10

Causal chains and instrumental case in Hindi/Urdu

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10.1 Introduction

This chapter concerns the representation of indirect vs. direct causation as exemplifed by Hindi/Urdu, which possesses two productive causative suffixes, -*aa* and -*vaa*, which attach to roots. In the literature, the difference between direct and indirect causation has been characterized in many different ways. We can detect two main classes of description: one in terms of the number and mental experience of the actants involved in the causally linked events; the other in terms of the event relationships themselves.*

   Thus, it is possible to characterize indirect causation primarily in terms of the participants, as the following quote from Masica (1976) shows, cited in Shibatani (2002).

A causative verb denotes an action that calls forth a particular action or condition in another person or object. This causation may be principally of two kinds, 'distant' and 'contactive'. In the latter, the agent does something to the object, bringing about its new condition by direct contact; in the former he makes use of an intermediary agent and serves only as the 'instigator' of the act.   (Masica 1976: 55)

   However, one can also express the difference in terms of the closeness of the causal chain linking the different subevents, as Nedjalkov and Sil'nickij (1973) do in the next quotation (also cited in Shibatani 2002).

In the case of distant causation there is a mediated relation between the causing subject and the caused state in which a greater or lesser independence of the cause subject is actualized in

its initiation (or failure to make an initiation) of the states s_j. This mediation often appears in an actualization of a certain time interval between the causing s_i and caused (s_j) states.'

(Nedjalkov and Sil'nickij 1973: 10)

The claim I make here is that the subevental characterization is the fundamental one, from which the argument structure properties derive, not vice versa. The quotation from Nedyalkov and Sil'nickij above is in fact strikingly similar to a proposal by Levin and Rappaport Hovav (1999) concerning the difference between direct and indirect resultatives. Specifically, Levin and Rappaport Hovav correlate the idea of 'directness' with a kind of temporal dependence between the two relevant subevents, although they use the term 'causational' only for the 'indirect' or temporally independent subevents.

- *Indirect:* A causative event structure consisting of two subevents formed from the conflation of temporally independent events
- *Direct:* A simple event structure formed from the conflation of two temporally dependent 'co-identified' events.   (Levin and Rappaport Hovav 1999: 63)

Shibatani and Pardeshi (2002) claim that morphologically opaque forms like lexical causatives (indistinguishable from simple transitives in many cases) tend to represent 'direct' causation, while transparent morphological forms (whether within the word or phrasal) tend to represent 'indirect' causation cross-linguistically. In addition, direct causativization is assumed to apply unproblematically to unaccusative roots, but indirect causativization is necessary to causativize fully transitive verbal forms (Nedjalkov and Sil'nickij 1973; Rice 2000; Shibatani 2002). Indirect causativization is sometimes assumed to be more complex, or biclausal, in containing one causing projection within another; direct causativization, on the other hand, contains only one (direct) cause.

On a very general semantic level, we will see that indirect vs. direct causation seems to be a very good characterization of the difference between the meanings of *-vaa* causativization and *-aa* causativization respectively in Hindi/Urdu. However, the assumption that difference between 'direct' and 'indirect' causation also correlates with morphological transparency and distribution with respect to verb type turns out not to hold in this language. This means that in any synchronic analytic account of these facts, the 'direct' vs. 'indirect' causational semantics must be logically independent of internal morphemic structure; in particular it must be capturable without recourse either to recursion or to the syntax lexicon divide. In fact, Hindi/Urdu is in some sense the perfect language for which to formulate a theory about direct vs. indirect causation, since it provides a controlled case where there are no detectable differences in morphological productivity or distribution between the two semantic types of causation.

In the literature on Hindi/Urdu, the difference between the *-vaa* causative and the *-aa* causative is often indistinguishable from the judgement that an optional *-se-* marked instrumental adjunct can be interpreted as an 'intermediate agent' in the former case, but not in the latter.

The intermediate agent interpretation is an important diagnostic, but to my knowledge the data for all the different verb types have not been systematically presented in the literature. The new empirical contribution of this chapter is a report on my own informant work on the interpretation of *-se* marked adjuncts with all the different verb types and suffixation possibilities discussed above. Given that this is the one clear linguistic diagnostic that can be used to distinguish the two different types of causation in this language, it is important to examine its distribution in a more fine-grained fashion to determine exactly what it is diagnostic *of*. Based on this data, I will show that the traditional participant-based description of indirect causation involving the existence of a demoted agent is not as successful as a more event-based characterization based on the immediacy of the causal chain linking subevents. In this sense, the chapter is consistent with the characterizations offered in Thomason (Ch. 2, this volume), and Lyutikova and Tatevosov (Ch. 11, this volume) in which causative structures are described in terms of relationships between subevents. I will argue that this kind of description is indeed primary, and that the facts about participant relationships to the events in question are derivative of it. This in turn will allow us to make a proposal about the representation of indirect vs. direct causation in the grammar.

The chapter is organized as follows. In the first section, I lay out the basic facts about direct and indirect causation in Hindi/Urdu with respect to distribution and interpretation. I argue here, following Saksena (1982b), that the indirect causative is not derived from, and cannot be seen as, the 'second causative' of the direct causative. In section 10.3, I present new facts about the licensing and interpretation of *se*-marked phrases in these different causatives, arguing that the intermediate agent interpretation is not correlated with a demoted agent in the base verb's argument structure, or even with the so-called 'indirect' causative suffix. Section 10.4 presents an analysis in terms of a concrete verbal event structure decomposition in the syntax, and discusses the implications of the analysis for theories of syntax–semantics interface, and the event-structural properties of indirect causation. Section 10.5 is the conclusion.

10.2 Direct and indirect causatives in Hindi/Urdu

Nearly every verb in Hindi/Urdu can undergo morphological causativization (Kachru 1976; Hook 1979; Masica 1991; Saksena 1982b). In Hindi/Urdu there are two distinct suffixes that attach directly to verbal stems to create causative secondary stems: *-aa*, traditionally seen as a transitivizer, or 'direct causative'; and *-vaa*, the

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'indirect causative'. The following triple shows an intransitive stem (a), a causative in -*aa* (b), and a causative in -*vaa* (c), all based on the same root.

(1)   a. Makaan   ban-aa
          house   make-PERF.M.SG
          'The house was built.'

      b. Anjum-ne   makaan   ban-**aa**-yaa
          Anjum-ERG house   make-*aa*-PERF.M.SG
          'Anjum built a house.'

      c. Anjum-ne   (mazdurõ-se)   makaan ban-**vaa**-yaa
          Anjum-ERG labourers-INSTR   house   make-*vaa*-PERF.M.SG
          'Anjum had the labourers build a house.'   (Butt 2003)

It is important to note that although it is necessary to use the English passive construction to gloss the (a) example above, the verb in (1a) is a simple underived verb stem and is intransitive/unaccusative. It denotes the event of a house undergoing development by building; it cannot take a *by*-phrase or an instrumental; there is no implicit agent available for control. Unlike English (but like e.g. Stat'imcets: Davis and Demirdache 2000), most transitive verbs are *derived* from bare unaccusative stems such as these. In fact, there are extremely few verbs in Hindi/Urdu which only exist in transitive form with no intransitive counterpart in the above sense. In a language like English, where a verb like *build* is transitive in its basic form, a passive construction must be used to approximate the Hindi/Urdu meaning.

The -*vaa* causative is traditionally considered to be the 'indirect' causation marker, interpreted by Kachru (1980) as a 'second' causative, and by Shibatani (1973a) as a 'syntactic' causative alongside a more 'lexical', 'first causative' -*aa*. Two main questions arise for this pattern. First, what is the structural and/or semantic difference between 'direct' and 'indirect' causation? Should it be analyzed in terms of 'lexical' vs. 'syntactic' processes (cf. Shibatani 1973a), or some syntactic version of this idea in terms of 'inner' and 'outer' causativization involving recursion? Secondly, what licenses the presence of the -*se* marked adjunct as intermediate agent?

While the examples above, given in sequence as they are, give the impression that the -*vaa* causative is the causative of the -*aa* causative, it is important to point out that the -*vaa* suffix does not attach to the -*aa* suffixed stem, but attaches instead of the -*aa* suffix. In fact, the *aa* and -*vaa* suffixes never occur simultaneously on the same root in Hindi/Urdu. Thus, the morphology does not support causative embedding by -*vaa* causatives of -*aa* causatives. From a semantic point of view also, there are cases which do not support an embedding analysis. For example, as pointed out by Saksena (1982b), the -*vaa* causative form in the (a) examples below does not entail the truth of the -*aa* causative in the (b) examples.

(2) a. mai-nee laṛke-ko do baje   khil-**vaa**-yaa
        I-ERG   boy-DAT two o'clock eat-vaa-PERF.M
        'I had the boy eat at two o'clock.'

     b. kisii-nee laṛke-ko do baje   khil-**aa**-yaa
        someone boy-DAT two o'clock eat-aa-PERF.M
        'Someone fed the boy at two o'clock.'

(3) a. mãĩ-ne laṛke-ko paṛh-**vaa**-yaa
        I-ERG   boy-DAT study-vaa-PERF.M
        'I had the boy study.'

     b. mãĩ-ne laṛke-ko paṛh-**aa**-yaa
        I-ERG   boy-DAT study-aa-PERF.M
        'I taught the boy.'   (Saksena 1982b)

One important aspect of the description of these two suffixes concerns their distribution. We can make concrete proposals about their role in the verbal argument structure if we understand what classes of verb they attach to and with what effects. According to the literature on causativization cross-linguistically, 'direct' causative or simple transitivizing morphology is often restricted to intransitives and sometimes, more specifically, to unaccusatives (Nedjalkov and Sil'nickij 1973; Rice 2000; Shibatani 2002). Periphrastic causatives tend to show no restrictions according to verb type, and also tend to have the 'indirect' causative interpretation (Shibatani and Pardeshi 2002). Given that the two causative morphemes *-aa* and *-vaa* in Hindi/Urdu have the meanings of direct and indirect causation respectively, one might expect a difference in their distribution, with the 'indirect' causative being more productive than the the 'direct' causative.

10.2.1 'Causativization' of intransitives

In what follows, I will show that with respect to different types of verbal root, there is no clear evidence that the *-vaa* suffix attaches to anything different or 'bigger' than the forms that the *-aa* suffix attaches to. First, we can consider the intransitive roots in Hindi/Urdu which pass the tests for unaccusativity.[1]

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[1] This list is taken from Bhatt (2003). Bhatt's diagnostics for unaccusativity are the following: (i) The past participle of unaccusatives can be used in a reduced relative, unergatives not. (ii) Unaccusatives can never form impersonal passives, while unergatives can. (iii) Only unaccusatives form an inabilitative construction, unergatives (and transitives) require passive morphology to do so. According to Ahmed (2007), verbal roots actually perform differently on these tests depending on whether an animate or an inanimate subject is used. As far as I can tell, this latter point does not substantially affect the arguments made in this section of the chapter.

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(4)   **Intransitive**   **Gloss**
      ban-naa   'be made'
      ḍuub-naa   'drown'
      gal-naa   'melt'
      gir-naa   'fall'
      jaag-naa   'wake up'
      so-naa   'sleep'
      suukh-naa   'dry'
      uṭh-naa   'rise'

Both the -*aa* suffix and the -*vaa* suffix can attach to these verbal roots to give transitive forms, where the subject of the intransitive becomes the direct object argument.[2]

(5)   a. garam havaa uṭhii
         hot air   rise.PERF.FEM
         'The hot air rose.'

      b. Anjum-ne   ṭebil uṭh-aa-yii
         Anjum-ERG table rise-aa-PERF.FEM
         'Anjum raised/lifted the table.'

      c. Anjum-ne   ṭebil uṭh-vaa-yii
         Anjum-ERG table rise-vaa-PERF.FEM
         'Anjum raised/lifted the table.'

When this verb is used with an animate subject in its intransitive form, it has the meaning 'to wake up'. In this meaning too, the -*aa* and -*vaa* suffixes can be applied to give forms that mean that somebody woke someone up.

(6)   a. Mary uṭhii
         Mary rise.PERF.FEM
         'Mary woke up.'

      b. Anjum-ne   Mary-ko   uṭh-aa-yaa
         Anjum-ERG Mary-ACC rise-aa-PERF.M
         'Anjum woke Mary up.'

      c. Anjum-ne   Mary-ko   uṭh-vaa-yaa
         Anjum-ERG Mary-ACC rise-vaa-PERF.M
         'Anjum woke Mary up.'

In both these cases, the only difference between the (b) sentences and the (c) sentences is that in the former, the subject must have lifted or done the waking

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[2] Thanks to Tafseer Khan Ahmed for judgments in this section and for providing clear minimal pairs.

herself, whereas in (c) she could have simply ordered it, or brought it about that it was done.

The class of unergative intransitives is much smaller, but according to the diagnostics given by Bhatt (2003) the following verbs (with animate subjects) are unergatives.

(7) | **Unergative** | **Gloss** |
|---|---|
| chal-naa | 'move, walk' |
| dauṛ-naa | 'run' |
| hãs-naa | 'laugh' |
| naach-naa | 'dance' |
| uṛ-naa | 'fly' |

These verbal roots also 'transitivize' both with *-aa* and *-vaa*, but the direct object of these forms seems to need to be inanimate, or at least 'controllable', to get a felicitous result. For example, if the bird has been released from a cage, or has been frightened off a branch by the subject, then the 'bird' is fine as a direct object in (9) and (10). Note that this fact is the same regardless of whether *-aa* or *-vaa* is used as a causativizer.

(8) patang/chiṛiyaa uṛ rahii   hai
     kite/bird   fly PROG.F be-PRES.SG
     'The kite/the bird is flying.'

(9) Anjali patang/?chiṛiyaa uṛaa rahii   hai
     Anjali kite/bird   fly PROG.F be-PRES.SG
     'Anjali is flying a kite/?a bird.'

(10) Anjali patang/?chiṛiyaa uṛvaa rahii   hai
      Anjali kite/bird   fly   PROG.F be-PRES.SG
      'Anjali is flying a kite/?a bird.'

If we take an unergative verb like 'laugh', an animate object is allowed, and causativization with both *-aa* and *-vaa* is once again possible. The difference in meaning is that in the (b) sentence, Anjum must have tickled the child or told some joke to make the child laugh, while in the (c) sentence Anjum could have got someone else to actively amuse the child.

(11) a. bacca hãs-aa
         child laugh-PERF.M
         'The child laughed.'

      b. Anjum-ne   bacce-ko   hãs-aa-yaa
         Anjum-ERG child-ACC laugh-aa-PERF.M
         'Anjum made the child laugh (with his tickling, or funny stories).'

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    c. Anjum-ne   bacce-ko   hãs-vaa-yaa
      Anjum-ERG child-ACC laugh-vaa-PERF.M
      'Anjum made the child laugh (by taking him to an amusement park).'

So far, we have seen that both the -*aa* suffix and the -*vaa* suffix attach to intransitive roots, albeit with slightly different semantics. If we were to assume that the -*vaa* suffix attaches to an already transitivized form, we would have to argue for a rule of allomorphy that spells out single causativization as -*aa* and double causativization as -*vaa*.[3]

10.2.2 Causativisation of 'basic' transitives

We have so far looked at intransitive roots, of both the unaccusative and unergative variety. These intransitive roots constitute the majority of the root types in Hindi/Urdu. However, there is another class of roots that come in transitive/intransitive pairs, where the intransitive version looks as though it is related to the transitive version by vowel shortening in the stem. This was a systematic alternation in a much earlier stage of the language, but is no longer productive (Saksena 1982b; Masica 1991). The table in (12) is a subset of the relevant forms, adapted from Bhatt (2003). According to Bhatt, the intransitive members of this class always pass the tests for unaccusativity.

(12)

Intransitive	Transitive	Gloss
bãṭ-naa	bããṭ-naa	'be divided/divide'
bandh-naa	baandh-naa	'connect'
chhid-naa	chhed-naa	'be pierced/pierce'
dhul-naa	dho-naa	'be washed/wash'
gir-naa	ger-naa	'fall/cause to fall'
ghir-naa	gher-naa	'be surrounded/surround'
kaṭ-naa	kaaṭ-naa	'be cut/cut'
khul-naa	khol-naa	'open'
lad-naa	laad-naa	'be loaded/load'
mar-naa	maar-naa	'die/kill'
nikal-naa	nikaal-naa	'come out/ bring out'
pal-naa	paal-naa	'be brought up/ bring up'

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[3] Masica (1991) points out that there are some Indo-Aryan languages where a single causative morpheme is found, which can be 'doubled' to get the effects of 'indirect' causation (e.g. Marathi). He further asserts that in the languages in which there are two distinct morphemes which do not stack, as in Hindi/Urdu, the 'indirect' causative is historically derived from a doubled 'direct' causative. However, Butt (2003) evaluates this claim with respect to Hindi/Urdu and finds no evidence for such a derivation. Rather, both allomorphs of the causative seem to be attested at an equally early stage. I therefore conclude that there is no historical evidence for the indirect causative in -*vaa* being the double causative of -*aa*. Of course, even if there were such evidence, it would not necessarily carry over to the synchronic state of the language.

sudhar-naa	sudhaar-naa	'improve'
ubal-naa	ubaal-naa	'boil'
ujar-naa	ujaar-naa	'be destroyed/destroy'
utar-naa	utaar-naa	'get down/bring down'

An interesting question to ask about this alternation is whether both forms need to be stored, or whether one can be systematically derived from the other. If the forms are synchronically derivationally related at all, the question is whether the transitive is derived from the intransitive by vowel lengthening, or whether the intransitive is derived from the transitive by vowel shortening. Bhatt (2003) argues that since the vowel shortening correspondence reduces the number of distinctions found in the long forms, it is better to derive the intransitive from the transitive (see Bhatt 2003 for data and discussion). Thus, either the forms are both basic in the modern language or the intransitive is derived from the transitive. In either case, we have a plausible set of candidates for base (underived) transitive roots. In fact, they are the only base transitives in Hindi/Urdu once the ingestives and perception verbs are put aside (see next subsection).

The initial expectation, if -*vaa* is indeed an 'indirect' or 'second' causative, is that it should attach to transitive roots, and that -*aa* should not (since by hypothesis, transitive verbs already contain a 'causer', or even an agent). However, testing these roots with -*aa* and -*vaa* augmentation involves a further fatal complication: both of these suffixes induce vowel shortening on the root—the very same vowel-shortening relation that reflects the transitive/intransitive alternation. This means that, in principle, it is very difficult to tell whether the suffix(es) in question are attaching to the transitive stem with vowel shortening or to the intransitive stem directly. Bhatt (2003) considers this question with respect to a handful of alternations where the final consonant changes in addition to vowel shortening (13).

(13)

Intransitive	**Transitive**	**Gloss**
chhuuṭ.-naa	chhoṛ-naa	be free/free
phaṭ-naa	phaaṛ-naa	be torn/tear
phuuṭ-naa	phoṛ-naa	be burst/burst
tuuṭ-naa	toṛ-naa	break

According to Bhatt, -*vaa* causatives for these verbs preserve the consonant in the transitive stem, not the intransitive stem (14).

(14)

Intransitive	**Transitive**	**-*vaa* form**
chhuuṭ-naa	chhoṛ.-naa	chhuṛ-vaa-naa
phaṭ-naa	phaaṛ-naa	phaṛ-vaa-naa
phuuṭ-naa	phoṛ-naa	phuṛ-vaa-naa
tuuṭ-naa	toṛ-naa	tuṛ-vaa-naa

However, Bhatt also points out two additional verbs, where the morphophonology suggests the opposite, i.e. where it looks as though the *-vaa* form is built on the basis of the intransitive stem.

(15) **Intransitive   Transitive   *-vaa* form**
       bik-naa   bech-naa   bik-vaa-naa (be sold/sell)
       simaṭ-naa   sameṭ-naa   simaṭ-vaa-naa (be collected/collect)

Thus, it is very difficult to see any difference in distribution between the *-aa* causative and the *-vaa* causative in this class. Even if it were systematically true that the *-vaa* causative attaches to transitive stems and the *-aa* causative to intransitive stems, it would be impossible to tell because of vowel shortening. There are also unsystematic gaps where not all forms have both *-aa* and *-vaa* causatives, together with much speaker and dialect variation. In particular, testing the morphologically irregular forms with *-aa* causative and *-vaa* causative minimal pairs proves impossible, and it is unclear whether this is accidental or not.

However, at least one thing is clear. Many stems/roots in this class occur with both *-aa* and *-vaa* causatives, even within the same dialect. When they do so, speakers find it very difficult to say what the semantic difference is between the two morphological causatives (16) (data adapted from Saksena 1982b).

(16) a. Paoda kaṭ-aa
          plant   cut-PERF.M.SG
          'The plant got cut.'

      b. Anjum-ne   paoda kaaṭ-a
         Anjum-ERG plant   cut-PERF.M.SG
         'Anjum cut a/the plant.'

      c. mãĩ-ne peṛ kaṭ-aa-yaa
         I-ERG   tree cut-*aa*-PERF
         'I had the tree cut.'

      d. mãĩ-ne peṛ kaṭ-vaa-yaa
         I-ERG   tree cut-*vaa*-PERF
         'I had the tree cut.'

Note that in these cases, both the *-aa* causative and the *-vaa* causative have the same valency as the transitive form. In neither case do we have the addition of an obligatory argument. In terms of the meaning difference between the simple transitive sentence in (b) above and the causatives in (c) and (d), both causatives have more of a flavour of indirect causation and are very difficult to distinguish from each other.

10.2.3 *Causativization of 'ingestives'*

With one small class of transitive verbs, causativization is possible with the *addition* of a required argument, to create a derived 'ditransitive' (Bhatt 2003). These verbs form a coherent class that one might characterize abstractly as 'ingestive' (whether physical or experiential), and show distinctive argument structure properties across Indo-Aryan (see Masica 1976). According to Shibatani (2002), this class of verbs is also significant in a cross-linguistic perspective, isolated as early as Nedjalkov and Sil'nickij (1973) as a special class of transitives which is more likely to take a causative morpheme than other transitives. Indeed, these verbs are the only clear case of a transitive verb being causativized in Hindi/Urdu, and we get the clear addition of a causer argument to the original argument structure of the ingestive verb.

(17)	**Ingestive**	**Ditransitive**	**Gloss**
	chakh-naa	chakh-aa-naa	'taste/cause to taste'
	dekh-naa	dikh(l)-aa-naa	'see/show'
	khaa-naa	khil-aa-naa	'eat/feed'
	pakaṛ-naa	pakṛ-aa-naa	'hold, catch/hand, cause to hold'
	paṛh-naa	paṛh-aa-naa	'read/teach'
	pii-naa	pil-aa-naa	'drink/cause to drink'
	samajh-naa	samjh-aa-naa	'understand/explain'
	siikh-naa	sikh-aa-naa	'learn/teach'
	sun-aa	sun-aa-naa	'hear/tell'

In (17), the ditransitives are given in their *-aa* form, but in fact these verbs form ditransitives with *-vaa* as well, with more of an 'indirect' causation flavour, as shown in (18).

(18)   a. rita-ne   angur   khaa-e
          rita-ERG   grape   eat-PERF.M.PL
          'Rita ate some grapes'

     b. rita-ne   sima-ko   angur   khil-aa-e
          rita-ERG   sima-DAT   grape   eat-*aa*-PERF.M.PL
          Rita fed Sima some grapes.'

     c. kala-ne   sima-ko   angur   khil-vaa-e
          Kala-ERG   sita-DAT   grape   eat-*vaa*-PERF.M.PL
          'Kala made Sima eat some grapes.'   (Butt 2003)

The ingestive class is clearly special, but in terms of distribution does not distinguish between the *-aa* suffix and the *-vaa* suffix.

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10.2.4 Summary

In general, then, -*vaa* and -*aa* attach to what appear to be the very same root/stems, with base transitives and intransitives of both kinds combining with both suffixes. There is no difference in the number of obligatory arguments found with -*aa* or -*vaa*, and no apparent difference in the classes of verb stem that they can apply to.

(19)	**Base unaccusative**	*ban*	*ban-aa*	*ban-vaa*
		'get made'	'make'	'have sth. made'
	Base unergative	*hās*	*hās-aa*	*hās-vaa*
		'laugh'	'make laugh'	'have (s.o.) laugh'
	Base 'ingestive'	*paṛh*	*paṛh-aa*	*paṛh-vaa*
		'read'	'teach'	'have s.o. study'
	Base transitive	*kaaṭ*	*kaaṭ-aa*	*kaaṭ-vaa*
		'cut s.t.'	'have (s.o.) cut s.t.'	'have (s.o.) cut sth.'

As Saksena (1982b) points out as well, there appears to be no difference in either degree of productivity (both are extremely productive) or in the tendency to have idiomatic conventionalized meanings. This table repeated from Saksena (1982b) shows a few cases of idiomatic transitives for both -*aa* and -*vaa* forms.

(20)	**Root (intr)**		**Idiomatic Transitive**	
	bul-naa	'speak'	*bul-aa-naa*	'call s.o.'
	pak-naa	'ripen'	*pak-aa-naa*	'cook'
	paṭ-naa	'get along'	*paṭ-vaa-naa*	'lay a floor/roof'
	le-naa	'take'	*li-vaa-naa*	'buy sth. for s.o.'

There seems no evidence that one of these suffixes is more 'lexical' than the other in terms of productivity or semantic transparency. Regardless of how one wants to interpret these notions, whether in terms of a difference in module or a difference in morphological or syntactic cycle, the point is that both suffixes seem to behave in very similar ways with respect to these criteria.

Thus, we have no evidence from morphology, semantic entailments, or distribution that the -*vaa* causative embeds the -*aa* causative, and we have no evidence that one of the suffixes is more 'in the lexicon' than the other.

Shibatani (2002) claims that across languages, there is a general correlation (or implicational hierarchy) between morphological transparency of the causativization strategy and the verbal hierarchy below:

inactive/unaccusative intransitives > active/unergative intransitives > ingestive transitives > transitives

The claim is that lexical causatives and unproductive or idiosyncratic morphological causativization usually represent simpler or 'easier' causativizations (i.e. the top part of the verbal hierarchy above), while productive morphological or periphrastic

devices are employed when the causativization is more unusual or difficult to conceptualize. The interesting thing about Hindi/Urdu in this regard is that we are dealing neither with completely opaque lexical causativization nor with completely analytic periphrastic constructions—there are two morphological suffixes here, and they both appear to be equally 'productive'. If Shibatani (2002) is right about his correlation between morphological transparency and productivity with respect to verb type, then both the *-aa* and the *-vaa* suffixes might be seen to satisfy that expectation unproblematically. However, the fact remains that the two different causative suffixes have different meanings in many cases, and the synchronic grammar must represent that difference somewhere.

Let us turn now to the distribution and interpretation of the instrumental *-se* phrase. This phrase is the one which is interpreted as the 'intermediate agent' in cases of indirect causation. In the Hindi/Urdu literature, this has usually been taken to be unexpressed or demoted agent of the pre-causativized verb.

10.3 -*SE* and the 'intermediate agent'

10.3.1 Introduction

There is a long tradition in the generative literature of interpreting the presence of the *by*-phrase adjunct in the English passive as the signal of a 'demoted argument', in this case, the AGENT of the corresponding active (Jaeggli 1986; Grimshaw 1990; Baker et al. 1989) or an AGENT feature in the syntax (Embick 2004).[4] In the case of Hindi/Urdu causative constructions, an instrumental *se*-marked adjunct is licensed with an 'intermediate agent/causee' interpretation in the indirect morphological causative using the suffix *-vaa* (Masica 1991; Saksena 1982b; Kachru 1980; Hook 1979), inviting comparisons with the demoted agent analysis of English *by*-phrases.

In the traditional analysis, based on the idea of an argument structure grid with thematically specified participants, the story goes as follows. The base verb has either a transitive or intransitive argument structure frame, and the causative morpheme has a single causer argument and an event position.

(21) (i) *-vaa*: E < Agent, Caused-Event >
   (ii) *hās*- 'laugh': E < Agent >
   (iii) *ban*- 'be made': E < Theme >
   (iv) *kaaṭ*- 'cut': E < Agent, Theme >

When the two combine (by assumption in these theories, in the lexicon), the caused-event internal argument of the causative morpheme identifies with the event

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[4] More recently, there are those who have argued that the *by*-phrase is itself in the Spec, vP position of an agentive little v, and is thus a syntactically represented argument (Goodall 1997; Collins 2005). Since I will end up arguing against the correlation with thematic role in any case for the Hindi/Urdu instrumental case, I do not consider this class of theories further.

position of the embedded verb. One argument of the embedded verb is interpreted as 'affected', and the linking rules will mark this with *-ko* in Hindi/Urdu and link it to the direct object position. The agent/causer argument introduced by the causative morpheme is linked to the subject, and any left-over argument must be demoted (here, the agent of the embedded verb) and realized as a *-se* marked adjunct.[5]

(22)   **Lexicon: cause + intransitive verb**

$$\text{-vaa: E} \quad < \text{Agent,} \quad \text{Caused-Event} > \quad h\bar{a}s \quad \text{E} \quad < \text{Agent} >$$

$$[\pm \text{Aff}]$$

SUBJECT   DIRECT OBJECT

-ko
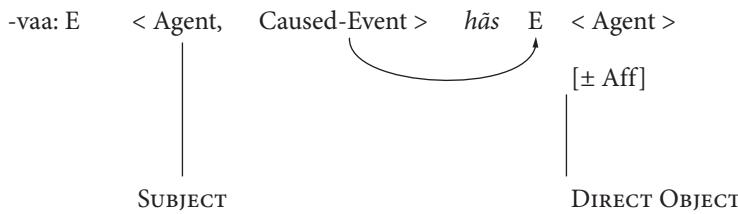
(23)   **Lexicon: cause + transitive verb**

$$\text{-vaa: E} \quad < \text{Agent,} \quad \text{Caused-Event} > \quad kaa\underline{t} \quad \text{E} \quad < \text{Agent}^\wedge, \quad \text{Theme} >$$

$$[\pm \text{Aff}]$$

SUBJECT   (CAUSEE)   DIRECT OBJECT

-se   **-ko**
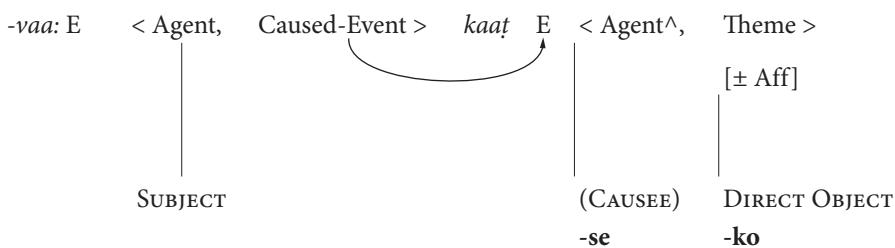
For this analysis to capture the difference between the *-vaa* causatives on the one hand, and *-aa* causatives on the other which do not seem to consistently allow intermediate agent expression, we need to establish two things: the *-vaa* causative morpheme must attach only to transitives (and possibly unergatives), while the *-aa* causative morpheme must attach to intransitives only. This means that we must argue that when *-vaa* attaches to an unaccusative like 'be made', it is really attaching to the transitivized version even though the morphology does not show this. Conversely, we would need to argue that the *-aa* forms never attach to a transitive stem themselves, although no difference in form or interpretation is found when *-aa* or *-vaa* attach to a 'transitive' like *kaaṭ-*'cut'. As I have tried to show in detail in the previous section, there is in fact no independent evidence that *-aa* and *-vaa* attach to different verb types.

Instead, a different view of the matter emerges if we take the morphology and the distribution seriously, and start from the fact that both *-aa* and *vaa* are structure-building morphemes that add external arguments, and that they can both attach to

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[5] This analysis is loosely adapted from the one found in Alsina and Joshi (1993) for causativization in Marathi in a lexicalist (LFG) formalism.

all kinds of root. However, we still need to look more closely at the distribution of the -*se*-marked adjunct with all the different verb types in their different causative forms.[6]

In all the transitive forms I consider in this section, a -*se* suffix on an inanimate DP can always be interpreted as a true *instrument*. The data I present here concerns specifically the intermediate agent reading of an animate DP marked with -*se*.

With base transitives (i.e. those not formed by causativization), a -*se*-marked adjunct can only be interpreted as an instrument and not as an intermediate agent. Thus, in (24) and (25), the sentences for the simple transitive and the transitive ingestive are ungrammatical/infelicitous with an animate marked with -*se*.

(24) **Base transitive**
Anjum-ne (*Saddaf-se) peṛ kaaṭ-aa
Anjum-ERG   tree cut-PERF.M.SG
'Anjum cut the tree.'

(25) **Ingestive transitive**
rita-ne (*Saddaf-se) angur khaa-e
rita-ERG   grape eat-PERF.M.PL
'Rita ate some grapes'

When we turn to causatives formed with -*aa*, we see the first difference from the standard pattern assumed in the lexical argument structure analysis. While unaccusatives transitivized using -*aa* systematically resist the intermediate agent interpretation for all speakers, as expected, the unergatives, ingestives, and transitives all allow it consistently for some speakers, though not for others. In the transitive root, it is plausible that there is a demoted agent involved. However, the unergatives and ingestives do not have a suppressed agent—their external argument is expressed in direct object position in the -*aa* causative.

(26) **AA-causative based on unaccusative root**
Anjum-ne (*mazdurõ-se) makaan ban-aa-yaa
Anjum-ERG   house make-*aa*-PERF.M.SG
'Anjum built a house.'

(27) **AA-causative based on unergative root**
Anjum-ne (%masxaraa-se) Saddaf-ko hãs-aa-yaa
Anjum-ERG (clown-INSTR) Saddaf-ACC laugh-*aa*-PERF.M.SG
'Anjum made Saddaf laugh (%by means of the clown).'

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[6] I thank Miriam Butt, Tafseer Khan Ahmed, and Rajesh Bhatt for being the patient informants for this section. All surviving misrepresentations and misunderstandings are self-created.

(28)   **AA-causative based on base transitive root**
Anjum-ne   (%Saddaf-se)   peṛ   kaT-aa-yaa
Anjum-ERG (Saddaf-INSTR) tree   cut-*aa*-PERF.M.SG
'Anjum cut the tree/ %had Saddaf cut the tree.'

(29)   **AA-causative based on ingestive transitive root**
Anjum-ne   (%Saddaf-se)   Ram-ko   khaanaa   khilaayaa
Anjum-ERG Saddaf-INSTR Ram-ACC food   eat-*aa*-PERF.M.SG
'(%)Anjum had Saddaf feed Ram food.'

Turning now to the causatives formed with -*vaa*, all speakers accept an inter-
mediate agent interpretation for all base stems, even for the unaccusatives causati-
vized in -*vaa*. With unambiguously unaccusative roots such as *ban*, which has no
transitive version except through causativization itself, there is obviously no
demoted agent in the base verb, by hypothesis, and yet the intermediate agent
reading is available. With the unergatives and ingestives, the original external
argument is not suppressed, but interpreted as 'affected' and realized in object
position.[7] Only with transitives is there an actual 'demoted agent', i.e. an agent
argument that should plausibly have been in the argument structure of that base
verb but which is not realised in the -*vaa* causativized form.

(30)   **VAA-causative based on unaccusative root**
Anjum-ne   (mazdurõ-se)   makaan   ban-vaa-yaa
Anjum-ERG (labourers-INSTR) house   make-*vaa*-PERF.M.SG
'Anjum had a house built (by the labourers).'

(31)   **VAA-causative based on unergative root**
Anjum-ne   (masxaraa-se) Saddaf-ko   hãs-vaa-yaa
Anjum-ERG (clown-INSTR) Saddaf-ACC laugh-*vaa*-PERF.M.SG
'Anjum made Saddaf laugh (by means of the clown).'

(32)   **VAA-causative based on base transitive root**
Anjum-ne   (Saddaf-se)   peṛ   kaṭ-vaa-yaa
Anjum-ERG (Saddaf-INSTR) tree cut-*vaa*-PERF.M.SG
'Anjum had the tree cut by Saddaf.'

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[7]   A reviewer asks how it is that an unergative verb can be causativized at all (the same question could be
asked of the transitives). The point is that the morphology in question does attach to these forms, and the
valency increases by one. The concept of 'laughing' in the unergative example does not change, but what is
emphasized in the morphologically derived form is the fact that somebody external triggered the internally
caused event of 'laughing' in the 'laugher', by directly affecting the 'laugher'. This is a perfectly coherent
interpretation, and it underlines the fact that certain entailments over event participants depend on the
syntactic context and not just on the lexical root.

(33) **VAA-causative based on ingestive transitive root**
Anjum-ne (Saddaf-se) Ram-ko khaanaa khil-vaa-yaa
Anjum-ERG (Saddaf-INSTR) Ram-ACC food eat-*vaa*-PERF.M.SG
'Anjum had Saddaf feed Ram food.'

To reiterate, the lexical argument demotion analysis predicts a one-to-one correlation between having an implicit agent left over in the base verb and allowing an intermediate agent reading of the instrumental adjunct. As the table in (34) shows, this correlation fails for the cells of the table that fall outside the two most common patterns of base unaccusative plus -*aa*, and base transitive plus -*vaa*. Note that the table in (34) does *not* adopt the hypothesis that the -*vaa* causative is attaching to covertly transitivized forms in B(i) of the table, neither does it assume that the -*aa* suffix is really attaching to an intransitive version in A(iii). I have argued that there is no independent reason for these assumptions, but even if they were made, it would not help us with the mismatches in B(ii) and B(iv), or for the -*se* permissive dialect in A(iii).

(34)	Verb type	Intermediate agent -*se*	Demoted agent in root
	Base trans.	NO	NO
	A. *aa*-Causative		
	(i) of unacc.	NO	NO
	(ii) of unerg.	%	NO
	(iii) of trans.	%	YES
	(iv) of ingestive	%	NO
	B. *vaa* -causative		
	(i) of unacc.	YES	NO
	(ii) of unreg.	YES	NO
	(iii) of trans.	YES	YES
	(iv) of ingestive	YES	NO

The important thing to realize about this pattern is that it seems to be always possible to get the intermediate agent reading once the -*vaa* suffix is used, regardless of verb type. In other words, it does not seem to matter what the original 'argument structure' of the uncausativized stem was, or whether there was an original agent or not, the intermediate agent interpretation is uniformly available once that form is augmented with -*vaa*. On the other hand, the -*aa* forms allow this reading for some speakers only with a subset of verbs—the ones that have original underlying external arguments. For these speakers, the readings available for causatives in -*aa* and -*vaa* are hard to distinguish for base transitives like 'cut' and 'eat'.

10.3.2 -SE *in passives*

There is independent evidence that a demoted agent does not correlate with the presence of a -*se*- marked adjunct. In the passive of a simple transitive verb, a -*se* adjunct with the intended reading is not possible.[8]

(35)   **Passive of a transitive verb**[9]
       peṛ (*anjum-se) kaaṭ-aa   gay-aa
       tree   cut(trans)-PASS go-PERF.M.SG
       'The tree was cut.'

Similarly, if one passivizes the -*aa* causativized version of a base intransitive, the implicit agent cannot be expressed with the -*se* adjunct.

(36)   **Passive of AA-causative of unaccusative verb**
       makaan (*anjum-se) ban-aa-yaa   ga-yaa
       house   build-*aa*-PASS go-PERF.M.SG
       'The house was built.'

Speakers prefer to use a different postposition *dwaaraa* in expressing the agent usually translated by a *by*-phrase in English. The *dwaaraa* postpositional phrase is possible for those speakers in sentences (36 and 35). Thus, the *dwaaraa* phrase is the best candidate for a translation of the *by*-phrase in English as found in passives.

(37)   **Passive of a transitive verb with agent adjunct**
       peṛ anjum-ke dwaaraa kaaṭ-aa   gay-aa
       tree anjum-OBL BY   cut(trans)-PASS go-PERF.M.SG
       'The tree was cut by Anjum.'

What then is the *se*-phrase, and why does it not work to express the demoted agent in a passive? The pattern seen in the last section indicates that the *se*-adjunct expresses an intermediate agent in the presence of -*vaa* morphology. Thus, the presence of a -*se*-marked adjunct in sentences such as (38) is due to the presence of -*vaa* and not of passive morphology.

(38)   **Passive of VAA-causative of transitive verb**
       Ram-se   peṛ kaṭ-vaa-yaa   ga-yaa
       Ram-INSTR tree cut-*vaa*-PASS go-PERF.M.SG
       'The tree was cut through Ram's actions.'

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[8] The -*se*-marked argument here can be interpreted as the holder of an ability. I will not explicitly address the abilitative reading of -*se* here. But see the Conclusion for some speculations.
[9] The passive in Hindi/Urdu is formed by using the light verb *ja*- 'go' shown here together with the perfective participial form of the root (formed with a zero suffix). See Bhatt (2003) for a general descriptive overview.

The *-ke dwaaraa* adjunct can even be added to the passivized *-vaa* causative in (37), in addition to the *-se*-marked adjunct (39).

(39)   Ram-ke -dwara   Anjum-se   peṛ   kaṭ-vaa-yaa   ga-yaa
       Ram-OBL BY   Anjum-INSTR   tree cut-*vaa*-PASS go-PERF.M.SG
       'The tree was caused to be cut by Ram, by Anjum.'

The conclusion I draw from this is that the presence of an intermediate agent reading for the *-se*-marked adjunct is independent of passivization, further supporting the idea that it is not correlated with the existence of an implicit agent in the structure. The group of readings covered by the *-se*-marked phrase is as follows: instrumental; modal subject of an inability passive (see Bhatt 2003); intermediate agent of certain causatives. I conclude that marking by *-se* is at least constrained to contexts where the participant in question is not in volitional control of the event, but is somehow facilitating. In the next section, I argue more specifically that this kind of participant is licensed in a particular event structure configuration.

10.4 Representing causation with subevental decomposition

10.4.1 Introduction

Given the generalizations of meaning and distribution established above, we are left with two central analytical questions: first, what is responsible for the meaning difference of 'indirect' vs. 'direct' causation as expressed by the *-vaa* and *-aa* forms respectively? Secondly, the related question: what licenses the adjunct in *-se*? Any successful analysis must account for the direct vs. indirect contrast (and the fact that it occurs only with certain verbal stems) without invoking a bi-clausal structure. Further, the demotion of an external argument cannot be the source of the felicity of the *-se*-marked adjunct in the intermediate agent reading.

To tackle this problem, I assume a representation of subevental relationships in the syntax corresponding to a maximal decomposition of a complex verbal event which includes an 'inception' a 'body' and a 'culmination' in the terms of Thomason (Ch. 2), linked by a direct 'causal daughter' relationship.

The proposal in Ramchand (2008) is essentially a syntacticization of this geometry. Each projection corresponds to a subevent; the causal relationship is the way subevental embedding is interpreted universally; the specifier hosts the holder of the property defined by the relevant subevent. This way we get thematic roles of INITIATOR, UNDERGOER, and RESULTEE, for holders of the inceptional property, undergoers of the changing property as described by the 'body', and holder of the culminational property respectively.

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(40)   initiationP (initiational eventuality)

DP$_3$ *init'*
subj of 'cause/init.'

init   processP (dynamic/transition eventuality)

DP$_2$ *proc'*
subj of 'process'

proc   resultP (result eventuality)

DP$_1$ *res'*
subj of 'result'

res   XP

...
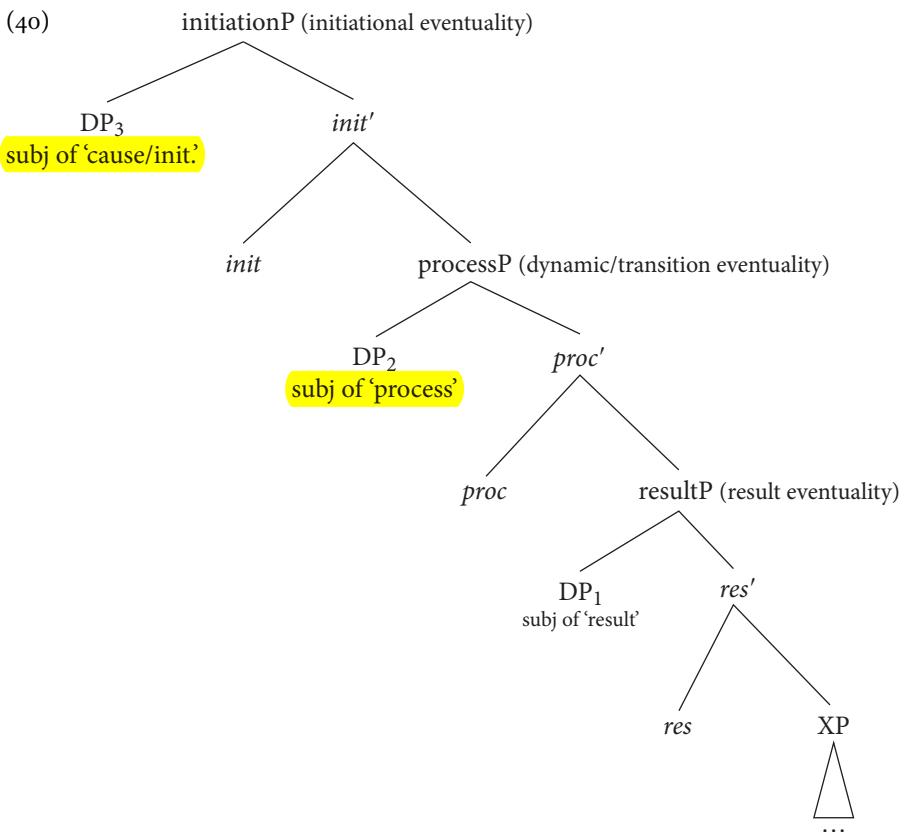
The discussion in Thomason (Ch. 2, this volume) concerns the different kinds of causal chains possible. In particular, in that chapter, the geometry can be expanded to show that causing subevents can be chained giving rise to indirect causations by transitivity, and also that more than one causal chain in this sense can bear on one and the same 'body'. eventuality.[10]

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[10] The Thomason geometrical representations also contain annotations for whether the event is 'voluntary' or 'involuntary'. I abstract away from this at the moment and return to it in later discussion.

(41)

$$e_2 \quad e_3 \quad e_4 \quad \textit{inception} \quad \textit{body} \quad \textit{culmination} \quad e_5 \quad e_6$$
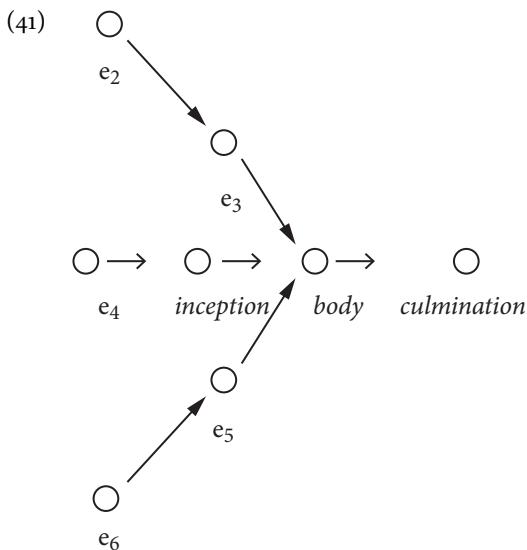
According to this geometry of causal chains, 'indirect' causation is simply represented as a mediated causal ancestral connection, while 'direct' causation is a direct link between two subeventualities. The problem, as Thomason points out, is that the real world does not give us these relationships unproblematically. First, and most obviously, we cannot assume that the cognitive representations of how events are related to each other are correct according to the laws of physics or respect all the details of every single low-level cause in actuality (even if we knew the truth of the matter). In these things, we are confined to the granularity of our own perception and cognition. Secondly, writing out a geometry like this in any particular case already requires interpretation, ignoring 'irrelevant' circumstances and intermediate stages (if Mary walks over to the other side of the room to open the window, the walking is not part of the causal chain for *open*).

From these basic considerations, I take it that we are not assuming that our models correspond in any verifiable way to the 'real world' and real-world physical causation, whatever the precise details of that turn out to be. What we are modeling is our own human cognitive structuring of the event domain (events themselves being a human cognitive construct).

Even putting the real world aside leaves us with interesting problem scenarios which demonstrate the non-trivial nature of the generalizations. Thomason provides us with a number of these to illustrate some important patterns. For example, Mary turning up the heat so that John is compelled to open a window (scenario A) does not justify the locution *Mary opened the window*; a convoluted Rube Goldberg mechanism that Mary sets in train to open the window does (scenario B). This shows that the sheer length of the causal chain is not what is at stake here, even if we

could agree on granularity and a way of counting. Similarly, if Mary fells a tree with her chainsaw and the tree falls on a fence, flattening it, we can say *Mary flattened the fence* under some circumstances (scenario C). But if the wind blows the tree down and the tree flattens the fence, it seems very odd to say *The wind flattened the fence* (scenario D). In both these cases, the mental involvement of the initiator seems to be crucial to account for native-speaker intuitions. Basically, the existence of a mediating intentional agent between Mary's action and the opening of the window seems to prevent Mary from being conceptualized as the agent of the opening event in scenario A, while the lack of such allows it in scenario B. Similarly, in scenario C, even though Mary did not intend it, the very fact of being a sentient agent allows us to consider her responsible for the fence being flattened, hopping over the intermediate inanimate causer. However, even though the intermediate proximate causer is also inanimate in scenario D, the non-sentience of the wind does not allow us to make such an ascription. Thomason points out that it is this careful description of native-speaker judgments that we need to account for in any linguistic analysis.

But I would go even further and argue that the problem is compounded by the existence of different lexical verb types. For example, in English many causative/transitive verbs impose severe semantic selectional restrictions on their agents. In (42a,b) we see that the verb *murder* requires an intentional agent, while the verb *destroy* in (42c,d) does not.

(42) a. John murdered the president.
      b. # The earthquake murdered the president.
      c. John destroyed the city.
      d. The earthquake destroyed the city.

Similarly, while I agree with the intuition that *Mary flattened the fence* can be true in scenario C with the intermediate tree felling, my judgment is that if the fence ended up lying on the ground, under the same circumstances, we *cannot* say *Mary laid the fence on the ground*. So the nature of the lexicalization is also crucial here: what Mary did in scenario C could count as a *flattening*, but what she did could not count as *laying*.

Facts like these seriously undermine any attempt to ground this distinction in terms of real-world forces or eventualities alone. Instead, we need to acknowledge the important factor of lexicalization in grounding the linguistic entailments we uncover.

We already know that the typological facts about the expression of direct vs. indirect causation interact directly with morphology and lexicalization. Shibatani and Pardeshi (2002) claim that morphologically opaque forms like lexical causatives tend to represent 'direct' causatives, while transparent morphological forms (whether within the word or phrasal) tend to represent 'indirect' causation cross-linguistically. The implicational hierarchy within and across languages is interesting,

and suggests that lexicalization of structure has an influence on how tightly subevents are causally related. Rather than let these facts somehow follow from functional considerations, as is often suggested in the literature, I will take more seriously the idea that lexicalization has an influence on the directness of causation of the resulting predication, and build it into the interface conditions of grammar directly.

(43) **Effects of lexicalization I: direct vs. indirect causation**
For a result subevent to be interpreted *obligatorily* as 'directly caused' by a process, the same root must identify both the 'process' and the 'result' subevents.

Therefore, in what follows, I am going to pursue the (possibly) radical assumption that there is no objective reality to the indirect/direct causation distinction. I will assume rather that it is a property of abstract representations that lies solely in our cognition, and is enshrined in our grammar. In particular, I will assume that the full scope of event geometries shown in (42) is never lexicalized in natural language grammar—syntax only ever constructs a simple non-branching causal embedding. Direct causation is defined as the co-lexicalization of immediately adjacent events in the causal chain; indirect causation occurs when different morphemes lexicalize adjacent events in the causal chain.

In describing the Hindi/Urdu patterns of morphological causativization, I will be assuming that the morphology of the alternation in Hindi/Urdu indicates a structure-building analysis where the causative/transitive version is structurally larger than the intransitive version. Both the additive nature of the morphology and the addition of subevents (when it occurs) support the structure building account in this case. There is of course an ongoing debate on this topic for the causative/inchoative alternation in English and Romance, and much recent work claims that, at least for those languages, the causative alternation is due to productive detransitivization processes in the 'lexicon', prior to lexical insertion (Levin and Rappaport Hovav 1995; Reinhart 2002). While the morphological evidence is lacking in English, it seems to favor detransitivization in Romance for some verb types at least, but the evidence in Hindi/Urdu unambiguously indicates a causativizing derivation. Although I am employing a constructivist framework here, I do not assume that all causative alternations in all languages should be analyzed the same way; the claims I will make in what follows will be directed to the Hindi/Urdu situation. (See Haspelmath 1993a for a typological study of the variability in this regard with respect to morphology and causativization/decausativization.)

The analysis given here is couched in the framework of Ramchand (2008), which differs from some constructivist frameworks in that the lexical item possesses syntactic information in the form of category features. This makes the system employed here different from the acategorial roots of Distributed Morphology (Harley and Noyer 2000b; Marantz 2001), but stops short of encoding argument

structure or argument-structure manipulations in a lexical module. The fact that the different verb classes in Hindi/Urdu behave differently with respect to the causativization phenomena being investigated here is a clear indication that roots have different classificatory properties. In a bare roots view of the lexicon, these properties would have to be captured by encoding selectional properties, e.g. as a memorized contextual context for insertion (see Harley and Noyer 2000b), whereas in this system they are directly encoded in terms of the category features that the lexical root is associated with, and whose encyclopedic content they can 'identify'. The system I propose is thus ideally placed to capture differences in interpretation based on different lexicalizations of structure.

I summarize the view of the relation between the root's syntactic features and the syntactic structure it occurs in in (44).

(44)   **Assumptions concerning lexical attachment/insertion**

    (i)   There is no argument structure module in the lexicon; the only syntactic information stored with lexical roots is a multi-set of category features (i.e. *init*, *proc*, *res* in this case).

    (ii)   Structure must be licensed by lexical content in order to satisfy full interpretation.

    (iii) Lexical category features may in certain circumstances remain 'unattached', or 'under-associated'.

The idea here is that the causal geometry represented by the hierarchical phrase structure contributes a general semantics of causal embedding and determines which merged-in DP is related to which subevent. However, the lexical encyclopedic content of a root is what identifies and fleshes out more specifically the nature of the subevents involved, e.g. whether they are an 'eating' or a 'breaking', etc.

Assumption (iii) above needs further comment. While (ii) says that structure *must* be connected to a particular lexical item to be licensed/built at all (ii), (iii) says that the lexical item is not forced to 'use' all of its features when lexicalizing syntactic structure.[11]

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[11] This claim is not equivalent to 'optionality' of all category features, since in Ramchand (2008) there are constraints on underassociation that are assumed to play a role when a syntactic structure is lexicalized. The first important constraint is that a lexical item may not lexicalize a discontinuous set of heads in the functional sequence, simply because it would be non-linearizable. The other constraint on under-association proposed in Ramchand (2008) is that an under-associated feature in a lexical entry must AGREE with a licensed feature of the same time in the phrase structure, and that the encyclopedic content of the under-associated feature is still accessible to the semantics and must conceptually unify with the other encyclopedic content of the clause. This is only relevant in a system like this, where lexical items do not necessarily lexicalize just a single terminal node but 'span' a number of heads in the structure, in the sense of Williams (2011), or lexicalize constituent chunks in the sense of Caha (2007). For the purposes of this chapter, this is equivalent to head to head movement under adjacency, or REMERGE of heads. The reader is invited to think of the implementation in whichever way she finds most intuitive.

Thus, a piece of verbal morphology comes coded with a set of category features which tells us which subevents are conceptually identified by it. An unaccusative verb like (intransitive) *break* tells you that what goes on is a 'breaking' and what ends up happening is that something gets 'broken'. A transitive verb like *destroy* is an [init, proc, res] verb: the initiation is a 'destroying', what goes on is a 'destroying', and what ends up happening is that something gets 'destroyed'. Notice that a simple lexical transitive like *destroy* is associated with the same phrase structure as a simple causative of an unaccusative, by assumption. This point is also made forcefully in Lyutikova and Tatevosov (Ch. 11, this volume) in their discussion of Karachay-Balkar causativization. I agree with them that the 'cause' head in the event structure of a simple transitive cannot be different from the 'cause' head in a morphologically derived transitive. However, under the view I am proposing here, there *is* a difference in lexicalization which can give rise to different interpretations. Consider what would happen if a base unaccusative such as (intransitive) *break* in English were augmented with a causative suffix representing the *init* head. Now it is still true that what happens is a 'breaking' and what ends up is that something gets 'broken', but the eventuality that initiated that 'breaking' event and set it in train could not necessarily be called a 'breaking'. It can be anything the context requires, up to real-world felicity. This is indeed true of transitive *break* in English, where any kind of reasonable causer, either indirect animate, or inanimate can appear as its subject (45).

(45) a. John broke the window.
     b. The opera singer broke the glass (by singing a high note).
     c. The tree branch broke the window (as it blew about in the storm).
     d. The storm broke the window.

Elsewhere I have argued that transitive *break* in English is formed from intransitive *break* with the addition of a null causative morpheme. This analysis accounts for the productivity of the alternation (there are vanishingly few unaccusatives in English which do not form a transitive alternant), and for the loose restrictions on the nature of the causing subevent. We will see that the suggestion I just made here for English *break* is what happens overtly in Hindi/Urdu with the suffix *-aa*.[12]

Here then are the lexical representations of the different types of root that we will need for Hindi/Urdu. In (46), I notate each verb type with its categorial features.

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[12] At this point the reader might object that this definition of direct causation is entirely circular, and that it does not relate to any clearly verifiable facts about the world. I would agree. My point is that these notions are undefinable in real-world terms, and that the only real data is data about when we are willing to use which words as descriptions of certain events. The hope, however, is that the different classes of verb–word behavior correlate with different classes of cognitive subtypes of causation we have as humans, and that our use of language correlates with the way we package that event cognitively.

(46) **Verb classes in Hindi/Urdu**
      Unergatives [*init**, *proc*]
      (1 argument: Initiator-Undergoer)
      Unaccusatives [*proc**, *res*]
      (1 argument: Undergoer-Resultee)
      Transitives [*init, proc*]
      (2 arguments: Initiator and Undergoer)
      Ingestives- [*init**, *proc, N*]
      (2 arguments: Initiator-Undergoer and Path/Rheme)

The reader will notice that the number of subevents identified by a particular verb type does not correspond in a one-to-one fashion with the (usual) number of arguments that the verb requires. I assume that a single DP argument may occupy more than one specifier position, accumulating entailments via movement. I have notated this on the representations by marking each 'raising' head with an asterisk.

An unaccusative verb does not contain an outer causing subevent; it is lexicalized as describing a process which leads to a resulting state. The single argument of an unaccusative verb is the Undergoer of the change and the holder of the result state (Resultee). An unergative verb contains an outer causing subevent, but it has only a single argument which is the undergoer of the change as well as the Initiator of it. A normal transitive verb also has both a causing outer event and a process, but the arguments of each subevent are distinct. The ingestive verbs are intermediate in the sense that they are like the unergatives in having a single argument filling the initiator and undergoer positions, but are transitive because they also have a nominal complement to the *proc* head which co-describes the path of change. (See Ramchand 2008 for a more detailed exposition of different verb types in English and the diagnostics used to classify them.)

I have proposed that co-lexicalization of [proc] and [res] is what is necessary to get a meaning of a directly caused result. What happens if [init] and [proc] are not co-lexicalized? I speculate that what happens here is a disruption between the conceptual content of the causing subevent and the caused process in exactly the same way. This manifests itself in the pure cause interpretations for a transitive verb like *break*. When [init] and [proc] are lexicalized by the same root, this kind of contextual flexibility is not allowed. Consider the case of a verb like 'eat' where the root co-lexicalizes *init* and *proc* and where the same DP is both Undergoer and Initiator. This must be interpreted as the initiating subevent being characterizable as an 'eating' instigated by the subject, and the undergoing also being an 'eating' also experienced by the same subject. In other words, co-lexicalization with raising is only interpretable if the agent also undergoes the 'body' of the event. I will assume that this situation is trivially satisfied with verbs of self-induced motion and ingestives, but is also licensed when an animate sentient subject exerts continual mental energy to produce the body subevent. I propose therefore that volitionality licenses

init proc co-lexicalization, and that pure cause interpretations are only possible if the
init head is not co-lexicalized with *proc*.[13]

(47) **Effects of lexicalization II: pure cause vs. agent**
For an initiating subevent to be interpreted as a pure abstract (potentially
indirect) cause, the same root must *not* identify both the 'initiation' and the
'process' subevents.

   If the same root identifies both the 'initiation' and 'process' of an event,
then the specifier of the 'initiation' must be either mentally involved or
physically involved with the 'process' subevent.

In addition to direct vs. indirect causation, volitional causers vs. pure causers or
initiators is a distinction that has been highlighted in the literature as having
grammatical effects. Volition is an important annotation in the geometries given
by Thomason (Ch. 2, this volume) that allows a statement of the generalization
concerning felicity of expression as a subject. Ilic (Ch. 7 this volume) also points out
that typologically, initiator and controller need to be distinguished. The analysis I
offer of these distinctions is different from most others in that I drive both types of
effect from patterns of lexicalization, and do not invoke any new semantic rule of
combination (as Lyutikova and Tatevosov, (Ch. 11, this volume) do for indirect
causation), and no new-theta role, or flavor of little v for the different types of
subject causer. The syntactic representation of all of these different kinds of causal
chain is the same. The differences arise in how the conceptual content, as provided
by roots and morphemes, combine to co-describe the complex event.

10.4.2 *Building Hindi/Urdu causatives*

As mentioned before, the morphology of the alternation in Hindi/Urdu indicates a
structure-building analysis where the causative/transitive version is formed from
suffixing a morpheme, either *-aa* or *-vaa* to the root.

Causativization in *-vaa* always gives rise to an indirectly caused result state. I build
on the observation in Bhatt (2003) that the only base verbs that do not take *-vaa* in
Hindi/Urdu are those that cannot occur in perfect participial form in combination
with the 'light verb' *ja-* 'go', the so-called analytic passive.[14] I will further assume that
the *res* specification on the root is not inherent, but comes from the fact that it
occurs in the stem form of the perfective participle. This is simply an assumption,
since the morphology here is null and thus the stem form for the perfective participle

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[13] See Ramchand (2008) for further discussion of the relationship between argument interpretation and
position and the effect of movement.

[14] Bhatt (2003) actually uses this fact to motivate an analysis of *-vaa* causativization which explicitly
embeds passive substructure. My claim here is different, though related, namely that the root identifies
only the result subevent *res* in *-vaa* causativization—a fact that it has in *common* with the construction
involving the 'passive' light verb 'go'. The reason I reject the idea of explicit passive substructure in *-vaa*
causatives is that unaccusative intransitive roots do causativize in *-vaa* although they do not passivize.

is indistinguishable in principle from the root in Hindi/Urdu. I assume it never-
theless because the semantics of the causative forms all include some realized result:
that of the event described by the root actually happening. This is true regardless of
the aktionsart of the root. I have nothing to say about how the morphology
decomposes here, or how the result state reading is derived semantically from the
semantics of the root verb. Depending on the verb, it seems as if it can either have a
target state (telics) or a resultant state reading (atelics) in the sense of Kratzer (2000),
Embick (2004); but in this sense the pattern exactly replicates what we find for the
interpretation of perfect participles in English-like languages.

In addition, it is often noted in the literature that causativization in -*vaa* seems to
involve a high degree of volitionality on the part of the external argument. My
fieldwork confirms that pure causers are rejected as subjects of -*vaa* causatives, while
being accepted as the subjects of -*aa* causatives. The verb pairs that I elicited for the
translations of the following English sentences employing stative and inanimate
causers shown below were grammatical for the -*aa* causative and ungrammatical
for the -*vaa* causative.

(48) a. ban-aa-naa/*ban-vaa-naa 'John's money built that house.'
      b. pak-aa-naa/*pak-vaa-naa 'The sun ripened the fruit.'
      c. suljh-aa-naa/*suljh-vaa-naa 'The new arrangements simplified the problem.'
      d. ubalaa-naa/*ubal-vaa-naa 'The kettle boiled the water very fast.'
      e. dhul-aa-naa/*dhul-vaa-naa 'The rain washed the clothes.'

I will therefore assume that -*vaa* lexicalizes the outer two subevents, being inserted
to lexicalize both the *init* and *proc* heads, leaving the root verb to identify just *res*.

(49) **'Indirect' causativization in -*vaa***
      • The -*vaa* suffix bears both *init* and *proc* features. It can lexicalize a structure
        together with roots of various different types.
      • -*vaa* always forces underattachment of the root's own category features.
        The root itself always identifies only *res*.
      • Since *proc* and *res* are always identified by different lexical items, the
        complex causative structure will be interpreted as 'indirect' causation.
      • Since *init* and *proc* are identified together by -*vaa*, it is inconsistent with a
   pure cause interpretation and favors volitional interpretations.

As desired, regardless of the type of the base verb, causation in -*vaa* will always be
indirect because of the fact that -*vaa* is specified as identifying both *init* and *proc*,
and therefore the content of the root verb will never identify both process and result.
Also, since -*vaa* lexicalizes *init*, it will always introduce an extra argument in relation
to a verb that either has no *init* feature itself, or whose *init* feature was a 'raising'
subevent. Thus, in the case of unergatives and ingestives, the INITIATOR-UNDERGOER
of these verbs survives in UNDERGOER-RESULTEE position and is interpreted only as

'affected' by the process but not as an INITIATOR any more. In the case of transitives, the *init* feature of the root will underassociate, and therefore, even though an argument gets added, one gets lost as well, leaving the argument structure transitive as it was before.

An example of the decomposition of a causative in -*vaa* for the unaccusative *ban*-'build' is shown in the phrase structure below.

(50) anjum-ne   (mazdurõ-se)   makaan ban-vaa-yaa
      anjum-ERG labourers-INSTR house be made-*vaa*-PERF.M.SG
      'Anjum had a house built by the laborers.'

(51) **Unaccusatives plus -*vaa***
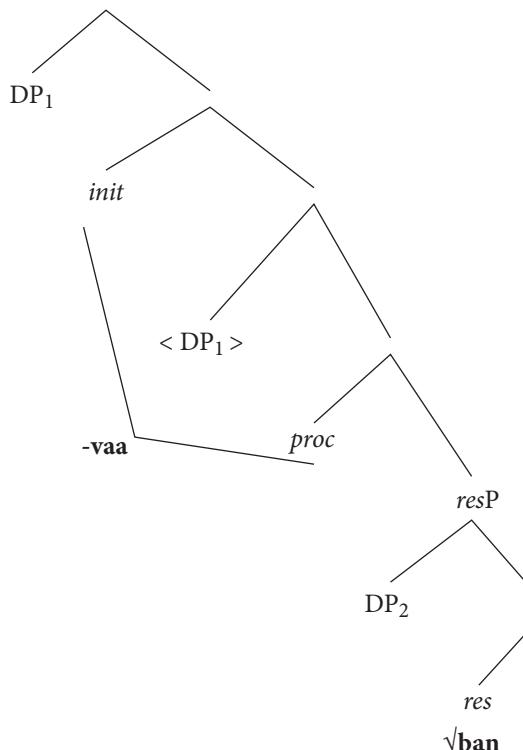
'make-vaa': *DP$_1$ initiates and undergoes some process so that DP$_2$ ends up getting made.*

Turning now to the causative suffix -*aa*, it too can attach to all verb types, but with a meaning of direct causation. I will assume that this means that the root verb lexicalizes not only *res*, as in -*vaa* causativization, but *proc* as well. This means, by hypothesis, that the process and result subevents will be co-lexicalized and lexically encyclopedically identified by the same item.[15]

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[15] Here I make use of the fact that the stem form of the root in the perfective participial form and the bare root are systematically homophonous in this language, and the same form can be inserted under *res*, as under *proc* and *res*, in forming a full verb.

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(52)   **Direct Causativization in *-aa***
- The *-aa* suffix bears an *init* feature. It can lexicalize a structure together with roots of various different types.
- If the root in question also has an *init* feature, it will remain unattached (implicit).
- Since *proc* and *res* are identified by the same lexical root, the complex causative structure will be interpreted as 'direct'.
- Since *-aa* identifies just the *init* subevent, it is consistent with interpretations involving pure stative causes.

Like *-vaa*, since *-aa* lexicalizes *init*, it will also always introduce an extra argument in relation to a verb that either has no *init* feature itself or whose *init* feature was a 'raising' subevent. However for the *-aa* suffix, the relation between process and result will always be direct, regardless of verb type.

An example of the decomposition of a causative in *-aa* for the unaccusative *ban-* 'build' is shown in the phrase structure in (54).

(53)   a. Makaan ban-aa
          house   make-PERF.M.SG
          'The house was built.'

    b. Anjum-ne   makaan ban-aa-yaa
       Anjum-ERG house   make-*aa*-PERF.M.SG
       'Anjum built a house.'

(54)   **Unaccusative plus *-aa***
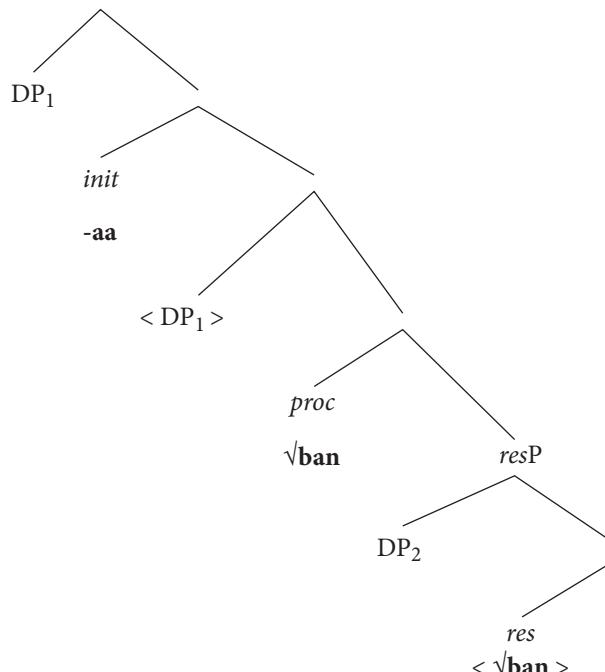
'*make-aa*' : DP$_1$ *initiates (vaguely), leading to DP$_2$ undergoing a change and getting made (DP1 makes DP2)*

For those inclined to decompose the morphology even further, one can note that the analysis proposed above has the -*aa* suffix lexicalizing a proper sub part of what -*vaa* lexicalizes. The latter extends down to *proc*, while the former lexicalizes only *init*. A decomposition that places the -*aa* morpheme uniformly in *init* and the -*v* morpheme in *proc* would work for the facts and be consistent with the mirror principle.

10.4.3 -se *as a subevent modifier*

It now remains to assess the data from -*se*-phrase interpretation, which I argue constitutes independent evidence for the description I have offered in terms of subevental causal chains.

Under the view of things I have been proposing, the base verb root is free to demote/underassociate its category information (which corresponds to information about subevents). In the case of -*vaa* suffixation, the root becomes a derived participle under *res*, and all the root's category information is demoted In the case of -*aa* suffixation, only a root with an *init* feature will have a demoted subevent. I will further assume that, like implicit or demoted arguments in the classical theory of argument structure derivations in the lexicon, a demoted subevent is still 'present semantically',[16] and can be modified or further specified by adjuncts.

We are now in a position to see the pattern in the distribution of -*se*-marked adjuncts in Hindi/Urdu causative constructions. Given the proposal for representing direct vs. indirect causation above, we see that certain event descriptions contain unassociated, or implicit subevent category information, while others do not. The table in (55) shows the different combinations of verb stem and suffix, together with an indication of which if any subevent category feature remains unexpressed but implicit.

(55)

Verb type	Intermediate agent -*se*	Implicit subevent
Base Trans	NO	NO
AA-Causative		
of unacc.	NO	NO
of unerg.	%	*init*
of trans	%	*init*
of ingestive	%	*init*

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[16] The way I would implement this formally would be to say that the lexical encyclopedic content linked to that unassociated feature must be unified with the structural semantic and other lexical encyclopedic ingredients of the linguistic representation.

VAA-Causative

of unacc.	YES	*proc*
of unerg	YES	*init, proc*
of trans	YES	*init, proc*
of ingestive	YES	*init, proc*

Note that the theory of implicit subevents is not in one-to-one correspondence with implicit arguments in this kind of set-up. This is because in this theory, unlike some others, there is no simple one-to-one match between arguments and subevents. Essentially this is because the theory I am advocating has a slightly more fine-grained event structure decomposition than numbers of arguments.[17] The fine-grained event structure I have proposed corresponds to the kinds of decomposition motivated in the philosophical and semantic literature (such as Thomason, Ch. 2, this volume).

We can now state the pattern as follows. All speakers allow an intermediate agent interpretation when there is an unassociated *proc* feature in the root, and a subset of speakers also allow it when there is an unassociated *init* feature in the root. Thus, we can analyze the -*se* adjunct as a predicate over events which attaches at the level of *proc*P and further specifies the event description that it modifies. -*Se* phrases essentially introduce a (non-volitional) facilitator/direct cause as part of the lexical encyclopedic specification of -*se*. Both instruments and intermediate agents are non-volitional direct causes.[18] However, the *kind* of direct cause that is inferred depends on the nature of the event being modified. The -*se* phrase appears to modify both syntactically expressed and implicit (under-associated) subeventual information: if it modifies the the syntactically expressed *proc*, it is interpreted as 'instrument' because it must be a non-volitional facilitator that acts *in addition* to the expressed causer of *proc*; if it modifies an *implicit proc*, it can refer to an animate entity which directly causes the implicit subevent (distinct from the causer of the expressed subevent), thus interpreted as an intermediate actor. Essentially, what I am claiming here is that we can unify all the interpretations of the -*se* adjunct by seeing it as a subevent modifier which introduces a direct, non-volitive cause of that subevent. The different interpretations it gets within this broad definition is a matter of semantics: implicit encyclopedic content from a root verb provides conceptual information that makes an intermediate agent interpretation possible/felicitous; an instrument reading is always felicitous, given the appropriate choice of instrument. The choice of an animate or an inanimate in combination with -*se* drives the two

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[17] This in turn correlates with the fact that arguments in this theory can fill more than one specifier position and accumulate entailments within the complex event structure.

[18] It is also a property of the -*se* marked arguments of the abilitative construction, in both its 'accidental' and 'inabilitative' guises (see Bhatt 2003), although I will not extend the proposal to those arguments here, since some independent issues arise for this construction such as modality and subject-hood properties.

different readings here, but the intermediate agent reading will fail unless there is an implicit subevent in the representation.

For most speakers, the intermediate agent reading is very salient when there is an implicit *proc* event, since it can have an agent/direct cause that is distinct from the expressed agent of the explicit *proc* event. For some speakers, the intermediate agent interpretation is possible even if there is only an implicit *init* subevent. Further work is clearly needed to see whether there are subtle differences between the interpretation of a -*se*-marked animate with implicit *init* events and the interpretation one gets with implicit *proc* events. I have attempted to unify the instrument and intermediate agent readings of these adjuncts, but there are other readings for -*se* adjuncts in Hindi/Urdu, such as manner and means modifiers, that are probably related uses, possibly event modifiers at slightly higher levels of structure.

10.5 Conclusion

I have tried to argue that the intermediate agent of an indirect causative should not be seen as some kind of demoted thematic role. Rather, a careful investigation of direct vs. indirect causation in Hindi/Urdu reveals that it is an event modifier, like other adjuncts/adverbials, whose interpretation is sensitive to the causational substructure of the phrase that it modifies, and to general conceptual factors. I have tried to show that, at least in this language, direct vs. indirect causation does not correspond to lexical vs. syntactic, or monoclausal vs. biclausal predications. Rather, it corresponds to the descriptive lexical encyclopedic independence of events that are stated to be in the causative relation. Specifically, in my implementation indirect causation is implied when *process* to *result* are not co-lexicalized. Pure causes are inferred when the *init* subevent is lexicalized independently of the 'body' of the event (the *proc* and *res*). I repeat the correlations that I have argued for between lexicalization and the types of causal chain created:

(56) **Effects of lexicalization I: direct vs. indirect causation**
For a result subevent to be interpreted *obligatorily* as 'directly caused' by a process, the same root must identify both the 'process' and the 'result' subevents.

(57) **Effects of Lexicalization II: Pure Cause vs. Agent**
For an initiating subevent to be interpreted as a pure abstract (potentially indirect) cause, the same root must *not* identify both the 'initiation' and the 'process' subevents.

   If the same root identifies both the 'initiation' and 'process' of an event, then the specifier of the 'initiation' must be either mentally involved or physically involved with the 'process' subevent.

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These claims are importantly different from an architecture that assumes a distinct primitive semantic relation between subevents corresponding to indirect causation (as in Lyutikova and Tatevosov, Ch. 11, this volume), or one which explicitly introduces independent causal heads to create more indirect causal chains (which is how I read Pylkkänen 2002).

While the analysis is not couched within a theory that contains a lexical module, these data patterns nevertheless require a way of dividing verbs up into natural classes depending on their subevental structure. The differences in interpretation of the -*se* marked phrases were found to be sensitive to the subevental structure of the verbal stems before causative affixation. I implemented this in terms of implicit subevents in a theory which allows items to underassociate some of their category features in certain syntactic contexts.

One important point that emerges from this analysis is that the indirect/direct distinction per se is not an indication that there is full clausal embedding in one case and not in the other, or even that the indirect causative formally embeds the direct causative. While there are probably many languages where structures are indeed built up in that way (e.g. English *I made Bill make Sue draw a picture of a goat*), it is unsafe to assume that the semantics of indirect causation always correlates with this kind of periphrastic recursion. The evidence from Hindi/Urdu in fact seems to be, paradoxically, that the direct causative marker properly includes the indirect causative marker, and that the latter morpheme reaches down even lower into the subevental structure, disrupting a direct relationship between initiation and result. I leave it for further research whether there are other languages with direct and indirect causative markers that should also be analyzed along these lines.