1 Introduction

In this paper, I address the event structure of transfer of possession (ToP) verbs in Pima, a Uto-Aztecan language spoken in Arizona.¹ I show that ToP’s consist of (at least) two subevents, one the action performed by the agent, the other the resultant state. I also show that there are two subtypes of ToP, those in which the transference is entailed, and those in which the transference is only implicated.

2 Temporal PP’s

Addition of a temporal PP to these predicates generally results in one of two possible readings: In the (a) examples below, the temporal PP indicates repetition of the action over a span of time. Crucially, the action of the agent is included in this time span. In the (b) examples, the PP indicates the length of time that the resulting state holds. The action of the agent is not included in this time span. (See Beck and Johnson (2004) for similar data with again.) I’ll say that the PP’s in the (a) examples modify an event e, while in (b) they modify an event e’.²

(1) a. John ’at maa heg hiosig heg Maliiya hemako mashad ’ab.
   John AUX:PF give(PF) DET flower DET Maria one month for
   ‘John gave Mary a flower (every day) for a month.’
   b. John ’at heñ= maa heg kalit gamai domig veejaj.
   John AUX:PF 1S= give(PF) DET car GD:bk:DX week behind
   ‘John gave me the car for the weekend.’ (a car to have/use over the weekend)

(2) a. Homer ’o ceavgid heg shomaigig heg Marge vee véejitéj: vestmaam
   Homer AUX infect DET cold DET Marge all winter ten
   ’ahidad ’ab.
   year for
   ‘Homer has infected Marge with a cold every winter for 10 years.’

¹I would like to thank my Pima teacher Virgil Lewis for his hard work and good humor in teaching me about his language. For their valuable comments on this endeavour, I also thank Pam Munro, Eric Jackson, Greg Kobe, and Ben “Pablo Naruda” Keil. All mistakes remain my own.

b. Homer 'at ceavagi heg shomaigig heg Marge gamai domig veegaj. Homer AUX:PF infect(PF) DET cold DET Marge GD:BK:DX week behind 'Homer infected Marge with a cold for the weekend.' (had a cold over the weekend)

(3) a. John 'at heÊi= kovhiic vees tash hemako mashad 'ab. John AUX:PF 1s= make.coffee.for all day one month for 'John made me coffee every day for a month.'

b. John 'at hema heÊi= kiic gam domig veegaj. John AUX:PF some 1s= make.house.for GD:BK week behind 'John made me a house for the weekend.' (a house to have/use over the weekend)

Note that the two verbs in (3) are different: kovhiic 'make coffee for' and kiicud 'make house for'. These verbs are part of a more general pattern in which a noun is suffixed by -t to mean 'to make NOUN' or -cud to mean 'to make NOUN for'. All verbs in this class behave the same if you control for the properties of the actual noun used. (Hale, 2000; Hale and Keyser, 2002)

It is tempting to interpret this data as evidence for decomposition of these predicates into an activity and a state, with e a causal event and e' the resulting state, according to the structures below. This initially appears to match the temporal facts, plus intuitions about meaning. We'll see that such an interpretation would be hasty.

(4) x CAUSE(e) [ y HAVE(e') z ]
(5) x CAUSE(e) [ y BE.SICK.WITH(e') z ]

3 Deictic Particles and Ditransitives

3.1 Introducing the Particles

Pima has a set of deictic particles that can be used in a variety of ways related to distance and direction in space and time (and other things). (Saxton and Saxton, 1969; Hale et al., 1977; Shapira, 1979; Madsen, 2001)

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<td>Proximate</td>
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1. Distance: The basic opposition in distance is between proximate and distal. The greater and proximate distals are further specifications of distance, but are never truth conditionally necessary. Note, the spelling of the iconic distals is somewhat misleading, because the vowel can be of any length: the longer the vowel, the greater the distance.
2. **Direction:** There is a basic three-way contrast in direction, with two minor additions. In the proximate, it is not necessary to indicate direction. The “Out of Sight” particle only shows up in the Greater Distal, and serves to emphasize the fact that the item is not observable. Note that one can know and specify the direction of things that are currently out of sight. It is not uncommon for the direction to be specified without any indication of distance, especially for non-locative uses.

There are many semantic (sub-)uses of the particles. Four relevant ones are discussed here.

1. **General Location:** They can indicate location of an event or individuals in the event relative to a deictic center. (6) makes reference to the position where the speaker usually is when the pig comes to him. Using ‘ab would make the location at some point in front of the speaker’s current location, ‘an would make the location at some point to either side of the speaker’s current location, ‘i would have make the current location the pig-visiting location.

   (6) Koji 'o 'ab/'an/'i heñ= wui jijvia.
   pig AUX:PF D:FR/D:SD/P 1S= toward PL come
   ‘The pig comes to me there (in front of me)/there (to my side)/here.’

2. **Line of Sight:** The particles can specify the direction a figure is facing relative to the deictic center. The particles in (7) indicate the direction the dog is facing relative to the speaker. With ‘ab the dog is facing the speaker, with ‘an it is facing perpendicular, and with ‘am it is facing away. Example (8) shows the particle modifying a simple intransitive verb. (The box around a noun indicates that the deictic is providing information about that individual.)

   (7) Gogs 'o 'ab/'an/'am bool ba'ic keek.
   dog AUX D:FR/D:SD/D:BR ball in front stand
   ‘The dog is standing in front of the ball (looking towards me/perpendicular to me/away from me)’

   (8) Keli 'at 'ab i'iho.
   man AUX:PF D:SD cough(PF)
   ‘The man coughed (facing me).’

3. **Motion:** The particles can specify the direction a figure is moving in relative to the deictic center. The particles in (9) indicate the direction the subject (and incidentally, the object) is moving relative to the speaker.

   (9) Bart 'o 'ab/'an gahi cevaimed: heg gogs kii c'ed:.
   Bart AUX D:FR/D:SD across DET dog room in
   ‘Bart is dragging the dog across the room (towards me/perpendicular to me).’
4. Temporal: The distance and direction can also apply on the temporal dimension, though this is poorly understood. In (10), 'am is the only possible particle in the perfective. 'ab is impossible in the perfective, but acceptable in the imperfective.

(10) a. Hihido  'ant  'am hem= veehejed:.
    PL,cook(PF) AUX:1S:PF D:FR 2S=  for
    'I cooked for you (and it’s over and done with).'

b. *Hihido  'ant  'ab hem= veehejed:
    PL,cook(PF) AUX:1S:PF D:FR 2S=  for
    'I cooked for you.'

c. Shel  'añ  'ab hem= veehejed: hihidod:
    often AUX:1S D:FR 2S=  for  PL,cook
    'I cook for you all the time.'

5. Misc: There are other uses that do not fall into the above categories, but they will not play any role in what follows.

3.2 Syntax of Deictics

The deictic particles behave like maximal projections rather than heads. Furthermore, they appear to be structurally higher than the VP, based on minimality-like effects holding between the particles and the verb.

(11) a. M at  'i'ìho.
    BK AUX:PF cough(PF)
    'He coughed.'

b. *'i'ìho  at  'am.
    cough(PF) AUX:PF D:BK
    'He coughed.'

Particles are attached to the left edge of VPs and PPs, as shown in examples (8) and (10) above. Gross structures are shown below. I remain agnostic as to whether there is a designated deixis projection or the particles are adjoined.\(^3\)

\(^3\)There is some cross-linguistic evidence suggesting there may be a projection, but I have no Pima internal evidence.
3.3 Semantic Restrictions on Locatives

The deictic particles have different possibilities for interpretation depending on the predicates and arguments they modify. Some obvious ones:

1. Figures that don’t have an inherent front (e.g., balls, trees, etc.) can’t participate in line-of-sight readings. The reason should be obvious.4

2. Stative predicates (e.g., stand, sleep, etc.) do not permit a motion reading of the deictic. This should also be obvious.

There are some less obvious cases. A deictic that is attached to a purely psychological predicate cannot have any of the locative interpretations. (12) shows a fear-type psych predicate. Locative deictics are not compatible with such verbs. Similar facts hold of (13), as shown above, where the deictic is attached to a benefactive PP. Both sentences can only have readings from the temporal or miscellaneous categories.

(12) Marge 'o 'am s- 'eebid heg Homer.
Marge AUX D:FR STAT- fear DET Homer
'Marge (*who is looking away from me) is afraid of Homer.'

(13) Hihido 'ant 'am hem= veehejed:.
PL,cook(PF) AUX:1S:PF D:FR 2S= for
'I cooked for you (*who is looking away from me).'

Scare-type psych predicates do allow a locative deictic interpretation. (14) shows encoding of the direction the subject is looking relative to the speaker.

(14)  Homer 'o 'ab 'ebkiod heg Marge.
Homer AUX D:FR scare DET Marge
'Homer (who is looking at me) scares Marge.'

4I'm aware that in some languages trees have inherent fronts. Pima isn't one of them.
The difference is that in the *fear*-type, the predicate refers only to properties of an individuals mind, but in the *scare*-type, the predicate is an external relationship between two individuals. This supports the view that the difference between the two types are based in aspectual or event structure, not just in idiosyncratic projection or case assignment patterns. (Belletti and Rizzi, 1988; Grimshaw, 1990; Pesetsky, 1995)

4 Putting the particles to use

We have just seen that the deictic particles can be used to probe aspects of the meanings of verbs. They continue to provide insights when applied to ToP’s.

4.1 Motion in ToP’s

Predicates asserting possession of physical objects and diseases are stative, and do not allow a motion reading of the deictic. Indeed, such sentences rarely have any kind of deictic at all. (15) is one that does, but clearly the deictic does not encode direction of motion. It is unclear what the role of this deictic is. It cannot be motion, since the predicate is stative. It cannot be line of sight, since the dog is not around. It is unclear what location would be encoded here. Possibly, this is temporally related — none of the present tense possessives in my notes have a deictic.

(15) M añ hema gogs -ga -kahim.
   BK AUX:1S some dog -POS -PT:CONT
   ‘I used to have a dog.’

*Maak* ‘give’ is frequently accompanied by a deictic particle. In my notes, 85% of all sentences containing this word have a deictic as well. All the possible interpretations discussed above are available for the deictic in this sentence, crucially including the motion interpretation.

(16) Homer ’at ’an maa heg Marge heg [kooba].
   Homer AUX:PF D:SD give(PF) DET Marge DET cup
   ‘Homer gave Marge a cup (which moved in a perpendicular direction).’

*Ceavagit* ‘infect with, give (a disease)’, on the other hand, rarely has a deictic particle. When it does occur it specifies the location of the participants, not the direction they are facing or the direction of motion of the disease. The motion part makes intuitive sense, since diseases do not visibly move. Why this verb does not allow a line of sight reading is unclear. Perhaps the spread of a disease is not a (relatively) quick action, but is due to prolonged exposure during which people change their orientation. If so, then only a rough direction would be available, if even that.

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5The count was done by computer. Identical sentences recorded on different days are counted independently. Only grammatical sentences are counted, including ones that are quite marginal. All marginal sentences lacked deictics, though the grammaticality/semanticality problems lay elsewhere.
(17) Homer 'at 'an ceavagi heg Marge heg shomaigig.
Homer AUX:PF D:SD infect(PF) DET Marge DET cold
‘Homer infected Marge with a cold (both of whom are off to my side).’

*N-cud* ‘make N’ predicates rarely have a deictic. When they do, they do not allow the
deictic to encode motion of the theme. Nearly all cases involving a deictic in my data also
include a temporal adverb of some sort. The effect of the particle in the examples below
appears to be to emphasize the fact that the action is complete. I have not found any
examples in which the motion of the theme is tracked.

(18) M ant hekiu hem= kiic!
BK AUX:1S:PF already 2S= make.house.for
‘I already built you a house!’

(19) Hemuj 'ant 'am 'i hem= paanc!
now AUX:1S:PF D:BK INCEP 2S= make.bread.for
‘I just made you bread!’

A potential concern is that the theme is incorporated into the verb in these examples, and
therefore may not have the same range of possible structures available to them. However,
these nouns are referentially active, as seen from the fact that they can antecede pronouns.
They can also be quantified over.

(20) Jason 'at hema hoat k 'am maa heg Suzanne.
Jason AUX:PF some make.basket and D:BK give(PF) DET Suzanne
‘Jason made a basket and gave it to Suzanne.’

More generally, I do not have any examples of a sentence with a benefactive indirect
object and a deictic tracking motion. This is surprising, because many such predicates can be
used in contexts where the transfer of possession has already taken place. (21), for example,
was produced in a context where Homer was facing the speaker, and Marge was directly
behind, looking off to the side. The particle indicates the direction Homer is facing – I could
not get a reading depicting the motion of the drink.

(21) Homer 'at 'ab hema nolavc heg Marge heg 'i'idag.
Homer AUX:PF D:FR some buy.for DET Marge DET drink
‘Homer bought Marge a drink (while facing towards me).’

4.2 Relating Motion to e and e’

Recall that e is a dynamic event, but e’ is a stative event. Given this, the movement tracked
by a deictic must be part of e, not e’.
5 ENTAILING e’

1. *maak* ‘give’ – Since the movement of the theme can be noted by the deictic, e is an event wherein the theme moves from the agent (source) to the goal.

2. *ceavagid* ‘infect with’ – Since the movement of theme cannot be indicated by the deictic, e may not encode any motion. This could either be because the theme is not visible and therefore not trackable, or because there is no conceptualized motion.

3. *kovhiicud* ‘make coffee for’ – Since the movement of the theme cannot be indicated by the deictic, e does not appear to encode any motion. Since *coffee* is something that could be tracked just as easily as a cup (well, duh!), there is no property of the theme that could be responsible for this. This suggests that e only encodes the making of the coffee, not the transference.

5 Entailing e’

Investigating the entailments of the above verbs supports the characterization of *maak* ‘give’ and *kovhiicud* ‘make coffee for’ and clarifies the nature of *ceavagid* ‘infect with’. Here, I construct biclausal sentences, the first asserting the (apparent) transference, the other negating it.

5.1 Facts

1. It is contradictory to use *maak* ‘give’ in this context. It is not possible to give someone something if they did not take it. In other words, this verb entails e’.

   (22) *Kovhii ’ant hema maa heg Maliiya, shaba t pi ’ab hu coffee AUX:1s:PF some give(PF) DET Maria but PF not D:FR far bei.
   take(PF)
   ‘I gave Maria a coffee, but she didn’t take it.’

2. *Ceavagid* ‘infect with’ in this context does not strictly yield a contradiction when the second predicate is *mumku* ‘be very sick’. This is because *mumku* ‘be very sick’ implicates being bedridden due to illness. Getting a cold need not have this affect on a person. However, even this sentence seems to suggest that Marge gets a cough or the sniffles, or something. If she didn’t show any symptoms, you would never know she had been infected. This makes me suspect that this verb entails e’.

   (23) Homer ’at ceavagi heg Marge heg shomaigig, shaba t pi Homer AUX:PF infect.with DET Marge DET cold but PF not sha’i mumku.
   INTNS very.sick
   ‘Homer infected Marge with a cold, but she didn’t get sick.’
3. Kovhiicd ‘make coffee for’ does not yield a contradiction. Just because you make coffee for someone does not mean you actually give it to them: You merely had intent to give it to them. If fact, you can give it to somebody else without any hint of linguistic awkwardness. This shows that the verb does not entail e’, but just implicates it.

(24) a. Kovhiic  'ant heg Maliiya, shabat pi 'ab hu make.coffee.for AUX:1S:PF DET Maria but PF not D:FR far bei.
take(PF)
‘I made Mary coffee, but she didn’t take it.’

b. Kovhiic  'ant heg Maliiya, shabant maa heg make.coffee.for AUX:1S:PF DET Maria but 1S:PF give(PF) DET John.
John
‘I made Maria coffee, but gave it to John.

6 Theorizing

What all this suggests to me, is that the basic meaning of the verb is expressed via e, and e’ is a (potential) result of e. If some subpart of the meaning of e overlaps with e’, then e’ is entailed to occur. If there is no overlap, then e’ is not entailed, just implicated.

(25) [ x give(e) y z ] [ y HAVE(e’) z ]
(26) [ x infect(e) y z ] [ y BE.SICK.WITH(e’) z ]
(27) [ x make(e) z ] [ y HAVE(e’) z ]

This does not preclude the possibility that these predicates are decomposable. There are plausible arguments that they are decomposable, at least semantically, if not syntactically. If this is correct, then e is composed of (at least) two subevents: e₁ is the action of the causer, and e₂ is the resulting event (or state). (Pustejovsky, 1995)

For example, kill has often been claimed to be cause to die or cause to be dead. Under the current conceptualization, this would be

```
  e
    \--\--
    e₁   e₂
      CAUSE   DIE
```

Note that the resultant state of kill is not available for temporal modification.

(28) *Yesterday I killed John tomorrow. ⇒ ‘Yesterday I did something so that John will die tomorrow.’
(29) *The Romans killed Jesus for three days. ⇒ ‘The Romans caused Jesus to be dead for three days.’
Applying this to the transfer of possession verbs, we get

\[
\begin{align*}
\text{\textit{maak} 'give'} & & \text{\textit{ceavagid} 'infect with'} \\
& & \\
\begin{tikzpicture}[scale=0.5]
\node (e) at (0,0) {$e$};
\node (e') at (1,0) {$e'$};
\node (theta1) at (-1,-1) {$\theta_1$};
\node (theta2) at (1,-1) {$\theta_2$};
\node (have) at (0,-1.5) {HAVE};
\node (cause) at (0,-2) {CAUSE};
\draw (theta1) -- (e);
\draw (theta2) -- (e');
\draw (cause) -- (theta1);
\draw (cause) -- (theta2);
\end{tikzpicture} & \\
\begin{tikzpicture}[scale=0.5]
\node (e) at (0,0) {$e$};
\node (e') at (1,0) {$e'$};
\node (theta1) at (-1,-1) {$\theta_1$};
\node (theta2) at (1,-1) {$\theta_2$};
\node (be_sick_with) at (0,-1.5) {BE.SICK.WITH};
\node (cause) at (0,-2) {CAUSE};
\draw (theta1) -- (e);
\draw (theta2) -- (e');
\draw (cause) -- (theta1);
\draw (cause) -- (theta2);
\end{tikzpicture} \\
\textit{kouhiicud} 'make coffee for' & or perhaps & \textit{kouhiicud} 'make coffee for' \\
\begin{tikzpicture}[scale=0.5]
\node (e) at (0,0) {$e$};
\node (e') at (1,0) {$e'$};
\node (theta1) at (-1,-1) {$\theta_1$};
\node (theta2) at (1,-1) {$\theta_2$};
\node (have) at (0,-1.5) {HAVE};
\node (cause) at (0,-2) {CAUSE};
\draw (theta1) -- (e);
\draw (theta2) -- (e');
\draw (cause) -- (theta1);
\draw (cause) -- (theta2);
\end{tikzpicture} & \\
\begin{tikzpicture}[scale=0.5]
\node (e) at (0,0) {$e$};
\node (e') at (1,0) {$e'$};
\node (theta1) at (-1,-1) {$\theta_1$};
\node (theta2) at (1,-1) {$\theta_2$};
\node (be_sick_with) at (0,-1.5) {BE.SICK.WITH};
\node (cause) at (0,-2) {CAUSE};
\draw (theta1) -- (e);
\draw (theta2) -- (e');
\draw (cause) -- (theta1);
\draw (cause) -- (theta2);
\end{tikzpicture} & \\
\end{align*}
\]

\section{Conclusion}

The above has (hopefully) shown that verbs describing a transfer of possession involve two separate events. In all cases there is a resultant event relating to the possession of the theme by the (intended) recipient. Whether this resultant state is entailed or implicated depends on the meaning of the verb stem: if the stem encodes the transfer itself, then the resultant state is entailed, but if the stem does not encode the transfer, then the resultant state is implicated.

A big question is how these facts are syntactically encoded. There are a lot of proposals for this, but I find most to be quite unsatisfying given the above facts.

\section*{References}


