

# Contraction

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## 1 Introduction

*Contraction* is the term traditionally used to describe phenomena where one word is reduced and apparently affixed to another, as when *have not* is realized as *haven't*, or *we have* as *we've*. It should be noted that this is only a descriptive term and does not presuppose any particular type of analysis. Indeed, whether a particular type of contraction is to be analyzed in morphological, phonological, or syntactic terms is often a point of contention. Here, we will examine some contraction phenomena

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that have been thought to relate to syntax (i.e. those that appear to result from or interact with syntactic processes).

## 2 *Wanna*-contraction

### 2.1 The basic paradigm

The most well-known such contraction by far is that in which *want to* is realized as *wanna*. This phenomenon first caught the eye of syntacticians because of facts like (1), first discussed by Lakoff (1970).

- (1) a. Who do you wanna dance with?  
 b. \*Who do you wanna dance?

The contrast between (1a) and (1b) here is surprising at first, because they would seem to result from the contraction of the *want to* sequences in (2a) and (2b), respectively, which are both fine.

- (2) a. Who do you want to dance with?  
 b. Who do you want to dance?

The most obvious difference between (2a) and (2b), though, is that the *wh*-phrase originates as the object of *with* in (2a), and as the subject of *dance* in (2b). If we assume that *want* and *to* may contract only when they are adjacent, and that a trace or copy of *who* intervenes between *want* and *to* in (2b) but not in (2a), then the contrast follows. This is the thrust of the analysis in Chomsky (1976), and it is still presented in many basic textbooks as an argument that the extraction site of A'-movement is represented in the syntactic structure (e.g. Napoli 1993; Radford 1997).

Although very appealing, this analysis is less straightforward than it might seem. First, one could argue that there is also an intervening trace in (2a), since by successive cyclic movement the *wh*-phrase will stop in the embedded SPEC of CP (between *want* and *to*) before moving to its surface position. Second, it is standardly assumed that there is a PRO subject in the embedded clause in (2a), and this would appear to make *want* and *to* non-adjacent. Third, traces of A-movement do not seem to block similar types of contraction. This may be seen in (3), where the fact that *John* might originate in a position between *going* and *to* does not prevent contraction of these to *gonna*.

- (3) a. John is going to dance with Mary.  
 b. John is gonna dance with Mary.

Thus, simply saying that *wanna*-contraction is sensitive to the presence of empty categories is not sufficient, since we have seen that only some empty categories appear to block contraction. As Jaeggli (1980) pointed out, those that do are Case-marked (in terms of Government and Binding Theory). This, of course, opens up the question of why contraction would be sensitive to the presence of an

intervening Case-marked empty category but not to Caseless empty categories such as the intermediate *wh*-trace, *PRO*, and NP-trace. For the facts seen so far, however, Jaeggli's (1980) distinction based on Case seems to yield the right results.

## 2.2 Fuller view of data

The picture is complicated by the fact that *wanna*-contraction is sometimes blocked even when there is no intervening Case-marked trace, as noted by Postal and Pullum (1982). Contraction of *want to* is impossible in all of the following sentences, for example.

- (4) a. I don't want to flagellate oneself in public to become standard practice in this monastery.  
 b. It seems like to want to regret that one does not have.  
 c. I don't want anyone who continues to want to stop wanting.  
 d. One must want (in order) to become an over-effective consumer.  
 e. I want to dance and to sing.  
 f. I don't need or want to hear about it.

In (4c) in particular, there is arguably no empty category at all intervening between *want* and *to*, but in none of them is there an intervening Case-marked trace. What, then, is the difference between (2a), where contraction is possible, and (4), where it is not? In (2a), *to* is in I of the complement clause of *want*, but this configuration does not obtain in any of the examples in (4). This may be seen straightforwardly in (4a)–(4d). In (4e) it appears that *to* is in an I embedded within a coordinate structure, and in (4f) *want* is part of a coordinate structure.

## 2.3 Using government or multiple spell-out

The generalization that now emerges is that contraction between *want* and *to* is possible only when *to* is in the main I of the complement of *want*. This sort of head-complement requirement between the verb *want* and the *to* of its complement clause is reminiscent of the government relation in the Government-Binding framework, and it is thus tempting to formulate the conditions on *wanna*-contraction in terms of this relation (i.e. by saying that for *want* and *to* to contract, *want* must govern *to*) (see Aoun and Lightfoot 1984; Lobeck and Kaisse 1984; Bouchard 1986).

The basic intuition behind government-based accounts, that *want* and *to* must be in a kind of head-complement relation, is clear enough, but getting the technical details to work out right is more challenging. Under standard assumptions about clause structure and government, in fact, *want* does not govern *to* in ordinary sentences where contraction is possible (e.g. (1a)), the reason being that there is an intervening CP maximal projection that will prevent *want* from governing IP and its head *to*. Under standard Government-Binding assumptions about *PRO*, we want this CP to be present, since otherwise the *PRO* subject of the embedded clause would be governed illicitly. Of course, there are a number of ways one might address these difficulties. Barss (1995), for instance, adopts the view that there is no intervening CP in control clauses and that *PRO* can be governed.

More recently, Sato (2012) presents an analysis that is in a similar spirit, but without the appeal to government. Adopting a phase-based, multiple spell-out framework, Sato (2012) proposes that *want* and *to* may contract when they are both within the same spell-out domain. Crucially, Sato (2012) argues that in the subject control environment, *want* takes a TP complement. This TP is not a phase and is not spelled out on its own, so its *to* head is in the same spell-out domain as *want* and is thus eligible for contraction. In non-control environments, *want* does take a CP complement. This is a phase and is spelled out on its own, so *want* and *to* end up in different spell-out domains and may not contract. In this way, the contrast between (1a) and (1b) is accounted for. With a few auxiliary assumptions, the account may be extended to cover the data in (4) as well.

What the above government and multiple spell-out analyses have in common is that *want* and *to* may contract when they are both adjacent and in a specific structural relation. This relation is destroyed by the presence of an intervening CP (which either blocks government or triggers a new spell-out domain). Such a CP is claimed to be present in (1b) but not in (1a), thus accounting for the contrast in contraction there, and the required structural relation is absent in (4), thus accounting for the impossibility of contraction there.

## 2.4 Using restructuring

It has been known for a long time that there are some significant similarities between *wanna*-contraction and the phenomenon known as *restructuring* (or *clause reduction*), and analyses making use of this fact have been developed that either complement or are in opposition to those in section 2.3 that depend on the presence of an intervening CP to prevent contraction (e.g. Frantz 1978; Postal and Pullum 1978; Goodall 1991; Roberts 1997). An example of restructuring is given in (5), from Spanish.

- (5) Juan lo quiere ver.  
 Juan it want see  
 'Juan wants to see it.'

Despite the presence of two verbs here, sentences of this type display some properties of a single clause, such as the clitic-climbing seen in (5).

One obvious similarity between restructuring and *wanna*-contraction is that they both affect the verb *want*. This fact in itself is not very impressive, but it becomes more so if one considers that there are other verbs that have been argued to participate in contraction with *to* that is of the same type as *wanna* (see e.g. Pullum 1997):

(6)	<i>Verb</i>	<i>Contracted Form</i>	<i>Example</i>
a.	go	gonna	I'm gonna dance.
b.	used	usta	I usta dance.
c.	have	hafta	I hafta dance.
d.	got	gotta	I gotta dance.
e.	ought	oughta	I oughta dance.
f.	supposed	suposta	I'm suposta dance.

These verbs are either aspectual, as in (6a)–(6b), or modal, as in (6c)–(6f) and *want*. These turn out to be two of the major classes of verbs that participate in restructuring.

This similarity in verb classes could of course just be a coincidence, but when considered in combination with a number of significant syntactic similarities, this seems less likely (for discussion, see Goodall 1991). We have seen, for instance, that contraction is only possible when *to* is in the complement clause of *want*, and likewise restructuring is only possible between a verb and its complement clause. Both phenomena are also restricted to control or raising structures (i.e. neither is possible when the embedded subject is not coreferential with the matrix subject; cf. (1b) for contraction). In addition, the behavior of contraction in coordinate structures that we saw in (4e)–(4f) is replicated exactly with restructuring.

If these similarities are in fact significant, then of course one would want to know why they obtain. This question is particularly intriguing since at a descriptive level, contraction and restructuring would not seem to have much in common in terms of how they operate. One possible account is given by Roberts (1997), who argues that restructuring is the result of raising embedded T into the matrix clause through head movement. Assuming that *to* is generated in T, contraction could then be seen as the same process. This then gives us an immediate account of the cases in (4). Since contraction is now the result of syntactic head movement, it is disallowed here for whatever reasons generally prevent movement out of a subject, adjunct, or coordinate structure, or into a subject or coordinate structure.

This also allows us to explain the contrast between (1a) and (1b). With the Exceptional Case-Marking (ECM) use of *want*, it is sometimes assumed that there is a null version of *for* in C, which provides case for the embedded subject. If true, this complementizer should block raising of *to* to the matrix clause, which thus accounts for the ungrammaticality of (1b) (though under other analyses of ECM, the account is less clear). (1a), however, is not an ECM structure, so C is not filled and nothing should prevent raising of *to*.

This analysis thus allows us to account for the constraints on contraction and its fundamental similarities with restructuring in an elegant and relatively simple way. In fact, for reasons having to do with the theory of adjunction that Roberts (1997) is assuming, he proposes that *wanna* itself is formed in the lexicon, so there is actually no syntactic raising of *to* as such. Instead, *wanna* is endowed with a restructuring feature that must be checked by T of the embedded clause. Given that this checking is accomplished by raising of the embedded T, the account of the constraints on *wanna*-contraction just sketched remains basically unchanged.

## 2.5 Using subcategorization

Under Roberts' (1997) checking analysis, the T embedded under *wanna* must be null, since overt *to* is neither adjoined to *wanna* nor present in the embedded clause, and the embedded clause cannot be tensed. Thus, we can say that *wanna* subcategorizes for a kind of bare infinitive. This may seem like an innocent conclusion, but in fact it can account for much of the data seen so far in and of itself, if we make the standard assumption that a head may subcategorize only for a complement. Thus, the fact that contraction is disallowed in (4) now follows. In (4a)–(4d), the clause to

the right of *want* is not a complement of *want*, so even if we used *wanna* in place of *want*, the clause to its right would not be licensed as a bare infinitive. In (4e), replacing *want* with *wanna* would mean that both conjuncts would have to be bare infinitives, not just the first; and in (4f), using *wanna* would result in a conjunction of verbs with different subcategorization requirements, which we would expect to be ungrammatical. Specifically, only *wanna* would subcategorize for a bare infinitival clause.

By saying that *wanna* subcategorizes for a bare infinitive, then, as appears to be necessary under Roberts' (1997) analysis, we can straightforwardly account for the lack of contraction in (4) without appealing to raising of the embedded T. This is, in fact, the analysis that Pullum (1997) proposes: *wanna* is related to *want* by derivational morphology, and it subcategorizes for a bare infinitive.

More specifically, in order to account for the ungrammaticality of (1b) under a subcategorization-only analysis, we have to say that *wanna* subcategorizes for a control bare infinitival clause, with a PRO subject (see Pullum 1997). Such a specification is independently needed to account for impossible contractions such as (7).

(7) \*You wanna Bill eat the pie.

What remains unexplained under this account, though, is why *wanna* should be restricted in this way. It cannot be that overt subjects are disallowed in principle in bare infinitival clauses, because verbs like *make*, for example, allow them, as in (8).

(8) Bill made it rain.

One possible solution comes from Roberts' (1997) analysis, which supplements subcategorization with raising of embedded T. The ungrammaticality of (1b) and (7) then follows from the assumption that these ECM cases require a filled C in order to license case on the embedded subject. If C is filled, then raising of T to matrix V is blocked, and contraction is impossible (though, as above, it is unclear whether a similar solution is available under other analyses of ECM). Thus, there may be some advantage to adopting an account that makes use of more than just subcategorization, in that we can then account for the impossibility of an overt embedded subject with *wanna* without stipulating it.

Whether or not we supplement it with raising of the embedded T, the subcategorization account of *wanna* predicts that we should find no evidence for the presence of *to* in the embedded clause. Pullum (1997) points out that in principle, we should be able to look for such evidence by examining the behavior of *wanna* versus *want to* in constructions where an overt element in T is required. VP ellipsis (as opposed to null complement anaphora) and VP fronting are two such constructions. Examples of the latter are given in (9).

- (9) a. I said I'd wash the dishes, and wash them I did.  
 b. \*I said I'd help wash the dishes, and wash them I helped.

If *wanna* involves no overt element in the embedded T, we would then predict that (10b) would be worse than (10a).

- (10) a. I said I'd feel like climbing the mountain, and climb it I want to.  
 b. I said I'd feel like climbing the mountain, and climb it I wanna.

Although (10a) appears to be better than (10b), Pullum (1997) reports that judgments on sentences like these are so unclear and inconsistent to be of little use (and similar results obtain with examples involving VP ellipsis), so at this point it is an open question whether it is possible to find evidence for or against the presence of *to* in the clause embedded under *wanna*.

## 2.6 Adjacency again

One interesting property of the accounts of Roberts (1997) and Pullum (1997) just examined is that adjacency between *want* and *to* plays no role in the analysis. That is, the only restriction on *wanna* is that its complement clause be of the appropriate type and, for Roberts (1997), that the T of this complement clause raise to check the restructuring feature of *wanna*. Since they assume that *wanna* is formed in the lexicon, there is no requirement, nor could there be, that for *wanna* to be well-formed, the non-*wanna* version of the sentence must have *want* and *to* in adjacent positions.

The data that originally motivated such a requirement, such as (1) and (7), can now be accounted for in a different way, as we have seen. For Pullum (1997), (1b) and (7) are out because *wanna* subcategorizes for a bare infinitival clause with a PRO subject, and for Roberts (1997), they are out because T of the embedded clause is unable to raise to *wanna*. The subject of the embedded clause requires a filled C for Case reasons, and this blocks movement of T to the matrix V.

Thus, the role that (1b) played historically as a kind of unusually concrete evidence for the existence of traces is gone under these analyses. An account of (1b) may still crucially involve a trace (although there are ways to do this without a trace also; for discussion, see Pullum 1997), but only in the way that many other sentence types do. That is, positing a trace in (1b) may allow us to give a unified account of (1b) and (7), but we cannot say under these analyses that it is the trace itself that directly blocks the contraction.

This point is of more than historical interest. Recall that one of the problems facing an adjacency analysis of *wanna*-contraction is that an A'-trace disrupts the adjacency of *want* and *to* but PRO does not (as seen, for instance, in the contrast in (1)). One possible response to this problem is to say that if we assume that the adjacency analysis is correct and that A'-trace and PRO are present in the syntactic structure, then it must be that only A'-trace intervenes between *want* and *to*. This amounts to saying that A'-trace raises to the specifier of an inflectional head but that PRO does not, or at least does not need to. This is the line of argument adopted by Baltin (1995), who proposes that PRO remains in a VP-internal position. Under this analysis, then, *wanna*-contraction can provide valuable evidence regarding the surface position of PRO.

Another possible response to the problem for an adjacency analysis of intervening PRO is to assimilate control to A-movement, as in Hornstein (1999), and to assume that A-movement does not leave a trace or copy. This is essentially the analysis of Boeckx (2000), who shows that adopting these assumptions allows one to say that *want* and *to* are indeed adjacent in (1a) and (3), but not in (1b), where the

A'-trace intervenes, just as in the classical analysis. This solves the problems of PRO and NP-trace for an adjacency analysis that we examined earlier in this chapter (and see Boeckx (2000) for a brief discussion of how facts like (4) might be handled under his analysis).

So far, then, we have seen analyses such as Roberts (1997) and Pullum (1997), which account for the “adjacency” facts of *wanna*-contraction (i.e. (1) and (7)) without actually appealing to adjacency as part of the analysis, and analyses such as Baltin (1995) and Boeckx (2000), which claim that *wanna* is possible only when *want* and *to* are adjacent. To decide between these two approaches, one could look for cases of non-adjacent contraction (i.e. cases where *wanna* is possible but where *want* and *to* would not be adjacent in the corresponding sentence without contraction). Such cases might be expected to surface if Roberts (1997) and Pullum (1997) are correct, but they are clearly predicted to be impossible under Baltin’s (1995) and Boeckx’ (2000) accounts. One possible example of such a case is the *Langendoen dialect* noted by Postal and Pullum (1978) and discussed more recently by Pullum (1997). In this dialect, reportedly spoken by Terence Langendoen, (11a) is possible but (11b) is not.

- (11) a. %I wanna very MUCH go to the game this evening!  
 b. \*I want to very MUCH go to the game this evening!

The adverbial expression *very much* must clearly appear within the matrix clause (i.e. to the left of *to* in (11b)). Thus, the possibility of *wanna* in this dialect is very surprising if we assume an adjacency analysis. With an analysis such as Roberts’ (1997) or Pullum’s (1997), however, (11a) is straightforward. What would seem more difficult, in fact, is explaining why most speakers do not accept it. Pullum (1997) points out, though, that the ungrammaticality of (11a) for most speakers is probably due to the fact that in general, verbs must be adjacent to their bare infinitival complements (for whatever reason). *Wanna* then falls into the general pattern.

The contrast in (11) thus in principle provides interesting evidence in favor of a non-adjacency analysis of *wanna*-contraction, but it is hard to be fully confident that this contrast actually exists. A more complete examination would require using a variety of adverbial expressions, but a preliminary exploration suggests that the same (slight) contrast occurs with others beyond *very much*, as seen in (12), for example.

- (12) a. ??I wanna with all my heart go with you.  
 b. \*I want to with all my heart go with you. (cf. I want with all my heart to go with you.)

Still, the judgments seem subtle at best, so neither (11) nor (12) is as decisive as one would like.

## 2.7 Prosodic accounts

We have now seen three basic approaches to an analysis of *wanna*-contraction: (i) adjacency approaches, where *wanna*-contraction applies when *want* and *to* are adjacent, unless certain maximal projections intervene (e.g. Barss 1995; Sato



2012); (ii) restructuring approaches, where *wanna* is possible only in environments where *want* and the complement clause undergo restructuring (e.g. Goodall 1991); and (iii) subcategorization approaches, where *wanna* is listed in the lexicon as subcategorizing for a bare infinitival control clause (e.g. Pullum 1997; Roberts 1997). As we have also seen, the conflict among these approaches involves how they fare not just empirically but also conceptually. That is, we expect a fully adequate analysis of *wanna*-contraction to show that the various restrictions that we have seen follow naturally and without stipulation from other, independently needed properties of the grammar. In this regard, one can wonder whether the difficulty that the field has had historically in finding such an analysis has resulted from trying to frame the generalizations in specifically syntactic terms.

Some recent analyses, such as Ackema and Neeleman (2003) and Anderson (2008), have tried to shift the focus of the analysis of *wanna*-contraction from syntax to prosody. On the one hand, this seems a natural move, given the fact that *wanna*-contraction involves some sort of phonological reduction, at least in descriptive terms. On the other hand, however, many of the restrictions on *wanna*-contraction give the appearance of being squarely syntactic, as we have seen.

The core of these prosodic analyses rests on the very natural idea that *wanna* is possible only when *want* and *to* are adjacent within the same prosodic phrase. This immediately accounts for (4a)–(4d), in that there is a clearly felt prosodic break between *want* and *to* in these cases, indicating the end of one prosodic phrase and the beginning of another. Perhaps more surprisingly, this approach appears to make the proper contrast between (1a) and (1b) as well. That is, there is a prosodic break between *want* and *to* in (2b), but not in (2a) (the non-contracted versions of (1b) and (1a), respectively), and we thus correctly predict that contraction will be impossible in (1b)–(2b). Both Ackema and Neeleman (2003) and Anderson (2008) propose that the prosodic break in this case follows from a general principle in which extraction sites trigger the beginning of a new prosodic phrase to their right. This basic approach is less immediately able to account for the restrictions involving coordination in (4e)–(4f), although Ackema and Neeleman (2003) do provide some ideas on how these cases might be dealt with within the analysis.

For the most part, then, the prosodic analysis has the same empirical coverage as the best of the syntactic analyses. As far as is known, the environments in which *want* and *to* are in the same prosodic phrase are the same as when *want* takes a control clause complement headed by *to*, so the predictions made by prosodic and syntactic analyses appear to be completely overlapping (though this, of course, does not rule out the possibility of empirical differences being discovered in the future). Conceptually, however, the prosodic analyses do seem to have an advantage. The basic generalization of when *wanna*-contraction is possible (i.e. when *want* and *to* are adjacent in the same prosodic phrase) is expressed very simply and naturally in prosodic terms, whereas capturing this same environment in syntactic terms does not lead to a formulation that is as clearly simple and natural.

Notice also that although prosodic structure is largely derived from syntactic structure (for discussion, see Kratzer and Selkirk 2007), it may not be isomorphic to it. As Anderson (2008) discusses, there are a number of factors that cause prosodic and syntactic structure to diverge, so in principle, it should be possible to determine whether some process is more sensitive to one or the other. The prosodic break that

occurs after gaps, for instance, has no counterpart in syntactic structure, so to the extent that the analysis of a phenomenon requires reference to this break, this would constitute evidence for an analysis in terms of prosodic structure.

## 2.8 New sources of evidence

Much of the literature on *wanna*-contraction has been motivated by the striking contrast between (1a) and (1b). To my knowledge, no one has questioned the general existence of this contrast, but there have been occasional suggestions that there are “liberal dialect” speakers who do not have it (e.g. Postal and Pullum 1982; Carden 1983; Pullum 1987). Unfortunately, there appear not to have been any systematic studies of such individuals, but recent experimental work suggests that they do in fact exist. Zukowski and Larsen (2011) report the results of a production study with 14 adults in which the participants produced *wanna* in illicit environments like (1b) at a rate of 10.6 percent, compared to a rate above 50 percent in environments like (1a). This result clearly confirms the basic contrast between the two environments that has been discussed so often, but it also seems odd, in that if (1b) were truly ungrammatical, one might expect a contraction rate closer to 0 percent. A large number of the instances of *wanna* in (1b) environments were produced by two of the participants, so there may be something to the idea of liberal dialects (or at least liberal speakers) with regard to *wanna*-contraction, though this needs to be probed more deeply. Kweon and Bley-Vroman (2011) find similar results in a different type of production study (though not, notably, in an acceptability study). Most analyses of *wanna*-contraction in recent years have not discussed or acknowledged these liberal varieties, but if they exist, they could clearly have profound implications for what types of analyses are possible.

*Wanna*-contraction has played a prominent role in discussions of learnability and poverty of the stimulus arguments for innate linguistic knowledge. It is thus natural that it has been investigated in children, since the standard poverty of the stimulus arguments (e.g. Chomsky 1980) would suggest that children should obey adult-like restrictions on *wanna* as soon as they begin to produce it. Thornton (1990; see also Crain and Thornton 1998) argues that this prediction is correct, but a more recent study by Zukowski and Larsen (2011) calls this result into question. In their study, children do use *wanna* at a higher rate in environments like (1a) than in (1b), but they still produce *wanna* at a rate of 46.5 percent in the latter environment. This is much higher than the rate obtained with adults in the same study (see above), and it suggests that learning is required in order to begin to observe adult-like restrictions on contraction, a conclusion that is difficult to reconcile with the more classical view of *wanna*-contraction and learnability. Potentially, studies such as these with children could help decide between the competing analyses of *wanna*-contraction discussed earlier, though this possibility has yet to be fully exploited (for some relevant discussion, see Zukowski and Larsen 2011).

## 2.9 Conclusion

There is no consensus yet on the proper analysis of *wanna*-contraction, but as we have seen, new ways of exploring the phenomenon are emerging that may enable

us to achieve more satisfactory answers. Most earlier studies, for instance, took it for granted that *wanna*-contraction is essentially a syntactic phenomenon, and there are several competing analyses within this tradition, as we saw in detail in this chapter. Given more recent work, however, the larger question of whether the correct analysis lies within syntax or prosody (or some interplay between the two) has now become much more pressing. In addition, the current availability of new ways to explore the range of variation within the adult population and the developmental trajectory within the child population could offer very useful sources of evidence as we move forward.

### 3 Finite auxiliary contraction

#### 3.1 A comparison with *wanna*-contraction

The term *finite auxiliary contraction* is used to label the phenomenon in which finite auxiliaries (finite forms of *have*, *be*, and modals *will* and *would*) appear to contract with elements to their left, as in (13).

- (13) a. We've eaten the pie.  
 b. We're eating the pie.  
 c. We'll eat the pie.  
 d. We'd eat the pie.

A list of the fully contracted forms, as well as some common “intermediate” forms (to be discussed further in this chapter), is given in (14):

(14)	<i>Fully contracted form</i>	<i>Intermediate form</i>
has	's [z]	[əz]
have	've [v]	[əv]
had	'd [d]	[əd]
am	'm [m]	
are	're [r]	
is	's [z]	[əz]
will	'll [l]	[əl]
would	'd [d]	[əd]

This phenomenon resembles *wanna*-contraction in a couple of ways that could turn out to be significant. First, it involves the apparent contraction of an element in T with something to its left. Assuming that *to* is in T, this description would fit *wanna*-contraction as well. Second, the finite auxiliary cannot skip over a lexical subject to contract with something further to the left. This is seen in (15).

- (15) \*I don't know who's John going to the party with.

Here, *is* has contracted with *who* despite the intervening subject *John*, and the result is ill-formed. This is reminiscent of the restriction that we saw in (7), where *wanna*-contraction may not cross an intervening subject.

Although we saw earlier that both of these descriptions of *wanna*-contraction (that it involves contraction of an element in T and that it may not cross intervening material) are open to question, still the initial similarity between it and finite auxiliary contraction might give us hope that they could both receive a common analysis and that the additional data that auxiliary contraction could provide might resolve some of the open questions remaining in the analysis of *wanna*-contraction.

This hope is bolstered by the fact that finite auxiliary contraction, like *wanna*-contraction, cannot be reduced to purely phonological processes associated with rapid speech and must ultimately be lexically specified. As Kaisse (1985) points out, *would* contracts to 'd, but the very similar auxiliaries *could* and *should* do not. Similarly, auxiliary *has* contracts to 's, but main verb *has* does not. Finally, *have*, *will*, and *would* are able to appear in both finite and non-finite environments, but they are only able to contract when they are finite. (16) shows their inability to contract in non-finite environments.

- (16) a. \*The chairman may've gone home.  
 b. \*It would have been a pity to've given up syntax.  
 c. \*She wouldn't let me've gone there on my own.  
 d. \*Should we've helped him?

(Radford 1997)

In all of these cases, it is clear that more than segmental phonology is involved in determining when contraction is possible. This is also true with *wanna*-contraction, where the contraction appears to be possible only with verbs for which it is lexically specified.

However, a closer look shows that there are some significant differences between the two types of contraction. For example, *wanna*-contraction involves the apparent contraction of *to* with a specific word to its left, that is, the verb *want* or one of the handful of other verbs that behave similarly (see the list in (6)). The finite auxiliary, however, contracts with whatever is to its left. This means that the sort of subcategorization analysis that we saw earlier for *wanna*-contraction will be unworkable for finite auxiliary contraction. In fact, the finite auxiliary is able to contract with more than just subjects, as seen in (17).

- (17) Who's John going to the party with?

In this case, *is* has presumably raised to C, but it is still able to contract.

An even more striking difference is that finite auxiliary contraction does not behave like *wanna*-contraction in terms of the latter's most celebrated property: its inability to contract across an A'-trace. Whereas *wanna*-contraction is impossible in cases like (1b), finite auxiliary contraction is perfect in analogous cases such as (18).

- (18) Who do you think's dancing?

The well-formedness of (18) is particularly interesting given the fact that auxiliary contraction is not able to operate across an overt subject, as we saw in (15). Thus, the

parallelism between overt arguments and A'-traces that has drawn so much attention in *wanna*-contraction is not found in finite auxiliary contraction.

### 3.2 Sensitivity to syntactic factors

The above differences might make us somewhat pessimistic about finding a common analysis for these two types of contraction. In fact, they could even suggest that whereas *wanna*-contraction is clearly sensitive to a number of syntactic factors, finite auxiliary contraction seems largely oblivious to the syntax. For instance, we have seen that the finite auxiliary may contract with a variety of elements to its left (e.g. a subject in (13), an element in SPEC/C in (17), and a verb in (18)) regardless of the syntactic position. Moreover, finite auxiliary contraction is blocked by the presence of intervening overt material, but not by the presence of a trace (e.g. (15) and (18)). We might thus conclude that finite auxiliary contraction, unlike *wanna*-contraction, operates at some level unrelated to syntactic structure

However, the literature points to a number of ways in which this conclusion appears to be too hasty, in that finite auxiliary contraction does seem to be sensitive to the syntax in a way that we would not expect of a purely lexical and/or phonological process.

First, and most famously, contraction is barred when there is a gap immediately to the right of the auxiliary (see King 1970; Lakoff 1970; Baker 1971; Bresnan 1978):

- (19) a. \*I don't know what kind of lawyer Mary's.  
 b. \*Tom has eaten as much pie as we've.  
 c. \*They'll water the plants on Tuesday, and I'll on Thursday.  
 d. \*If John would get some exercise, then Mary'd as well.

All of these sentences are grammatical without contraction. Since the gaps are plausibly present in the syntax, but not at other levels of representation, (19) suggests some role for syntax in this type of contraction. Note that the gaps at play here are syntactically heterogeneous: they may be gaps of A'-movement (as in (19a) and (19b), arguably) or the result of ellipsis (as in (19c) and (19d)). What seems intriguing about the restriction seen here, of course, is that the auxiliary contracts with the word to its left, yet it is sensitive to the type of material to its right.

Second, for those auxiliaries that can only contract with a word ending in a vowel (*have*, *had*, *will*, and *would*), contraction is possible between the auxiliary and a pronoun, as in (20), but not between an auxiliary and a full DP, as in (21).

- (20) a. You've upset her.  
 b. They'd probably refuse you if you asked them.  
 c. We'll help you out.  
 d. Who've they chosen?

(Radford 1997)

- (21) a. \*John and you've got a lot in common.  
 b. \*The Masai've been driven out of their homeland.

- c. \*Di'd like to be an ambassador for Britain.
- d. \*Which one of you've they chosen?

(Radford 1997)

In fact, contraction also seems degraded when the element to the left is a full CP or PP, as in (22).

- (22) a. \*[What you did yesterday]'d cause a problem if it appeared in the papers.
- b. \*[After tea]'ll be a good time to talk.

In both (21) and (22), it is important to note that the sentences are acceptable when intermediate forms (with a reduced vowel) are used, rather than the fully contracted forms (see (14)). Assuming that pronouns are heads, it is possible to interpret the above facts as showing that auxiliaries may fully contract with heads, but not with maximal projections (Radford 1997).

Third, whether or not a finite auxiliary may contract with a preceding adverb depends on the class, and presumably structural position, of the adverb. Sentential adverbs allow contraction, as seen in (23), but aspectual adverbs do not, as seen in (24) (Baker 1971; Bresnan 1978; Kaisse 1985).

- (23) a. John clearly'd eat the pie if he had the chance.
- b. Jane apparently's eating the pie.

- (24) a. \*John never'd eat the pie.
- b. \*Jane often's eating pie.

The non-contracted form of the auxiliary is possible to the right of the adverb in cases like (24) (though the position to the left of the adverb is preferred), as is the intermediate form, but the fully contracted form seems worse in (24) than it does in (23).

A fourth area in which finite auxiliary contraction seems to show an interesting interaction with syntax is in the differing behavior of contraction with stage-level and individual-level predicates. Barss (1995) shows that when the predicate to the right of the auxiliary is stage-level, as in (25), contraction is perfect, but when the predicate is individual-level, as in (26), it is slightly degraded.

- (25) a. Who do you think's available?
- b. Who did you say's coming to the party?
- c. Who do you think's outside?

- (26) a. ?\*Who do you think's altruistic?
- b. ?\*Who did you say's tall?
- c. ?\*Who do you think's moral?

The distinction is subtle, although it appears to be real. As Barss (1995) shows, an account of this contrast may be possible if one assumes a structural difference between clauses with stage-level and individual-level predicates.

### 3.3 Syntactic accounts

We now review analyses of finite auxiliary contraction that make use primarily of syntactic mechanisms. We focus on the most well-known aspect of this phenomenon (i.e. the fact that contraction is blocked when there is a gap to the right of the auxiliary). One way to approach this problem is to exploit the fact that auxiliaries are heads. If we then assume that contraction raises this head out of its base position, we could take the impossibility of such raising when there is a following gap to show that the gap must be in a local relation with the head. This is, of course, reminiscent of the Empty Category Principle (ECP) of Government and Binding Theory, in which empty categories must be properly governed by a head, and some have proposed that the gap restriction on finite auxiliary contraction derives ultimately from the ECP (for discussion, see Zagana 1982). Unfortunately, however, it is difficult to show that the exact formulation of the ECP that one would need for this case matches what one needs in other cases of purported ECP violations, so it is not clear that there is truly a generalization to be found here.

An earlier analysis, but one that is still very influential, is from Bresnan (1978), who proposed that despite the orthographic convention of representing auxiliaries as contracting with the element to their left, they actually cliticize to the element to their right. This view then gives us a simple explanation for the gap restriction: contraction is disallowed when followed by a gap, because this would require cliticizing the auxiliary onto an empty category, which is (by assumption) not possible. As Anderson (2008) points out, however, auxiliaries are otherwise entirely oblivious to the material on their right when it comes to contraction, so there is no independent motivation for this idea of rightward cliticization. Moreover, there is plentiful evidence that auxiliary contraction is sensitive to the material on the left. For instance, it seems to matter whether contraction occurs with a pronoun or a full phrase (as in (25)–(27)), or with a sentential or aspectual adverb (as in (18)–(19)). Phonologically as well, we see interaction between contracted auxiliaries and the material to their left, but not to their right. The form of the contracted auxiliary can depend on whether the preceding element ends in a vowel or a consonant, and in the latter case, whether it is voiced or voiceless. The *'s* and *'d* forms participate in the same voicing alternations as other English suffixes (such as plural *-s* and past tense *-ed*), which would be odd if they were actually attached to the element on their right. Overall, then, the idea of accounting for the gap restriction by appealing to rightward cliticization of the auxiliary appears to have little motivation.

### 3.4 Prosodic accounts

Another idea that has long been present in analyses of finite auxiliary contraction is that the gap restriction follows from prosodic requirements of the auxiliary. More specifically, if we say that the auxiliary must be stressed when followed by a gap, and that contraction is incompatible with stress, we then derive the gap restriction (see e.g. Baker 1971; Sato 2012).

Anderson (2008) shows that in this simple form, a prosodic analysis of this type is unlikely to be the full story, since there are cases where the auxiliary is clearly not stressed, but where contraction is nonetheless impossible, as seen in (27).

- (27) a. \*Do you know what THAT's?  
 b. \*Pat's happier than's his brother-in-law.

In both of these examples, uncontracted *is* is possible, and it is unstressed.

Anderson (2008) proposes instead that auxiliaries may cliticize to their left and that, when they do this, they leave the prosodic phrase to which they originally belonged. If this results in that phrase being phonetically empty, the sentence is ruled out due to a general constraint on prosodic structure. Consider (19a), for example, which has the (partial) prosodic structure in (28) (see Anderson (2008) for details on how prosodic structures are generated).

- (28) I don't know [what kind of lawyer] (Mary) (is \_\_\_\_).

In the embedded clause, the subject and the verb phrase are in separate prosodic phrases (indicated by parentheses). The *wh*-phrase has been fronted, so if *is* is cliticized onto *Mary*, the prosodic phrase will be empty and the constraint violated. Similarly in the gapping case in (29), if the auxiliary cliticizes leftward, the prosodic phrase will be left empty.

- (29) They'll water the plants on Tuesday, and (I) (will \_\_\_\_ ) on Wednesday.

In this way, the general prohibition of contraction followed by a gap is derived. The presence of a gap has the consequence that when contraction occurs, the prosodic structure becomes ill-formed. In addition, the heterogeneous nature of the gaps now makes sense. The prosodic conditions don't care whether the gap was formed by movement or ellipsis; all that matters is whether there is phonetic material in the prosodic phrase or not.

If this analysis is correct, we should then see cases where contraction is barred even when there is no gap, just as long as contraction would result in an empty prosodic phrase.

- (30) a. Marie's better known than (is) (her husband).  
 b. John (is), (my dear), (a bastard).  
 c. John, (my dear), (is a bastard).

As predicted, contraction is impossible in (30a) and (30b), but possible in (30c). Note that no gaps are involved here (or, if there is one in (30a), it is not in the relevant position), but the same account used for the gap cases applies equally well.

This analysis appears very promising, in that it accounts for a wide range of cases and makes sense of the otherwise very curious restriction regarding gaps, in which auxiliaries that contract to the left seem to be sensitive to the presence of gaps on the right. It remains to be seen whether it can be extended to account for the other cases discussed in section 3.2.

### 3.5 Intermediate forms

Any study of finite auxiliary contraction needs to take note of the difference between fully contracted forms, typically pronounced as a single consonant, and the intermediate forms, which additionally have a reduced vowel (see the table



in (14)). The intermediate forms are able to avoid some of the restrictions that we have discussed so far (though not always the gap restriction), and they have thus been traditionally of less interest to syntacticians. Nonetheless, we can't claim to understand why contraction behaves as it does if we can't explain why the intermediate forms behave differently.

MacKenzie (2012) presents a detailed corpus study of contracted auxiliaries and notes that with some auxiliaries, the fully contracted form and the intermediate form are almost in complementary distribution. The auxiliary *will*, for instance, appears as *will* at approximately the same rate following both vowel-final pronouns and *it*, but the rest of the time, it appears as 'll [l] following the vowel-final pronouns and as [əl] following *it*. This near-complementary distribution between 'll and [əl] suggests that they are the surface expressions of a single source, and MacKenzie (2012) argues that this source is the contracted form, with insertion of a reduced vowel in the case of [əl] by means of a regular phonological process. A potential problem that arises is that sometimes the intermediate form surfaces when it does not appear to be phonologically motivated. Consider the contrast in (31), for instance.

- (31) a. You'll be fine tomorrow.  
 b. \*The ewe'll be fine tomorrow.

As we saw in (20) and (21), the fully contracted form is allowed with a pronoun but not with a full DP, even though the phonological environment here would appear to be the same. (31b) is perfect with [əl], even though the preceding word does not end in a consonant. MacKenzie (2012) suggests that this may be because full DPs have more prosodic bracketing and this prevents proper syllabification of 'll, resulting in the insertion of schwa.

If this analysis is on the right track, we must then say that consonants differ as to whether they trigger schwa insertion, since auxiliary *has* is able to fully contract with a preceding vowel-final DP without requiring schwa.

- (32) The ewe's eaten already.

When the intermediate form of *has* [əz] does surface, then, MacKenzie (2012) suggests that this is the result of regular phonological processes (i.e. *h*-deletion and vowel reduction) operating on non-contracted *has*. Auxiliary *have* should be subject to the same processes, so we expect that *have* will sometimes be realized as [əv] even without contraction. When *have* does contract to a vowel-final DP, however, schwa insertion does apply (i.e. the fully contracted form is impossible, as seen in (21)), so the surface form [əv] must have two possible sources: non-contracted *have* and fully contracted 've. MacKenzie (2012) provides corpus data suggesting that this characterization of *have* is correct.

This sketch of an analysis, when paired with Anderson's (2008) analysis of the restrictions on fully contracted forms, appears to go a long way toward explaining when intermediate forms are allowed. In particular, it seems to make correct predictions regarding the gap restriction as it relates to intermediate forms. Those intermediate forms that are always derived from fully contracted forms, such as [əl] (from *will*), should be banned in the same environments where fully contracted

forms are (i.e. in cases where cliticization to the left would result in an empty prosodic phrase). This appears to be true, as seen in (33) (cf. (19d)).

(33) \*If John'll get some exercise, then Tom [əɪ] \_\_\_\_ as well.

Both the fully contracted and the intermediate forms are impossible here after *Tom*. In contrast, those intermediate forms that are able to be derived from non-contracted forms should be able to bypass this restriction. The intermediate forms of *has* and *have* are of this type, as shown in (34).

(34) a. If John's gotten some exercise, then Tom [əz] \_\_\_\_ as well.  
 b. If the girls have gotten some exercise, then the boys [əv] \_\_\_\_ as well.

These sentences are perhaps not perfect, but they are clearly far better than their counterparts with full contraction or the sentence in (33).

### 3.6 Conclusion

At a descriptive level, finite auxiliary contraction seems to have a few similarities with *wanna*-contraction, and many more differences. This has led some to assume that essentially different mechanisms are at play, but in an ideal analysis, all differences would follow from a single, more basic difference: finite auxiliary contraction involves contraction of the auxiliary with whatever element happens to be to the left, whereas *wanna*-contraction contracts *to* with a very limited set of verbs. The more recent prosodic analyses seem to offer some hope that this ideal can be attained, but it is too soon to be sure that a unified analysis of this type is possible.

## 4 Conclusion

The study of contraction is emblematic of larger issues that have arisen in the study of language over recent decades. First, it shows that language, like nature more generally, does not always divide itself up the way our *a priori* ideas would lead us to expect. Given that contraction involves the loss of segments and word boundaries, one might expect that accounting for it would be a matter for phonology. In fact, however, investigation has shown that contraction behaves, to one degree or another, in ways that are not consistent with an analysis purely in terms of segmental phonology and that seem to implicate certain aspects of syntactic structure. Whether this means that the contraction process has recourse to syntax itself or to a level of prosodic structure that is built off of syntax is still an open area of research, but the latter view does appear to show great promise. As in many other areas of language, then, a fuller understanding of the phenomenon may require us to explore more carefully the interfaces between different components of the grammar.

Second, the study of contraction shows us that traditional techniques of gathering data, such as fieldwork and introspective judgments, can take us very far, but there

is growing awareness that other techniques also have much to offer. We saw in the preceding discussion how experimental production studies, both with adults and with children, as well as corpus work have made important contributions to the study of contraction in recent years.

SEE ALSO: Adverb Classes and Adverb Placement; Clitic Climbing; Comparative Deletion and Comparative Subdeletion; Control Phenomena; Gapping; Modal Auxiliaries; Phrasal Stress and Syntax; Subject–Auxiliary Inversion; Verb Clusters, Verb Raising, and Restructuring; VP-Ellipsis

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