DATIVE SHIFT IN CHINESE AND ENGLISH:
A LEXICAL MAPPING ACCOUNT

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ABSTRACT This paper proposes two revisions to the Lexical Mapping Theory as part of UG and accounts for dative shift and the interaction between dative shift and passive in Chinese and English. The overall strategy is to maximize the universality of the Lexical Mapping Theory by allowing only morpholexical operations to be language-specific.

0. BACKGROUND

This paper applies the Lexical Mapping Theory (LMT) in recent developments of Lexical-Functional Grammar (LFG) as part of Universal Grammar (UG) [e.g., 1, 2, 3] to account for the dative alternation (1-2) in Chinese and English.

```
1.a. Li3si4 song4 le  yi1 ben3 shu1 gei3 ta1.
     Lee     give ASP one CLS  book to   she
  a' Lee gave a book to her.

2.a. Li3si4 song4 le ta1 yi1 ben3 shu1.
  a' Lee gave her a book.

  b. Li3si4 song4gei3 le ta1 yi1 ben3 shu1.
  b' Lee gave her a book.
```

We also account for the interaction between dative shift and passive in the two languages by posing two language-specific morpholexical operations: passive and dative. Thus, we treat both dative shift and passive as morpholexical processes, which belong to the only language-specific component of lexical mapping principles. We are thus opposed to previous LMT accounts of dative shift and other relation-changing processes that pose a language-specific thematic hierarchy [4], language-specific intrinsic classifications [5, 6], or language-specific default specifications [7, 8]. In general, we argue against all accounts that do not reveal the derivational relation in dative alternation and passive.

The paper is organized as the following: in section 1, we provide a revised lexical mapping account of Chinese and English dative alternation, passive operations, and the interaction of the two in both languages. We then review some of the previous LMT accounts in section 2 and discuss the implications of our account in section 3. Section 4 concludes the paper with a summary.

1. A REVISED LEXICAL MAPPING ACCOUNT

Based on the Lexical Mapping Theory outlined in Bresnan (1994) [1] as part of UG, we propose two revisions: 1) following [8, 9, 10], we allow morpholexical operations the feature-adding capability, in addition to adding, suppressing, or binding thematic roles (see C2 below), and 2) we extend the function-specific and somewhat controversial Subject Condition (i.e., every lexical form must have SUBJ) to a general Unmarkedness Condition (see D1 below). The Lexical Mapping Theory we propose thus consists of:

A) the universal thematic hierarchy:
       ag > ben > go/exp > inst > th/pat > loc

B) classification of grammatical functions:
1. $\pm$r (restricted thematically) and $\pm$o (objective):
       SUBJ [-r -o]   OBJ   [-r +o]
       OBL$_\theta$ [+r -o]   OBJ$_\theta$ [+r +o]
2. markedness hierarchy: SUBJ > OBJ/OBL$_\theta$ > OBJ$_\theta$

C) lexical mapping principles:
1. intrinsic classifications (IC's):
       th/pat → [-r]; ag → [-o]
2. morpholexical operations:
       a. Passive (Eng): ê → ϕ/+r & go → $\pm$r
       b. Passive (Chi): ê → ϕ/+r & go → +r
       c. Dative (Eng & Chi) : go → +o
       d. Gei-compounding (Chi):
             [V < ag go th >]+[*gei3*] → [V*gei3*]
3. default classifications (DC's):
       ê → [-r]; all others → +r
4. *monotonicity* condition: feature assignment must
       be feature-preserving

D) well-formedness conditions (WF):
1. Unmarkedness Condition:
> Every expressed role must be mapped to the least marked
> grammatical function permissible.
2. Function-Argument Biuniqueness:
> Each expressed role must be mapped to a unique function, and
> conversely.

The same dative operation in Chinese and English (C2c), go → +o,
predicts correctly the same dative functional structure for the two
languages, as shown in 1-2. Note that, following the analysis that
[V+*gei3*] strings like *song4gei3* in 2b are compounds [11, 12], we propose
a morpholexical rule, Gei-compounding (C2d), which incorporates verb
gei3 with a verb of the same <ag go th> argument structure. All
[V+*gei3*] compound verbs undergo the dative operation obligatorily, which
is quite plausible since verb *gei3* independently requires an OBJ_θ.

The two languages' passive operations, however, are different in the
setting of one parameter--in English, the goal role is classified +r or -r,
but in Chinese passive the gaol role is +r only. This slight difference
nicely accounts for the passivizable goal in English dative construction and
the non-passivizable goal in Chinese, as shown in 3 below.

```
3.a.*Ta1 (bei4 Li3si4) song4 le  yi1 ben3 shu1.
      she  by   Lee       give ASP one CLS   book
   b. She was given a book (by Lee).

4.a. Shu1 (bei4 Li3si4) song4 le gei3 ta1.
   b. The book was given to her (by Lee).

5.a. Shu1 (bei4 Li3si4) song4(gei3) le ta1.
   b.%The book was given her (by Lee).
```

The following are examples of how dative shift, as shown in (1-2),
is accounted for in both Chinese and English by the same dative operation
that assigns +o to the goal role within the lexical mapping framework we
have proposed in A-D above.

```
1.      song4/give < ag      go      th >
     IC              -o              -r
     DC              -r      +r
     ------------------------------------------------
                    SUBJ OBLθ/OBJθ  S/O
     WF             SUBJ   OBLθ     OBJ

     Li3si4 song4 le yi1 ben3 shu1 gei3 ta1.
     Lee gave a book to her.
```

```
2. song4(gei3)/give <    ag        go       th >
   IC                    -o                 -r
   Dative OR                       +o
    Gei-compounding
   DC                    -r        +r
   ----------------------------------------------
                       SUBJ      OBJ_θ    S/O
   WF                  SUBJ      OBJ_θ    OBJ
```

Li3si4 song4(gei3) le ta1 yi1 ben3 shu1.
Lee gave her a book.

Passive operations, however, differ in Chinese and English. Here we will first show how Chinese passive operations interact with the dative operation and yield the observed lexical forms in 4a and 5a. The Chinese passive operations classify goal as +r only, which prevents goal from being realized as subject. Thus, 3a is ill-formed precisely due to the ungrammatical subjecthood of its goal role. Lexical mapping of the grammatical 4a and 5b are illustrated below.

```
4.a.            song4 <    ag        go        th >
    IC                     -o                  -r
    Chinese Passive        φ/+r      +r
    DC
    ------------------------------------------------
                        φ/OBL_θ   OBL_θ/OBJ_θ   S/O
    WF                  φ/OBL_θ   OBL_θ         SUBJ
```

Shu1 (bei4 Li3si4) song4 le gei3 ta1.
'The book was given to her (by Lee).'

```
5.a.    song4(gei3)  <    ag        go        th >
    IC                    -o                  -r
    Dative OR                       +o
     Gei-compounding
    Chinese Passive       φ/+r      +r
    DC
    ------------------------------------------------
                        φ/OBL_θ   OBJ_θ     S/O
    WF                  φ/OBL_θ   OBJ_θ     SUBJ
```

Shu1 (bei4 Li3si4) song4(gei3) le ta1.
'The book was given her (by Lee).'

Unlike the restrictive classification of Chinese goal as +r, English passive allows its goal to alternate between +r and -r. The goal role may therefore be realized as any grammatical function in a lexical form. Goal is mapped to SUBJ in 3b, OBL_θ in 4b, and either OBJ or OBJ_θ in 5b.

```
3.b.             give   <    ag       go       th >
     IC                     -o                -r
     English Passive        φ/+r     -r
     DC
     ----------------------------------------------------
                            φ/OBL_θ   S/O      S/O
     WF                     φ/OBL_θ   SUBJ     OBJ
```

She was given a book (by Lee).

```
4.b.             give   <    ag       go       th >
     IC                     -o                -r
     English Passive        φ/+r     +r
     DC ·
     ----------------------------------------------------
                            φ/OBL_θ   OBL_θ/OBJ_θ  S/O
     WF                     φ/OBL_θ   OBL_θ        SUBJ
```

A book was given to her (by Lee).

```
5.b.(i)          give   <    ag       go       th >
     IC                     -o                -r
     Dative                          +o
     English Passive        φ/+r     -r
     DC
     ----------------------------------------------------
                            φ/OBL_θ   OBJ      S/O
     WF                     φ/OBL_θ   OBJ      SUBJ


     (ii)        give   <    ag       go       th >
     IC                     -o                -r
     Dative                          +o
     English Passive        φ/+r     +r
     DC
     ----------------------------------------------------
                            φ/OBL_θ   OBJ_θ    S/O
     WF                     φ/OBL_θ   OBJ_θ    SUBJ
```

A book was given her (by Lee).

Note that sentence 5b, although questionable in prescriptive grammar, is quite acceptable to some speakers [e.g., 13: 596, 14: 300, 15: 833]. However, note that dative and passive must both apply to yield this construction. The resulting dual status of OBJ_θ and OBJ manifested by the goal role creates two paths in parsing. Sentences like 5b are therefore highly marked construction. For speakers who do not accept such sentences, we may stipulate that in their grammar dative and passive do not apply to the same thematic structure collectively. The fact that this construction is highly marked could be taken as an explanation of why most speakers do not accept it.

2. PREVIOUS ACCOUNTS

Tan [7: 170] attributes the difference in passivizable goal in Chinese and English to an additional universal intrinsic classification (IC) for goal, go → -r, and a subject default rule in 6.

6. Subject default rule
 ê → -o → SUBJ; otherwise
 Θ → -r → SUBJ (English)
 th/pt → -r → SUBJ (Chinese)

This subject default rule is an ad hoc stipulation for the dative construction, however. It increases the formal power of the lexical mapping theory by introducing an additional mechanism. Furthermore, it does not account for locative inversion construction, for example, where the lower locative role is mapped to subject while the higher theme/agent role is mapped to object [10]. This problem notwithstanding, it does not even work in excluding the ungrammatical passivized goal subject in Chinese.

```
7.           song4  < ag      go      th >
     IC                -o      -r      -r
     PASSIVE            φ
     DC
     ----------------------------------------
                              S/O     S/O
          Subject def. & WF   SUBJ    OBJ
```

3.a.*Ta1 (bei4 Li3si4) song4 le yi1 ben3 shu1.
 'She was given a book (by Lee).'

The additional IC classifies goal to be -r. Passive suppresses the highest role agent and only goal and theme remain. Tan's subject default thus predicts, incorrectly, that goal, now the highest role in the argument structure, is the passivized subject.

Huang [4], on the other hand, accounts for Chinese dative by a language-specific thematic hierarchy, one that reverses theme and goal as well as an additional *optional* IC that assigns +o to roles lower than theme. Since goal is now lower than theme and intrinsically assigned +o, it is barred from being subject. The optionality of this IC, however, is a language-specific as well as construction-specific stipulation. Locative role, a role lower than theme, for example, must not receive the intrinsic +o in an inversion construction where the locative role maps to subject [10]. The postulation of a language-specific thematic hierarchy, likewise, undermines the theory's universal appeal.

Lai [5] follows the version of LMT in Bresnan and Zaenen [16], where three IC's are adopted (8a-c). In addition, she proposes another IC specifically for goal in Chinese (8d).

8. a) primary patient → -r   c) other roles → -o
   b) secondary patient → +o   d) goal → +r

In Chinese dative, when goal receives -o from 8c and +r from default, it maps to OBL_θ. When goal receives +r from 8d and thus null from default, it can alternate between OBL_θ and OBJ_θ. This account thus not only maps goal to OBL_θ via two separate mapping paths but also renders the two alternative constructions in dative shift completely free variations, with no derivational relation. Since English and Chinese are alike in dative shift allowing goal to alternate between OBL_θ and OBJ_θ, this account cannot possibly account for the difference in passivizable goal subject by suggesting still the same passive rule for both languages. Thus, contrary to the author's claim [5: 22], this account incorrectly predicts that goal may be the passivized subject, as shown here in 9.

```
9.          song4  < ag     go      th >
     IC             -o      -o      -r
     PASSIVE        φ
     DC                     -r
     ------------------------------------------
                            SUBJ    S/O
     WF                     SUBJ    OBJ
```

3.a.*Ta1 (bei4 Li3si4) song4 le yi1 ben3 shu1.
    'She was given a book (by Lee).'

Finally, we examine Zaenen's [8] account of English dative alternation. Three DC's are proposed, instead of the usual two. And no morpholexical rule is proposed for dative.

10. a) the highest role → -r
    b) the next role → +o
    c) the third role → +r

```
2.          give < ag      go      th >
     IC            -o              -r
     DC            -r      +o
     ------------------------------------------
                  SUBJ  OBLθ/OBJθ   S/O
     WF           SUBJ  OBLθ/OBJθ   OBJ
```

1.a' Lee gave a book to her.
2.a' Lee gave her a book.

Unlike the author's claim [8: 19] that goal is realized as +o, +r, i.e., OBJ_θ, in her account goal does not receive +r from either IC's or DC's and therefore must allow a free variation of OBJ_θ and OBJ_θ as the function of goal. Consequently, like Lai [5], there is no account for the generalization that the unmarked function of goal is OBL_θ.

3. DISCUSSION

In comparison, the account we propose attains several advantages over previous accounts. First of all, in previous accounts, dative shift is implied to be universal or has to be set as a parameter allowing different settings by different languages. The former is simply incorrect, and the latter complicates the universal grammar. By keeping dative alternation a language-specific morpholexical operation, which may indeed be shared by many languages, we are able to account for its non-occurrence in other languages, and maintain the optimal universality of all intrinsic and default role classifications.

Another advantage of morpholexical rules is that they capture the derivational relations between different classes of verbs, for example locative inversion verbs and their canonical forms, and alternative realizations of dative construction. The canonical dative form, undergoing no morpholexical operations, produces an unmarked structure with oblique *gei3* or *to/for*, while the ditransitive dative form, mediated by the morpholexical rule, derives a more marked construction with an OBJ_θ. Passivized dative constructions are thus even more marked in that two morpholexical operations must apply to yield the lexical form.

Since in the theory intrinsic and default classifications already assign values, allowing morpholexical operations the capacity of feature-assignment does not compromise the formal power of the formalism, while making it more expressive. It is by a different setting of the r feature of the goal role in passive that triggers the difference in passivizable goal subject in English and Chinese.

The unmarkedness condition we proposed replaces the more ad hoc, function-specific, and somewhat controversial subject condition [e.g., 2: 28]. Moreover, the unmarkedness condition utilizes another part of the theory, the markedness hierarchy derived from the natural classes of functions, whose consequence is otherwise unrealized, such is the case in previous accounts. The account we propose, with the two modifications to the theory, enables language-specific morpholexical rules to reveal derivational relations and markedness of lexical forms and at the same time optimizes the universality of the lexical mapping theory.

Finally, by allowing the language-specific module of morpholexical operations to interact with other modules of lexical mapping principles that are optimally universal, our account captures the insight that languages diverge and converge at the same time [e.g., 17]. This LMT view also supports the relativist position that languages (and the various constructions within a single language) may vary in degree in terms of iconicity [e.g., 18, 19, 20], with high iconicity taken to be a direct mapping between the argument structure and the functional structure with little or no mediation of morpholexical operations.

4. CONCLUSION

To summarize, under the overall strategy to maximize the universality of the Lexical Mapping Theory by allowing only morpholexical operations to be language-specific, we propose two revisions: 1) morpholexical operations may add features, and 2) the function-specific Subject Condition is replaced with the Unmarkedness Condition, which realizes the consequence of the unmarkedness hierarchy of grammatical functions. Within the revised lexical mapping framework, dative shift receives the same treatment in Chinese and English, while the passive operations differ in the setting of the goal role, which accounts for the different results of the interaction between dative shift and passive in Chinese and English.

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