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ON THE EVOLUTIONARY PATHS OF
LOCATIVE EXPRESSIONS

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Spatial location has been traditionally studied indirectly as a consequence of studying the structurally coherent categories of prepositions and case inflections. This particular semantic domain, however, is expressed by a diverse selection of means - within one, and across languages - ranging from grammatical, closed-class items, such as adpositions (prepositions and postpositions) and case inflections, to open-class items, such as adverbs and nouns. According to the same tradition, languages are different in surface form only (Lyons 1968), implying that each language "selects" a particular means of expressing locative notions from a basket of universally-available means.

There are some problems with this theoretical orientation. First, while it is true that location tends to receive grammatical expression across languages, and in many languages closed-class items (prepositions and case inflections) share structural properties, it is not the case that members of a closed class, such as prepositions, express meaning in the same semantic domain. Also, the set of meanings expressed by prepositions in one language is not the same as the set of meanings expressed in another. As a consequence, comparison of languages based on structural similarities would result in a view according to which languages are very different from each other in expressing locative notions. Second, this theory does not explain nor predict why a language utilizes one particular means of expression over another, thus implying an unmotivated, arbitrary system of selection. Third, this theory faces great difficulty in explaining how a form expressing some locative notion can be used lexically and grammatically at the same time. A theory that presupposes a strict categoriality of forms has a hard time dealing with peripheral effects.

Recent theoretical innovations regarding grammatical categories, proposed by Bybee & Pagliuca (1985, in press), and Bybee(1985b), require MEANING to be the driving force of any linguistic activity. Within a specific semantic domain, languages are diverse in the means of expression they employ. The reason for this structural diversity is that different means of expression reflect different evolutionary stages that languages are at in a particular synchronic stage. Grammatical forms develop out of lexical forms via a gradual process of fusion and phonological erosion accompanied by semantic generalization. The paths of development of forms within a semantic domain are universal. Partial synonymy exists because the forms are in different developmental stages.

Following the alternative view, and as a test of its general theory, I argue that expressions of location, such as "in", "in

front of", "in back of", "outside", evolve in a specific way
following a predictable path, going from concrete and specific to
abstract and general in both semantic and morphological domains.
Nouns referring to concrete entities evolve to become adpositions
and bound affixes with no referential ability, by gradually
losing structural autonomy and meaning specificities, and by
undergoing concomitant phonological erosion.

    Diachronic and cross-linguistic studies by Kahr(1975),
Givón(1975), and Heine & Reh(1984) have shown that universally
there are a number of sources for locative adpositions including
nouns, verbs, adverbs, adjectives and participles. In this paper
I will concentrate on the nominal source of locative expressions
without that being a statement for primacy, greater frequency or
typological distinction (although the latter might turn out to be
true) as occurring in the languages of the world, but simply a
restricting device for a very wide domain. These studies have
shown that new locative expressions can emerge from combining
already existing adpositions or case inflections with nouns. In
addition, Miller's (1985) data from a variety of languages show
that prepositions not only develop from nouns, but that they
share certain syntactic and morphological properties with nouns
on a synchronic level.

    The theory of the evolution of grammatical meaning proposed
by Bybee & Pagliuca, which I outlined earlier, provides the
theoretical support for the reconstruction of universal
evolutionary paths of locative expressions. The assumption that
the evolution of linguistic material is gradual leads to the
representation of that evolution as a continuum where various
points, in a stroboscopic view, are intervals and constitute
stages only for the purpose of clarity of presentation. The other
assumption - that meaning is the driving force of any linguistic
change - requires there to be two aspects of the continuum
of the evolution of locative expressions, represented by two
continua, one of the evolution of meaning and the other of the
evolution of the form,which must be thought of as being parallel.

    I will start with the presentation of the continuum of the
morphological evolution of locative expressions.

MORPHOLOGICAL EVOLUTION OF LOCATIVE EXPRESSIONS

FIGURE 1 : <u>Morphological evolution of locative expressions-</u>
            <u>nominal source</u>

    LEXICAL   GRAMMATICAL
  <--->
  noun > genitive construction > adverb > adposition > bound affix

    According to Figure 1, lexical material in the form of a noun
becomes grammatical in the form of a bound affix after first
passing through a stage where it is frequently used in genitive
constructions as the "possessed" noun, followed by a stage where

it behaves as an adverb, and then by a stage where it is an adposition. The underlying dimension of this continuum is the AUTONOMY of the evolving material : lexical forms, which are syntactically autonomous and relatively free to appear in many positions, become grammatical by becoming dependent on some lexical form and by assuming a fixed position, passing through intermediate levels of autonomy. The claim that this continuum makes is that the various stages are ordered, so that lexical material cannot become grammatical without passing through the intermediate stages.The empirical support for adjacent stages of the proposed continuum comes from a number of unrelated and randomly-selected languages.

Noun > adposition

Many languages have adpositions which are homophonous with nouns. Data from ten languages are given in Appendix A. Here, I will demonstrate with data from two languages only.

In Abkhaz (Hewitt 1979), a NW Caucasian language, the noun a-c̦'ə̀ "mouth" is used as a postposition with locative meaning as in (1).

(1) a-vok'zàl   a-c̦'ə̀   də̀-q'o-w+p'
     the-station 3spro-mouth he-be- (stat.)
     "He is at the station"

The noun àpxá "front" is also used as a postposition as in (2):

(2)   a-yᵒn-   [a]-àpxá   də-tᵉ'ò-w+p'
      the-house-[3spro]-front he-sit- (stat.)
      "He is sitting in front of the house"

And the noun à-šta "trace, footprint", compounded with a more general bound locative affix, expresses the notion 'behind', as in (3):

(3)   a-yᵒn-   à-šta-x'   də̀-q'o-w+p'
      the-house-3spro-trace   he-be- (stat.)
      "He is behind the house"

Vai, a Mande language of the Niger-Congo family, provides further evidence for the nominal source of adpositions. This language has been described (Welmers 1976) as having relational nouns, which can be used as nouns, as in (4), and as postpositions, as in (5):

(4) sɛ̌ŋɛ̌   mà   kpàndí'à
    rock's surface is hot
    "The surface of the rock is hot"

(5) kà'áǎ bɛ̀   sɛ̌ŋɛ̌   mà
    snake is-at rock's surface
    "The snake is on the rock"

The noun 'ɔ̀ "inside", which demonstrates its nominal character in (6), is behaving as a postposition in (7):

(6) laa   'ɔ̀   nɔ́ɔ́'à
    pot's inside dirty
    "The inside of the pot is dirty"

(7) ànú bὲ   fέŋ lɔ̀ndà kέnέ   'ɔ̀
    they be-at eat   house's inside
    "They're eating in the house"

Furthermore, the noun kpáà "buttocks", in a compound form with
the 'ɔ̀ "inside" form in (7), gives the nominal form kpáà'ɔ̀ ,
which specifies the area behind something; in (8), this compound
has a prepositional meaning:

(8) à nùú'à kɔ̀ŋɛ́   kpáà'ɔ̀
    he hid   tree's buttock-in
    "He hid behind the tree"

The other eight languages on which I have data relate the
nominal and adpositional uses of those terms along similar lines.
The adpositions are either identical in form with the nouns, as
in the Abkhaz examples (1) and (2) and the Vai examples (4)
through (7), or they appear in a compound complex with some other
locative affix, as in the Abkhaz example (3) and the Vai example
(8), depending on the available mechanism in each language.

Kahr (1975), Givón (1975), Miller (1984),and Heine & Reh
(1985) provide more examples of adpositions emerging out of nouns
from many more languages.

The genitive construction stage

Givón has suggested a genitive construction stage in the
evolution of postpositions from nouns in Niger-Congo languages,
and Heine & Reh support this claim for other African languages.
This phenomenon seems not to be restricted to the languages of
Africa, however. The general idea is that there is a genitive/
possessive marker mediating between the adposition and the noun
that acts as its object. The position of the marker seems to
vary, appearing either on the adposition or on the object of the
adposition, corresponding to head-marking and dependent-marking
patterns proposed by Nichols (1986). But let's look at some
examples.

In Abkhaz, all postpositions carry an affix which expresses
3rd person singular, refers to non-humans and is used as an
indirect object pronominal affix. This affix marks the possessed
noun in phrases like (9),but it is also present as an affix on
the postposition in (10).

(9)   à-la   a-xə̀
      the-dog   3sPro-head
      "The head of the dog"
(10) a-x°cɔ̂'-k°à   a-y°nə̀   a-y°nə̀+c'q'a yə-x°màr-we- yt'
     the-child-(pl) the-house (3sPro)-house+in they-play(dyn)(fin)
     "The children are playing inside the house"

A similar pattern appears in Tajik (Miller 1985), an Indo-
Iranian language, where prepositions which are identical in form
with nouns form prepositional phrases,as in (12), obligatorily
via the "izafet" construction, which also relates the possessor
and the possessed, as in (11).

(11) kitob-<u>i</u>   rafikam
     book -(iz) my comrade
     "My comrade's book"

(12) berun   -<u>i</u>   xona
     exterior-(iz) house
     "outside the house"

The Abkhaz and Tajik patterns would be examples of head-marking languages. Other languages that exhibit similar phenomena are Hungarian, as in (13), and Hausa, as in (14) (Kahr 1975).

(13)közepen "in the middle of" <   köz-   *ep-   en
                                    space   poss   locative
                                    in between marker   marker

(14)i. (a) kâ-n   tēbùr   ii.   ciki-n   dákî
            head-gen table   stomach-gen house
        "on the table"   "inside the house"

The dependent-marking pattern is exemplified by languages like Vai, which obligatorily marks the possessor, as in (15)i., or the object of adpositional phrases, as in (15)ii. below.

(15)i. sɛ̌ŋɛ̌   mà   kpàndí'à
        rock's surface is hot
        "The surface of the rock is hot"
    ii. kà'áá bɛ̀   sɛ̌ŋɛ̌   mà
        snake is-at rock's surface
        "The snake is on the rock"

The object of the adposition is also marked in Kannada(cf.(16)), with the genitive case suffix, also used for possessors (McCormack 1966).

(16) mane-<u>ya</u>   hora-ge
      house-(gen) exterior-(dat)
      "outside the house"

Other languages that exemplify this pattern are cited by Givón, and include Fula, Ewe and Ijo.

An interesting example of a language that actually does not have any marker for genitive in adpositional phrases, but where the corresponding relation is implied, is Papago (Mason 1950). Papago exhibits a pronominal/nominal suffix <u>-ga^ᶜ</u>, which marks possession as in (17),

(17)i. n-'o'be-<u>'ga</u>ᶜ
       I-enemy-(poss)
       "my enemy"

    ii. ha-ᶜtcuᶜk·u'de-<u>'ga</u>ᶜ
        they-   owl   -(poss)
        "their owl"

but which has a restriction on its use: it cannot be affixed to nouns denoting body parts, kinship terms or manufactured objects, where the sense of possession is more or less inherent or natural[1]. In other words, <u>-ga</u>ᶜ marks alienable possession. Since body parts are very frequently treated in discourse as being possessed inalienably (Hopper & Thompson,1984), and since, as we will see later on, it is body part terms that are very frequently used as adpositions, there is good reason for the lack of a marker for genitive/possessive , as is shown in (18)i. and ii., since the notion is inherent to the meaning of the nouns.

(18)i. ki· -ba·ᶜcO   ii. 'aᶜki -ᶜkoA
    house-breast   arroyo-forehead
    "in front of the house   "at the edge of the arroyo"

The adverb > adposition sequence

As I mentioned earlier, the adverbial and adpositional uses emerge almost simultaneously. I consider as adverbs expressions that relate some entity to some given place by pointing at it deictically or anaphorically,and as adpositions, expressions that relate some entity to some place which is explicitly mentioned. In most languages I studied, the majority of locative adpositions can be used as adverbs. In some languages adverbs and adpositions have the same form. Compare the Abkhaz examples in (19).

(19)i.a-xᵒcə̂'-kᵒà   a-yᵒnə̀   a-yᵒnə̀+c'q'a   ya-xᵒmàr-we-yt'
   the-child-(pl) the-house (3sPro)-house+(loc) they-play-(dyn)(fin)
    "The children are playing inside the house"
  ii.   a-xᵒcə̂'-kᵒà   a-yᵒnə̀+c'q'a   yə-xᵒmàr-we-yt'
   the-child-(pl) (3spro)-house+(loc)   they-play-(dyn)(fin)
    "The children are playing inside"

In others, however, the adpositions seem to have an additional locative marker, not present in the adverb. Compare, for instance, the Tigre forms below (Leslau,1945):

adverb		preposition		
laᶜal	"upwards"	mən laᶜal	"above,over"
taḥat	"downwards"	mən taḥat	"under,below"

The strongest evidence for the development of adpositions from adverbs comes from historical data on languages such as English and Greek. According to the OED, in English, across, a compound of the preposition a "in" and the noun cross, first appears in the late 15th century as an adverb meaning "in the shape of a cross, crossing each other". Only later, in the following century, does it occur as a preposition with motion verbs meaning "from side to side of".behind has had a similar history: it is a compound of the OE preposition bi/be plus the adverb hindan (hind "back"+adv.suff.-ana). In the 10th century it functions as an adverb with the meaning "in the place whence those to whom the reference is made have departed", and only later, in the 13th century, it acquires a prepositional function and means "in a place left by".

In Modern Greek , all of the compound prepositions are formed with an adverb, which is or comes from an Ancient Greek adverb, plus one of the prepositions apo , or s(e), which are very general in their use covering many relational notions (Andriotis 1983).Some examples are given below.

AG adverb		MG preposition	
andikrí	"opposite"	andíkri s'	"opposite"
péran	"yonder"	péra s'	"over at"
hamái	"on the ground"	hámo s'	"under"
epáno	"on top"	páno s'	"on top of"
opíso	"in back"	píso apo	"in back of"
ékso	"out"	ékso apo	"out of"

Additional evidence comes from Melanesian Pidgin English (Hall 1943), where most prepositions are complex, formed by an adverb plus a very general preposition lɔŋ which expresses location.

adverb		preposition	
antap	"above"	antap lɔŋ	"above"
arade	"along the edge"	arade lɔŋ	"beside"
ənənit	"underneath"	ənənit lɔŋ	"beneath"
awtsajt	"outside"	awtsajt lɔŋ	"outside of"

The genitive > adverb sequence

The only evidence for the claim that the genitive construction stage precedes the adverb stage would be cases in which an adverb would bear a marker of genitive construction. This kind of evidence can be found in head-marking languages which have a genitive marker present in relational expressions. In Abkhaz, indeed, such a marker exists as is shown in (20).

(20) a-xᵒcə̂'-kᵒà   a-yᵒnə̀+c'q'a   yə-xᵒmàr-we-yt'
     the-child-(pl) (3spro)-house+(loc) they-play-(dyn)(fin)
     "The children are playing inside"

The adposition > bound affix sequence

Evidence for the adposition > bound affix sequence comes from data showing adpositions becoming bound affixes to verbs. In Abkhaz the postposition a-c'ə̀ "at", as in (1), appears as a preverb with various meanings: a locative meaning for things on the face in (21), as a progressive marker in (22), and with a metaphorical meaning in (23).

(21) a-pac'-à   (Ø-)yə +c'ə̀   -w+p'
     the-moustache (it)his+face-on-(stat)
     "He has a moustache"
(22) a-xᵒmàr-ra   d-a+c'ə̀ -w+p'
     the-play-(masd) he-it+in-(stat)
     "He is playing"
(23) aẑᵒa ñ•a   à-m- ba- tᵒ'   (Ø-)l+c'ə̀   -w+p'
     word saying the-not-see-(gerund)(it)her+mouth-in-(stat)
     "She is a fine/eloquent speaker"

In Chechen ,a NE Caucasian language, the postposition č̌u "in" as in (24), has started 'migrating' towards the verb, as in (25), the latter being the preferred structure (Nichols,1986:84).

(24) č̌aj-na   č̌u šiekar   tasan
     tea-(dat) in sugar(nom) sprinkle(inf.)
     "Put sugar in tea"
(25) šiekar   č̌aj-na   č̌u-tasan
     sugar(nom) tea-(dat) in-sprinkle(inf.)
     "Put sugar in tea"

Furthermore, from the history of English we can see the development of the Old English preposition bi/be to a prefix, in forms like behind, before, below, etc. According to the OED, in Old English the preposition had two forms: the accented bí and

the unaccented bĭ/be, and they were used as adverbial particles
of place. In Middle English, the accented form developed into the
preposition bi/by, while the unaccented form be- was retained
only as a prefix on verbs and nouns, as it is today.

According to the theory presented earlier, the bound
material should be reduced in form. Although this is hardly the
case in the examples we just saw (except the English one) in
languages with case inflections this is true. Case inflections
are usually monosyllabic and so reduced that they bear no
similarity to a lexical form. Such is the case with the Turkish
locative case inflection and its allomorphs (Lewis 1967).

-de	ev-de kaldi	"he has stayed in the house"
-da	tarla-da kaldi	"he has stayed in the field"
-ta	kitap-ta	"in the book"
-tte	serha-tte	"in the frontier"

THE EVOLUTION OF THE MEANING OF LOCATIVE EXPRESSIONS

The stages of the evolution of locative expressions that
were presented do not make much sense unless there is some
motivation for the succession of each stage. I propose that the
motivation for morphological/syntactic change is the change
in meaning that the forms undergo following a predictable
path as is represented by Figure 2.

FIGURE 2: <u>The evolution of the meaning of locative expressions-
nominal source</u>
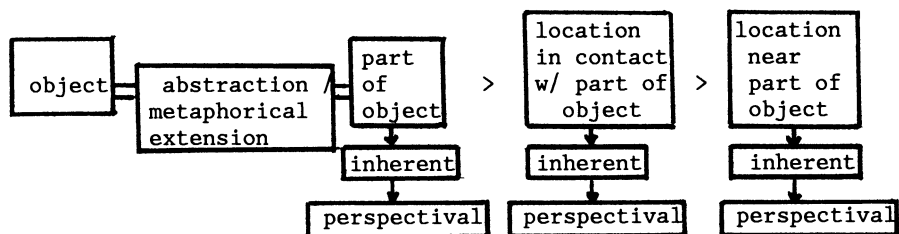
According to Figure 2, a noun which refers to a concrete
entity starts being used in contexts where it denotes a part of
an object , WHICH particular part is more or less predictable from
the original semantics (see below). In a later stage, it denotes
a location in contact with a part of an object, and only after
that can it denote a location near the part of an object. At this
point the noun can be used in semantic domains other than spatial
location, to denote other grammatical relations, to introduce
embedded clauses and to convey metaphorical relations.In the last
three stages, whenever an assymetrical axis of orientation, such
as the front-back or the up-down axes, is required for the
interpretation of locative notions, the inherent interpretation,
which takes into consideration the configuration of the object

used as the reference frame, comes before the perspectival, which depends on the viewer's position with respect to that object.

An example from the development of the English locative expression <u>in front of</u> will illustrate the various stages. According to the OED, the noun <u>front</u> was borrowed from Latin in the 13th century with the meaning "forehead". A century later it was found used in a possessive construction <u>the front of</u> to denote the foremost part of objects, for instance in buildings where the inherent front is the entrance side, and later on to denote any side of the building depending on the viewer's perspective. Not until the 17th century is it found in a locative expression (<u>in the front of</u>) to denote a location in contact with the front part of an object. And only later, in the 18th century, was it used to specify a location near the front part of an object, finally acquiring the meaning of its present form <u>in front of</u>.

Assuming the continuum in Figure 2, I argue that it is not odd that nouns referring to concrete entities become markers of locative relations, if we consider the kinds of nouns that undergo this development. Three classes of nouns can be distinguished according to their referents: the BODY-PART class, which includes nouns that refer to the head, mouth, back, breast, etc., the OBJECT-PART class, which includes nouns meaning front, top, edge, middle, etc., and the ENVIRONMENTAL LANDMARK class, which includes nouns referring to things such as sky, canyon, field, house, etc. (See Appendix B for a more detailed list). A common property of all these nouns is that they can have a relational meaning. While this is obvious for object-part nouns like <u>front</u>, <u>inside</u>,<u>top</u>, which require some reference frame for their interpretation, it is not so obvious for body-part and environmental nouns. Body-part nouns,however, as Hopper & Thompson (1984) have suggested, very frequently appear in discourse as non-individuating, non-manipulable entities, as a part of a whole, carrying a relational notion in their inherent semantics. As for the environmental landmarks, their position with respect to other environmental elements assures the relational character of the nouns that descibe them.Thus, this particular property of the nouns, which allows them to denote not only an object but also the relative position of the object, makes them appropriate ancestors of locative expressions.

Furthermore, the evolution of such nouns into locatives seems a natural consequence of their character. If the entities denoted by the nouns are most of the time perceived as being parts of wholes, then the genitive markers and constructions in locative expressions are nothing more than the reflection of the part-whole relations. Even the extension to denote a similar part of any object and the metaphorical use to indicate a location in contact or non-contact with that part of the object, seem to be natural consequences of the relational character of the nouns. Once it has reached the stage where it denotes some location, the form has lost its concreteness, now expressing a relation which

is abstract . This particular property makes it appropriate for
appearing in many contexts in discourse where location is
expressed but also where other semantic domains, such as time,
are expressed. Its frequency of use over many contexts strips it
of its specificities thus leaving it with only a very general
meaning. It is at this point that the form has become
grammatical, and that phonological erosion and allomorphy become
apparent.

An interesting parallel to the evolution of the meaning of
locative expressions is provided by the literature on the
acquisition of locative expressions. Studies on different
languages done by Kuczaj & Maratsos (1975), Johnston & Slobin
(1979), Tanz (1980), Johnston (1981,1984) and others show that
children exhibit parallel cognitive and linguistic development in
the comprehension and production of locative expressions which is
amazingly similar to the evolution of meaning of such expressions
proposed here. Johnston (1981) isolates some stages of cognitive
development according to which the 15-18 months olds conceive of
objects as having an independent and relatively permanent
existence. When they reach two years of age, they start to
construct relationships among objects that are the natural
consequences of their inherent properties. During the 30-42
months period they start constructing relationships that do not
depend on specific object properties, but rather take into
consideration frames of reference and landmarks. At first these
relationships involve only whole objects which are likely to be
in actual contact. Later on, children can make use of object
parts as landmarks and understand that objects might be related
even if they do not touch. English children follow a similar
linguistic development and the meanings they express with spatial
prepositions emerge in an order that is PARALLEL to the emergence
of non-verbal locational concepts. The order of acquisition
suggested by Johnston (1984) is:
on - in - under - next to - $back_{object\ invisible}$ - $back_{inherent}$

$featured$ - $front_{inherent}$ - $back_{deictic}$ - $front_{visible}$ -

$front_{deictic}$.

Everything I have mentioned above suggests that the
comparison of languages, if it is to bring coherent results has
to take into consideration a diachronic dimension. Languages are
similar in the way thay evolve because the paths of change are
universal and are governed not only by linguistic principles but
by more general cognitive principles. Furthermore, the
postulation of semantic domains as islands of linguistic activity
allows for a comparison of languages on a more general basis,
without requiring the artificial classifications traditionally
imposed on linguistic forms.

NOTES

1. At first sight, manufactured objects seem not to fit with the body parts and kinship terms in exemplifying inalienable possession. If, however, we consider inalienable possession as a graded notion, then the three categories of entities are similar: body parts, due to their natural attachment to the body, are the best examples of inalienable entities; kinship terms express genetic/social relations and are second best examples, while manufactured objects are even more distant from inalienable possession, but still within the domain of their creator, as if they were carrying his "signature", being his product.

APPENDIX A

ABKHAZ (Hewitt,1979) [NW Caucasian]

a-c̦ˌə̀ "at"	<	a-c̦ˌə̀ "mouth"
àpxá "in front of"	<	àpxá "front"
a-z-àa-ay-gᵒa-ra "near to"	<	a-gᵒə̀ "heart"
a-yᵒnə̀-c'q'a "inside"	<	a-yᵒ-nə̀ "house"
à-šta+x' "behind"	<	à-šta "trace,footprint"
a-xə̀+x' "above/over"	<	a-xə̀ "head"
à-kᵒcᵒa "on"	<	à-kᵒcᵒa "top"
à-vara "beside"	<	à-vara "side,flank"

preverbs

-ɣra- "inside"	<	a-ɣrà "stomach"
-xᵒla- "inside"	<	à-xᵒda "neck"
-ša- "on"	<	a-šap'ə̀ "foot"

VAI (Welmers,1976) [Mande,Niger-Congo]

mà "on"	<	mà "top surface"
fὲ "along"	<	fὲ "edge"
tὲ "between"	<	tὲ "half"
'ɔ̀ "in"	<	'ɔ̀ "inside"
kpáá'ɔ̀ "behind"	<	à kpáà "his buttocks"
kɔ́'ɔ̀ "under"	<	à kɔ́'ɔ̀ "his back, area behind him, area under him"
fá'à "in front of"	<	àjá "his eyes"

PAPAGO (Mason,1950) [Uto-Aztecan]

-'eḍa "in"	<	'eḍaᶜ "interior < 'e'eda "blood"
-ba·ᶜcO "in front of"	<	bacOᶜ "breast"
-koA "at the edge of"	<	koa "forehead"
-ca·gi'D "between"	<	ca·gi'D "canyon"
-huhuṭa "on the side of"	<	huhuṭa "heart"

TIGRE (Leslau,1945) [Semitic]

'asar "after" < 'atr,'asr	"trace" (Semitic & Ethiopic rt.)
haqo "after" < Arab. ḥaqw, Geez	ḥaqʷe "loins,inferior part"
('ət) ra'as "on,above" <	ra'as "head"
('ət) səməṭ "at the side of" <	Geez səmṭ "flank", Amhar. šənt "flank"

BURIAT (Poppe,1960) [Ural-Altaic]

xažuu-da "beside"	<	xažuu "side"

MELANESIAN PIDGIN ENGLISH (Hall,1943)
  arade/arare lɔŋ "along/beside < arade/arare "edge"
  ɪnsajd lɔŋ "inside of"   < ɪnsajd "inside"
YAGARIA (Renck,1975) [Central New Guinea]
  hitagipi' "underneath" < hita"bed" + gina"opening" + pi'"in"
  agovetulo "on top of" < agovetu "top"
VIETNAMESE (Thompson,1965) [Mon-Khmer, Austro-Asiatic]
  trong "inside"   <   trong   "inside"
  trươć "in front of"   <   trươć   "front"
  trên "above,on top of" <   trên   "top"
KANNADA (McCormack,1966) [Dravidian]
  mēle "on top of"   <   mēl   "top"
  horag(e) "outside" <   hora   "exterior"
  (v)oLag(e) "inside" <   (v)oLa "interior"
ENGLISH [Indoeuropean]
  beside   <   be + side
  aside   <   a + side
  behind   <   be + hindan (hind "back" + adv.suf. anna)
  in back of <   back
  in front of <   front
  on top of <   top

             APPENDIX B: NOUNS THAT DEVELOP INTO ADPOSITIONS
BODY-PART NOUNS: head, heart, anus, mouth, face, neck, ear,
 forehead, back, loins, rib, body, breast, chest, blood, foot,
 waist, belly, stomach.
OBJECT-PART NOUNS: front, edge, top, back, bottom, side,flank,
 end, middle, entrance, circumference, outside, interior,
 exterior, upper space, space in between.
ENVIRONMENTAL LANDMARKS: field, ground, canyon, sky, house.

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