2] Examples utilize the Chitimacha Tribe's modern practical orthography, the most important features of which to note are that the glottalized consonants /p', t', ts', k', t͡ʃ'/ are represented by the graphemes for voiced stops and affricates, <b, d, dz, g, j>, and the phonemes /t͡ʃ, ʃ, j, ʔ/ are represented by <c, x, y, q> respectively. Abbreviations for glosses are provided at the end of the paper. Each example is provided with its source location from Swadesh's texts, where the first number indicates which of Benjamin Paul's texts it comes from, and the second number indicates the index of the utterance within that text.

(5) qix   kap   nuupkicuux   qam   weytemank   ne   hesigen   *wopi-id-**naa**   gan*.
      1SG   PUNC when I die   what like that   even again   hear-FUT-NF.SG NEG
      'When I die, you will not hear that sort of thing again.'   (A5.61)

(6) qam   weytemankx   ne   *qam-puy-**naki**   gan*.   *particle construction*
      what   like.that   even see-IPFV-1PL.A   NEG
      'We are not used to seeing that sort of thing.'   (A4.35)

These are not the only ways of forming negative clauses in Chitimacha. It is common for the negative auxiliary to itself be nominalized into a participle and so function as the complement of another auxiliary, as in (7). A more grammaticalized form of this construction, where the participialized negative auxiliary and the following main auxiliary are contracted, also appears, as in (8). The particle *gan* also appears in a range of nominal and adverbial constructions, where it is often lexicalized, as in (9). The verb *gay-* may also function lexically, and in this case means 'lack' or 'be missing' as in (10). Finally, in a few cases the particle *gan* itself seems to have become verbalized, as seen in (11).

(7) ... *we qaxinjadanki   ni   kimpi   **gay**-g-x   na-quy-naqa*.
          in the old man   DTRZR believe-GER   NEG-PTCP-SUBORD   COP(PL)-IPFV-NF.PL
      '... [they] did not believe in the old man.'   (11.2)

(8) *weyjiigx   kunugu   panx pinikankx   siksis   geti   **gay**-x-naqa*.
      thus   QUOT   Indians   eagle   kill-GER   NEG-SUBORD-NF.PL
      'They say that is why Indians do not kill eagles.'   (1.19)

(9) *quc   =hix   **gan**   kaakw-iqi   qaxt   quciig   panx   kap   natspikmiqi*.
      who   ERG   NEG   know-NF.SG   how   doing   people   INCEP   started up
      'Nobody knows how people started up.'   (1.23)

(10) *hunks   guxti   kap   **gay**-nki-x   hesigen   ...*
      3PL   food   PUNC   NEG-LOC-TEMP   again
      'When their food ran out again ...'   (3.15)

(11) *huykx   qam qoonak   ni xikki   **gan**-x-iki*.
      yet   everything   I forgot   NEG-SUBORD-1SG
      'I have not forgotten everything yet.'   (5.60)

Given this extensive selection of ways to form negative clauses in Chitimacha, one may wonder why I have singled out the auxiliary construction and the particle construction as defined here in particular. There are mainly two reasons for this: First, these two constructions are the most frequent of the class of negation constructions, and clearly form

the canon or prototype. Participial *gayg* appears only 27 times, while *gayš* and its variants occur 62 times, *ganx* appears 19 times, and lexical uses of *gay-* occur approximately 20 times.

The second reason for focusing on the auxiliary and particle constructions is that they show constructional parallels in ways that the other negation constructions do not. The lexical verb and the negating element are positioned the same in both cases; on cursory inspection they appear to have the same range of distributional potential (though as will be shown this is not actually the case); and they are the most unmarked construction types for the function of negation. Other ways of forming negation are each marked either morphologically or in their distributional potential (e.g. they may only appear in certain aspects).

Deciding which of either the auxiliary or the particle construction is primary or the more unmarked member of the category, however, does not present an easy answer. On the one hand, *gay-* could be viewed as a canonically-unmarked, fully-inflectable lexical verb meaning 'be not', so that the negative particle *gan* should be seen as its synchronic derivative. Additional evidence for this position would be that *gan* is actually a nominalization consisting of *gay-* 'be not' + *-n* PATIENT NOMINALIZER. In terms of frequency, however, *gay-* is actually more marked, since *gan* is significantly more frequent in the corpus overall (by a ratio of approximately 2:1, based on ~600 instances of the two types). The fact that *gan* is historically a nominalization may be irrelevant if one assumes that *gan* has simply become routinized into a general negation particle. That it also appears with nominal arguments could be taken as evidence for this position (though *gay-* has a similar distribution whenever it appears in a predicate nominal construction).

Given these similarities, it is difficult to say one way or the other whether *gay-* and *gan* are in fact separate constructions. Indeed it hard not to receive the impression, after spending some time with the corpus, that for speakers of the language these were two subtle variations on a single polysemous construction. The purpose of this paper, then, is to make progress towards determining whether this is in fact the case. Or, to avoid over-dichotomizing the problem: to determine the *extent* to which these two constructions exhibit similar behavior in a quantifiable way. This project is thus an excellent candidate for the application of the Behavioral Profile approach, which is "specifically geared towards the analysis of larger sets of synonymous/antonymous words, or highly polysemous words with many senses and in fact not only allows for, but specifically encourages, the inclusion of different forms of a lemma as well as very different kinds of co-occurrence information" (Gries 2010:326). The one notable difference is simply that the present study uses the Behavioral Profile approach to characterize near-polysemous constructions (a 2-gram in this particular case) rather than words. Such an extension of the method should however be uncontroversial if one takes words

to be just a special case of constructions more generally, as is assumed by much work in construction grammar (e.g., Croft 2001).

Having briefly described the types of negation constructions in Chitimacha, I now turn to laying out the method for the present study.

4   Methods

The method for this study follows the procedure outlined in Gries (2006; 2010) for creating behavioral profiles. Because the Chitimacha corpus is a closed one, and relatively small as far as most corpus analysts are concerned, the first step of this process – retrieving a representative sample of all instances of the lemma of interest – was accomplished with relative ease. A total of 691 potential instances of the negation construction were found. Of these, 282 had the auxiliary *gay-* and 409 had the particle *gan*. Of these, only a portion were canonical instances of the auxiliary and/or particle negation constructions. Many of the instances of *gan* in particular were actually cases of argument negation, and outside the scope of the present study. After other types of negation and other false positives were removed, the frequencies of the two forms were more similar: 128 instances of the auxiliary construction, and 145 of the particle construction. Of course, culling out the other results in the first place is actually a deviation from the Behavioral Profiling method which, as mentioned earlier, encourages the inclusion of a variety of token types. Time simply did not permit for the coding of the less prototypical cases in addition to the prototypical ones.

The next step in the Behavioral Profile approach is to annotate the instances of the phenomenon for a variety of morphosyntactic features, termed ID TAGS following (Atkins 1987). For the present study, a small set of features were chosen for annotation, whose motivations fall into three categories: 1) features that are known crosslinguistically to display interactions with negation (semantic aspect); 2) features that seemed impressionistically to co-occur commonly with negation in Chitimacha, but in a random way (morphological tense/aspect marking); and 3) features that impressionistically seemed to have strong correlations with negation or one negation construction in particular (the lexical verb which is being negated). The complete set of ID tags used to annotate my corpus is provided in Table 1. Note that the lexical verb category was coded by lexeme (lemma), rather than token.

Table 1. ID tags used in this study

Type of ID Tag	ID Tag	ID Tag Levels
Event Type	Stativity	stative, dynamic
	Durativity	durative, punctual
Morphological	Agentivity	agentive, patientive
	Perfectivity	perfective, imperfective
	Reality Status	realis, irrealis
Lexical	Main Verb Lexeme	67 different lexical verbs

After annotating the corpus, the resulting frequency distributions of each feature are compiled into a single table, where each column represents a single construction and each row represents a level of an ID tag being coded for, and the cells provide the frequency of co-occurrence between the two. Table 2 below shows the raw frequency data for each combination of ID tag level and construction, alongside the relative frequency for each value. The table includes only the top 10 most frequent verbs (as a function of the total number of co-occurrences of that verb across both negation construction types). The relative frequency for each verb is however calculated as a function of all the verbs in the data set, not just the 10 listed. Also note that the total counts for each cross-section of construction type and ID tag are not always the same, because not every ID tag was relevant to every construction. For example, agentivity is only morphologically coded in person marking in the first person. Other features of the verb's behavior often make it possible to determine the agentivity of any given verb by other means, but in the interest of consistently operationalizing how the agentivity tag ID is coded (not to mention time), I restricted my analysis of agentivity to just first person verbs.

Table 2. A non-normalized behavioral profile of Chitimacha negation constructions

		Construction Type			
		auxiliary		particle	
ID Tag	ID Tag Level	#	%	#	%
Stativity	stative	36	0.30	100	0.99
	dynamic	84	0.70	1	0.01
Durativity	durative	96	0.79	122	0.92
	punctual	26	0.21	11	0.08
Agentivity	agentive	18	0.67	14	0.29
	patientive	9	0.33	34	0.71
Perfectivity	perfective	119	0.98	138	0.96
	imperfective	2	0.02	6	0.04
Reality Status	realis	82	0.64	129	0.89
	irrealis	46	0.36	16	0.11
Lexical Verb	gas- 'plant'	0	0.00	6	1.00
	get- 'beat, hit, kill'	8	0.07	2	0.01
	gih- 'want'	10	0.08	17	0.12
	gux- 'eat'	8	0.07	2	0.01
	huy- 'be good, well'	1	0.01	17	0.12
	kaakwa- 'know, be able'	13	0.11	33	0.23
	kima- 'believe'	7	0.06	4	0.03
	qam- 'see'	1	0.01	7	0.05
	quci- 'do, make'	5	0.04	7	0.05

These two tables represent versions of the behavioral profile for each construction, that is, a list of its co-occurrence frequencies for each semantic feature of interest. This behavioral profile can also be constructed based on type frequencies rather than token frequencies (Gries & Divjak 2009:64–65), which requires normalizing the type frequencies against their overall occurrence in the corpus. At present, total corpus frequencies are only available for a few of the ID tags examined here, but for those that are, a smaller but normalized Behavioral Profile of type frequencies is provided in Table 3.

Table 3. A normalized behavioral profile of Chitimacha negation constructions

ID Tag	ID Tag Level		Construction Type	
			auxiliary	particle
Agentivity	agentive		0.03	0.2
	patientive		0.02	0.8
Lexical Verb	*gas-*	'plant'	0.00	0.17
	get-	'beat, hit, kill'	0.30	0.00
	gih-	'want'	0.05	0.08
	gux-	'eat'	0.04	0.01
	huy-	'be good, well'	0.01	0.24
	kaakwa-	'know, be able'	0.08	0.19
	kima-	'believe'	0.12	0.07
	qam-	'see'	0.01	0.08
	quci-	'do, make'	0.03	0.04

The final step in the Behavioral Profile approach is the application of statistical techniques to examining the relationship among the various constructions and their properties in the behavioral profile. For the present study, these measures were limited to the following:

- testing whether the frequencies of each ID tag type varies as a function of construction type, using a χ^2 test for difference/independence (done for both the absolute and relative frequency tables)

- testing the overall similarity of the two constructions (i.e., the correlation between the frequencies of each of their semantic features) using Pearson's *r*

- testing the similarity of the two constructions with respect to just their lexical verbs, and just their morphological and semantic features, again using Pearson's *r*

I now proceed to a discussion of the results.

5   Discussion

I begin by examining Table 2, the non-normalized frequencies of each ID tag by construction type. Figure 1 provides association plots for the first five ID tags (the non-lexical tags).

Figure 1. Associations between semantic factors and negation construction type
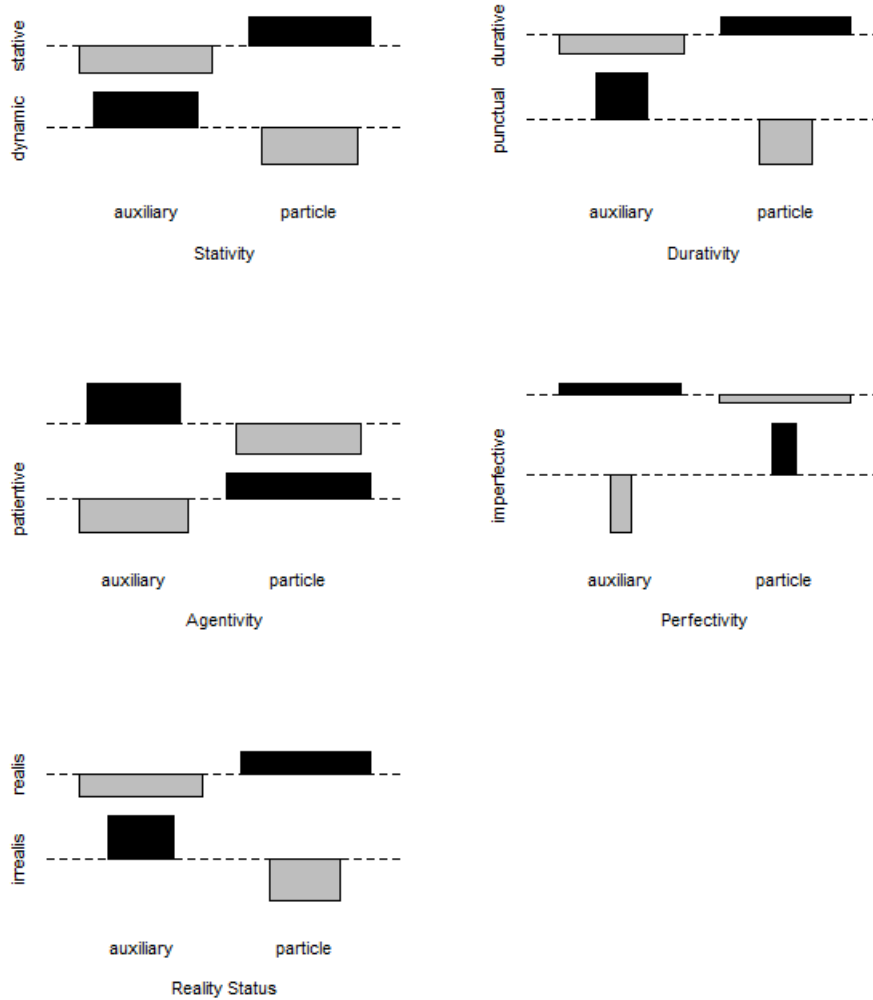
Each of the five ID tags shows potentially interesting interactions, all of which are inverse correlations between the two variables. Thus each ID tag type was investigated using a χ^2 test to determine whether the inverse correlation between the ID tag and the negation construction types was statistically significant. I assume for present purposes that the samples are independent, although more fine-grained analysis of the data may reveal this assumption to be false, especially if the correlated constructions turn out to consistently appear together in the same texts. A continuity correction was applied for stativity and perfectivity since some of the observed frequencies were fewer than 5, but because the range of observed frequencies is actually rather large (ranging from 1 to 100 in the case of stative vs. dynamic), and the continuity correction is sometimes thought to overcorrect, the non-corrected results for these two tag types are also reported. The test results and their effect sizes using Cramer's *V* are given in Table 4. The degrees of freedom for all tests was 1.

Table 4. Results of the χ² tests for dependence

ID Tag Type	χ²	p-value	I	Significance
Stativity	110.3468	p = 2.20e^{-16}	0.7066165	***
Stativity (w/correction)	107.4504	p = 2.20e^{-16}	0.6972812	***
Durativity	8.7237	p = 0.003141	0.1849613	***
Agentivity	9.9337	p = 0.001623	0.3639356	**
Perfectivity	1.4191	p = 0.2335	0.07317936	NS
Perfectivity (w/correction)	0.6904	p = 0.406	0.05104177	NS
Reality Status	24.0199	p = 9.535e^{-07}	0.2966224	***

In short, all results were very significant except for perfectivity, confirming the correlations that appeared in the visual inspection of the data.

What this tells us is that the negative auxiliary construction is associated most strongly with events that are dynamic, extended in time (durative), agentive rather than patientive in nature, and, most interestingly, more strongly associated with irrealis (future tense or conditional) verbs than with realis ones, though this effect size was relatively small. By far the largest effect size was for stativity, which the negative auxiliary construction strongly disprefers (by a ratio of 100 : 1).

These results help resolve a standing issue not just for negation constructions in Chitimacha, but for auxiliary constructions in the language generally. Visual inspection of the corpus and impressionistic senses of frequency alone were not enough to tease apart the conditioning factors for when speakers used auxiliary verb constructions. But for the negative auxiliary at least, the present results clearly demonstrate that the conditioning factor is the dynamic vs. stative distinction. While Chitimacha does not have dedicated morphology to code the dynamic/stative distinction, the distinction nonetheless conditions a number of behavioral alternations in the grammar, so the current result nicely conforms to these patterns. It is very likely that the other auxiliaries also follow this pattern as well, so the present study provides excellent direction for future research into the auxiliary system.

Next I compare the overall behavioral profiles of the two construction types, using the Pearson product-moment correlation *r*. The co-occurrence frequencies for each construction type are treated as vectors and subjected to a linear regression. Those two vectors are plotted against each other in Figure 2, along with a best fit line. The same procedure was then followed with only the non-lexical ID tags, and finally with just the lexical ID tags. These two correlations are depicted graphically in Figure 3 & Figure 4.
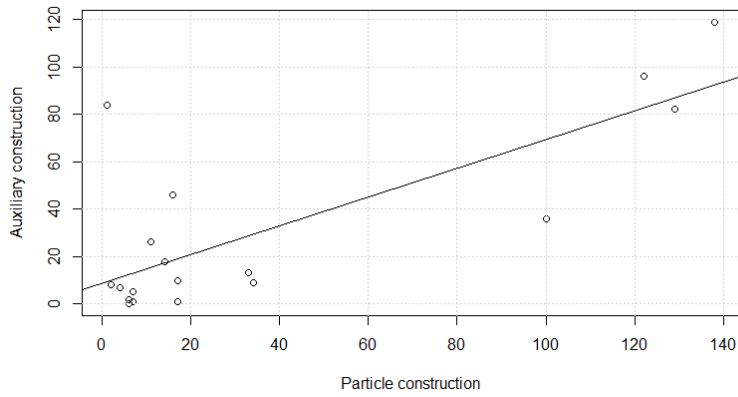
Figure 3. Similarity of auxiliary and particle constructions based on semantic and morphological properties alone (*r* = 0.6864651)
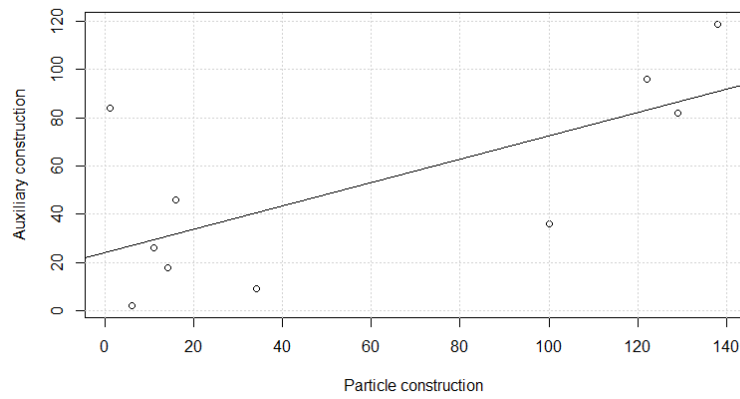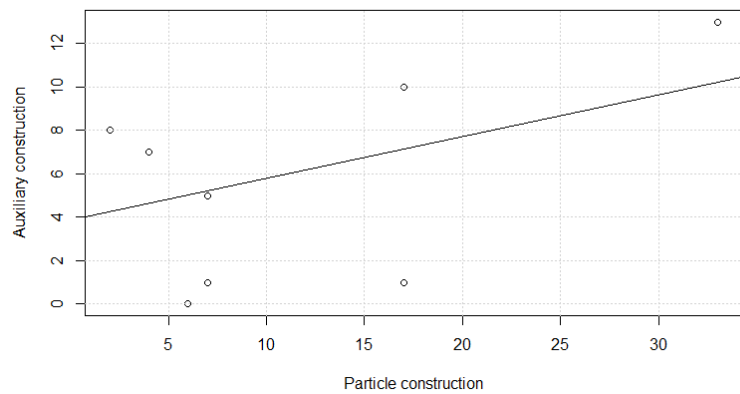

Figure 4. Similarity of auxiliary and particle constructions based on lexical co-occurrences alone (*r* = 0.4359371)

The results show a very high positive correlation for the two constructions overall, and a weaker but still substantial correlation when examining just a subset of the ID tags. Returning

to our earlier discussion of whether the two negation constructions should be viewed as simply instances of the same, polysemous construction, the present data would seem to suggest that this in indeed the case. In fact, given how strongly the auxiliary vs. particle constructions bifurcate along the dynamic versus stative distinction, it seems reasonable to conclude that *gan* and *gay-* are not marked and unmarked forms of each other, one basic and the other derived; rather that the two constructions are best viewed as inflectional variants of the other, standing in near-complementary distribution. The fact that *gay-* can occur in stative constructions might seem at first to contradict this claim, but it seems likely that further inspection will reveal that these instances of *gay-* are actually lexical rather than aspectual in meaning, and/or receive their stative semantics from the main verb they co-occur with, which Swadesh himself claims is the case (Swadesh 1939:93). The normalized data in Table 3 further support the claim that neither of the two negation constructions is particularly more marked than the other, since both co-occur with the same number of lexical verbs (this coincidentally holds true for the entire set of 66 lexical verbs as well, in addition to the 10 listed in Table 3).

To wrap up: This paper set out to characterize two different negation constructions in Chitimacha, using the Behavioral Profile approach for statistical corpus analysis. This procedure turned out to yield robust and highly statistically significant results. It was found that the negative auxiliary construction occurs almost exclusively with dynamic as opposed to stative verbs, nicely dovetailing with other grammatical phenomena in the language which also pattern strongly with this distinction without coding it overtly. Discovering this fact without the kind of detailed featural coding undertaken here would have been difficult to say the least, because of the number of other confounding factors that up until this study had made it impossible for me to see patterns in the data, despite spending years with this corpus. Finally, this study lends support to an analysis of *gan/gay-* not as two different constructions, but two inflectional variants of the same polysemous construction, where the dynamic / stative distinction is not coded overtly, but rather instead the construction as a whole has grammaticized to fulfill this function.

References

Atkins, B. T. S. 1987. Semantic ID tags: Corpus evidence for dictionary senses. *Proceedings of the Third Annual Conference of the UW Centre for the New Oxford English Dictionary*, 17–36.

Campbell, Lyle. 1997. *American Indian languages: The historical linguistics of Native America.* (Oxford Studies in Anthropological Linguistics). Oxford: Oxford University Press.

Croft, William. 2001. *Radical Construction Grammar: Syntactic theory in typological perspective.* Oxford: Oxford University Press. doi:10.1093/acprof:oso/9780198299554.001.0001. http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780198299554.001.0001/a cprof-9780198299554.

Gries, Stefan Th. 2006. Corpus-based methods and cognitive semantics: The many senses of to run. *Corpora in cognitive linguistics: Corpus-based approaches to syntax and lexis*, 57–99.

Gries, Stefan Th. 2010. Behavioral profiles: A fine-grained and quantitative approach in corpus-based lexical semantics. *The Mental Lexicon* 5. 323–346. doi:10.1075/ml.5.3.04gri.

Gries, Stefan Th. & Dagmar Divjak. 2009. Behavioral profiles: A corpus-based approach to cognitive semantic analysis. In Vyvyan Evans & Stéphanie Pourcel (eds.), *New directions in cognitive linguistics*, 57–75. (Human Cognitive Processing). John Benjamins.

Mithun, Marianne. 1999. *The languages of Native North America.* (Cambridge Language Surveys). Cambridge: Cambridge University Press.

Swadesh, Morris. 1939. Chitimacha grammar (Copy 1). *Chitimacha grammar, texts and vocabulary.* (American Council of Learned Societies Committee on Native American Languages, Franz Boas Collection of Materials for American Linguistics). Philadelphia, PA: American Philosophical Society.

Swadesh, Morris. 1953a. *Chitimacha grammar, texts and vocabulary.* Philadelphia, PA: American Philosophical Society.

Swadesh, Morris. 1953b. Chitimacha texts. *Chitimacha grammar, texts and vocabulary.* (American Council of Learned Societies Committee on Native American Languages, Franz Boas Collection of Materials for American Linguistics). Philadelphia, PA: American Philosophical Society.

Swadesh, Morris. 1953c. Chitimacha-English dictionary (Copy 1). *Chitimacha grammar, texts and vocabulary.* (American Council of Learned Societies Committee on Native American Languages). Philadelphia, PA: American Philosophical Society.

Abbreviations

1	1st person
3	3rd person
A	agent person marker
COND	conditional
COP	copula
DTRZR	detransitivizer
ERG	ergative
FUT	future
GER	gerund
INCEP	inceptive preverb
IPFV	imperfective
LOC	locative postposition
NEG	negative particle/auxiliary
NF	non-first person marker
PL	plural
PTCP	participle
PUNC	punctual preverb
QUOT	quotative
SG	singular
SUBORD	clausal subordination marker
TEMP	temporal subordination marker