

Invisible Meaning

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Invisible Meaning

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The following was reported by Newsweek (Jan. 15, 1990):

*Mario Cuomo: Refuses all clemency requests for first time.
De-Hortonizes himself for 1992.*

The neologism found here, *de-Hortonize*, may well on that occasion, and with the exception of the present article, have made its first and last appearance in the English language. It exhibits consistent morphology, with the affixes *ize* and *de*, and the tense/person marker *-s*. Furthermore, as far as I can tell, for people reasonably familiar with the American political context, it does not pose severe comprehension problems; the understanding, in fact, is felt to be pretty much 'automatic'. Since the word is not part of the reader's lexicon when first encountered, one may ask what is involved in constructing an 'instant' interpretation, and whether the process at work is regular or linguistically pathological.

Informally, something like the following seems to be going on: *Horton* in the Newsweek context calls up a presidential campaign frame exemplified by the 1988 campaign with 'roles' for the presidential contenders (Democrat Dukakis and Republican Bush) and the 'criminal' treated with leniency (*Horton*). This frame is structured by various kinds of background knowledge; among other things, one of the roles, 'the contender showing leniency', is vulnerable within this frame, and in fact is defeated by the other. In the excerpt, *1992* takes us to a corresponding possible instantiation of the same frame with different values (slot-fillers) for the roles. Since the inferential structure of the frame is preserved, we get the correct inference that if Cuomo were to grant clemency requests, he would be vulnerable, and perhaps defeated, in the 1992 campaign. To *de-Hortonize* oneself, then, is to avoid fitting the relevant role in the frame; other inferences are latent: for instance, combining the explicit information that this is the first time Cuomo has not granted clemency, and the presuppositional properties of the prefix *de-*, the reader is liable to assume that until then, Cuomo did meet the conditions for the 'Horton' frame.¹

A formally precise and theoretically anchored account of this phenomenon would clearly demand much work. For present purposes, it is sufficient to note that very rich structure and transfer functions are mobilized in the understanding of such an example on the basis of very little linguistic information (the string *prefix-proper name-suffix*). The meaning of the expression, if we choose to call it that, is for the most part invisible.

It has been argued persuasively, e.g. in Travis (1981), Nunberg (1978), Kay and Zimmer (1976), Ryder (1989), that such meaning construction, far from being exceptional, is in fact the rule for unobtrusive everyday grammatical combinations such as 'Adjective Noun', 'Article Noun', 'Noun Noun', etc. One way to put this is that much of meaning is invisible - not encoded in a systematically retrievable fashion by the linguistic

forms. And it's worth noting that while this feature is supported by an abundance of data, it runs counter to our folk theories of language and to most formal theories as well: core meaning is commonly viewed to be entirely supported by words, with special pragmatic provisions for contextual effects.

Grice's work on implicature came into linguistics in the late sixties and had a major impact on the evolution of the field; one reason was that it opened up and legitimized the study of invisible meaning, i.e. inferences that are essential for a proper understanding of what is said, and yet bear little or no connection to any manifest linguistic structure in the relevant speech situation. At the time when this occurred, the theoretical emphasis in linguistics was largely on syntax, which had been elevated to quasi-scientific status thanks to work by Harris, Chomsky, and their students; little attention was devoted to semantics for its own sake: meaning tended to come into the picture via the underlying structures of syntax, and pragmatics, if mentioned at all, was at best a convenience for dismissing embarrassing discrepancies between theoretical expectations and observed behavior. Grice unwittingly opened Pandora's box. The invisible meaning (conversational implicatures, indirect speech acts and the like) needed to make sense of language expressions was not only hard to account for; it turned out to affect syntactic distributions in important ways (cf. Ross (1975), Green (1975), Schmerling (1971), Horn (1972), Fauconnier (1975), Cornulier (1984, 1985), Anscombe and Ducrot (1983)).

But Grice and his epigones were operating within a 'classical' scheme: language expressions were first endowed with a full truth-conditional literal meaning in virtue of their structure, and only later was a derived (extended or modified) meaning produced under pressure from pragmatic communicative principles. In fact, a major appeal of the Gricean approach was that it simplified, or regularized, the literal meaning component: the discrepancies between standard logic and natural language were to be accounted for by combining a well-behaved literal meaning component with appropriate pragmatic principles.

In Gricean terms, the problem of invisible meaning takes on the following form: given that expressions come with literal meaning, *why* does this core meaning get transformed or expanded in actual communication, and *where* does the extra meaning come from? Typically, powerful Gricean notions such as the Cooperativeness Principle and the Maxims address the *why* part of this question more than they do the *where* part; apparent or real lack of relevance or of quality triggers the search for implicature but does not in and of itself determine the implicature content.

Matters appear in a different light if we take a view of meaning construction like the one mentioned at the outset in connection with the 'Horton' example. Under such a view, it is in the very nature of linguistic form to considerably underspecify meaning construction; the search for 'invisible' meaning is on from the start: context and prior discourse configurations must be invoked directly before any meaning at all, literal or derived, can emerge.² From that perspective, Gricean phenomena are no longer sharply different from other meaning constructions, and the role played by communicative principles (like the maxims) deserves to be reexamined.

Using data from hypothetical and counterfactual phenomena, I will suggest in the present paper that the construction of interpretations includes the following kinds of steps:

- **constraint satisfaction:** as discourse construction unfolds, each language expression that comes along can be viewed as placing strong constraints on the next step of the construction;
- **construction strategies:** to choose between the constructions compatible with the constraints (imposed by the language form), strategies operate that are based on previous

stages of the discourse configuration, on default, simplicity, and optimization principles, and on 'look-ahead' techniques;

- **pragmatic inference**: although the configurations obtained in the first two steps are themselves sensitive to pragmatic factors, they require properly pragmatic operations to be fully interpreted; such operations are apparently often based on simplified cultural and psychological models of various sorts.

1. Transfer functions in counterfactuals

I assume the familiar approach in which hypotheticals (including counterfactuals) set up new discourse domains ('spaces') which are linked to previous discourse domains by space to space mappings called 'connectors'.³ Interesting grammatical and semantic properties follow from the fact that spaces can be linked by more than one connector. Consider the following counterfactuals:

(1) *If Henry was Gorbachev, he would bomb Lithuania.*

(2) *If Bush was Gorbachev, he would cut the Pentagon's budget.*

(3) *If Henry was Lucy, he would have blue eyes.*

There is a wide variety of interpretations that such sentences could take in context. For present purposes, I will single out the following:

(1): a statement about Henry, e.g. his aggressivity, or his opinion about what Gorbachev should do;

(2): what Gorbachev might do if he were running the U.S.;

(3): what Henry would look like if he happened to be Lucy; (3) might be uttered by someone who has just met Henry and suspects that he might be Lucy in disguise.

In all three examples, we have two connectors linking elements in the base **B** with elements in the newly set up hypothetical space **H**. For example, in case (1), element **b** in the base, associated with properties attributed to Gorbachev, including the name Gorbachev, is mapped via the identity connector **I** onto **b'** in space **H**. Element **a** in the base, corresponding to Henry, is also mapped onto **b'** in **H**, but via another connector **D**. Under the intended interpretation, connector **D** transfers some dispositional properties of **a** onto **b'** (e.g. Henry's aggressivity, or his political views), while identity **I** transfers (by default) the remaining properties of **b** onto **b'**, in particular relevant properties such as Gorbachev's 'situation': his role as head of state in the USSR, present political circumstances, etc.

Example (2) is formally similar to (1), with *Bush* (element **a**) substituted for *Henry*. But the transfer function, call it connector **S**, works differently: this time the connexion between **a** and **b'** carries 'situational' properties from **a** to **b'**, while **b'** inherits its other properties, including dispositional, from **b** via connector **I**. Figuratively speaking, Gorbachev under the intended interpretation of (2) retains his character, along with other personal characteristics, but finds himself in the situation 'previously' occupied by Bush.

In this section, we take a closer look at the grammatical constraint satisfaction part of the process. Consider once more examples like (1), (2), (3). They have the general grammatical form (5):

(5) *IF* *NP1 be NP2* , *Pro1* *Predicate*

When a sentence having this form comes into the discourse, it will place constraints on the construction process by virtue of its grammatical structure and lexical content.

In order to outline the constraint process, I will use some notions from the mental space framework:⁴

- **space-builders**: a space-builder is a grammatical expression that either opens a new space or shifts focus to an existing space. Space-builders take on a variety of grammatical forms, such as prepositional phrases, adverbials, subject-verb complexes, conjunctions+clause. E.g. *in 1929, in that story, actually, in reality, in Susan's opinion, Susan believes* __, *Max hopes* __, *If it rains* __, ...
- **names and descriptions** (grammatically, noun phrases): names (*Max, Napoleon, NABISCO*,...) and descriptions (*the mailman, a vicious snake, some boys who were tired*,...) either set up new elements or point to existing elements in the discourse construction. They also associate such elements with properties (e.g. 'having the name Napoleon', 'being a boy', 'being tired'...).
- **presuppositional constructions**: some grammatical constructions⁵ signal that an assignment of relations within a space is introduced in the presuppositional mode; this mode allows the relations to be transferred into neighboring spaces for the counterparts of the relevant elements.⁶
- **trans-spatial operators**: the copula (*be* in English), and other 'copulative' verbs, such as *become, remain*, may stand for connectors between spaces. (The general function of *be* is to stand for domain mappings; connection between spaces is a special case of this general function). Consider a grammatical structure of the form *NP1 be NP2*, where *NP1* and *NP2* are noun phrases, and identify elements *a1* and *a2* respectively, such that *a1* is in space *X* and *a2* is in space *Y*. Suppose *F* is the only connector linking spaces *X* and *Y*. Then the language expression *NP1 be NP2* will stipulate that *a2* in *Y* is the counterpart of *a1* in *X* via connector *F*, i.e.

$$a_2 = F(a_1)$$

- identification of elements:

A crucial property of language and cognitive constructions is the following:

Identification:

If two elements **a** and **b** are linked by a connector **F** ($b = F(a)$), then element **b** can be identified by pointing to its counterpart **a**.

Linguistically, 'pointing to **a**' means to give a name or description of **a**. When this indirect identification procedure is used, we say that the element named or described, **a**, is the **trigger**, and that the element identified, **b**, is the **target**.⁷

- **identification path**: the above identification procedure can apply more than once. So if $b = F(a)$, and $c = G(b)$, and $d = H(c)$, element d at one extremity of the chain can be identified by pointing to element a at the other end of the chain. We say that there is an **identification path** from a to d .

- **role and value**: inside a space, there can also be connectors linking elements. One such connector is the role/value link V , such that if ' $a = V(r)$ ', element r is said to be a **role** for element a , and element a is said to be a **value** of that role. Typically (but not invariably), a role is pointed to by a description (e.g. '*the queen*'). This is a way of identifying the role (as in '*The queen selects the prime minister*'); but pointing to the role is also a way of identifying the corresponding value, by virtue of identification (identification path from r to a , via connector V).

Returning now to the general problem of constraint satisfaction, consider the grammatical form (5) once again. When a sentence of this form enters the discourse, constraints are placed on the ongoing construction. Such constraints include the following:

- **conjunction IF**: specifies that a hypothetical space H is open relative to the space B currently in focus; the relation specified by 'Predicate' must hold in that space;

- **noun phrase NP1**: identifies some element (call this unknown ' x ') in space B directly, or in space H indirectly by pointing to ' v ' in B ;

- **noun phrase NP2**: points to some element in B (' y ') and identifies some element in H (' z ');;

- **copula *be***: signals a connector ' F ' that links the two elements identified by $NP1$ and $NP2$:

$$z = F(x)$$

(Notice that if x and z are in different spaces, F must then be a connector that operates across spaces; and if x and z are in the same space (necessarily H in this case), F will be the kind of connector that operates within spaces, e.g. role/value or metonymy.);

- **pronoun Pro_1** must identify an element ' w ' in space H that will satisfy the relation expressed by 'Predicate'. And since $NP1$ is the grammatical antecedent of Pro_1 , there must be an identification path linking ' v ' or ' x ' to ' w '.

What needs to be emphasized is that there is in principle an infinite number of subconfigurations compatible with such a set of constraints. This is because 1) the possible connectors do not constitute a finite set; 2) the identification paths from ' v ' to ' x ', from ' x ' to ' w ', or from ' y ' to ' z ' can in principle be as long as we like; 3) the possible prior stages of a construction, which serve as preconditions for a given step, are not finite in number either.

To see how all this works in practice, take the following instantiation of structure (5), pointed out by Ch. Fillmore:

(6) *If I were your father, I would spank you.*

Fillmore noticed two very different interpretations for (6): in one case (the 'lenient father' understanding), the speaker is suggesting that the father would be well advised to spank more; in the other (the 'brutal father' version), the speaker is pointing out to the child what the father is prone to do in certain circumstances (and the speaker may thereby be emphasizing his/her own leniency, or the child's luck, or the child's bad behavior,

or...). And there are in fact many more ways to read (6). Here is how some of them come about.

First, (6) instantiates structure (5) in the following way:

NP₁ = *I*

Pro₁ = *I*

NP₂ = *your father*

Predicate = *spank you*

(I leave out the NP's corresponding to *you*, and the tense and mood markings)

Assume that space **H** is set up (by *if*), that *I* points to element **a** in the base space **B**, and that *your father* points to role **r** in space **B**.

In order to satisfy the constraints imposed by sentence (6) on the discourse construction, we must find the 'unknown' elements, 'x', 'y', 'z', 'w', and the unknown pragmatic connector 'F', specified in the constraint satisfaction schema for (5) outlined above.

Make the following simplifying assumptions: there was no prior discourse construction before the appearance of (6); the only trans-spatial connectors to be considered are the transfer functions for counterfactuals studied in sec.1, **I**, **D**, and **S**; the only space-internal connector to be considered is the role/value link **V**.

Finally, for ease of presentation, let's give names to the participants, Mary to the speaker, Tommy to the child, Jack to the father.

Given all this, here are some of the ways to satisfy the grammatical constraints on the construction:

D) dispositional interpretations:

- role **r** has value **b** (Jack); **b** has counterpart **b'** in **H** (via the identity connector **I**); **a** (Mary) has counterpart **a'** in **H** (also via **I**);

- NP₁ (*I*) identifies **a** in space **B**;

- NP₂ (*your father*) triggers the identification path **r** ---**V**---->**b** ----**I**----> **b'**

- the connector 'F' signaled by the copula *be* is the dispositional transfer function **D**; it follows that **a** in the base is connected to **b'** in the counterfactual space by **D**:

$$\mathbf{b}' = \mathbf{D}(\mathbf{a})$$

- Pro₁ (*I*) triggers the identification path starting with **a**:

$$\mathbf{a} \text{ ----- } \mathbf{D} \text{ -----} > \mathbf{b}'$$

It follows that **b'** is associated with the property indicated by 'Predicate'.

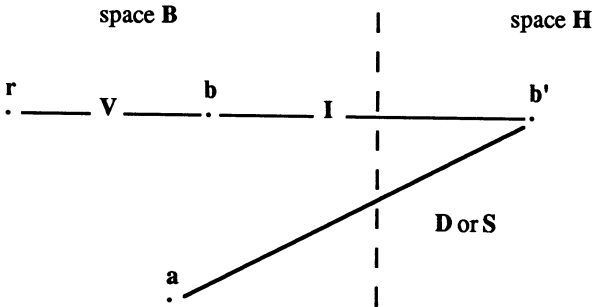
This construction can yield the 'lenient father' reading. Informally, b' in the counterfactual space inherits the speaker's relevant dispositions (via D), and the father's other characteristics (via I). I return below to the question of how this construction can be further elaborated in context to provide a full-blown interpretation.

II) situational interpretations:

Let the construction be exactly the same as in case I) except for the choice of connector 'F'. Instead of the dispositional transfer function, take 'F' to be the situational function S (cf. sec.1) that transfers situations across spaces. This time, the local situation L involving Tommy is, so to speak, transferred from Mary to Jack: b' , with b 's properties inherited through I , is in situation L , and furthermore, for the same reason as in I), is associated with the property indicated by 'Predicate' (spanking Tommy). This makes the inference available (although not obligatory) that Jack in situation L behaves in the way indicated by 'Predicate', which is the source of the 'brutal father' understanding.

Diagrammatically, I) and II) correspond to (7):

(7)



III) role interpretations:

Another way to satisfy the general constraints imposed by form (5) in the case of (6) is to have NP1 trigger the identification path:⁸

$$a \text{ -----I-----} > a'$$

and to have NP2 trigger the path:⁹

$$r \text{ -----I-----} > r'$$

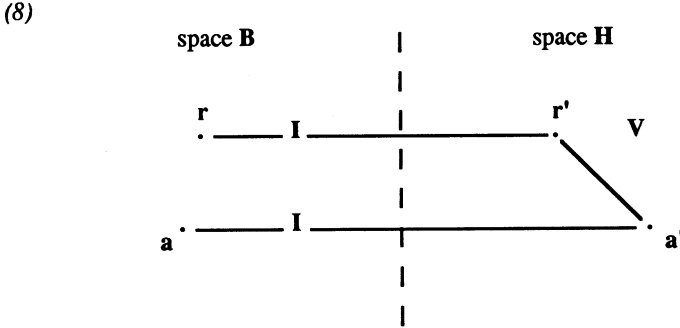
With this choice of paths, the identification targets of NP1 and NP2 are both in H. The connector 'F' that must link them (constraint imposed by *be*) can be the role/value connector V , in which case:

$$a' = V(r')$$

With respect to the general constraint schema, what we have done here amounts to choosing a for ' v ', a' for ' x ', r for ' y ', r' for ' z ', and V^{-1} for 'F'.

Informally, the effect of this construction is to shift the role 'Tommy's father' held by Jack to the speaker ($I = \text{Mary}$). This yields a class of understandings sharply different from I) and II): this time Jack does not come into the picture at all. In saying (6), the speaker indicates that if she 'stood in the father relation' with respect to Tommy, then she would spank him. This does not even entail that Tommy actually has a father.

A diagrammatic representation of the construction for III) is (8):



Constructions I), II), III) show how the same general grammatical constraints can be satisfied in superficially different ways. Other possibilities would emerge if we enriched our set of connectors or added more spaces to the configuration. For example, changing *spank* to *help* in (6):

(6') *If I were your father, I would help you.*

suppose the context for (6') is the making of a movie and the casting has not been decided yet. The speaker is Kirk Douglas and the addressee Jane Fonda. The drama connector T (for 'theatre') becomes available, along with a space M for the movie relative to hypothetical space H. A host of new understandings arise by picking identification paths that use connector T, and target space M. Informal glosses of such understandings would be:

- Kirk tells Jane that if they were father and daughter in the movie, then in the movie, the father would help the daughter;
- Kirk tells Jane that if he were to play the part of Henry Fonda (Jane's real life father), then in the movie he would help whatever character she would be playing;
- Kirk tells Jane that if he were to play the part of Henry Fonda, then in the movie, the character Henry Fonda would help the character Jane Fonda (his daughter), who might of course be played by some actress other than Jane herself;
- Kirk tells Jane that if they were to be father and daughter in the movie, then he would help her off the set (in 'real life');

- Henry and Jane are both acting in the movie. Kirk tells Jane that if he (Kirk) were playing the part that Henry is actually playing, then the corresponding character in the movie would help the character played by Jane;
- Kirk tells Jane that if he were to play the part of Henry Fonda (Jane's real-life father), then he would help her in 'real life'.
- Kirk tells Jane that if he were her real father, then the character he plays in the movie would help the character she plays.
- Kirk tells Jane what he thinks the character in the movie ('her father') should do to the character she plays. (a dispositional construction vis-a-vis the character).
- Kirk tells Jane what the movie character would do in Kirk's real life situation. (a situational construction vis-a-vis the movie character).

The reader may justifiably find it tedious to go through these paraphrases of possible interpretations. The excuse for pointing them out is the following important and surprising theoretical point: the availability of such interpretations is automatic. It is a straightforward consequence of the **constraint satisfaction** conditions on meaning constructions: adding an extra connector and an extra space makes new identification paths available, and therefore increases the number of ways in which a construction can satisfy the constraints imposed by the linguistic expression.

To illustrate: the first interpretation in the above list corresponds to an identification path going from *k* ('Kirk') in *B* to *k'* in *H* (via connector *I*) and then to *k''* in *M* (via connector *T*), and an identification path going from *j* ('Jane') in *B* to *j'* in *H* via *I* and then to *j''* in *M* via *T*. The role *r''* (father of *j''*) in *M* is connected to *k''* via *V*. The third interpretation has a path going from *r* (father of *j*) to *h* ('Henry'), then to *h'* in *H* via *I* and to *h''* in *M* also via *I*; another path goes from *k* to *k'* and then from *k'* to *h''* via connector *T*; a third path goes from *j* to *j'* and then via *I* to *j''*.

To repeat a point often made in this regard: the possible configurations correspond to truth-conditionally distinct and clear-cut interpretations. In the particular context envisioned, sentence (6') is indeed at least twelve times ambiguous (not just vague, or incomplete). But it has only one structure, of the form (5), yielding only one set of constraints on the configurations. The degree of ambiguity depends on the available spaces and connectors when the constraints apply.

3. Pragmatic elaboration

Although the construction process takes into account many factors of discourse and context that would traditionally be called pragmatic, the configurations obtained do not in themselves provide full interpretations. Full interpretations are obtained by further fleshing out of a properly pragmatic sort. Take for example the 'dispositional' construction corresponding to structure (5), and applied to example (7):

(7) *If I were Nancy, I would give up.*

This construction has dispositions of the speaker transferred (by **D**) to a counterpart of 'Nancy' in the counterfactual space. How can this yield real world inferences? The answer relies on simplified pragmatic default models that look informally something like this:

[Default model 1] Egocentric 'speaker does best' principle: the speaker's dispositions are the best and therefore lead to the most desirable actions or states of affairs.¹⁰

In (7), we first have the inference in **H** (from the space construction) that 'someone' in Nancy's situation and with the speaker's dispositions would act in a certain way ('give up'). The default model provides the further inference that this course of action is recommended.

[Default model 2] Better than speaker is great: if speaker dispositions d_s lead to course of action a_s , and some other course of action a_n is better than a_s , then the dispositions leading to a_n must be 'better' than d_s , hence truly admirable.

In (7), the space construction provides the same inference as before. But Default model [2] yields a different complete interpretation: since Nancy does better than 'give up', it is inferred that she has enviable dispositions leading to her course of action.

Notice then, that although [1] and [2] are both egocentric, [1] leads to an interpretation critical of Nancy, while [2] leads to an interpretation of praise. Other pragmatic interpretation strategies for (7) are available; for example, in a non-egocentric interpretation, the speaker could be taking Nancy's dispositions as the norm and deploring his or her (the speaker's) inadequacies. The choices among default models and interpretation strategies is a fascinating and hard question that will not be pursued here.¹¹

4. Invisible meaning

We started out by observing the importance of Grice's work for highlighting the extent to which language underspecifies interpretation and understanding. The Gricean approach focuses on ways in which communication principles provide the means for 'filling in' what language leaves unspecified. But recent research taking into account the intermediate level of cognitive construction suggests that communication is not enough.

The position outlined above is more radical. Language expressions have no 'literal meaning' in the classical sense. What they do is impose constraints on space-building, leading to constructions which depend on context, but which also need further pragmatic elaboration to be complete.

The 'semantics' of a language expression is the set of constraints it imposes on cognitive constructions; this is a structural property, which is independent of context. The 'meaning' of an expression is something quite different. It arises, or rather some meaning arises, when a particular construction is performed and pragmatically elaborated.

It follows that 'implicature' cannot be viewed as merely a way to patch up basic meanings under pressure from communication principles, because there are no basic meanings for such a scheme to operate on. Instead, cognitive constructions require frames

and connectors which are not inherently linguistic, although language may code or highlight some of their characteristics. The frames and connectors bring with them rich (often non-monotonic) inference systems, and implicatures are typically part of such systems.¹²

It remains a formidable challenge, however, to find out how frames and connectors are chosen or retrieved in particular situations. The issue of relevance which Grice brought forcefully to the attention of linguists remains central in this regard.

¹ The linguistic and cognitive importance of the notion of role and/or frame is discussed in Fillmore (1982), Hofstadter, Clossman and Meredith (1982), Sweetser (1989), Sakahara (to appear a), Langacker (to appear), Fauconnier (1985, 1986). Goffman (1974) gives us a broad and insightful study of the sociological and contextual aspects of framing.

² This point has been stressed repeatedly in mental space research, and also in recent work on relevance, e.g. Sperber and Wilson (1986), and pragmatics (Recanati ms.).

³ Connectors are studied in Maida (1984), Dinsmore (1989), Fauconnier (1985, 1990).

⁴ Sakahara (to appear b) contains some recent research in this framework. Formalizations are proposed in Den (to appear), Dinsmore (1989).

⁵ cf. Keenan (1971), McCawley (1981), Morgan (1973).

⁶ cf. Fauconnier (1985), chap.3.

⁷ Jackendoff (1975, 1983) shows how the equivalent of this principle applies analogously in the case of talk about pictures and about beliefs and how this explains the standard referential opacity puzzles. Nunberg (1978) applies the principle to metonymy and to pragmatic functions in general. The wide range of application of the Identification Principle to different kinds of domains and different kinds of connectors is studied in Fauconnier (1985, 1990).

⁸ This identifies Mary's counterpart in space H.

⁹ This identifies the role 'Tommy's father' in space H.

¹⁰ Forman (1974) explains indirect speech acts in terms of a 'Speaker Knows Best' principle. Langacker (to appear) discusses the importance of subjectivity in accounting for grammatical phenomena.

¹¹ Recent research that studies in some detail the pragmatic aspects of space construction includes Rubba (1988), Lansing (1988), Kinsui and Takubo (to appear), Encrevé and de Fornel (1983), Encrevé (1988). Cicourel (1988) stresses the role of cultural and social factors commonly ignored in work on meaning.

¹² Especially revealing in this regard is Lakoff's (1987) study of idealized cognitive models (ICM's) and metonymic models.

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