

Chapter 10, Problem 3: The Dative Alternation

A. The Dative Alternation applies to newly coined verbs (of the right syntactic and semantic sort). New technologies have brought a number of new terms for transmission of information, and they quite generally appear in both the prepositional construction and the ditransitive construction.

- (1) a. Andy faxed the article to Dana.
- b. Andy faxed Dana the article.

Similar examples can be constructed with such novel verbs as *email* and *ftp*. This indicates that speakers have internalized a general relationship between the ditransitive and prepositional constructions, which provides motivation for positing a rule.

B. In this sample solution, we take the argument structure represented in (ii) to be the input. It is also possible to write a similar rule with the argument structure in (i) as the input.

$$\left[\begin{array}{l} \text{d-rule} \\ \text{INPUT} \quad \left\langle \boxed{1}, \left[\begin{array}{l} p_{tv-lxm} \\ \text{ARG-ST} \quad \langle \boxed{2}, \boxed{3}, \text{PP}[\text{FORM to}]_i \rangle \end{array} \right] \right\rangle \\ \text{OUTPUT} \quad \left\langle \boxed{1}, \left[\begin{array}{l} d_{tv-lxm} \\ \text{ARG-ST} \quad \langle \boxed{2}, \text{NP}_i, \boxed{3} \rangle \end{array} \right] \right\rangle \end{array} \right]$$

C. Assuming that the lexical rule takes *ptv-lxms* as input, the lexical entry for *hand* is the following:

$$(2) \quad \left\langle \text{hand}, \left[\begin{array}{l} p_{tv-lxm} \\ \text{ARG-ST} \quad \langle \text{NP}_i, \text{NP}_k, \text{PP}[\text{FORM to}]_j \rangle \\ \text{SEM} \quad \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \left\langle \begin{array}{l} \text{RELN} \quad \text{hand} \\ \text{SIT} \quad s \\ \text{HANDER} \quad i \\ \text{RECIPIENT} \quad j \\ \text{HANDED} \quad k \end{array} \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

When the INPUT of the Dative Alternation Lexical Rule is any lexical sequence meeting that description, the OUTPUT will meet this description:

$$(3) \quad \left\langle \text{hand}, \left[\begin{array}{l} d_{tv-lxm} \\ \text{ARG-ST} \quad \langle \text{NP}_i, \text{NP}_j, \text{NP}_k \rangle \\ \text{SEM} \quad \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \left\langle \begin{array}{l} \text{RELN} \quad \text{hand} \\ \text{SIT} \quad s \\ \text{HANDER} \quad i \\ \text{RECIPIENT} \quad j \\ \text{HANDED} \quad k \end{array} \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

Such lexical sequences can be the INPUT of the Passive Lexical Rule, yielding as outputs lexical sequences that meet the description in (4).

$$(4) \quad \left\langle \text{handed} , \left[\begin{array}{l} \text{part-}lcm \\ \text{SYN} \quad \left[\text{HEAD} \quad \left[\text{FORM} \quad \text{pass} \right] \right] \\ \text{ARG-ST} \quad \langle \text{NP}_j , \text{NP}_k \text{ (PP[FORM by]}_i) \rangle \\ \text{SEM} \quad \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \left\langle \begin{array}{l} \text{RELN} \quad \text{hand} \\ \text{SIT} \quad s \\ \text{HANDER} \quad i \\ \text{RECIPIENT} \quad j \\ \text{HANDED} \quad k \end{array} \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

Lexical sequences meeting the description in (4) are related by the Constant Lexeme Lexical Rule to lexical sequences with second members of type *word*. One of these lexical sequences is the one that licenses the word structure for *handed* in *Merle was handed a book by Dale*.

Of course, the lexical sequences in (2) are also compatible with the INPUT of the Passive Lexical Rule. When it is resolved that way, the OUTPUT meets the description in (5):

$$(5) \quad \left\langle \text{handed} , \left[\begin{array}{l} \text{part-}lcm \\ \text{SYN} \quad \left[\text{HEAD} \quad \left[\text{FORM} \quad \text{pass} \right] \right] \\ \text{ARG-ST} \quad \langle \text{NP}_k , \text{PP[FORM to]}_j , \text{PP[FORM by]}_i \rangle \\ \text{SEM} \quad \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \left\langle \begin{array}{l} \text{RELN} \quad \text{hand} \\ \text{SIT} \quad s \\ \text{HANDER} \quad i \\ \text{RECIPIENT} \quad j \\ \text{HANDED} \quad k \end{array} \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

Again, lexical sequences meeting the description in (5) are related by the Constant Lexeme Lexical Rule to lexical sequences with second members of type *word*. One of these lexical sequences is the one that licenses the word structure for *handed* in *A book was handed to Merle by Dale*.

- D. The Passive Lexical Rule demotes the first element of the ARG-ST, so the subject in the passive will always be the second item on the ARG-ST list of the active verb. In ditransitive active lexical sequences for *handed* — that is, (3) — the second element of the ARG-ST list denotes the recipient (Brooke, in this case). The only valence pattern in which the thing handed (a book, in this case) is the second element of the ARG-ST list is (5). But in (5), the recipient is expressed by a PP. There is no way that the NP corresponding to the thing handed can be promoted to the first element of the ARG-ST list unless the recipient argument is a PP.

To put it yet another way, in order to get (v), the Passive Lexical Rule would have to apply to an input with an argument structure like (6), where NP_k is the thing handed and NP_j is the recipient:

$$(6) \quad \left[\text{ARG-ST} \quad \langle \text{NP}_i , \text{NP}_k , \text{NP}_j \rangle \right]$$

Since neither the lexical entry for *handed* nor the output of the Dative Alternation Lexical Rule supply this valence pattern, there is no such input for the Passive Lexical Rule and (v) will not be generated.

