Phonological and syntactic analyses of contraction phenomena 音韻論と統語論における様々な縮約

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Abstract

This paper explores different accounts of contraction phenomena, particularly focusing on *to* contraction (e.g., *want to/wanna* and *used to/usta*) and the contraction of auxiliary. Some researchers attempt to explain the contraction issues phonologically as well as syntactically. Others approach them from the perspective of the interaction between phonology and syntax. Although their investigations may illustrate the contraction phenomena to some extent, none of them seems to capture the issue completely.

Keywords: contraction, phonology, syntax

Introduction

Contraction phenomena are phonological processes (Lakoff, 1970). However, phonology alone cannot explain all aspects of contraction phenomena, and it has been generally agreed that syntactic constraints also govern them (Lakoff, 1970; Wood, 1979; Zwicky, 1970). The following sentences exemplify such contraction phenomena.

(1) a. They want to/wanna go now.b. Who do they want to/*wanna go now?

Larry Horn (as cited in Lakoff, 1970, p. 632) observed that contraction of *want to* to *wanna* is permitted in cases like (1a), whereas the contraction is not allowed in cases like (1b), even though the two share the same phonological context. A similar contrast is observed with *used to* as in (2) and with the

contraction of the auxiliary as in (3) (King, 1970).

- (2) a. He used to/usta go often.
 - b. That is used to/*usta clean table tops.
- (3) a. Who do you think is/'s there?b. Who do you think he is/*'s?

Phonological explanations alone are thus not satisfactory in regard to the contrasts given in (1) through (3); these contrasts require additional accounts. Let us take the contraction of *be* in (3) as an example. In (3b) *who* has moved from a position following *is*. Lakoff (1970) suggests that it is this movement that blocks the contraction. He emphasizes that this contraction involves both syntactic (i.e., movement) and phonological rules (i.e., stress-lowering), and thus it instantiates the interaction between syntax and phonology. Linguists have attempted to propose different accounts for these contraction phenomena.

The purpose of this paper is to critically discuss different accounts of contraction phenomena proposed to date, from both syntactic and phonological points of view. The discussion will be focused particularly on contraction of *want to* (as in (1)), *used to* (as in (2)), and *is* (as in (3)). The contraction of *want to* and *used to* are often called *to* contraction (Jaeggli, 1980; Postal & Pullum, 1978), whereas the contraction of *is* (or *be*) is referred to as an instance of contraction of auxiliary or auxiliary reduction (King, 1970; Zwicky, 1970). In this paper, I will use the labels "*to* contraction" to refer to the contraction of *want to* and *used to*, and the "contraction of auxiliary" to refer to the contraction of *is*.

The paper is organized as follows. First, I will discuss phonological factors that seem to be involved in these contraction phenomena. Following this, I will examine syntactic factors that have been proposed to account for those phenomena. Then, the interaction between syntax and phonology will be discussed.

Phonological Factors

Contraction occurs in connected speech, and involves various processes including vowel reduction, consonant deletion, voicing/devoicing, and nasalization. This being the case, what are the processes that derive these contractions, and why do they occur? While connected speech in general has received attention in the phonological literature (e.g., Kaisse, 1985; Shockey, 2003; Zwicky, 1972), the actual derivations of various contraction phenomena have not been discussed much.

What is common among the three contraction phenomena (i.e., *wanna*, *usta*, *'s*) is that *to* in *to* contraction and *is* in the contraction of auxiliary do not receive stress. Lakoff (1970) contends, referring to an example of the contraction of *be*, that "contraction is presumably an automatic consequence of a rule lowering the stress on the auxiliary *be*" (p. 632). When syllables or words are unstressed, phonological changes take place (Kreidler, 1989). Shockey (2003) confirms that unstressed syllables in English are likely to undergo reduction of vowels as well as other reduction. Thus, the primary motivation for these contractions is that *to* and *is* are unstressed.

I will now look at each example of contraction. Let me begin with the contraction of the auxiliary as illustrated in (3a), repeated in (4).

(4) Who do you think is/'s there?

In (4), *think is* is pronounced as $[\theta n k n z]$ when the auxiliary *is* receives stress, whereas *think's* is realized as $[\theta n k s]$. There are fundamentally two steps in this phonological process of the contraction of *be*: (a) vowel deletion and (b) consonant devoicing (Zwicky, 1970). Zwicky states that the rule of vowel deletion in the contraction of auxiliary as follows (p. 328):

(5)
$$\begin{bmatrix} V \\ -\text{ tense} \\ -\text{ stress} \end{bmatrix} \rightarrow \emptyset / \#\# ___ [+ \text{ cons}] \#\#$$

This rule indicates that word-initial unstressed lax vowels are deleted.

The rule changes [IZ] to [Z]. The second step, devoicing of the consonant, is equivalent to devoicing in morphemes such as plural –*s* (e.g., [s] in *books*, [Z] in *dogs*, [iz] in *watches*) in that contracted *is* is also realized as [s, z, iz] depending on the preceding sound (e.g., *Dick's/John's/Butch's here*) (Zwicky, 1970, p. 331). The first step, vowel deletion, produces [θ IJKZ] in (4), and since the preceding sound of [Z] is [k] ([–voiced]), [Z] also becomes [–voiced] and the outcome is [s] (Progressive Voicing Assimilation) (Zwicky, 1970).

Next, I will discuss the phonological processes of *to* contraction. The contraction of *used to* to *usta* is exemplified in (2), repeated in (6).

- (6) a. He used to/usta go often.
 - b. That is used to/*usta clean table tops.

First, let me examine the case of (6a). The phonological processes involved in this contraction are the following: (a) consonant linking and (b) vowel reduction. The full form of *used to* when it receives stress is [just tu]. When the word-final consonant is identical to an initial consonant of the following word, the two consonants usually link and become one long consonant (Avery & Ehrlich, 1992), as in *best table* ([best terbl] \rightarrow [best:erbl]) and *book case* ([buk kers] \rightarrow [buk:ers]). Then the pronunciation of *used to* also changes from [just tu] to [just:u]. However, it should be noted that in most instances of consonant linking, the second word is also stressed, which is not the case in *used to*. For this reason, one of the adjacent identical consonants in [just tu] may delete and the derived form may be [justu] instead of [just:u]. The next process is vowel reduction. When a syllable is unstressed, a vowel is often reduced (Shockey, 2003). *To* in *to* contraction receives no stress, and this causes vowel reduction in *to* ([u] \rightarrow [ə]). Thus, [justu] becomes [justə].

Although the written form of *used to* in (6a) is identical to that in (6b), they are phonologically different: The pronunciation of *used* in (6b) is [juzd] (Postal & Pullum, 1978). Furthermore, the form in (6b) is a past participle of the transitive verb *use*, which means "utilize," and thus lexically distinct from the past habitual aspectual *used* (Postal & Pullum, 1978). However, being lexically

separate items is not sufficient as an explanation of contraction blocking in (6b) because with other environments remaining the same, *used to* in (6b) may also become *usta* by undergoing phonological processes. There are several possible factors that can explain why this is not the case. For example, in (6b), *used* is a main verb, which is likely to receive a heavy stress within the sentence. In contrast, *used* in (6a) is sometimes categorized as a semiauxiliary (Postal & Pullum, 1978); thus it does not receive as much stress as a main verb like *used* in (6b) does. This difference in stress is one possible factor that phonologically distinguishes *used to* in (6a) and (6b) (Shockey, 2003).

Lastly, I will discuss the phonological processes of *want to* becoming *wanna* as shown in (1a), repeated in (7).

(7) They want to/wanna go now.

Phonetically, [want tu] becomes [wãrə] (Pullum, 1997). This contraction phenomenon seems to mainly involve the following two processes: (a) vowel reduction and (b) /t/ deletion or flapping (Bolinger, 1981). Let me start with the first process, vowel reduction. Since *to* in *to* contraction is unstressed, the vowel [u] of [tu] is reduced to schwa [ə] and *to* is pronounced as [tə]. Next, the second process, /t/ deletion or flapping, applies. A similar process to this is found in the phonological change of items like *winter*. Ladefoged (2001) describes the rule as follows.

(8) Alveolar stops and alveolar nasal plus stop sequences become voiced taps [or flaps] when they occur between two vowels, the second of which is unstressed. (p. 59)

Following this rule, *winter* [wintər] becomes [\tilde{w} irər] (see also Wells, 1982). Donegan and Stampe (1979) provide a more detailed description about this process by using *plant it* as an example.

Table 1

Phonological Processes for Derivation of "plant it" (Donegan & Stampe, 1979, p. 146)

Phonological processes	plant it [plæntɪt]
a. Elision of nasals before homorganic (tautosyllabic) (voiceless) consonants, e.g., [ment] $meant \rightarrow [m\tilde{e}t]$ —also with regressive nasalization.	[plæ̃tıt]
 b. Flapping of intervocalic syllable-final apical stops, e.g., [ðætæpl] <i>that apple</i> → [ðæræpl], [bætid] <i>batted</i> → [bærid]. 	[plæ̃rɪt]
 c. Progressive nasalization of (tautosyllabic) sonorants in unstressed syllables after nasalized segments, e.g., [sɪgnɨl] signal → [sɪgnɨl] 	[plæ̃rīt]

Want to also follows the same processes, although there is one step prior to the application of them. Since there are two identical consonants adjacent to each other in [want tə], they become one long consonant as observed in the case of *used to* above and it becomes [want:ə], though it may be in fact [wantə] without a long consonant because *to* is unstressed. Then, the processes given in Table 1 apply ([wantə] \rightarrow [wātə] \rightarrow [wārə] \rightarrow [wārə]).

However, *to* contraction is lexically governed in that similar phonological contexts to *want to* do not necessarily trigger contraction as seen in (9) (Jaeggli, 1980; Postal & Pullum, 1978).

(9) a. I was wont to/*wonna take the bus to school.b. I went to/*wenna Boston.

The difference in parts of speech (and thus receiving different degree of stress) as well as lexical frequency might influence such distinction (see Shockey, 2003, for a discussion about factors influencing reduction in connected speech).

Different phonological processes were discussed here for the derivation of *wanna, usta,* and *'s.* However, these are certainly not sufficient to account

for these contraction phenomena. If we hypothetically claim that as long as the phonological conditions are met, the contraction takes place, then why do we observe such a contrast given in (1) through (3)? In the next section, different proposals about syntactic factors influencing these phenomena will be critically examined.

Syntactic Factors

Contraction phenomena have been frequently discussed in the syntactic literature. In this section, I will review various approaches proposed since 1970 to the three contraction phenomena under investigation here and critically discuss each approach.

First Analyses of to Contraction and Contraction of Auxiliary

Both *to* contraction and the contraction of auxiliary (*be*) were examined in Lakoff (1970). Lakoff critiqued the then-dominant assumption in transformational grammar that phrase structure rules and transformational rules are strictly local, in that "they define well-formedness conditions on individual phrase-markers and on pairs of successive phrase-markers in a derivation" (p. 627). He proposes that global rules are required which "state well-formedness conditions on configurations of corresponding nodes in nonadjacent trees in a derivation" (p. 628). Contraction phenomena, such as (10), illustrate his argument in favor of global rules. (The following sentences were taken from Lakoff (1970, p. 631).)

- (10) a. There's this much wine in the bottle
 - b. I wonder how much wine there is/*'s in the bottle.

Lakoff accounts for the contrast as follows. In (10b), an NP was deleted from the position following *be* by a transformational rule, and this prohibits the contraction. He also explains that the disallowance of *wanna* contraction, which was observed by Larry Horn, is similar to the contraction of auxiliary: There is an intervening NP between *want* and *to*, which blocks the contraction.

King (1970) focuses on the contraction of auxiliary. He notes that the contraction of auxiliary cannot be accounted for simply by phonological factors, and one needs to consider syntactic factors as well. He simply raises the issue, without proposing any specific solutions.

Trace Theory Accounts for to Contraction and Contraction of Auxiliary

Among subsequent proposals to Lakoff (1970), an influential proposal is the trace theory (Chomsky & Lasnik, 1977, 1978). Chomsky and Lasnik assume that the contraction occurs when there is no trace (*t*) intervening between *want* and *to* (1977). Thus in (1a), repeated in (11a), where PRO, not a trace, is intervening between *want* and *to*, the contraction is not blocked, as shown in (11b).

(11) a. They want to/wanna go now.b. They want PRO to go now.

On the other hand in (1b), repeated in (12a), a trace, or a *wh*-trace to be more precise, is intervening between *want* and *to*, blocking contraction as (12b) shows.

(12) a. Who do they want to/*wanna go now?b. Who do they want *t* to go now?

These cases suggest that a *wh*-trace blocks contraction while PRO does not. The trace effectively encodes the original position of a moved element and thus fills a similarly explanatory function to global rule conditions. The key here is that both *wh*-trace and PRO are "a phonetically unrealized syntactic element" and yet they behave differently (Postal & Pullum, 1978, p. 4). What makes them behave distinctively?

Another asymmetry considered in contraction phenomena is NP-traces vs. *wh*-traces as exemplified in (2a), repeated here as (13a), and in (12a), repeated here as (14a) (Lightfoot, 1976).

- (13) a. He used to/usta go often.
 - b. He used t to go often.
- (14) a. Who do they want to/*wanna go now?b. Who do they want *t* to go now?

The surface representation of (13a) is (13b) on the assumption that *used to* is a raising verb (Postal & Pullum, 1978). An NP-trace does not block contraction in the raising construction as in (13), but a *wh*-trace prevents *want* and *to* from contraction as in (14). This analysis brings up the question of what distinguishes those two traces in terms of their effect on *to* contraction. Boeckx (2000) recognizes these two asymmetries as problems, that is, (a) the asymmetry between PRO and *wh*-trace for *to* contraction, and (b) the asymmetry between *wh*-trace and NP-trace for *to* contraction.

There is another asymmetry to consider here. As (3a), repeated in (15a), shows, the contraction of auxiliary is possible across a *wh*-trace, while *to* contraction is not permitted across a *wh*-trace, as in (14b) above.

(15) a. Who do you think is/'s there?b. Who do you think *t* is there?

Barss (1995) focuses on this asymmetry observed in *wh*-trace between *to* contraction and the contraction of auxiliary. These asymmetries can be summarized as in Table 2 (Barss, 1995; Boeckx, 2000).

to contraction		Auxiliary contraction	
PRO	Contraction not blocked	Not applicable	
NP-trace	Contraction not blocked	Not applicable	
wh-trace	Contraction blocked	Contraction not blocked	

Table 2

Asymmetries	Observed i	n Contraction	Phenomena
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Jaeggli (1980) offers an answer to the questions of the asymmetries observed within *to* contraction—namely the asymmetries observed by Boeckx (2000)—by proposing that Case-marked traces block contraction. In (11), PRO is not Case-marked, and similarly in (13), the NP-trace does not receive Case because it is a raising construction (the NP *he* moves to [Spec, IP] to get Case). In (14), however, the *wh*-trace receives Case, and thus contraction is blocked according to Jaeggli (1980).

Although this proposal accounts for the facts of *to* contraction in (11), (13), and (14), it poses several problems. First, in the Minimalist Program, PRO receives (null) Case; thus it is Case-marked (Barss, 1995; Boeckx, 2000). Boeckx (2000) attempts to provide a solution to this problem by making refinements to the Minimalist Program. He argues that A- (NP-) movement does not leave a trace while \bar{A} - (*wh*-) movement does. Furthermore, following Hornstein's (1999) proposal which views "control as a subcase of raising" (Boeckx, 2000, p. 360), Boeckx claims that PRO is merely an NP-trace (i.e., no trace, following his assumption that A-movement leaves no trace). However, this claim still leaves the problem of possible contraction over *wh*-trace, and this is explained next.

The second problem that is posed by Jaeggli's account is that, as (15), repeated here as (16), shows, the contraction of auxiliary is still permitted with a *wh*-trace intervening between *think* and *is*.

(16) a. Who do you think is/'s there?b. Who do you think *t* is there?

Contraction of the auxiliary has received attention in the syntactic literature, as *to* contraction has (e.g., Kaisse, 1983; Schachter, 1984), but the analyses have revealed a contrast with *to* contraction in that the contraction of the auxiliary is possible across the *wh*-trace while *to* contraction is not. This is the asymmetry observed by Barss (1995), as briefly stated above. This is one piece of evidence that Wood (1979) relies on to claim that *to* contraction and the contraction of auxiliary are separate processes. Bresnan (1971) suggests

that tensed *be*-contraction is procliticization, not encliticization, and thus the contraction depends on what follows the auxiliary, not on what precedes it, unlike in to contraction. Yet, Bresnan's proposal is not without criticism (e.g., Kaisse, 1983).

Despite these attempts to provide solutions, both Barss and Boeckx have missed one crucial datum which makes the case more complicated. In cases like (2b), repeated in (17a), the trace is an NP-trace and it blocks contraction, unlike (13), repeated as (18).

- (17) a. That is used to/*usta clean table tops.
 - b. That is used NP-*t* to clean table tops.
- (18) a. He used to/usta go often. b. He used NP-*t* to go often.

Table 3

Jaeggli's (1980) Case-marking proposal cannot account for this instance because in both (17) and (18), the NP-trace is not Case-marked; that is, NPtrace in (18) does not receive Case because it is a raising construction, and NPtrace in (17) does not either, because it is a passive construction (Haegeman, 1994). Thus, Table 2 can be revised as follows.

to contraction Auxiliary contraction PRO Contraction not blocked Not applicable Contraction not blocked (e.g., (18)) NP-trace AND Not applicable Contraction blocked (e.g., (17)) wh-trace Contraction blocked Contraction not blocked

Revised Asymmetries Observed in Contraction Phenomena

Lightfoot (1976) identifies this asymmetry exemplified in (17) and (18), but since he did not assume extraction of an element in (18), the problem was not raised. Postal and Pullum's (1978) discussion about these two constructions is limited to a claim that these two elements, *used* in (17) and *used* in (18), are simply two separate lexical items. Therefore in the trace theory account, the asymmetry between (17) and (18) still remains in question.

Alternative Syntactic Accounts

In this section, I will review other proposals that attempt to account for contraction phenomena. Most of the proposals discussed in this section are concerned with *to* contraction. With respect to the contraction of auxiliary, Kaisse's (1985) proposal will be examined here, but the other relevant alternative accounts will be discussed in the next section which explores the interaction between syntax and phonology.

Kaisse (1985) takes the position that the contraction of auxiliary is encliticization, as opposed to Bresnan's (1971) position that it is procliticization. Kaisse's proposal is that "auxiliaries may encliticize only onto a constituent that they govern" (p. 47). Here, she adopts a simple definition of government: "The head of any phrase will be said to govern all the phrases (= X^{max}) within its projections, and to c-command every element within those phrases" (p. 47). However, this cannot account for (19) in which *is* cannot govern *think* because there is at least one maximal projection intervening between the two (e.g., IP of an embedded clause), and yet the contraction is permitted.

(19) Who do you think $[_{IP} is/s there]?$

Aoun and Lightfoot (1984) also rely on the government condition to account for *to* contraction. However, as Barss (1995) points out, their proposal is "too restrictive" in that it predicts the blocking of contraction in sentences in which contraction is actually allowed, such as the following.

(20) They $[_{VP}$ want $[_{CP}[_{IP} PRO [_{I'} to [_{VP} go now]]]]]$.

Following Aoun and Lightfoot, want must govern to for the contraction to

take place, but *want* does not govern *to* in (20) with a CP intervening between the two, and yet the contraction is possible.

Postal and Pullum (1978, 1982) reject Chomsky and Lasnik's (1977, 1978) idea by claiming that "adjacency is *not* the primary prerequisite to contraction" (Postal & Pullum, 1982, p. 130). They present a number of counterexamples that show incorrect predictions about contraction based on Chomsky and Lasnik, such as the following (Postal & Pullum, 1982, p. 126).

(21) a. I want to /* wanna dance and to sing.

b. I don't need or want to/*wanna hear about it.

Postal and Pullum propose an alternative account in relational grammar. Their key claim is that there should be subject sharing between the main clause and the complement in order for the contraction to take place, as (22a) represents.

- (22) a. They want to/wanna go now.
 - b. Who do they want to/*wanna go now?

In (22a), the subject of the main clause and that of the complement are the same, and therefore contraction is allowed. On the other hand, (22b) does not meet this condition, thus contraction is prohibited.

In contrast to the purely syntactic analyses provided so far, Bolinger (1981) suggests that *wanna* "resembles such forms as *notwithstanding, nevertheless, underway*," in that it is "something slightly different from the sum of its former parts [i.e., *want to*]" (p. 200). This indicates that *wanna* is a lexically separate unit from *want (to*). Selkirk (as cited in Postal & Pullum, 1978) and Chomsky and Lasnik (1978) also recognize the possibility of *wanna* as a lexicalized item.

Pullum (1997) concurs that *wanna* and *want* are lexically distinct, but he proposes that these two lexemes are "related via derivational morphology" and no syntactic operations are involved (p. 83). To develop this idea, he relies on the theory of headed morphological structures. In a headed morphological

structure, inflectional affixes attach to a head, not to a derivational affix. His key claim is that in the case of *to* contraction, for example, *to* is a derivational postverbal element attaching to the head verb, and this derives *wanna*, *hafta*, and so forth. This is evident in the contracted forms taking inflectional affixes. For example, when the contracted form of *have to*, *hafta*, takes the third person singular form, the operation is *have-s-to*, not **have-to-s*. This derives *hasta*. If this is correct, however, language learners, both L1 and L2, will have to add more items to their lexicon (Kweon, 2001).

Interaction of Syntax and Phonology

Although many of the proposals attempting to account for contraction phenomena have been syntactically motivated, some scholars have approached the phenomena as an interaction between syntactic and phonological constraints. This seems to be more prevalent in accounts of the contraction of auxiliary.

Selkirk (1984) explicitly states that the contraction of auxiliary involves rules in syntax-phonology mapping. In her proposal, *to* in *to* contraction is syntactically enclitic, and it is (a) stressless and (b) juncturally close to the host verb. In (23), contraction is blocked because of the violation of the latter condition (i.e., being juncturally close to the preceding element).

(23) Who do they want $_$ to /* wanna go now?

The same configuration seems to apply to the contraction of auxiliary, but there is one crucial difference between *to* and auxiliaries in terms of contraction. As presented in (24), the contraction of *is* is blocked at such positions as "phrase-final or pre-focus (though some might call them preempty category positions)" (Selkirk, 1984, p. 401). (The following sentence was taken from Selkirk (1984, p. 401).)

(24) Tell me where the party is/*'s $_$ tonight.

Selkirk attempts to account for this instance by claiming that the preceding

NPs matter. This is similar to Kaisse's (1983) proposal in which she claims that the preceding element must be an NP in order for auxiliaries to contract. Selkirk's explanation is that the preceding NP should be a single personal pronoun. Although this applies to auxiliaries such as *will, have, are,* and *am* (e.g., **The foci've been altered.*), Selkirk admits that the contraction of *is* can occur when the preceding NP is not a single personal pronoun (e.g., *Mary's leaving soon*) (p. 404), and provides an ad hoc explanation for this. However, her explanation cannot account for the ungrammaticality of the following sentence.

(25) Who do you think he is/*'s?

In (25), the preceding NP is a single personal pronoun (*he*); nevertheless the contraction is blocked. Kaisse (1983) cannot account for this either.

Wilder (1997) adopts both Bresnan's (as cited in Wilder, 1997) position that the contracted auxiliaries are proclitics and Kaisse's (1985) position that they are enclitics, but regards the procliticization as a syntactic operation and encliticization as a phonological operation. He claims that procliticization feeds encliticization in this contraction phenomenon in that "contraction that survive (i) are subject to (ii)" (p. 353).

(26) (i) proclisis

(ii) late enclisis rule

In the sentence (3a), repeated in (27), the auxiliary *is* is proclitic to *there* at one stage of derivation, but enclitic to *think* phonologically.

(27) Who do you think is/'s there?

The idea that encliticization is phonological can be supported by the following evidence. When the contraction of auxiliary occurs, the pronunciation of the contracted auxiliary is determined by its preceding sound (e.g., *Mary's* [z] / *Pete's* [s] *crazy*) (Wilder, 1997, p. 326).

The proposals discussed may be right in that they attempt to account for

the contraction phenomena from both syntactic and phonological points of view. However, each proposal focuses on particular contraction phenomena, and faces problems when generalized to other contraction phenomena. This problem also arises in the purely syntactic accounts, which were reviewed earlier. Researchers continue to investigate these issues (e.g., Lawson, 2012; Sato, 2012), and more refined analyses may be needed to accurately illustrate the phenomena.

Conclusion

Various theoretical accounts of the contraction phenomena, particularly *to* contraction (*wanna* and *usta*) and the contraction of auxiliary (*is*), were critically discussed in this paper. It is apparent that none of these accounts is without criticism. Nevertheless, every proposal sheds light on various instances of contraction. As linguists continue to analyze the phenomena from syntactic and phonological standpoints, we hope to capture a clearer picture of these phenomena.

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