Paradigmatic relations of exclusion and opposition

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9.1 Incompatibility and co-taxonymy

9.1.1 Incompatibility

Very often a superordinate has more than one immediate hyponym (i.e. there are no intermediate terms), and among these, there is typically a set of terms each of which is related to all the others by the relation of incompatibility. An example of this is the set of terms denoting kinds of animal (under the superordinate *animal):*

superordinate *animal*
hyponyms *dog, cat, mouse, lion, sheep,* etc.

superordinate *horse*
hyponyms *stallion, mare, foal*

The relation between these hyponyms is an important and rather special one. It is not simple difference of meaning. Just as hyponymy can be thought of as a relation of inclusion, incompatibility is a relation of exclusion. This is easiest to grasp in its extensional manifestation: incompatibles are terms which denote classes which share no members. Hence, if something is a mouse, then it is not a dog, horse, or elephant: nothing in the world can belong simultaneously to the class of mice and the class of dogs. From the intensional point of view this is harder to picture, but easier in the case of obviously composite terms than for taxonyms. Take the case of *horse, stallion,* and *mare:*

horse = [ANIMAL] [EQUINE]
stallion = [ANIMAL] [EQUINE] [MALE]
mare = [ANIMAL] [EQUINE] [FEMALE]

In such cases we need to say that incompatibles are distinguished from their common superordinate by semantic features which cannot be simultaneously

present. This characterization is less satisfactory for co-taxonyms, where no distinct semantic features are identifiable.

It is important to understand that co-hyponyms are not necessarily in-compatible in the above sense. For instance, *queen* and *mother* are both hyponyms of *woman,* but there is nothing to prevent someone who is a queen from at the same time being a mother. (In some cases, the compatibility of co-hyponyms is only apparent. For instance, *novel* and *paperback* at first sight seem to be compatible co-hyponyms of *book.* However, a closer study reveals that they are hyponyms of different sense units within the meaning of *book* (i.e. they are facets—see Chapter 6).) The co-hyponyms of each of the subunits are incompatibles in the orthodox way:

superordinate	*book* (TOME)
hyponyms	*paperback, hardback*
superordinate	*book* (TEXT)
hyponyms	*novel, biography, textbook*

9.1.2 Co-taxonymy

Hyponymy, the logical relation defined by entailment, was distinguished from taxonymy, the conceptual relation corresponding to *X is a kind!type of Y.* In the same way, incompatibility may be given a logical interpretation, defined by: *F(X)* unilaterally entails *not-F(Y)* (e.g. *It's a dog* entails but is not entailed by *It's not a cat).* The corresponding conceptual relation may then be called **co-taxonymy.** This is designated in ordinary language by *X is a different kind of Y from Z.* Co-taxonyms are not necessarily strict incompatibles; it is enough that prototypical cases should be mutually exclusive. Consider, for instance: *Members of our Women's Group come from all walks of life ... doctors, teachers, solicitors, housewives, students, prostitutes.* There is no *logical* reason why someone who is a housewife cannot at the same time be a solicitor or a student, but prototypically this is not the case, hence the intuitive well-formedness of the above co-ordinated list. Taxonymy in combination with co-taxonymy corresponds to a fundamental and vital mode of categorization of experience: successive subdivision into (prototypically) mutually exclusive subcategories.

9.1.3 Co-meronymy

A relation of exclusion parallel to that which holds between co-taxonyms holds also between co-meronyms. If X and Z are sister meronyms of Y, then if the relation is a strictly logical one, no meronym of X is simultaneously a meronym of Z. Speaking extensionally, if X' and Z' are parts of some indi-vidual Y', then *A' a part of X'* unilaterally entails *A' is not a part of Z'.* Put in another way, sister parts do not overlap. This strict logical relation holds between sister pieces, and pieces of pieces. However, if we think of meronyms

as designating concepts, these concepts are by no means as clear-cut as this picture indicates. In particular, the boundaries of parts often display a degree of vagueness which destroys the strict logical relationship. Consider the upper arm and the lower arm. Imagine that you are asked to indicate the extent of the upper arm, by, for instance, pointing; now indicate the extent of the lower arm. Did you not include the elbow in both demonstrations? This indeterminacy is a characteristic of joints.

We have seen a number of parallelisms between, on the one hand, taxonyms and co-taxonyms, and on the other hand, meronyms and co-meronyms. Further such parallels will be explored in Chapter 10.

9.2 Opposites

Everyone, even quite young children can answer questions like *What's the opposite of big! long!heavy luploutletc.?* Oppositeness is perhaps the only sense relation to receive direct lexical recognition in everyday language. It is presumably, therefore, in some way cognitively primitive. However, it is quite hard to pin down exactly what oppositeness consists of. The following points seem to be relevant (a full account will not be attempted here; see Cruse 1986 for a fuller treatment):

(i) Binarity: opposites are, of course, incompatibles by the definition given above: *X is long* entails *X is not short.* But they are not *just* incompatibles. There is nothing in the notion of incompatibility itself which limits the number of terms in a set of incompatibles; but there can only be two members of a 'set' of opposites. Hence, binarity is a prerequisite.

(ii) Inherentness: we must, however, distinguish between accidental and inherent binarity. There are, for instance, only two classes of buses on the '-decker' dimension, namely single-deckers and double-deckers. There may well be reasons, to do with stability and the height of bridges and so forth, for the absence of triple-deckers, but there is no *logical* reason. Likewise, there are only two sources of heat for cooking in the average suburban kitchen, namely gas and electricity; and only two sorts of hot drink served after lunch in the Senior Common Room at Manchester University, tea and coffee. But there is no more than the feeblest hint of oppositeness about *single-decker.douhle-decker, gas-'.electricity,* or *tea.cojfee.* That is because the binarity is accidental and pragmatic, rather than inherent. By contrast, the possibilities of movement along a linear axis are logically limited to two: the binarity of the pair *up'.down* is thus ineluctable, and they form a satisfactory pair of opposites. Inherent binarity can thus be considered a prototypical feature for oppositeness.

(iii)   Patency: inherent binarity is necessary for a prototypical pair of opposites, but is not sufficient Take the case of *Monday. Wednesday.* The time dimension is linear, and *Monday* and *Wednesday* are situated in opposite directions from *Tuesday.* Yet they do not feel at all like opposites. What is the difference between these and *yesterday* and *tomorrow,* which display a much more marked opposite character? It seems that in the case of *Monday* and *Wednesday,* their location in opposite directions along the time axis relative to Tuesday (and hence the binarity of their relationship) is not encoded in their meanings, but has to be inferred, whereas the directionality of *yesterday* and *tomorrow* relative to *today* is a salient part of their meaning. In Cruse (1986) this difference was referred to as **latent** as opposed to **patent** binarity. The patency of the binary relation can thus be added to the list of prototypical features of opposites.

Lexical opposites fall into a number of different fairly clearly distinguishable types, of which the four principal ones will be described here.

9.2.1 Complementaries

The following pairs represent typical complementaries: *dead:alive, truefalse, obey: disobey, inside:outside, continue (V.ing):stop (V.ing), possible:impossible, stationary: moving, male:female.* Complementaries constitute a very basic form of oppositeness and display inherent binarity in perhaps its purest form. Some definite conceptual area is partitioned by the terms of the opposition into two mutually exclusive compartments, with no possibility of 'sitting on the fence'. Hence, if anything (within the appropriate area) falls into one of the compartments, it cannot fall into the other, and if something does not fall into one of the compartments, it must fall into the other (this last criterion distinguishes complementaries from mere incompatibles). Thus if we consider the conceptual domain of possible responses to a felicitous command (i.e. one where the issuer has authority over the recipient, the action required is both possible and not already carried out, the recipient can hear and understand the command and so on), it is clear that responses must fall into either the category of obedience, or that of disobedience. Likewise, an entity belonging to the realm of living things must either be alive or dead, and a concrete object must be either stationary or moving.

Complementarity can be given a strict logical definition:

F(X) entails and is entailed by not-F(Y)

From this it follows that *Y or X* is logically equivalent to *Y or not- Y,* which is a tautology; and *neither Y nor X* is equivalent to *neither Y nor not- Y,* which is a contradiction. Thus, *This proposition is either true or false* is a tautology, and *This proposition is neither true nor false* is a contradiction.

As we have observed with other sense relations, the logical definition of complementarity is probably too strict. Some pairs may satisfy the strong

definition (e.g. *continue V.ing\stop V.ing,* but in most cases we need to add a hedge of some sort, such as 'in normal circumstances', or perhaps 'proto-typically', although this is not so straightforward. For instance, *neither male nor female* is not logically anomalous, even for an individual belonging to a normally gendered species, given the possibility of various developmental or genetic abnormalities and so forth. The same is true of *neither dead nor alive.* (It is also true that the point of transition from life to death is vague. But this is a different point. Here, one might argue that the linguistic division is sharp, although the mapping on to external reality is uncertain. What I am referring to is the possibility of exceptional states, such as zombification (the UNDEAD!), or the vampiric state, which are neither death nor life.) It should also be emphasized that virtually all complementaries display their characteristic properties only within certain specific domains.

9.2.2 Antonymy

The most extensively studied opposites are undoubtedly antonyms. (Note that **antonymy** is frequently used as a synonym for **opposite;** it is here used in the narrower sense introduced by Lyons 1963.) Antonyms, too, fall into several relatively well-defined groups. One of these has a fair claim to be the central variety, so this group will be described in some detail, and the others will be sketched in more briefly.

9.2.2.1 Polar antonyms

The following are examples of polar antonyms:

long:short	heavy:light	thick:thin
fast:slow	strong:weak	high:low
wide:narrow	large: small	deep shallow

The main diagnostic features of polar antonyms are as follows:

(i)   Both terms are fully gradable, that is to say, they occur normally with a wide range of degree modifiers: *very!slightlylratherlquite!a bit!too!long.* (Complementaries characteristically show some reluctance to be graded: *?very!slightly!a bit!too dead.)*

(ii)   They occur normally in the comparative and superlative degrees: *long, longer, longest', light, lighter, lightest.* But even when used in the positive degree, they typically need to be interpreted comparatively in relation to some reference value. This is often contextually determined, but in the default case is usually some kind of average value for the class of entities denoted by the head noun. So, for instance, *a long poem* would, out of context, be taken to refer to a poem that was longer than the average poem. *My goodness! Isn't Tom tall?* would in all probability need a reference point drawn from the context, for example, "tall for his age", "tall since the last time I saw him", etc.

(iii)   They indicate degrees of some objective, unidimensional physical property, prototypically one which can be measured in conventional units such as centimetres, kilograms, miles per hour, etc. One of the terms, when intensified, denotes a progressively higher value of the property *(very long* indicates more units of length than *long),* while the other term when intensified denotes a lower value of the property *(very short* denotes fewer units of length than *short).*

(iv)   They are incompatibles, but not complementaries. Hence, *It's neither long nor short* is not a contradiction (it might be of average length), nor is *It's either long or short* a tautology.

(v)   Comparative forms stand in a converse relationship (see below for further information on this relation): specifically, if X and Y are (polar) antonyms, and A and B are nouns, then *A is X-er than B* entails and is entailed by *B is Y-er than A. (A is heavier than B* entails and is entailed by *B is lighter than A.)*

(vi)   The comparative forms of both terms are **impartial,** that is to say, use in the comparative does not presuppose that the term in the positive degree is applicable. Thus, *X is longer than Y* does not presuppose that X is long, similarly with *shorter.*

(vii) One of the terms yields an impartial question in the frame *How X is it?* and an impartial nominalization. Compare *How long is it?,* which merely enquires about length without any presuppositions, and *How short is it?* Similarly *Its length worries me* tells us nothing about whether 'it' is long or short, but *Its shortness worries me* indicates that 'it' is short. Notice that it is the term that indicates *more of* the relevant property that yields the impartial question: *How long!stronglbigl thick! wide!fast is it?*

9>2.2.2 Equipollent antonyms

The two other main types of antonym can most easily be diagnosed by the impartiality or otherwise of their comparatives. In the case of **equipollent antonyms,** neither term is impartial (i.e. both are **committed),** hence, for instance, *hotter* presupposes "hot", and *colder* presupposes "cold". For this reason, both the following are odd:

?This coffee is cold, but it's hotter than that one.
?This coffee is hot, but it's colder than that one.

(It would be more normal to say *warmer* and *cooler,* respectively, in these situations.) Neither term yields a neutral Aow-question. Equipollent antonym pairs typically denote sensations *(hot-cold, bitter-sweet, painful-pleasurable),* or emotions *(happy-sad, proud of.ashamed of).*

9.2.2.3 Overlapping antonyms

With overlapping antonyms, for instance *good'.bad,* one member yields an impartial comparative, and the other a committed comparative:

?John is an excellent tennis player, but he's worse than Tom.
John's a pretty useless tennis player, but he's better thanTom.

In this case, *good* yields a neutral tow-question *(How good was the film?),* whereas *bad* gives a committed question *(How bad were the exam results?).* Ail overlapping antonym pairs have an evaluative polarity as part of their meaning:

good:bad kind:cruel clever:dull pretty:plain polite:rude

It is invariably the positively evaluative term which is associated with impartial use.

A property of overlapping antonyms that is worth pointing out is that of **inherentness.** Take the case of *bad.good.* If two bad things differ in degree of badness, one may, without oddness, describe one as *worse* than the other: *The weather last year was bad, but this year it was worse; This year's drought is worse than last year's.* However, of two bad things, it is not always possible to describe one as *better* than the other: *The weather is bad this year, but it was better last year* is fine, but *?This year's famine was better than last year's,* is odd. The general principle is that only things that are not inherently bad (i.e. where good examples are possible) can be described using *better,* inherently bad things can only be described as *worse,* and, furthermore, cannot be questioned using *How good. . . ? (* How good is Mary's toothache?).*

9.2.3 Reversives

Reversives belong to a broader category of **directional opposites** which include straightforward directions such as *up'.down, forwards'.backwards, into'.out of, north: south,* and so on, and extremes along some axis, *top:bottom* (called **antipodals** in Cruse (1986)). Reversives have the peculiarity of denoting movement (or more generally, change) in opposite directions, between two terminal states. They are all verbs. The most elementary exemplars denote literal movement, or relative movement, in opposite directions: *risefall, advance'.retreat, enter.leave.* (Notice, however, that even in these cases it is the overall effective direction of movement from origin to goal which counts, not the details of the path traversed in between). The reversivity of more abstract examples resides in a change (transitive or intransitive) in opposite directions between two states: *tie.untie, dress:undress, rolkunroll, mount'.dismount.*

Interestingly, the manner of the process or action seems to have little significance; at least it does not have to be the same for the two processes or actions. For instance, the action of tying a bow in a ribbon is likely to be rather different from the action of untying the same bow. What counts here is the fact

that in one case the ribbon starts out untied and ends up tied (for *tie)* and that in the other case it starts out tied and ends up untied (for *untie),*

9.2.4 Converses

Converses are also often considered to be a subtype of directional opposite. They are also, paradoxically, sometimes considered to be a type of synonym. There are valid reasons for both views. Take the pair *above:below,* and three objects oriented as follows:

A
B
C

We can express the relation between A and B in two ways: we can say either *A is above B,* or *B is below A.* The logical equivalence between these two expressions is what defines *above* and *below* as converses. But since both are capable of describing the same arrangement, a unique situation among opposites, there is some point in thinking of them as synonyms conditioned by the order of their arguments. Consider now, however, A and C in relation to B: clearly A is above B and C is below B, hence *above* and *below* denote orientations in opposite directions, and are therefore directional opposites.

Other converse pairs with a salient directional character are: *precede:follow, in front of:behind, lend:borrow* (the thing borrowed/lent moves away from or towards the person denoted by the subject of the verb), *bequeath'.inherit, buy'.sell* (a double movement, here, of money and merchandise). The directional nature of some converse pairs, however, is pretty hard to discern *(husband'.wife, parent'.offspring, predator'.prey),* although it is perhaps not completely absent.

Converses may be described as **two-place** if the relational predicate they denote has two arguments (e.g. *above:below)* and **three-place** if it has three (e.g. *lend: borrow: A borrowed B from C|C lent B to A); buy'.sell* are arguable four-place converses: *John sold the car to Bill for £5,000!Bill bought the car from John for £5,000.*

The members of a converse pair may not be congruent in respect of range. This is the case, for instance, with *doctor' .patient,* since dentists, physiotherapists, and suchlike also have patients, and this destroys the strict logical relation, although it does not disqualify such pairs from being converses. (Here again, the logical definition is too strict.) A similar lack of congruence can be observed in *lecturer.student* and *rapist'.victim.*

9.2.5 Markedness

The notion of **markedness** is often applied to pairs of opposites: one term is designated as the **marked** term and the other as the **unmarked** term of the opposition. Unfortunately, this concept is used in a variety of different ways

by different linguists, so it is necessary to be more specific. Lyons (1977) distinguishes three major conceptions of markedness, which may or may not coincide in a particular instance or type of instances. The first is **morphological markedness,** where one member of the opposition carries a morphological 'mark' that the other lacks. This mark is most frequently a negative prefix:

possiblerimpossible   happyrunhappy
kindrunkind   trueruntrue

The second notion of markedness is distributional markednessr the unmarked term according to this conception is the one which occurs in the widest variety of contexts or context-types. By this criterion it could be argued that *long* is unmarked with respect to *short* because it occurs in a variety of expressions from which *short* is excluded:

This one is ten metres long.
What is its length?
How long is it? (neutral question)

The third notion of markedness is the most interesting in the present connection. Lyons gives it the name **semantic markedness.** According to this conception, the unmarked term is the one which is used in contexts where the normal opposition between the terms is neutralized, or non-operational. In such contexts, the meaning of the term is what is common to the two terms of the opposition. Take the case of *lion:lioness.* In *The lion and the lioness were lying together,* there is a sex contrast between the terms. But in *We saw a group of lions in the distance,* the sex contrast is neutralized, and the group may well contain both males and females. This notion can be applied to, for instance, antonyms, too. Thus, in the neutral question *How long is it?,* we can say that the normal contrast between *long* and *short* has been neutralized, and *long* refers to what is common to *long* and *short,* namely, the scale of length. (Notice that in some oppositions—those known as 'equipollent'—both terms are marked.)

The notion of markedness is sometim'es applied to the terms of the opposition, and sometimes to uses of those terms. Hence, while *How long is ifl* (with the intonation nucleus on *long)* represents an unmarked use of the unmarked term *long, How long is it?,* (with the intonation nucleus on *How),* represents a marked use of the same term, as it presupposes that the referent is long rather than short. Notice that our use of **impartial** cannot always be translated as **unmarked.** For instance, in the case of a comparative such as *shorter,* although it is impartial, because it does not presuppose the applicability of the default sense of *short,* it is not unmarked, because the contrast between *shorter* and *longer* is not neutralized.

9.2<6 Polarity

Another notion that is often applied to opposites is **polarity,** whereby terms are designated as **positive** and **negative.** This notion is used in an even greater variety of ways than markedness. The following are the main ones:

(i) **Morphological polarity:** one term bears a negative affix, the other does not.

(ii) **Logical polarity:** the determination of logical polarity depends on the fact that one negative cancels out another: if John is not not tall, then John is tall. The prototypical example of this is *true:false.* Is *true* to be analysed as equivalent to *not false,* or is *false* to be glossed "not true"? Which is the negative term and which the positive? The criteria for logical polarity give an immediate answer:

It's true that it's true. = It's true.
It's false that it's false. = It's true.

False suffers the reversal when applied to itself, and is thus the negative term. The following are further examples of the same phenomenon:

She succeeded in succeeding.
She failed to fail. (reversal)

A large measure of largeness.
A small measure of smallness, (reversal)

This is a good example of a good book.
This is a bad example of a bad book, (reversal)

In each of these cases, the item which produces reversal is the negative member of the pair.

(iii) **Privative polarity:** one term is associated with the presence of some-thing salient, and the other with its absence. On this criterion, *alive* is positive and *dead* negative, because something that is alive possesses salient properties such as movement, responsiveness, consciousness, etc. which a dead thing lacks; *married* is positive and *single* negative, because a married person has a spouse, and a single person does not (notice that we have *unmarried,* but not **unsingle)', dress* is positive and *undress* negative, because the end result of dressing involves the pres-ence of clothes, whereas the end result of undressing involves the absence of clothes. This notion can be generalized to include "relative abundance" and "relative lack" (of some salient property). This move allows us to categorize *long, heavy, thick, wide, strong, fast,* and so on, as positive in this sense, because they denote a relative abundance of salient properties such as extension, weight, speed, and so on, com-pared with their partners *short, light, narrow,* etc.

(iv)   **Evaluative polarity:** one term is evaluatively positive, or commendatory, and the other is negative. The obvious key example of this is *good:bad.* Other examples are: *kind'.cruel, prettyplain, clean'.dirty, safe: dangerous, brave: cowardly.*

There is a relation between polarity and partiality: in the most general terms, positive members of a pair of opposites have the greater potential for impartial use. However, there are relations of dominance among the different types of polarity. For instance, evaluative polarity generally dominates privative polarity. Take the case of *clean'.dirty.* The most natural analysis in terms of privativeness is that *clean* is the 'absence' term *{Cleanness is the absence of dirt)* and *dirty* the 'presence' term (?*Dirtiness is the absence of cleanness).* Yet it is *clean* that yields, for instance, a neutral question: *How clean is it?* This, however, is in accordance with the fact that *clean* is evaluatively positive. Similarly, privative polarity dominates logical polarity. Consider *far.near,* it seems that *far* is logically negative :

A is far from everything far from B.= A is near to B.
A is near to everything near to B. = A is near to B.

But *far* is privatively positive as it denotes the greater amount of the most salient property, namely distance. The neutral question *How far is it?* thus complies with privative rather than logical polarity. The exact details of these relationships remain to be worked out.

Discussion questions and exercises

1. Identify the types of opposition/exdusion relation exemplified by the following pairs:

   (i)   *movingistationary*
   (ii)   *aunt-.uncle*
   (iii)   *engine-.chassis (of car)*
   (iv)   *possibledmpossible*
   (v)   *fall illirecover*
   (vi)   *blackiwhite*
   (vii) *probable:improbable*
   (viii) *bequeathdnherit*
   (ix)   *cricket-.football*
   (x)   *approve:disapprove*

2. Classify the following antonym pairs (as polar, equipollent, overlapping, privative, or implicit superlatives):

   fartnear   *happytunhappy*
   beneficiahharmful   *satisfied-.unsatisfied*

happy:sad	*comfortableiuncomfortable*
brilliant-.stupid	*polite-.rude*
deep:shallow	*easy:difficult*
advantageous-.disadvantageous	*thick=th in*
fat:thin	*rough-.calm* (of sea)

Suggestions for further reading

Incompatibility is discussed in Cruse (1986: ch. 4.1); see also Cruse (1994ZO, and (forthcoming *a)* for a prototype account.

All aspects of oppositeness are discussed in Cruse (1986: chs. 9-11); see also Lehrer (1985). For later developments within this approach, particularly on antonymy, see Cruse (1992a) and Cruse and Togia (1995); for reversives, see Cruse (forthcoming *b)*.

Alternative approaches to antonymy can be found in Lehrer and Lehrer (1982) (a formal account), and Mettinger (1994) (a structuralist approach).