Antonyms as lexical constructions:
or, why *paradigmatic construction* is not an oxymoron[1]

M Lynne Murphy

University of Sussex

Abstract

This paper argues that antonymy is a syntagmatic as well as a paradigmatic relation, and that antonym pairs constitute a particular type of construction. This position relies on three observations about antonymy in discourse: (1) antonyms tend to co-occur in sentences, (2) they tend to co-occur in particular contrastive constructions, and (3) unlike other paradigmatic relations, antonymy is lexical as well as semantic in nature.

CxG offers a means to treat both the contrastive constructions and conventionalised antonym pairings as linguistic constructions, thus providing an account of how semantically paradigmatic relations come to be syntagmatically realised as well. After reviewing the relevant characteristics of CxG, it looks at some of the phrasal contexts in which antonyms tend to co-occur and argues that at least some of these constitute constructions with contrastive import. It then sketches a new type of discontinuous lexical construction that treats antonym pairs as lexical items, and raises issues for further discussion.

0. Introduction

Antonymy[2] (lexical opposition) has traditionally been classified as a paradigmatic relation between words. That is, antonym pairs form a contrastive paradigm within a semantic field, such that in contexts in which one member of the pair can occur, so could (with different truth conditions) the other member of the pair. In this way, it is likened to other lexical-semantic paradigms, such as synonymy and hyponymy. This is illustrated in (1), in which any member of any of the paradigms could grammatically and logically occur.

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[2] Note that I use "antonym" in the broad sense of the term, referring to any contrasting lexical pair, regardless of the type of logical relation it is in. This is in contrast to the more narrow sense 'gradable contrary' used by some authors, e.g., Lyons (1977) and Cruse (1986).

(1)   That was the only time I saw him ____.
        antonym paradigm: {drunk, sober}
        synonym paradigm: {drunk, sloshed, inebriated}
        hyponym paradigm: {drunk, falling-down drunk}

Classifying these as paradigmatic relations implies that we do not expect the members of the paradigm to co-occur in the same constructions – we choose one or another, as in (1). But there are reasons to think that antonymy is a syntagmatic relation as well as a paradigmatic one, and that antonym pairs may well constitute a particular type of construction. This position relies on three observations about antonymy in discourse. First, corpus studies have repeatedly shown that members of antonym pairs tend to co-occur in sentences (e.g., Justeson & Katz 1991; Mettinger 1994; Willners 2001). Furthermore, when antonyms co-occur in discourse, they tend to do so in particular contrastive constructions (Fellbaum 1995; Jones 2002). Finally, unlike for other paradigmatic relations, antonym relations are lexical as well as semantic (Gross et al. 1989; Murphy 2003b); that is, the pairing of words is not based solely on meaning but also on the association of those particular word forms, indicating that the pairings are learned through exposure to them and stored as lexical knowledge.

These three observations lead to the view that antonym pairs constitute more than just two-member semantic paradigms, which then raises the problem of how to represent antonym relations in linguistic theory so as to capture both their paradigmatic and their syntagmatic properties. In the tradition of structural semantics (e.g., Lehrer 1974; Lyons 1977; Cruse 1986), antonym relations are represented within a paradigmatically organised lexicon. So, for example, the fact that *hot* is the opposite of *cold* would be directly represented at the semantic level of representation, and (in order to account for the lexical nature of antonymy) the relation would also be specified in the lexical entries for the two words. However, such a view is overly simplistic, as (a) it does not distinguish between (lexical) relations among words and (semantic) relations among meanings, and (b) it cannot (without positing a great amount of polysemy in the lexicon) account

for the fact that antonym pairings are context-sensitive (Murphy & Andrew 1993). For example, *wet* is a good antonym for *dry* when talking about roads or towels, but not when talking about cake (*moist/#wet cake*; # indicates semantic/pragmatic inappropriateness) or soluble substances (*damp/#wet salt*). This observation has led to the position that opposite relations are pragmatically generated, but that some particular antonym pairs are conventionally associated (Murphy 2000, 2003b). In *Semantic relations and the lexicon* (Murphy 2003b), I claimed that such conventional associations are part of one's metalexical (i.e., metalinguistic) knowledge *about* the words involved (as opposed to one's lexical/linguistic knowledge *of* the words), and contended that such metalexical knowledge leads to the co-occurrence of the word pair in discourse. This article, on the other hand, argues that Construction Grammar offers a means to treat conventionalised antonym pairings as linguistic constructions, thus providing a more direct account of how semantically paradigmatic relations come to be syntagmatically realised as well.

The next section reviews the characteristics of Construction Grammar that are relevant to the subsequent discussion of antonyms. Section 2 deals with the use of antonyms in discourse, looking at some of the phrasal contexts in which they tend to co-occur and arguing that at least some of these phrasal templates constitute contrastive constructions. Section 3 turns to the antonym pairs that often co-occur in those constructions and the question of whether the pairs themselves constitute lexical constructions. Section 4 returns to a problem that is raised in section 2, that of "Ancillary Antonymy", and whether this discourse function of antonymy merits a construction-based account as well. The last section offers a brief summary of the arguments raised and suggestions for further work on the topic.

1. The applicability of Construction Grammar

Construction Grammar[3] (CxG) has several properties that distinguish it from generative approaches to language. These distinctive properties allow for the treatment of antonym *pairs* as lexical input to syntactic and textual structures. In other words, if one accepts the arguments presented in section 3 that antonym pairs should be treated as constructions, then these arguments also serve as arguments for preferring a construction-based model to other approaches to grammar and lexis.

There are many contrasts between construction-based grammars and other current syntactic theories, but two are particularly relevant to this article. First, because CxG does not rely on a phrase structure grammar, it gives no priority to the notion of syntactic constituency. Thus, constructions may involve one, several or no constituents, in the traditional sense of the term. For example, *from* [NP-SOURCE] *to* [NP-GOAL] functions as a unit in discourse, but has no status as a constituent in phrase structure grammars, which can lead to problems in trying to explain its prosodic and information-structural properties. By not tying grammatical explanation to the notion of constituency, CxG can account for structures at every level from the morphological to the textual. This is particularly apt for the treatment of antonym pairs, which co-occur both within (*hot and cold*) and across (*from hot to cold*) constituent boundaries.

Second, CxG posits that the basic unit of linguistic analysis is the construction, which is defined as a form-meaning pair in which some aspect of meaning and/or form is not predictable from its component parts (Goldberg 1995: 4). This notion of **"construction"** is important to the following discussion for a number of reasons. First, the definition of "construction" is roughly equivalent to the definition of *lexical item* in other syntactic theories (such as Head-driven Phrase Structure Grammar, Minimalism) but unlike such theories, CxG makes little distinction between

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[3] While this article follows Construction Grammar as introduced by Fillmore and Kay (1995 and elsewhere), the properties of CxG that are relevant for the present purposes are general properties of all construction-based grammars. Thus other construction-based grammars (e.g., Croft 2001) are equally relevant to the phenomena discussed here.

that which is lexical and that which is grammatical. Instead, being a grammatical structure or being a lexical item is a matter of degree – with very abstract grammatical structures at one end of the continuum and simple morphemes at the other end. In between are grammatical units that are specified for varying degrees of lexical content. This is particularly relevant to the study of antonymy, which may be said to flout the distinction between paradigmatic and syntagmatic relations. In structuralist and most generativist approaches to language, the lexicon is the realm of paradigms and the grammar is the realm of syntagms. The lack of lexicon-grammar modularity in the CxG approach makes the "problem" of antonymy's paradigmatic-syntagmatic status less problematic. Second, since grammatical structures (as well as lexical items) are seen as form-meaning pairs in CxG, the possibility arises for grammatical structures to be polysemous (see, e.g., Goldberg 1995: 31–39). This is relevant to the discussion of contrastive constructions in the next section. Finally, conventionalised preferences for using particular lexical forms together can be represented directly in the **constructicon**. This is useful in explaining why some pairs of expressions with opposite meanings co-occur far more frequently than others, as discussed in section 3.

2. Constructions in which antonyms occur

As noted above, several researchers have observed that antonyms often co-occur in particular phrasal contexts. This section introduces some of these contexts and establishes that these phrasal contexts constitute constructions, in that they are form-meaning pairings. I focus here on some of the contexts identified by Jones (2002), who provides a particularly thorough investigation of antonyms in text. Jones systematically describes the contexts in which 56 antonym pairs co-occur in a corpus consisting of nine years of the British broadsheet newspaper *The Independent*. While noting a range of lexico-syntactic templates in which antonym pairs occur, he also groups them according to their discourse functions. These discourse categories have been found in other genres (spoken English; Jones 2006) and registers (child and child-directed speech; Jones & Murphy

2005; Murphy & Jones forthcoming), and work is underway to establish their frequency in other languages. For the sake of brevity, I restrict my attention to a few of these discourse functions and the structures associated with them in English.

The discourse-functional category of Coordinated Antonymy accounts for about a third of the antonym co-occurrences in Jones' corpus.[4] The semantic/discourse effect of Coordinated Antonymy is to indicate exhaustiveness of the scale involved. In other words, coordinated antonyms are used in order to indicate that what is being said is true of both of the opposed states and all states in between. In effect, this neutralises the difference between normally opposed categories, as seen in (2) (examples from Jones 2002, from *The Independent* corpus).

(2a)　These qualities all made him sought after by **young and old alike**.

(2b)　It is **how well or badly** a person plays a game, runs a race, or rides a horse that matters most.

(2c)　Thompson… says he is **neither a pessimistic nor optimistic** about his prospects…

Coordinated antonyms often occur in syntactic frames such as those in (3).[5]

(3)　**Coordinated antonym frameworks**

(3a)　*X and Y*

(3b)　*both X and Y*

(3c)　*X and Y alike*

(3d)　*X as well as Y*

(3e)　*X or Y*

(3f)　*either X or Y*

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[4] Such a high frequency of coordinated antonymy may be particular to the genre of this particular corpus. Preliminary work on antonyms in spoken English has found a smaller proportion of coordinated antonyms, although it is still considered to be a major category (Jones 2006).

[5] It is important to keep in mind here that Jones' term "Coordinated Antonymy" is the name of a discourse function of an antonym pair, and not of a grammatical situation. This means that antonyms can be in a Coordinated Antonymy relation without being in a coordinate grammatical structure. For example, *She loves everyone from young to old* indicates exhaustiveness of the age scale and thus is considered to be a case of Coordinated Antonymy. Likewise, antonyms that are in grammatically coordinated constructions are not necessarily in the Coordinated Antonymy discourse relation. For example, Interrogative Antonymy involves coordination in the form of disjunction (*Is it hot or cold?*), but presupposes that only one of the disjuncts can be true, not both.

(3g)   *how X or Y*

(3h)   *whether X or Y*

(3i)   *neither X nor Y*

I have followed Jones' convention in referring to the antonyms here as X and Y, although in some of the cases above the part of speech could be specified. For instance *how X or Y* involves adjectives or adverbs, while *X and Y alike* involves nouns or adjectives.

Some of the frames in (3), such as *X and Y alike*, are particularly associated with (usually binary) contrast. While well-established antonym pairs often co-occur in these syntactic frames, other words can serve as the X and the Y, and in such cases they are essentially treated as opposites. For example, the word *green* does not have a clear, conventionalised opposite in neutral contexts,[6] but when it serves as the Y in instances of *X and Y alike*, the X is a contextually appropriate opposite, as shown in (4), which shows typical results in a web search for *and green alike*.[7] Such examples provide a demonstration of the contrastive nature of the *X and Y alike* construction.

(4a)   **Veteran and green alike** come here to share their wisdom and views.
        (www.aresaxis.us/phpbb/index.php)

(4b)   …in order to provide a safe gateway into the scene for newcomers by
        bringing them together with people from their own generation **experienced and green alike**
        (www.dssanctuary.org/ME_TNG/METNG.htm)

(4c)   Unbidden tears begin to fall from **blue eyes and green alike**.
        (www.merwolf.com/academy/ fanfic/x/xenamour_finalscene.html)

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[6] Part of the evidence for this is that words with canonical opposites usually stimulate opposite responses in word association tasks, for example 74% responded to *black* with *white* and 31.5% of responses to *deep* were *shallow* in the Minnesota word association norms (Jenkins 1970). For *green*, however, the most common response is the syntagmatic response *grass* (26%), followed by a range of contrasting colours (*red, blue, yellow*), with no single, clear opposite.

[7] All World-Wide Web examples were obtained via the google.co.uk search engine and are accessible as of February 2005.

(4d)   What's your favourite fruit? ... grapes (**purple and green alike**)
       (www.cosforums.com/showthread.php)

(4e)   They watched the line of flames eat back into the grass, burning the
       brown and green alike
       (www.myredbuffalo.com/grazing.htm)

(4f)   **Dry wood and green alike** fell before my whirring chain.
       (www.talkaboutreligion.com/group/alt.religion.kibology/messages/501753.html)

(4g)   …committed the [coffee] beans to the compost bucket, **roasted and
       green alike**.
       (www.themeyers.org/HomeRoast/Topic5989.htm)

(4h)   a means of uniting the deprived Irish working class, **orange and green
       alike**,
       (homepage.ntlworld.com/alan.scott4/min.html)

Some of the examples in (4) involve opposites that are conventional with respect to particular senses of *green* (particularly *green/orange* in the context of discussing Irish politics), while others are semantically opposed in the context, but not necessarily conventionally opposed as lexical items. This can be seen in the range of lexical items that can contrast with the 'inexperienced' sense of *green* in (4a-b) or with the 'colour' sense in (4c-e). In these cases, *green* is in a binary contrast with the sense of its coordinated counterpart, but the lexical item *green* is not conventionally associated with the opposite provided within the phrase. Compare, for example, (4e) and (4f), in which green is used to describe similar types of things (living grass or living wood), but where the authors have chosen different opposites, *brown* and *dry*. One could also imagine other contrasts that are possible, for example, *green/dead, living/dead, fresh/brown* and so forth, and those as well would be acceptable in the *X and Y alike* frame, whereas an invented example like (5) is only acceptable if we can think of a context in which *green* and *living* could be in contrast.

(5)   # I cut the grass, green and living alike.

This kind of evidence can be used to argue that *X and Y alike* constitutes a construction with semantic or discourse import of its own. This is to say that part of the meaning of this construction is that it unites contrasting categories, and so if two words appear in this lexico-syntactic template, then they are interpreted as opposites. This could be seen as a kind of relational coercion, in which appearance in the X and Y positions of the contrastive construction influences word pairs that are not necessarily in an opposite relation already to be interpreted as opposites.

Not all of the frames for coordinated antonyms shown in (3) force a contrastive interpretation of the X and Y in all situations. For instance, *X and Y* conjunctions can be contrastive, but are not necessarily so; in other contexts *and* may indicate co-occurrence, temporal ordering or causation as well as contrast. But as Fillmore and Kay (1995: 50) note, "[t]he regular and highly productive constructions of the language sometimes furnish the syntactic skeleton for special constructions which embody particular semantic and pragmatic features, sometimes quite narrowly defined ones." The contrastive use of the *X and Y* construction is one such special construction, as it can be distinguished from other uses of *X and Y* (Haspelmath forthcoming). The contrastive meaning of this construction is particularly evident in cases where the conjoined items are noun phrases. So, in (6) and (7) we see that it is odd to conjoin noun phrases that are related by the inclusion relations of synonymy and hyponymy. On the other hand, (8) is perfectly natural, since the second conjunct *other animals* does not include the first *cats*, but contrasts with it.

(6)   # We saw a lot of housecats and moggies.   (synonyms)

(7)   # We saw a lot of cats and animals.   (hyponym, hyperonym)

(8)   We saw a lot of cats and other animals.   (co-hyponyms: contrast relation)

So, in cases of Coordinated Antonymy, we have seen that (a) antonyms tend to co-occur in particular lexico-syntactic frames and (b) the frames themselves require or underscore the contrast between the X and Y elements. Conversely, the contrastive reading is facilitated by our knowledge of the semantics of the employed "word pairs". The fact that these syntactic frames are associated with particular semantic-discourse contributions indicates that they should be treated as constructions. We can label them generally as **contrastive constructions**.

Jones identifies several other types of discourse functions of antonymy, and most of these are associated with particular lexico-syntactic frames, some of which may qualify as contrastive constructions as well. The discourse types include Negated Antonymy, Transitional Antonymy and Comparative Antonymy. **Negated Antonymy** juxtaposes the assertion of X and the negation of Y in order to reinforce their contrast and thus emphasise the assertion of X. This is often effected through the negated contrastive constructions in (9):

(9a)   *X, not Y*
(9b)   *not Y, but X*
(9c)   *X instead of Y*
(9d)   *X as opposed to Y*

Comparative Antonymy measures one antonym against the other. The *more X than Y* comparative frame in particular has the hallmarks of a construction. Firstly, it is formally marked in terms of the comparative morphology used, as shown in (10), in which *more happy* is allowable, but the inflected form *happier* isn't.

(10a)   [C]amp is over, and [I]'m more happy than sad.
        (http://www27.brinkster.com/christy747/rants2.html)
(10b)   *Camp is over, and I'm happier than sad.

When non-antonymous adjectives are contrasted in the *more X than Y* construction, the two properties described are understood in context as being in a sort of binary contrast: the more

one has of one property, the more it offsets the having of the other property. So, the Y in *more happy than Y* can be any property that is considered to be inconsistent with happiness. This is borne out by a web search in which the 770 returned Google hits for *more happy than* yielded 56 cases of the construction.[8] Except for one case of word play (*Old Pete was always happy-go-lucky, but more happy than lucky*), all of the examples contrast *happy* with a negatively evaluated state, usually *sad* (n = 17) or *unhappy* (n = 14), but also *confused, jealous, disappointed, shocked, frightened, angry, overwhelmed, calamitous* and others.

Lastly, **Transitional Antonymy** indicates a shift from one state, action or thing to its opposite. The constructions associated with this function require semantically contrasting (i.e., non-identical) referents in the X and Y positions, but not necessarily opposite (binary contrasting) referents, so they are not "contrastive constructions" to the same extent as the coordinated ones in (3) or the negated ones in (9). Nevertheless, "conventional" antonyms often co-occur in such constructions:

(11a)   *from X to Y*
(11b)   *turning X into Y*
(11c)   *X gives way to Y*

While the above categories are associated with particular syntactic frames, some of which can be argued to be contrastive constructions, the most frequent antonym function, Ancillary Antonymy,[9] is not associated with specific lexico-syntactic frames. In Ancillary Antonymy, the use of one antonym pair creates or emphasises a contrast between another pair of expressions. In (12) the primary antonym pair is presented in bold, while the secondary contrast pair is italicalised.

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[8] The figure 770 refers to the number of hits actually returned by the Google search engine in a regular search, rather than the 64,000 it estimated to exist on the web. The other 726 did not have adjectives in the Y position, or involved ellipsis.

[9] Ancillary Antonymy is widespread, accounting for between 30 and 40 percent of all antonym co-occurrences (Jones 2002 and 2006; Murphy & Jones forthcoming).

(12a)   You want your friends to **hate** *the sin* and **love** *the sinner.*[10]
         (Jones 2002)
(12b)   We ought to live in **big** *cities*, not **small** *suburbs*
         (slate.msn.com/id/3670/entry/24043/)
(12c)   *Bofors* might indicate **failure**, but *Venus and Saturn* spell **success**.
         (Jones 2002)

As (12) shows, Ancillary Antonymy usually involves members of an antonym pair in parallel constructions in which the second contrastive pair occurs in parallel positions as well. This may involve other identifiable contrastive constructions as well, such as *X and Y* in (12a) and *X, not Y* in (12b), but does not necessarily do so. Thus, Ancillary Antonymy itself is not associated with particular partially lexicalised frames though instances of Ancillary Antonymy may also belong to other categories (Negated, Coordinated) and thus be associated with their frames. Since Ancillary Antonymy is different in this respect, we return to it in section 4. Next we turn to the Xs and the Ys that fill out the contrastive constructions and ask whether these pairings also constitute constructions.

3. Antonym pairs as lexical constructions

3.1 Why antonym pairs are constructions

The argument for antonym pairs as constructions involves **canonical antonym pairs** (Murphy 2003b)[11] — that is, pairs of words in binary semantic opposition that are associated by convention as well as by semantic relatedness. English examples of canonical antonym pairs include *black/white, fall/rise, alive/dead, off/on, private/public* and so forth. In this category, I also include words that may not be antonymous according to some logical definitions of "antonym", but which

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[10] As Jones (2002:58) notes, the ancillary contrast between *love* and *hate*, coupled with the parallel clause structures leads us to interpret *sin* and *sinner* as separable, contrastable things. In this way, Ancillary Antonymy creates contrasts between expressions that are, on their own, in meronymous relations.

[11] These are similar to what Gross et al. (1989) call "**direct antonyms**" and to what Mettinger (1994) calls "**systematic antonyms**".

are nevertheless incompatible terms that are conventionally paired, like *cat/dog* and *niece/nephew*. The notion of canonical antonymy contrasts with simple **semantic opposition** in which the meanings are incompatible, but the words are not necessarily conventionally paired – for example, *cold/scorching*, *blue/orange*, and *descend/rise*.

There is plenty of evidence that canonical antonym pairs are closely linked in our minds. The members of these pairs tend to elicit each other (and not other semantic opposites) in psychological tests such as free word association (Deese 1965; Charles & Miller 1989), and people are faster at recognizing them as antonyms than non-canonical opposites (Herrmann et al. 1979; Charles et al. 1994). Charles, Reed and Derryberry (1994) also found that canonical (or in their terms, direct) antonym recognition is not affected by the semantic distance between members of the pair, whereas semantic distance in non-canonical opposites delays reaction times for those pairs. In semantic priming tests, canonical antonyms prime each other more strongly than non-canonical opposites (Becker 1980). These types of evidence have been used to argue that the relation between the words is accessible without recourse to semantic processing (e.g., Gross et al. 1989; Charles et al. 1994). If, as I am about to argue, such pairs constitute complex lexical items in their own right, such effects can be accounted for.

At the textual level, members of canonical pairs tend to co-occur within sentences at higher than expected rates (Justeson & Katz 1991, 1992). Jones (2002) estimates that one in about every fifty sentences of journalistic English contains an antonym pair, and current work on spoken English (Jones 2006), and child and child-directed English speech (Jones & Murphy 2005) reveals similar rates of co-occurrence. The canonical pairings are preferred to other semantically possible pairings (Willners 2001). For example, the non-canonical pair *large/little* is rare in text, but *big/little* and *large/small* are extremely frequent (Charles & Miller 1989). Furthermore, these studies show that knowing antonym pairs is not just a matter of knowing set phrases in which they occur, like *the long and the short of it* or *neither here nor there*. Instead, we can use any pair in a

range of different constructions, as illustrated in (13), and any contrastive construction can contain

a wide range of antonym pairs, as shown in (14) and (15):

(13)   *Rich/poor* in various contrastive constructions.

(13a)   *coordinated post-nominal adjectives* (Coordinated Antonymy)
          Today practically everyone, **rich and poor**, enjoys the benefits of
          electrical power
          (www.libertarianworld.com/Sorry-not-Capitalism.html)
          He was always very gracious to everyone, **poor and rich**
          (www.aboutmeco.org/crossroads/jul03/july03-06.html)

(13b)   *neither X nor Y* (Coordinated Antonymy)
          Bool longed to be **neither rich nor poor**
          (www.theithacajournal.com/news/stories/20030111/localregional/753437.html)
          [N]either poor nor rich know how to be content
          (www.ccel.org/ccel/watson/contentment.xii.html)

(13c)   *go from X to Y* (Transitional Antonymy)
          The only area in London to **go from rich to poor** and back again, twice.
          (www.footandmouthwalkingtours.co.uk/ pages/neighbourhood.htm)
          But how can we **go from poor to rich** just by reading a headline?
          (www.worldwideadnetwork.com/headlines.htm)

(13d)   *not X but Y* (Negated Antonymy)
          The typical Angelino is **not rich but poor**.
          (www.inthefray.com/la10/interact/snow20/snow20-page2.html)
          Much of the Third World is **not poor**, **but rich**.
          (www.nsu.ru/filf/pha/threads/log11.htm)

(13e)   *more X than Y* (Comparative Antonymy)
          Most of us who read these words, by New Testament standards, are
          more rich than poor.
          We tend, however, to think ourselves **more poor than rich**.
          (www.baptiststandard.com/ 2002/8_12/pages/bstexas7_28.html)

(14)   Some antonyms occurring in *more X than Y* construction
          (from Jones 2002: 76-77)

(14a)   Sometimes I feel **more masculine than feminine**.

(14b)   Although one has to be **more pessimistic than optimistic**…

(14c)   Dr Higgs was a lot **more right than wrong**.

(14d)   [S]ome living composers are **more dead than alive**.

(15)   Some antonyms in the *from X to Y* construction
         (from Jones 2002: 85)
(15a)   Her film career has lurched **from success to failure**.
(15b)   _ both camps swung **from optimism to pessimism**.
(15c)   I have no problem crossing the boundary **from straight to gay** people …

It may be useful to briefly compare the data in (13) and (15) to set phrases that conform to particular contrastive constructions, such as *from rags to riches* ('from poor to rich') or the (American English) set phrase, *from soup to nuts*, meaning 'exhaustively, from start to finish'. While the *from X to Y* phrase in (16) superficially has the same structure as those in (15), the set phrases are less schematic.

(16)   Learn everything you need to know to be a successful real estate investor…**from**
         soup to nuts.
         (www.notetools.com/souptonuts.html: ellipsis in original)

While *from soup to nuts* is a set phrase, *from rich to poor* (13d) instantiates the integration of the *from X to Y* construction with the lexical pair *rich/poor*. This is evident in the fact that the contrast between *soup* and *nuts* is only clear with reference to that particular phrase. The pair *soup/nuts* is used in other contrastive constructions only as a type of metalinguistic humour device, as indicated by the examples in (17):

(17a)   The guides had flown in an elaborate spread soup to nuts, seriously they had **both**
         soup and nuts.
         (www.transworldsnowboarding.com/snow/resorts_travel/article/0,13009,242666,00.h
         tml)
(17b)   The evening has begun — for you are at a wedding from soup to nuts (though they
         serve **neither soup nor nuts**.)
         (http://www.aislesay.com/PA-TONY.html)

Similarly, *rags* and *riches* co-occur frequently in the phrase *from rags to riches*, but phrases such as *both rags and riches* and *neither rags nor riches* are relatively rare (*from rags to riches* is

found nearly a thousand times more often than these in a web search), and phrases like *both riches and rags* and *neither riches nor rags* do not occur at all on the web. Compare this to pairs like *rich/poor*, which are found across the range of contrastive constructions that allow nouns and adjectives (as in (13)), as well as in more abstract contexts, such as word-association tests and thesauri, and in cases of Ancillary Antonymy, as in (18).

(18a)   In this account, the **rich** get *to choose*, and the **poor** get *the queues*.[12]
         (Jones 2002: 52)
(18b)   Now these orders of time have been reversed: the **rich** *rise at dawn*; the **poor** *sleep late*.
         (Jones 2002: 54)
(18c)   The **rich** are *stupid*; the **poor** are *ignorant*.
         (www.geocities.com/benign0/agr-disagr/10-1-voters.html)

The fact that *rich*/*poor* can trigger Ancillary Antonymy, in some cases creating a contrast where it is usually not found (as for *stupid/ignorant* in (18c)), indicates that the co-occurrence of the pair is not merely a result of language users having internalised *rich* and *poor* in a number of set phrases. In these cases, the phrases are not set, but the opposition between *rich* and *poor* is.

Comparing canonical antonym pairings to morphologically derived antonyms provides further evidence that the lexical (i.e., not morphologically derived) antonym pairs are directly represented in our language production faculties. While morphological opposites are readily available in English, we tend to prefer lexical opposites in contrastive constructions. For example, Jones (2002) searched for the word *natural* in various contrastive constructions. *Artificial* and *man-made* were the most frequent opposites found, while the morphologically derived antonym *unnatural* did not occur at all in the majority of the contrastive constructions investigated by

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[12] Again (cf. fn. 10), this example demonstrates the ability of Ancillary Antonymy to create binary contrasts between expressions that are not conventionally antonymic. In this case, *to choose* indicates rich people's access to private facilities, whereas the poor have to make do with public facilities, and the waiting list for those facilities. The rhyme in this case is used to heighten the effect by creating a phonetic similarity against which the semantic contrast is starker.

Jones, and occurred at much lower rates than *artificial* and *man-made* in the constructions in which it did occur. So, while we have the ability to make predictable morphological opposites for many words, we often prefer to use morphologically unrelated words as opposites in contrastive constructions. The regularity with which we use the same words as antonyms in the face of the range of other available semantic opposites indicates a learned preference for pairing particular words.

Regular co-occurrence in contrastive constructions can cause word pairs to be added to the antonym canon, and their use as antonyms then extends beyond the original contexts in which they were found. For example, Jones (2002) looked at occurrences of *style* in contrastive constructions and found that it was frequently contrasted with *substance*. However, a shift in application of this opposite pair was evident in the nine years covered in his newspaper corpus (1988–1996). While in the earlier years it had been mostly applied in political contexts (particularly referring to Tony Blair and New Labour), by the end of the corpus period (and to the present), it was used much more broadly, indicating that the relation between the two words has been lexicalised at a more abstract (i.e., less context-bound) level. Similarly, the fact that *rags* and *riches* do co-occur in contrastive constructions other than *from X to Y* indicates that experiential reinforcement of that pair may have brought them to the periphery of the antonym canon.

The pairing of polysemous words can provide another piece of evidence that particular words are paired as opposites. Antonymy is usually classed as a sense relation (e.g., Lyons 1977), meaning that it relates word senses rather than the words themselves, which have a range of senses. Thus, the opposite of *hot* is *cold* when it is used as a temperature term, but the opposite is *mild* when *hot* is used to mean 'spicy'. Nevertheless, when a member of a canonical antonym pair acquires a new sense, the opposition can be carried into the new semantic field, thus indicating that we perceive the words as related even apart from their usually opposed senses. So for

example, *black/white* are opposed as achromatic colour extremes, but when one is used to describe some other state, the other is still available as an opposite, as in (19).

(19a)   black coffee / white coffee (unadulterated/with milk)
(19b)   black market / white market (illegal/legal)
         White market plants include those that have been legally collected by botanical gardens
         (www.sarracenia.com/pubs/ncsp.doc)
(19c)   black people / white people (non-European/European genetic heritage)
(19d)   black box testing / white box testing (also called glass *box testing*)
         (involving not-visible/visible internal processes)
(19e)   white light / black light
         (visible/invisible types of radiation)

In each of these cases the earlier of the two usages is leftmost. So, for example, *black* was in regular use as a racial term before *white* was (Flexner 1976). While few of the items referred to in (19) are literally *black* or *white*, because one has been designated *black*, we can productively label its opposite *white* on the grounds that the *black/white* antonym pair is well known to us. In some of the cases in (19), it may also be the case that a metaphorical transfer has occurred. For instance, there are deeper semantic reasons to call a certain kind of testing *white-box testing* (19d) since the metaphor of a monochromatic colour scale has been imported to the testing schema. In this case, we might naturally invent the term *grey-box testing* if a test with partially visible internal processes were invented. However, the phenomenon does not reduce to metaphorical relatedness, since examples (19a) and (19c) are not metaphorical. Coffee with only a little milk isn't *grey coffee*, for example.

The proposal that pairs like *rich/poor* and *black/white* are represented in the lexicon (e.g., Gross et al. 1989) is not new, but what is rather different is to propose treating antonym pairs as syntagmatically related words.[13] Approaches like lexical field theory (Lehrer 1974) or lexical

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[13] Antonym relations have also been treated as syntagmatic in Meaning-Text Theory (MTT), although not regularly. In early versions of MTT (Zholkovskii & Mel'chuk 1970), antonymy, in the form of the "**Anti**" relation, was classed as

networks like WordNet (Fellbaum 1998) treat antonyms as lexically linked to each other in a paradigmatic relation. These models represent paradigmatic relations (not just antonymy, but also synonymy, hyponymy and others) in order to partly represent the meanings of the words involved. Because they focus on the paradigmatic and semantic aspects of the relations, the syntagmatic aspects of antonymy in particular are neglected.

CxG's sister theory, Frame Semantics (Fillmore 1978 and elsewhere) is often likened to field approaches (Kittay & Lehrer 1992), but it differs in that

> "words or word senses are not related to each other directly, word to word, but only by way of their links to common background frames and indications of the manner in which their meanings highlight particular elements of such frames" (Fillmore & Atkins 1992: 77)

Yet in the case of canonical antonyms the word-word relation needs representation as well.

Construction Grammar provides the potential to bridge the gap between the syntagmatic and the paradigmatic. Thus, in addition to the representation of the semantic, paradigmatic relation of opposition in conceptual structure, I propose that certain pairings of opposite words are reinforced through linguistic experience and that such learned associations must be represented in the mental lexicon (or "constructicon") in order to explain the particular distribution of these word pairs in discourse.

Treating antonym pairs as constructions provides an explicit means for describing and explaining the interaction of antonym pairs with the particular types of construction in which they appear. However, as discussed below, the antonym construction is not a contiguous phrase, and so we might consider it to be a paradigmatic construction, that is, a complex lexical construction that unifies with other constructions, resulting in syntagmatic usage. So, just as there is no strict

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a syntagmatic (in their terms "parameter") relation because it is an exception to the rules governing paradigmatic relations in MTT. Nevertheless, later versions treat **Anti** as paradigmatic, although still an exception to generalizations about paradigmatic relations (Alonso Ramos & Tutin 1996). See Murphy 2003a for discussion.

division between the lexical and the grammatical in CxG, the syntagmatic and the paradigmatic constitute a continuum, rather than two distinct linguistic categories.

3.2 The antonym construction

I begin the discussion of antonym constructions with a general antonym construction – a schematic version that summarises the common properties of the lexicalised versions, and that can also be used in the sanctioning of new antonym pairings. The proposal here is that canonical antonym pairs constitute lexical "items" made up of two lexical items that are syntactically similar and semantically related, but which are not in any phrasal relation to each other. In this way, this construction is unlike any that have been proposed before, but it is possible that other similar "paradigmatic" constructions could exist, for example among larger sets of contrasting categories (e.g., *animal/vegetable/mineral*) or hyponyms and their hyperonyms (*apple < fruit*). However, there is less evidence for canonical relations within paradigmatic relations other than antonymy and less opportunity for such relations to be experientially reinforced (see the discussion in Murphy 2003b, chapters 2 and 5).

The Antonym Construction requires the following properties (I-VI).

I The entire construction is specified as lexical [LEX +].

That is, although this construction has daughters, they are not in any specified syntactic relation to each other, therefore, it is not a phrase, but a complex lexical item.

II   The construction consists of two lexical daughters.

III The construction shares its syntactic category with its daughters.

That is, the syntactic categories of the two daughters must be unifiable.

IV A feature UNIT is specified as 2.

A further feature specification is needed to indicate that this [LEX +] construction is not a single lexical item. This is necessary because the lexical and categorical specifications alone do not distinguish single nouns, verbs, or adjectives from pairs such as these, and only the former can serve as daughters in constructions requiring a single noun, verb or adjective. The default specification for this UNIT feature is 1, but it is specified as 2 in pair-wise paradigmatic constructions such as the antonym construction. So, *rich* is [LEX +, CAT Adj, UNIT 1], while *rich-poor* is [LEX +, CAT Adj, UNIT 2]. A paradigmatic relation construction is thus one that is [LEX +], but which has daughters. Ideally, the specification of the UNIT feature should result from the calculation of the number of daughters in a [LEX +] construction. In the case of [LEX -] constructions, the UNIT specification should automatically be 1.

An alternative analysis, which would not posit a differentiation between paradigmatic (UNIT > 1) and syntagmatic (UNIT 1) constructions, would be to treat antonyms in the same way as other discontinuous but interdependent word pairs, such as *both...and*. In both cases, the words act as a pair, but are not (on their own) a phrase. Nevertheless, the relation between *both* and *and* can be represented in a phrasal construction: *both X and Y*. Following this example, one could try to model a phrasal construction that is extremely underspecified except for the co-occurrence of the two antonyms – something like (*X*) *rich* (*Y*) *poor* (*Z*). The material around the antonyms in this case is underspecified to the extent that we can say nothing about its category, lexical/phrasal or discourse status, or even whether it occurs at all (since in some constructions nothing comes before *rich* and in others nothing comes between *rich* and *poor*, and so forth). This approach has not been pursued here because it seems to force the antonyms to be ordered with respect to one another. As discussed in section 3.4, mandatory ordering of antonyms within an antonym construction is not desirable.

V   Semantically, the two daughters are construed so as to be incompatible within the frame in question.

This can be represented as a feature INCOMPATIBLE in the semantic specification of the Antonym Construction, which takes the two daughters as its specification. This means that when two words appear in this construction, they are necessarily interpreted as being semantically incompatible.

VI   Pragmatically, the two daughters are considered to be minimally different for the purposes at hand.

This can be represented as a pragmatic feature CONTRAST, which takes the two daughters as its specifications.

The schematic version of the Antonym Construction sketched above gives the framework for the particular pairings of canonical antonyms (or *antonym constructs*) that are recorded in the construction. The example of *rich-poor* is given in (20).

(20)

syn	LEX $+$	
	CAT Adj	
	UNIT 2	
sem	INCOMPATIBLE $\{\#1, \#2\}$	
prag	CONTRAST $\{\#1, \#2\}$	
lxm	**rich, poor**	

#1			#2		
syn	LEX $+$		syn	LEX $+$	
	CAT Adj			CAT Adj	
	UNIT 1			UNIT 1	
lxm	**rich**		lxm	**poor**	
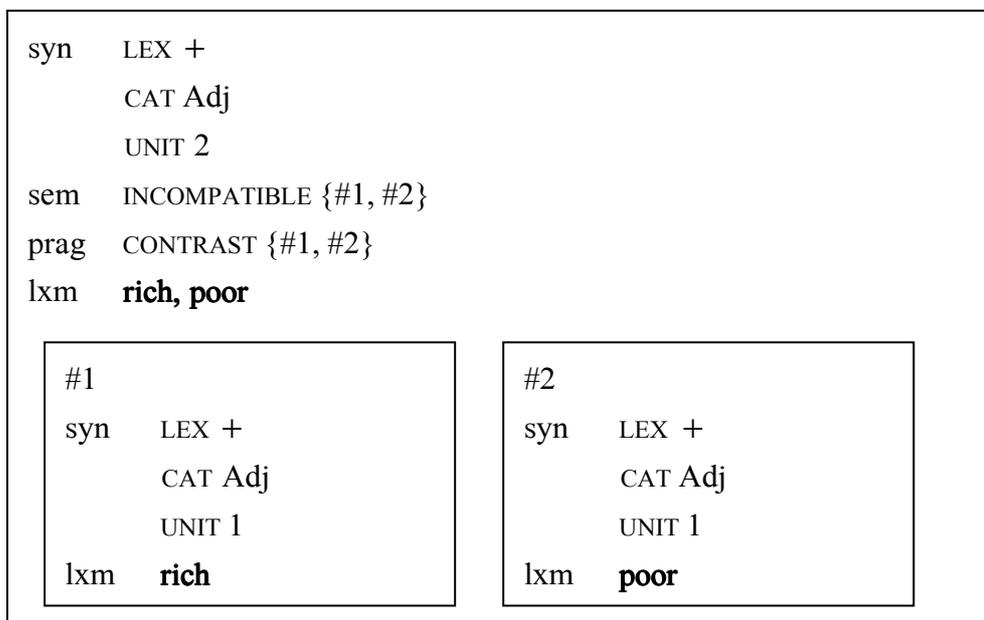
These antonyms can then occur in any construction that allows for contrasting adjectives. A two-dimensional box diagram cannot do justice to the intersection of the discontinuous, lexical antonym construction and the phrasal construction it slots into. (It would be best to represent the

boxes intersecting in three dimensions.)   However, the diagram in (21) demonstrates how an antonym construction consisting of two adjectives (or nominalisations of those adjectives) can slot into a contrastive construction when the two are unifiable with each other. In this case, we have a construction *X and Y alike* that requires two adjectives and indicates that the two adjectives are being contrasted. The lexical item *rich/poor* fulfils this criterion, and so can unify with it.

(21) [CAT Adj]   *and*   [CAT Adj]   *alike*
      | | | | [contrastive construct]

      rich   and   **poor**   alike
      | | [antonym construct]
      rich   *poor*
      [CAT Adj]   [CAT Adj]
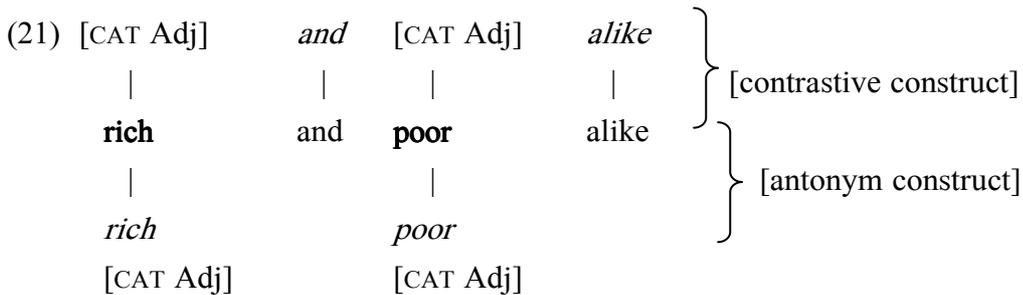
Of course, there is no requirement that the adjectives in *X and Y alike* consist of a construction in themselves. In the cases we saw in (4), lexical items like *green* and *dry* occur in the *X and Y alike* construction, and there is no reason to believe that such items constitute a pair. Similarly, *rich* and *poor* could be inserted as two lexical items that happen to be contrastive or as a lexical pair that is specified as being contrastive. In other words, the speaker has two options in using a contrastive construction – to fill it in with a ready-made antonym construction or to assemble a contrastive pair for the purpose at hand.

3.3 The semantics and pragmatics of the Antonym Construction

The semantic and pragmatic properties of the Antonym Construction (V and VI) deserve further comment. Both of these contend that the antonym relation is fixed at the pair level, in a top-down fashion. In other words, the Antonym Construction represents canonical antonyms as semantically incompatible, but this is not directly calculated from particular semantic properties of the two daughters. Of course, historically, these pairs have come to be lexicalised as antonyms because they are opposite on semantic grounds (in at least some of their senses/uses), but the antonym construction itself records the two words as an antonym pair without reference to those semantic

details. There are several advantages to treating antonymy this way, rather than deriving the opposite relation from the words' individual semantic properties within the antonym pair construction.

Firstly, the top-down approach to canonical antonym pairs is consistent with the experimental evidence (e.g., Charles et al. 1994) that oppositeness is understood immediately for canonical antonyms and not semantically derived anew, as it is for non-canonical antonyms.

Secondly, antonym relations are not limited to those pairs that are logically in a binary oppositional relation, and anything that can be construed as incompatible can be interpreted as antonymous in a particular context (Murphy 2003b). For example, (5) above showed *green* in context-specific antonym relations with *veteran*, *roasted*, *experienced* and *orange*. Because it was in a contrastive construction, *green* in these cases had to be construed in such a way that it was incompatible with the words with which it was contrasted. So, for example, when contrasted with *roasted*, *green* has to be construed as meaning 'unroasted' in part because of that contrast. In that case, the occurrence of the two words in a contrastive construction leads to their construal as opposites. However, for canonical antonyms, such construals can happen without the help of a contrastive construction. This can be seen in cases like those in (19), in which the pairing of *black/white* was shown to affect the interpretation of the words in the pair. So, for example, when we hear the term *white market* (19b), we understand this is incompatible with *black market*, since we know that *black* and *white* are opposites (because they are listed in the constructicon as instantiations of the Antonym Construction). This leads us to construe the meaning of *white* in such a way that it is incompatible with the meaning of *black* in the equivalent context. Thus, *white* is construed as meaning 'legal'. This can only occur via a "top-down" antonym process, because the inference that *white* means 'legal' is due to the knowledge that it is the opposite of *black*, not by extending an established meaning of *white*.

Finally, representing the particular relationship between the two words involved would entail representing many different kinds of semantic relationship, and there is scant evidence that such relational types are relevant to the use of antonyms in discourse. Types of oppositional relation among words include contradiction, contrariety, reversal, and converseness, which all have different logical properties. Which kinds of opposites a word can have depends in part upon the meaning of the word. For example, converse opposites must have at least two arguments (in order that they can be reversed in the opposite word; e.g., *buy/sell*, *parent/child*), while contradictories (complementaries) must denote absolute states or properties. While such differences are relevant to the types of inferences that arise due to opposition (and thus must be represented in some way at the conceptual level), such semantic distinctions are not particularly relevant to pairing antonyms in discourse. It has been experimentally shown that most people do not recognise that pairs like *up/down*, *happy/sad*, and *dead/alive* are semantically different types of antonyms (Chaffin & Herrmann 1984). Furthermore, semantic antonym types have little relevance to the contrastive constructions in which they are used. So, for example, the relations between the Xs and Ys in *X and Y alike* might be complementary (*male and female alike*), contrary (*young and old alike*) or directional (*up and down alike*).[14] Representing these types of opposition semantically would involve different constructional types for each semantic type of antonym. Since there is no evidence that such information is relevant to the insertion of the pairs into other constructions, representing it at the constructional level would be unmotivated and would miss important generalizations that can be made about how antonym pairs are used in natural language.

The top-down antonym relation is represented in this analysis by features at both the semantic and pragmatic levels.[15] The semantic INCOMPATIBLE feature ensures that words are

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[14] *Each of my sences* [sic] *was pushed outward. I looked **up and down alike**.*
(http://stfederation.org/missions/logs/downtimechap1.htm accessed 17 June 2004)

[15] This differs from the version of the paper presented at ICCG-3 and in seminars elsewhere. In that version, antonyms semantically shared their frames and pragmatically were minimally different, following the radically pragmatic

construed in such a way that their extensions do not overlap. This means that if *fruit* and *apple* are ever used as antonyms, they must be construed in such a way that *fruit* means something like 'fruits other than apples' (or in such a way that *apple* is not a type of fruit). It is impossible in this case for the meaning of *fruit* that includes apples to be the antonym of *apple* (if *apple* denotes a type of fruit). The pragmatic feature CONTRAST ensures that two items that are presumed to be antonyms are interpreted as being minimally different for the purposes of the context. This feature is needed in order to account for the oppositeness of incompatible items that are not logically in a binary relation. For example, *sweet* is incompatible with a number of other taste terms, for example *salty, bitter, sour, savoury* (and possibly others like *meaty* and *spicy*), and any of these can be an opposite of *sweet*, given enough context. At least three of these, *savoury, bitter* and *sour*, are (in some dialects/jargons, at least) canonical antonyms for *sweet.* When we choose one of these over the others to act as the antonym of *sweet*, it signals that the two states (e.g., *sweet/bitter*) are, for the context at hand, considered to be more like each other than they are like the other potential antonyms. That is to say, when *bitter* is the opposite of *sweet* it is because these two properties are perceived as being part of the same scale (from *bitter* to *sweet*) or because they are perceived as properties of the same types of things (e.g., pills, chocolate), whereas in this case *sour* is perceived as being a different sort of property which is found on a different scale and/or which applies to different kinds of things. So, while the semantic feature INCOMPATIBLE guarantees that the two words in an antonym pair are construed as incompatible, the CONTRAST feature in the antonym construction ensures that they are construed as each other's opposites.

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approach to semantic relations in Murphy 2003b. The INCOMPATIBLE feature here means that antonyms necessarily differ in denotation, while Murphy 2003b claims that referential incompatibility follows from the principle of minimal difference (which, as a pragmatic principle, has the potential to be overridden). Since canonical antonyms are always semantically incompatible, a more direct and uncancellable route to incompatibility has been offered here. The earlier version also differs in that the FRAME specifications of the two daughters had to be unifiable. In the current view, similarity of FRAME specifications typically follows from the pragmatic requirement that the words be minimally different for the context at hand.

As discussed in section 2, contrastive constructions such as *X and Y (alike)* and *more X than Y* carry a contrastive interpretation, so that the pragmatic CONTRAST feature introduced for the Antonym Construction in this section could also be integrated into constructional treatments of the contrastive constructions in which antonyms often occur. So, a contrastive construction requires that two of its daughters are in the CONTRAST relation, and an antonym construction provides two lexical items that are already in the CONTRAST relation. This congruence between the two constructional types explains why they are so often integrated in discourse.

3.4 Ordering of antonyms

So far, I have posited no syntactic relations among the members of the antonym pair, but one might ask whether the two terms should be ordered with respect to each other. (While one item of the pair necessarily comes first in a box diagram like (20), the comma separating the two items indicates that the items are not ordered with respect to one another.) Certainly, in a neutral context *poor/rich* sounds more marked than *rich/poor*, and *rich and poor* is certainly more frequent than *poor and rich* (about 20 times more frequent in a web search). Nevertheless, there are a few reasons to be cautious about specifying ordering in the antonym construction or in any particular antonym constructs. Firstly, not all antonymic pairs have an inherent order. For example, there is no strong preference in the British National Corpus for *cat(s) and dog(s)* (42 occurrences) versus *dog(s) and cat(s)* (56 occurrences) (Murphy 2003b). Secondly, the strength or stability of the ordering varies even for those that do tend to occur in a particular order. For example, Jones' (2002) corpus included no cases in which *indirectly* preceded *directly*, but while *happy* usually preceded *sad*, the order was reversed 30% of the time. Thirdly, for those that do exhibit a preferred order, the order can be overcome by semantic or information-structure demands in context. As we saw in (13) above, *rich* and *poor* can occur in either order in a range of contrastive constructions. In some contexts, the ordering of the two terms is semantically determined – that is

to say, changing the order of the terms leads to a change in the meaning of the sentence, as in (13e), repeated here as (22):

(22)   Most of us who read these words, by New Testament standards, are **more rich than poor**. We tend, however, to think ourselves **more poor than rich**. (www.baptiststandard.com/ 2002/8_12/pages/bstexas7_28.html)

In cases in which the ordering is not truth-conditionally important, the less marked term tends to go first, but this is contextually variable. While *rich* usually goes first, as it is less marked in more neutral contexts, *poor* comes earlier if it is unmarked in context. For example, in (23) (repeated from (13a)), the preceding context is about murdered missionaries who had been helping poor people. So, the fact that the man under discussion was gracious to poor people is already given information, and thus it is the unmarked term in this context.

(23)   He was always very gracious to everyone, **poor and rich**. (www.aboutmeco.org/crossroads/jul03/july03-06.html)

In such cases in which discourse factors are at work in determining the order of antonyms, the issues regarding ordering can be accounted for in the theory in more general ways, by positing certain ordering constructions with reference to given/new information or markedness in discourse (see discussion in Fried & Östman 2004).

We still need to account for cases in which we do find strong preferences for ordering the pair (when discourse and truth-conditional matters are not a factor). Such cases are often part of a general morphological or semantic pattern. Derived antonyms come second in morphologically asymmetrical pairs, such as *correct/incorrect* and *prove/disprove*, and words that refer to more positive traits or traits involving having or being "more" tend to precede their opposites, as in *rich/poor*, *true/false*, *big/little*. Temporally related antonyms tend to be chronologically ordered (*begin/end*). Phonological tendencies/constraints may also play a role in which member of a pair comes first, though they generally come second to semantic constraints (Cooper & Ross 1975;

McDonald et al. 1993; Benor & Levy 2006). Gender opposites in particular seem to be affected by syllable length, with longer words typically following shorter ones (*niece/nephew, ladies/gentlemen, man/woman, male/female*).[16]

The tendency of antonyms to occur in particular orders is thus the result of a number of conspiring factors. First, semantic, morphological and phonological and prosodic properties of the words in the pair affect our preferences for ordering in largely predictable ways. Rather than specifying such ordering preferences in the Antonym Construction or any particular antonym construct, these general patterns should be accounted for by more general statements in the grammar – through particular ordering constructions or principles. Second, some pairs seem to be learnt in particular orders, since they occur in other more complex, lexically specified constructions in which they occur in a specific order. This is clearly true for irreversible binomials (Malkiel 1959) like *ladies and gentlemen*. In this case, we would expect that the ordering would be stronger in those set phrases than in other cases of co-occurrence, although experience of the words in that particular order may reinforce that order when the two words occur in other structures. So, while the disjunction *ladies or gentlemen* occurs more often than *gentlemen or ladies*, the difference in frequency between the two phrases is just a fraction of the difference between *ladies and gentlemen* and *gentlemen and ladies*.[17] In other words, the sequence is not as fixed in contexts other than the set phrase; nevertheless experience of the set phrase may strengthen a particular order across contexts. Finally, discourse considerations, such as markedness and information structure, play a role in the sequencing of the items. Since these are context-dependent, they cannot translate directly into ordering of the antonym construct, but may be a part of other constructions that the antonym pair enters into – for example, constructions that

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[16] Similarly, Wright et al. (2005) found that a conspiracy of phonological factors, particularly syllable count, play a strong role in preferences for ordering gendered names (e.g., *Fred and Wilma*).

[17] In a web search, *ladies and gentlemen* occurred more than 45 times more often than *gentlemen and ladies*, whereas the disjunctive *ladies or gentlemen* occurred only 3.5 times more often than *gentlemen or ladies*.

order given and new information. Experience of ordered antonym pairs in these contexts
contributes to the strength of ordering in particular antonym pairs. Since there is plenty of
evidence that ordering is predictable, although complexly so, there's no motivation to include
ordering as part of the general Antonym Construction or as part of many particular antonym
constructions. For *particular* antonym pairs, however, experience of the antonyms in one order is
likely to reinforce that sequence, and the strength of the sequencing varies with the amount of
reinforcement and the number of factors (semantic, morphological, phonological, and so forth)
contributing to that ordering. Thus, indication of the strength of ordering for particular pairs might
be included in particular antonym constructions.

4. Ancillary Antonymy revisited

As noted in section 2, Jones (2002) found that the most common use of antonyms in text is to
introduce or reinforce a contrast between another pair of expressions. Jones calls this function
Ancillary Antonymy, and it was exemplified in (12) and (18) above, which are repeated below as
(24) and (25), respectively.

(24a)   You want your friends to *hate* **the sin** and *love* **the sinner**.
         (Jones 2002: 57)
(24b)   We ought to live in *big* **cities**, not *small* **suburbs**
         (slate.msn.com/id/3670/entry/24043/)
(24c)   **Bofors** might indicate *failure*, but **Venus and Saturn** spell *success*.
         (Jones 2002: 57)

(25a)   In this account, the *rich* get **to choose**, and the *poor* get **the queues**.
         (Jones 2002: 52)
(25b)   Now these orders of time have been reversed: the *rich* **rise at dawn**; the *poor* **sleep
         late**.
         (Jones 2002: 54)
(25c)   The *rich* are **stupid**; the *poor* are **ignorant**.
         (www.geocities.com/benign0/agr-disagr/10-1-voters.html)

While contrastive constructions like *X and Y alike* and *more AdjX than AdjY* force the construal of a contrastive relation between X and Y (see the discussion of *X and green alike* above), in Ancillary Antonymy the phrasal contrastive cues are less concrete. What is common amongst these examples is the fact that the canonical antonym pairs act as triggers for the secondary contrast. In order for them to act as triggers, their particular lexical pairings must be readily available to the creators and interpreters of ancillary contrasts in conversation or text. This availability is allowed through the Antonym Construction and particularly the instantiation of the bold pairs in (24) and (25) as antonym constructs.

However, there is more to these examples than simply the occurrence of canonical antonyms. In order to identify the secondary contrast in such examples, we rely on other cues. In particular, cases of Ancillary Antonymy typically involve parallelism at some level; many involve another contrastive construction (such as the negated construction in (24b)), and some involve other lexical markers of contrast, such as *but* (24c) or *however*. Parallelism itself is a marker of contrast; that is, the items in the parallel constructions are asserted to be comparable yet different in some key way. Since parallelism involves a certain kind of form associated with a certain kind of meaning, it should also be treated as a construction. What is needed is a very abstract construction that represents that two items with some formal properties in common are interpreted as contrasting (i.e., are arguments of the CONTRAST feature), and more specific instantiations of this construction could follow – for instance, particular forms of grammatical parallelism, prosodic parallelism, phonemic parallelism (such as the rhyme in (25a)). Since parallel items need not be in continuous positions in discourse, it is possible that the [UNIT 2] specification, which was introduced for the Antonym Construction above, is needed for the parallelism construction as well. In that case, antonyms and parallelisms would both be considered to be paradigmatic constructions.

Another grammatical contrast marker is parallelism with ellipsis (or *gapping*), in which some (usually verbal) expression is not repeated in an otherwise parallel second phrase (Hendriks 2004). This too may be considered a contrastive construction in itself. Ancillary Antonymy with a copular "gap" is illustrated in (26).

(26)   *The peace* is usually **male**, *the disturbance* **female**.
         (Jones 2002: 56)

Formalising all of these contrastive constructions is beyond the scope of the present paper, but we can at least conclude that Ancillary Antonymy involves the use of antonyms in contrastive constructions that contrast two pairs of expressions. Furthermore two of the features introduced for the Antonym Construction, namely CONTRAST and UNIT, are likely to be involved in a range of contrastive constructions, thus supporting the introduction of these features into the theory and explaining the affinity of contrastive phrases and contrastive word pairs.

5. Conclusions

CxG theorists (e.g., Kay & Fillmore 1999) emphasise that a true account of a language's grammar must account for all the types of constructions that occur in it, not just some set of "core" structures. It is in this spirit that I have explored the idea that the theory could be extended to account for preferences for putting particular words together even when those words are not associated with any particular phrasal construction. Canonical antonym pairs fit the constructional bill, in that they are form-meanings associations. The form of the Antonym Construction proposed in section 3 is that of a word pair with matching syntactic category and semantic frame, and its meaning guarantees that the two members of the pair are incompatible and contrastive.

Thus, a canonical antonym pair is a complex lexical construction consisting of two lexical items ready for insertion into constructions that require two items of the same part of speech. They have a particular affinity for constructions in which contrastive semantics are typical, such

as the contrastive frameworks identified by Jones (2002) and discussed in sections 2 and 4. By treating antonym pairs as constructions, we recognise that the pairings are to some extent arbitrary and learned – that is, we have a learned preference for pairing particular opposites (like *rich/poor, style/substance*) rather than others (like *wealthy/poor, style/essence*). This approach also involves an intersection of the notions *paradigmatic* and *syntagmatic*, essentially treating items in the antonym relation as discontinuous lexical items that are compatible with appropriate slots in a grammatical construct. It would be possible to treat other paradigmatic lexical relations, such as hyponymy or synonymy, in this way, although there is much less evidence that such relations also display the syntagmatic properties that have been found for antonymy. That is to say, there is less evidence that synonym sets (or hyperonyms and hyponyms) are relations among particular lexical form-meaning units (words) rather than relations among the meanings or concepts that they represent. Nevertheless, there may be other uses for paradigmatic constructions in CxG, including the treatment of parallelism in discourse (as briefly discussed in section 4).

The model of the Antonym Construction proposed here is merely a sketch, and so further details need to be worked out, such as the formal properties of the UNIT feature, how inheritance is allowed/constrained within the construction, and whether both semantic (INCOMPATIBLE) and pragmatic (CONTRAST) features are needed to ensure that words in the antonym relation are construed as opposites. I have also discussed and hypothesised about a variety of other types of contrastive construction, each of which deserves further exploration.

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