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Neo-Gricean Pragmatics and the Lexicon

Yan Huang
University of Auckland, New Zealand
yan.huang@auckland.ac.nz

Abstract
Interest in the pragmatics of the lexicon is probably as old as that in pragmatics itself, as can be seen in the early work by e.g. the 19th century British philosophers John Stuart Mill and Augustus De Morgan, and the more recent, seminal work by Grice (1975, 1989) and McCawley (1978). However, a revival of this interest has occurred since the 1990s, and there has since been an acceleration in the development of a separate branch of lexical pragmatics. Currently, lexical pragmatics - the systematic study of aspects of meaning-related properties of lexical items that are dependent on or modified in language in use, i.e. that part of lexical meaning which is parasitic on what is coded but is not part of what is coded (e.g. Huang 1998) – is a hot pursuit within at least three different theoretical frameworks of pragmatics, namely, neo-Gricean pragmatic theory (e.g. Horn 1984, 1989, 2003, 2006a, b, 2007, Huang 1998, 2005, 2008, 2009, Levinson 2000), neo-Gricean oriented bidirectional optimality-theoretic (OT) pragmatics (e.g. Blutner 1998, 2004, forthcoming) and relevance theory (e.g. Carston 1997, Wilson 2003, Wilson and Carston 2007). The aim of this article is to present a neo-Gricean pragmatic analysis of four central topics in lexical pragmatics: lexical narrowing, lexical cloning, lexical blocking, and asymmetry in the lexicalization of certain logical operators.

Keywords
lexical pragmatics, neo-Gricean pragmatic theory, lexical narrowing, lexical cloning, lexical blocking, lexicalization asymmetry

1. Introduction

In the study of the lexicon, a number of interesting questions or myths can be identified. These include: (i) why we normally do not say *cow's milk*, but we do say *goat's milk*, (ii) what the meaning of a lexical clone is, which involves contrastive focus reduplication such as *DRINK-drink* in English, *neri neri* 'black black' in Italian and *Salat-Salat* 'salad-salad' in German, (iii) why *cunzhang* 'village head', *xiangzhang* 'town head', *xianzhang* 'county head' *shizhang* 'mayor' and *shengzhang* 'provincial governor' are words, but **guozhang* 'state president' is not a word, in Chinese, (iv) why unlike *teacher* 'a person who teaches', *cooker* does not mean a person who cooks, (v) why *pale red* is used far less frequently than *pale blue*, *pale green* and *pale yellow*, and finally (vi) why

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words used to express universal negation can be lexicalized (e.g. *not some* > *none*), but words used to express particular negation are normally not (e.g. *not all* > **nall*) in a number of languages. In this article, I shall provide an answer to questions and myths like these in terms of neo-Gricean lexical pragmatics, drawing on previous work by McCawley (1978), Huang (1998, 2005, 2008, 2009), Levinson (2000), and especially Horn (1984, 1989, 2003, 2006a, b, 2007). More specifically, I shall (re)-demonstrate that by utilizing some general neo-Gricean pragmatic principles such as Horn's (1984, 1993, 2006a, b, 2007) Q- and R-principles and Levinson's (1987, 1991, 2000) Q-, I- and M-principles, and the resolution schemas regulating their interaction, all of the questions posited above can be given a satisfactory and elegant answer.

Interest in the pragmatics of the lexicon is probably as old as that in pragmatics itself, as can be seen in the early work by e.g. the 19th century British philosophers John Stuart Mill and Augustus De Morgan, and the more recent, seminal work by Grice (1975, 1989) and McCawley (1978). However, a revival of this interest has occurred since the 1990s, and there has since been an acceleration in the development of a separate branch of lexical pragmatics. Currently, lexical pragmatics - the systematic study of aspects of meaning-related properties of lexical items that are dependent on or modified in language in use, i.e. that part of lexical meaning which is parasitic on what is coded but is not part of what is coded (e.g. Huang 1998) - is a hot pursuit within at least three different theoretical frameworks of pragmatics, namely, neo-Gricean pragmatic theory, neo-Gricean oriented bidirectional optimality-theoretic (OT) pragmatics (e.g. Blutner 1998, 2004, forthcoming, see also Lascarides and Copestake 1998) and relevance theory (e.g. Carston 1997, Wilson 2003, Wilson and Carston 2007). Against all this, the current paper, I hope, will be another, small step forward in our long journey to attain a better understanding of some of the core issues in lexical pragmatics.

This article is organized as follows. Section 2 will outline classical Gricean pragmatic theory. In Section 3, I shall present Horn's bipartite and Levinson's tripartite neo-Gricean pragmatic models. Next, I shall concentrate on four topics within lexical pragmatics. The focus of Section 4 will be on lexical narrowing. In Section 5, I shall discuss the phenomenon known as lexical cloning. Section 6 will analyze lexical blocking. Finally, in Section 7, I shall examine the lexicalization asymmetry relating to logical operators.

2. Classical Gricean Pragmatic Theory

On a general Gricean account of meaning and communication, there are two theories: a theory of meaning$_{\text{-n[on]n[atural}}$ and a theory of conversational

implicature (e.g. Grice 1989). In his theory of meaning$_{-nn}$, Grice emphasized the conceptual relation between natural meaning in the external world and non-natural, linguistic meaning of utterances. He developed a reductive analysis of meaning$_{-nn}$ in terms of the speaker's intentions, the essence of which is that meaning$_{nn}$ or speaker-meaning is a matter of expressing and recognizing intention.

In his theory of conversational implicature, Grice suggested that there is an underlying principle that determines the way in which language is used maximally efficiently and effectively to achieve rational interaction in communication. He called this overarching dictum the co-operative principle and subdivided it into nine maxims of conversation classified into four categories: Quality, Quantity, Relation and Manner. The names of the four categories are taken from the German philosopher Immanuel Kant (Grice 1989: 26). The co-operative principle and its component maxims ensure that in an exchange of conversation, truthfulness, informativeness, relevance and clarity are aimed at. They are simplified in (1) (e.g. Huang 2000a: 206, 2007: 26).

(1) Grice's theory of conversational implicature
  a. The co-operative principle
    Be co-operative.
  b. The maxims of conversation
    Quality: Be truthful.
      (i) Don't say what is false.
      (ii) Don't say what lacks evidence.
    Quantity:
      (i) Don't say less than is required.
      (ii) Don't say more than is required.
    Relation: Be relevant.
    Manner: Be perspicuous.
      (i) Avoid obscurity.
      (ii) Avoid ambiguity.
      (iii) Be brief.
      (iv) Be orderly.

Assuming that the co-operative principle and its associated maxims are normally adhered to by both the speaker and addressee in a conversational interaction, Grice suggested that a conversational implicature - roughly, any meaning implied or expressed by, and inferred or understood from, the utterance of a sentence which is meant without being part of what is strictly said[1] - can arise from either strictly observing or ostentatiously flouting the maxims. In Huang (2003, 2007), I called conversational implicatures that are engendered by way of directly observing the maxims conversational implicatures$_O$, and conversational implicatures that are generated by way of the speaker's deliberately flouting the maxims conversational implicatures$_F$.

A second Gricean dichotomy, independent of the conversational implicature$_O$/conversational implicature$_F$ one, is between those conversational implicatures which arise without requiring any particular contextual conditions and those which do require such conditions. Grice called the first kind generalized conversational implicatures (GCIs), and the second kind particularized conversational implicatures (PCIs).

Finally, Grice designed a battery of tests to facilitate the identification of conversational implicatures. First, there is defeasibility or cancellability - conversational implicatures can simply disappear in certain linguistic or non-linguistic contexts. A second property exhibited by conversational implicatures is non-detachability - any linguistic expression with the same semantic content tends to carry the same conversational implicature. (A principled exception is those conversational implicatures that arise via the maxim of Manner.) Thirdly, calculability - conversational implicatures can transparently be derived via the co-operative principle and its attendant maxims. Fourthly, non-conventionality - conversational implicatures, though dependent on the saying of what is coded, are non-coded in nature. Fifthly, reinforceability - conversational implicatures can be made explicit without producing a sense of redundancy. Sixthly, some conversational implicatures may be indeterminate. They can be taken as conveying an open-ended range of implictures relating to matters in hand. Finally, we have universality - conversational implicatures tend to be universal, being rationally motivated rather than arbitrary (see also Levinson 2000, Bach 2006, Huang 2007: 32-35). In summary, Grice's account of conversational implicature is couched in a general theory of intention, co-operation, and more broadly, rationality (see also Huang 2007, 2009, forthcoming a).

[1] Saul (2002) is of the view that Grice's main goal is to develop a theory of speaker-meaning. Following Saul, Horn (2004, 2006a: 24) now holds that contra his own earlier work, conversational implicature is a component of speaker-meaning rather than a pragmatic inference (but see also Horn 2006a: 35). By contrast, Levinson (2000), Atlas (2005) and others are still treating conversational implicature as a pragmatic inference. My definition is applicable to both sides.

3. Two Neo-Gricean Pragmatic Models

Since its inception, Grice's classical theory of conversational implicature has revolutionized pragmatic theorizing, generating a large number of reinterpretations, revisions and reconstructions. Of all neo-Gricean reductionist models, the most influential are the two-principled Hornian and the three-principled Levinsonian neo-Gricean ones, to which I shall now turn.

3.1. The Hornian Bipartite Model

Horn (1984, 2007) put forward a bipartite model. On Horn's view, all of Grice's maxims (except the maxim of Quality) can be replaced with two fundamental and counterpoising principles: the Q[uantity]- and R[elation]-principles.

(2) Horn's Q- and R-principles
  a. The Q-principle
    Make your contribution sufficient;
    Say as much as you can (given the R-principle).
  b. The R-principle
    Make your contribution necessary;
    Say no more than you must (given the Q-principle).

In terms of information structure, Horn's Q-principle, which collects Grice's first sub-maxim of Quantity and his first two sub-maxims of Manner, is a lower-bounding pragmatic principle which may be (and characteristically is) exploited to engender upper-bounding conversational implicatures: a speaker, in saying '...*p*...', *ceteris paribus* conversationally implicates that (for all he or she knows) '...at most *p*...'. The *locus classicus* here is those conversational implicatures that arise from a prototype Horn-scale. Prototype Horn-scales are defined in (3) (Horn 1972, Atlas and Levinson 1981, Levinson 2000, Huang 2007: 38), with exemplification given in (4).

(3) Prototype Horn-scales
  For <*S*, *W*> to form a Horn-scale,
  (i) A(*S*) entails A(*W*) for some arbitrary sentence frame A;
  (ii) *S* and *W* are equally lexicalized, of the same word class, and from the same register; and
  (iii) *S* and *W* are 'about' the same semantic relation, or from the same semantic field.

where *S* stands for 'semantically strong expression' and *W* stands for 'semantically weak expression'.

(4) a. <all, most, many, some>
  b. <hot, warm>
  c. <beautiful, pretty, attractive>

An instance of Q-implicatures is given in (5). (I use '+>' to stand for 'conversationally implicate'.)

(5) Some of the boys were hiding behind the wall.
  +> Not many/most/all of the boys were hiding behind the wall

On the other hand, the counterbalancing R-principle, which subsumes Grice's second sub-maxim of Quantity, his maxim of Relation, and his last two sub-maxims of Manner, and which is based on Atlas and Levinson's (1981) principle of informativeness, is an upper-bounding pragmatic law which may be (and systematically is) exploited to invite low-bounding conversational implicatures: a speaker, in saying '...*p*...', conversationally implicates that (for all he or she knows) '... more than *p*...'. This is illustrated in (6) below. However, more recently Horn (2007) has been of the view that the R-principle is not in itself subsumable under Grice's co-operative principle, but under rationality.

(6) The snake slid through the grass and disappeared.
  +> The snake first slid through the grass and then disappeared

Viewing the Q- and R-principles as a mere instantiation of Zipfian economy (Zipf 1949), Horn (1984, 2007) explicitly equated the Q-principle ('a hearer-oriented economy for the maximization of informational content') with Zipf's Auditor's Economy (the Force of Diversification, which tends towards a vocabulary of *m* different words with one distinct meaning for each word) and the R-principle ('a speaker-oriented economy for the minimization of linguistic form') with Zipf's Speaker's Economy (the Force of Unification, which tends towards a vocabulary of one word which will refer to all the *m* distinct meanings). The notion of Speaker's Economy is further distinguishable between mental inertia or paradigmatic economy (*économie mémorielle*) and articulatory/physical inertia or syntagmatic economy (*économie discursive*), hence internally dialectic in its operation. The former is concerned with the reduction in the inventory of mental lexicon; the latter, with the reduction in the number of linguistic units (Martini 1962, Horn 2007: 173-174). While the Auditor's Economy places a lower bound on the informational content of the message, the Speaker's Economy places an upper bound on its form. Furthermore, Horn argued that the whole Gricean mechanism for pragmatically contributed meaning can be derived from the dialectic interaction (in the classical Hegelian sense) between the two mutually constraining mirror-image forces in the following way.

(7) Horn's division of pragmatic labour
The use of a marked (relatively complex and/or prolix) expression when a corresponding unmarked (simpler, less 'effortful') alternate expression is available tends to be interpreted as conveying a marked message (one which the unmarked alternative would not or could not have conveyed).

In effect, what the communicative equilibrium in (7) basically says is this: the R-principle generally takes precedence until the use of a contrastive linguistic form induces a Q-implicature to the non-applicability of the pertinent R-implicature (see also Huang 1991, 1994, 2000a, b, 2003, 2004a, b, 2006, 2007, 2009).

3.2. The Levinsonian Tripartite Model

Horn's proposal to reduce Grice's maxims to the Q- and R-principles was called into question by Levinson (1987, 1991, 2000). In Levinson's view, Horn failed to draw a distinction between what Levinson called semantic minimization ('Semantically general expressions are preferred to semantically specific ones.') and expression minimization ('"Shorter" expressions are preferred to "longer" ones.').[2] Consequently, inconsistency arises with Horn's use of the Q- and R-principles. For example, in Horn's division of pragmatic labour, the Q-principle operates primarily in terms of units of speech production whereas elsewhere, in Horn-scales, for instance, it operates primarily in terms of semantic informativeness.

Considerations along these lines led Levinson to argue for a clear separation between pragmatic principles governing an utterance's surface form and pragmatic principles governing its informational content (but see Horn 2007 for a spirited defense of his bipartite model). He proposed that the original Gricean program (the maxim of Quality apart) be reduced to three neo-Gricean pragmatic principles: what he dubbed the Q[uantity]-, I[nformativeness]- and M[anner]-principles. Each of the three principles has two sides: a speaker's maxim, which specifies what the principle enjoins the speaker to say and a recipient's corollary, which dictates what it allows the addressee to infer. Let me take them one by one.

[2] There is, of course, a strong tendency for the two distinct minimizations (or economies) to be conflated. This general correlation, in fact, follows directly from the Zipfian theory of economy. See e.g. Huang (1994, 2007: 40) for further discussion.

(8) The Q-principle (simplified) (e.g. Levinson 2000, Huang 2007)
Speaker: Do not say less than is required (bearing the I-principle in mind).
Addressee: What is not said is not the case.

The basic idea of the metalinguistic Q-principle is that the use of an expression (especially a semantically weaker one) in a set of contrastive semantic alternates (such as a Horn-scale) Q-implicates the negation of the interpretation associated with the use of another expression (especially a semantically stronger one) in the same set. Seen the other way round, from the absence of an informationally stronger expression, one infers that the interpretation associated with the use of that expression does not hold. Hence, the Q-principle is essentially negative in nature.

Three types of Q-implicature can then be identified: (i) Q-scalar implicatures, as in (5) above; (ii) Q-clausal implicatures, and (iii) what I dubbed Q-alternate implicatures in Huang (2007). As mentioned above, Q-scalar implicatures are derived from Horn-scales. Next, Q-clausal implicatures are pragmatically enriched meanings of epistemic uncertainty. Like Q-scalar implicatures, Q-clausal implicatures also rest on a set of contrastive semantic alternates, but in this case, of a constructional kind (see (9). Finally, we have Q-alternate implicatures, which come from a non-entailment semantic (contrast) set. Roughly, we have two subtypes here. In the first, the lexical expressions in the set are informationally ranked, as in (10). Following Huang (2007), let me call Q-implicatures deriving from such a set Q-ordered alternate implicatures. By contrast, in the second subtype, the lexical expressions in the set are of equal semantic strength, as in (11). Let me term Q-implicatures thus induced Q-unordered alternate implicatures. Furthermore, Horn (2007: 168-170) distinguished two kinds of pragmatic strengthening: informative and rhetorical. While R- or I-implicature (to be discussed below) increases both informative and rhetorical strength, Q-implicature is informatively but not rhetorically stronger than the sentence uttered without the implicature. This is evidenced by what Horn (2007) called rank orders.

(9) Mary believed that the fire burned all night.
+> The fire might or might not burn all night - the speaker doesn't know which
(10) John tried to give up smoking.
+> John did not succeed in giving up smoking
(11) We teach French, German and Russian here.
+> We don't, for example, teach Spanish here

Next, there is the I-principle.

(12) The I-principle (simplified) (e.g. Levinson 2000, Huang 2007)
Speaker: Do not say more than is required (bearing the Q-principle in mind).
Addressee: What is generally said is stereotypically and specifically exemplified.

Mirroring the effects of the Q-principle, the central tenet of the I-principle is that the use of a semantically general expression I-implicates a semantically specific interpretation. More accurately, the conversational implicature engendered by the I-principle is one that accords best with the most stereotypical and explanatory expectation given our knowledge about the world.

(13) If you do the shopping, I'll give you ten euros.
+>If and only if you do the shopping will I give you ten euros

Finally, we come to the M-principle.

(14) The M-principle (simplified) (e.g. Levinson 2000, Huang 2007)
Speaker: Do not use a marked expression without reason.
Addressee: What is said in a marked way conveys a marked message.

Unlike the Q- and I-principles, which operate primarily in terms of semantic informativeness, the metalinguistic M-principle operates primarily in terms of a set of alternates that contrast in form. The fundamental axiom upon which this principle rests is that the use of a marked expression M-implicates the negation of the interpretation associated with the use of an alternative, unmarked expression in the same set. Putting it another way, from the use of a marked linguistic expression, one infers that the stereotypical interpretation associated with the use of an alternative, unmarked linguistic expression does not obtain. An M-implicature is illustrated by (15b) below, which is marked.

(15) a. Mary's boss is sympathetic.
I +> Mary's boss is sympathetic in the stereotypical sense
b. Mary's boss is not unsympathetic.
M +> Mary's boss is less sympathetic than the utterance of (15a) suggests

Given the above tripartite classification of neo-Gricean pragmatic principles, the question that arises next is how inconsistencies arising from these potentially conflicting implicature apparatuses can be resolved. According to Levinson (2000), they can be resolved by an ordered set of precedence, incorporating Horn's (1984) division of pragmatic labour.

(16) Levinson's resolution schema for the interaction of the Q-, I-, and M-principles
a. Level of genus: Q > M > I
b. Level of species: e.g. Q-clausal > Q-scalar

This is tantamount to saying that genuine Q-implicatures (where Q-clausal cancels rival Q-scalar) precede inconsistent I-implicatures, but otherwise I-implicatures take precedence until the use of a marked linguistic expression triggers a complementary M-implicature to the negation of the applicability of the pertinent I-implicature. By way of summary, both Horn's and Levinson's neo-Gricean endeavors have put the classical Gricean theory on a much more rigorous basis, showing that the theory can be formalized and tested (or falsified), hence enhancing its predictive and explanatory adequacy (see also Huang 1991, 1994, 2000a, b, 2003, 2004a, b, 2006, 2007, 2009 for further discussion).

4. Lexical Narrowing

In the previous two sections, I outlined Grice's classical and Horn's and Levinson's neo-Gricean pragmatic theories. Starting from this section, I shall show how neo-Gricean pragmatics can be explored to provide an answer to the questions or myths raised in Section 1 above. Let me begin with lexical narrowing.

4.1. Lexical Underspecification

When one says something, one usually means more than what he or she has actually said (e.g. Huang forthcoming b). In other words, there is a gap between linguistic meaning (roughly, what is said or part of what is said) and speaker meaning (roughly, what is meant or what is communicated). This is embodied in the linguistic underdeterminacy thesis in (17) (e.g. Atlas 2005, Recanati 2004, Bach 2004, Levinson 2000, Horn 2004, 2007).

(17) The linguistic underdeterminacy thesis
The linguistically encoded meaning of a sentence radically underdetermines the proposition a speaker expresses when he or she utters that sentence.

Furthermore, the gap between what is said and what is communicated is normally filled in by pragmatic enrichment. Consider, for example, the assignment of anaphoric reference in (18).

(18) a. The authorities barred the anti-globalization demonstrators because they advocated violence.
b. The authorities barred the anti-globalization demonstrators because they feared violence.

In (18), the assignment of reference for the anaphoric pronoun *they* depends crucially on our background assumption about who would most likely be advocating or fearing violence. This extralinguistic information is responsible for the two opposing interpretations, namely, *they* going back to *the anti-globalization demonstrators*, as in (18a) or being linked to *the authorities*, as in (18b).

The same is true of the interpretation of lexical items. As our first example, witness the use of *take back* in (19).

(19) a. They took the panda back to the zoo.
b. They took the tram back to the zoo.

The meanings of *take back* are different in (19a) and (19b). In (19a) the panda is the object that they took back to the zoo, whereas in (19b), the tram is the instrument that took them back. Notice that from a semantic or lexical point of view, *take back* is in general not taken as ambiguous (e.g. Blutner 2004). Consider next the meaning of *rabbit* used in (20).

(20) a. Mary likes wearing rabbit.
b. Mary likes eating rabbit.

In (20a), *rabbit* tends to be interpreted as *rabbit fur/skin*, whereas in (20b), it tends to be read as *rabbit meat*.

Next, essentially the same story can be told of the interpretation of adjectives. For example, the adjective *red* in (21) has to be understood differently. This presents a challenge to compositionality (e.g. Quine 1960, Lahav 1993). The interpretation of nouns such as *run* and verbs such as *open* also falls under this category.

(21) a. The apple is red. [on its peel]
b. The watermelon is red. [inside its flesh]
c. The pencil is red. [painted red or with red lead]
d. The book is red. [on its cover]
e. The house is red. [on its outside]

Finally, other cases that can be cited include the interpretation of noun-noun compounds (22), possessive NPs (23) and so-called systematic ambiguity (24) (Huang 2005, 2007). From all this, one can conclude that there is also a gap between lexical meaning and what the speaker actually means when he or she uses a particular lexical item on a particular occasion.

(22) a. the government's safe-sex campaign
+> the government's campaign for safe sex
b. the government's drug campaign
+> the government's campaign against illegal drug
(23) a. John's father +> the one to whom he is son
b. John's office +> the one he works in
c. John's class +> the one he attends/teaches
d. Newton's ideas +> the ones originated from Newton
e. Halley's comet +> the one named after Halley
(24) a. The whole nursery burnt down.
+> The buildings of the whole nursery burnt down
b. The whole nursery went on a country outing.
+> The staff and children of the whole nursery went on a country outing

How can a semanticist deal with examples like (19)-(24)? He or she has to treat the lexical items under discussion as ambiguous. However, there is a serious problem at the very heart of this ambiguity analysis, namely, the account runs directly against the spirit of a metatheoretical principle known as 'Occam's razor', which dictates that entities are not to be multiplied beyond necessity. A particular version of Occam's razor, dubbed 'modified Occam's razor' by Grice (1989: 47) is that senses or dictionary entries must not proliferate. This has the consequence that all things being equal, an account which has to suggest two lexical items is to be rejected in favour of an analysis which does not. Therefore, if one adopts the semantic analysis, one has to analyze most lexical items in a language as ambiguous - clearly not an economic analysis.

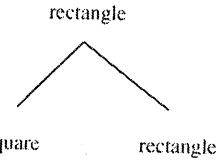
An alternative is for us to take the lexical underspecification view, namely, the view that every lexical item determines an unspecified representation (e.g. Blutner 1998), and combine it with a theory of pragmatic enrichment. In other words, whenever one is faced with a lexical item that is apparently systematically ambiguous, one should try to analyze it as containing a single univocal, semantically broad sense with a set of defeasible pragmatic inferences (e.g. Levinson 2000: 20-21). A desirable consequence of such an account is that the interaction and division of labour between lexical semantics and pragmatics will allow us to avoid unnecessary semantic ambiguity and preserve semantic parsimony, thereby approximately halving the size of the lexicon (Levinson 1983: 37-38, Huang 2004b, 2007). One theory that can be

utilized to provide a pragmatic analysis of lexical narrowing is the Horn-Levinson neo-Gricean pragmatic model outlined above in Section 3.

4.2. *Two Types of Lexical Narrowing*

Lexical narrowing or strengthening refers to the phenomenon whereby the use of a lexical expression conveys a more specific meaning than the expression's lexically encoded meaning. It can be grouped into two types. In the first, the use of the general (i.e. superordinate) term of a hyponymic taxonomy where there is a specific hyponym denotes more narrowly the complement of the extension of the hyponym (Kempson 1980, Horn 1984). This is the case for (26).

(25)



(26) a. John folded the newspaper neatly into a rectangle.
b. +> John did not fold the newspaper neatly into a square

Lexical narrowing of this type follows directly from the Q-principle. Notice that *square* and *rectangle* form a Horn-scale here. Since the speaker has used the semantically weaker expression *rectangle*, where a semantically stronger one of equal brevity *square* is available, he or she would contradict the Q-principle if the semantically stronger expression held. Consequently, he or she believes that the semantically stronger statement does not hold. Hence, from the use of the semantically weaker *rectangle*, one obtains the pragmatically narrowed meaning 'not square' (Horn 1984, Huang 1998, 2005, Levinson 2000). This Q-based reduction of meaning typically gives rise to what Horn (1984) and Levinson (2000) called autohyponymy, i.e. privative polysemy. In addition to (26) above, further exemplication is provided in (27).

(27) a. finger +> not thumb
b. gay +> not lesbian
c. actor +> not actress

Note that these Q-narrowed meanings are not part of the lexical semantics of the lexical items under consideration, because they can be cancelled, as in (28). (I use '-+>' to signify 'do not conversationally implicate'.)

(28) John folded the newspaper neatly into a rectangle, if not a square.
-+> John did not fold the newspaper neatly into a square

Secondly and more interestingly, there is the R/I-implicature-based lexical narrowing. The basic idea here is that the use of a semantically general lexical item is I-implicated to a semantically more specific interpretation. This is the case for (29), where the semantically general term *milk* is I-narrowed to denote its culturally salient subset 'cow's milk'.

(29) a. John had a glass of milk for breakfast this morning.
b. +> John had a glass of cow's milk for breakfast this morning

More examples are given in (30) below.

(30) a. I usually have an egg for breakfast.
+> The speaker usually has a hen egg for breakfast[3]
b. It's not the drink; it's the way we drink. (advertisement against binge drinking on TVNZ).
+> It's not the alcoholic drink; it's the way we drink alcohol[4]
c. Gordon's cousin is a nurse/secretary/prostitute.
+> Gordon's cousin is a female nurse/secretary/prostitute
d. The little girl has a temperature.
+> The little girl has a high temperature
e. She dislikes blood.
+> She dislikes human blood
f. John is reading two modern languages at Oxford. [British English]
+> John is reading two modern European languages other than Modern English at Oxford University
g. Fernando Lugo [the President of Paraguay] acknowledged he had a relationship with Viviana Carillo [while he was still a Catholic bishop]. (*The New Zealand Herald* 15 April 2009)
+> Fernando Lugo acknowledged he had a sexual relationship with Viviana Carillo [while he was still a Catholic bishop]
h. She wants to marry an Asian. [British English]
+> She wants to marry a sub-Indian Continental Asian
i. Something smells here!
+> Something smells bad here!
j. The blonde has a brain.
+> The blonde has a high-functioning brain

[3] Cf. *egg* used in *an Easter egg*.

[4] Cf. *John smokes*. In most countries, the uttering of *John smokes* R/I-implicates that John smokes cigarettes. But according to Blutner (forthcoming), in Amsterdam, it may implicate that John smokes joints (cigarettes containing marijuana). This indicates that an R/I-implicated narrowing is also subject to cultural factors.

k. Have you been to Shakespeare's birthplace?
+> Have you been to the birthplace of William Shakespeare, the English dramatist and poet
l. That country is testing a bomb.
+> That country is testing an atom bomb
m. Something has happened in the hotel.
+> Something unusual has happened in the hotel

The class of R/I-implicated lexical narrowing is heterogeneous, but the narrowed readings in (30a) - (30m) above share a number of properties. In the first place, they are more specific than the lexical items that engender them. For example, in (30b), from the use of the semantically general *drink*, one gets the semantically more specific interpretation 'alcoholic drink/drink alcohol'. In (30c), the speaker uses the semantically general *nurse/secretary/prostitute*, and the addressee infers them as 'female nurse/secretary/prostitute', which are semantically more specific. The difference between *drink* and *secretary*, according to Horn (1984) and Levinson (2000), is that while *drink* is an autohyponym, *secretary* is not. In (30k), from *Shakespeare*, one obtains the semantically more specific interpretation 'William Shakespeare, the English dramatist and poet'. The same can be said of all the other examples. Secondly, unlike Q-implicature based lexical narrowing, R/I-implicature based lexical narrowing is positive in nature. Thirdly, it is characteristically guided by stereotypical assumptions. This is the case, for instance, for (29) and (30a) - (30c). Fourthly, it is generally non-metalinguistic, in the sense that it makes no reference to something that might have been said but was not (e.g. Huang 1998, 2005, 2009, Levinson 2000).[5]

Again, one point that is worth noting is that the pragmatically I-narrowed meanings are not part of the lexical semantics of the lexical items under discussion. This can be seen by the fact that these lexical items can co-occur with words such as *male*, *goats* and *dog*.[6]

[5] R/I-implicature based lexical narrowing is very common cross-linguistically. In mainland China, for example, the use of *dangyuan* 'party member' is typically R/I-implicated to *gongchandangyuan* 'Communist Party member'. While in ancient times, *quche* 'drive (in) a vehicle' is narrowed down to mean e.g. *qugan mache* 'drive a horse cart', as in one of the famous Tang poems written by Li Shangyin, in contemporary China, it is usually narrowed down to *kai xiaoqiche* 'drive a car'. Finally, once the two-syllable condition is met, one does not need to say *jidan* 'hen egg'. The *dan* used in e.g.*dangao* 'egg cake', *danjuan* 'egg roll' and *danpi* 'egg wrap' is all R/I-narrowed down to *jidan*.

[6] There is, of course, the other side of the lexical change coin, namely lexical broadening or loosening. According to Horn (2007: 165), this process of meaning expansion can be accounted for in terms of his R-principle. Within the relevance-theoretic framework, three types of lexical broadening are identified: approximation, category extension and metaphoric extension. See Wilson and Carston (2007) for an attempt to provide a unified account of lexical narrowing and broadening within the relevance-theoretic framework.

(31) a. A male nurse/secretary/prostitute was arrested yesterday.
b. John particularly likes goats' milk.
c. Mary doesn't drink tap water.
d. As soon as she saw her dog's blood, Susan fainted.
e. Modern Standard Arabic is a modern language.
f. Something smells delicious here!
g. Mr Key and Premier Wen Jiabao toasted the health of the relationship and the desire to build on the one-year-old trade deal between the two countries [New Zealand and China]. (*The New Zealand Herald* 17 April 2009).

5. Lexical Cloning

Lexical cloning refers to the phenomenon whereby there is a modifier reduplication of a lexical item. The reduplicated modifier is used to single out some privileged sense, in contrast to other senses, of an ambiguous, polysemous, vague or loose lexical expression.[7] This is illustrated in (32).[8]

(32) a. (Hohenhaus 2004)
'I've got a job now.' 'What, part time...?' 'No, no - a job-job.'
b. (Ghomeshi et al. 2004)
My car isn't MINE-mine; it's my parents'.
c. (Ghomeshi et al. 2004)
That's not AUCKLAD-Auckland, is it?
d. (Hohenhaus 2004)
I started a really worthless thread [...] well, actually, I didn't start-start it, but...
e. (Ghomeshi et al. 2004)
I'm up, I'm just not UP-up.
f. (Hohenhaus 2004)
Honey, I'm so sorry. Am I late late or just late? (from *Gilmore Girls*)
g. (Ghomeshi et al. 2004)

[7] A terminological note is in order here. The construction is called 'double constructions' in Dray (1987) and Horn (1993), 'contrastive (focus) reduplications' in Ghomeshi et al. (2004), 'identical constituent compounding' in Hohenhaus (2004), and 'lexical clones/lexical cloning' in Horn (2006b).

[8] Most examples used in Ghomeshi et al. (2004) are based on a corpus they have gathered. I am grateful to Kevin Russell for the permission he has given me to use the corpus. The data in Hohenhaus (2004) are from a corpus he has collected from a number of corpora (see below).

A: I was sitting across from your husband at dinner.
B: Really?
A: Well, not ACROSS-across (but close by).
h. (Dray 1987)
Oh, we are just LIVING TOGETHER living together.
i. (Hohenhaus 2004)
'We are thirty-six, you know.' 'Yeah, but we're not, like, thirty-six thirty-six' (from *Lovely and Amazing*)

As can be seen in (32), lexical cloning can target nouns (32a), pronouns (32b), proper names (32c), verbs (32d), adverbs (32e), adjectives (32f), (contentful) prepositions (32g), lexicalized expressions (32h), and even numerals (32i).[9]

Lexical cloning is found in both British and North American English, but it seems more common in the latter. It is a relatively recent phenomenon. A search of the British National Corpus, the British Component of the International Corpus of English, the Santa Barbra Corpus of Spoken American English and Lampeter Corpus of Early Modern English Tracts found that the majority of lexical clones is from the 1990s onward, only a few are traced back to the 1980s, and only one to the 1970s (Hohenhaus 2004: 315). Furthermore, as observed by both Ghomeshi et al. (2004) and Hohenhaus (2004) independently, the use of double constituents of this kind is largely restricted to a certain, informal conversational register of spoken English. Even the tokens of lexical cloning that are found in written English such as scripts for plays, films and TV programs are largely representations of spontaneous spoken language (as a mode) in written form (as the medium) (Hohenhaus 2004: 302).

Lexical cloning is also found in a number of other languages in the world. These include Afrikaans (Botha 1988: 92-95), Dyari (Levinson 2000: 152), Dyirbal (Dixon 1980), Italian (Wierzbicka 1991: 258, 280), French (Mau 2002: 88, 144), Quebec French (Jensen 1990: 68ff), Modern Greek (Wierzbicka 1991), KiNande, Vulgar Latin, Persian (Ghomeshi et al. 2004), Russian (Wierzbicka 1991: 280, Ghomeshi et al. 2004), Spanish (Horn 1993, Mau 2002: 219), Tzeltal, Tzotzil, and Western Desert (Levinson 2000:152). To these, we can add German. Ghomeshi et al. (2004: 312-313) claimed that German is not a lexical cloning language, based on the German translation of a replicated noun *RICH-rich* in English.[10] But this is clearly not the case.

[9] For an informative discussion of the morphosyntax, reduplicative phonology, prosodic and lexical constraints on lexical cloning, see Ghomeshi et al. (2004).

[10] The original English sentence and its German translation:
They are rich, of course; obscenely rich by the world's standards; but not RICH- rich, not New York City rich. (Michael Cunningham: *The Hours*)... aber nicht richtig reich, nicht nach den Maßstäben von New York City. (... but not really rich, not by the standards of New York City.)

According to Hohenhaus (1998, 2004) and Mau (2000: 88, 144), lexical cloning is at least as common in German as it is in English. Examples from languages other than English are given in (33).

(33) a. Dyirbal (Levinson 2000)
gunbal-gunbal 'cut repeatedly'
b. German (Hohenhaus 2004)
(Context: said by the well-known German comedian Otto to a recent show on the TV channel, Sat 1 that 'invented' the Film-Film slot)
Guten Abend meine Damen und Herren! Ich darf Sie enttäuschen, denn Sat 1 zeigt heute nicht dem Film-Film "Chitty-Chitty Bang-Bang", und auch nicht den Sport-Sport in "ran-ran"; statt dessen erwartet Sie in Sat 1 [...] die neue Show-Show "Only Otto-Otto" von und mit Otto-Otto. Viel Vergnügen mit Otto-Otto.
'Good evening, ladies and gentlemen. I'm delighted in disappointing you... because Sat 1 will not show the film-film "Chitty-Chitty Bang-Bang" today, nor the sports-sports in "ran-ran". Instead you can now see [...] the new show- show "Only Otto-Otto", written by and starring Otto-Otto. Have a good time with Otto-Otto.'
c. Italian (Wierzbicka 1991)
caffè caffè 'coffee coffee'
b. KiNande (Mutaka and Hyman 1990)
o.ku-gulu.gulu 'leg leg'
d. Persian (Ghomeshi et al. 2004)
loxt-e loxt ken a-bud.
'He/she wasn't NAKED-naked.'
e. Russian (Ghomeshi et al. 2004)
On zheltyj-zheltyj, a ne limonno-zheltyj.
'It's YELLOW-yellow, not lemon-yellow.'
e. Spanish (Mau 2002)
mina mina 'mine mine'

What, then, is the main function of lexical cloning? According to Ghomeshi et al. (2004), it is to specify a true, real, default, salient, or prototypical denotation of the repeated lexical item. This reading is in contrast to a potentially looser or more specific interpretation. More specifically, Horn (1993, 2006b) identified three types of meaning of lexical cloning: (i) prototypical meaning, (ii) 'value-added' or intensifying meaning, and (iii) literal, as opposed to figurative, meaning. Furthermore, he pointed out that meaning (i) is related especially to reduplicated nouns, and meaning (ii), especially to repuplicated adjectives. This is also echoed by Hohenhaus

(2004: 301, 315), who postulated two formulas, one for doubled nouns and the other for doubled adjectives/adverbs/verbs.

(34) Hohenhaus' formulas
a. For doubled nouns
An XX is a proper/prototypical/precise/just X
b. For doubled adjectives, adverbs and verbs
An XX = really/properly/extremely X

Construed thus, lexical cloning seems to function like what Lasersohn (1999) called pragmatic 'slack regulators' - words such as *exactly*, *precisely* and *perfectly*. These words serve to shrink what Lasersohn termed 'pragmatic halos' – the set of entities associated with the denotation of a lexical item or proposition (e.g. Ghomeshi et al. 2004). If this is the case, then lexical clones can also in part be regarded as a special case of lexical narrowing.

This standard, prototype analysis advocated by Horn (1993, 2006b), Ghomeshi et al. (2004) and Hohenhaus (2004), however, is not without problems. What the theory predicts is at best only a general tendency. If a lexical clone were completely predictable from the isolated use of the reduplicant, then its interpretation would be a purely semantic issue. In the first place, cross-linguistic evidence indicates that the pattern does not seem to be universal. There are languages in the world which display an invertible pattern. That is, while the non-reduplicated lexical item singles out the prototype category member, the lexical clone picks out its non-prototypical complement. This appears to be the case for Dyari, West Desert, Tzeltal and Tzotzil. In Dyari, whereas *kintha* means 'dog', its repeated form *kintha-kintha-la* denotes 'little dog'. In West Desert, *wati* means 'men', but *wati-wati* has the meaning of 'kids pretending to be men'. In Tzeltal and Tzotzil, the use of non-cloned colour terms picks out the prototypical, stereotypical hues, but the repeated colour terms indicate that the colour in question deviates from the relevant focal or prototypical hue (Levinson 2000: 152).[11] Furthermore, in some of the world's languages, the meanings of different lexical clones may move in opposite directions. A stock example of such a language is Africaans, in which reduplication is a highly productive kind of derivational morphology. In this language, one can find, for example, *bakke-bakke* 'lots of bowls' versus *ruk-ruk* 'a few times', *troppe-troppe* 'scattered flocks' versus *tien-tien* 'ten together', and *dik-dik* 'very thick' versus *skop-skop* 'tentatively kick' (Botha 1988, Levinson 2000: 152).

[11] Note that in languages where colour adjectives do single out the prototypical or intensifying meaning, as pointed out by Whitton (2008), they are more common in the prototypical or focal sense than in the intensified sense.

Secondly, one of the most important characteristics of lexical clones is that in terms of interpretation, they are heavily context-dependent, contra Hohenhaus (2004: 314-315). First, they typically occur in a contrastive linguistic context in the form of (35) (Hohenhaus 2004).

(35) a. Not (just) X but (rather) XX
b. Not (just) XX but (rather) X

In addition to (32b), (32e), (32g) and (32i) above, we have (36).

(36) a. Frank is not just my colleague; he's my colleague-colleague. We work in the same department; in fact, we work in the same section.
b. (Hohenhaus 2004)
Toni: [...] Josie, you're back. [...]
Josie: I'm back, but I'm not back back yet. (from *Another World*)
c. (Ghomeshi et al. 2004)
Look at all the yellow vans on the road. Not vans like ours [i.e. minvans], but VAN-vans.

Next, in order to avoid potential ambiguities and misinterpretations, as a preemptive measure, the user of a lexical clone often launches a self-initiated, self-repair of some sort using paraphrases, clarifications or explanations. This is the case for (37a) – (37c) below. On the other hand, there are occasions where the speaker anticipates that the addressee would be able to work out what the repeated constituent means, but in fact the addressee cannot. As a consequence, the addressee will launch an other-initiated self-repair to seek clarification from the speaker (e.g. Huang 2000a, b). This is precisely the phenomenon displayed in (37d).

(37) a. (Hohenhaus 2004)

... things have gone so bad that I decide to go home – home home, Mom and Dad home, [...] Home home is near Watford, ... (from *High Fidelity*)

b. (Ghomeshi et al. 2004)
(Dialogue between a married couple, recently separated and now living apart.)
A: Maybe you'd like to come in and have some coffee?
B: Yeah, I'd like that.
A: Just COFFEE-coffee, no double meanings.
c. (Hohenhaus 2004)
there are two kinds of love, Jerry. There's wellness love, which is good love, healthy love, love love. [...] It's characterized by respect and

understanding – and great sex. [...] And then there's unwellness love, like Maggie's. People get involved in this kind of relationship to relieve their loneliness. (from *Forever Night*)
d. (Hohenhaus 2004)
Mike: I didn't really bring anything.
Geoff: So you didn't bring any food!?
Mike: Not food-food...
Geoff: What's 'not food-food', then?
Mike: Got bubble gum...
Geoff: How you expect to survive on gum for three days, you muppet?!? (from *The Hole*)

Third, as pointed out by Whitton (2008), the same lexical clone can mean differently in different contexts. As an illustrating example, let us consider the use of *drink-drink* in the following contexts.

(38) (Whitton 2008)
a. ...if you must have a 'drink, drink' go with the hard liquor. Why is hard liquor better than beer?
b 'Do you want a bottle of wine?' Mac asks. 'I think I'll have a drink-drink,' I say, and when the waiter comes, I order a martini.
c. and drink prices are never over the top (around 3 euros a shot and 8 euros a drink-drink).

Generally speaking, the use of *drink-drink*, like that of *drink*, is considered to denote 'alcoholic drink'. However, given the relevant context, in (38a) *drink-drink* includes both hard liquor and beer, while in (38b) it refers to hard liquor only, in contrast to softer drinks like wine. Finally in (38c), once again the opposition set is different; this time the contrast is between a mixed drink and a shot (Whitton 2008). In other words, in (38) the meaning of *drink-drink* or its contrast set is so indeterminate that the reduplicated item is almost uninterpretable without context. Next consider (39).

(39) a. Oh, we're just LIVING together living together.
b. Oh, we're not LIVING together living together.

As Dray (1987), Horn (1993, 2006b), and Ghomeshi et al. (2004) note, the choice of the interpretation for the lexical clone here is determined by linguistic context. Whereas *LIVING together living together* has the prototypical meaning of 'living together as roommates' in (39a), it is taken in the 'value-added' sense as living together as partners or lovers' in (39b). As our final example, take (40).

(40) I don't just teach pragmatics; I teach PRAGMATICS-pragmatics.

Here, the interpretation of the doubled construction may depend crucially on who said (40). If it was said by an eminent neo-Gricean such as Larry Horn, the inferred reading for *PRAGMATICS-pragmatics* is likely to be 'Gricean and neo-Gricean pragmatics'. On the other hand, if (40) was uttered by a leading relevance-theorist such as Deirdre Wilson, the interpretation is likely to be 'relevance theory'.

Finally, in an appropriate context, the meaning of a lexical clone can even be reversed. For example, *drink-drink* does not always signify 'alcoholic drink', as in (41a), and it can even have the invertible, 'non-alcoholic' sense, as in (41b).

(41) (Whitton 2008)
a. (Context: two people at a fast food restaurant sharing one meal that comes with one drink)
A: What do you wanna get?
B: I'll probably just get water so if you want a drink-drink get whatever you want
b. A: ... Come on girls I need some drink ideas. Please – Celeste
B: Are you looking for alcohol? Or just a drink drink?

Given that fast food restaurants (in the United States) do not serve alcohol, the contrast in (41a) is between water and e.g. soft drinks such as coca cola, lemonade and soda. In (41b), the inferred interpretation for *drink-drink* is opposite of the expected, prototypical sense of 'alcoholic drink'. Furthermore, (41b) does not represent an isolated case, and a number of similar examples can be found in the corpus collected by Hohenhaus (2004). One such example is given in (42).

(42) Oh, I had a feeling – not a feeling feeling, but a real feeling.

To sum up, the above discussion leads to the conclusion that (i) the vast majority of lexical clones is impossible to be interpreted properly out of context, contra the prediction of the prototype analysis, and (ii) there are dimensions of contrast other than those in prototype and intensification, and all the dimensions on which the contrast set is ordered are provided by context (see also Whitton 2008). It is largely due to this heavy context-dependency that lexical clones resist lexicalization, and therefore they are unlikely to become fully lexicalized 'listems' in the sense of Di Sciullo and Williams (1987) - lexemes which are stored and can be readily retrieved from the mental lexicon. They are in essence an instance of nonce word-formation, which are actively produced only in performance (e.g. Hohenhaus 2004).

Given the crucial role played by context in the production and comprehension of reduplicated forms, lexical cloning is essentially a pragmatic phenomenon. Horn (1993, 2006b) presented a neo-Gricean pragmatic analysis of lexical cloning in terms of the interaction between his Q- and R-principles. His argument goes roughly thus. On the one hand, a lexical clone in the form of XX is more effortful than its corresponding non-reduplicated form X. On the other hand, XX is less informative and arguably less effortful than a phrase in the form of YX. Consequently, given his division of pragmatic labour between the Q- and R-principles in (7) above, it is predicted that XX is both necessary (as against X), and sufficient (as against YX) to narrow the relevant domain down.

Given that it is largely based on the prototype hypothesis, Horn's analysis, however, is not adequate. In order to account for lexical cloning more adequately, let me propose an alternative analysis within the same neo-Gricean pragmatic framework. By Grice's co-operative principle, in using an innovative lexical clone XX, the speaker assumes and has good reasons to believe that the addressee can work out the meaning of XX. On the other hand, XX, being like a tautology, is superficially uninformative. Confronted with this blatant infringement of Grice's maxim of Quantity, the addressee assumes that the speaker is actually co-operative, and has to work out why he or she has used such an apparently uninformative construction. The only way to do this is to interpret it as highly informative. Assuming next that XX is marked as opposed to both X and YX, contra Horn, the actual meaning of XX can then be computed in terms of the systematic interplay between Levinson's I- and M-principles coupled with context. Since structural constraints of the language allow the unmarked X or YX to be used to express the meaning Z, the speaker will use it if such an interpretation is intended. On the other hand, if the X or YX is not utilized, but the marked XX is employed instead, then an M-implicature is created, namely, not only meaning Z, but something more than meaning Z as well is intended. In other words, we have an M-implicated contrast set between XX and X/YX here (see also Levinson 2000). This M-implicated opposition set may involve different dimensions of contrast in different contexts. Some dimensions are those on which the contrast is between prototype versus non-prototype, a 'value-added'/intensifying versus a 'non-value-added'/non-intensifying use, or a literal versus a metaphorical meaning, as envisaged by the prototype analysts; other dimensions of contrast may involve resolving reference (as in the case of the use of proper names), disambiguating expressions (as in the case of hyponymy) and narrowing generalities (as in the case of pragmatic looseness versus strictness) (e.g. Whitton 2008); still others may have to do with the contrast between descriptive versus non-descriptive meaning or between different connotations of the lexical items used. Very often, the use of lexical clones gives rise to some kind of novelty for sarcastic, humorous, or other rhetoric effects. Of these different dimensions of contrast, some are clearly truth-conditional, while others are not. Also, as mentioned above, the way in which the contrast set is selected and ordered is determined by context, perhaps along the line of what Levinson (2000) called a Hirschberg-scale. A Hirschberg-scale is essentially a nonce scale, that is, a contextually given *ad hoc* scale. Such a scale can be based on any partially ordered contrast sets in a contextually salient way (e.g. Huang forthcoming c). Notice finally that an M-implicature generated here is a particularized conversational implicature (PCI) rather than a generalized conversational implicature (GCI) in the sense of Grice and Levinson.

6. Lexical Blocking

Lexical blocking or lexical pre-emption refers to the nonoccurrence of a lexical expression due to the prior existence of another lexical item. More specifically, it is the phenomenon whereby the appropriate use of a word formed by a relatively productive process is apparently prevented by the prior existence of a synonymous or occasionally, homophonous word. Put the other way round, the existence of a conventional lexical item for a particular meaning pre-empts or takes priority over any innovative lexical expressions. This process applies to both derivation and inflection. Furthermore, it can also take place between morphologically unrelated stems. This is illustrated in (43).

(43)

Blocking word	Blocked word
glory	*gloriosity
went	*goed[12]
queen	*kingess

Of the two types of lexical blocking, blocking by homonymy is much less common than blocking by synonymy. One example is *liver* with the meaning of 'inner organ' preventing **liver* in the sense of 'someone who lives', which would be homonymous with the former. As a second example, we have *fall* (v) 'drop down from a higher level to a lower level' blocking **fall* (v) 'to spend the autumn/fall'. Contrast (44a) and (44b).

[12] Cf. *dreamt* does not block *dreamed*, and *learnt* does not override *learned*, either.

(44) a. They summered in Scotland.
b. *They falled in Scotland.

As pointed out by Clark (1992), while we can say (44a), we cannot say (44b). This is because the form **fall* in (44b) is barred by the established, salient form *fall*, as used in (45).

(45) Something is falling from the sky onto the ground.

In contrast to pre-emption by homonymy, examples of blocking by synonymy abound. In addition to *glory*/**gloriosity*, *went*/**goed* and *queen*/**kingess*, cited above, there are *brevity* which ousts **brevitude*, *thief* which prevents **stealer* (Bolinger 1975: 109).[13] and *hospitalize* (v) which pre-empts **hospital* (v).

Lexical blocking is very common cross-linguistically. A few examples from languages other than English are given in (46) below (see also van Marle 1985 for data from Dutch, Malicka-Kleparska 1985 for data from Polish, and Kiparsky 2005 for data from Latin).

(46)

	Blocking word	Blocked word
Chinese	zhongtong 'president' zhuxi ' president'	*guozhang
German	lieber 'more willingly'	*garner
Italian	coraggio 'courage'	*coraggiosità[14]

Synonymy blocking can further be divided into two types: what Rainer (1988) called (i) type-blocking, and (ii) token-blocking, essentially following a proposal by van Marle (1985). The former involves competition between rival affixes. Generally speaking, special affixes with restricted domains (such as the *–cy* suffix) preclude general affixes with unrestricted domains (such as the *–ness* suffix). Thus, we have *decency* blocking **decentness*. In Dutch, the plural form *–s* blocks the rival plural form *–en*, since the domain of the former is restricted, while that of the latter is unrestricted (van Marle 1985). By contrast, token-blocking is concerned with the blocking of potential regular forms by already existing synonymous, or occasionally homophonous, but distinct words. Further examples of token-blocking include *oxen* blocking **oxes*, *children* overriding **childs*, *small* preventing **unbig*, *teeth* barring **tooths* and *Egyptian* pre-empting **Egypti*.

Finally, the process of lexical blocking can be either (i) full or complete, or (ii) partial. The former is illustrated by the pairs *bad*/**ungood*, *brought*/**bringed*, and *arrival*/**arrivement*, and the latter is exemplified by the pairs *glory*/**gloriosity*, because there is still *gloriousness*.

Although the phenomenon of lexical blocking has been well-known, especially in German studies of word-formation, since Paul (1896), Aronoff (1976) was credited as perhaps the first in modern linguistics to remind the linguist that the existence of a simple lexical expression can restrict the formulation of an otherwise expected, affixally derived form with the identical meaning. Two of his examples are listed in (47c) and (47d), where a pre-existing simple abstract nominal underlying a given *–ous* pre-empts its nominalization with *–ity*. This is in contrast with (47a) and (47b).

(47)

a. curious	curiosity	curiousness		
b. various	variety	variousness		
c. furious	fury	*furiosity	furiousness	
d. glorious	glory	*gloriocity	gloriousness	

Aronoff's analysis was, however, called into question by Kiparsky (1982, 1983) (see also Hofmann 1993, Di Sciullo and Williams 1987, Rainer 1988, and many others for a critique).[15] On Kiparsky's view, Aronoff's account is both too strong and too weak. On the one hand, productive derivational processes are not always prevented by the existence of a more lexicalized alternative. This is evidenced by the fact that as noted by Aronoff himself, the abstract nominals *gloriousness* and *furiousness* co-exist peacefully with *glory* and *fury*. On the other hand, blocking is not limited to derivation, but extends to inflection as well. As an alternative, Kiparsky (1982) suggested that Aronoff's blocking paradigm be reformulated as a lexical analog of the more general and ancient Elsewhere

[13] As Bauer (1983: 87) pointed out, *stealer* can still be used, but it can be used only when the object stolen is mentioned, as shown in the *Oxford English Dictionary*. Horn (1984) also noted the use of *base stealer* in baseball. In German, according to Rainer (1988: 156), *Stehler* is blocked by *Dieb* 'thief' except that it can occur only in the proverb *Der Hehler ist schlimmer als der stehler* 'The receiver is worse than the stealer/The fence is worse than the thief/It is worse to condone a crime than to commit it'. I am grateful to Janet von Randow for providing me with the first translation and discussing the other two with me.

[14] Blocking can also extend to syntax, where a prior existence of a word can block an entire synonymous phrase. In English, while there are *this morning* and *this evening*, there is not *this night*, which is frustrated by *tonight* (Hoffman 1982, Aronoff and Anshen 1998). In French, we do not have *de le*, which is blocked by *du*. Finally, in Spanish *conmigo* pre-empts *con mi* 'with me' (Piera 1985).

[15] On Rainer's view, for example, 'Aronoff's theory of blocking should thus be considered a failure, both on conceptual and on empirical grounds. What remains is a felicitous name (*blocking*) and the paradoxical fact that the rise of the theoretical interest in the phenomenon of blocking which we have witnessed over the last decade is due precisely to the rather macroscopic flaws of Aronoff's theory and the ensuring desire to improve on it' (Rainer 1998: 157).

Condition, which can be traced at least back to Panini two millennia ago. However, the existence of partial blocking like *contestant/contester*, *sealer/sealant* and *refrigerant/refrigerator* shows that Kiparsky's prediction ('Special rules block general rules in their shared domain.') is still too powerful, because partial blocking corresponds to the phenomena that 'the special affix occurs in some restricted meaning and the general affix picks up the remaining meaning' (Kiparsky 1983, see also Horn 1984). As an attempt to accommodate these cases, Kiparsky (1983) put forward a generalization which he dubbed avoid synonymy (see also Clark's 1990, 1992, 1993 principle of contrast).

(48) Kiparsky's avoid synonymy condition
The output of a lexical rule may not be synonymous with an existing lexical item.

What (48) basically predicts is the pre-emption of potential, absolute synonyms by established lexical items. Put slightly differently, there will be no blocking without synonymy. As an initial illustrating example, consider *cook* and *cooker*. Given the established meaning of *cook* 'a person who cooks', it constrains *cooker* with that meaning, but not with a different meaning 'an appliance which cooks'. Here, in terms of derivational morphology, verb-to-noun conversion (*cook* (v) –> *cook* (n)) takes place at level 1, whereas *–er* is attached at level 2 (e.g. Plag 2003). Another case in point involves the singular and plural forms of *fish*. The usual plural form of *fish*, namely *fish* blocks *fishes* as its plural form, but does not block it when its sense is 'different kinds of fish'. Differences in meaning are the reason why we may find a pair like *childish/childlike*, *informant/informer*, *brethren/brothers*, *productivity/productiveness* and *Israelite/Israeli*. Finally, once again, the principle of synonymy accounts for why *ethnicity* and *ethnicness* can sometimes co-exist peacefully. Now, contrast (49a) and (49b).

(49) a. The lanterns demonstrated the ethnicity of the restaurant.
b. The lanterns demonstrated the ethnicness of the restaurant.

As pointed out by Riddle (1985: 438), the two sentences have different meanings. In (49a), the lanterns indicate to which ethnic group the restaurant belongs, but in (49b), they show that the restaurant has an ethnic appeal. Furthermore, if two words are from very different registers or have widely differing connotations, blocking will not occur, either. This is the case for *begin* and *commence*. Our final example comes from lexical change. After the Norman Conquest in 1066, English speakers at court were faced with two sets of terms for animals: one from English (*calf, cattle, deer, pig, sheep*...) and the other from French (*veau, boeuf, venaison, porc, mouton* ...). Given the avoid

synonymy condition, the French terms were prevented from becoming synonymous with their English counterparts. Eventually, English and French terms were assigned different extensions: the original English terms for animals, but the terms borrowed from French for food. Thus we have the familiar pairs: *calf/veal*, *cattle/beef*, *deer/venison*, *pig/pork*, and *sheep/mutton* (see also Clark 1990). This has the effect that the use of a food-denoting term usually blocks the conceptual grinding mechanism with regard to the use of an animal-denoting one, as in (50).

(50) John doesn't like eating pork/?pig.

A second condition on blocking proposed by Rainer (1988) is productivity. What the condition dictates is that it should be possible for the potentially blocked word to be formed by a productive rule. In other words, the blocked word must be morphologically well-formed. Evidence abounds in both child and adult learner language. In the first place, children use blocked words before and sometimes even after they have acquired the blocking words. In other words, if the irregular form is not available to a child or the child has temporarily forgotten it, he or she is likely to produce the regular form. For instance, **breaked* may be used for *broke*, **famousness* for *fame*, and **oar* (v), for *row* (v) (e.g. Clark 1993, Aronoff and Anshen 1998). The same is true of German. Rainer (1988), for example, reported the use of *Kehrer* 'lit. sweeper' for *Besen* 'broom' by a four-year old boy. Next, in slips of the tongue, words that are usually blocked may sometimes show up. In English we may find **taked* for *took*, **braker* instead of *brake* and **borer* for *bore*. In German, we find that *beratet* was used for *berät* by Kurt Waldheim in *man konsultiert sich*, *man beratet sich* 'you ask yourself, you advise yourself'. Furthermore, in language change, blocked forms frequently oust their blockers. Finally, poets may sometimes use normally blocked words to create novelty and even shockingness. This is the case of using playful forms like *mein Gutester* 'lit. my goodest' instead of *mein Bester* in German (Reiner 1988). All this shows that before a word becomes blockable, it has to be able to come into potential existence.

Thirdly and finally, there is the condition of frequency, which basically says that in order to be able to prevent the establishment of a potentially synonymous word, the blocking word must be sufficiently frequent. Clearly, it is not the case that all the blocking words that are stored in the mental or 'permanent' lexicon exert the same blocking force on the potential regularly derived words. Consequently, 'the blocking force is a function of the frequency of the blocking word' (Rainer 1988: 163). In fact, the higher the frequency of a word, the more likely that it will be able to block a rival one (see e.g. Rainer

1988: 168-169 for detailed evidence from both Italian and German to support the correlation between frequency and blocking force). Also if two words co-exist for a time, the more frequently used word will block the less frequently used one. For example, children may produce *seeable* and *hearable* at the same time when they produce *readable* and *washable*. After that, *seeable* and *hearable* may co-exist with *visible* and *audible* for a while. In the end, the more frequent, special *visible* and *audible* will block the less frequent, regularly derived *seeable* and *hearable* (Blutner 2004).

Lexical blocking, however, can be cancelled under certain conditions, resulting in what Blutner (2004) called deblocking. For example, Nunburg and Zeanen (1992) noted that the use of *cow* rather than *beef* is more appropriate in (51) (see also Copestake and Briscoe 1995 for further examples).

(51) Hindus are forbidden to eat cow/?beef.

The same can be said of **liver* in the sense of 'a person who lives'. Given an appropriate linguistic context, it can also be deblocked, as in the pun in (52a) (Jespersen 1942: 231), and the quotation from the *Oxford English Dictionary* in (52b). (Plag 2003: 64).

(52) a. Is life worth living? It depends on the liver.
b. The country for easy livers,
The quietest under the sun.[16]

This shows that there is essentially a pragmatic base for lexical blocking and deblocking.

We have a neo-Gricean pragmatic explanation for the lexical blocking process, along the lines of Horn (1984). By Horn's division of pragmatic labour or Levinson's resolution schema, the process, namely, less productive/lexicalized/unmarked/irregular forms block more productive/lexicalized/marked/regular forms in the same slot,[17] is the result of the interaction between the Q/M- and R/I-principles. Given the R/I-principle, the speaker tends not to use the less productive form in most cases, because the more productive one is more readily available. On the other hand, by the Q/M-principle, the speaker tends to employ the less productive form to achieve some special effects which the use of the more productive form would not allow. Therefore, this is a case of unmarked forms tending to be used to convey unmarked messages, and marked forms, to

[16] Deblocking can also be found in syntactic blocking. For instance, *this night* can be used in *Why is this night different from all other nights?* (Aronoff and Anshen 1998).

[17] Malicka-Kleparska's (1985) study of Polish and Rainer's (1988) investigation of Italian show that the blocking word may be a morphologically regular form provided that it is stored in the mental lexicon.

convey marked messages in the interface between pragmatics and morphology (see Huang 1998, 2008, 2009, see also Aronoff and Anshen 1998).[18]

Next, in a pioneering study of the role played by Gricean conversational implicature in the lexicon, which is independent of the work done by Aronoff and Kiparsky, McCawley (1978) discussed a number of cases of partial blocking, outside the area of derivation and inflection. One case concerns the formulation of colour terms in English. For example, *pale red* is far less frequently used than, say, *pale blue*, *pale green* and *pale yellow*. This is because while English has no lexical item for *pale blue*, *pale green* and *pale yellow*, it has a lexical item for pale red, namely *pink*. Furthermore, what is interesting is the fact that *pale red* is found to be used occasionally. When it is used, it denotes a colour other than pink, that is, a colour that is paler than red but not as pale as pink. This indicates that *pale red* is partially blocked by *pink*.

(53) a. John's girlfriend likes wearing pink skirts.
b. John's girlfriend likes wearing pale red skirts.
c. +> John's girlfriend likes wearing skirts whose colour can't be described exactly as pink.

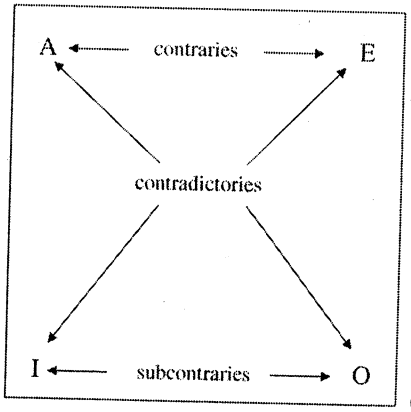
Once again, as I argued in Huang (1998, 2008, 2009), the contrast shown between (53a) and (53b) falls out naturally from Horn's division of pragmatic labour or Levinson's resolution schema. While the use of (53a) engenders a straightforward I-implicated stereotypical interpretation, given that *pink* and *pale red* form an M-contrast set, the use of the marked (53b) M-implicates (53c). On the other hand, since there is no colour term to block the use of, or to form an M-contrast set with *pale blue*, the use of *pale blue* (which means whitish blue) does not carry any M-implicated extra meaning.

7. Lexicalization Asymmetry: Logical Operators

We come finally to the asymmetry in the lexicalization of certain logical operators. Consider the traditional arithmetic Square of Opposition formulated by Boethius out of Aristotle two millennia ago.

[18] Kiparsky (2005) presented an optimality-theoretic (OT) analysis of blocking. According to this account, blocking is not a relation between competing word-formation rules, but between competing expressions. It is the result of the interplay between two OT constraints: economy, which is a markedness constraint, and expressiveness, which is a faithfulness constraint. This analysis can be easily recast in terms of the neo-Gricean oriented, bidirectional OT pragmatic theory (Blutner 1998, 2004). For a discussion of OT with regard to anaphora, see Huang (2000), and for a commentary on Blutner's bidirectional OT treatment of the Q- and R/I-principles, see Huang (2004b).

(54) Square of Opposition



Clearly, there is an asymmetry in the lexicalization of logical operators on the square. Whereas the A, E, and I vertices can all be lexicalized, the O vertex cannot. This is schematized in (55).

(55)

	A	I	E	O
Quantifiers	all	some	none	not all/*nall
Adverbs	always	sometimes	never	not always/*nalways
Connectives	and	or	nor	and not /*nand
Modals	must	may	must not	permit not *permitn't

Furthermore, as pointed out by Horn (1972, 1989: 252-267), the lexicalization asymmetry seems to some extent cross-linguistic, as the data drawn from Geek, Latin, French, Japanese, and Malagasy show. In other words, there is a cross-linguistic tendency for the O corner not to be represented in the lexicon. Rather, it is nearly always encoded by complex phrases.[19]

Why is this the case? To answer this question, we need to consider the question of what is the relation between the sub-contrary I and O vertices on the square? Put slightly differently, the question boils down to whether the I/O relation is a logical one or not. On Aristotle's view, the relation is logical as far as the modals are concerned, but in the case of the quantifiers, it is non-logical. This was disputed by William Hamilton and Otto Jespersen, who held

[19] This applies to natural languages only. See Horn (2006a) for lexicalized O values such as NAND and XOR in non-natural languages.

that the relation is logical for all the squares. By contrast, for Augustus De Morgan and John Stuart Mill, it represents a non-logical relationship for all the squares (Levinson 2000: 68).

Now, given the neo-Gricean pragmatic theory, the answer to the puzzle presents itself. Notice that the vertices always form the scale of <A, I> and <E, O>. This has the consequence that the assertion of I Q-implicates '~A', which is the contradictory of A, and hence equivalent to O. Using quantifiers, this can be illustrated in (56).

(56) a. <all, some>
Some workers are exhausted. (I)
+> Not all workers are exhausted (~A = O)
b. <none, not all>
Not all workers are exhausted. (O)
+> Not none (i.e. some) workers are exhausted (~ E = I)

Thus, the I and O corners are related by nothing but a generalized Q-scalar implicature. Furthermore, given that conversational implicatures are cancellable, the I/O relation is a non-logical one.

Let me now return to the question raised at the beginning of this subsection, namely, why only the O value resists lexicalization? The answer is straight forward within the neo-Gricean pragmatic framework: what is Q-implicated on the square is not lexicalized. But such an explanation raises a further question, namely, given that the I and O vertices have the same communicational load, why the I corner can be and indeed is lexicalized. The answer, according to both Horn (2006a) and Levinson (2000: 70-71), can be sought in the relatively complex nature or functional markedness of negation. Given a choice between a positive term and a negative term with the same communicational load, the positive term is usually picked up as the basic form to be lexicalized (see also Huang 1998, 2008, 2009, Horn 1989, Levinson 2000).

8. Concluding Remarks

Let me conclude this article by answering the questions/myths I raised in Section 1 above. Since given the R/I-principle, the use of *milk* is stereotypically narrowed down to mean 'cow's milk', we do not need to make 'cow's' explicit. On the other hand, given that *milk* is not R/I-narrowed down to mean 'goat's milk', we have to say *goat's milk* explicitly to avoid potential ambiguity or misinterpretation. The interpretation of a lexical clone such as *DRINK-drink* in English, *neri neri* in Italian, and *Salat-Salat* in German is

subject to the M-principle, because they are marked expressions in contrast to *drink*, *neri* and *Salat*. The exact meaning of each of the three reduplicated forms, however, is to be determined by the M-principle coupled with the specific context in which the relevant word is used. While *cunzhang*, *xiangzhang*, *xianzhang*, *shizhang*, and *shengzhang* are words in Chinese, **guozhang* is not a word in the language. This is because of the prior existence of *zhongtong/zhuxi*. In other words, the nonoccurrence of the latter is due to the force of blocking. The word *cooker* does not mean 'a person who cooks', because there is already a word with that meaning, namely *cook*. The blocking process is accountable in terms of the interplay between the Q/M and R/I-principles. The less frequent use of *pale red* is due to the fact that English has a lexical item for it, namely *pink*. When it is used, it falls under the M-principle. Finally, the form used to express particular negation *not all* resists lexicalization for two reasons: (i) unlike *not some*, it is Q-implicated, and (ii) unlike *some*, it is a negative term.

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