GOOSE-fronting among Chinese Americans in New York City

Amy Wing-mei Wong*

1 Background on GOOSE-Fronting and the Scope of this Study

The fronting of GOOSE in words like *tooth* and *food* is a supra-regional feature that is attested in many varieties of English across the English-speaking world (e.g. Labov et al. 2006, Schneider et al. 2004) and among speakers of different ethnic groups. Phonological conditioning on fronting is robust across varieties of English: Preceding coronals as in *too* and *do* favor fronting. Preceding non-coronals as in *food* and *who* favor fronting to a lesser extent. Following lateral as in *tool* and *cool,* on the other hand, tends to inhibit fronting in most cases. In this paper, these subsets are labeled separately as TOO, HOOP, and TOOL, while GOOSE is used as a label for the superset.

Within the US, the Atlas of North American English (the Atlas) classifies a GOOSE token as fronted if its F2 value is above 1550 Hz. If its F2 value falls below 1200 Hz, it is considered a back vowel. Tokens between these two values are considered moderately fronted. Based on these criteria, the Atlas reported TOO in New York City English (NYCE) to be fronted (around 1800 Hz) but not HOOP (Labov et al. 2006:145, 54, 56, 234).

Report on the time-depth of GOOSE-fronting in NYCE, whether this is a recent phenomenon and whether it is undergoing change, is anecdotal and inconclusive. Labov's (2006 [1966]) study showed the GOOSE vowel to be in a stable, non-fronted position in NYCE. Thomas (2001) reported anecdotally that many young, middle-class New Yorkers produced GOOSE with some fronting and suggested that fronting might have developed after Labov's fieldwork in the 1960s, implying more recent change. However, the earliest descriptions of NYCE, from Babbit (1896) to Kurath and McDavid (1961), contain reports of GOOSE-fronting, indicating that the feature was found in NYC as early as the late 1800s. Unfortunately, these early descriptions do not provide much information on how much fronting there was (except that it was not as extreme as the one heard in the South), what linguistic conditioning there was, who the fronting speakers were with respect to class, gender, and age, and if there was a change towards more fronted GOOSE over time.

Almost all existing descriptions of the GOOSE vowel in NYCE, with the exception of Coggshall and Becker (2010), were based on data collected from New Yorkers of European descent. Little is known about how the vowel is pronounced by non-European ethnic groups. Elsewhere in the US, GOOSE-fronting is often characterized as a majority sound change led by speakers of European background, with African American and Latino speakers participating in the change albeit in a slower pace (e.g. Fridland 2003, Fridland and Bartlett 2006, Lee 2011, Nguyen and Anderson 2006, Yaeger-Dror and Thomas 2010). This is not the case in NYC. Coggshall and Becker found little ethnic differentiation between the nucleus of GOOSE produced by African Americans and white speakers. For Asian Americans, the handful of studies, mainly conducted in California, all showed that they pattern with European speakers and produced fronted GOOSE to a similar, if not greater extent (Hall-Lew 2011, Hinton et al. 1987). Whether Asian Americans in NYC lead or lag in GOOSE-fronting is not known.

Women have been found to lead the fronting of GOOSE consistently, suggesting that fronting is in part socially motivated (Labov 2001). However, fronting is so pervasive that researchers have proposed that instead of indexing any specific local or regional distinctions, fronted GOOSE may carry only weak and general social meanings. Fridland (2012:188), for instance, suggests that fronted GOOSE has a general "prestige (or at least unmarked) association" in most North American dialects. There is some indication that retracted GOOSE may also carry some general social meanings. Both Hall-Lew (2009) and Wagner (2008) speculate that the backed variants of GOOSE (and GOAT) might be used by speakers in their studies to index certain affects or emotional stances. Eckert has shown that variability in the F2 of several vowels serves important affective functions in the speech of a few preadolescent girls (2011).

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Given these existing findings of GOOSE-fronting, this study examines the GOOSE vowel produced by Chinese Americans in NYC. I will first establish the quantitative profile of the GOOSE vowel produced by the speakers with reference to the NYCE pattern reported in the Atlas. I will then explore the possible social meanings of the frontness of GOOSE by looking closely at the speech-in-interaction of one of the youngest speakers in the sample.

2 The Study

The speaker sample for this paper consists of 32 second generation Chinese Americans (16 females and 16 males) of Cantonese descent, born in NYC (or arrived by the age of 5) between 1940–1998. All of them speak English as one of their native languages. Speech data were elicited through interviews conducted by me with the speakers either individually or in small groups between the year 2009–2010. All but one speaker also read a passage.

This study focuses on the TOO and HOOP sets. The TOO set also includes words like *dew*, *juice* and *tube*.[1] While Labov (2006 [1966]:355–66) found that some New Yorkers pronounced *do* and *dew* differently, statistical and auditory analysis returned no significant difference between the TOO and DEW sets in my sample.

All of the measured tokens contain the target vowel in stressed positions and in phonetic contexts that produce the least perturbations of formant values. Vowel tokens followed by nasals, liquids, glides, vowels, or the voiced velar stop [g] were omitted from analysis (Thomas 2011). Given that the GOOSE class is relatively small, vowel tokens after a nasal (e.g. *noob*, *nude*) or a lateral (e.g. *loose*, *lewd*) consonant were included when it became crucial to increase the number of measured tokens for a given speaker. Following the practice of many existing work on the fronting of GOOSE in US dialects, I focus on the frontness (F2) of the nucleus, the element affected by the fronting in most North American dialects.[2] Single-point measurements of the nucleus of the vowel were taken at the F1 maximum. Tokens were normalized to the modified Watt and Fabricius scale (Fabricius et al. 2009, Watt and Fabricius 2011) simultaneously across all speakers together with 5 white female speakers sampled in the Atlas in the NORM suite (Thomas and Kendall 2007). A total of 860 tokens of GOOSE from the 32 speakers were measured and analyzed.

3 Quantitative Results

I conducted a token-level mixed-effect linear regression analysis on the potential effects of several linguistic, contextual, and social factors on the normalized F2 of all GOOSE tokens in Rbrul (Johnson 2012). Speaker and lexical items were entered as random effects. Fixed effects tested included preceding phonological environments, word position, stylistic contexts, the year of birth, and gender of the speakers, the ethnic composition of the student population of each speaker's elementary and middle schools, and the speaker's orientation towards their heritage culture.

The step-up/step-down analysis shows that the variation in the frontness of GOOSE is best accounted for with a model containing 3 factors (see Table 1): preceding place of articulation ($p < 0.001$), preceding voicing/manner of articulation (**$p = 0.002$**), and stylistic contexts ($p = 0.002$). Word position, speaker's gender, year of birth and orientation to their heritage culture were not significant.

On average, TOO tends to be more fronted than HOOP. Figure 1 plots speakers' mean normalized F2 for TOO and HOOP in two side-by-side panels. The dotted horizontal lines in red represent the rough estimates of the Atlas's cutoff points within the modified Watt and Fabricius scale (i.e. F2/S(F2)). Values above the upper line are considered fronted. Values below the lower line are heard as back. Chinese American speakers are in blue circles, and the 5 Atlas speakers are in gray diamonds. Regression lines based on speaker means are fitted to the data. Although all regression lines show positive trend, only the one for TOO among the Atlas speakers and the one for HOOP produced by Chinese American speakers reached statistical significance. In the token-level mixed-

[1]Additional examples include *chew, lewd, new,* and *Tuesday*. The set does not include words that invariably contain the /j/ glide as in *music, cute*, *use*, etc.

[2]The fronting of GOOSE might also involve the whole trajectory in some cases (see Koops 2010 for a discussion).

effect linear regression analyses, however, speaker's year of birth was not selected as a significant main effect on the frontness of GOOSE.

Sig. Fixed Effects	Levels	Linear Coef.	N	Mean
Preceding Place	Coronals (TOO + DEW)	0.136	447	0.982
(p < 0.001)	Non-coronals (HOOP)	-0.136	413	0.780
Preceding Voicing/Manner	Voiced Stops (e.g. *due, goose*)	0.072	159	0.879
(p = 0.002)	Fricatives (e.g. *food, who, juice*)	0.029	214	0.921
	Voiceless Stops (e.g. *too, scoop*)	0.008	306	0.916
	Nasals (e.g. *move, noob*)	-0.004	105	0.703
	Lateral (e.g. *lewd, loose*)	-0.105	76	0.922
Stylistic Contexts	Reading	0.029	323	0.900
(p = 0.002)	Interview	-0.029	537	0.876
Deviance = -515.937	**df = 10**	**Intercept = 0.862**		**Grand Mean = 0.885**

Table 1: Results from the best run in a mixed model regression analysis on the frontness of GOOSE.

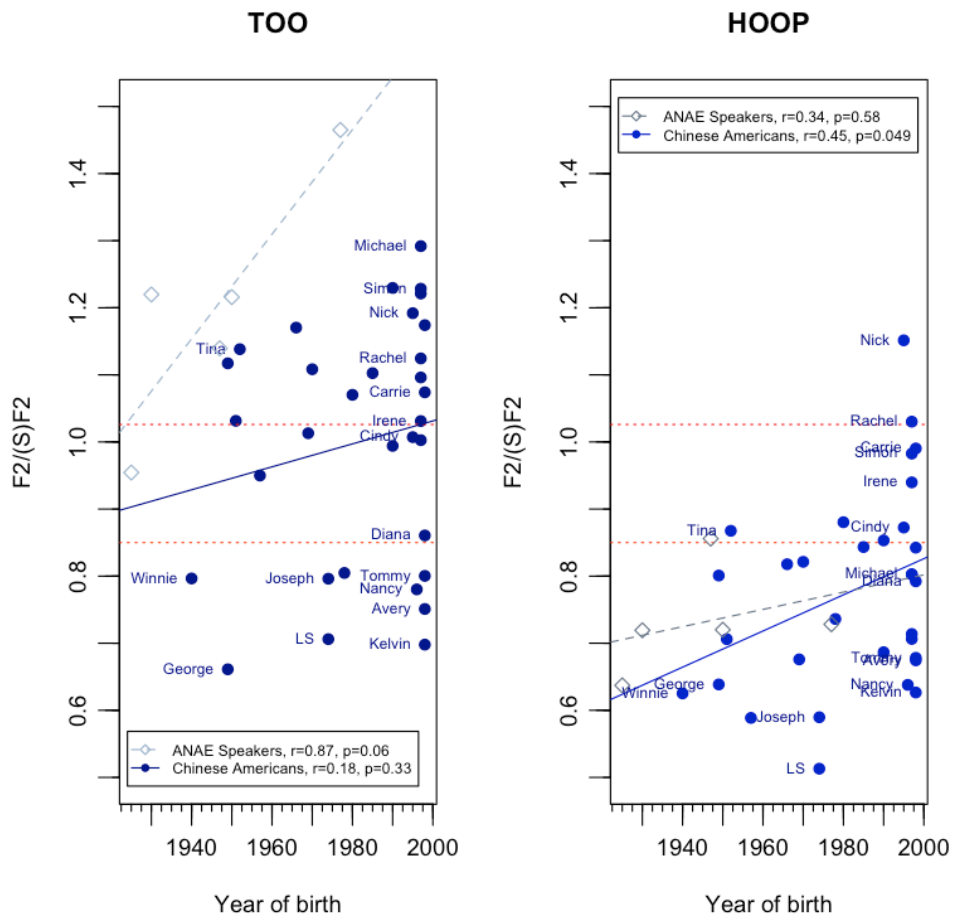

Figure 1: Mean normalized F2 of TOO and HOOP among the 32 Chinese American speakers.

As Figure 1 shows, GOOSE produced by Chinese New Yorkers follows the robust phonologically conditioning documented in the existing literature: TOO tends to be more fronted than HOOP (i.e. TOO has a higher normalized F2). The regression line for HOOP is squarely below the lower cutoff line and approximates the line from the 5 Atlas speakers, showing that generally Chinese Americans and European Americans alike do not front HOOP. At the level of the individuals, however, a few of the youngest speakers produced HOOP that are fronted (Nick and Rachel) or almost fronted (e.g. Carrie and Irene).[3] Regarding TOO, Chinese Americans as a group seem to trail behind the Atlas speakers somewhat. The regression line for TOO among Chinese Americans is much lower than that of the Atlas speakers and is below the upper cutoff line. This is, however, not because individual Chinese Americans did not front TOO. In fact, over half of the speakers produced TOO that is front of (N=17) or approaching (N=4) the Atlas's cutoff. The lower regression line is instead driven by the presence of a significant number of speakers who produced TOO that is heard as backed (N=9). These two groups of speakers, however, do not differ significantly in terms of gender and mean age.

The voicing and manner of the preceding segment is also a significant main effect, and the favoring and inhibiting environments generally follow known effects of formant transition and coarticulation (e.g. Hillenbrand et al. 2001, Labov et al. 2006, Malécot 1956, Tunley 1990). Preceding nasals (e.g. *noob*) and laterals (e.g. *lewd, lose*) tend to lower the normalized F2 of GOOSE and voiceless stops (e.g. *too*) show a more inhibiting effect on the increase in normalized F2 than voiced stops (e.g. *do*).

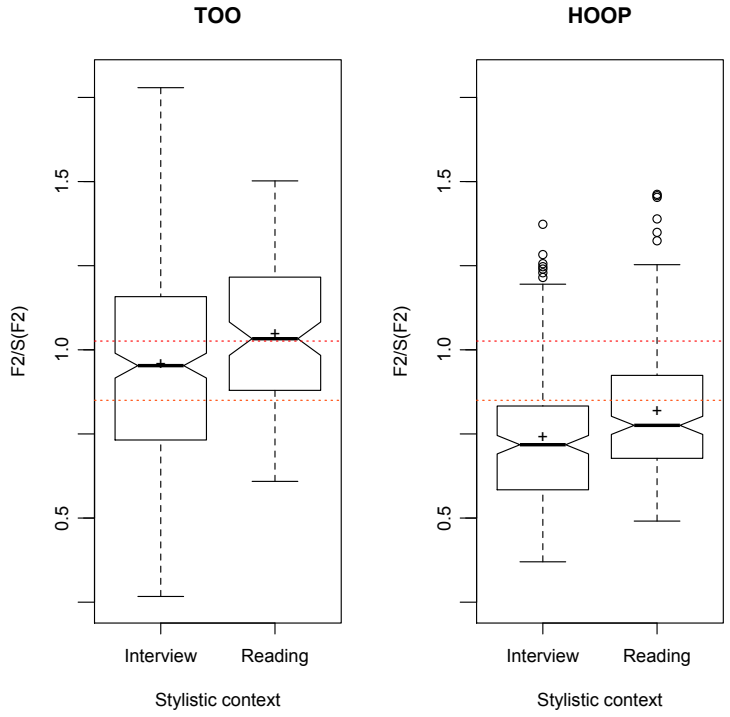

Figure 2: Box-and-whisker plot of the normalized F2 of TOO and HOOP by stylistic contexts.

Figure 2 is a box-and-whisker plot of the significant main effect of stylistic contexts. Both TOO and HOOP are more fronted in the reading context than in the interview context in terms of their medians (i.e. the horizontal lines within each box) and their means (i.e. the '+' symbols). The non-overlapping notches of the reading and interview contexts confirm that the normalized F2 of these two contexts are significantly different. There are a few fronted outliers within the HOOP set (i.e. the individual circles above the upper whiskers) which mainly came from a few of the young-

[3]All speaker names are pseudonyms.

est speakers. The presence of these outliers skews the mean F2 of HOOP positively above the median. We do not see such positive skewing in TOO. According to Labov, positive skewing is often associated with the incipient stage of GOOSE-fronting (2001:488) and almost all North American dialects show positive skewing in HOOP. While the presence of skewness in HOOP among the speakers in this sample could be an early sign of change towards the non-backed (or even fronted) variants, it is crucial to reiterate that the token-level regression analysis did not return year of birth as a significant predictor. There is also an absence of a significant gender effect which is often present in areas where fronting is in progress. It is, thus, unclear at this point if HOOP is undergoing change towards the non-backed variants among these speakers. The results, at best, show that the phonological conditioning on GOOSE-fronting, though present, is somewhat leveled among Chinese New Yorkers. Compared to the Atlas speakers, the F2 gap between TOO and HOOP is narrower in the sample for this study. It is not entirely clear from the available data whether the phonological leveling is unique to Chinese New Yorkers and is substrate-induced or if it is a more general sign of incipient change with fronting spreading to the traditionally less favoring environments.

Given that speakers typically switched to more socially acceptable variants in reading style, the finding on stylistic context suggests that the target for the 'standard' or at least "socially unmarked" (Fridland 2012) GOOSE among Chinese New Yorkers is consistent with the NYCE pattern, with TOO being somewhat fronted, and HOOP remaining more or less a back vowel. However, the question concerning why there is significant variation in the fronting of GOOSE between the two stylistic contexts remains. One possibility is that interviews involve faster speech rate than reading contexts, resulting in an increased number of 'undershoot' tokens. This possibility is ruled out by Welch's two-sample t-tests on the normalized duration of TOO and HOOP by stylistic contexts. The mean duration of TOO and HOOP tokens is longer during the interviews than during the reading contexts. Another possibility is that backed GOOSE may in fact come to index certain affects and stances that may not be as relevant in the reading context. Since stylistic contexts is a kind of within-speaker variation, one possible avenue to examine the social meanings of the frontness of GOOSE is through an exploration of how individual speakers vary in their production of this vowel in unfolding talk. In the next section, I turn to analyze a few stretches of talk involving a middle-school girl, Irene, to see how the frontness of her GOOSE tokens vary as she takes stances and constructs her persona in moment-to-moment interactions. Irene is not the only speaker who shows variation in the GOOSE vowel, but she is one of the most expressive girls in my sample.

4 The Frontness of GOOSE in Moment-to-moment Interactions

The ethnographic data presented in this section is drawn from a year-long participation observation I conducted in an afterschool program in NYC's Lower East Side, in which Irene was one of the participants. The speech data from Irene came from several short interviews conducted by me. Some of the interviews were between Irene and me and some involved a friend or two of Irene's. Selected segments from the interviews were closely transcribed following the conversation analytic conventions outlined in Atkinson and Heritage (1984) and Nofsinger (1991) with a few additional modifications (see Wong in preparation).

Irene was a seventh grader. In many ways, Irene displayed a 'sophisticated teenage girl' persona. She was one of the handful of girls in the afterschool program who participated in the (emerging) heterosexual marketplace that centered around her day school. Although Irene's boyfriend from her day school did not attend the afterschool program, many youths in the program did go to the same day school as Irene and were aware of her dating practices. She was generally a compliant student and seldom got into trouble with the staff in the afterschool program. But it was a different story with other kids in the program. Irene often talked about disliking other girls in and out of the programs and had been involved in a few arguments with them. A key component to Irene's persona involved her ability to display a versatile range of styles, both linguistically and non-linguistically. She often wore tight-fitted tees from popular preppy teen brands like Abercrombie and Fitch or Aéropostale and never hesitated to offer me fashion tips. While she often wore bright and pastel colors, she would occasionally dress in an all black ensemble, with thickened and elongated black eyeliner and told me that it was her 'emo' day. She liked to act out her femininity flamboyantly. She was the only one in the program to ostensibly hug her friends and

other people she liked, including boys. You would often hear her yelling "I love you" to her friends and to the staff, especially when she was making some requests or pleading for something.

Figure 3 is a plot of Irene's tokens of TOO (in orange circles) and HOOP (in green squares) that were analyzed in this paper. The specific tokens discussed in this section are labeled. The bigger orange circle and green square represent the mean value of Irene's TOO and HOOP respectively. The gray vertical lines represent the rough estimates of the Atlas's cutoff points for fronted and retracted GOOSE. As Figure 3 shows, the range of Irene's TOO tokens span from being fronted to being backed, and her HOOP tokens are mainly in the back with a few non-backed ones.

The first episode that illustrates how the frontness of GOOSE bears indexical significance comes from a one-on-one conversation between Irene and me. In this episode, Irene was filling me in about an unusual meeting the staff of the afterschool program had with all the youth participants earlier that day. The meeting was called because Irene's iPod had gone missing but was subsequently returned to the staff by another seventh grade girl whom Irene disliked. In the conversation, Irene implied that this girl stole her iPod and chastised her for getting the teachers involved. The TOO vowel in this episode came from 3 occurrences of the word *stupid*, labeled separately as *stupid1* (line 1 in the transcript), *stupid2* (line 5) and *stupid3* (line 11).

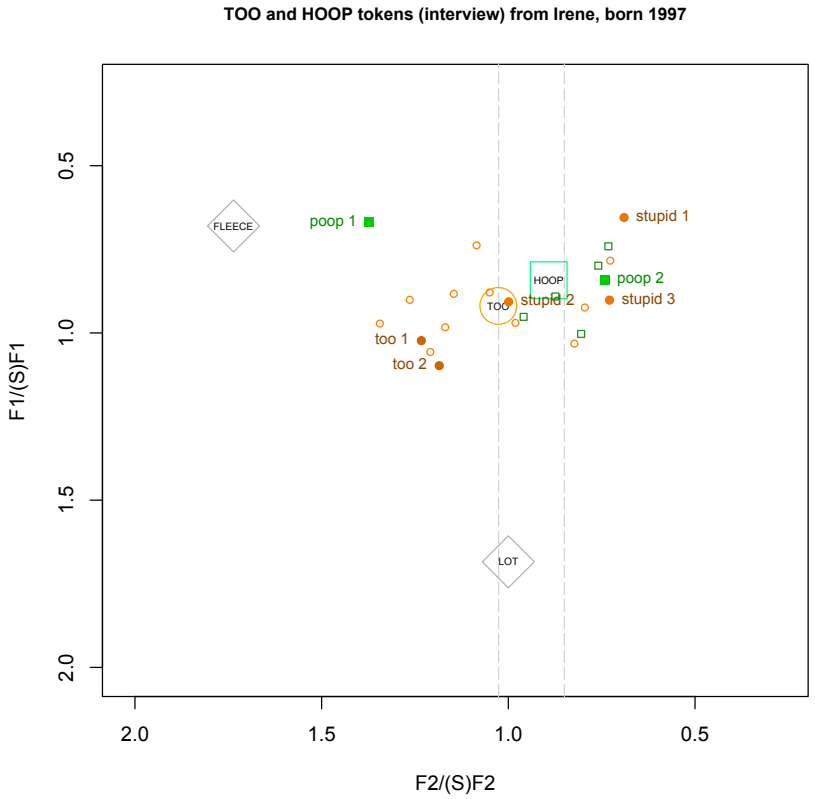

Figure 3: The TOO and HOOP tokens from Irene.

The episode begins with Irene criticizing the girl (lines 1 to 4) with the first occurrence of *stupid* being predicated on "she" (line 2). To couch this under Du Bois's framework of stance (2007), Irene was taking an affective stance—more specifically, expressing annoyance and resentment—in this utterance. The stance object was the girl who returned her iPod. From lines 5–8, Irene shifted from criticizing the girl directly to providing an explanation of why getting the adults involved was a stupid act. The second occurrence of *stupid* is predicated on "that" (line 5), signaling a shift in the stance object. The use of "that" in line 5 together with the subsequent use of the generic, impersonal "you" in lines 6 and 8 indicate that Irene was not so much expressing annoyance directly towards the girl in these utterances than expressing some kind of conventional wisdom of how such situation should be handled more generally. Notice also the change into present tense in

these utterances which often accompanies the shift to truisms (Laberge and Sankoff 1979). In lines 9 to 10, I geared the conversation back to focusing on the girl and in response, Irene returned to expressing her anger at the girl directly in line 11. The third occurrence of *stupid* is once again predicated on "she". In this episode, Irene was expressing a hostile stance towards the girl who returned her iPod while simultaneously positioning herself as the smart and mature one. The two occurrences of the TOO vowel in the word *stupid* that Irene uttered as she expressed her anger and hostility tend to be further backed in her vowel space. They are in fact as retracted as some of her HOOP tokens.

Episode 1: The missing iPod

→	1	Irene:	And then .hh she is- she was stupid1
	2		((F2/S(F2)=0.69)) enough? to tell ((Name re-
	3		moved)) and then that's how she got into
	4		trouble.
→	5		Like that's stupid2 ((F2/S(F2)=0.999))
	6		like you don't have to tell a teacher like
	7		.hh I could solve this between me and you and
	8		you won't get into trouble a:t a:ll
	9	Amy:	So why did she tell ((Name removed)). What
	10		did she tell [((Name removed))
→	11	Irene:	['coz she was stupid3
	12		((F2/S(F2)=0.729)) I don't know. She-

The backness of the TOO vowel in different iterations of *stupid* is in stark contrast with the relatively more fronted (and lowered) TOO tokens that came from the next two episodes from a casual interview between me, Irene and a friend of hers, Bonnie. In one part of the conversation (Episode 2), Irene told me about the presents she and Bonnie received on Valentine's Day. In the other part (Episode 3), Irene started telling me about a small fight she had gotten into with a girl in her school; and when I showed disbelief, she turned to me and asked playfully if she could slap me. The TOO vowel came from two occurrences of the sentence final *too* (*too1* and *too2*).

Episode 2: Valentine's presents

	1	Irene:	Hmmhmm eh I can show you right now.
	2	Amy:	(-> Bonnie) Do you have flowers too?=
→	3	Irene:	=(-> Bonnie) _You got flowers too1_
	4		((F2/S(F2)=1.233))=
	5	Bonnie:	=No:[:::
	6	Irene:	[_Three tulips (.)
	7		[and two roses_ ((chuckles))
	8	Bonnie:	[( )

Episode 3: A small fight

	1	Irene:	>She did something I forgot what
	2		And then I just slapped her
	3		And then I don't know<
	4	Amy:	You slapped ... her?
→	5	Irene:	_Yes can I slap you too2_ ((F2/S(F2)=1.185))?
	6	Bonnie:	(Doh)

As Figure 3 and the transcripts show, the nucleus of both occurrences of *too* was fronted (and lowered). Both utterances containing the TOO tokens were also accompanied by falsetto voice (indicated by the underscores '_' around the text). Looking at the interactional contexts, the use of fronted TOO and falsetto voice took place when Irene began to perform potentially face-threatening acts. In Episode 2, the shift took place when Irene revealed some information about Bonnie that Bonnie herself would unlikely volunteer to me. This is evidenced by Bonnie's attempt to stop Irene (line 5). In the second episode, the shift took place when Irene asked if she could slap me (line

5). I argue that in both interactional contexts, Irene used fronted TOO and falsetto to enact a sweet and innocent voice. By using such a sweet and innocent voice, Irene keyed (Goffman 1974) the potentially face-threatening utterances into harmless, playful teases, pre-empting her interactants to take offense.

Episode 4: "Shit means poop"

	1	Amy:	[( )
	2	Irene:	[(-> Microphone) Yes people talk shit about
	3		me.
	4		(0.1)
	5	Amy:	Okay now I have the recording.
	6		So we make a pack. We are not telling people.
	7	Irene:	°I don't care if you tell people°
	8	Amy:	No::::
	9	Irene:	[((Chuckles))
	10	Amy:	[What happened just now [in the
	11	Irene:	[°mhm°
	12	Amy:	in the community building thing? is that you
	13		shouldn't- there are certain words that you
	14		shouldn't use. (.) They spent all this time
	15		talking abou=
→	16	Irene:	[(-> Microphone) _=Shit means poop1_
	17		((F2/S(F2)=1.373)) (0.1) ((Chuckles))
	18		(0.2)
	19	Amy:	What?
→	20	Irene:	Shit means poop2 ((F2/S(F2)=0.741)) (.)
	21		Yea::::::h

The final example (Episode 4), in which Irene produced the same HOOP token (*poop1* and *poop2*) in succession, makes it even more apparent that the backed and fronted variants of GOOSE carries different social meanings for Irene. This final episode is taken from a one-on-one conversation I had with Irene that took place after Irene used the word "shit", a taboo word within the after-school program. I subsequently brought up another meeting that the staff had with the youths just that day about how cursing should be avoided in the program. As I was talking about how certain word should not be used, Irene turned to the microphone, took on a cute voice and provided a definition for the taboo word as "poop" (line 16). This *poop1* token was produced with extreme fronting that was not typical of her speech, as Figure 3 shows. I was somewhat stunned to hear such an exaggerated pronunciation and asked "what?" This licensed Irene to repeat the utterance again, which she did in a more serious tone. The *poop2* token (line 20) was backed.

The contrast between the first and second occurrence of *poop* again lies not simply in the frontness of the HOOP vowel, but her voice quality. The exaggerated fronting in *poop1* may seem like a bit of an anomaly, but when looking at the situated context, the fronting serves similar interactional purposes as the fronted *too* in Episodes 2 and 3. Irene used fronted HOOP and falsetto in her attempt to write off *shit* as a taboo words when she explained its meaning with the innocuous word *poop*. Once again, the fronting of HOOP, together with falsetto, emerge as linguistic indices of a cute and innocent persona. Immediately after, when I asked Irene to repeat her utterance, Irene assumed a more serious stance; she lowered her pitch and backed her HOOP vowel when making a clarification.

These clips give us a glimpse on how the frontness of GOOSE is one of the linguistic resources that Irene uses in interactions to express affects, take stances and key utterances. For Irene, the fronted variants are associated with a sweet and innocent persona, while the backed variants surfaced when she expressed anger or took on a more confrontational stance. Irene is in no way unique in varying the frontness of her GOOSE vowel in this way. In fact, another young speaker in my sample also show a similar pattern of variation. The variation displayed by Irene is consistent with previous work on sound symbolism that connects more fronted vowels with smallness and cuteness and the more backed variants with larger size and toughness (see Eckert 2011 for more detailed discussions). Eckert (2011) proposes that the variation in F2 may be more fundamentally,

or non-arbitrarily, tied to a complex set of abstract, affective oppositions that speakers learn very early on as young children. In this sense, the social meanings of the frontness of GOOSE are not always derived secondarily from macro-social or stylistic stratification. While the GOOSE vowel does not show robust macro-social stratifications and may lack a strong regional/local association in NYC or, speakers like Irene could still tap into the more fundamental affects and stances indexed by the variation in F2 in their everyday interactions. Certain stances, such as being hostile and confrontational, may surface more during conversations than during a reading task. And this could be one of the reasons why the GOOSE vowel in interviews tend to be less fronted than in the reading context.

5 Conclusion

The analysis on the frontness of GOOSE based on aggregated data finds that second generation Chinese Americans generally produced TOO that is somewhat fronted while their HOOP remained retracted. This corroborates the NYCE pattern reported in the Atlas and follows the general linguistic conditioning of GOOSE-fronting found across different dialects of English. However, there is indication that the phonological conditioning on GOOSE-fronting is somewhat leveled among Chinese New Yorkers. Whether this phonological leveling is a result of substrate influence or a sign of incipient change remains an open question for further research. There is little evidence among the sample to suggest that future fronting of TOO is in progress. There is a weak but significant result for HOOP-fronting over apparent time only at the speaker-level analysis. No other social predictors were found to significantly explain the variation in the frontness of GOOSE.

Despite the lack of significant macro-social stratifications on the frontness of GOOSE, a significant main effect of stylistic contexts was obtained from the aggregated data, with the interview context favoring more fronted TOO and HOOP. The presence of stylistic stratification suggests that variation in the frontness of GOOSE may carry some indexical meanings. Indeed, microanalysis of moments-to-moments interactions and the persona of a middle-school girl reveal that she varies the frontness of different GOOSE vowels along with modifications in her voice quality as she takes stances and expresses affects. These findings suggest that this supra-regional feature that is sometimes argued to lack region-specific associations may still function as a resource to index locally relevant meanings, at least for some speakers.

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Department of Linguistics
New York University
10 Washington Place
New York, NY10003
amywong@nyu.edu