1. Introduction*

In October 2010, Fritz Newmeyer posted the following question on the functionally-and typologically-oriented linguistics network Funknet:

"Does anybody know of a functional explanation (published or not) for why preposition stranding is so rare in the languages of the world? (I am referring to constructions such as 'Who did you talk to?', 'Mary was talked to', etc.) As far as I know, it exists only in Germanic, marginally in French, and possibly in some Niger-Congo languages. There are a number of functionally-oriented accounts of P-stranding in English, but I wonder if anybody has taken on the question of its rarity cross-linguistically".

At the time, the response I gave Fritz on Funknet was a rather ungainly three-pronged promissory note spread over a number of postings, suggesting that his two-part puzzle was no puzzle at all. Rather:

- The affixing of stranded adpositions to verbs is not a typological rarity.
- It is the consequence of zeroing-out adpositionally-marked nominal arguments ('obliques') in various contexts of co-reference.
- It is found in languages that possess no alternative means for preserving adpositional case-marking in well known zero-marking contexts, often following the diachronic loss of alternative means for preserving the stranded adpositions.

This chapter is a belated attempt to deliver on that old promissory note. In the process, I will try to show how Newmeyer's puzzle of stranded adpositions is part and parcel of the story of zero. A more general methodological lesson may be drawn from this discussion, touching on both the typological and functional aspects of Newmeyer question: That in order to solve some seemingly compact puzzles one needs to sometimes re-construe them in a much broader context.

2. Stranded adpositions in relative clauses

2.1. Verb-stranded prepositions in English

The syntax of REL-clauses revolves around a universal functional dilemma, one that can be described as the case-recoverability imperative:

(1) a. The referential identity of the zeroed-out argument inside the REL-clause is easily recovered from the immediate anaphoric context--the co-referent head noun.
   b. But how can one recover the case-role of the missing argument inside the REL-clause, given that the head noun is marked for its case-role in the main clause?
One can go on and enumerate the various syntactic-typological means by which languages solve the case-recoverability conundrum. In the current dialect of English Newmeyer refers to, the problem is handled differently for the three main argument-types—subject, direct object, and prepositional object ('obliques'). For the subject, the case-role is recoverable from the case-marked REL-pronoun ('subordinator'), combined with the SVO word-order. The direct object-role, in turn, is recoverable from default zero-marking and the OSV word-order. Lastly, the various oblique case-roles are recoverable from the stranded preposition. When the clause is bi-transitive, the stranded preposition most commonly follows the direct object, as in (2d) below:

(2) a. **Main bi-transitive clause:**
   He gave the book to Mary
b. **Subject REL-clause (SVO):**
   The man [who gave the book to Mary]
c. **Direct-object REL-clause (OSV):**
   The book [John gave to Mary]
d. **Prepositional-object REL-clause:**
   The woman [John gave the book to]

When the oblique object appears in an intransitive clause, the stranded preposition is a suffixed to the verb itself as a verb *clitic*, as in:

(3) a. The woman he talked-*to*
b. The boy she argued-*with*
c. The house she lived-*in*
d. The school she went-*to*
e. The town she lived-*in*
f. The road she drove-*by*
g. The knife she cut-*it*-with*h. The boy she made-*it*-for*

Older dialects of English, one of them still in use but considered somewhat un-colloquial, had other means of preserving the preposition, by prefixing it to the REL-pronoun/subordinator, most often a **WH-pronoun**. Thus compare, respectively:

(4) a. The woman *to*-whom he talked
b. The boy *with*-whom she argued
c. He house *in*-which she lived
d. The school *to*-which she went
e. The town *from*-which she came
f. The road *by*-which she drove
g. The knife *with*-which she cut it
h. The boy *for*-whom she made it
This strategy was already well established in written English by late-18th-Century. As an illustration, consider REL-clauses in Adam Smith's *The Theory of Moral Sentiment*. In Smith's written genre, subject REL-clauses modifying human head nouns are marked with *who*; those that modify non-human head nouns are marked with *which*, with *that* reserved to cases where the head noun is non-referring. Thus consider:[FN 2]

(5) a. ...those faithful friends *who* interest us...
b. ...ulcers *which* are exposed...
c. ...some good or bad fortune *that* has befallen a person...

Direct object REL-clauses with human head nouns are marked with *whom*, and those with non-human head nouns with *which*, again alternating with *that* for non-referring head nouns, as in:

(6) a. [hypothetical] ...the wretches *whom* they are observing... [FN 3]
b. ...the anguish *which* humanity feels...
c. [hypothetical] ...whatever anguish *that* humanity may feel... [FN 4]

In the vast majority of oblique REL-clauses in Smith's text, the stranded preposition is prefixed to the WH-pronoun subordinator, primarily 'whom' for human heads and *which* for inanimate heads. Thus:

(7) a. ...those with *whom* he is angry...
b. ...the person in *whom* we observe them...
c. ...the man from *whom* the appear to be in such danger...
d. ...other person for *whom* we are concerned...
e. ...every passion of *which* the mind of man is susceptible...
f. ...the calamities to *which* the condition of morality exposes mankind...
g. ...the human breast, from *which* reason and philosophy will...attempt to defend it...
h. ...situations from *which* it arises...
i. ...in that in *which* they appear to ourselves...
j. ...the standards and measures by *which* he judges of mine...
k. ...that change of situation, upon *which* their sympathy is founded...

Only in a few instances does Smith employ other relativization strategies. The first one involves a transitional hybrid construction, with verb-stranded prepositions coexisting with the WH-pronoun subordinator, as in:

(8) a. ...the wretches *whom* they are looking *upon*...
b. ...one *whom* in all the passions of the heart we can entirely sympathize with...
c. ...the sentiment *which* it gives occasion to...
d. ...the relation *which* they stand in...
e. ...our preceding experience of *what* our sentiments would commonly correspond with...
Example (8e) also illustrates Smith's fairly consistent use of the WH-pronoun *what* to mark headless REL-clauses with non-human head nouns, as in:

(9) a. **Subject**: ...the utility of those qualities...is *what* first recommended them to us...
    b. **Direct object**: ...by conceiving *what* we ourselves should feel...
    c. **Oblique**: ...inform us *of what* he suffers...
    d. **Oblique**: ...coincide *with what* he feels...

Written 18th Century English had another, perhaps older, strategy for stranding prepositions on the REL-subordinator--suffixing them to the invariant locative WH-pronoun *where*. This pattern may have been largely phased out by the late-18th Century. Thus, in the Adam Smith text noted above, not a single example of this pattern was found. In the entire text of the *Declaration of Independence* and *Constitution of the United State*, including the first 14 amendment, only 5 examples of this pattern are found:[FN 5]

(10) a. ...the Emoluments *whereof* shall have been encreased...
    b. ...in Witness *whereof* We have hereonto subscribed our Names...
    c. ...for crimes *whereof* the party shall have been duly convicted...
    d. ...the State *wherein* they reside...
    e. ...*whereby* the Legislative Powers...have returned to the People at large...

In contrast, the pattern employing the WH-pronouns *which*/*whom*, with the stranded prepositions prefixed to the pronoun, predominates in the same text, with 11 examples:

(11) a. ...the Forms *to which* they are accustomed...
    b. ...during the Time *for which* he was elected...
    c. ...to that House *in which* it shall have originated...
    d. ...the other House, *by which* it shall likewise be considered...
    e. ...Every Order, Resolution, or Vote, *to which* the Concurrence of the Senate and House of Representative be necessary...
    f. ...two Persons, *of whom* one at least should not be an inhabitant of the same State...
    g. ...the Day *on which* they shall give their Voters...
    h. ...the Period *for which* he shall have been elected...
    i. ...the State *from which* he fled...
    j. ...the Party *to whom* such Service of Labour may be due...
    k. ...all or any *of which* articles...

In an earlier 18th Century text, published in 1732, one finds roughly an equal number of the *where*-P pattern, as in (10), and the *P-which/P-whom* pattern, as in (7), (11), but no example of the V-stranding pattern. What is more, the range of prepositions suffixed to *where* is much wider in this earlier text. Thus:[FN 6]
(11) a. ...the Character *wherewith* the Jesuits make is their Business to brand me...
b. ...the Rule *whereby* they squared their own Conduct...
c. ...the different Conditions *wherein* I have been found...
d. ...some of them *wherewith* I am not well acquainted...
e. ...*whereof* I will pass on from my Life...
f. ...*wherefore* I will pass on from my life...
g. ...*wherefore* I only answer'd...
h. ...the Consequences *whereof* I was entirely ignorant...
i. ...the Consequences *whereof* I did not well apprehend...
j. ...no doubt disturbed Father Girard's Tranquility; *wherefore* he brought me me...
k. ...his Principles, *wherein*, since..., consisted all his Direction...

(12) a. ...four children, *of whom* I am the youngest...
b. ...she gave me those Instruction *of which* Children are capable...
c. ...a Mercy *for which* I ought to thank God...
d. ...I answer'd him..., *to which* he reply'd...
e. ... I declared to Father Girard that..., *to which* he answer'd...
f. ...I found myself utterly incapable of Praying; *of which* I gave an account...
g. ...I often had fits; *during which* Father Girard never call'd any Assistance...
h. ...that certain Things pass within our Souls,
   *to which* we ought never to give any Attention...
i. ...he made me strip to my Shift, *in which* Condition he embraced me...
j. ...although that is a Custom *from which* they never recede...
k. ...I felt a Sort of Pain which was new to me; *after which* he help'd to dress me...

A similar transitional situation is found in Shakespeare's *Coriolanus*, ca. a century earlier, where in the first 100 pp. of the text, 3 example of the old *where-P* patterns were found:

(13) *Where-P* relativization pattern:
a. ...that natural competency *whereby* they live...
b. ...for corn at their own rates; *whereof*, they say, the city is well stocked...
c. ...rejoice in theat absence *wherein* he won honors...

As against 11 examples of the *P-WH-pronoun* pattern:

(14) *P-WH-pronoun* relativization pattern:
a. ...Fame, *at which* he aims,
b. *in whom* already he's well graced...
c. ...to a cruel war I sent him; *from whence* he returned...
d. ...seven years of health; *in which time* I will make a lip at the physician...
e. ...the good patrician must be visited; *from whom* I received only greetings...
f. ...doubt not the commoners, for whom we stand...
g. ...the multitude; of which we being members, should bring ourselves to be...
h. ...you show too much of that for which the people stir...
i. ...if you will pass to where you are bound...
j. ...the people, in whose power we were elected theirs...
k. ...a word or two; to which will turn you to no further harm...

In addition, however, a transitional blend pattern has the V-stranded preposition co-existing with the WH-pronoun subordinator:

(15) **WH-pronoun & verb-stranded P:**
   a. ...disdain the shadow which he treads on at noon...
b. ...a kinder value of the people that he hath thereto prized them at...
c. ...our then dictator, whom with all praise I point at...
d. ...his worthy deeds did claim no less than what he stood for...
e. ...you must inquire your way, which you are out of...
f. ...sedition, which we ourselves have plough'd for...

In sum, the stranding of prepositions as verb-suffixes in English oblique REL-clauses developed as the latest alternative to two older patterns. In both of those, the prepositions were affixed to WH-pronouns marked, initially, for a limited range of case-roles. In the earlier pattern, the prepositions were suffixed to where. In the later pattern, they were prefixed to whom or which. And the new—current—pattern of verb-stranded prepositions developed in the very same functional context—where the co-referent argument inside the REL-clause is zeroed out, precipitating a case-recoverability problem (1).[FN 7]

2.2. **Typological alternative to verb-stranded adpositions**

As noted above, suffixing the stranded preposition to the verb is but the latest relativization strategy in English, replacing two earlier alternative patterns. The verb suffix position of the preposition is, further, a natural consequence of the VO syntax of English, where oblique objects either post-verbal and, in bi-transitive verbs, follow the direct object. In this section we will survey three alternatives typological solutions to the case-role recoverability imperative (1).

2.2.1. **Anaphoric pronoun-affixed preposition: Hebrew**

Hebrew is a VO language where REL-clauses follow the head noun and all oblique objects, as well as the definite-accusative, are marked with prepositions. In subject REL-clauses, the case-role recoverability imperative (1) is handled by the obligatory subject pronominal agreement on the verb, available in most verbal paradigms (see chs 3 above). In direct-object REL-clauses, the same **default-zero** cum OSV-order strategy is employed as in English, with an optional anaphoric pronoun carrying the definite-accusative preposition. Thus consider:
(16) **Main-clause anaphora**

<table>
<thead>
<tr>
<th>a. Subject</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>hi ba'-a hena</td>
<td>ha-isha she-ba'-a hena</td>
</tr>
<tr>
<td>she came-3sf here yesterday</td>
<td>the-woman REL-came-3sf here</td>
</tr>
<tr>
<td>'She came here yesterday'</td>
<td>'the woman who came here yesterday...'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. Direct-object</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yo'av qana 'ot-o</td>
<td>ha-sefer she-Yo'av qana (ot-o)</td>
</tr>
<tr>
<td>Y. bought/3sm ACC-3sm</td>
<td>the-book REL-Y. buy/PA/3s ACC-3sm</td>
</tr>
<tr>
<td>'Yoav bought it'</td>
<td>'the book Yoav bought'</td>
</tr>
</tbody>
</table>

For all oblique REL-clauses, the post-verbal anaphoric pronoun carrying the preposition is obligatory. Thus consider:

(17) **Main-clause anaphora**

<table>
<thead>
<tr>
<th>a. Dative</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yo'av maqshiv l-a</td>
<td>ha-isha she-Yo'av maqshiv l-a</td>
</tr>
<tr>
<td>Yoav listens/sm to-her</td>
<td>the-woman REL-Y. listens/3sm to-3sf</td>
</tr>
<tr>
<td>'Yoav listens to her'</td>
<td>'the woman Yoav listens to'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. Associative</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yo'av favad 'it-a</td>
<td>ha-isha she-Yo'av favad 'it-a</td>
</tr>
<tr>
<td>Y. worked/3sm with-her</td>
<td>the-woman REL-Y. worked/3sm with-3sf</td>
</tr>
<tr>
<td>'Yoav worked with her'</td>
<td>'the woman Yoav works with'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Allative</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mira nas-f-a 'el-av</td>
<td>ha-ish she-Mira nas-f-a 'el-av</td>
</tr>
<tr>
<td>M. travel-3sf to-3sm</td>
<td>the-man REL-M. drove-3sf to-3sm</td>
</tr>
<tr>
<td>'Mira traveled to him'</td>
<td>'The man Mira traveled to'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d. Ablative</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>hi' barh-a mimen-o</td>
<td>ha-ish she-hi barh-a mimen-o</td>
</tr>
<tr>
<td>she escaped/3sf from-3sm</td>
<td>the-man REL-she escaped-3sf from-3sm</td>
</tr>
<tr>
<td>'Mira escaped from him'</td>
<td>'the man she escaped from'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>e. Locative</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>hu' ſipes ſal-av</td>
<td>ha-baytit she-hu ſipes ſal-av</td>
</tr>
<tr>
<td>he climbed/3sm on-3sm</td>
<td>the-house REL-he climbed/3sm on-3sm</td>
</tr>
<tr>
<td>'he climbed on it'</td>
<td>'the house he climbed on'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>f. Instrumental</th>
<th>REL-clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>hi' ſafra 'it-a</td>
<td>ha-maḥṭ she-hi ſafra 'it-a</td>
</tr>
<tr>
<td>'she sewed/3sf with-3sf'</td>
<td>the-needle REL-she sewed/3sf with-3sf</td>
</tr>
<tr>
<td>'she sewed with it'</td>
<td>'the needle she sewed with'</td>
</tr>
</tbody>
</table>
g. **Genitive**

hars-u 'et-ha-bayit shel-a ha-'isha she-hars-u 'et-a-bayit shel-a
ruin-3pm ACC-the-house of-her the-woman REL-ruined-3pm ACC-the-house of-3sf
'they demolished her house' 'the woman whose house they demolished'

One must note, however, that the anaphoric pronoun strategy used in Hebrew oblique-object relativization may well be just a minor variant of the verb-stranding strategy in English. This is so because the *prep-pro* compounds in (14) above bears all the marks of being verb clitics: They are short, de-stressed and overwhelmingly verb-adjacent. These features are obscured by the writing system. To test the feasibility of this, examples of oblique REL-clauses in A.B. Yehushua's highly colloquial part-I of the novel *Mr. Mani* were inspected. In the first 30 pp. of the novel, the *prep-pro* compounds in 10 of the 12 examples were verb-adjacent. That is:

(18) **ADJACENT PREP-PRO IN OBLIQUE REL-ClausE:**

a. *...yesh hamon zkhuyot... she-'anakhnu afilu lo' shamañnu ʕāley-ḥem...*
be many rights REL-we even NEG heard/1p **on-3pm**
'...there are many benefits...we haven't heard about/...'

b. *...le-'avi-v,... she-hu' lo' matzliḥ... le-hodia ʕal-o...*
to-father-3sm REL-he NEG manage/sm to-make.know **to-3sm**
'...to his father... whom he is hasn't managed to make-known to/...'

c. *...l-a-reḥov shel ha-ʻaba' shel-o, she-nikhnasti ʕel-av...*
to-the-street of the-fathe of-3sm REL-entered/1s **to-3sm**
'...to his father's street, that I entered into/...'

d. *...ha-shrafraʕ ha-qaṭan she-ʕolim ʕal-av...*
the-stool the-little REL-climb/3p **on-3sm**
'...the little stool that one climbs on/...'

e. *...ha-sefer ha-ze, she-hu' qore' b-o...*
the-book the-that REL-he read **in-3sm**
'...that book, that he read in/...'

f. *...ha-shkhnuna... she-hu' noseaʕ 'eley-ḥa...*
the-neighborhood REL-he drive/3sm **to-3sf**
'...the neighborhood... he is driving to/...'

g. *...madregot 'ahoriyot she-yordim ba-ḥen...*
stairs back REL-go.down/mp **in-3pf**
'...back stairs that one goes down by/...'
The two exceptions where the *prep-pro* compound was not verb adjacent were:

(19) a. ...ma qara ʕim-ʿavi-v she-ha-qesher it-o nutaq... what happened/3sm with-father-3sm REL-the-contact with-3sm disconnected/3sm
   '..what happened with his father with whom contact was lost...'

   b. ...ha-heder she-mimen-o zaraq 'ot-i... the-room REL-from-3sm threw/3sm ACC-1s
   '..the room he threw me from...'

In the first (19a), the *prep-pro* compound is adjacent to the de-verbal first part of the compound predicate 'disconnect contact'. In the second (19b), the ablative *prep-pro* compound competes for verb adjacency with the accusative, which invariably wins by the hierarchic rule *dative > accusative > others*.

The strong pressure for verb adjacency of the *prep-pro* compound can be also seen, lastly, in subject REL-clauses that contain non-focal oblique objects. Thus consider:

(20) **Adjacent prep-pro in subject REL-clauses:**
   a. ...ze ma she-qara l-i be-yrushalayim... this what REL-happened/3s to-1s in-Jerusalem
   '..this is what happened to me in Jerusalem...'

   b. ...kol davar she-ʕal-ay... ...every thing REL-passes/sm on-me...
   '..everything that happens to me...'

   c. ...'ha-yoʕetset... she-nishleha... le-ταπεl b-anu... the-counselor REL-was.sent/3sf to-care in-1p
   '..the counselor...that was sent...to care for us...'
d. ...me-ha-pli'a ve-ha-bilbul she-naflu ʕal-av...
   from-the-wondering and-the-confusion REL-fell/3p on-3sm
   '...from the wondering and confusion that fell upon him...'

e. ...ve-hi' gam she-hitsila 'ot-o...
   and-she also REL-saved/3sf ACC-3sm
   '...and she's also the one who saved him...'

f. ...sherut ha-milu'im she-mehake l-o...
   service/of the-reserves REL-wating/sm to-3sm
   '...the reserve service that is awaiting him...'

g. ...shtey zqenot qтанot sfaradiyot... she-ba'u le-nahem 'ot-o...
   two old/fp tiny/fp Spanish/fp REL-came/3p to-console ACC-3sm
   '...two little old Spanish ladies that came to console him...'

h. ...gam lo'-mudaʃ nosaf, she-meshabesh 'ot-o...
   also NEG-known added/sm REL-confuse/sm ACC-3sm
   '...another unconscious (thing) that messes him up...'

2.2.2. Post-positions affixed to the REL-subordinator: Ute

   Ute REL-clauses are historically nominalized, with the verb marked by either one of two
   suffixes, distinguish between subject and object nominalization. Thus consider:[FN 8]

   (21) a. **Main clause:**
      'áapachi tukuavi tuka-qha
      boy/S meat/O eat-PA
      'the boy ate the meat'

   b. **Subject nominalization (headless REL-clause):**
      tukuavi tuka-qha-tu
      meat/O eat-PA-NOM
      'the meat eater', 'the one who ate the meat'

   c. **Subject REL-clause:**
      'áapachi 'u tukuavi tuka-qha-tu
      boy/S the/S meat/O eat-PA-NOM
      'the boy who ate the meat' (hist.: 'the boy eater of the meat')

   d. **Object nominalization (headless REL-clause):**
      'áapachi 'uway tuka-qha-na
      boy/G the/G eat-PA-NOM
      'what the boy ate', lit. 'the boy's eating'
e. **Object REL-clause:**
   tu'kuavi 'uru 'áapachi 'uway tu'ka-qha-na
   meat/S the/S boy/G the/G eat-PA-NOM
   'the meat that the boy ate' (hist.: 'the meat of the boy's eating')

In oblique-object REL-clauses, the same object-nominalizing suffix -na is used as in (21d,e) above. To solve our functional imperative (1), stranded post-positions are suffixed to an invariant 'carrier' morpheme *pu-* historically a reduction of the inanimate WH-pronoun *'ipu* 'what?'. Thus consider:

(22) a. **Main clause--locative**
   tu'kuavi tu'ka'napu-vwan wachaka
   meat/S table/O-on be/IMM
   'the meat is on the table'

b. **REL-clause:**
   tu'ka'napu 'uru pu-vwan tu'kuavi 'uru wachaka-na
   table/S the/S REL-on meat/G the/G be-NOM
   'the table on which the meat is' (hist.: 'the table of the book's being on')

c. **Main clause--allative (inanimate):**
   mamachi kani-vee-tu pu'n'ni-kya
   woman/S house/O-at-DIR look-PA
   'the woman looked at the house'

d. **REL-clause:**
   kañjí 'uru pu-vaa-tu mamachi 'uway pu'n'ni-kya-na
   house/S the/S REL-at-DIR woman/G the/G looke-PA-NOM
   'the house the woman looked at' (hist.: 'the house of the wooman's looking at')

e. **Main clause--dative (animate):**
   'áapachi mamachi-vee-chu 'apagha-qa
   boy/S woman/O-at-DIR talk-PA
   'the boy talked to the woman'

f. **Rel-clause:**
   mamachi 'u pu-vaa-chu 'áapachi 'uway 'apagha-qa-na
   woman/S the/S REL-at-DIR boy/G the/G talk-PA-NOM
   'the woman that the boy talked to' (hist.: 'the woman of the boy's talking to')

g. **Main clause--associative:**
   mamachi 'áapachi-wa wáuka-qha
   woman/S boy/O-with work-PA
   'the woman worked with the boy'

h. **REL-clause:**
   'áapachi 'u pu-wa mamachi 'uway wáuka-qha-na
   boy/S the/S REL-with woman/G the/G work-PA-NOM
   'the boy that the woman worked with' (hist.: 'the boy of the woman's working with')
The Ute strategy of suffixing the stranded post-positions to an invariant REL-subordinator is essentially the same as the older English strategy of suffixing prepositions to the invariant WH-pronoun *where*. Indeed, historically the subordinator *pu*- is probably a shortened version of the inanimate WH-pronoun *'ipu* 'what?'

2.2.3. Case-marked REL-pronouns and stranded prepositions: German

In German, case-inflected demonstrative pronouns were recruited to act as REL-pronouns ('subordinators'), first via the Y-movement ('emphatic topicalization') construction used in non-restrictive REL-clauses, which were then converted to restrictive REL-clauses. Thus:[FN 9]

(23) a. Simple clause:
    Martin hat dem Mann das Buch gegeben
    M. has the/DAT man the/ACC book given
    'Martin gave the book to the man'.

b. Y-movement clause–NOM:
    DER hat das Buch dem Mann gegeben
    THAT/NOM has the/ACC book the/DAT man given
    'That one gave the book to the man'.

c. Y-movement clause–ACC:
    DAS hat Martin dem Mann gegeben
    THAT/ACC has Martin the/DAT man given
    'That one Martin gave to the Man'.

d. Y-movement-DAT:
    DEM hat Martin das Buch gegeben
    THAT/DAT has Martin the/ACC book given
    'To that one Martin gave the book'.
(24) **Non-restrictive (parenthetical) REL-clauses:**

a. **Nominative:**
   Ich kenne die Frau, **DIE** hat dem Mann das Buch gegeben.
   I know the woman, **THAT/NOM** has the/DAT man the/ACC book given
   'I know the woman, the one who gave the book to the man'.
   (Hist.: 'I know the woman. *that one* gave the book to the man').

b. **Accusative:**
   Ich kenne das Buch, **DAS** hat Martin dem Mann gegeben.
   I know the book, **THAT/ACC** has Martin the/DAT man given
   'I know the book, the one that Martin gave to the man'.
   (Hist.: 'I know the book. *That one* Martin gave to the man').

c. **Dative:**
   Ich kenne den Mann, **DEM** hat Martin das Buch gegeben.
   I know the/ACC man, **THAT/DAT** has Martin the/ACC book given
   'I know the man, the one that Martin gave the book to'.
   (Hist.: 'I know the man. *That one* Martin gave the book to').

(25) **Restrictive REL-clauses:**

a. **Nominative:**
   Ich kenne die Frau **die** dem Mann das Buch gegeben hat.
   I know the woman **that/NOM** the/DAT man the/ACC book given has
   'I know the woman who gave the book to the man'.

b. **Accusative:**
   Ich kenne das Buch **das** Martin dem Mann gegeben hat.
   I know the book **that/ACC** Martin the/DAT man given has
   I know the book that Martin gave to the man'.

c. **Dative:**
   Ich kenne den Mann **dem** Martin das Buch gegeben hat
   I know the/ACC man **that/DAT** Martin the/ACC book given has
   'I know the man to whom Martin gave the book'.

German demonstrative pronouns, however, are marked for only a restricted range of case-roles (nominative, accusative, dative, genitive). And German has over the years developed many prepositions to mark more finely nuanced case-roles. In REL-clauses those prepositions, now stranded due to the zeroing of the co-referent argument, are **prefixed** to the demonstrative subordinator, enriching its case-marking range the same way they enriched the WH-pronoun subordinators in earlier dialects of English. Thus (Bernd Heine, i.p.c):
Der Junge hat das Fleisch mit einem Messer geschnitten.
'The boy cut the meat with a knife'

Das Messer mit dem der Junge das Fleisch geschnitten hat.
'the knife with that/DAT the boy cut the meat with'

Die Frau hat mit dem Jungen gearbeitet.
'the woman worked with the boy'

Der Junge mit dem die Frau gearbeitet hat
'the boy the woman worked with'

Der Junge legte das Buch auf den Tisch
'The boy put the book on the table (locative)'

Der Tisch auf den der Junge das Buch legte
'the table the boy put the book on'
2.2.4. Piggy-backing on an applicative promotional system: KinyaRwanda

KinyaRwanda, a Lake-Bantu language, has an applicative system via which various oblique objects can be promoted to direct-objecthood, leaving their preposition stranded—since direct-objects in Bantu, much like in English, are morphologically unmarked. Having been tossed off their original nominal perch, the stranded prepositions suffix themselves to the verb—given their post-verbal position in a VO language. Thus (Kimenyi 1976):

(28) **Dative-benefactive (obligatory promotion):**

a. *DO = patient:*

*Yohani y-ooher-eje ibaruwa ku-Maria*

John 3s-send-ASP letter DAT-Mary

b. DO = dative-benefactive:

Yohani y-ooher-er-eje Maria ibaruwa

John 3s-send-BEN-ASP Mary letter

'John sent Mary a letter'

(29) **Locative 'to':**

a. DO = patient:

umugore y-ooher-eje umubooyi ku-isoko

woman she-send-ASP cook LOC-market

'The woman sent the cook to the market'

b. DO = locative:

umugore y-ooher-eke-ho isoko umubooyi [FN 10]

woman 3s-send-ASP-LOC market cook

'The woman sent to the market the cook'

(30) **Locative 'in':**

a. DO = patient

umugore y-ooher-eje umubooyi mu-isoko

woman she-send-ASP cook LOC-market

'The woman sent the cook into the market'

b. DO = locative:

umugore y-ooher-eke-mo isoko umubooyi [FN 11]

woman 3s-send-ASP-LOC market cook

'The woman sent into the market the cook'
(31) **Instrument:**
   a. **DO = patient:**
   umugabo ya-tem-eje igiti n(i)-umupaanga
   man 3s-cut-ASP tree **INSTR-saw**
   'The man cut the tree with a saw'
   b. **DO = instrument:**
   umugabo ya-tem-ej-eeshumupaanga igiti
   man 3s-cut-ASP-INSTR saw tree
   'The man used the saw to cut the tree'

(32) **Manner:**
   a. **DO = patient:**
   Maria ya-tets-e inkoko n(a)-agahiinda
   Mary 3s-cook-ASP chicken **MANN-sorrow**
   'Mary cooked the chicken with regret'
   b. **DO = manner:**
   Maria 3s-tek-an-yeyagahiinda inkoko
   Mary she-cook-**MANN-ASP** sorrow chicken
   'Mary with regret cooked the chicken'

(33) **Associative:**
   a. **DO = patient:**
   umuhuungu ya-riimb-jye ururiimbi na-umugore
   boy 3s-sing-ASP song **ASSOC-woman**
   'The boy sang the song with the woman'
   b. **DO = associative:**
   umuhuungu ya-riimb-an-yeyumugore ururiimbi
   boy 3s-sing-**ASSOC-ASP** woman song
   'The boy sang with the woman a song'

As the reader may note, in only two locative cases, (29) and (30) above, does the actual preposition (ku-, mu-, respectively) become suffixed to the verb, augmented with the vowel -o. In another case, the associative (33), the verb suffix -an- is a reflex of the preposition na- ‘with’. This is clearer in other core-Bantu language, as in Bemba:[FN 12]

(34) a. **Transitive:**
   umuana a-a-mona umukashi
   child 3s-PA-see woman
   'the child saw the woman'
b. **Reciprocal:**

umuana na-umukashi ba-a-mona-na
child and-woman 3p-PA-see-REC
'the child and the woman saw each other'

c. **Intransitive:**

umuana a-a-bomba na-umukashi
child 3s-PA-work with-woman
'the child worked with the woman'

d. **Joint action:**

umuana na-umukashi ba-a-bomba-na
child and-woman 3p-PA-work-REC
'the child and the woman worked together'

In all the other cases, Rwanda recruits well-known Bantu verb suffixes ('verb extensions') \(\text{[FN 13]}\) to code the case-role of the lost preposition—the *applicative-benefactive* in (28), the *causative* in (31), and the *associative* in (32) and (33), above.

The REL-clause system of KinyaRwanda piggy-backed on the applicative system described above, by imposing a relational constraint on relativization: only **direct-objects** can be the focus--co-referent zeroed-out argument--of object REL-clauses. This constraint automatically strands the case-marker of zeroed-out argument on the verb, much like stranded prepositions in English.

In subject and patient-DO REL-clauses, no verb-coding is needed, and a word-order strategy similar to that of English is used:

- \(\text{S-V(-O)} = \text{subject REL-clause}\)
- \(\text{O-S-V} = \text{object REL-clause}\)

Thus consider (Kimenyi 1976):

\[(35)\]

a. **Simple main clause:**

umugabo ya-mon-e abagore
man 3s-see-ASP women
'the man saw the women'

b. **Subject REL-clause:**

umugabo u-a-kubis-e abagore
man 3s/REL-PA-hit-ASP women
'the man who hit the women'

c. **Patient-DO REL-clause:**

abagore umugabo y-a-mon-e
women man 3s-PAST-hit-ASP
'the women that the man saw'

In oblique object relativization, the object must be promoted to DO, and thus gains verb-coding of its case-role. Thus compare (28)-(33) above to, respectively:
(36) a. **Dative-benefactive:**
   umugore Yohani y-ooh-er-eje ibaruwa
   woman John 3s-send-BEN-ASP letter
   'the woman that John sent the letter to'

   b. **Allative:**
   isoko umugore y-ooh-er-eje-ho umubooyi
   market woman 3s-send-ASP-LOC cook
   'the market the woman sent the cook to'

   c. **Ingressive:**
   isoko umugore y-ooh-er-eje-mo umubooyi
   market woman she-send-ASP cook
   'the market that the woman sent the cook into'

   d. **Instrumental:**
   umupaanga umugabo ya-tem-ej-eesa igiti
   saw man 3s-cut-ASP-INSTR tree
   'the saw the man cut the tree with'

   e. **Manner:**
   agahiinda Maria ya-tek-an-ye inkoko
   sorrow Mary 3s-cook-MANN-ASP chicken
   'the regret with which Mary cooked the chicken'

   f. **Associative REL-clause:**
   umugore umuhuungu ya-riimb-an-ye ururiimbi
   woman boy 3s-sing-ASSOC-ASP song
   'the woman with whom the boy sang the song...'

   In sum, the stranding of adpositions on verbs in REL-clauses is neither a functional mystery
nor a typological white swan. Rather, it is one of the alternative typological means by which
languages respond to the very same functional imperative (1)--preserving the case-marking of the
zeroed-our argument in complex syntactic environments. And since grammaticalized case-markers
tend to be bound morphemes, they cliticize to whatever stressed word that is adjacent and available.

3. **Stranded adpositions in WH-questions**

3.1. **Verb-stranded prepositions in English**

    At first blush, WH-questions seem to not involve the zeroing-out of arguments, but strictly
speaking **pronominal replacement**. One could of course indulge in a formal quibble, splitting
replacement into two steps--'deletion' and 'reinstatement' at a new location. A complex diachronic
argument could also be raised, suggesting that WH-question are historically derived from cleft-focus
clauses, which in turn involve REL-clause structure. On occasion, a language can be caught at the
point where the chain of evidence for this complex diachronic development of is still visible. This
can be seen in Kihungan, a Western Bantu language. Thus consider (Takizala 1972):
(37) a. Simple main clause:
   kipes ka-swiim-in kit
   K. 3s-buy-PA chair
   'Kipes bought a chair'

b. Object REL-clause:
   kit ki a-swiim-im Kipes
   chair that 3s/REL-buy-PA K.
   'the chair that Kipes bought'

c. Paratactic cleft-focus:
   kwe kit, kiim ki a-swiim-in Kipes
   be chair thing DEM 3s/REL-buy-PA K.
   It's a chair, the thing that Kipes bought'

d. Partially-simplified paratactic cleft-focus:
   kwe kit, ki a-swiim-in Kipes
   be chair DEM 3s/REL-buy-PA K.
   'It's a chair, what Kipes bought'

e. Syntactic cleft-focus:
   kwe kit ki a-swiim-in Kipes
   be chair that 3s/REL-buy-PA K.
   'It's a chair that Kipes bought'

f. Paratactic WH-question:
   kwe khí, kiim ki a-swiim-in Kipes?
   be what thing DEM 3s/REL-buy-PA K.
   'It's what, the thing that Kipes bought?'

g. Simplified paratactic WH-question:
   kwe khí, ki a-swiim-in Kipes?
   be what DEM 3s/REL-buy-PA K.
   'It's what? what Kipes bought?'

h. Semi-syntactic WH-question:
   kwe khí ki a-swiim-in Kipes?
   be what that 3s/REL-buy-PA K.
   'It's what? that Kipes bought?'

i. Syntactic WH-question:
   khí Kipes ka-swiim-in?
   what Kipes 3s-buy-PA
   'What did Kipes buy?'

The canonical SVO order of Kihungan is seen only in the main clause (37a) and the fully simplified WH-question (37i), as does the use of the main-clause subject-agreement pronoun ka-. All other construction in (37) display the OVS ('subject post-posing') word-order characteristic of object REL-clauses, as well as the REL-clause subject-agreement pronoun a-. Both of these features bear witness to the complex diachronic origin of the syntactically simplified WH-question (37i).
Diachronic source aside, WH-questions share the functional problem (1) of zeroed-out arguments of REL-clause: By replacing the original nominal with a WH-pronoun and then fronting it, a case-recoverability problem arises. Case-inflected WH-pronouns take care of part of the problem, but English is a good example of how the inventory of case-marking prepositions soon outstrips the inventory of case-inflected WH-pronouns. So how should those more-specific preposition be preserved? The solution in current idiomatic English is to suffix them to the verb. Thus compare:

<table>
<thead>
<tr>
<th>case-role</th>
<th>main clause</th>
<th>WH-question</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Subject:</td>
<td>She did it</td>
<td>Who did it?</td>
</tr>
<tr>
<td>b. DO/AN.:</td>
<td>She saw him</td>
<td>Who(m) did she see?</td>
</tr>
<tr>
<td>c. DO/INAN.:</td>
<td>She saw it</td>
<td>What did she see?</td>
</tr>
<tr>
<td>d. Manner:</td>
<td>She did it this way</td>
<td>How did she do it?</td>
</tr>
<tr>
<td>e. Time:</td>
<td>She did it yesterday</td>
<td>When did she do it?</td>
</tr>
<tr>
<td>f. Vague-LOC:</td>
<td>She was at home</td>
<td>Where was she?</td>
</tr>
<tr>
<td>g. Specific-LOC:</td>
<td>She went to Houston</td>
<td>Where did she go-to?</td>
</tr>
<tr>
<td>h.</td>
<td>She comes from Houston</td>
<td>Where does she come-from?</td>
</tr>
<tr>
<td>i.</td>
<td>She went into the house</td>
<td>Which house did she go-into?</td>
</tr>
<tr>
<td>j.</td>
<td>She majored in math</td>
<td>What did she major-in?</td>
</tr>
<tr>
<td>k.</td>
<td>She fell out of her bed</td>
<td>Which bed did she fall-out-of</td>
</tr>
<tr>
<td>l. Reason:</td>
<td>She did-it for a lark</td>
<td>What/why did she do-it-for?[FN 14]</td>
</tr>
<tr>
<td>m. Purpose:</td>
<td>She dances for tips</td>
<td>What does she dance-for?</td>
</tr>
<tr>
<td>n. Benefactive:</td>
<td>She preened for Joe</td>
<td>Who did she preen-for?</td>
</tr>
<tr>
<td>o. Instrumental:</td>
<td>She cut it with a shovel</td>
<td>What did she cut-it-with?[FN 15]</td>
</tr>
<tr>
<td>p. Associative:</td>
<td>She slept with Joe</td>
<td>Who did she sleep-with?</td>
</tr>
</tbody>
</table>

In all instances of verb-stranded preposition (38g-p) above, the WH-pronoun lacks case-role specificity, and the stranded preposition is then pressed into service. And as in REL-clauses, earlier above, it is the VO word-order of English that dictate the post-verbal position of the stranded preposition. To illustrate this, consider the rather minuscule sample of oblique WH-questions in the entire text of Shakespeare's Coriolanus, given in (39) below. The first of those, (39a), is reminiscent of the transitional blend pattern found in REL-clauses, above, presaging the later verb-stranding of prepositions. The second (39b) recapitulates another REL-clause pattern.[FN 16]

(39) Oblique WH-questions in Coriolanus
a. Prefixed prepositions:
   ...In what enormity is Marcius poor in, what you two have not in abundance.?...
   ...From whence? From Rome...
b. Suffixed prepositions:
   ...Wherefore? Wherefore?...
3.2. Stranding adpositions on WH-pronoun

3.2.1. Ute

Ute has a large array of WH-pronoun, marking animacy, number, referentiality and case-role contrasts. If the WH-pronoun is fronted, it is quite natural to express the rest of the clause as a nominalized cleft structure, i.e. a REL-clause, (see (16) above). This is reminiscent of the Kihgungan situation in(37) above. Thus consider:[FN 17]

(40) Declarative WH-question

<table>
<thead>
<tr>
<th>a. Subject (an.):</th>
<th>'áapachi tukuavi tuka-qha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>boy/S meat/O eat-PA</td>
</tr>
<tr>
<td></td>
<td>'the boy ate the meat'</td>
</tr>
<tr>
<td>b. Subject (inan.):</td>
<td>'aghochi qopoqhi-kya</td>
</tr>
<tr>
<td></td>
<td>dish break-PA</td>
</tr>
<tr>
<td></td>
<td>'the dish broke'</td>
</tr>
<tr>
<td>c. Object (inan):</td>
<td>________________________</td>
</tr>
<tr>
<td>d. Object (an.):</td>
<td>'áapachi mamachi punikya-qha</td>
</tr>
<tr>
<td></td>
<td>boy/S woman/O see-PA</td>
</tr>
<tr>
<td></td>
<td>'The boy saw the woman'</td>
</tr>
</tbody>
</table>

In oblique-object questions, the WH pronoun must carry the post-position originally belonging to the zeroed-out noun. When the WH-pronoun is placed after the subject, in a pre-verbal position, it is more natural to express the rest of the clause as a finite main clause. Thus:[FN 18]

(41) Declarative WH-question

<table>
<thead>
<tr>
<th>a. Locative (vague):</th>
<th>mamachi kani-vee 'uni'ni</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>woman/S house-at be/IMM</td>
</tr>
<tr>
<td></td>
<td>'The woman is at the house'</td>
</tr>
<tr>
<td></td>
<td>mamachi 'aghaa -va 'uni'ni?</td>
</tr>
<tr>
<td></td>
<td>woman/S WH/INAN-at be/IMM</td>
</tr>
<tr>
<td></td>
<td>'Where is the woman?'</td>
</tr>
</tbody>
</table>
b. **Locative (on):**

\[
\begin{align*}
&\text{tu-kuavi} \quad \text{tu-ka'napu-v\text{wan} wach\text{\=a}ka} \\
&\text{meat/S table/O-\text{on} be/IMM} \\
&\text{tu-kuavi 'aghaa-v\text{an} wach\text{\=a}ka} \\
&\text{meat/S WH/\text{INAN-on} be/IMM} \\
\end{align*}
\]

'the meat is on the table'

'Where-on is the meat?'

c. **Allative:**

\[
\begin{align*}
&mamachi kani-\text{vee-tukh paghay-\text{\=way}} \\
&w\text{oman/S house/S-at-to walk-IMM} \\
&mamachi 'aghaa-v\text{aa-tukh paghay-\text{\=way}}? \\
&w\text{oman/S WH/\text{INAN-at-to walk-IMM} }
\end{align*}
\]

'The woman is walking to the house'

'Where-to is the woman walking?'

d. **Ablative:**

\[
\begin{align*}
&\text{kani-\text{vee-tu-mana-kway paghy-\text{\=way}} } \\
&\text{house/O-at-DIR-leave-go walkk-IMM} \\
&'\text{(s/e) is walking from the house}' \\
&'agha-v\text{aa-tu-mana-kway paghay-\text{\=way}}? \\
&\text{WH/INAN-at-DIR-leave-go walk-IMM} \\
&'\text{Where-from is (s/he) walking?}'
\end{align*}
\]

e. **Directional/dative:**

\[
\begin{align*}
&mamachi-\text{vee-\text{ch\=u 'apagha-y} } \\
&\text{woman/O-at-DIR talk-IMM} \\
&mamachi 'aay-\text{vee-ch\=u 'apagha-y}? \\
&\text{WH/AN-O-at-DIR talk-IMM} \\
&'\text{Who is (s/he) talking to?}'
\end{align*}
\]

f. **Associative:**

\[
\begin{align*}
&'\text{\=aa-y-wa w\text{\=\=u-ka-qha} } \\
&\text{woman/S boy/O-with work-PA} \\
&'\text{\=aa-y-wa w\text{\=\=u-ka-qha}?} \\
&\text{WH/AN-O-with work-PA} \\
&'\text{Who did (s/he) work with?}'
\end{align*}
\]

g. **Instrumental:**

\[
\begin{align*}
&\text{wiichi-m tukuavi chaqhvai'na-qa} \\
&\text{knife-with meat/O cut-PA} \\
&'\text{ipu-m tukuavi chaqhvai'na-qa?} \\
&\text{WH/INAN/O-with meat/O cut-PA} \\
&'\text{What did (s/he) cut the meat with?}'
\end{align*}
\]

3.2.2. **Hebrew, Spanish**

A similar strategy of affixing the adpositions--in this case prepositions--to the WH-pronoun is found in Hebrew:

(42)  

<table>
<thead>
<tr>
<th><strong>Declarative</strong></th>
<th><strong>WH-question</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. <strong>Accusative</strong></td>
<td>b. <strong>Dative</strong></td>
</tr>
<tr>
<td>ra'-iti 'ot-a sham</td>
<td>he' amr-a l-o 'et-ze</td>
</tr>
<tr>
<td>saw/1s ACC-3sf there</td>
<td>she told-3sf to-3sm ACC-it</td>
</tr>
<tr>
<td>'he saw her'</td>
<td>'she told it to him'</td>
</tr>
<tr>
<td>'et-mi ra'-ita sham?</td>
<td>le-mi he' amra 'et-ze?</td>
</tr>
<tr>
<td>ACC-who saw-2sm there</td>
<td>to-who she told-3sf ACC-it</td>
</tr>
<tr>
<td>'what did he see'</td>
<td>'who did she tell it to?'</td>
</tr>
</tbody>
</table>
c. **Locative**
   hu' yashav ūal-ze
   he sat/3sf-it on-it
   'he was sitting on it'
   ūal-ma hu' yashav?
   on-what he sat/3sm
   'what was he sitting on?'

d. **Associative**
   hi' ūoved-et 'it-am
   she work-sf with-3pm
   'she works with them'
   ūim-mi hi' ūoved-et?
   with-who she work-sf
   'who does she work with?'

e. **Instrumental**
   ūatax-ti 'et-ze b-a-sakin
   cut-1s ACC-it with-the-knife
   'I cut it with a knife'
   ūbe-ma ūatax-ta 'et-ze?
   with-what cut-2sm ACC-it
   'what did you cut it with?'

The same pattern is seen in Spanish, again with prepositions:

(43) **Declarative**

<table>
<thead>
<tr>
<th>Human-accusative</th>
<th>WH-question</th>
</tr>
</thead>
<tbody>
<tr>
<td>vi a mi mamá</td>
<td>a quien viste?</td>
</tr>
<tr>
<td>saw/1s ACC/AN</td>
<td>ACC/AN who saw/2s</td>
</tr>
<tr>
<td>my mother</td>
<td>'who did you see?'</td>
</tr>
<tr>
<td>'I saw my mother'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dative</th>
</tr>
</thead>
<tbody>
<tr>
<td>se lo dijo a Juan</td>
</tr>
<tr>
<td>DAT it told/3s DAT J.</td>
</tr>
<tr>
<td>'s/he told it to Juan'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Locative</th>
</tr>
</thead>
<tbody>
<tr>
<td>vinieron de Madrid</td>
</tr>
<tr>
<td>came/3p from Madrid</td>
</tr>
<tr>
<td>'they came from the house'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Associative</th>
</tr>
</thead>
<tbody>
<tr>
<td>trabajaba con sus hijos</td>
</tr>
<tr>
<td>work/IMPF/3s with her/his sons</td>
</tr>
<tr>
<td>'s/he worked with her/his sons'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instrumental</th>
</tr>
</thead>
<tbody>
<tr>
<td>lo cortó con el machete</td>
</tr>
<tr>
<td>it cut/3s with the machete</td>
</tr>
<tr>
<td>'s/he cut it with the machete'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WH-question</th>
</tr>
</thead>
<tbody>
<tr>
<td>a quien se lo dijo?</td>
</tr>
<tr>
<td>DAT who DAT it told/3s</td>
</tr>
<tr>
<td>'who did s/he tell it to?'</td>
</tr>
</tbody>
</table>

| de donde vinieron?|
| from where came/3p|
| 'where did they come from?'|

| con quién trabajaba?|
| with who work/IMPFV/3s|
| 'who did s/he work with?'|

| con qué lo cortó?|
| with what it cut/3s|
| 'what did s/he cut it with?'|

Why Ute, Hebrew and Spanish have persisted with affixing the stranded adpositions to the WH-pronoun while English changed--between Shakespeare's time and the present--to verb-stranded prepositions, remains for the moment an open question.
3.3.3. German

In standard German, the prepositions are prefixed to the WH-pronoun, as in Hebrew and Spanish. Thus (Werner Heiber, i.p.c.):

(44) a. **Declarative clause:**

   Martin hat **dem** Mann **das** Buch gegeben  
   M. has **the/DAT** man **the/ACC** book given  
   'Martin gave the book to the man'.

b. **Nominative WH-Q:**

   **Wer** hat dem Mann das Buch gegeben?  
   who/NOM has the/DAT man the book given  
   'Who gave the book to the man?'

c. **Accusative WH-Q (inanimate):**

   **Wass** hat Martin dem Mann das Buch gegeben?  
   what has M. the/DAT man the book given  
   'What did Martin give the man?'

d. **Accusative WH-Q (human):**

   **Wen** hat Martin gesehen?  
   who/ACC has M. seen  
   'Who did Martin see?'

e. **Dative WH-Q**

   **(zu)-wem** hat Martin das Buch gegeben?  
   to-who/DAT has M. the book given  
   'Who did Martin give the book to?'

f. **Instrumental, declarative:**

   Der Junge hat das Fleisch **mit** einem Messer geschnitten.  
   the boy has the meat **with** a knife cut  
   'The boy cut the meat with a knife'

g. **Instrumental WH-Q:**

   **Mit-wass** hat der Junge das Fleisch geschnitten?  
   with-what has the boy the meat cut  
   'What has the boy cut the meat with?'

h. **Associative, declarative:**

   Die Frau hat **mit** dem Jungen gearbeitet.  
   the woman has **with** the/DAT boy worked  
   'The woman worked with the boy'

i. **Associative WH-Q:**

   **mit-wem** hat die Frau gearbeitet?  
   with-who/DAT has the woman worked  
   'Who did the woman work with?'
j. **Benefactive, declarative:**
   Der Junge sang für die Frau
   the boy sang for the woman
   'The boy sang for the woman'

k. **Benefactive, WH-Q:**
   für-wem hat der Jungen gesungen?
   for-who/DAT has the boy sung
   'Who did the boy sing for'

l. **Locative ('on'), declarative:**
   Der Junge legte das Buch auf den Tisch
   the boy put the book on the table
   'The boy put the book on the table (locative)'

m. **Locative (non-specific), WH-Q:**
   Wo hat der Junge das Buch gelegt?
   where has the boy the book put
   'Where did the boy put the book?'

n. **Locative (specific), WH-Q:**
   Auf-wass hat der Junge das Buch lelegt?
   on-what has the boy the book put
   'What did the boy put the book on?'

o. **Locative ('in'), declarative:**
   Der Junge sitzt im Zimmer
   the boy sits in room
   'The boy is sitting in the room'

p. **Locative (specific), WH-Q:**
   im-welchem Zimmer zitzt der Junge?
   in-which/DAT room sits the boy
   'In which room is the boy sitting?'

Finally, in spoken So. German dialects (Bavaria, Austria), one finds at least some examples where the preposition is **suffixed** to the variant subordinator wo 'where', as in REL-clause. Thus (Bernd Heine, i.p.c.):

(45) a. **Instrumental, declarative:**
   a. Der Junge hat das Fleisch mit der Messer geschnitten
      The boy has the meat with the knife cut
      'The boy cut the meat with the knife'

   b. **Instrumental, REL-clause:**
      Das Messer wo-mit der Junge das Fleisch geschnitten hat.
      the knife WH-with the boy the meat cut has
      'the knife the boy cut the meat with'
c. **Instrumental, WH-question:**

   *Wo-mit* hat der Junge das Fleisch geschnitten?

   where-with the boy the meat cut
   'What did the boy cut the meat with?'

This pattern is identical to the older English pattern in both REL-clauses and WH-questions (see above).

4. **Stranded adpositions in passive clauses**

4.1. **Preamble: Passive voice**

   The passive is one of the three main *de-transitive voice* construction, all of which can be defined functionally in terms of the relative topicality of the main clausal arguments:[FN 19]

   (46) **Topicality and voice:**
   a. **Active:** AGT > PAT  (default norm)
   b. **Inverse:** PAT > AGT  (mild demotion of agent)
   c. **Passive:** PAT >> AGT  (radical demotion of agent)
   d. **Antipassive:** AGT >> PAT  (radical demotion of patient)

   A more fine-grained definition of the passive-voice clause is (Shibatani 1985):[FN 20]

   (47) **Functional definition of passive voice**
   a. In the passive-voice the subject/agent of the active is radically de-topicalized, most commonly by complete deletion.
   b. One of the remaining arguments then assumes the role of topic of the passive clause, whether by default or by explicit syntactic promotion to subjeckthood.

   The most general syntactic-typological feature of passives divides them into **promotional** vs. **non-promotional** passives. That is:[FN 21]

   (48) **Major typological division of passives**
   a. **Non-promotional passive:**
      The topic-of-passive argument retains the same syntactic case-role as in the active.
   b. **Promotional passive:**
      The topic-of-passive argument assumes the subject/nominative case-role.

4.2. **Non-promotional passive**

   It should be immediately obvious that non-promotional passives bypass our functional imperative (1), the original functional impetus for stranded adpositions--since all surviving
arguments in such agent-deletion passives retain their original case marking. As an illustration of this, consider the Ute impersonal passive.\[FN 22\]

(49) \begin{center}
\begin{tabular}{ll}
\textbf{active} & \textbf{passive} \\
\hline
\textbf{a. Transitive:} & \textbf{takuavi taka-ta-qha} \\
'áapachi takuavi taka-qha & meat/O eat-PASS-PA \\
boy/S meat/O eat-PA & 'the boy ate the meat' \\
'the boy ate the meat' & \\
\textbf{b. Intransitive:} & \textbf{wíi-ta-qha} \\
mamachi wíi-kya & dance-PASS-PA \\
woman/S dance-PA & 'the woman danced' \\
'the woman danced' & \\
\textbf{c. Intransitive:} & \textbf{t'áapachi-vee-chu pani'nji-qha} \\
mamachi t'áapachi-vee-chu pu-ni'ni ta & boy/O-at-DIR look-PA \\
woman/S boy/O-at-DIR look-PA & 'someone looked at the boy' \\
'the woman looked at the boy' & \\
\textbf{d. Intransitive:} & \textbf{wiichi-m ukh chaqhavi'na-ta-qha} \\
'táapachi-vee-chu pani'nji-qha & knife/O-with-it cut-PASS-PA \\
boy/S-it knife/O-with cut-PA & 'someone cut it with a knife' \\
'the boy cut it with a knife' & \\
\textbf{e. Intransitive:} & \textbf{na'achichi-wa wíi-ta-qha} \\
mamachi na'achichi-wa wíi-qya & girl/O-with dance-PASS-PA \\
woman/S girl/O-with dance-PA & 'someone danced with the girl' \\
'the woman danced with the girl' & \\
\end{tabular}
\end{center}

When the corresponding active clause is bi-transitive, either the patient/direct-object or oblique/post-positional argument may be the topic-of-passive, pending on word-order. Thus compare:

(50) \begin{center}
\begin{tabular}{ll}
\textbf{a. Active:} & \textbf{wiichi tuka'napu-vwan wachu-ka} \\
mamachi wiichi tuka'napu-vwan wachu-ka & woman/S knife/O table/O-on put-PA \\
woman/S knife/O table/O-on put-PA & 'the woman put the knife on the table' \\
'the woman put the knife on the table' & \\
\textbf{b. Passive--DO topic:} & \textbf{wiichi tuka'napu-vwan wachu-ta-qha} \\
wiichi tuka'napu-vwan wachu-ta-qha & knife/O table/O-on put-PASS-PA \\
knife/O table/O-on put-PASS-PA & 'the knife was put on the table' \\
'the knife was put on the table' & \\
\textbf{c. Passive-IO topic:} & \textbf{na'achichi-wa wíi-ta-qha} \\
na'achichi-wa wíi-ta-qha & girl/O-with dance-PASS-PA \\
girl/O-with dance-PASS-PA & 'someone danced with the girl' \\
'on the table someone put a knife' & \\
\end{tabular}
\end{center}
4.3. **Promotional passives**

Scattered adposition are found only in promotional passives, where our functional imperative (1), now re-defined for the more specific to passive context, may be given as:[FN 23]

(51) **The conundrum of semantic case-marking the topic of promotional passives:**
   a. In the promotional-passive clause, the topical argument has been syntactically promoted to the **pragmatic case-role** of subject/nominative.
   b. Because of such promotion, the topic-of-passive has lost its **semantic-case-role** marking.

There are two well-known typological solutions to conundrum (51).

(52) **Typological solutions to conundrum (51):**
   a. Impose a strong restriction whereby **only direct objects** can become the topic of the passive clause. That is, **only transitive clauses** can be passivized.
   b. Couple passivization to an extant **applicative** ('promotion-to-DO') rule that produces **verb-coding** of the semantic role of the promoted DO. Then impose restriction (52a).

Most languages with a promotional passive, English included, adopt solution (52a), with only minor exceptions. Only languages with a verb-coding applicative, adopt solution (52b).

It is in the context of conundrum (51) and its two typological solutions (52a,b) that the discussion verb-stranded adpositions in passive clauses--in English and elsewhere--begins to makes sense. It is hardly an accident that Newmeyer's original 'Mary was talked to' was a rather questionable example of stranded preposition in the English promotional passive. Indeed, the equivalents of all the Ute examples in (49) and (50) above would be rather dubious in English, with only sporadic exceptions. Consider first possible passives of English intransitive clauses:

(53)  

<table>
<thead>
<tr>
<th>active</th>
<th>passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. She went into the house</td>
<td>?The house was gone-into (by her)</td>
</tr>
<tr>
<td>b. She went to the house</td>
<td>?The house was gone-to (by her)</td>
</tr>
<tr>
<td>c. She sat on the porch</td>
<td>?The porch was sat-on (by her)</td>
</tr>
<tr>
<td>d. She lay under the table</td>
<td>?The table was laid-under (by her)</td>
</tr>
<tr>
<td>e. She talked to the plumber</td>
<td>?The plumber was talked-to (by her)</td>
</tr>
<tr>
<td>f. She quarreled with her brother</td>
<td>?Her brother was quarreled-with (by her)</td>
</tr>
<tr>
<td>g. She talked to her brother</td>
<td>?Her brother was talked-to (by her)</td>
</tr>
<tr>
<td>h. She wrote with a fine pen</td>
<td>?The fine pen was written/with (by her)</td>
</tr>
</tbody>
</table>
Most bi-transitive clauses in English allow only the direct object to become the subject of the passive, thus abiding by solution (52a):

(54)  \begin{tabular}{l|l}
\textbf{active} & \textbf{passive} \\
\hline
a. He cut the bread with the knife & The bread was cut \textbf{with} a knife  \\
 & \*The knife was cut-\textbf{with} the bread  \\
 & \*The knife was cut the bread \textbf{with} \\
b. He put the book on the table & The book was put \textbf{on} the table  \\
 & \*The table was put-\textbf{on} a book  \\
 & \*The table was put a book \textbf{on} \\
c. He threw the ball to the floor & The ball was thrown \textbf{to} the floor  \\
 & \*The floor was thrown-\textbf{to} a ball  \\
 & \*The floor was thrown a ball \textbf{to} \\
\end{tabular}

Only in the case of dative-benefactive, which can be promoted to DO in the active and thus do not violate restriction (52a) on promotion passives, does one find good examples of non-patient subjects of the English promotional passive, as in:

(55)  \begin{tabular}{l|l}
\textbf{active} & \textbf{passive} \\
\hline
a. She gave the book to Joe & The book was given to Joe  \\
b. She gave Joe a book & Joe was given a book  \\
c. She sent the letter to him & The letter was sent to him  \\
d. She sent him a letter & He was sent a letter  \\
e. She told the story to her mother & The story was told to her mother  \\
f. She told her mother the story & Her mother was told the story  \\
g. She showed the book to her mother & The book was shown to her mother  \\
h. The shown her mother the book & Her mother was shown the book \\
\end{tabular}

Relatively few, marginal, exceptions to the DO-only restriction (52a) can be found in English, and they may turn out to prove the general rule: Passivization is allowed just in those cases where verb-stranded prepositions code the semantic role of the subject-of-passive, thus solving conundrum (51) with (52b). That is:[\textit{FN 24}]

(56)  \begin{tabular}{l|l}
\textbf{active} & \textbf{passive} \\
\hline
b. Someone tampered with the lock & The lock was tampered-\textbf{with} \\
No one slept in my bed & My bed was not slept-\textbf{in}  \\
Someone didn't look after her & She was not properly looked-\textbf{after}  \\
They looked into the accusations & The accusations were looked-\textbf{into} \\
\end{tabular}
Languages with promotional passives that allow an extensive range of non-patient objects to become the subject of the passive are, invariably, those that have an extensive promotion-to-DO mechanisms--with verb-coding of the semantic role of the non-patient DO on the verb. As in the case of relativization, promotion-to-DO is then coupled to passivization. As an example, consider again, KinyaRwanda (Kimenyi 1976):

(57) a. **Active, DO = dative-benefactive:**
   Yohani y-ooher-er-eje Maria ibaruwa
   John 3s-send-BEN-ASP Mary letter
   'John sent Mary a letter'

b. **Passive:**
   Maria y-ooher-er-ej-we ibaruwa
   M. 3s-send-BEN-ASP-PASS letter
   .Mary was sent a letter'

c. **Active, DO = allative:**
   umugore y-ooher-eke-ho isoko umubooyi
   woman 3s-send-ASP-LOC market cook
   'The woman sent to the market the cook'

d. **Active, DO = ingressive:**
   umugore y-ooher-eke-mo isoko umubooyi
   woman 3s-send-ASP-LOC market cook
   'The woman sent the cook into the market the cook'

e. **Passive:**
   isoko ry-ooh-er-ej-we ho umubuyi
   market 3s-send-ASP-PASS-LOC
   'The marked was sent-to the cook'

f. **Active, DO = instrument:**
   umugabo ya-tem-ej-eesha umupaanga igiti
   man 3s-cut-ASP-INSTR saw tree
   'The man used the saw to cut the tree'

g. **Passive:**
   umupanga wa-tem-ej-esh-wa igiti
   saw 3s-cut-ASP-CAUS-PASS tree
   'The saw was used to cut the tree'

h. **Active, DO = manner:**
   Maria ya-tek-an-ye agahiinda inkoko
   Mary she-cook-MANN-ASP sorrow chicken
   'Mary with regret cooked the chicken'
h. **Passive:**

\[
\text{agahinda ga-tek-an-ye-we inkoko}
\]

\[
\text{sorrow 3s-cook-MANN-ASP-PASS chicken}
\]

'Regret was used to cook the chicken'

i. **Active, DO = associative:**

\[
\text{umuhuungu ya-riimb-an-ye umugore ururiimbi}
\]

\[
\text{boy 3s-sing-ASSOC-ASP woman song}
\]

'The boy sang with the woman a song'

j. **Passive:**

\[
\text{umugore ya-riimb-an-ye-we ururiimbi}
\]

\[
\text{woman 3s-sing-ASSOC-ASP-PASS song}
\]

'the woman was sung-with a song'

A more extensive system of coupling the verb-coding of case-roles with passivization can be seen in Philippine languages. A somewhat more restricted system, reminiscent of KinyaRwanda, is found in Indonesian.\[FN 25\]

5. **Y-movement**

My previous impression had been that **Y-movement** ('contrastive topicalization') in English--unlike **L-dislocation**--involves the fronting (and stressing) of the entire NP or PP, including the preposition, as in, e.g.:

(58) a. To *him* I gave a sandwich, to *her* (I gave) a burrito.

b. With *Joe* I had coffee, with *Bill* (I had) a beer.

That is, until on encounters this lone example in Shakespeare's *Coriolanus* of Y-movement with a verb-stranded preposition:

(59) ...Coriolanus he would not **answer to**...

(= He would not answer to Coriolanus)

One then begins to wonder whether native speakers would accept the examples of stranded prepositions in Y-movement, as in:

(60) a. **Fronted PP:**

To *him* I gave coffee, to *her* (I gave) cigarettes.

b. **Stranded P:**

?*Him* I gave coffee to, *her* I gave cigarettes to
c. **Fronted PP:**
   To this store I drive every day, to that one I hardly ever go.

d. **Stranded P:**
   This store I drive-to every day, that one I hardly ever go-to.

e. **Fronted PP:**
   With Joe I work, with Jill I play.

f. **Stranded P:**
   Joe I work-with, Jill I play-with.

g. **Fronted PP:**
   At the house I work every day, at the barn (I work) only once week.

h. **Stranded P:**
   The house I work at every day, the barn I work at only once a week.

Hebrew seems to prefer Y-movement with the fronted PP. Y-movement with a stranded preposition, prefixed to an anaphoric pronouns as in REL-clauses, seems to suggest L-dislocation, with a pause and a different intonation pattern. Thus compare:

(61) a. **Fronted PP:**
   *le-Yo'av* natati kafe, *le-Yemima* (natati) sigaryot
   to-Y. gave/1s coffee to-J. (gave/1s) cigarettes
   'To Yoav I gave coffee, to Jemima (I gave) cigarettes'

   b. **Stranded P:**
   Yo'av natati-l-o kafe, Yemima natati la sigaryot
   Y. gave-1s to-him coffee J. gave/1s to-her cigarettes
   'Yoav I gave him coffee, Jemima I gave her cigarettes'

   c. **L-dislocation:**
   Yo'av, natati l-o kafe. Yemima, natatil l-a sigaryot
   Y. gave/l to-him coffee J. gave/1s to-her cigarettes
   'Yoav, I gave him coffee. Jemima, I gave her cigarettes'

In Biblical Hebrew, examples such as (61b) are unattested. Rather the whole prepositional phrase is fronted, like (61a), as in:

(62) a. ...*u-li* Shem yulad...
   and-to-Shem was.born
   '...and to Shem were born (children)...'  (Gen. 10.21)

b. ...*u-li* Eber yulad shne banim...
   and-to-Eber was.born two sons
   '...and to Ebver were born two sons...'  (Gen. 10.25)
c. ...u-mi-'eleh nifri-du ha-goyim...
    and-from-those separated the-peoples
'...and from those the (various) peoples separated...' (Gen. 10.32)

To the extent that strand-preposition examples like (60b,d,f,h) in English are acceptable, it
seems that adpositions can be stranded not only in zero-anaphoric contexts like REL-clauses or
replacement contexts like WH-questions, but also in contexts of 'movement', 'extraction' or
'promotion' like applicatives, passives and Y-movement.

6. Adposition prefixed to verbs

6.1. Romance and Germanic: The zero of antipassive

In this last section I will discuss a phenomenon that is well known in both Romance and
Germanic languages--the incorporation of preposition as verb prefixes, a historical process that
has resulted in the rise many new lexical verbs. This old diachronic process is strongly associated
with the old OV word-order of Indo-European. Its more recent mirror-image recapitulation,
during the current period of VO syntax in English, involves the incorporation of preposition as verb
suffixes. As an illustration, consider the lexicalized end-products of the old process:

(63) Prepositions prefixed to Latin-derived English verbs:
suggested old concrete meanings

<table>
<thead>
<tr>
<th>'close'</th>
<th>'hold'</th>
<th>'build'</th>
<th>'call'</th>
<th>'press'</th>
<th>'turn' (?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-clude</td>
<td>main-tain</td>
<td>con-struct</td>
<td>ex-claim</td>
<td>ex-press</td>
<td>in-verse/vert</td>
</tr>
<tr>
<td>ex-clude</td>
<td>ob-tain</td>
<td>de-struct</td>
<td>de-claim</td>
<td>im-press</td>
<td>ad-verse/vert</td>
</tr>
<tr>
<td>pre-clude</td>
<td>de-tain</td>
<td>in-struct</td>
<td>re-claim</td>
<td>de-press</td>
<td>re-verse/vert</td>
</tr>
<tr>
<td>con-clude</td>
<td>re-tain</td>
<td>ob-struct</td>
<td>pro-claim</td>
<td>re-press</td>
<td>con-verse/vert</td>
</tr>
<tr>
<td>se-clude</td>
<td>per-tain</td>
<td>re-struct(ure)</td>
<td>ac-claim</td>
<td>com-press</td>
<td>tra-verse</td>
</tr>
<tr>
<td>oc-clude</td>
<td>con-tain</td>
<td>dis-claim</td>
<td>pro-claim</td>
<td>op-press</td>
<td>sub-verse/vert</td>
</tr>
<tr>
<td>at-tain</td>
<td>enter-tain</td>
<td>de-claim</td>
<td>dis-claim</td>
<td>sup-press</td>
<td>extro-vert</td>
</tr>
<tr>
<td>abs-tain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>per-verse/vert</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>'carry'</th>
<th>'bend'</th>
<th>'pull'</th>
<th>'breathe'</th>
<th>'form'</th>
<th>'throw'</th>
<th>'stand' (?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>com-port</td>
<td>ex-tend</td>
<td>ex-tract</td>
<td>in-spire</td>
<td>re-form</td>
<td>e(x)-ject</td>
<td>ex-cede</td>
</tr>
<tr>
<td>ex-port</td>
<td>in-tend</td>
<td>de-tract</td>
<td>ex-spire</td>
<td>in-form</td>
<td>in-ject</td>
<td>re-cede</td>
</tr>
<tr>
<td>im-port</td>
<td>con-tend</td>
<td>re-tract</td>
<td>re-spire</td>
<td>de-form</td>
<td>ob-ject</td>
<td>con-cede</td>
</tr>
<tr>
<td>de-port</td>
<td>dis-tend</td>
<td>con-tract</td>
<td>con-spire</td>
<td>re-ject</td>
<td>re-ject</td>
<td>suc-cede</td>
</tr>
<tr>
<td>re-port</td>
<td>at-tend</td>
<td>at-tract</td>
<td>a(d)-spire</td>
<td>de-ject(ed)</td>
<td>de-ject(ory)</td>
<td>pre-cede</td>
</tr>
<tr>
<td>sup-port</td>
<td></td>
<td>sub-tract</td>
<td>per-spire</td>
<td></td>
<td>pro-ject</td>
<td>inter-cede</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tra-ject(ory)</td>
<td>de-cedent</td>
</tr>
</tbody>
</table>
(64) **Prepositions prefixed to German- derived English verbs**

a. **For(e):** forget, forgive, forego, forlorn, forbid, forsake, foretell, foreclose, forecast, foredoom, forewarn, foreshore, forerunner, foresee, forestall,

b. **Over:** overcome, overload, overbearing, oversee, override, overlay, overpass, overtake, over-state, overpay, over-run, overwhelm, over-indulge, over-compensate, over-emphasize

c. **In:** inbreed, inhale, input, income, inlay, instill, install, incur

d. **Out:** outgoing, outreach, outlier, outlive, output, outcast, outrank, outrun, outpour, outrage, outflow, outfit, outflank, out-grow, outlet, outlast, outlook, outplay, outreach, outreach, outset, outstanding, outwit,

e. **Under:** understand, undergo, underlie, undergird, undermine, underbid, undercut, understate, underwrite, undertake

Examples of the more recent mirror-image pattern can be seen in:

(65) **Post-verbal incorporation of English prepositions:**

a. The window broke
b. The meeting broke **up** (early)
c. Her car broke **down** (on the freeway)
d. Her skin broke **out** (in a rash)
e. He turned (and left)
f. (So finally) he turns **up** (in Las Vegas)
g. They turned **in** (for the night)
h. It turned **out** (that she was right)
i. She worked (hard)
j. It worked **out** (just fine)
k. They worked **out** (in the gym)

l. He worked **up** a sweat
m. He worked **up** their engagement

p. They broke him **in** (gradually)
q. Break it **down** for us into manageable chunks, will you.

r. He turned the key
s. He turned the key **over** (to her)
t. They turned her **down** (for the job)
u. She turned **in** her report

v. They shut the door
w. She shut him **up**
x. They shut the plant **down**
y. We shut them **out** completely

z. He shut the water **off**.
Since prepositions prototypically mark the case-role of nominals, what are they doing affixed to verbs in simple main clauses? This synchronic-typological puzzle can be factored out into two diachronic questions:

● What was the original construction involving a prepositional phrase?
● What zeroing process then removed the nominal and left the preposition stranded?

There are, universally, two types of zeroes in language. First, our well-known anaphoric zero in the context of adjacent preceding mention (see chs 1,2). And second, the less-know cataphoric zero seen in both passives ('agent deletion') and antipassives ('object deletion'), both in the context of lower topicality. The reason why these two most-iconic syntactic processes tend to fly under the language typologist's radar is because of their utter ubiquity. Consider first the zero-agent passive of Sherpa (and many other S.E. Asia languages):

(66) a. **Expressed agent of active:**
   ti mi-ti-gi chenyi chaq-sung
   DEF man-DEF-ERG cup/ABS break-PA/EV
   'The man broke the cup'

   b. **Zero agent:**
   chenyi chaq-sung
cup/ABS break-PA/EV

(i) **Active interpretation:** 'S/he broke the cup'
(ii) **Passive interpretation:** 'The cup was broken', 'Someone broke the cup'

As Shibatani (1985) has noted, the passive prototype is agentless. Even promotional passives, as the English BE-passive, which technically can have an oblique agent, are mostly agentless in discourse.[FN 26] The agent-of-passive is most commonly zeroes out because it is unimportant (non-topical). But sometimes the boundary between low topicality ('unimportance') and predictability ('accessibility')--either from the anaphoric context or from habitual/generic/cultural knowledge--can be blurred. Thus, consider the following examples from a work of fiction (Trout 1974):

(67) a. ...The first ship..., the Golden Goose, **had been revved up** to top speed...
b. ...It began barking loudly... Simon tried to ignore him. Then he **became annoyed**...
c. ...He went into the Hwang Ho... The stellar maps **were stored** in...

In (67a), the agent of 'revved up' is predictable from the habitual knowledge that 'pilots rev up flying machines' engines'. In (67b), the agent of 'become annoyed' is accessible from the immediate anaphoric context--'it (the dog) began barking loudly'. In (67c), the previous Chinese pilots of the spaceship Hwang Ho were described several paragraph earlier, and by inference those were the agents of 'stored'. In all three cases, the perfectly accessible agent was unimportant (non-topical) at the discourse juncture where the passive clause was used.

Since we are dealing now with stranded **prepositions**, however, their zeroed-out nominal must have been an **object** rather than a subject/agent. So that the zeroing-out process must have involved an antipassive, not a passive In this context, consider now the innocuous **zeroed-out direct-objects** in the English antipassives below:
(68) a. **Active:** She drank her whiskey in one gulp  
    b. **Antipassive:** She drank (a lot, like a fish)  
    c. **Active:** He hunted the deer  
    d. **Antipassive:** He hunts (every fall, in the mountains)  
    e. **Active:** She read the memo  
    f. **Antipassive:** She reads (a lot, often, in bed)  
    g. **Active:** She understood the question  
    h. **Antipassive:** They explained it to her, and she understood (what he said)

In (68b) the object is the habitual, stereotypic 'liquor'. In (68d) it is the stereotypic 'game animals'. In (68f) it is the stereotypical 'book', 'magazine' or 'paper'. And it (68h) it is the anaphorically accessible 'talk' or 'what he said'. Either way, the object is unimportant at the point in discourse where the antipassive is used.

Consider, lastly, the equally innocuous zero-object antipassive, this time applied to the prepositional object:

(69) a. The hill was just ahead. All he needed to do was go up (the hill)  
    b. She saw the room was empty, so she went in (the room)  
    c. The door was open, so she went out (of the door)  
    d. She saw a flower on the ground, so she leaned over (the flower)  
    e. She stopped by the bed and looked under (the bed)  
    f. We were at the house when she came by (the house)  
    g. It was a tall wall, but she still managed to climb over (the wall)

This is, I suggest, the context within which the lexicalized pre-verbal preposition in Romance and Germanic begin to make sense--give the earlier Indo-European OV syntax. This is also where the more-recent post-verbal stranding of prepositions in English, as in (65) above, begins to make sense in the current VO syntax of English.

6.2. **Pre-verbal incorporation of Rama post-positions: Promotion to DO**

Rama is an SOV language, with unmarked subject and direct-object and post-positionally-marked obliques. Some related Chibchan languages have their oblique objects following the verb (S-DO-V-IO).[FN 27] In Rama, obliques can either precede or follow the verb, with the fronted position reminiscent of promotion to DO ('dative shifting'). But in addition, the pre-verbal oblique can also cede its post-position to the verb, where the post-position becomes a **verb prefix**. Thus compare, for the dative (Craig 1986; Craig and Hale 1987):

(70) a. **Post-verbal PP:**  
     ngang an-tangi Juan-ya  
     bed 3p-gave John-DAT  
     'they gave the beds to John'
b. **Pre-verbal PP:**
   ngang Juan-ya an-tangi bed John-DAT 3p-gave 'they gave John a bed'

c. **V-stranded post-position:**
   Rama ya-an-tangi
   Rama DAT-they-gave
   'they gave (it) to some Rama person'

d. **V-stranded post-position, elliptic NP:**
   ngang ya-an-tangi bed DAT-they-gave
   'they gave (him/her) a bed'

And similarly for the associative (Tibbits 1987a, 1987b):

(71) a. **Pre-verbal PP:**
   nah-u an-siiku
   1s-with 3s-come
   'they came with me'

b. **V-stranded post-position:**
   sainsaina-dut yu-i-traali
   other-PL with-3s-go
   'he went with the others'

And likewise for variolus locatives:

(72) a. **Post-verbal PP:**
   kiskis naing yu-i-siike nguu-ki
tongs DEM with-3s-bring house-in
   'he brings the tongs into the house'

b. **Pre-verbal PP:**
   kiskis naing beg-ki sut apakuli
tongs DEM bag-in we put
   'we put the tong in the bag'

c. **V-stranded post-position:**
   kiskis naing beg sut ki-apakuli
tongs DEM bag we in-put
   'we put the tongs in a bag'

d. **Post-verbal PP:**
   an-siiku ipang-su
   3p-come iland-to
   'they come to the island'
e. **Pre-verbal PP:**
   - \textit{ipang-su} an-siiku
   - island-to 3p-come
   - 'they come to the island'

f. **V-stranded post-position:**
   - \textit{su-an-siiku}
   - to-3p-come
   - 'they come over'

Example (72f) above hints at the possibility that V-stranding of post-positions may be an antipassive device in Rama. However, the bulk of the Rama examples of syntactic variation between N-suffixed and V-stranded post-positions suggest, rather, promotion to DO, indeed a syntactic mirror image of the KinyaRwanda situation (see above), with the verb-stranded post-position indicating that the erstwhile oblique has become the direct object. Possible support for such an interpretation comes from the frequency distribution of the presumed "promoted"--stranded post-position--form. Thus consider (Tibbitts 1987b):

(73) **Percent distribution of syntactic forms:**

<table>
<thead>
<tr>
<th>case</th>
<th>PP</th>
<th>V-stranded</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>dative</td>
<td>21</td>
<td>48.8</td>
<td>22</td>
</tr>
<tr>
<td>associative</td>
<td>36</td>
<td>31.6</td>
<td>78</td>
</tr>
<tr>
<td>LOC-in</td>
<td>33</td>
<td>89.2</td>
<td>4</td>
</tr>
<tr>
<td>LOC-to</td>
<td>90</td>
<td>97.8</td>
<td>2</td>
</tr>
</tbody>
</table>

Human referents--associative, dative-benefactive--are universally more topical and more likely to be promoted to DO. In many languages such promotion is obligatorily. In contrast, non-human locatives tend to be non-topical and are seldom promoted to DO.[FN 28]

Tibbits (1987b) next compared the average anaphoric distance of the two syntactic forms, measuring the distance, in # of clauses backwards, from where the antecedent appeared last in the preceding discourse. The results, while not fully consistent, again suggest that the object of the verb-stranded post-position is more topical.[FN 29]
Average anaphoric distance in # of clauses backward to the previous occurrence of the referent

<table>
<thead>
<tr>
<th>case</th>
<th>PP</th>
<th>V-stranded</th>
</tr>
</thead>
<tbody>
<tr>
<td>dative</td>
<td>5.1</td>
<td>5.0</td>
</tr>
<tr>
<td>associative</td>
<td>8.5</td>
<td>1.9</td>
</tr>
<tr>
<td>instrument</td>
<td>10.2</td>
<td>3.7</td>
</tr>
<tr>
<td>LOC-in</td>
<td>12.9</td>
<td>1.0</td>
</tr>
<tr>
<td>LOC-to</td>
<td>10.8</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Lastly, Tibbits (1987b) measured the average cataphoric topic persistence of the object in the two syntactic forms, in terms of the average number of times it is mention in the directly-following discourse. The results are again suggestive, tagging the "promoted" object--with verb-stranded post-position--as being more topical.

<table>
<thead>
<tr>
<th>case</th>
<th>PP</th>
<th>V-stranded</th>
</tr>
</thead>
<tbody>
<tr>
<td>dative</td>
<td>7.8</td>
<td>11.2</td>
</tr>
<tr>
<td>associative</td>
<td>2.6</td>
<td>11.8</td>
</tr>
<tr>
<td>instrument</td>
<td>1.1</td>
<td>7.5</td>
</tr>
<tr>
<td>LOC-in</td>
<td>0.5</td>
<td>1.1</td>
</tr>
<tr>
<td>LOC-to</td>
<td>1.3</td>
<td>3.0</td>
</tr>
</tbody>
</table>

With a puzzling distortion in the case of the dative, these results suggest that the stranding of post-positions on the verb in Rama is akin to promoting the oblique to direct object.

7. Discussion

Newmeyer's original question was a terrific service to typology. It prompted, leastwise for me, a wide-ranging search for the multiple grammatical context in which stranded prepositions can be found. In the course of the search, it became clear that a whole range of zero-marking contexts are involved here, all of them with a common denominator: Case-marking adpositions are detached from their zeroed-out nominal arguments, and must then find a new cliticization locus in order to preserve case-marking. But contexts of pronominal replacement (WH-pronouns) as well as topicality-changing 'movement' (dative-shifting, Y-movement, passive) or deletion (passive, antipassive) are also implicated. Answering Newmeyer's question without considering these multiple context would have been self-defeating, if one is interested in theoretical explanation.
We have noted, further, that stranding of adpositions on the verb is only one typological solution to the functional imperative that underlies the phenomenon—the need to preserve the case-marking of a zeroed-out or displaced nominals. The other typological solutions involved affixing the stranded adposition to a pronoun or to a subordinator. And over historical time, the very same language—English being a prime example—can switch from one typological solution to another.

Are verb-stranded adpositions a typological rarity? Yes, and no. But finding why some languages favor this pattern would require a much broader investigation of the availability of typological alternatives, and the intricate factors that govern the diachronic rise and fall of all alternatives.

Perhaps the most useful lesson to be learned from Newmeyer’s original question is methodological: Language typology is both meaningless and incomplete when shorn of its functional and diachronic dimensions, dimensions that transform it from a purely classificatory, empiricist enterprise to a theoretical discipline.
Footnotes
*
I am indebted to Fritz Newmeyer for the original question as well as for many valuable comments and suggestions on an early version of the ms. I am also indebted to Bernd Heine and Werner Heiber for key German data.
1
2
Counting all examples in the first 13 pp. of Smith (1756).
3
Not attested as such. Constructed by analogy with other examples.
4
Ibid.
5
Using the 2002 pocket edition edited and printed by The Cato Institute, pp. 9-50. The Declaration was dated July 4, 1776. The original Constitution, together with the first 12 amendments (Bill of Rights), was transmitted by Congress to the states for ratification in September 1787. The 14th amendment was ratified in July 1868.
6
Counted were the first 10 pp. of A complete Translation of The Sequel of the Proceedings of Marie Catherine Cadiere, against the Jesuit Father John Baptist Girard, London, near the Horse Guards: J. Millan, 1732. The 2-volume book is a quality literary translation from the original French, constituting the judicial transcripts of a famous 1731 sex-scandal trial in Toulon and Aix en Provence, published in the Hague in 1732. The French of the period employed neither stranded-preposition REL-clause pattern, but only case-inflected WH-pronouns. The translation thus reflects the period English high-literate usage. A much less literary translation was also consulted, revealing a predominance of the which/whom pattern with prefixed stranded prepositions, the presumably-younger pattern that predominates in the Adam Smith and the U.S. Constitution texts.
7
It is of course of interest to ask why the shift in relativization patterns occurred. Whatever the answer may be, the attested text-distribution is rather typical of diachronic change in general; whereby multiple variants lurk about, one statistically dominant but both older and newer patterns still present in low frequency. Thus, both the relic where-P pattern an the innovative verb-P 'stranded' pattern appear as small minorities in late-18th-Century texts, where in P-which/P-whom pattern predominates. The history of English is more complex, though. Van Kemenade (1987) cites a single example of V-stranded preposition in Old English, in a simple clause with neither zero nor pronominal replacement nor movement:
& moni thing ham falled to
and many things them befallen to
'and many things happened to them'
He later cite many more examples of V-stranded prepositions in Middle English, but no text-frequency counts in either case. The question thus remains: Why is this construction, apparently viable in ME, go under the radar in written early Modern English?
For further details of Ute grammar see Givón (2011).

See discussion in ch. 7, above, as well as in Givón (2015, ch. 26).

The KinyaRwanda preposition *ku-* first undergoes lenition to *hu* when suffixed, then the old Bantu relative suffix *-o* is added, yielding the final verb suffix *-ho*.

The preposition *mu-*-, when suffixed to the verb and followed by the old Bantu relative suffix *-o*, becomes *-mo* (see also fn. 10).

Most Bantu verb suffixes ('extensions') are historically derived from verbs (Givón 20125, ch. 6). The reciprocal *-na* may be an exception, being related to the preposition *na-* 'with' > 'and'. However, comparative Niger-Congo evidence suggest that the preposition/conjunction *na-* was ultimately verb-derived too (Givón 2015, ch. 7).

For a discussion of the diachrony of the Bantu verb suffixes ('extentions') see again Givón (2015, ch. 6).

English anaphoric objects are, by all general criteria, already cliticized as verb suffixes (Givón 2002, ch. 3).

Ibid.


For the entire complexity of the system, see (Givón 2011, ch. 14).

Ibid.

Where AGT here standing for either transitive agent or intransitive subject, and PAT for either transitive patient or transitive/intransitive oblique. For details see Givón (ed. 1994).

See also Givón (1982; ed. 1994).


See Givón (2011, chs 10, 11)

For the distinction between semantic and pragmatic case and promotion to direct-object, see Givón (1984).
Out of morbid curiosity, I counted all the passives found in two of my all-time favorite texts, the first 10 pp. of Chomsky's *Language and Mind* (1968/1972), and the first 13 pp. of Louis L'Amour's *Shalako* (1962). Out of the total of 83 promotional BE-passives in Chomsky's text, 68 were of mono-transitive verbs and 13 of bi-transitive verbs. In all 81, the subject of the passive was the patient direct-object of the active. Only in two example was the subject of the passive a prepositional object with a stranded preposition, both involving an intransitive verb. The first of these examples is so convoluted, being a translated from the original Spanish, it fairly begs reproducing in full: "...by means of which some, without art or study, speak such subtle and surprising things, yet true, that were never before seen, heard or writ, no, nor ever so much as thought of..." (p. 9). And the second: "...all of this, it was argued, could be accounted for on "mechanical grounds"..." (p. 10). All passives in L'Amour's text involved promoted direct objects.

See extensive review in Givón (1979, ch. 3).

See text-frequency counts in Givón (1979, ch. 2).

For a comparative discussion of the diachronic typology of word-order in the Chibchan and Misumalpan languages of Meso-America, see Givón (2015, ch. 24).

The benefactive case in Rama is marked by a large, diachronically newer post-nominal word (*kama* or *king*) that never cliticizes, neither on the noun not on the verb.

For an extensive discussion and cross-linguistic application of this measure, as well as the subsequent cataphoric persistence measure, see Givón (ed. 1983).
References

Craig, C. and K. Hale (1987) "Oblique relations and re-analysis in some languages of the Americas", *Language*, 64.2


Takizala, A. (1972) "Focus and relativization in Kihungan", *Studies in African Linguistics*, 3.2

Tibbits, B. (1987a) "Some lexicalization patterns in the Rama verb", University of Oregon, Eugene (ms.)

Tibbits, B. (1987b) "Cliticization of adpositions in Rama", University of Oregon, Eugene (ms.)

