6. Polysemy

6.1. Polysemy and Situational Meaning

6.1.1. Homophony vs. Polysemy

Traditionally, two types of lexical amibiguity are distinguished: **homophony** refers to cases in which two words "accidentally" have the same phonological form (e.g., *bank*), whereas **polysemy** refers to the phenomenon that one and the same word acquires different, though obviously related, meanings, often with respect to particular contexts. Consider the following examples of homophony (cf. Pustejovsky (1995): p. 27):

(1)   a.   Mary walked along the <u>bank</u> of the river.
        b.   HarborBank is the richest <u>bank</u> in the city.

(2)   a.   Drop me a <u>line</u> when you are in Boston.
        b.   We built a fence along the property <u>line</u>.

(3)   a.   First we leave the gate, then we <u>taxi</u> down the runway.
        b.   John saw the <u>taxi</u> down the street.

(4)   a.   The discussion <u>turned</u> on the feasibility of the scheme.
        b.   The bull <u>turned</u> on the matador.

(5)   a.   The judge asked the defendant to approach the <u>bar</u>.
        b.   The defendant was in the pub at the <u>bar</u>.
        c.   He bought a <u>bar</u> of soap.

And contrast this with the following cases of meaning variation, which illustrate polysemy:

(6)   a.   The <u>bank</u> raised its interest rates yesterday.
        b.   The store is next to the newly constructed <u>bank</u>.
        c.   The <u>bank</u> appeared first in Italy in the Renaissance.

(7)   a.   John crawled through the <u>window</u>.
        b.   The <u>window</u> is closed.
        c.   The <u>window</u> is made of security glass.

(8)   a.   The <u>farm</u> will fail unless the drought ends soon.
        b.   It is difficult to <u>farm</u> this land.

(9)   a.   The store is <u>open</u>.
        b.   The thief tried to <u>open</u> the door.

There are two important differences:

1. First, it is immediately obvious to speakers that the meanings of a polysemous expression are **related** to each other. This is typically not the case for homophonous expressions, even though they may be historically related as well (cf. some of the examples above).

2. Second, polysemy is **regular**. For example, we find the three meanings illustrated with *bank* in (6) (specific institution, building that houses the institution, and the type of the institution) with *university* as well. Similarly, we find the three meanings of *window* illustrated in (7) (path, opening, and concrete object that can close an opening) with *door*:

(10)   a.   The <u>university</u> changed its admission policy last year.
        b.   The <u>university</u> is close to the capitol.
        c.   The <u>university</u> became established in the early medieval times.

(11) a. Mary walked through the <u>door</u>.
      b. The <u>door</u> was open.
      c. Bill painted the <u>door</u>.

These systematic aspects make polysemy an important field of study of synchronic and generative linguistics.

Obviously, homophony and polysemy are fuzzy concepts, insofar as polysemy might evolve into homophony: Two uses of the same word may become more and more dissimilar, to the point that the relation is not obvious anymore to ordinary speakers.

6.1.2. Treatment of homophony and polysemy in dictionaries

The issue of how homophony and polysemy should be distinguished is particularly relevant for lexicographers. As a matter of principle, the different readings of homophonous words should be specified as different key words, whereas the readings of a polysemous word should be specified under one key word. For example, consider the following entry for *bank* in *Webster's new dictionary and thesaurus*, 1989:

(12) **bank**[1] [bangk] *n* a mound or ridge; the margin of a river; rising ground in a lake or sea; the lateral, slanting turn of an aircraft. – *vt* to pile up; to cover (a fire) so as to lessen the rate of combustion; to mak (an aircraft) slant laterally on a turn; to make (a billiard ball) recoil from a cushion. [ME *banke*, of Scand. origin, cog. with **bank** (2 and 3), **bench**]

    bank[2] [bangk] *n* a row of oars; a row or tier, as of keys in a keyboard. – *vt* to arrange in a row or tier [OFr *banc*, of Gmc. origin, cog. with **bank** (1)]

    bank[3] [banngk] *n* a place where money or other valuable material, e.g. blood, data (**blood, data bank**) is deposited until required; an institution for the keeping, lending and exchanging, etc. of money; *vi* to deposit in a bank. – *ns* **bank account** (…)

The different entries are different words that happen to have the same phonology (even though they are all etymologically related in this case). The descriptions within each entry refer to different uses of polysemous words. It is debatable whether the choice of key words is always right; for example, the use of *bank* in aviation might warrant a separate entry.

A dictionary obviously should list homophonous entries separately. But it is not so clear how detailed the listing of the readings of a polysemous word should be, given the fact that in many cases these readings will be related to each other by general laws. In the case of hand, the intransitive use and the transitive use of *bank* in aviation are clearly related by general laws, the 'place' interpretation and the 'institution' interpretation of *bank*[3] are systematically related, etc. The dictionary forgets to mention that the institutional intepretation does not only hold for banks that save money, but could equally well be applicable, e.g., for a blood bank.

In a famous review, Weinreich (1964) criticized the tendency the third edition of Webster's third edition to list very specific meanings without deriving them from general principles. For example, he discusses the treatment of *turn*, which is listed in nine major senses and ultimately 115 sub- or sub-sub-senses, some of them quite dubious (e.g., in *turned topsy-turvy*: 'to reverse or upset the order or disposition of', where actually the adjective *topsy-turvy* carries this meaning.)

> **Aufgabe:** Vergleichen Sie die Behandlung von drei polysemen Ausdrücken in drei Wörterbüchern (des Deutschen oder des Englischen). Können Sie dabei systemtische Unterschiede in der Behandlung von Polysemie feststellen?

6.1.3. Frequent types of polysemy

Several types of polysemous variation occur so frequently that they should be considered part of the grammatical knowledge of the speakers of a language. The following list extends on the list given in Pustejovsky (1995):

First, we have count/mass alternations for nouns, which can serve several functions:

(13) Animal/meat:
a. The lamb is running in the field.
b. John ate lamb for breakfast.

(14) Object/Stuff an object is made up:
a. There is an apple on the table.
b. There is apple in the salad.

(15) Stuff/Kind:
a. There was cheese on the table.
b. Three cheeses were served.

(16) Stuff/Portions:
a. The restaurant served beer, and so
b. we ordered three beers.

Plant/food alternation:

(17) a. Mary watered the fig in the garden.
b. Mary ate the fig.

We have alternations between containers and contained:

(18) a. Mary broke the bottle.
b. The baby finished the bottle.

Figure/Ground reversal:

(19) a. The window is rotting.
b. Mary crawled through the window.

Product/producer alternation, e.g. *newspaper*, *Honda*:

(20) a. The newspaper fired its editor.
b. John spilled coffee on the newspaper.

Process/result alternation:

(21) a. The company's merger with Honda will begin next fall.
b. The merger will lead to the production of more cars.

Alternations involving location:

(22) Building/institution, e.g. *university*, *bank* (see above)

(23) Place/people:
a. John traveled to New York.
b. New York kicked the mayer out of office.

(24) Capital/government, e.g.
Washington accused Havana not to do enough for the victims.

6.2. A Generative Theory of Polysemy

In this section we will discuss the theory of polysemy developed by Pustejovsky (e.g., Pustejovsky (1993), Pustejovsky (1995), Pustejovsky & Bouillon (1995)). This theory intends to describe the systematic aspects of polysemy patterns, using generative rules.

6.2.1. Problems of a Sense Enumeration Lexicon

We have seen that human languages have homophonous expressions — two obviously different words happen to have the same phonology. Using a feature notation, this suggests lexical entries like the following (where "GENUS" refers to a semantic sort):

(25) PHON: *bank*   PHON: *bank*
   CAT: count noun   CAT: count noun
   GENUS: financial institution , GENUS: shore

This representation is fine for homophonous expressions. But there are arguments that we should not use the same format for polysemous expressions, that is, expressions that have different, though related meanings. The following representation of *window* would be quite inappropriate:

(26) PHON: *window*   PHON: *window*
   CAT: count noun CAT: count noun
   GENUS: aperture , GENUS: physical object

The main problem with this representation is that it indicates that the two uses of *window* are comparable to the two uses of *bank*, which is certainly not the case. We could perhaps assume that we have just one lexical entry, with two possible meanings:

(27) PHON: *window*
   CAT: count noun
   GENUS: {aperture, physical object}

The problem with this representation is that it does not capture the fact that other nouns behave in exactly the same way, e.g. *door*, *gate*, *bull-eye*, etc.

Pustejovsky argues that polysemy should be represented in a more general way.

6.2.2. Coercion

We have seen that homophony and polysemy get resolved in context. Consider first homophony. The following examples (like the ones in (1ff.)) prefer particular interpretations of *bank* (even though the other readings may not be totally excluded):

(28) a. The bank opens at 9 a.m.
    Mary got some money from the bank.
    The bank fired three employees.

1. The boat landed on the bank.
  The bank was sandy and not very steep.
  An aligator was lying on the bank, basking in the sun.

Clearly, world knowledge helps to disambiguate *bank* here in ordinary contexts. That's certainly an important phenomenon, but it is not so clear whether it is of great linguistic relevance. (Except perhaps in historical linguistics: If two expressions occur in many of the same contexts, we should expect that there is pressure against them becoming phonologically too similar. We have mentioned a case of this type in the chapter on Historical Semantics (Southwest France: *gallus* 'rooster' was replaced by *azan* or *bigey* because it became too similar to *cattus* 'cat').

Consider now polysemy. The following examples (like the ones mention in the first section) show that context can restrict the interpretation to a particular interpretation:

(29) a. The bank fired three employees.
      b. The bank is on the intersection of Main Street and Elm Street.

There are good reasons not to treat the disambiguation we find here in the same way as with homophones. The principles behind it appear to be more systematic (we would find the same meaning variations with *university, department store, city hall* etc.)

Pustejovsky analyzes the "disambiguation" of polysemy in context as a phenomenon of **coercion**. The basic meaning of *bank* is coerced into the 'financial institution' reading in (29.a), and into the 'building' reading in (29.b). That is, there is only one interpretation of *bank* (in this sense), but it can be shifted by the context in which it occurs. In particular, an agentive verb like *fire* requires a person or an institution in subject position, which explains why we find a shift towards the 'institution' reading in (a), and a predication of a location like *be on the intersection of...* requires a physical object that can be located in space, which explains the 'building' reading in (b).

Notice that this account would not make sense for homophonous expressions. There is no "common" interpretation of *bank* that would comprise both the 'shore' reading and the 'financial institution' reading of *bank*, and there are no general principles that would allow the shift from one to the other.

Similar principles explain the "disambiguation of polysemy" in other cases (review examples (6ff) and (13ff)).

But, of course, coercion is not unconstrained. Consider the following examples:

(30) a. *This building fired three employees.
      b. *The baby finished the sponge.
      c. *Bill painted the hole.

(30.a) shows that a shift from *building* to *institution housed in the building* is difficult or impossible. In (b) we find that a shift from *sponge* to *liquid contained in a sponge* is difficult or impossible, and the same for (c) with a shift from *hole* to *border of a hole*. Hence, the rules of coercion should not overgenerate.[1]

6.2.3. The Model of Type Shifting

Pustejovsky considers coercion similar to the well-known phenomenon of **type shifting**. For example, while the coordination *and* basically combines sentences, we find that it also can combine many other expression types, like VPs, transitive verbs, adjectives, prepositions. The idea is that the basic meaning of *and* is polymorphic, that is, can exist in many different semantic types.

(31) a. Mary smiled and John laughed.
      b. Bill walked and talked.
      c. Ken read and understood the novel.
      d. Sue owns an old and valuable coat.
      e. Books were lying on and under the table.

Pustejovsky assumes that polysemy should be treated in a similar way: We have a basic meaning, and general rules to derive specialized meanings.

Pustejovsky distinguishes between the following four levels of representation:

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[1] The most extreme case I am aware of occurs in a science fiction short story by the Polish writer Stanislav Lem, which contains the sentence *Be careful, you are pilling my father!*

(32)   a.   Argument structure — specifies the number and type of semantic arguments, and how they are related syntactically.

        b.   Event structure — specifies the sort of an event, e.g. whether it is a state, a process, or a transition.

        c.   Qualia structure — specifies certain aspects in which the entity can interact with other entities. For subtypes:
            i.   constitutive: the relation between an object and its constituents, like material, weight, or parts and component elements.
            ii.   formal: that which distinguishes the object within a larger domain, like orientation, magnitude, shape, dimensionality, color, position
           iii.   telic: the purpose and function of the object, in particular
                -- the purpose that an agent has in performing an act,
                -- the built-in function or aim which specifies certain activities
           iv.   agentive roles: factors involved in the origin or bringing about of an object referring to the creator of an artefact or a cause.

        d.   Lexical inheritance structure — specifies the way how a lexical structure is related to other structures, by way of a type inheritance system.

Lexical entries are given in terms of feature structures. I will work here with considerably simplified representations.

The qualia structure allows us to deal with the various interpretations of sentences like the following:

(33)   a.   John began the novel last month.
        b.   The writer began the novel last month.

Typically, (a) will be interpreted as *John began reading the novel last month*, and (b) and *The writer began writing the novel last month.* This is analyzed as follows: In (a) reference is made to the telic role (novels are meant to be read), and in (b), to the agentive role, of the lexical entry of *book* (cf. Pustejovsky, et al. (1995)):

(34)   **novel**
        ARGSTR =   ARG1 = x: information
                       ARG2 = y: physical object

        QUALIA =   FORM = HOLD(y, x)
                       TELIC = READ(e^T, z, x)
                       AGENT = WRITE(e^T, z, x)

This lexical entry for *novel* contains the information that the argument can be either seen as a piece of information or as a physical object (which are in turn sorts of a sortal hierarchy). The qualia structure specifies that the physical object holds or contains the information (here analyzed as the formal quale, but perhaps better analyzed as the constitutive quale), that the telic role of books is that someone (w) should read it (e stands for an event, here a reading event, which is telic), and the agentive role is that someone (v) should write it (e here would fill the writing event, again a telic event).

If the meaning of *novel* and the meaning of the aspectual verb *begin* is combined, the following happens: The subcategorization of *begin* requires an event, as e.g. in *it began to rain* or *it began raining*. NPs headed by *book* don't specify an event directly (they either denote something of the type 'information', or of the type 'physical object'). But with *book* two events are specified in the qualia structure, namely a reading event and a writing event. And these events satisfy the selectional restrictions of *begin*.

6.2.4. Further Examples

Coercion can be used for many other cases of systematic polysemy. Cf. for example the readings of object NPs in the object position of *enjoy*:

(35)   a.   Mary enjoyed the novel.
          b.   The writer obviously enjoyed this book very much.

(36)   Mary enjoyed the meal tremendously.

Enjoy basically subcategorizes for activity complements, e.g. *enjoy jogging.* With an object NP in its position the object NP is coerced into some activity reading. We find the same interpretation for an object NP denoting a book as with *begin* (in. (35.a), reading the book, in (b), writing the book). With an NP denoting food, the operator Q_T will give us the meaning of 'eating the food', and correspondingly (36) has to be spelled out as 'eating the meal'.

Now take a case of container/contained variation:

(37)   a.   The baby broke the bottle.
          b.   The baby drank the bottle in a few minutes.

The lexical entry of *bottle* should contain the information that it can either refer to the bottle as a container, or to the substance contained in it. In Pustejovsky's type system it may have the type CONTAINER•SUBSTANCE, or an argument that is ambiguously specified as x: container and y: substance, with the formal or constitutive qualia information that x contains y. The verb *break* subcategorizes for physical objects, and hence can take the first sense of *bottle*. The verb *drink* subcategorizes for liquids, which somehow should be marked as a typical content for bottles, and hence a coercion operator like Q_F or Q_C will have to shift the meaning of *bottle* from the object x to the content y.

In the reformulation of the theory suggested in section **Error! Reference source not found.** we can assume the following rule:

(38)   For all x: If x is a container, then x is related to a y such that y is the CONTENT of x. The content y may be a liquid, a mass object, or a plural object.

This allows the coercion from the container x to the content y. — We can treat other cases of polysemy in a similar way (e.g., the intepretation of *bank* as institution of building, the interpretation of *newspaper* as institution or product, etc.)

Another case Pustejovsky discusses are the interpretations of adjectives. One example is *fast*:

(39)   a.   a fast ride
          b.   a fast car
          b.   a fast road

The basic meaning of *fast* presumably is related to movement events (a). But we can apply *fast* also to vehicles (with the meaning that fast movement events are possible with the vehicle), to paths (with the meaning that fast movements are possible on the path), etc. There are of course many other uses of *fast*, as e.g. in *a fast answer*, *a fast letter*, *a fast typist*, etc. The specific interpretations of *fast* in (39) can be treated as follows: *fast* requires a movement event. In the qualia structure of the lexical entry of *car* it is specified that cars can undergo movement events, and in the lexical entry of *road* it is specified that movement events happen on them. The interpretation of *fast* is then applied to those movement events. In addition we have a generic interpretation, the origin of which is not quite clear.

6.2.5. Conclusion

A generative treatment of polysemy as semantic coercion appears possible, even if currently the theoretical framework is not very well worked out. Also, little is known about the underlying coercion rules. Questions are, for example: What is the structure of the type inheritance system (or al-

ternatively, the rules that allow for meaning shifts?) Which nodes should be assumed? Do they cover what we actually find in texts, do they over-generate? This is a large and little-known field of research that presumably will be stimulated by the existence of large language corpora as research tools.

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6.3. A Pragmatic Account of Polysemy

In this section we will discuss the theory of shifted interpretation developed by Nunberg (Nunberg (1979), Nunberg (1995)), and the related ideas in Fauconnier (1985).

6.3.1. Polysemy and Ambiguous Reference

One of the characteristics of **homophonous** expressions is that pronominal constructions can refer only to one of their readings:

(40) Mary went to the bank, and Bill did too.
    i.   'Mary went to the financial institution, and Bill went to the financial institution.'
    ii. 'Mary went to the river shore, and Bill went to the river shore.'
    But not: 'Mary went to the financial institution, and Bill went to the river shore.'

(41) Bill gave Harry a file, and received one from Jane.
    i.   'Bill gave Harry a set of documents, and received a set of documents from Jane.'
    ii. 'Bill gave Harry an instrument, and received an instrument from Jane.'
    But not: 'Bill gave Harry a set of documents, and received an instrument from Jane.'[2]

This is different when the noun occurs twice. While there is a natural tendency to interpret then nouns in the same way, the following sentence is not contradictory:

(42) Bill gave Harry a file, and received a file from Jane,
    but in the first case it was a set of documents, and in the latter, an instrument to take care of his fingernails.'

With **polysemous** expressions we find examples of pronominal elements that are interpreted in the a sense that is different from its antecedent. The following list are mainly examples cited by Nunberg 1979 and Fauconnier 1985:

(43) a. The newspaper has decided to change its format.
    b. Yeats did not enjoy hearing himself read aloud.
    c. The window was broken so many times that it had to be boarded up.
    d. I'm not so much concerned with finding extraterrestrial life as with prolonging ours on earth.
    e. The ham sandwich at table 20 wants his money back.

We also have cases like the following in which one expression serves to distinct roles, without any (overt) pronominal element:

(44) a. John used to work for the newspaper that you are reading.
    b. (Pointing to a newspaper:) This newspaper over there fired one of its journalists.
    c. Caedmon, who was the first Anglo-Saxon poet, fills only a couple of pages of this book of poetry.

These facts are predicted if we assume that the specific interpretation of polysemous expressions is fixed locally, by subcategorization restrictions. In the case of (43.a) we have an analysis along the following lines:

(45) a. The newspaper has decided to change its format.
    b. [(The institution that produces) the newspaper$_i$] has decided to change its$_i$ format.

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[2] However, sometimes *one*-anaphora seem to pick up an expression, which then can be resolved in various ways. Example: *When Bill and Mary were asked to draw a 'lock', Bill draw one for doors, and Mary draw one for ships.*

As a newspaper, an inanimate object, cannot decide anything, x is coerced to [the institution that produces x]. — There could be another possible derivation, which requires a shift from an institution reading to a product reading

(46)   a.   [(the institution that produces) the newspaper]$_i$ has decided to change
              [(the product of) i's] format.

But this derivation is more complex, as it involves two coercions. Also, while the latter coercion is possible (it appears to be the producer-product shift that we have, e.g., with company names like *Honda* or artist names like *Picasso*), we actually don't find direct evidence for this shift. Assume that Murdoch Global Inc. produces one newspaper, then the following sentence is quite odd, in the intended reading.

(47) $^?$Murdoch Global Inc. decided to change its format.

6.3.2. Meaning shifts and anaphora

Consider the following contrast, pointed out by Fauconnier:

(48)   a.   The mushroom omelet left without paying. He simply walked away.
        b.   The mushroom omelet left without paying. *It was inedible.[3]

Here, (a) is fine as the pronoun picks up the shifted sense of *mushroom omelet*. For (b) to be good we would have to assume either (i) there is a shift from persons to things that they ate, which does not exist, or (ii) that the antecedent of *it* is the un-shifted version of *the mushroom omelet*. Interestingly, this appears not to be possible; meaning shifts sometimes create pronominal islands.

(49)   a.   *[Shift [antecedent$_i$]]… … pronoun$_i$
        b.   ✓[Shift [antecedent]]$_i$… … pronoun$_i$

This explains why the following example is bad, in the intended interpretation:

(50)   *The mushroom omelet was eating itself with chopsticks.

But it allows for the following:

(51)   [The omelet$_i$ which$_i$ was too spicy]$_j$ left in a hurry, and he$_j$ didn't even pay the bill.

On the other hand, (45.b) is of the structure ruled out by (49.a), so it is unclear how general this rule is. (Fauconnier suggests a distinction between 'closed' and 'open' connectors).

Anaphoric elements might undergo shifts themselves:

(52)   Norman Mailer likes to read himself: [antecedent]$_i$ … [Shift [pronoun]$_i$]

The following example illustrates a person-to-topic shift:

(53)   Norman Mailer is not, in itself, a great dissertation topic:
        [Shift [antecendet]]$_i$ … pronoun$_i$.

6.3.3. Deferred Reference with Deictics

Nunberg considers cases like the following, in which the expression that experiences a shift of reference does not contain a head noun:

(54)   a.   (Pointing at a newspaper) That was bought by Murdoch last week.
        b.   (Pointing at a copy of *Bleak House*) He was born in the same year as Browning.
        c.   (Pointing at a ham sandwich): He is sitting at table 20.

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[3] The topic position of *it* is critical here. Continuations like *Later the waitress realized that it was inedible* are fine; Fauconnier mentions *He realized that it was inedible.* as a possible continuation.

We already have made the point above that the shifted reference in those cases cannot easily be treated within a theory like Pustejovsky's, which requires a lexical entry like *newspaper*, *book*, or *ham sandwich* to be present in order to trigger coercion. We might assume that the deictic expressions evoke a certain nominal description, but a theory that does not need to appeal to such non-overt nouns (like the one suggested above) is certainly to be preferred.

However, with examples like (54) we have to distinguish different cases. Notice that we can replace the pronoun with a full noun in (a), and (c), but not in (b):

(55)   a.   This newspaper was bought by Murdoch last week.
        b.   *This book was born in the same year as Browing.
        c.   This ham sandwich is sitting at table 20.

It appears that we have to distinguish between two processes:

• The meaning shift of an expression (which may be deictic, non-deictic, or mixed), typically triggered by selectional restrictions.

• The use of deictic expressions to refer to entities related to the object pointed to. In this case the deictic expression has to satisfy the type and gender of the deictic expression. (Cf. *This/*It /✓He was born in the same year as Browning*).

This might also explain cases that appear to contradict the rule (49.a):

(56)   Plato is on the top shelf. He is a truly great author.

We can analyze this case as an instance of (49.b), i.e. *he* is a deictic expression that is used to refer to an entity related to the object pointed to, which are the books by Plato. (Fauconnier suggests an otherwise unmotivated distinction between 'closed' and 'open' connectors.)

6.3.4. Conditions for Meaning Shifts

Nunberg investigates various conditions that enable the shifts of meaning that we see with coercions. Notice that not anything goes.

One rather striking contrast is the following:

(57)   John used to work for this newspaper / *book.

It seems that we cannot identify books with the institutions (the publishers) that produces them, different from newspapers. The reason is presumably that newspapers are produced on a regular basis, and the content of newsapers is seen as more characteristic for the company that produces it than the content of a book is seen as characteristic for its publisher.

We may assume that the producer of a newspaper is its publisher, whereas the producer of a book is its author, and authors are not considered institutions one can work for. If a book is a collective and institutional enterprise, we find that things are fine again:

(58)   Mary used to work for this dictionary / encyclopedia / handbook.

But notice that simple co-authorship does not qualify; the sentence *Mary worked for this book* is bad, in the intended sense, if Mary and John were the co-authors of this book.

The meaning shift to from product to producer we have considered so far is to be distinguished from the shift of deictic terms discussed in section 6.3.3:

(59)   a.   John used to work for her (pointing at a copy of a book by Isabelle Allende).
        b.   John used to work for them (pointing at a Toyota).

Notice that the choice of pronoun reveals the true referent here (a female person, a group or institution). Hence this fixing of a referent by an act of ostension appears to be quite different from the coercion from a product to a producer we have seen in (57) and (58).

Another contrast is discussed in Nunberg (1995):

(60)   [Speaker is a painter.]
         a. I am in the Metropolitan Art Museum.
         b. $^{??}$I am in the second crate on the right.

The intended meaning is: some (or all) of speaker's paintings are at the indicated place. The difference is that it is considered to be a **relevant** property of a painter whether his or her paintings are in the Metropolitan Art Museum in practically all contexts, whereas the context in which the second property is relevant are quite limited. Nunberg says that the property attributed to the meaning of the shifted expression must be noteworthy for the meaning of the expression in its basic interpretation.

We find meaning shifts especially when the shifted predicate expresses a distinctive property. For example, the foods people eat are distinctive for waiters in a restaurant, hence we have sentences like *The ham sandwich is at table 7*.

6.3.5. The pragmatic roots of systematic polysemy

Nunberg (1995) argues that meaning shifts are essentially a pragmatic phenomenon. We essentially can use any predicate P to refer to an entity x, even if P does not apply to x directly, but rather to an entity y that is related to x, if this relation is obvious, and if it is "noteworthy" for x that it stands in a relation to a y with P(y). Examples of "systematic" polysemy are cases in which the relation between x and y happens to be obvious in many or most contexts.

But Nunberg also claims that such meaning shifts can become 'idiomatic'. This is particularly obvious when we find language-specific constraints. For example, English does not have a count-mass alternation for liquids:

(61)   a. There was apple in the salad. (= apple stuff).
         b. $^{??}$There was apple in the drink. (with the interpretation: apple juice)
         c. $^{??}$She drank a glass of apple.

[This is presumably due to **blocking**: We have specific nouns like *apple juice*, *olive oil* etc. that would be used in such cases.]

There are differences between languages in the readiness how certain shifts are applied. Apresjan (1974) (an excellent overview of cases of systematic polysemy in Russian) mentions that in Russian one can use the names of organs for diseases, e.g. 'I have kidneys' for 'I have a kidney problem', a use that is not idiomatic in English. In German, singular definite NPs referring to a person of a nationality can be used to refer to the nationality, cf. Frege's *der Türke belagerte Wien* 'The Turk besieged Vienna'.

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