indicates that the speaker is not sure whether (11) is true. The assertion "John has stopped beating his wife" is made only conditionally.[3] Compare this case with the example in (3), where the phrase *which he did anyway* asserts the truth of the preceding consequent clause. If we are to believe Lakoff, in (3) the truth of a presupposition is denied. On the other hand, in (10) one cannot go as far as to deny the truth of (11). The following example is anomalous:

(12) *John has stopped beating his wife, *and he never beat her at all.*

Since Lakoff does not distinguish between these two cases, I fail to understand what "cancelling out a presupposition" is supposed to mean. I do not believe that (3) and (10) have anything in common which would justify grouping them together as examples of the same phenomenon.*

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Mirror-Image Rules and VSO Order*

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In Langacker (1969), Langacker pointed out the existence of syntactic processes which operate in two directions. While I suspect that some of the rules he cited as examples of this phenomenon (Gapping, for instance) may turn out to be reanalyzable in other terms, it is undeniable that some rules which have this property exist. In particular, it seems

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[3] If one accepts J. R. Ross's (1970) proposal about underlying performative sentences, one may want to derive (10) from a structure such as (i):

(i) If John has ever beaten his wife at all, then *I assert to you* that John has stopped beating his wife.

Somehow it has to be made explicit that (10) is no ordinary conditional.

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to me that whatever rule accounts for sequence-of-tense restrictions in English, as well as the rule (whether transformational or interpretive semantic) which allows negative polarity items like *any* to precede *false*, but to follow *deny* (cf. (1)–(2)—both of these examples were used by Langacker), must operate in both directions.

(1) a. That Portnoy {*is / was} frustrated was likely.

b. We supposed that Portnoy {*is / was} frustrated.

(2) a. That they have any money is {false / *true}.

b. They {deny / *assert} that they have any money.

In addition, it seems that the following processes must also operate bidirectionally:

Equi-NP Deletion must be able to delete the subjects of *subject* complements under identity with *object* NP's (cf. (3a)), and the subject of *object* complements under identity with *subject* (and other preceding) NP's (cf. (3b)).

(3) a. (My) being nominated made me dream of glory.

b. I resented (my) being nominated.

(Subject) Raising promotes subjects of subject clauses (cf. (4)), as well as subjects of object clauses (cf. (5)).

(4) a. For me to be elected is unlikely.

b. I am unlikely to be elected.

(5) a. I would hate (it) for my opponent to triumph.

b. I would hate my opponent to triumph.

Langacker proposes to account for all such cases by expanding the theoretical vocabulary of generative grammar to include the prefix "*", which, when appearing before the structural index of a transformation, signifies that the rule will apply bidirectionally, in a sense which he defines formally. It is the purpose of the present squib to argue that this formal device is too strong: it would allow, in principle, for more bidirectionality to exist than can be attested. In all of the above cases, *the axis of symmetry is the verb*. That is, if verbs in underlying structure are either final, as in Japanese, or initial, as in Arabic and English, with later rules producing verb-second superficial order for the latter language, as McCawley has argued on independent grounds (cf. McCawley (1970)), then all of the above processes can be formulated unidirectionally, as operating forward. As far as I know, there are no syntactic processes which have any other axis of symmetry than the verb. That

is, it would never be necessary to place the "*" prefix before the structure index of such rules as Dative, the rule which converts (6a) into (6b),

(6) a. I wish to send this nightshade to my mother-in-law.
b. I wish to send my mother-in-law this nightshade.

or before the structure index of rules which work only inside NP's, such as the rules effecting the conversions in (7) and (8).

(7) a. The pugilist whom I am affianced to
b. The pugilist I am affianced to
(8) a. A stevedore who is fond of truffles
b. A stevedore fond of truffles

Two apparent counterexamples, Dislocation in French, and various pronominalization processes, both taken from Langacker (op. cit.), appear to be avoidable. First of all, Left Dislocation appears not to be the same process as Right Dislocation, as was pointed out to me by David Perlmutter (cf. (9)).

(9) a. {*À Jean / Jean}, je lui ai donné un livre.
'John, I gave him a book.'
b. Je lui ai donné un livre, {à Jean / *Jean}.
'I gave him a book, John.'

Left Dislocation of the indirect object yields a bare NP, but Right Dislocation of the same constituent produces a prepositional phrase with *à*. And such rules of pronominalization as VP Deletion (cf. Ross 1967) must be formulated in such a way as to embody the restriction that the deleted VP be in a subordinate clause, if it precedes its anaphor, but not if it follows. Thus it is not evident that forward and backward pronominalizations of various sorts could be collapsed even using Langacker's "*" notation.

The real examples of syntactic bidirectionality thus depend on SVO ordering. If underlying structures with SVO ordering are assumed, then some such device as a (restricted) version of Langacker's *-notation will be necessary. Therefore, adopting McCawley's analysis, under which English (and French) have underlying VSO order, leads to a simplification of the theoretical machinery of the theory of grammar. This fact constitutes another argument for the correctness of McCawley's analysis.

In conclusion, let me point out one more respect in which the *-notation is too strong. It would be perfectly

possible, given such a notation, for SOV languages such as Japanese to have *-prefixed rules in their grammars. In fact, however, I know of no cases in any SOV language, or in any strict VSO language, for that matter, where Langacker's *-notation is called for. All "true" cases of bidirectionality seem to be limited to VSO languages like English and French, where late rules have moved their subjects to the left of the verb. But if my conjecture is correct, that all cases of the important mirror-image phenomenon noted by Langacker are best regarded as consequences of converting underlying VSO order to derived SVO order, then there are no true cases of bidirectionality in syntax.

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Double Indices

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While there are serious unsolved difficulties with the analysis of pronominalization processes in natural language, it seems clear that any adequate statement of the phenomenon will make use of the notion of reference. Consider the strings of (1a, b):

(1) a. It is clear why people call *Acid Eddie that.*
b. *Acid Eddie* says that *he* is always tripping.

The italicized elements in each sequence are intended to specify antecedent-anaphor pairs. In the (a) sequence the anaphor *that* obviously refers to the *name* of the individual who is called Acid Eddie. In the (b) sequence, on the other hand, the anaphor *he* clearly refers to the *individual* who is called Acid Eddie. The anaphors are not mutually substitutable as (2) shows:

(2) a. *It is clear why people call *Acid Eddie him.*
b. **Acid Eddie* says that *that* is always tripping.

Presumably the referential indices (adopting Chomsky's convention) will be of use in separating the antecedent-anaphor possibilities. If so, there are cases in natural language where a single surface lexical item/node will bear more than one referential index, for example:

(3) Even *Acid Eddie*'s mother calls *him that.*