1 Introduction

The purpose of this talk is to:

- the form of causation;
- the meaning of causation;
- and how the two relate in Pima.

Before getting into things, there is a question of what is meant by “causative”.

- As a first approximation, I use the description devised by the St Petersburg/Leningrad Typology Group:

  The issue ... is a typology of the causative opposition $v_i : v_j$, where $v_i$ denotes a constant $s_i$ (i.e. some 'state') and $v_j$ denotes a constant $k s_j$ (i.e. the same 'state' presented as caused).
  The $v_i$ verbs are non-causatives, and the $v_j$ verbs are their causative counterparts. $V_i$ and $v_j$ are connected by a derivative relation: $v_j$ is 'derived' form $v_i$ by adding the caustive sense $k$. (Nedjalkov and Litvinov, 1995, p. 230-40)

- Let's be more specific about what it means for $s_j$ to be “caused”. I'll say that $s_j$ is caused if the attainment of $s_j$ is subject to the influence of some other factor.

- The definition is a bit too broad, as it also includes certain types of adjuncts (e.g., 'X because of Y'), so the further statement is a useful guide:

  If the causal factor is integrated into the predicate we have more than 'a sentence expressing a causal relation'; we are dealing, in fact, with a true causative construction. (Nedjalkov and Litvinov, 1995, p. 239)

First, I will discuss the form of causative expressions with as little appeal to semantics as possible. Then I will discuss the semantics, with little reference to form. Finally, some remarks will be made correlating the two.

2 Form

The literature recognizes three broad morphosyntactic types of causative, each with subtypes:

1. Lexical
2. Morphological
3. Syntactic/periphrastic

Shibatani and Pardeshi (2003) argue that this is a scale, not a set of discrete categories. They blend into each other, and often it is a judgement call to decide where to draw the line.

2.1 Lexical

Lexical causatives are when the $v_i : v_j$ relation does not involve any regular expression of the causal sense $k$. These occur in Pima in cases of suppletion, partial suppletion (2) and conversion (3).

(1) ‘i geesh ‘fall’ → dakkuan ‘drop’
(2) muuk ‘die’ → mua ‘kill’
(3) vapshud ‘blister’ → vapshud ‘get blisters’ → vapshud ‘give blisters’
2.2 Morphological

Morphological causatives are those in which the \( v_i : v_j \) relation involves regular phonological expression of \( k \). In all Pima cases, there is also a regular correspondence between \( s_i \) and \( s_j \). There are two subcategories:

1. Causativizing - derivational relationship is \( v_i \rightarrow v_j \).

   (4) 'gi' 'be fat' \( \rightarrow \) 'gi'icud 'fatten'

2. Anti-causativizing - derivational relationship is \( v_i \leftarrow v_j \).

   (5) 'e-haín 'be broken, break' \( \leftarrow \) haín 'break'

2.2.1 Causativizing

The causativizing subgroup is the most common. There are four (semi-)regular patterns that can be used to derive a causative. Only one appears to be productive.\(^1\)

1. -\( \text{cu}d \) - This suffix is the only productive one; it derives a simple causative

2. -\( \text{id} \) - This suffix is not productive; it derives a simple causative

3. -\( \text{ji}d \) - This suffix is also unproductive; it derives a simple causative

4. -\( \text{cu}l \) - This suffix is very unproductive. It derives a what look like passive causatives. This matches the description of -\( \text{cu}\text{id} \) in Saxton et al. (1983). However, the final -\( \text{id} \) in the SSE form only shows up in my Pima data if there is also a beneficiary. Given that -\( \text{id} \) is a transitivizing morpheme, this suggests there are two components, not just one.\(^2\)

   (6) \( \text{Heñ}= \text{je}'e \ 'at \ 'am \ \text{ñe}id \ \text{heg} \ 'o'\text{ohan} \).
   
   1S = mother \( \text{aux:PF} \) \( \text{de:bk sec} \) DET book
   
   'My mother read the book.' (Mother must have read the book.)

   (7) \( \text{Heñ}= \text{je}'e \ 'at \ 'am \ \text{ñe}id \ -\text{c} \) \( \text{heg} \ 'o'\text{ohan} \).
   
   1S = mother \( \text{aux:PF} \) \( \text{de:bk sec} \) \( \text{psv:trns((pf)} \) DET book
   
   'My mother had the book read.' (Mother need not have read the book.)

   (8) \( \text{Heñ}= \text{je}'e \ 'at \ \text{heñ}= \ \text{ñe}id \ -\text{cu}l \) \( \text{heg} \ 'o'\text{ohan} \).
   
   1S = mother \( \text{aux:PF} \) \( \text{de:bk sec} \) \( \text{psv:trns:(pf)} \) DET book
   
   'My mother had the book read to me.' (Mother need not have read the book.)

5. -\( \text{V:sh} \) - This is a partial suppletion pattern found with causatives of positional verbs. Classifying this as a morphological causative rather than as a partially suppletive lexical causative is debatable. This classification was made because the causative form is regular for this small, semantically coherent class. Furthermore, the phonological form of the causative is predictable from the non-causative form, but the reverse is not possible.

   (9) \( \text{kees} \) 'stand' \( \rightarrow \) \( \text{kees}h \) 'make stand'

   (10) \( \text{daa}h \) 'sit' \( \rightarrow \) \( \text{daa}sh \) 'make sit'

   (11) \( \text{vo'o} \) 'lie' \( \rightarrow \) \( \text{voosh} \) 'make lie'

\(^1\)The Pimologist will recognize that in the descriptions below, I have ignored the possible benefactive readings.

\(^2\)Pima verbs often truncate in the perfective, which explains the discrepancy between forms seen above and below.
2.2.2 Anti-causativizing

The anti-causativizing pattern is second most common (I think). There are two ways (at least) to detransitive such a predicate.

1. 'e= derives an inchoative or passive from a transitive stem.

   (12) Hëñ= ’o’ohanakud: ’ant mul.
       1s= pencil AUX:1s:PF break
       ‘I broke my pencil.’

   (13) Hëñ= ’o’ohanakud: ’at ’e= mul.
       1s= pencil AUX:PF ANA break
       ‘My pencil broke.’

2. -s derives a state passive (Jackson, 2005)

   (14) Jason ’at mago heg maagina.
       Jason AUX:PF disassemble((PF ) DET engine
       ‘Jason disassembled the engine.’

   (15) ’ida maagina ’o matog -s.
       this engine AUX disassemble -ST:PSV
       ‘This engine is disassembled.’

2.3 Syntactic

Pima has four syntactic patterns that could be argued to be syntactic causatives, two of which are highly debatable. (There are probably more, but I do not have enough data on them.) In all three cases, the syntactic frame is the same, only the verb choice changes. The sj is expressed in a clause embedded under a clause headed by the k predicate. Justification for calling these causatives will be provided below.

1. hivik ‘let, allow; lend’ – the only sure syntactic causative. It is a permissive causative.

   (16) M at hivik t ’am o muu.
       BK AUX:PF let1 (PF ) D: BK IRR die((PF )
       ‘They let her die.’

   (17) John ’at hëñ= hivik ’ant ’am cindat heg vëenag-aj.
       John AUX:PF 1s= let1 AUX:1s:PF D: BK kiss DET sibling -3
       ‘John let me kiss his sister.’

   (18) Homer ’at ’ab hivik heg Marge heg votoñ.
       Homer AUX:PF D:FR lend DET Marge DET button
       ‘Homer lent Marge the button.’

2. daakto ‘let; leave, leave behind’ – similar meaning to hivik, but seems to be used in a more restrictive set of cases. The differences are as of yet unclear, though my consultant once suggested that with daakto, the subject must have been holding the result back, but then stopped. This requirement is not necessarily there with hivik. I have not found a situation that has reliably differentiated the two.

   (19) M at daakto t o muu.
       BK AUX:PF let2 (PF ) IRR die((PF )
       ‘They let her die.’
3. 'aag ‘tell, promise; have’ – As first noticed by Heriberto Avelino (p.c.), the best way to translate an English indirect causative is with 'aag ‘tell, promise’. Pam Munro (p.c.) noted that this structure is unlike a causative in that the resulting state is not entailed to hold. I see three possibilities:

(a) 'aag is not causative at all. Giving an order is simply the closest thing Virgil can think of to an indirect causative.
(b) 'aag is developing into a causative, but is not there yet.
(c) 'aag is ambiguous between a verb of saying and a causative, and tests to confirm the presence of the causative portion force the saying reading.
(d) Indirect causatives in Pima do not entail the result. (Lack of entailment in certain types of causative constructions is found in Tagalog (Dell, 1983), Kimaragang (Kroeger and Johansson, 2005), Japanese (Ikegami, 1985), Hindi (Singh, 1991), and many others.)

3 Meaning

The possible meanings of causation are just as diverse as the possible forms. Unfortunately, there is no direct correlation between the two. (There are some indirect correlations, though.) Most of the issues about causation occur in the interaction between $k$ and $s_j$. Two general areas of interaction need to be accounted for: the directness and force dynamics.

3.1 Directness

Shibatani and Pardeshi (2003) set up a model for the degree of directness in causative constructions. The model is based on the degree of cohesion between $k$ and $s_j$. The more $s_j$ depends on $k$, the more “direct” the causative relation is; the less dependency, the more “indirect”. The dependencies are based on three factors:

1. Causee control – causee control over $s_j$ points to less dependency
2. Temporal overlap – less temporal overlap points to less dependency
3. Spatial overlap – less spatial overlap points to less dependency

Variation of these parameters leads to a scale of directness with five focal regions. (Note, the examples given below can sometimes have additional interpretations beyond the one they are used to illustrate. The diagrams are reprinted from Shibatani and Pardeshi (2003).)

1. **Direct** causatives prototypically have no causee control, and significant spatiotemporal overlap. The causee does something which causes an uncontrolled response with the causee.

\[
\begin{array}{c}
A \rightarrow P \rightarrow \\
L_{/T}
\end{array}
\]
(22) John 'at mua heg ban gaat kaj.
    John AUX:PF kill DET coyote gun with
    'John killed the coyote with a gun.'

2. **Joint-action** causatives prototypically have some causee control, and significant spatiotemporal overlap. Both causer and causee perform the action, but the causer has the most control over the situation.

\[
\begin{aligned}
A & \rightarrow A' \rightarrow (P) \\
& \quad _{L_1/T_1}
\end{aligned}
\]

(23) John 'at him -c heg gogs.
    John AUX:PF go -TRANS((PF) ) DET dog
    'John walked the dog.'

3. **Assistive** causatives prototypically have a fair amount of causee control, and significant spatiotemporal overlap. Both are in the same situation, but most the action is performed by the causee.

\[
\begin{aligned}
A & \rightarrow A' \rightarrow (P) \\
& \quad _{L_1/T_1}
\end{aligned}
\]

(24) 'oks 'o hi'iv -cud heg 'e= mada:. 
    woman AUX urinate -TRANS DET ANA child
    'The woman is making her child urinate.' (in a potty-training context)

4. **Supervision** causatives prototypically have a large degree of causee control and only partial spatiotemporal overlap. The space of the causer and causee may be disjoint, and time of causer action overlaps with causee action

\[
\begin{aligned}
A & \rightarrow A' \rightarrow (P) \\
& \quad _{L_1/T_1} \rightarrow _{L_2/T_2}
\end{aligned}
\]

(25) John 'a:t 'am 'aa t 'am o hema 'o'oha heg 'o'ohan.
    John AUX:1S:PF D:BK tell (PF) D:BK IRR some write((PF) ) DET letter
    'I had John write a letter.' (secretary context)

5. **Indirect** causatives prototypically have a large degree of causee control and no spatiotemporal overlap. The causer does something to the causee, and then the causee does something.

\[
\begin{aligned}
A & \rightarrow A' \rightarrow (P) \\
& \quad _{L_1/T_1} \rightarrow _{L_2/T_2}
\end{aligned}
\]

(26) Heñ= je'e 'at 'am 'aa heg Malijya t 'am o heñ= ñeid -cul
    1S= mother AUX:PF D:BK tell DET Mary (PF) D:BK IRR 1S= read -PPSSV:TRANS((PF) )
    heg 'o'ohan.
    DET book
    'My mother had Mary read me a book.'

### 3.2 Force Dynamics

The role of **force dynamics** in linguistics was first formalized by Talmy (1988), and has since been adapted by Jackendoff (1990) and Wolff (2003). Force dynamics recognizes the existence of various forces and tendencies within a situation that lead to the fine details of the resulting situation. Three pieces of information necessary:
1. Status of causee and $s_j$ - Is the causee already in $s_j$ or not?

2. Change towards $s_j$ - Is the causee moving/changing towards $s_j$, away from $s_j$, or neither?

3. Direction of force $k$ - Does the force applied by the causer push the causee to be in $s_j$, to not be in $s_j$, or neither?

There are some gaps in my data, but let's consider the possibilities.

1. Causee is not in $s_j$

   (a) Causee is not changing towards $s_j$,

      i. Causer pressures towards $s_j$:
      This is the classical causative. This pattern can be expressed via lexical, morphological, or syntactic causative.

      ii. Causer pressures away from $s_j$:
      No data. An English example would be: *I kept the bird from flying* uttered in a context where the bird would not fly anyways. This is peculiar in English, and perhaps would not be lexicalized in any language.

      iii. Causer does not exert any force:
      No data. There probably is no such causation pattern, since there would be no reason to talk about $s_j$ at all; *I bucked the vase fall*, meaning "The vase is not falling or likely to fall, and I'm not doing anything to it one way or the other."

   (b) Causee is changing towards $s_j$

      i. Causer pressures towards $s_j$:
      Though not usually thought of as a causative, this is essentially the situation with *help*. I have seen one possible example of this in Pima, though the analysis is highly debatable. I predict this to be a syntactic causative if it exists.

      (27)  'am hahava 'ep 'i veemt 'am ha= wuappa heg Pimas Chahuahua t-
             D: BK then also INCEP help D: BK 3P= bring DET Pimas Chahuahua UNPOSS-
             'amjed:<
             from
             'Then I also helped bring the Pimas from Chahuahua.'

      One might argue that this also the situation in cases of mercy killing: the causee is dying, the causer hurries it along. I think this should be classified with the classical causatives.

      ii. Causer pressures away from $s_j$:
      No data. In English this is expressed with *prevent*. If this exists in Pima, it will probably only be as a syntactic causative.

      iii. Causer does not exert any force:
      These are the *let* examples. Pima has two, possibly depending on whether the causer had previously applied pressure against.

      (28)  M ant hivik heg ha’a t ’ab ’i gei.
             BK AUX:1S:PF let DET vase (PF) D:FR INCEP fall((PF )
             'I let the vase fall.'

      (29)  M ant daakto heg ha’a t ’ab ’i gei.
             BK AUX:1S:PF let DET vase (PF) D:FR INCEP fall((PF )
             'I let the vase fall [by getting out of its way].'

2. Causee is in $s_j$

   (a) Causee is not changing away from $s_j$
i. Causer exerts force towards $s_j$:
Possibly, this is morphologically marked with a suffix -kc. (Jackson, 2005)

(30) He$n=baabkeli 'at 'am 'eesto heg 'e= 'oolak-ga.
1S= grandfather AUX:PF D: BK hide(PF) DET ANA gold -POSS
‘My grandfather hid his gold.’

(31) Ku$n vaikko vestmaam 'ahidag 'ab 'am 'eesto -kc.
3:1S thirty year for D: BK hide(PF) -ST
‘I have kept it hidden for thirty years.’

ii. Causer exerts force away from $s_j$:
No data. Probably this will only ever be attested via negation; e.g., unredden, unbreak.

iii. Causer does not exert any force:
Insufficient data. This is probably expressed via hivik ‘let’ and daakto ‘let’; e.g., I let him be angry.

(b) Causee is changing away from $s_j$

i. Causer exerts pressure towards $s_j$:
This may be the -kc suffix mentioned above. It would be a case like I kept the ball rolling.

ii. Causer exerts pressure away from $s_j$:
No data. It might not exist. In English, this would be something like: I flibbed the ball rolling,
meaning ‘I helped the ball stop rolling.’

iii. Causer does not exert pressure:
No data. This probably does not exist. This would be like having a form of let, where it was implied that the complement was the reverse of the stated situation. In English, I let the ball roll meaning ‘I let the ball stop rolling.’

4 Correlating Form and Meaning

Are there any patterns correlating the form and meaning in causation? There are two claimed universals relating form and meaning, both of which Pima obeys.

1. If a language has a morphological indirect causative, it also has a morphological direct causative.

2. The indirect causative form is always equal to or longer than the direct causative.

Both of these universals can be exemplified with the following pair. The second example shows that Pima allows indirect morphological causatives, and we have seen morphological direct causatives. Also, for the same verb stem, the indirect causative form is longer than the direct causative form.

(32) Direct causative

‘i$dam shuushk ’o he$n= vapshud.
these shoe AUX 1S= blister

‘These shoes give me blisters.’

(33) Indirect causative

Eric ’o he$n= vapshud -cud.
Eric AUX 1S= blister -TRNS

‘Eric makes me get blisters.’
Pima does not appear to have any syntactic direct causatives. Direct causatives are always lexical or morphological. The converse probably does not hold: While most lexical and morphological causatives are not indirect, there are some plausible candidates. The following question-answer pair shows that the lexical causative *bek* ‘bring’ can be indirect.

\[(34) \text{ a. Shacu t } \text{ i'm= bei? what (pr) p 2s= bring((pr) ) 'What brought you here?'}
\]

\[
\text{b. Cikpan gaagi. work seek 'Looking for work.'}
\]

Turning to force dynamics, it seems that lexical and morphological causatives are only associated with force dynamics where the causer is acting against the tendency of the causee. When the causer helps or fails to hinder the causee, this is expressed via a syntactic causative construction.

**References**


