

Wanna revisited

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Abstract

The paper addresses general questions about the organization of grammar via a detailed discussion of a small, but well-explored, area of English: the contraction of want to to wanna. It distinguishes three general approaches to the analysis of wanna: in terms of a phonological rule, lexicalization or a derivational rule. Each approach has a different set of strengths, but they all have weaknesses as well. The paper then offers a new analysis in terms of ‘realization’ which combines the strengths of all the previous analyses. This analysis, which is based on the theory of word grammar, accounts not only for all the well-known syntactic and morphological constraints on this contraction, but also for a fact which has not been noted before: that, for some speakers, the last vowel alternates in just the same idiosyncratic way as that of to, which suggests strongly that in some sense wanna contains to as well as want. For these (but not all) speakers, the proposed analysis recognizes two words (sub-lexemes of WANT and TO_{inf}) at the level of syntax and a single form ({wanna}, containing variants of {want} and {to}) at the level of form; the relations between these words and forms, and between the forms and their phonological realizations, are defined by a declarative network.*

* I presented an analysis similar to the one in this paper at the September 2003 meeting of the Linguistics Association of Great Britain, where comments from the floor helped me greatly to clarify the ideas. I could not have assembled the phonetic facts in section 3 without the generous help of over 60 colleagues; I should like to thank them all, and in particular John Wells, John Maidment, David Britain and Peter Trudgill. The paper has benefited enormously from the suggestions of Brian Joseph and his colleagues at Language. Jasper Holmes has helped me a great deal in developing both the Word-Grammar theory of morphology and also this analysis of *wanna*.

1 The challenge of wanna

One of the classic debates of modern linguistics has centered on the ‘word’ wanna in examples such as (1).

(1) I wanna go home.

The scare quotes round ‘word’ in the first sentence signal the fact that one of the questions that such examples raise is whether wanna really is a word. I suggest below that it is actually two words but a single form, so from now on I refer to it simply as ‘wanna’. The choice between wanna and want to has attracted attention since Lakoff (quoting Horn) pointed out the contrast between sentences like those in (2) and (3) (Lakoff 1970):

(2) Who do you want to / wanna meet?

(3) Who do you want to / %wanna meet you?

This contrast has for all analysts been related to the difference between (4) and (5):

(4) You want to / wanna meet Bill.

(5) You want Bill to meet you.

In (5) the presence of Bill makes it impossible to contract want to to wanna, so the question has been how to generalize from (5) to (3). A variety of analyses have been suggested, and are reviewed below, and the theoretical consequences of the analyses have been explored. The debate has been particularly fruitful as a test-bed for general theories of language structure for two reasons.

- The basic facts are well known and generally uncontroversial, though there is some variation in the acceptability of (3) (indicated by the %) and this paper draws attention to a fact whose significance has not been noticed before.
- The alternation between want to and wanna involves not only the syntactic differences between pairs like (2) and (3), but also the differences between wanna and want to; this has raised important questions about the relations between syntax and the ‘lower’ levels of analysis such as phonology.

The analyses proposed so far fall into three broad groups:

- syntactically sensitive phonology
- lexicalization
- derivational morphology

After reviewing these analyses, I suggest an analysis of a different type, which we might call morphological merger. First, though, I must outline the facts which the analyses have to accommodate.

2 The non-phonological properties of wanna

Most of the properties of wanna are well documented and uncontroversial, so they are simply listed below.

(6) Syntax

a. For most speakers, want to does not reduce to wanna if want has an extracted object (which would have separated want from to had it not been displaced); we can call this the extracted-object restriction:

- (i) Who do you want to (wanna) see?
- (ii) Who do you want to (%wanna) come?

As usual, the sign ‘%’ indicates variation across speakers; in this case, a significant minority of speakers accept wanna in examples like (ii) (Bolinger 1981; Postal and Pullum 1978; Huddleston and Pullum 2002:1617; Karins and Nagy 1993). It is a matter of debate where the difference between these ‘liberal’ dialects and the rest lies.¹

b. Wanna is possible only under specific lexical and syntactic conditions: if want is the verb (not the noun) and if to introduces its infinitival complement - not, for example, if it introduces an adjunct or if want just happens to be the last word of a preceding NP:

- (iii) He described his every want to (*wanna) his therapist.
- (iv) Roosevelt promised freedom from want to (*wanna) help win votes.
- (v) How much paint do you want to (*wanna) finish the house?
- (vi) I’ll arrange for the books you want to (*wanna) be sent to your house.
- (vii) I want, to (*wanna) be honest, a bigger piece of cake.

(7) Morphology

a. Want reduces before to regardless of wanna’s own morphosyntactic features:

- (i) I want to (wanna) go home.
- (ii) They want to (wanna) go home.
- (iii) I’m soon going to want to (wanna) go home.
- (iv) Come on - really want to (wanna) do it, and you’ll do it!²

b. Wants and wanted never reduce before to:

(v) He wants to (*wanna, *wansna) go home.

(vi) He wanted to (*wanna) go home.

(8) Social status

In casual speech, either wanna or wanta (depending on age and geography) is the default pronunciation;³ but the written form wanna is only used to suggest casual speech. The unreduced form want to is possible but sounds either deliberate or formal.

(9) Generality

All the facts in (6), (7) and (8) apply, *mutatis mutandis* and where relevant, to all the forms which Pullum calls ‘therapy verbs’ (Pullum 1997). Apart from wanna, these include those listed in (10) to (15).

(10) gonna: I’m going to leave early.

(11) useta: I used to leave early.

(12) hafta: I have to leave early.

(13) gotta: I(‘ve) got to leave early.

(14) oughta: I ought to leave early.

(15) supposeta: I’m supposed to leave early.

Unlike wanna, there is no conventional spelling for some of these forms, so I have supplied pseudo-spellings.

3 The phonology of wanna and want to

The main factual contribution of this article is a point about the phonology of wanna which, so far as I know, has not been mentioned before in the literature. Although this observation is a detail about the word’s phonological structure, I can show that a great deal follows from it. In a nutshell, for some speakers the end of wanna has just the same phonological peculiarities as the to in both (16) and (17).

(16) I want to go home.

(17) I went to Rome.

As any phonetician of English knows, this vowel is usually schwa whether to is infinitival or prepositional, and the same is of course true of the vowel at the end of

wanna. This coincidence is hardly remarkable in itself, but what has not been noted before is the effect of a following vowel, which – for some speakers – causes the same vowel alternation in wanna as in want to or went to.

No doubt the reason why this has not been noted is that most linguists who have studied wanna have rhotic American accents where there is no such alternation: for them, the schwas of wanna and want to are just like any other word-final schwa, such as those in coda.⁴ However, there are accents (in the sense of dialects defined solely in terms of pronunciation) where the etymological link between wanna and want to is manifest in the special pronunciation of the final vowels. For instance, in the non-rhotic Eastern Massachusetts accent, wanna and to both resist the ‘intrusive r’ which is obligatory after other schwas (McCarthy 1993), as shown by the following pair (where /r/ is the non-etymological intrusive r):

(18) I want to/ə/ eat.

(19) I wanna/ə/ eat.

(20) Wanda/ər/ eats.

Similarly, many non-rhotic accents in the UK avoid the usual intrusive r, but use a rounded vowel /ɔ/ (or even a semivowel /w/) before a vowel instead of the usual /ə/:⁵

(21) I want to/ɔ/ eat.

(22) I wanna/ɔ/ eat.

(23) Wanda/ər/ eats.

In both these accents, both to and wanna share the same idiosyncratic pronunciation which suggests strongly that the connection between them is not merely etymological, but synchronic. I suggest an analysis which reveals and explains this special connection.

However, it is important to recognize that this analysis is certainly NOT right for every accent of English. An informal email survey⁶ revealed the following variation in the pronunciation of wanna and to:

- Eight speakers (all in the UK) denied ever using wanna.
- 39 reported the same pronunciation for the ends of wanna and to before a vowel, with pronunciations including:
 - the /ə/ and /ɔ/ reported above.

- /əɹ/, including an intrusive r which gives pronunciations such as I wanna/r/ eat and I want to/r/ eat; this seems to be restricted to the UK.⁷
- /i/ (as found also in the before a vowel); this was reported from Northern Ireland.
- an alternation /ə ~ ə̃/.
- 11 said they pronounced the ends of wanna and to differently, with a wide range of differences:
 - /ə/ in wanna and /ə̃/ in to.
 - /əɹ/ in wanna and /ə̃/ in to.
 - /ə ~ ə̃/ in wanna and just /ə̃/ in to.
 - /ə/ in wanna and /ə ~ ə̃/ in to.
 - /ə/ in wanna and /i/ in to.

(Another variable is whether the infinitival to has the same pronunciation as the preposition to; most speakers report the same pronunciation but some report a different one.)

As far as the analysis of wanna is concerned, these data seem to suggest that different speakers need different analyses. The crucial speakers are those who pronounce to in an idiosyncratic way before a vowel. At one extreme, we have speakers who seem to recognize that, in some sense, wanna still contains to; for these speakers, wanna and to both have the same idiosyncratic pronunciation in which /ə/ before a consonant alternates with some other vowel – /ə̃/ or /i/ – before a vowel. However, the other extreme is occupied by speakers whose pronunciation of wanna hides its etymological link to the infinitival to: wanna has /ə/ while to has a different vowel, usually /ə̃/. Apart from these two groups, there is a large group whose pronunciation of wanna and to is irrelevant because these words behave just like any other word ending in /ə/: either they both have /ə/ regardless of whether the next word begins with a consonant or with a vowel, or they both have intrusive r before a vowel.

In conclusion, the details of pronunciation suggest strongly that some speakers recognize a synchronic link between wanna and infinitival to.⁸ The best explanation for why these speakers have the same idiosyncratic pronunciation in both cases is an analysis in which the end of wanna not only has the pronunciation of to, but IS to. Equally, however, some other speakers have quite different pronunciations for to and

the end of wanna, so these speakers require a different analysis. As for the remaining speakers, the pronunciation is compatible with either of these analyses.

This rich collection of rather uncontentious facts from syntax and morphology is an ideal test-bed for any theory of language structure. The rest of this article reviews previous attempts and then offers a new analysis based on word grammar.⁹

4 Previous analyses of wanna

I follow Pullum in dividing earlier analyses into three groups (Pullum 1997) according to what grammatical apparatus handles the alternation between want to and wanna:

- phonological rule
- lexicalization
- derivational morphology

I review the strengths and weaknesses of these analyses before presenting my own, which represents a fourth type.

Analyses that involve a phonological rule assume that wanna has just the same syntax as want to, but undergoes a phonological rule which reduces the phonology. These analyses represent the oldest tradition which dates back to the first published account of wanna (Lakoff 1970). The published discussions generally pay much less attention to the nature of the phonological rule than to the extracted-object restriction (see (6)), which rests on the different syntactic structures of pairs like (24) and (25):

(24) Who do you wanna see?

(25) %Who do you wanna come?

Why is contraction not possible when who is the subject of come? A wide variety of answers has been offered, but the most popular one is still based on a trace of the moved element (Aoun and Lightfoot 1984; Ausin 2002; Boeckx 2000; Jaeggli 1980; Thornton and Crain 1999). Others have invoked an invisible complementizer (Snyder and Rothstein 1992), structural adjacency (Travis and Lamontagne 1992 or reanalysis (Hoeksema 1983).

The strength of these analyses is that they recognize the similarity in syntax between wanna and want to by assigning them both exactly the same syntactic structure. The difference between them is purely phonological – wanna is merely a

fast way of saying want to. This seems intuitively correct, and it is at least possible that some speakers do intuitively register these similarities in their grammars – in fact, the pronunciation facts reviewed in section 3 support this idea strongly – so a linguistic analysis must be able to accommodate the generalization. One important consequence of this analysis is that wanna is not, in fact, a word. It is a joint pronunciation of two words, which retain their separate identities in the syntax.¹⁰ On the other hand, these analyses also have significant weaknesses:

- There is little independent evidence for the syntactic differences that they invoke for the extracted-object restriction – indeed, the wanna facts are often almost the only evidence for these differences. The diversity of the explanations offered is itself symptomatic of the uncertainty over the rather abstract syntactic analyses that the assumed theories allow.
- Phonological rules may not be an appropriate mechanism for handling variation which is limited to so few lexical items. Rules imply some degree of generality, and the facts are clearly lexical rather than general properties.

The main attraction of this tradition seems to be its roots in the transformational literature, rather than any demonstrated superiority to other alternatives.

Another strand in the ongoing debate has been a series of proposals for analysing wanna in terms of lexicalization – i.e. by treating wanna as a single word which is a separate lexical item from want, and also, of course, from to (Bolinger 1981; Brame 1984a; Brame 1984b; Sag and Fodor 1994). According to these proposals, the relation between wanna and want is diachronic but not synchronic. Synchronically, we have two different verbs, which happen to have the same meaning but have different syntactic valencies - to for want, and a bare infinitive for wanna; but crucially wanna is a (diachronic) lexicalization of the intransitive want to, where the two words occur together. When want has an object, this normally prevents contraction so the transitive want does not lexicalize to wanna.

This proposal's strengths and weaknesses are the mirror image of those of the phonological-rule analyses. One strength is that it locates the facts about wanna in a lexical entry rather than in a rule. But another important advantage is the very natural explanation for the extracted-object constraint. Contraction is possible in (26) because this is the intransitive want, which is typically immediately followed by to, as in (27).

(26) Who do you wanna see?

(27) You want to see Bill.

In contrast, for most speakers contraction is not an option in (28) because this is a different want which is normally separated from to, as in (29).

(28) %Who do you wanna come?

(29) You want Bill to come.

The approach's main weakness is that it denies any syntactic or semantic link between wanna and want, and therefore cannot explain the very odd restriction on its distribution, namely that it can only be used in those places where uninflected want to can be used, but not where want would have any kind of suffix; for example, it is possible as a bare infinitive (30) but not as an ordinary present-tense verb with a third-singular subject (31).

(30) He may wanna go home.

(31) *He wanna go home.

The shortcomings of lexicalization are well documented (Pullum 1997).

The third kind of analysis, involving derivational morphology, is Pullum's preferred option (ibid). According to this analysis, wanna is again a single word and a separate lexical item from want, but is synchronically related to want by a rule of derivational morphology which adds the suffix /tə/ not only to want but also to the therapy verbs including have, thereby creating a new verb which takes a bare infinitive instead of to. The details of the phonology, such as the loss of /t/, are handled by 'lexeme-particular morphophonology' – a familiar concept which applies well to English words that have idiosyncratically alternating forms before vowels and consonants such as the and a (Joseph 1997). As for the odd position of inflectional suffixes such as the s of hasta (e.g. He hasta go = He has to go), this is explained by Stump's theory of head-marking which allows inflectional affixes to attach to the head of a base-form, rather than to its edge. This solution allows verbs such as wanna to have a complete paradigm, because the third singular and past tenses are accommodated by forms that we might write as wansta and waneda.

This analysis, like the lexicalization analysis, correctly locates all the relevant facts in lexical entries, but unlike the lexicalization analysis it also establishes a synchronic link between wanna and want and gives these two verbs the same syntactic distribution. On the other hand, these two strengths are offset by some significant weaknesses.

- The analysis denies any link between the derived verbs and to, even though the suffix which is added by the rule happens to have exactly the same underlying pronunciation as to. The discussion in section 3 above shows that this similarity of pronunciation is more than a coincidence for at least some speakers, so an analysis must show a synchronic link between wanna and not only want, but also to.
- It does not explain why wanna cannot take an overt object as well as a bare infinitive, as in (32), parallel with let in (33). This is strange because the synonymous want does allow an object as in (34).

(32) *I wanna him go.

(33) I let him go.

(34) I want him to go.

- It does not explain why the bare infinitive can be coordinated with a to infinitive; although such examples are clumsy (because there is no motivation for the to) they are a lot better than to following a verb such as let, as can be seen from the contrast between (35) and (36).

(35) I wanna go to sleep and (?to) not wake up till I feel better.

(36) He let me go to sleep and not (*to) wake up till I felt better.

These shortcomings suggest that derivational morphology may not be the correct avenue to explore either.

The conclusion seems to be, therefore, that none of the existing proposals is fully adequate, although each has its attractions. What is needed is an analysis which combines the strengths of all the earlier attractions:

- It gives wanna and want to the same syntactic structure, which means that wanna is not a single word.
- It locates the contraction of want to which gives wanna in a mechanism which is specific to want and the remaining therapy verbs.¹¹
- It gives a natural explanation to the extracted-object restriction by relating this restriction to the position of a non-extracted object, but it also accommodates the minority of speakers who do not apply this restriction.

- It relates the pronunciation of wanna not only to that of want, but also to that of to; and in particular it allows wanna to share the exceptional alternation found in to.

I now offer an analysis in terms of word grammar which satisfies these requirements, and which we might call a 'realization' analysis. In a nutshell, it maps the two words (intransitive) want to onto a single form wanna, so wanna is a single form but not a single word; this part of the grammar is shared by all speakers except (of course) those who have no wanna at all. On the other hand, for some speakers wanna also has internal structure, consisting of (variants of) the forms want and to, so it is not a single morpheme either. The analysis therefore rests on a fundamental and controversial theoretical distinction between words and forms, the topic of the next section.

5 Why words and forms are different

The basis for my analysis is the set of 'levels of analysis' that I assume within the general theoretical framework of word grammar. This theory is based on the assumption that language is a declarative cognitive network (Hudson 1984; Hudson 2000b). This network has various other properties that need not concern us here, but one property which plays an important part in the analysis is multiple default inheritance (widely used in other theories of human reasoning and language structure – e.g. Briscoe et al 1993; Carpenter 1992; Luger and Stubblefield 1993; Touretzky 1986), the mechanism by which generalizations in the network apply to tokens (Hudson 2003b). The analysis is presented in a series of figures which gradually introduce the basic ideas of the theory.

Returning to the question of levels, two levels are more or less uncontroversial: syntax and phonology. At the level of syntax the basic units are words (hence the name of this theory: word grammar), which are quite different from the basic units of phonology (e.g. segments and syllables). But in between these two levels I recognize a level of forms which allows an exhaustive analysis for every sentence in every language (including those that have no morphological complexities). Forms include traditional morphs (i.e. concrete morphemes), which are the atomic

elements at this level, but they also include complex structures such as complete word-forms which consist of several morphs - forms such as wanted or wanting, or even unpronounceable. As I suggested earlier, this level allows us to analyse wanna as a single (complex) form which corresponds to two separate words, and because the second word is to, we have an immediate explanation for why the last vowel of wanna shows the same alternation as the vowel of to. The details of the analysis are presented below.

It is clearly confusing to say that one item, wanna, is at the same time one form and two words, so it is important to have a different notation for each level. I do not try to distinguish phonetics and phonology (though little hangs on this decision), and for this level I use the traditional /.../ notation; for simplicity I call it ‘phonology’. For forms I use the {...} notation which is sometimes used for single morphemes (Mugdan 1994); so the form {wanna} is distinct from its phonological realization /wɒnə/ and also from {want} and {to}. Unfortunately there is no established notation like this at the level of words, but capitals are often used for lexemes, so I adopt that notation here. In this notation, the word-level units corresponding to {wanna} are the lexemes WANT and TO_{inf} (meaning ‘infinitival TO’). What is lacking is a generally accepted way of distinguishing different inflections of each lexeme, so for this I follow a notation that I have used recently in a number of works: a colon followed by the name of the inflection concerned. For example, the past tense of WANT is WANT:past (realized by {wanted}), and {wants} corresponds to WANT:3singular; for reasons which are irrelevant here, the uninflected present tense is WANT:finite. Given all this notation, we can now distinguish three different levels of analysis for wanna in the sentence I wanna go home:

- (37) a. Syntax: WANT:finite + TO_{inf}, in a specified syntactic relation
(discussed below). In contrast, the first word in You may wanna go home would be WANT:infinitive.
- b. Form: {wanna}, consisting of a variant of {want} followed by a variant of {to}.
- c. Phonology: /wɒnə/

Following Bauer (Bauer 2003), I refer to the smallest forms as ‘morphs’ in order to avoid confusion with the much more abstract morphemes that are sometimes

recognized in syntax, and which are equivalent to syntactic features or (in my analysis) inflections. It turns out, however, that some morphs have variants; for example, {to} has alternatives with /t/ and without /t/, and with varying vowels. In early structuralist theories of morphology (e.g. Hockett 1958) this allomorphy would require the common unit to be called a morpheme, but as I explain below this contrast can easily be accounted for in terms of default inheritance, so the basic and special forms do not need to have different theoretical statuses. The ‘form’ level, therefore, includes morphs and more complex structures which consist of morphs.

The distinction between (syntactic) words and (morphological) forms may be important for this analysis, but can it be independently justified? This question is important because many theories of language structure have no place for a level of form.¹² This is true of any theory in which words are ‘signs’ which map directly onto semantics and phonology (Pollard and Sag 1994, Chomsky 1995, Jackendoff 1997, Langacker 1998). It is also true of morphological theories in which morphological variation is treated as purely phonological variation which is sensitive to inflectional and other morphosyntactic features of words (Beard 1994, Anderson 1992). It is equally true of theories which take the converse position, in which morphemes are units in the same hierarchy as words and phrases (Halle and Marantz 1993).

On the other hand, the three-way distinction between words, forms and phonological structures is widely accepted (Aronoff 1994, Sadock 1991, Levelt et al 1999). The following is a brief survey of the kind of evidence which seems to support this view.

- Morphemes cannot be defined in terms of either meaning or phonology. For example, in spite of their semantic and syntactic differences the words UNDERSTAND and WITHSTAND may be analysed as sharing the same root as STAND, because they all share the same irregular past tense (Aronoff 1976:14). Similarly, but even more dramatically, the verbs GO and UNDERGO (and for some speakers, FOREGO) share the suppletive past tense in went. The roots {stand} and {go} bring no meaning or syntax to these very diverse verbs, so they are not words. Nor, on the other hand, are they merely a piece of phonology, because similar pieces of phonology do not share the same characteristics: for instance, the potential verb GO meaning ‘play the Japanese board game *go*’, if it existed, would certainly have goed rather than went as its past tense.

- Mapping to phonology is independent of mapping to words. For example, the form {one} corresponds to at least two, and possibly three, quite different words: the numeral ONE_{num} as in one book, the dummy common noun ONE_{cn} as in the big one and the generalized personal pronoun ONE_{pp} as in One does one's best. But independent of this mapping, {one} also has two alternative pronunciations in the UK: the same as {wan} (the form of the adjective WAN) in the north of England, and the same as {won} (the form of WIN:past) in the south. At least some speakers (such as me) know both pronunciations and alternate between them, so for these speakers both pronunciations must be part of their grammar. The morpheme {one} serves as the meeting point for these two choices, as shown in [[INSERT Figure 1. Without the intermediate form {one}, each of the three words would need to be related separately to each of the two pronunciations, entailing a loss not only of elegance but also of explanatory power and psychological plausibility.¹³ The question could easily be settled by sociolinguistic research to see whether those (like myself) who use both pronunciations are influenced in this choice by the meaning or grammar. This research remains to be done, but my prediction is that the two sets of contrast are statistically independent.

[[INSERT Figure 1 about here]]

- The principles for arranging morphemes and words are different. For example, many languages have more or less free word order, but no language has free morpheme order (Bresnan 2001: 93). Languages with complex morphology assign each morpheme to a fixed slot in a flat grid which may disregard the phrasal bracketing of syntax, giving rise to 'bracketing paradoxes' such as transformational grammarian, where ian has to be part of grammarian although it belongs semantically to the whole phrase. Such structural mismatches between morphology and syntax are commonplace (Sadock 1991).
- Morphological and syntactic classification are distinct. For example, so-called 'irregular verbs' are irregular only in their morphology, and this irregularity never seems to encourage any kind of syntactic irregularity, not even when sub-regularities appear such as the group of verbs like SING, RING and SWIM

which share similar patterns of morphology. Even more striking are languages which have different ‘inflection classes’ (Carstairs-McCarthy 1992:231), known in traditional grammar as ‘declensions’ and ‘conjugations’. Traditional grammars of Latin recognize five declensions of nouns, each of which distinguishes the same range of inflectional categories but uses a different range of suffixes to do so. For example, the noun AMIC, ‘friend’, takes the suffix {us} in the nominative singular and {i} in the nominative plural, whereas URB, ‘town’, takes {s} and {es}. What is striking is that these inflection classes are purely morphological - they have nothing whatever to do with syntax, and very little to do with meaning. Indeed, they even cut across the main word classes because the noun distinctions apply to adjectives as well (e.g. BON, ‘good’, is like AMIC whereas FORT, ‘strong’, is like URB). If inflection classes were classes of words, this would be strange because one might expect interactions with the other ways of classifying words; but the three-level analysis allows them to be classifications of morphs, not words. Thus it is not AMIC and URB, but {amic} and {urb}, that belong to distinct inflection classes.

- The separation of purely morphological classification from syntactic classification is one aspect of a more general split between syntax and morphology which has led to the important claim that syntax is always blind to morphology (Zwicky 1992). For example, syntactic rules are never sensitive to the presence of a particular morpheme as such, though they are of course often sensitive to a morphosyntactic feature which happens to be signalled by one morpheme. This is easy to explain if morphemes exist on a different level from syntax, as in the three-level analysis, because this increases the ‘distance’ between syntactic and morphological categories. The distance concerned can be modelled in network theories such as word grammar in terms of links in networks. For example, according to the analysis presented below, the suffix {s} in dogs is three links from the category Plural; consequently the suffix is three links less accessible to any syntactic pattern than the inflection Plural is, and is that much less likely to be mentioned in the pattern.
- Morphological structure is psychologically real. There is massive evidence that ordinary speakers recognize morphological structure, ranging from the famous WUG test with infants to popular etymology. For example, the only plausible

explanation for words such as CHEESE-BURGER is that speakers thought they recognized the form {ham} in HAMBURGER, leaving {burger} as residue to be handled any old how. One interpretation of the residue would link it (irrelevantly) the archaic word BURGHER, but a more plausible one would identify the very common morpheme {er} as in three-pounder (or indeed in hammer, spanner, pliers or even in mother, father, sister, brother, daughter), leaving burg as an unexplained residue. If the only psychologically real levels were syntax and phonology this kind of analysis would not be possible. The three-level analysis also explains a wide range of speech-error data (Levelt et al 1999), such as the different kinds of permutation error in (38) and (39). The first mistake, in which the speaker said pies instead of apples, can easily be explained in terms of exchanged lexemes ('lemmas' in Levelt's terminology), but slicely in (39) makes no sense unless there are morphemes which can be used in the wrong word.

(38) How many pies does it take to make an apple?

(39) slicely thinned

Further behavioral evidence in favor of the three-level analysis comes from sociolinguistic studies of t/d deletion (Guy 1994), the process whereby words such as pact and packed are pronounced without a final /t/. Statistical analysis of a corpus of utterances shows that /t/ is much more likely to be pronounced in words where /t/ is a suffix, such as packed, than in mono-morphemes such as pact. Once again it is hard to explain this difference without referring to morpheme boundaries, which presuppose morphemes as discrete units.

- Forms are often 're-cycled' to take on different functions. For example, it is common for the same forms or formal patterns to be used both in inflection and in derivation; thus the suffix {ing} signals present participles and gerunds (which are inflections) but also nouns derived from verbs and even nouns derived from nouns (e.g. flooring). More generally, the mismatch between words and forms leads to widespread homonymy, so the level of form is needed even in languages which have little morphology as such.

In short, there is a solid case for distinguishing the level of form from those of syntax and phonology.

Having established the principle of a three-level analysis, I now explain more precisely what it means in word grammar, and in particular how I see the relation

between syntax and form. A popular view is that morphs are parts of words, so the difference is merely a matter of size. This is not my view, and cannot be because I recognize word-sized units at the level of form (called, unsurprisingly, ‘word-forms’); there is a part-whole relation, but it lies between word-forms and morphs, so it cannot also exist between words and morphs. If morphs were parts of words, then it would be natural to follow the structuralists in seeing them as the smallest units of syntax - but the evidence given above shows clearly that morphs are arranged in quite different ways from words.

In word grammar, the difference between syntax and form is therefore not one of size but more like the difference between form and phonology. Each level has a different vocabulary of units, based on different kinds of abstraction from the linguistic ‘substance’ of utterances, and the levels can be ordered in terms of increasing abstractness from phonology through form to syntax. The relation between less abstract and more abstract levels is not part-whole, but ‘realization’.

The following bullet-points summarize the differences among the levels of spoken language:

- Syntax: the basic units are words, which have syntactic and semantic properties, but no phonology. They are realized by forms. As I explain below, words are basically related to one another by syntactic dependencies rather than by part-whole relations to phrases - i.e. the syntax is a version of dependency grammar, not phrase-structure grammar (Hudson 1990:105-120).
- Forms: the basic units are morphs, which realize words but have no meaning or syntax of their own. They do have a phonological structure, and where a language has a form-based writing system such as an alphabet or syllabary, forms also have a graphological (i.e. written) structure. Smaller forms are organized into larger forms by strict part-whole relations based on rigidly ordered templates, so a morph may be part of a word-form (and perhaps of intermediate forms as well).
- Phonology: the basic units are phoneme-like segments, which are realized by phonetic properties and combine in ways that need not concern us here.

The architecture of the three-level model (ignoring graphology) is illustrated in [[INSERT Figure 2, which uses the standard word-grammar notation for classification: the small triangle whose base is next to the super-category, and whose

apex points towards the sub-categories. The classification relation is called ‘is-a’, so each sub-category is-a the super-category (for example, DOG:plural is-a Word). The curved arcs show realization relations, and the straight numbered arrows combine part-whole relations with linear order (for example, {dog} is the first part of {dogs}). The diagram is (of course) a greatly simplified version of a complete analysis for dogs.

[[INSERT Figure 2 about here]]

The aim of this section was to explain the three-level structure which distinguishes forms from both words and phonological structures. This distinction seems to be well supported by converging evidence from a wide range of sources, so I can now take it for granted in the analysis of wanna. This means that rather than treating wanna as a single word, we can distinguish the word-level and form-level analyses proposed in (37), giving the network in [[INSERT Figure 3. In short, wanna is two words realized jointly by a single form. However the complete analysis also makes it possible to relate the single form {wanna} to the simpler forms {want} and {to}, which allows us to explain why {wanna} shows the same alternation as {to}.

[[INSERT Figure 3 about here]]

6 The syntax of wanna

The aim of this section is to explain the syntactic constraints on wanna on the basis of the assumption, justified in the previous section, that wanna is in fact two words. The question is under what syntactic conditions the words WANT and TO_{inf} can share the form {wanna}. I have already summarized the facts in (6) using the following example sentences:

(40) Who do you want to (wanna) see?

(41) Who do you want to (%wanna) come?

(42) How much paint do you want to (*wanna) finish the house?

(43) I’ll arrange for the books you want to (*wanna) be sent to your house.

It is easy to distinguish the good cases from the bad ones using standard word-grammar syntactic structures.

The word-grammar treatment of syntax has two distinctive characteristics which are helpful in the analysis of wanna:

- Words are arranged in an inheritance hierarchy which ranges from the most general category – Word – through word classes such as Verb and Auxiliary verb, down to specific lexemes. However it does not stop there, because lexemes may include sub-lexemes which inherit some features from the lexeme while also adding specific features of their own. For example, we recognize not only the lexeme WANT, but also a number of distinct sub-lexemes each displaying a different pattern or valency (i.e. sub-categorization). This facility is important because it blurs the traditional contrast between ‘same lexeme’ and ‘different lexeme’.
- As mentioned earlier, sentence structure defines word-word dependencies directly rather than via phrase structure. This proves helpful in defining the possible structural relations between WANT and TO_{inf}. The syntactic structure of the sentence I want to go away is shown in [[INSERT Figure 4, where the relation called ‘sharer’ is the traditional subject complement (or object complement); the term alludes to the structure-sharing whereby to go¹⁴ shares the subject of want.

[[INSERT Figure 4 about here]]

The main syntactic condition on contraction to {wanna} is that the two words must be ‘closely related’ in syntax (in a sense that we explore below); this explains the impossibility of {wanna} in example (43), where WANT and TO_{inf} just happen to be next to each other. This constraint is as expected if the {wanna} pattern is stored, because it must be stored together with some syntactic structure, and the simpler this structure is, the more frequently it will occur and the more likely it is to be learned. Word-word dependencies are ideally suited for defining this structure because they relate individual words directly to one another without any intervening phrase nodes. This is just what is needed for explaining what it means for TO_{inf} to be ‘closely related’ to WANT: the two words must be directly related by a single dependency, so mere adjacency as in example (43) will not do. Moreover, even if there is a direct dependency it must be a dependency of the right type: it is not enough for TO_{inf} to be

a mere adjunct of WANT, as in (42), because (by definition) adjunct relations are not stored. What is needed is a lexically-stored relation, so TO_{inf} must be some kind of complement (in the modern sense) of WANT, because only this configuration can be stored in such a way as to provide a reference point for the stored form {wanna}.

The definition of ‘closely related’, therefore, is that the second word must be a complement of the first; in fact, in view of the analysis in [[INSERT Figure 4, we can define it more specifically as the latter’s ‘sharer’ (which is a particular sub-type of complement). Thanks to the dependency basis of word-grammar syntax, this is easily formalized by a dependency arrow labelled ‘sharer’: roughly speaking, {wanna} is possible as a realization of WANT followed by TO_{inf} as its sharer. This is not quite accurate as it stands because it is not WANT, as such, that is accompanied by TO_{inf} , but a particular sub-case of WANT which we can call $WANT_{to}$: the version of WANT that takes TO_{inf} . For similar reasons, we need to refer to the latter as TO_{want} , the TO that occurs as the sharer of $WANT_{to}$. This may seem like hair-splitting but it is vital to the (inheritance) logic of the system. These sub-cases ‘isa’ the more general category, which have the crucial property of being directly connected by dependency. This pattern is shown in [[INSERT Figure 5.

[[INSERT Figure 5 about here]]

We can now say that {wanna} is a possible realization of $WANT_{to}$ and TO_{want} when linked by ‘sharer’, which excludes chance adjacency and guarantees the close relationship required for a merged form. The remaining syntactic restriction is the one that first brought wanna to prominence in linguistics: the blocking effect of a displaced object, as in (41), repeated below:

(44) Who do you want to (%wanna) come?

Given that some English speakers do allow wanna in such sentences, the restriction must not follow from universal principles; but it must be sufficiently natural for most learners to infer for themselves. As it stands, [[INSERT Figure 5 does not yet define the conditions for contraction sufficiently precisely to prevent contraction in examples

like (44). How, then, can we modify this grammar in such a way as to make contraction sensitive to the presence of a potential object?

The solution is easy: distinguish transitive and intransitive sub-cases of WANT. Such a distinction is necessary in any case because of the valency differences among examples like (45) to (47):

- (45) I want an apple. (object)
 (46) I want to go away. (sharer)
 (47) I want you to go away. (object + sharer)

In each of these examples WANT has a different range of complements in the syntax, as indicated in brackets, so we can distinguish three sub-lexemes:

- WANT_{obj} takes an object;
- WANT_{to-obj} takes TO_{inf} as its sharer but no object;
- WANT_{to+obj} takes both TO_{inf} and an object.

The second and third entries are more similar to each other than to the first, so we can also recognize an intermediate category WANT_{to}. The relevant lexical entries are shown in [[INSERT Figure 6, where the number ‘1’ (contrasting with ‘0’) indicates that the item concerned is obligatory; this is another standard convention from word grammar (Creider and Hudson 2006). A sharer is obligatory for WANT_{to}, so by inheritance it is also obligatory for the lower sub-lexemes.

[[INSERT Figure 6 about here]]

One reasonable objection to this analysis is that the various valency patterns could have been treated as alternative valencies for a single lexical verb, WANT. Under this approach, the single lexeme WANT would allow an object and/or a sharer, so there would be no need to distinguish the three sub-cases.¹⁵ However this objection turns out to be weaker than it appears when we consider the facts, which show that each sub-case has its own peculiarities. The different usages of WANT have some properties which cannot be predicted from more general ‘constructional’ patterns, as I now explain.

Most obviously, the object which combines with the sharer does not allow passivization, whereas the ordinary transitive object does allow it (Huddleston and Pullum 2002:1432).

(48) a. That is what they want.

b. That is what is wanted.

(49) a. They want Paul to resign.

b. *Paul is wanted to resign.

Moreover, the three uses have different meanings. In each case they refer to a desire for some state of affairs, and a sharer defines exactly what kind of state of affairs this is - going away, resigning or whatever. But when there is no sharer the state of affairs defaults to 'having', so I want an apple means 'I want to have an apple.' This semantic peculiarity of the ordinary transitive use must be stored somewhere, and the natural solution is to distinguish this use from the others as a separate sub-lexeme. Moreover, when WANT does have a sharer, the syntactic details must be stored somehow because verbs that take sharers differ according to whether or not they also allow an object; for example, EXPECT and INTEND do, but HOPE and LONG do not. In short, at least in this area of meaning not all syntactic dependency patterns can be predicted reliably from meaning (or from anything else) and those that cannot need to be stipulated. The conclusion is that we must recognize distinct sub-lexemes such as WANT_{to-obj} and WANT_{to+obj}.

Given this distinction between transitive and intransitive WANT_{to}, it is easy to explain the remaining syntactic restriction on {wanna}: most of us allow this only for WANT_{to-obj}, but a minority allow it for any WANT_{to}. The majority restriction is quite natural since {wanna} is obviously impossible if WANT and TO_{inf} are separated by an object, and it is only in the very special circumstances of Wh-movement (and other kinds of extraction) that the object can be removed. As a result, contraction is almost always possible for WANT_{to-obj}, but very rarely for WANT_{to+obj}.

It is by tying contraction to the lexeme WANT_{to-obj} that we relate it formally to the absence of an intervening object: this lexeme brings together a bundle of properties which include both contraction and the lack of an object. However, a lexeme is a highly abstract construct based on a range of properties, so it contrasts with a simpler and more concrete analysis which linked contraction directly to

adjacency and the lack of an object. This analysis would be wrong; this is the whole point of the debate about wanna, which is based on the observation that contraction is sometimes not possible even when want and to are adjacent. Some kind of abstraction is needed in the analysis, and the theoretical question is what kind of abstraction it should be. As explained in section 4, analyses with phonological rules generally assume abstract syntactic structures with inaudible objects, but word grammar, like the lexicalization and derivational-morphology analyses, assumes abstract lexical items.

The word-grammar explanation for the syntactic restrictions on wanna is presented in [[INSERT Figure 7. This shows, as before, that $WANT_{to}$ takes TO_{want} (the infinitival to) as its sharer. The crucial part of this diagram is in the bottom right segment, which shows the combination $WANT_{to-obj}$ and $TO_{want-obj}$. This defines the pair of words which may (optionally) be realized as wanna. The minority of speakers who allow contraction when an object has been extracted have a slightly different grammar; for them, contraction is possible for the more general categories $WANT_{to}$ and TO_{want} .

[[INSERT Figure 7 about here]]

7 The allomorphy of to

The evidence in section 3 showed that some speakers pronounce to differently according to whether the next word starts with a consonant or with a vowel. Everybody has /ə/ before a consonant, but these speakers have either /ɔ/, /ər/ or /i/ before a vowel. The aim of this section is to explain how such allomorphy can be handled in a network theory such as word grammar.

One of the advantages of distinguishing forms from words is to allow us to handle this alternation entirely at the level of form, without regard to the words realized. As a result it is possible for the same rule to cover all uses of {to}, including not only TO_{inf} but also TO_{prep} – the ordinary preposition (as in to Egypt) – which shows exactly the same allomorphy in some accents. In this case there is no question of expressing the same generalization in terms of words, because the two words are

very clearly distinct lexemes, belonging to distinct word classes.¹⁶ However, as I mentioned briefly in section 3, there are speakers who have different allomorphy for the prepositional and infinitival TO, so their grammars also need to be accommodated.

The main goal of this section, then, is to account for the idiosyncratic allomorphy of to in accents (such as my own) which have an /ə~ɔ/ alternation rather than the expected intrusive r. The details are less important than the general mechanism for handling allomorphy in word grammar, so, ignoring various phonetic details, I assume that there are just two alternative pronunciations and that the choice between them is conditioned by the following phonological context: /ɔ/ before a vowel and /ə/ before a consonant.

One of the distinctive characteristics of word grammar is that relations can be introduced as needed and, when introduced, they are included in an inheritance hierarchy. We exploit this facility by introducing two relations which are important in any account of allomorphy:

- ‘next’, a very general relation which relates one segment to the one that immediately follows it; this allows us to relate the selected variant to the consonant or vowel following it.
- ‘last’, another general relation which relates a form to its final segment. In many cases, including that of {to}, the final segment has different identities before a consonant and before a vowel, so we may recognize two general sub-relations: ‘last+C’ and ‘last+V’, the segments found respectively before a consonant and before a vowel. Each of these two relations is-a ‘last’.

Given these relations, the rule for {to} is simple: its ‘last+C’ segment is an example of /ə/ which also has a consonant as its ‘next’, while the ‘last+V’ segment is /ɔ/ and is followed by a vowel. The full analysis for {to} is in [[INSERT Figure 8. (The ‘next’ links which distinguish last+C and last+V are not strictly necessary here because they are inheritable from a more general pattern; they are included here for clarity.)

[[INSERT Figure 8 about here]]

In words, [[INSERT Figure 8 deals with the realization of {to}, which in turn is the realization of either TO_{inf} or TO_{prep}.¹⁷ It has a ‘first’ segment /t/ and ‘last’

segment which is an instance of either /ə/ or /ɔ/, depending on whether the ‘next’ segment is a consonant or a vowel. No doubt this vowel alternation could be explained better in the context of a full analysis of English phonology in which this alternation followed from more general principles. However the main point is that allomorphy can be handled elegantly in a completely declarative network. The /ə~ɔ/ alternation now applies automatically whenever {to} occurs - including those contexts where it is merged into wanna. The next section explains this merger.

8 Wanna

The analysis in section 0 defined the syntactic conditions under which wanna is possible: if WANT_{to-obj} combines with TO_{want-obj}. Section 7 then explained how word grammar handles the vowel alternation in {to}, which (for most speakers) is the realization not only of the preposition TO_{prep} but also of TO_{inf} and all its sub-lexemes (including, of course, TO_{want-obj}). What remains is to show how {want} and {to} merge as wanna, explaining all the morphological facts in (7) repeated below:

(50) a. Want reduces before to regardless of *wanna*’s own morphosyntactic features:

- (i) I want to (wanna) go home.
- (ii) They want to (wanna) go home.
- (iii) I’m soon going to want to (wanna) go home.
- (iv) Come on - really want to (wanna) do it, and you’ll do it!

b. Wants and wanted never reduce before to:

- (v) He wants to (*wanna, *wansa) go home.
- (vi) He wanted to (*wanna) go home.

These facts reduce to the simple fact that wanna is possible (given the syntactic constraints mentioned above) if, and only if, the two morphs {want} and {to} are next to one another. Clearly this is a matter of form, not syntax. In addition to these well-documented facts, we also have to explain why /ə/ at the end of wanna either does, or does not, alternate in the same way as to.

Two parts of word-grammar theory are particularly important for this section:

- Since default inheritance is the basic logic, it is possible for wanna to inherit nearly all the phonology of both {want} and {to} while also overriding some details.
- Some nodes have very little content, and may be thought of as ‘variables’ (in contrast with constants such as WANT, Finite and {wanna}). By a convention mentioned earlier, variable nodes are shown either as a mere dot or as a number which shows whether they are obligatory (label ‘1’) or impossible (label ‘0’). The zero quantity is used to override an inheritable ‘1’, as in the case of elements which are ‘deleted’ – i.e. which are expected, but absent.

We start with the basic morphological information about WANT and TO_{inf} given in [[INSERT Figure 9, where the only link between the two items is that they share the segment /t/. This shows that the first segment of {want} is an example of /w/, and so on through the three other segments. Notice how this simple fact is presented: it is not the case that the first segment of {want} is the stored sound-type /w/ itself. If that were true, then every example of /w/ would inherit the property of being the first segment of {want}. By treating each segment as a variable which is an example of the general sound-type concerned, we avoid this logical problem. Moreover, if each segment of {want} is a variable, then it has a quantity which may be overridden by ‘0’ - in other words, it may be ‘deleted’. This is how we explain the absence of /t/ in wanna. Similarly, the stems of the two words WANT and TO_{inf} are variables which are examples of the form concerned; this allows other examples of the same form to serve as the stem of other words (such as the noun WANT_{noun} or the preposition TO).

[[INSERT Figure 9 about here]]

The next figure, [[INSERT Figure 10, concludes the analysis of wanna in those accents where it alternates like to. In linking the separate morphs {want} and {to} to the contracted form {wanna}, it builds on:

- the syntactic classification in [[INSERT Figure 7, which guarantees that {wanna} is only found in the right syntactic structures,
- the phonological analysis in [[INSERT Figure 8 of the /ə~ɔ/ alternation in {to}, which automatically applies (by inheritance) to the {to} in {wanna},

- the morpho-phonological analysis of {want} and {to} in [[INSERT Figure 9, which shows that the last segment of {want} is an example of the same sound (/t/) as the first segment of {to}.

[[INSERT Figure 10 adds four new items of information to what is already contained in earlier diagrams:

- that WANT is uninflected – i.e. its stem is also its ‘fif’ (fully inflected form) - thereby excluding forms like *wansa, while allowing any uninflected form regardless of its morphosyntax;
- that the last (segment) of {want} and the first of {to} are both 0; in other words, the shared /t/ is suppressed, giving /wɒnə/;
- this combination of {want} and {to}, with this pronunciation, comprises a complex form {wanna} which is stored alongside {want} and {to};
- {wanna} rather than the expected sequence {want} {to} is the default pronunciation; the more formal pronunciation could be added as a special case, with special social properties. (Social properties can be included in a word-grammar analysis – Hudson 1996; Hudson 1997 – but the mechanism is irrelevant here.)

Notice that this analysis treats {wanna} as a two-part structure {{want}{to}} whose boundary is blurred in the phonology by the merger and then suppression of the /t/. It inherits every other property of {want} and {to}, including – crucially – the alternation of vowels in {to} shown in [[INSERT Figure 8.

[[INSERT Figure 10 about here]]

However, we also saw in section 3 that some speakers treat the end of wanna differently from to. In each case, to had an idiosyncratic /ə~ɔ/ alternation while wanna had an ‘ordinary’ /ə/ (i.e. one which was treated like the /ə/ in sofa, whether this showed no alternation or intrusive r), so wanna has been regularized. One possible interpretation of this finding is that these speakers no longer have any active link to the form {to}. On the other hand, wanna still has all the other properties noted above which show that it must be linked to the form {want} (i.e. the uninflected realization of WANT), and also to the words WANT and TO. If this is correct then we need something like the analysis in Figure 11. The left side of this diagram is the

same as in [[INSERT Figure 10]so it captures the fact that only the bare stem of WANT can be involved in wanna; and it also shows that the expected /t/ is missing.

[[INSERT Figure 11 about here]]

The difference lies on the right, where the end of {wanna} is taken as an example of {er} rather than {to}. The morpheme {er} is the one I discussed briefly in section 5 in connection with the re-analysis of hamburger; I pointed out there that this same form seems to crop up in words as varied as three-pounder, hammer and mother – not to mention the more familiar speaker and bigger. These words have very little in common, but this is not a problem in a three-level analysis where morphemes have neither syntax nor meaning. Consequently there can be no theoretical objection to recognizing the {er} morpheme in wanna as well, and indeed the type frequency of this morpheme may help to explain why some speakers find it, rather than a deviant version of {to}, when they hear wanna.

The remaining question is how the analyses in these two diagrams can be extended to the remaining ‘therapy verbs’ (gonna, useta, hafta, gotta, oughta, supposeta). All these verbs have ‘full’ variants containing to, so they can all have the same unified syntactic analysis as I have suggested for wanna; this means that although gonna, useta and so on are all single forms, in each case the one form realizes two separate words in syntax, one of which is the infinitival TO_{inf}. This means that they can all build on the treatment suggested in either [[INSERT Figure 10] or [[INSERT Figure 11, depending on whether or not the final vowel shows the same alternation as {to}. Beyond that, it is very hard to be sure how far the treatment of {wanna} can, and should, be extended to the other words; this is ultimately a matter of psychological reality. One possibility is that each word has a separate lexical entry just like the one for wanna, but that there is no formal link among these different entries. Another is that (as native speakers) we recognize the similarities by creating a super-node which subsumes them all, and which carries a generalized version of the wanna analysis (like [[INSERT Figure 10] but with ‘therapy verb’ instead of WANT and a variable instead of {wanna}). The main point is that it is easy to generalize the

treatment of wanna to other related forms, and the only problem is choosing the correct analysis.

9 Conclusion

At the end of section 4 I suggested that the analysis of {wanna} should combine the strengths of previous analyses. These strengths are listed below, together with comments on how the proposed analysis provides them.

- The analysis should give wanna the same syntactic structure as want to.

In my analysis {wanna} realizes a sub-case of WANT with a sub-case of TO as its sharer, so the syntactic structures are precisely the same.

- The mechanism for contraction to wanna should be specific to this lexical item (and the remaining therapy verbs).

My analysis restricts the contraction just to {wanna}, and does not generalize at all unless we choose to apply it to the other therapy verbs.

- The syntactic analysis should relate the extracted-object restriction to the fact that the transitive want is normally separated from to by the object; but it should also accommodate the minority of speakers who do not apply this restriction.

The proposed analysis allows wanna only for the intransitive WANT (WANT_{to-obj}), but can easily be changed to allow wanna as a realization for any WANT_{to}.

- The phonological part of the analysis should relate the pronunciation of wanna to those of both want and to, including the exceptional vowel alternation found (for some speakers) in to.

My analysis for these speakers treats {wanna} as a combination of {want} and {to}, so each of its parts automatically inherits all the pronunciation facts of these two morphs except for the suppressed /t/.

Wanna contraction is a tiny corner of English grammar but it is sufficiently challenging to provide evidence on a wide range of theoretical issues, from syntax to morphology. To the extent that the analysis presented here is successful, it has provided evidence in support of the following more or less controversial points of general theory:

- Forms (e.g. {want}) are distinct from both words (e.g. WANT) and phonological structures, so there are four ‘linguistic levels’:
 - meanings
 - words
 - forms
 - sounds
 rather than the three (or two) which are recognized by theories which see a language as a collection of ‘signs’ which directly link, or are directly linked to, meanings and sounds.
- Lexemes may be further sub-divided into sub-lexemes (e.g. WANT_{inf-obj}) which have syntactic, semantic and/or morphological idiosyncracies. These abstract lexemes and sub-lexemes eliminate the need for abstract elements such as traces in syntactic structure, so the wanna facts do not, in fact, support the trace theory or movement rules.
- Complex morphology, including allomorphy, may be handled, without loss of generality or insight, in a declarative network provided we can invoke specialized relations which relate a variable form to its context (e.g. ‘last+C’, ‘next’).

However, although these various conclusions are supported by the wanna facts, they do not rest solely on the evidence from wanna. They can all be justified independently, and word grammar provides a coherent theoretical framework which accommodates them all.

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Notes

¹ One suggestion is that it is a matter of phonology, so liberal dialects have a phonological rule for reducing clusters which applies across syntactic boundaries where the other dialects forbid it (Pullum 1997); however in the absence of independent evidence for this difference, this explanation has no advantage over any other.

² This example is intended to show that *wanna* is possible for any bare form of the stem, even if the verb is imperative; unfortunately, it is hard to imagine a situation where an imperative *want* is needed, so the example may not be totally convincing. The point is that in these examples contracted *wanna* is no worse than uncontracted *want to* said at normal speed.

³ This generalization focuses on the contrast between a single form such as *wanna* and two separate forms such as *want to*; the phonetic details of the forms vary, of course, from place to place. For example, in most of East Anglia (UK), neither *want* nor *wanna* has an /n/ in the vernacular pronunciation: /wɒʔə/; consequently, a pronunciation with /n/ sounds relatively high-status (Peter Trudgill, p. c.).

⁴ The American Heritage Dictionary lists only two pronunciations for *to*: (t̩; t̩ when unstressed).

⁵ These facts are regularly taught to foreign learners of British English, and they can be found in any dictionary of British English including the online Oxford English Dictionary, which lists three pronunciations for *to*: '(tu̥, t̩, t̩)'; in the Longman Dictionary of Contemporary English (2003) we find: '/tə; before vowels t̩; strong tu:/' . The alternation between [ə] and [ʊ] is noted for *gonna* in Wells 2000 (under *go* and *gonna*), and Wells agrees (pc) that it is also found in *wanna*.

⁶ I circulated a small questionnaire to a total of 62 linguists and phoneticians, asking about the recipient's own usage. The results are summarised at www.phon.ucl.ac.uk/home/dick/wanna-data.htm. There are obvious questions about the reliability of self-report data, but the respondents are all experienced professionals, none of them had any vested interest in the outcome of the survey, and it is hard to imagine a better way of exploring such a wide range of pronunciations for such rare items.

⁷ The use of intrusive r in *to* (and *wanna*) strongly suggests a general rule for inserting /r/ after any /ə/, even if this is a non-etymological variant of another vowel, contrary to the purely exemplar-based account in Hay and Sudbury 2006. In short, a gradual lexically-based change can lead to a state from which speakers induce categorical generalizations.

⁸ Brian Joseph tells me that there are speakers in central Ohio have a form *hafing to* (with medial /f/) for necessitative *have* (where other speakers have the form *having to*), deriving (presumably) from *hafta* (again with /f/). If this explanation is right, it confirms that speakers can recognise the word *to* in merged forms such as *hafta* and *wanna* (Joseph 1992).

⁹ Word grammar is described in Hudson 1984, Hudson 1990 and a number of more recent publications including Hudson 2000a and Hudson 2003a. A great deal of information may be found at www.phon.ucl.ac.uk/home/dick/wg.htm.

¹⁰ In terms of clitic theory (Zwicky 1977), we might call *to* an 'ordinary clitic' which leans phonologically on *want*, except that the two words share the consonant /n/. The analysis presented below makes no commitment as to whether *to* is 'really' a clitic.

¹¹ John Wells has pointed out to me that the same ‘degemination’ of /t/ occurs in other auxiliary verbs too: *ought to* and *used to* can both be pronounced with a single /t/.

¹² Indeed, at one time I myself denied that morphemes were anything but arbitrary strings of phonemes, so I also denied the existence of a ‘morphemic’ level of analysis in contrast with a ‘phonemic’ one (Hudson 1984:54). The position I advocate in the present paper is a more orthodox combination of the European ‘Word and Paradigm’ approach with the American ‘Item and Arrangement’ approach, which I myself accepted in my earliest work on morphology (Hudson 1973). I have gradually returned to this position via a series of hesitant intermediate steps (Hudson 1990:85, Creider and Hudson 1999).

¹³ It would be quite possible for a speaker to learn a separate range of pronunciations for each meaning, but if all meanings allow the same range of pronunciations, it is at least possible for a learner to extract the relevant generalisation; and if the generalisation is to be expressed, it presupposes an intermediate form {one} which is related independently to a range of syntactic/semantic structures and to a range of phonological structures.

¹⁴ The details of how we analyse *to go* are a side issue here, but I assume that *to* is an auxiliary verb (Pullum 1982, Hudson 1984:83, Pollard and Sag 1994:125). Like other such verbs, its subject is ‘raised’ from its complement, the bare infinitive verb; e.g. *I want to go*, *I* is the subject not only of *want*, but also of *to* and *go*, and *to* is the ‘sharer’ of *want* while *go* is the sharer of *to*.

¹⁵ A minor variation on this suggestion is that the transitive infinitival use inherits from both the transitive use and the (intransitive) infinitival use – i.e. WANT_{to+obj}

inherits both from $WANT_{obj}$ and from $WANT_{to-obj}$. Multiple inheritance is formally allowed in word grammar, and indeed it plays an important role in the theory, but this analysis would be hard to justify because $WANT_{to+obj}$ blocks so many of the properties that it ‘ought to’ inherit from these two sources:

- the possibility of passivization (from $WANT_{obj}$)
- the default meaning ‘have X’ (from $WANT_{obj}$)
- the possibility of contraction to *wanna* (from $WANT_{to-obj}$).

¹⁶ Regarding the word class of TO_{inf} , the main point is that it is not a preposition. One possibility is that it is a ‘subordinator’ (Huddleston and Pullum 2002:1185), but another, which Huddleston and Pullum reject, is that it is an auxiliary verb which is always non-finite. One piece of evidence in support of the latter analysis which they do not mention is that it allows a preceding *not* (e.g. *Not to go would be a mistake*), which is generally possible for subordinate words (in contrast with fragments such as *Not here*) only if they are verbs. A third possibility is that it does not belong to any general word class (Pullum 1981; Pullum 1982). As Huddleston and Pullum acknowledge, the evidence is rather inconclusive.

¹⁷ As I mentioned in section 3, there are speakers who claim to have different pronunciations for infinitival and prepositional *TO*. Some of these speakers have non-alternating /ə/ in the infinitival and alternating /ɔ/ in the other, but others make the reverse distinction. **Error! Reference source not found.** would need to be adjusted in obvious ways for these speakers.