

# LINKING CAUSATIVES AND EXPERIENCERS

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## Abstract

In this paper the syntactic and semantic properties of certain psych predicates in Finnish are examined. These verbs are discussed in light of theories of argument linking, particularly those which attribute *fear-frighten* alternations in Indo-European languages to thematic and aspectual differences between the two classes. Causative affixation is shown to derive two distinct classes of verb from two classes of base verb, one stative and one inchoative. Unexpectedly, stative causatives in Finnish turn out to show properties of unaccusative verbs similar to the Italian *piacere*-class, while inchoative causatives pattern license an external argument as predicted. The linking of arguments to the syntax in these predicates is argued to be predictable not by lexical thematic role assignment or aspectual class, but from the effect of causative morphology on the argument structure of different classes of base verb.

## 1 Introduction: Psych Predicates and Argument Linking

This paper addresses core issues related to linking, or the mapping of thematic roles to arguments in the syntax<sup>1</sup>. Psychological predicates are important for theories of linking because of well-known alternations like the following:

- (1) a. The queen enjoys chocolates.  
b. Chocolates delight the queen.  
  
c. Miriam loves lively parties.  
d. Lively parties appeal to Miriam.  
  
e. The boy fears horses.  
f. Horses frighten the boy.

In the (a), (c) and (e) examples, the subject is assigned the role of Experiencer and the object is the Theme, while in the (b), (d) and (f) examples, the mapping of roles is reversed. Alternations such as these raise interesting questions about the organisation of the grammar: are arguments bearing particular thematic roles linked to particular positions, or is argument linking achieved by some other mechanism?

Baker's UTAH (1988) is the strongest formulation of the former position, in which the set of thematic roles is linked with particular argument positions in the syntax in a relatively rigid way:

- (2) The Uniformity of Theta Assignment Hypothesis (Baker 1988:46)  
Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

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Themes are taken to be canonical direct objects, which always appear at D-structure as internal arguments.<sup>2</sup> If the UTAH holds as a principle of UG, then the (b) examples above must be derived transformationally from sentences like the (a) examples, since all of the psych verbs license the same pair of thematic roles, <Experiencer, Theme>. This is the standard approach taken within the generative tradition since Postal (1970), who derives object experiencer verbs like *frighten* from subject experiencer verbs like *fear* via ‘flip-movement’, a transformation rule specific to psych verbs.

However, the picture turns out to be less clear. Belletti & Rizzi (1988) identify not two but three classes of psych verbs in Italian, exemplified by *temere* ‘to fear’, *preoccupare* ‘to worry’ and *piacere* ‘to please’ and the English verbs *fear*, *worry*, and *appeal to*:

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|--|-------------------------|
| (3) <u>Class 1</u> : Gianni teme questo.<br>Gianni(nom) fears this(acc)            | John fears bears.       |
| (4) <u>Class 2</u> : Questo preoccupa Gianni.<br>This(nom) worries Gianni(acc)     | The bears worried John. |
| (5) <u>Class 3</u> : a. A Gianni piace questo.<br>to Gianni(dat) pleases this(nom) | Bears appeal to John.   |
| b. Questo piace a Gianni.<br>this(nom) pleases to Gianni(dat)                      |                         |

The three classes of psych verbs identified by Belletti & Rizzi in Italian may be characterised on the basis of superficial argument linking properties and case marking. Class 1 verbs have nominative Experiencer subjects and accusative Theme objects; Class 2 verbs have nominative Theme subjects and accusative Experiencer objects; and Class 3 verbs have nominative Theme subjects and dative Experiencer objects.

Belletti & Rizzi (1988) note that Class 2 like *preoccupare* ‘to worry’ and Class 3 verbs like *piacere* ‘to please’ display certain syntactic properties that differentiate them from Class 1 verbs like *temere* ‘to fear’. Examining a range of data including anaphoric binding of clitics, the distribution of arbitrary *pro*, passives and causatives, they conclude that the three classes of psych verbs map arguments onto two underlying types of structure: *temere*-class (Class 1) verbs link the Experiencer as an external argument, while verbs in the other two classes (Class 2 and Class 3) are underlyingly unaccusative and license two internal arguments. Their analysis of Class 2 verbs remains controversial in the literature, and many have since argued that Class 2 verbs may in fact license an external argument or syntactic subject (see Grimshaw 1990, Pesetsky 1995, Bouchard 1995 and Arad 1998 for detailed critiques)<sup>3</sup>. In

<sup>2</sup> Throughout this paper, the distinction between *external* and *internal* arguments is assumed to reflect deep mapping of arguments to positions within the verb phrase at D-structure or prior to Spell-Out; internal arguments are taken to be those projecting internal to lower VP or V', while external arguments are those projecting as specifiers of a (higher) VP or vP (external to the maximal projection of the lower V). In various models of argument linking (eg Baker 1988, Chomsky 1995), the distinction between external and internal arguments is also associated with different thematic role labels; in particular, external arguments are closely connected with agentivity and causation.

<sup>3</sup> The picture is complicated by the fact that many object experiencer verbs cross-linguistically exhibit variable behaviour as either Class 2 or Class 3.

particular, the syntactic differences between Class 1 and Class 2 verbs (the *fear/frighten* alternation in English) have been attributed to differences in **aspect** and **causation**: Class 2 verbs have been analysed as licensing causative morphology and a thematic Causer role (Pesetsky 1995), or licensing an aspectual (non-stative) Causer role (Grimshaw 1990). Class 1 verbs, on the other hand, are stative and non-causative. In other words, the Theme of a verb like *frighten* may be interpreted as an agent causer of an event, while the Theme of a verb like *fear* cannot. According to Pesetsky's and Grimshaw's analyses of psych predicates, these differences in causation and aspect explain the syntactic and semantic differences between the two classes.

There is, however, relatively little discussion of Class 3 verbs in the literature, probably because they are represented by very small lexical classes in many European languages. They are associated with a cluster of syntactic and semantic properties which distinguish them from the other classes of psych predicates. As noted by Belletti & Rizzi (1988), unlike other psych verbs, Class 3 verbs in Italian select the unaccusative auxiliary *essere*; they allow relatively free word order compared to the other classes (5a and 5b); and the Experiencer is marked with dative, rather than accusative, case.<sup>4</sup> Others have noted that Class 3 verbs fail to form verbal passives and are always stative, disallowing an event interpretation (Grimshaw 1990 for Italian and English; Lutnæs & Áfarli 1999 for Norwegian). Class 3 verbs in English like *matter to*, for example, cannot occur in the progressive (6b) and resist passivisation (6c):

- (6) a. Peace mattered to Mary.  
 b. \*Peace was mattering to Mary.  
 c. \*Mary was mattered to by peace.

Previous discussions of Class 3 psych verbs, however, typically conclude that the syntactic characteristics of these predicates ultimately derive from idiosyncratic lexical properties like inherent case assignment (Belletti & Rizzi 1988, Pesetsky 1995) or that they do not form a distinguishable lexical class at all (Bouchard 1995, Arad 1998). In other words, if they do form a class, patterns of linking in these verbs is not seen to be predictable from aspectual semantics or morphology. Like Class 1 verbs, they are stative; like Class 2 verbs, they assign nominative case to the Theme and object case to the Experiencer, but unlike Class 2 verbs, they are not clearly causative.

To summarise, various analyses of psych verbs including Pesetsky (1995) and Grimshaw (1990) classify psych verbs in the following way:

- (7) Class 1 (states): *fear / temere* 'fear' <Experiencer, Theme>  
 Class 2 (events): *frighten / preoccupare* 'worry' <Theme, Experiencer><sup>5</sup>  
 Class 3 (states): *appeal to / piacere* 'please' <Theme, Experiencer>

Psych verbs in Finnish are problematic for these analyses. Like Japanese and other morphologically rich languages, Finnish derives causative psych verbs from

<sup>4</sup> These verbs also allow *ne*-cliticization of the nominative Theme in Italian, another potential diagnostic for unaccusativity in Italian (Pesetsky 1995).

<sup>5</sup> Pesetsky (1995) argues that Class 2 psych verbs license Causers as external arguments, while Grimshaw (1990) analyses Class 2 Causers as internal arguments which surface in the aspectual tier as syntactic subjects. The dotted underline in scheme above reflects the difference between these two analyses.

*fear*-class (Class 1) and other psych verb bases with causative morphology. However, the psych causatives (henceforth PCs) derived in this way may pattern as either Class 2 or Class 3 verbs. In other words, causative morphology does not require the Theme argument to surface as an external argument, as predicted by Pesetsky and Grimshaw; instead, causative psych verbs derived from states in Finnish behave like unaccusatives, characteristic of Class 3 predicates.<sup>6</sup> The data from Finnish also show that the behaviour of Class 3 verbs cannot be explained by appealing to lexical idiosyncrasy, because they are derived from a productive morphological process. The aims of this paper are (a) to investigate the morphosyntax, thematic properties, and aspectual properties of the various classes of psych predicate in Finnish and (b) to explain the observed linking alternations. It is shown that linking patterns in psych verbs cannot be captured by appealing to thematic hierarchies or aspect alone. A solution is proposed in section 5 in which argument linking is determined by the effects of causative morphology on the argument structure of different classes of base predicate. In section 6 it is argued that stative causative verbs may license an event in place of an external argument, which derives certain syntactic and semantic effects in these predicates.

## 2 Four classes of psych predicates in Finnish

Leiwo (1977) is among the first to discuss linking alternations in Finnish psych predicates. He characterises ‘flip’ verbs, psych predicates which map Theme to subject, as those verbs which can be conceived of as being externally caused, and presents a transformational analysis which derives this construction. He notes that Class 1 verbs denoting internal emotional states such as *rakastaa* ‘to love’, *himoita* ‘to desire’, *kaivata* ‘to miss’, and *kunnioittaa* ‘to honour, respect’ always map the Experiencer to subject. These verbs also fail to accept causative morphology because the emotional states they denote are interpreted as internally caused: for example, Class 1 verb *rakastaa* ‘to love’ cannot host causative –TTA to form \**rakastuttaa*. This is clearly a semantic constraint on the productivity of the causative affix.

Other Finnish psych verbs do accept causative morphology. They fall into two lexical classes, which are distinct morphologically, aspectually and syntactically. The first group, which includes *pelätä* ‘to fear’ and *surra* ‘to grieve’, are stative and transitive. This class will be referred to as **stative bases** throughout this paper. The second group, which includes *pelästyä* ‘to become frightened’ and *raivostua* ‘to become furious’, are inchoative (change of state); aspectually Vendlerian punctual achievements; include the affix *-stu/-sty*; and behave in many ways like intransitive verbs<sup>7</sup> (Pylkkänen 1999, Leiwo 1977). These will be referred to as **inchoative bases**. Both classes of base psych verb may appear with the causative –TTA affix to yield four classes of psych verbs in total:

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<sup>6</sup> Similar conclusions about these verbs in Finnish are reached independently in Pylkkänen (1999).

<sup>7</sup> Most inchoative base verbs take locative Themes (10b). However, some inchoatives such as *pelästyä* ‘get frightened (by)’ do assign objective partitive case, like stative bases.

	<u>Stative</u>	<u>Inchoative</u>
<u>base</u>	pelätä 'to fear' surra 'to grieve (for)' epäillä 'to suspect/doubt'	pelästyä 'to get frightened by' raivostua 'to become furious' suuttua 'to get angry'
<u>causative</u>	pelottaa 'to frighten' surettaa 'to grieve/sadden' epäilyttää 'to make suspicious'	pelästyttää 'to make frightened' raivostuttaa 'infuriate' suututtaa 'to anger'

Both classes of base verb, statives and inchoatives, pattern like Class 1 (*fear-class*) predicates in other languages, linking the Experiencer argument to subject:

(9) Minä pelkä-si-n / sur-i-n hän-tä.  
I.nom fear-past-1s / grieve-past-1s him/her-part  
'I feared / grieved for him/her'

(10) a. Liisa pelä-sty-i auto-a.  
Liisa.nom fear-inch-past.3s car-part  
'Liisa was frightened by a car' (from Leiwo 1977:152)

b. Mikko suuttu-i Peka-lle / Pekka-an.  
Mikko.nom get angry(inch)-past.3s Pekka-all / Pekka-ill  
'Mikko got angry with Pekka'

The psych causative verbs derived from these bases (henceforth **PCs**), on the other hand, show interesting and unexpected patterns of argument linking, given the predictions about causation and causative morphology made by the authors previously mentioned.

First of all, both stative (11) and inchoative (12) PCs derived this way may occur in an intransitive 'partitive subject' construction:

(11) Minu-a sure-tt-i. (stative causative)  
I-part grieve-caus-past.3s  
'I felt grief/saddened'

(12) Pekka-a raivo-stu-tta-a. (inchoative causative)  
Pekka-part fury-inch-caus-3s  
'Pekka feels infuriated'

In the examples above, the 'subject' is a partitive Experiencer, but no overt argument realises the Theme or Causer of the emotion. These 'emotional causative' sentences are possible for both morphologically causative and non-causative verbs, and are interpreted as internally caused states (Vilkuna 1996:134-7).

With a partitive subject, an overt Theme can also be added with neutral word order stress following the verb, but only if it signals a predicate realised by a nominalised or infinitive phrase (13a)(Vilkuna 1989); animate agent Themes are disallowed in this position without special stress to signal marked word order (13b):

(13) a. Minu-a sure-tt-i koirani kuolema.  
 I-part grieve-caus-past.3s dog-1sPx death.nom  
 ‘I felt grief about my dog’s death’

b.??Minu-a sure-tt-i Pekka.  
 I-part grieve-caus-past.3s Pekka.nom  
 ‘I felt grief for Pekka’

PCs with Theme subjects, however, have different syntactic and semantic properties which seem to be determined by the class of base verb from which they are derived. Inchoative PCs (such as *raivostuttaa* ‘to infuriate’) as in (15) derived from inchoative bases (14) behave as Class 2 (*frighten*-class) verbs, linking the Theme to subject.:

(14) Koira raivo-stu-i (minu-lle). (base inchoative)  
 dog.nom fury-inch-past.3s me-all  
 ‘The dog became infuriated (because of me)’

(15) Asia raivo-stu-tt-i minu-a / minu-t. (causative inchoative)  
 matter.nom fury-inch-caus-past.3s me-part / me-acc  
 ‘The matter was infuriating / infuriated me’

Experiencer objects of these verbs may appear in accusative case, signalling that the event is bounded or delimited, or in partitive case, signalling that the event is unbounded, typically with an iterative reading (Heinämäki 1984, Kiparsky 1998). As will be shown in the following sections, these predicates show typical Class 2 properties, as predicted by Grimshaw (1990) and Pesetsky (1995): they allow the Theme to be interpreted as an agent Causer; they may be interpreted as bounded events; and the Theme behaves like an external argument, allowing suppression in an impersonal passive, binding reflexives, etc.

However, PCs derived from stative bases (16) pattern more like Class 3 predicates, despite being morphologically causative (17):

(16) Pekka häpeä-ä minu-a.  
 Pekka.nom be ashamed-3s me-part  
 ‘Pekka is ashamed of me’

(17) Tämä-n kuvalehde-n ostaminen häve-tt-i minu-a /\*minu-t.  
 this-acc magazine-ac buying.nom be ashamed-caus-past.3s me-part / me-acc  
 ‘Buying this magazine made me feel ashamed’

As will be shown below, predicates like (17) are always stative; they do not allow the Theme to be interpreted as an agentive Causer; and they show various properties associated with unaccusative verbs, just like Class 3 verbs such as *piacere* in Italian.

The problem for previous approaches to this type of alternation is that causative morphology does not “fix” argument linking to the Class 2 (Object Experiencer) pattern for all psych verbs as predicted by Pesetsky (1995) and Grimshaw (1990). In other words, the fact that the verb is morphologically causative does not mean that the Theme argument is generated as an external argument as

expected. Instead, linking in causative predicates is sensitive to the aspectual class of the base verb.

In the next sections, various properties of the four classes of psych predicate will be examined. First, the syntactic properties of the four classes will be examined in section 3. The Class 3 stative verbs like *pelottaa* are shown to be unaccusative, in contrast to delimited causatives derived from inchoative bases. In section 4 the same classes of verbs are discussed in light of their thematic and aspectual properties. An analysis is proposed in sections 5 and 6.

### 3 Syntactic properties of psych predicates: transitivity and unaccusativity

In this section the argument structure of the two types of PC will be investigated. It is shown that the PCs derived from inchoatives license an external argument as expected for Class 2 causative verbs, while PCs derived from states display several properties which suggest that they are unaccusative, ie Class 3 predicates, contrary to predictions made in the literature.<sup>8</sup>

#### 3.1 Binding

Evidence from binding has played an important role in the literature on psych predicates. One of the most interesting cross-linguistic features of Object Experiencer predicates in many languages is that they allow ‘backward binding’ into the object constituent (18a):

- (18) a. Stories about each other frightened/annoyed/appealed to Miriam and Bob.  
 b. \*Stories about each other feared/liked Miriam and George.  
 c. \*Stories about each other told/whispered Miriam and George.

Both classes of PC predicate in Finnish, statives (19) and inchoatives (20), display the familiar ‘backward binding’ effects observed in other languages<sup>9</sup>:

- (19) Itse-nsä näkeminen häve-tt-i / pelo-tt-i hän-tä.  
 self-3Px seeing be ashamed-caus-past.3s / fear-caus-past.3s him/her-part  
 ‘Seeing herself shamed/frightened him/her’ (stative)
- (20) Itse-nsä näkeminen raivo-stu-tt-i / pelä-sty-tt-i häne-t.  
 self-3Px seeing fury-inch-caus-past.3s / fear-inch-caus-past.3s him/her-acc  
 ‘Seeing herself infuriated / frightened him/her’ (inchoative)

<sup>8</sup> In fact, Pesetsky (1995:60) explicitly dissociates causative morphology from Class 3 unaccusative psych predicates in English (including *appeal to*, *elude* and *escape*), stating “there is nothing causal about any of the unaccusative Object Experiencer predicates described...” While this may be true for the handful of verbs that pattern this way in English, this is clearly the wrong generalisation to make for languages like Finnish.

<sup>9</sup> Van Steenberghe (1990) employs a number of tests to show that Finnish is a configurational language that displays standard subject-object asymmetries including those related to Binding Principles A and B. In this paper, anaphoric binding tests will involve the third person possessive affix *-Vn/-nsa/-nsä* (or 3Px). This pronominal affix may attach to the reflexive pronoun *itse* and non-finite clauses as well as to other categories. In these cases it behaves as an anaphor subject to Principle A within finite IP (Vainikka 1989).

Belletti & Rizzi (1988) use facts like these to argue that Experiencers always project higher than Themes, which entails that Theme subjects in PCs must be derived from an underlying unaccusative structure with the Theme as direct object. However, as pointed out by Pesetsky (1995:42-50) for English and by Cançado & Franchi (1999) for Brazilian Portuguese, a variety of non-psych verbs cross-linguistically (typically causatives, but not always) also allow backward binding. Since some of these other verbs are uncontroversially transitive and license external arguments, the issue remains murky.

However, other binding facts from Finnish point to an unaccusative structure for stative PCs, with Experiencers projecting higher than Themes. For all classes of psych verb in Finnish, except the stative PC verbs, the nominative subject can bind a reflexive anaphor (Leiwo 1977). Subjects of inchoative bases can bind a reflexive either as a locative case marked oblique (21) or as a direct object (22):

- (21) Hän raivo-stu-i / suuttu-i itse-e-nsä  
 s/he.nom fury-inch-past.3s / get angry(inch)-past.3s self-ill-3Px  
 ‘S/he became furious / angry with him/herself’
- (22) Hän pelä-sty-i itse-ä-än  
 s/he.nom fear-inch-past.3s self-part-3Px  
 ‘S/he scared him/herself’

Subjects of stative bases can also bind a reflexive:

- (23) Pekka<sub>i</sub> epäile-e / häpeä-ä itse-ä-än<sub>i</sub>.  
 Pekka.nom doubt-3s / be ashamed-3s self-part-3Px  
 ‘Pekka doubts/ is ashamed of himself’

However, the causatives show a clear contrast in terms of binding. Those derived from inchoatives allow an anaphor to be bound by the nominative subject Theme (24), while those derived from states do not (25):

- (24) Aili<sub>i</sub> raivo-stu-tt-i / suutu-tt-i itse-nsä<sub>i</sub>.  
 Aili.nom fury-inch-caus-past.3s / get angry(inch)-caus-past.3s self(acc)-3Px  
 ‘Aili infuriated / angered herself’ (inchoative)
- (25) ??Pekka<sub>i</sub> epäily-tti / häve-tt-i itse-ä-än<sub>i</sub>  
 Pekka.nom suspect-caus.3s/past / be ashamed-caus.past.3s self-part-3Px  
 ‘Pekka suspected/ shamed himself’ (stative)

This pattern indicates that binding relations for causative predicates fall into two classes, one for inchoatives and one for statives. The anaphoric pronoun *itseään/itsensä* ‘himself/herself’ may be bound, so long as it is c-commanded by an antecedent. At whatever point in the derivation Binding Principle A holds for Finnish<sup>10</sup>, it appears that the nominative Theme in (25) does not c-command the

<sup>10</sup> This question will be left open for the purposes of the current discussion. The important point here is that nominative Themes in Class 3 PCs cannot locally bind anaphors, in contrast to subjects of other psych predicates.



anaphor. This contrast is explained if the Theme in (25) is analysed as a derived subject or topic that originates as an internal argument, c-commanded by the Experiencer at the relevant level of representation.

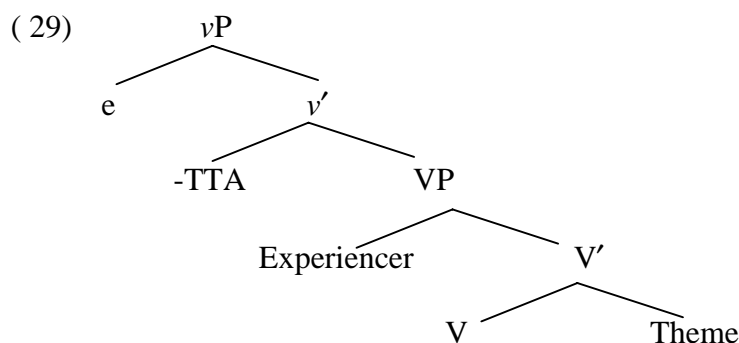
This is consistent with the analysis in Belletti & Rizzi (1988), who present binding data to show that in Italian, Experiencers project higher than Themes in unaccusatives.<sup>11</sup> Vilkuna (1989:153) notes that in Finnish, partitive Experiencers of stative PCs may directly bind a nominative anaphoric Theme (cf 25):

- (26) Mikko-a<sub>i</sub> harmitt-i / sure-tt-i itse-nsä<sub>i</sub>.  
 Mikko-part annoy.caus-past.3s / grieve-caus-past.3s self.nom-3Px  
 ‘Mikko annoyed himself / made himself sad’

It is also the case that the partitive Experiencer, but not the nominative Theme, can function as an antecedent for the reflexive pronoun *oma*:

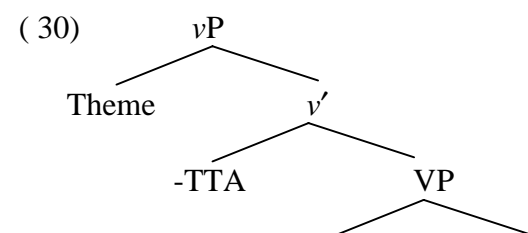
- (27) Pekka-a<sub>i</sub> inho-tta-a /häve-ttä-ä oma<sub>i</sub> itse-nsä<sub>i</sub>  
 Pekka-part loathe-caus-3s / be ashamed-caus-3s own self.nom-3Px  
 ‘Pekka loathes/feels ashamed of himself’
- (28) ??Pekka<sub>i</sub> inho-tta-a / häve-ttä-ä oma-a itse-ä-än<sub>i</sub>  
 Pekka.nom loathe-caus-3s / be ashamed-caus-3s own-part self-part-3Px

These binding facts point to an underlying structure for stative causatives as given in (29) below, assuming a VP-shell structure in which the higher *v*P is associated with agency and causation (Chomsky 1995):

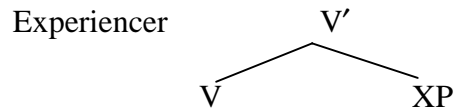


Similar underlying structures have been posited for Class 3 verbs in Norwegian (Lutnæs & Åfarli 1999).

Inchoative PCs, on the other hand, allow nominative Themes to bind anaphoric Experiencers, which suggests that they have an underlying structure as in (30):



<sup>11</sup> Baker (1997), however, reaches the opposite conclusion, that Themes project higher than Experiencers.



These structures will be adopted as the working underlying representations for the two classes of PCs in Finnish. In section 6, however, the interpretation of stative PCs will be examined in more detail, and a revision of the structure in (29) will be presented.

### 3.2 Impersonal passives

Both Belletti & Rizzi (1988) and Grimshaw (1990) use the ability of a given verb to form verbal passives as a diagnostic for the presence of an external argument; verbs that fail to passivise, they argue, are those which lack external arguments. The problem with using this test for psych predicates in Finnish is that Finnish lacks Indo-European type passives. Impersonal passives can be formed with verbs from essentially all lexical classes, including copular verbs like *olla* and verbs usually assumed to be unaccusative across languages, such as *syntyä* ‘to be born’ and *saapua* ‘to arrive’:

- (31) a. *Kaupungi-ssa ol-tiin ilois-ia.*  
city-iness be-pass.past happy-pl.part  
‘In the city (the people) were happy’
- b. *Maa-lla synny-ttiin.*  
country-adess be born-pass.past  
‘In the country (the people) were born’
- c. *Asema-lle saavu-ttiin.*  
station-all arrive-pass.past  
‘To the station (the people) arrived’

Shore (1988) points out that the main feature of impersonal passives (or ‘indefinites’ in her terminology) in Finnish is that the implicit argument must be interpreted as human and plural; any predicate can be ‘passivised’ so long as it involves human participation. Given that verbs typically analysed as unaccusatives like *saapua* ‘to arrive’ and *syntyä* ‘to be born’ may undergo impersonal passivisation, there does not seem to be a requirement that passivisation suppress external arguments or agents only, simply human participants. However, when a predicate involves multiple human participants, for example, *sääliä*, ‘to feel pity for’, then impersonal passivisation suppresses the underlying external argument Experiencer, not the internal argument (33):

- (32) *Ihmise-t sääli-vät Pekka-a.*  
people-nom.pl pity-3p Pekka-part  
‘People feel sorry for Pekka’
- (33) *Pekka-a sääli-tään.*  
Pekka-part pity-pass

‘Pekka is pitied (by people)’

Vilkuna (1989:150) explains such phenomena in terms of case: only nominative arguments may be suppressed in an impersonal passive. This explains why if an unaccusative verb only licenses a single argument, it must be suppressed:

- (34) a. \*Ihmisi-ä synny-ttiin  
 people-part born-pass.past
- b. \*Juna saavu-ttiin  
 train.nom arrive-pass.past

Stative base verbs allow suppression of the nominative Experiencer in impersonal passives as predicted, leaving an overt partitive Theme:

- (35) Mon-i-a asio-i-ta sur-raan / pelä-tään.  
 many-pl-part thing-pl-part worry-pass / fear-pass  
 ‘Many things are worried about / feared’

However, this generalisation runs into problems with PCs. PC predicates show a clear contrast between inchoative (36) and stative (37) verbs in their ability to undergo impersonal passivisation:

- (36) Minu-a / minu-t ilah-du-te-ttiin / suutu-te-ttiin.  
 I-part / I-acc glad-inch-caus-pass.past / get angry.inch-caus-pass.past  
 ‘(People) cheered me up / made me angry’
- (37) ??Minu-a harmi-te-ttiin / pelo-te-ttiin.<sup>12</sup>  
 I-part annoy.caus-pass.past / fear-caus-pass.past  
 ‘(People) annoyed / frightened me’

Explanations appealing to case (Vilkuna 1989) cannot fully explain the contrast, since the target for suppression in both cases is nominative. The contrast between (36) and (37) is not due to a thematic restriction either, since in both cases, the Experiencer remains overt while the Causer is suppressed. The problem seems to be that no human external argument participant is available for suppression in the impersonal passive in (37). This issue will be addressed again in section 6, where it is argued that stative PCs license events rather than arguments as external causers.

### 3.3 Agentive passives

Another contrast between stative PCs and inchoative PCs is that the inchoative verbs may occur in agentive passive participles formed with the third infinitive *-ma/mä* (38), while statives cannot (39):

- (38) miehe-n raivo-stu-tta-ma / pelä-sty-ttä-mä nainen

<sup>12</sup> There is some variation among native speakers on the acceptability of these verbs in impersonal passives, especially the verb *pelottaa* ‘to frighten’. However, all native speakers consulted agreed that impersonal passive inchoatives are better than statives.

man-gen fury-inch-caus-pass / fear-inch-caus-pass woman.nom  
'the woman infuriated / frightened by the man'

- (39) ??miehe-n epäily-ttä-mä / mielly-ttä-mä nainen  
man-gen suspect-caus-pass / please-caus-pass woman.nom  
'the woman made suspicious / pleased by the man'

The ability of a verb to undergo agentive passivisation with -MA does not necessarily depend on agency as such, or aspect/Aksionsart, since stative Class 1 Experiencer verbs like *rakastaa* 'to love', may occur in this construction:

- (40) miehen rakasta-ma nainen  
man-gen love-pass woman.nom  
'the woman loved by the man'

One explanation is that the lack of an external argument is the reason for the unacceptability of (39): *miehen* is the external argument of the underlying verbs in (38) and (40), but not of the stative PC in (39).

### 3.4 Case and agreement in stative PCs

Another source of evidence that stative PCs are unaccusative comes from case in embedded infinitival clauses. In Finnish, full DP internal arguments may appear as 'nominative objects' in syntactic environments which lack external arguments that agree with the verb, for example impersonal passives, existential constructions, imperatives, and some modal constructions (Vainikka 1989, Reime 1993, Mitchell 1991, Nelson 1998):

- (41) Pekka näh-tiin.  
Pekka.nom see-pass.past  
'Pekka was seen'

In these environments, infinitive verbs appear to be 'transparent' to the case assignment properties of the matrix verb. If the matrix verb licenses a nominative external argument that agrees with the verb, as in the case of the verb *haluta* 'to want', the object of the lower infinitive appears in accusative case:

- (42) Sinä halua-t osta-a olue-n.  
you.nom want-2s buy-inf beer-acc  
'You want to buy a beer'

If the matrix verb fails to license a nominative syntactic subject, as in the case of the modal verb *täytyä* 'must', which takes a genitive subject, then the object of the embedded infinitive verb shows up in nominative case if it is a full DP:

- (43) Minu-n täyty-y osta-a uusi tietokone.  
I-gen must-3s buy-inf new.nom computer.nom  
'I must buy a new computer'

This shows that the syntactic properties of the matrix verb may affect case assignment in the lower infinitival clause. When stative PCs take an infinitival complement with a partitive Experiencer ‘subject’, the object in the embedded clause surfaces as a nominative DP:

- (44) Jarmo-a harmitta-a / mielly-ttä-ä näh-dä mies.  
 Jarmo-part annoy.caus-3s / please-caus-3s see-inf man.nom  
 ‘Jarmo is annoyed / pleased to see the man’

The pattern in the examples above suggests that the matrix verbs, the stative PCs *harmittaa* ‘to annoy’ and *miellyttää* ‘to please’ do not license a syntactic subject, similar to the modal *täytyä* ‘must’ and impersonal passives. This is further evidence that these verbs are unaccusative.

In Finnish, preverbal nominative arguments usually trigger subject agreement on the finite verb. Subject to discourse constraints, stative PCs allow Experiencers and Themes to appear in either preverbal or postverbal position. As expected, preverbal nominative Themes trigger agreement morphology, while partitive ‘subjects’ do not:

- (45) Minä epäily-tä-n hän-tä.  
 I.nom suspect-caus-1s him/her-part  
 ‘I make him/her suspicious’
- (46) a. Minu-a sure-tt-i (koira-ni kuolema).  
 I-part grieve-caus-past.3s dog-1sPx death.nom  
 ‘I grieved (over my dog’s death)’
- b. Koiria-ni kuolema-t sure-tti-vat minu-a.  
 dogs-1sPx deaths-nom.pl grieve-caus-3p me-part  
 ‘My dogs’ deaths grieved me’

This is not, however, evidence that the nominative Themes are base-generated as subjects in these sentences. Finnish does allow derived nominative subjects in other constructions, most notably raising predicates (assumed to be unaccusative following Chomsky 1981):

- (47) a. Sinä näy-t ole-van väsynyt.  
 you.nom seem-2s be-pcp tired.sg  
 ‘You seem to be tired’
- b. Te näy-tte ole-van väsyne-i-tä.  
 you(pl).nom seem-2p be-pcp tired-pl-part  
 ‘You (pl) seem to be tired’

In (47), the surface subject appears to have raised from the lower clause, given the agreement between the surface subject and the adjectival predicate. As expected within a raising analysis, the raised argument also triggers verbal agreement. Agreement morphology, then, is not necessarily evidence in Finnish that a subject has been base-generated as an external argument.

In sum, evidence from binding, passivisation, agreement and case in embedded clauses suggests that PCs derived from stative bases fail to license an external argument.

#### 4 Thematic and aspectual properties of psych verbs in Finnish

It has been suggested that a more fine-grained thematic (Pesetsky 1995) or aspectual (Tenny 1994, Grimshaw 1990) approach to argument linking yields the correct predictions for various classes of predicate cross-linguistically. In this section, the aspectual and thematic properties of psych predicates in Finnish are examined in light of these hypotheses.

##### 4.1 Aspectual classes and event types

Grimshaw (1990) suggests that the key difference between Class 1 and Class 2 psych verbs is essentially aspectual: Class 1 verbs are states, while Class 2 verbs are (causative) delimited events. In her model of argument linking, a thematic tier interacts with an aspectual tier to yield the linking alternations associated with verbs like *fear* and *frighten*:

Thematic hierarchy: Agent > Experiencer > Goal/Source/Location > Theme  
Aspectual hierarchy: Cause > other

Class 1 verbs are non-causative states, so the thematic hierarchy links the highest role, Experiencer to external argument. Class 2 verbs license a Cause role, which supercedes the thematic roles in the thematic hierarchy and requires the argument with the highest aspectual prominence (ie the Causer or initiator of the event) to surface as the syntactic subject. Grimshaw's analysis predicts that causative psych predicates in Finnish should be interpreted (or interpretable) as delimited events. In this section it is argued that this prediction works for PCs derived from inchoative predicates, but not PCs derived from states.

In Finnish, the boundedness of an event is partially reflected in the case of the object. Objects of accomplishments may appear in either partitive or accusative case (Heinämäki 1984, Kiparsky 1998)<sup>13</sup>; states, being inherently unbounded events, require objects in the partitive and disallow them in the accusative. Object case morphology is therefore a useful metric for determining the event class of a given predicate in Finnish: if the object of a verb can only occur in the partitive, then the predicate is unbounded; if it can occur in the accusative, then the event is potentially bounded (or delimited). Not surprisingly, neither class of stative psych verb (base or causative) can occur with an accusative DP object:

(48) Minä sur-i-n hän-tä. / \*häne-t  
 I.nom grieve-past-1s him/her-part / him/her-acc  
 'I was sad for him/her'

(49) Asia sure-tt-i minu-a. / \*minu-t  
 matter.nom grieve-caus-past.3s me-part / me-acc

<sup>13</sup> As Kiparsky shows, the partitive/accusative alternation may also reflect the boundedness of the NP itself, but but this is not relevant for the current discussion.

‘The matter made me sad’

Moreover, both stative bases (50) and stative PCs (51) are fully compatible with the non-delimiting adverbial expression *yhden vuoden ajan*, ‘for a year’, but not with the delimiting expression *yhdessä vuodessa*, ‘in a year’:

- (50) Liisa pelkä-si koira-a yhde-n vuode-n aja-n. / ??yhde-ssä vuode-ssa  
 Liisa.nom fear-past.3s dog-part one-acc year-acc time-acc/one-iness year-iness  
 ‘Liisa feared the dog for a year / in a year’
- (51) Koira pelo-tt-i Liisa-a yhde-n vuode-n aja-n / ??yhde-ssä vuode-ssa.  
 dog.n fear-caus-past.3s Liisa-p one-acc year-acc time-acc/one-iness year-iness  
 ‘The dog frightened Liisa for a year / in a year’

However, these tests only show that these predicates are not bounded; in Finnish, certain stative verbs like *nähdä* ‘to see’ take accusative objects, which shows that the case system does not treat boundedness/telicity and stativity exactly the same way. Pykkänen (1999) devises other tests for stativity, and shows that causatives derived from states are indeed states. For example, both stative bases (52) and stative PCs (53) are incompatible with the progressive (3rd infinitive) affixes *-massa / -mässä* (Pykkänen 1999:7):

- (52) \*Kaisa on inhoa-massa / sääli-mässä Matti-a.  
 Kaisa is disgust- prog / pity-prog Matti-part  
 ‘Kaisa is disgusted by / pitying Matti’
- (53) \*Kaisa on inho-tta-massa / sääli-ttä-mässä Matti-a.  
 Kaisa is disgust-caus-prog / pity-caus-prog Matti-part  
 ‘Kaisa is disgusting / causing pity in Matti’

Another test for stativity involves tense interpretation: only stative verbs disallow a habitual interpretation in the present tense. Both base and causative stative psych verbs have this property (Pykkänen 1999:8):

- (54) Matti sure-e uutisi-a.  
 Matti.nom grieve-3s news-part  
 ‘Matti is sad because of the news (now)’  
 ‘#Matti is sad because of the news (on a regular basis)’
- (55) Uutiset sure-tta-vat Matti-a.  
 news.nom grieve-caus-3p Matti-part  
 ‘The news makes Matti sad (now)’  
 ‘#The news makes Matti sad (on a regular basis)’

These tests show that causative morphology in Finnish PCs derives states from states, not bounded events from states as expected.<sup>14</sup>

<sup>14</sup> As Pykkänen notes, this also is problematic for traditional assumptions about causation and lexical semantics; causative verbs are expected to behave like complex predicates, while states are assumed to

Like the stative predicates, inchoative base verbs do not denote delimited events, occurring only with partitive or locative case objects and disallowing the delimiting adverbial:

- ( 56) Liisa pelä-sty-i koira-a yhde-n vuode-n aja-n / \*yhde-ssä vuode-ssa.  
 Liisa.n fear-inch-past.3s dog-p one-acc year-acc time-acc/one-iness year-iness  
 ‘Liisa became frightened of the dog for a year / in a year’

However, these verbs are not states, but (typically punctual) achievements, shown by the fact that they can accept resultative expressions (57), like inchoative causative (Class 2) accomplishments (58) (Leiwo 1977):

- ( 57) Liisa pelä-sty-i koira-a puolikuoliaaksi.  
 Liisa.nom fear-inch-past.3s dog-part half-to-death  
 ‘The dog scared Liisa half to death’
- ( 58) Koira pelä-sty-tt-i Liisa-n puolikuoliaaksi.  
 dog.nom fear-inch-caus-past.3s Liisa-acc half-to-death  
 ‘The dog frightened Liisa half to death’

The only class of psych verb which seem to allow fully felicitous delimiting expressions such as *yhdessä vuodessa* ‘in a year’ is the class of causative inchoatives. Like other accomplishments in Finnish, they can be unbounded, with the object in the partitive, or bounded, with the object in accusative:

- ( 59) Koira pelä-sty-tt-i Liisa-n / Liisa-a yhde-ssä vuode-ssa.  
 dog.nom fear-inch-caus-past.3s Liisa-acc / Liisa-part one-iness year-iness  
 ‘The dog frightened Liisa in a year’ (inchoative)

This means that in Finnish, the causative affix -TTA changes the event class for achievements like *pelastyä* ‘to become frightened’, deriving an accomplishment with an event interpretation like *pelastyttää* ‘to frighten’, but it does not affect the basic event class for states. Any purely aspectually-based analysis of argument linking in psych predicates runs into problems from this data from Finnish.

#### 4.2 Thematic interpretation, role hierarchies and animacy

One of the major problems for thematic approaches to linking in psych predicates is that the Theme seems to share properties of both Agent and Patient, allowing this argument to be linked to positions high and low in the thematic hierarchy. Pesetsky (1995) observes that “Theme” encodes not one but several thematic roles, which interact in different ways with the emotion felt by the Experiencer:

- ( 60) a. Bill was angry at the article. (Target of Emotion)

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be semantically primitive. In other words, according to standard semantic theory, there is no such thing as a causative state; all caused events must involve a change of state (Levin & Rappaport Hovav 1995 cite Carter 1976, 1978 as the source of this idea). Pylkkänen shows that the primary semantic difference between causative and non-causative verbs in Finnish is that the base verbs represent individual-level predicates, while the causative verbs are stage-level. On her analysis, a causative psych state is one which is triggered in the Experiencer as long as the stimulus is perceived.



- b. The article angered Bill. (Causer of Emotion)
- c. John worried about seeing Mary. (Subject Matter of Emotion)
- d. Seeing Mary worried John. (Causer of Emotion)

Pesetsky notes that the Themes in subject positions are always interpreted as the direct causer of emotion. Theme objects, on the other hand, may be interpreted as Targets of Emotion, arguments evaluated positively or negatively by the Experiencer, or Subject Matter of Emotion, arguments which provoke an emotional response but do not necessarily cause the emotion directly. For example, in the above example in (60a), Bill evaluates the article negatively; he does not like the article (he may think it is badly written) and this makes him angry. In this case *the article* is the Target of Emotion. In (60b), Bill may or may not actually like the article, but something in its content causes him to become angry. *The article* is the Causer of Emotion. In (60c), seeing Mary provokes an emotional response in John, but he does not evaluate the event positively or negatively; seeing Mary is therefore a Subject Matter of Emotion rather than a Target. Interestingly, the last two examples also differ in factivity: (60d) entails that John has seen Mary, while (60c) does not.

By decomposing the Theme into three distinct thematic roles, Pesetsky accounts for argument mapping along the following hierarchy:

- ( 61) Causer > Experiencer > Target /Subject Matter

He shows that no verb licenses both a Target and a Subject Matter role. This means that all psych verbs license *either* <Causer, Experiencer> or <Experiencer, T/SM>; the highest argument on the hierarchy is mapped onto the external argument position. The Causer role is actually licensed by causative morphology (nonovert in English, but overt in Japanese and Finnish), and this is how Pesetsky explains many of the syntactic differences between Class 1 and Class 2 verbs. If Themes in Finnish also get similar contrasts in interpretation associated with causative morphology, then Pesetsky's account may be able to predict the data successfully.

Pesetsky's hierarchy successfully predicts patterns of argument linking for some Finnish verbs. As expected, Class 1 verbs like *rakastaa* 'love' license external argument Themes which are like non-agent Targets of emotion:

- ( 62) ??Mies rakast-i Anna-a tahallaan  
 man.nom love-past.3s Anna-part on purpose  
 'The man loved Anna on purpose'

In Finnish, there is a strong tendency to construe the Theme in most psych causatives as inanimate or non-human (Siiroinen 1997). Both stative and inchoative causatives allow human Themes, but only the inchoatives (63) allow an agentive interpretation:

- ( 63) Mies suutu-tt-i Anna-n tahallaan  
 man.nom get angry.inch-caus-past.3s Anna-acc on purpose  
 'The man made Anna angry on purpose'

- ( 64) ??Mies epäily-tt-i Anna-a tahallaan.  
 man.nom suspect-caus-past.3s Anna-part on purpose

‘The man made Anna suspicious on purpose’

This suggests that inchoative PCs may license a Causer role, but the stative PCs do not.

A closer look at stative PCs reveals more problems: thematic alternations surface not just from one verb to another, but for the same lexical verb with different surface word orders. Stative PCs may occur with the Theme as either surface subject or object if it is a nominalised event:

( 65) a. Hän-tä mielly-tt-i vaimo-nsa näkeminen.  
 him-part please-caus-past.3s wife-3Px seeing  
 ‘He was pleased to see his wife’

b. Vaimo-nsa näkeminen mielly-tt-i hän-tä.  
 wife-3Px seeing please-caus-past.3s him-part  
 ‘Seeing his wife pleased him’

In (65a), the Theme *vaimonsa näkeminen* is interpreted as Subject Matter, while in (65b) it is interpreted as the direct Causer of the emotion of the Experiencer. Furthermore, (65b) entails that he has actually seen his wife, but (65a) does not.<sup>15</sup> This is exactly the type of contrast predicted by Pesetsky’s thematic hierarchy in (61); Themes which are more like Causers are linked to a higher position than Experiencer, i.e. external argument or subject, while Themes which are less causal are linked to a lower position.<sup>16</sup> But these alternations are found within a *single* lexical verb. In other words, a verb like *miellyttää*, ‘to please’ seems to select either <Experiencer, Subject Matter> or <Causer, Experiencer>; causative morphology does not always license a Causer Theme as Pesetsky’s analysis predicts. Also, the different thematic interpretations of these arguments correlate with surface structural position (or relation to Experiencer on the thematic hierarchy), but are not associated with any change of case in the argument: Experiencers always receive objective case (partitive) and Themes nominative, regardless of their surface position.

Moreover, the patterns observed above do not yield a straightforward prediction for linking in basic stative psych predicates like *pelätä* ‘to fear’. Leiwo (1977:151) claims that for stative bases, the Theme object has an interpretation that is ambiguous between Pesetsky’s Subject Matter and Causer:

( 66) Pekka pelkä-ä sota-a / Liisa-a.  
 Pekka.nom fear-past.3s war-part / Liisa-part  
 ‘Pekka fears war/ Liisa’

<sup>15</sup> These examples also pose problems for Pykkänen’s (1999) and Arad’s (1998) hypotheses that causative mental states are triggered only as long as the stimulus is perceived by the experiencer, since (65) seems to be an example of a mental state that is triggered by a *potential* event and therefore cannot involve direct perception.

<sup>16</sup> This is similar to the line taken in Dowty (1991). Dowty explains *fear/frighten* alternations by virtue of the fact that in *frighten*-class verbs, each argument has a “weak but equal” claim to subjecthood because both have properties of proto-AGENTS; however, since Experiencers may be interpreted as undergoing a change of state (inchoative), they end up as objects. Baker (1997) incorporates Dowty’s proto-roles into a revised version of the UTAH. Both proposals give the desired result for Class 2 *frighten*-type predicates, but have little to say about Class 3, the stative transitives. Baker (1997:fn 43) describes explaining linking in these verbs as “the hard part”.

In this example, Liisa and war could be interpreted as that which causes fear in Pekka. Alternately, the Themes could be Subject Matter: Pekka could fear that there will be a war, or fear that some harm might come to Liisa, without the Theme directly causing the emotion. Cases like this seem to pose serious problems for Pesetsky's hierarchy.

One possible explanation for these phenomena is that these psych verbs occur in homophonous pairs which license different thematic roles. In other words, the causative -TTA in examples like (65) may actually derive two lexical verbs with differing thematic properties.<sup>17</sup> In fact, Pylkkänen (1999) points out that selectional restrictions for base stative verbs are preserved in their causative counterparts. Verbs like *sääliä* 'to pity' require an animate Theme both as causative and non-causative (Pylkkänen 1999:18)<sup>18</sup>:

- (67) a. ??Pekka sääli onnettomuu-tta.  
 Pekka.nom pity.past.3s accident-part  
 'Pekka pities the accident'
- b. ??Onnettomuus sääli-tt-ivät Pekka-a.  
 accident.nom pity-caus-past/3p Pekka-part  
 'The accident aroused pity in Pekka'

Examples like these provide evidence that causative psych verbs are morphologically derived from underlying base verbs, and suggests that causative affixation is a single, unified process with a single output. This means that the thematic properties of a stative base are preserved after causative morphology is added. However, argument linking in these predicates remains difficult to account for in terms of a thematic hierarchy.

### 4.3 Causative morphology and argument remapping

Finnish behaves like many non-Indo-European languages in that PCs are often associated with overt causative morphology, the affix -TTA. In this section, the syntactic effects of causative affixation are explored. It is argued that causative morphology has predictable effects on the argument structure of the predicates it

<sup>17</sup> This is the position argued by Hakulinen & Karlsson (1979:244) and Sulkala & Karjalainen (1992:294-6); this issue will be discussed in more detail in section 5.

<sup>18</sup> Interestingly, Leiwo (1977:149) reaches the opposite conclusion for *sääliä/säälittää* with the following examples:

- i. Eläinkokeet sääli-tt-ivät Pekka-a.  
 animal experiments-nom.pl pity-caus-past/3p Pekka-part  
 'Animal experiments aroused pity in Pekka'
- ii. \*Pekka sääli eläinkoke-i-ta.  
 Pekka pity.past.3s animal experiment-pl-part  
 'Pekka pitied animal experiments'

Satu Manninen (pers comm) points out that (i) is acceptable because the Theme *Eläinkokeet* is actually interpreted as animate, i.e. it is the suffering of the animals, not the experiments themselves, which arouse this feeling in Pekka.

attaches to: the external argument of the input is internalised, and an external Causer is added.

The -TTA affix is extremely productive, attaching to most transitive and many intransitive verbs (Hakulinen & Karlsson 1979, Sulkala & Karjalainen 1992):

- ( 68) Hän kirjoitt-i omaelämäkerta-nsa.  
 s/he.nom write-past.3s autobiography(acc)-3Px  
 ‘S/he wrote his/her autobiography’
- ( 69) Hän kirjoitu-tt-i omaelämäkerta-nsa (kirjailija-lla)  
 s/he.nom write-caus-past.3s autobiography(acc)-3Px (writer-adess)  
 ‘S/he had (a writer) write his/her autobiography’

When an ordinary (non-psych) transitive verb undergoes causative affixation, an overt Causer is introduced, while the underlying Agent subject, now Causee, is suppressed and resurfaces as an optional oblique expression in adessive case (69). The underlying Patient or Theme of the input predicate remains unaffected. Because causative affixation in transitives involves the addition of a Causer but the suppression of another argument, the total number of core arguments remains the same.

Interestingly, causative affixation is not confined to predicates with external arguments. Unaccusatives can also take the causative affix to yield transitive verbs:

- ( 70) kuolla ‘to die’ > kuolettaa, ‘to amortize, to cancel’  
 saapua ‘to arrive’ > saavuttaa ‘to reach, to achieve’  
 syntyä ‘to be born’ > synnyttää ‘to bear, to give birth’

- ( 71) a. Lapsi synty-i eilen.  
 child.nom be born-past.3s yesterday  
 ‘The child was born yesterday’
- b. Nainen synny-tti lapse-n.  
 woman.nom be born-caus-past.3s child-acc  
 ‘The woman gave birth to the child’

The fact that causative affixation yields a transitive (dyadic) verb in these cases means that no argument is suppressed as is the case when the input verb is transitive: an external argument (Causer) is simply added. Causative affixation is therefore sensitive to the argument structure of the input verb: if the input verb licenses a single internal argument (i.e. there is no underlying Agent) as in (71a), then a Causer is added, but the underlying internal argument remains a direct object (71b).

Unergative predicates pattern differently again. If no internal argument is licensed by the input verb, the underlying external argument is internalised, becoming a direct object in the causative (72b):

- ( 72) a. Minä laula-n.  
 I.nom sing-1s  
 ‘I (will) sing’
- b. Minä laula-t-i-n Pekka-a.  
 I.nom sing-caus-past-1s Pekka-part

‘I made Pekka sing’

The following generalisations may be made about the effects of causative affixation in Finnish:

- (73) i. Internalise external argument, if any  
 ii. Introduce Causer

The question now remains as to what effects causative affixation has on psych verbs. Some Finnish grammarians have analysed –TTA as two homophonous morphological processes, a syntactic process that yields true causatives and a lexical process that yields psych predicates. Hakulinen & Karlsson (1979:244) and Sulkala & Karjalainen (1992:294-6) reach this conclusion for several reasons. First of all, not all basic psych verbs can host causative morphology; for example, *rakastaa* ‘to love’ does not yield *rakastattaa* ‘to make (someone) love’. Secondly, PC verbs with the -TTA affix may lack corresponding underived verbs. For example, *harmittaa* ‘to annoy’ patterns like other PC verbs, but is not derived from a Class 1 base verb which takes an Experiencer subject. Like several other PC verbs, it appears to be derived from a nominal (or adjectival) base:

harmi n.	‘annoyance’	>	harmittaa ‘to annoy’
nolo adj.	‘embarrassed’	>	nolottaa ‘to embarrass’
jännite n.	‘tension’	>	jännittää ‘to strain, to excite’

Causative -TTA can, however, be seen as an affix which attaches to bases denoting mental states of various categories to yield complex causative predicates. Finally, there are a handful of verbs such as *etoa*, ‘to disgust’, which display Class 2 or 3 linking patterns but lack overt causative morphology. As pointed out by Vilkuna (1996:135), however, these verbs are still semantically, if not morphologically, causative; they may therefore be analysed as having nonovert causative morphology, as proposed in Pesetsky (1995) for English. The working hypothesis of this paper (following Siirainen 1997 and Pylkkänen 1999) is that causative -TTA should be analysed as a single affix that derives both psych and non-psych verbs. The evidence suggests that the results of causative affixation on argument structure are systematic and predictable for all classes of predicate, and therefore lend themselves to a unified analysis.

## 5 Deriving Argument Linking in Psych Predicates

So far it has been argued that PCs derived from inchoative bases such as *raivostuttaa* ‘to infuriate’ and *pelästyttää* ‘to frighten’ behave like Class 2 verbs as expected: they may receive a bounded (delimited) interpretation, assigning either accusative or partitive case to their objects; and their Theme subjects behave like external arguments, binding anaphors, undergoing impersonal passivisation, etc. PCs derived from stative bases like *surettaa* ‘to grieve’ and *epäilyttää* ‘to make suspicious’, on the other hand, do not behave as expected; they denote causative states, and their Themes do not behave like external arguments; instead, these verbs display properties of unaccusative Class 3 predicates.

(74)	<u>Stative</u>	<u>Inchoative</u>
<u>base</u>	surra ‘to grieve (for)’ Class 1 state	raivostua ‘to become furious’ achievement
<u>causative</u>	surettaa ‘to grieve’ Class 3 state [-external argument]	raivostuttaa ‘infuriate’ Class 2 event (accomplishment) [+external argument]

In this section, the effects of causative affixation are examined in more detail. It is argued that the different syntactic properties of PC verbs can be explained by examining the effects of causative affixation on base verbs.

As mentioned in section 2, base inchoative verbs such as *raivostua* ‘to become furious’ have several properties which distinguish them from stative bases like *surra* ‘to grieve (for)’: they incorporate the inchoative morpheme *-stu/-sty*, which derives change-of-state verbs from nominal and adjectival bases; and they usually take locative Themes:

- (75) Koira raivo-stu-i minu-lle.  
dog.nom fury-inch-past.3s me-all  
‘The dog became infuriated because of me’

Pylkkänen (1999) argues that these verbs are actually intransitive, and that the locative Theme in examples like (75) is not an argument of the verb. Her analysis will be adopted here.

Inchoative PCs derived from these verbs behave like ordinary transitive accomplishments:

- (76) Asia raivo-stu-tt-i minu-a / minu-t.  
matter.nom fury-inch-caus-past.3s me-part / me-acc  
‘The matter infuriated me’

In other words, causative affixation adds an external Causer argument to these predicates; the question remains as to whether the subject in examples like (76) is internalised by causative morphology as for unergative verbs (72b), or whether it is already an internal argument, as is the case for unaccusative verbs (71b). Levin & Rappaport Hovav (1995) argue that intransitive change of state verbs, especially those which participate in causative alternations like *break* and *grow* in English, are unaccusative. Since verbs like *raivostua* ‘to become furious’ denote changes of state and the single Experiencer argument is an undergoer rather than an agent, these verbs too lend themselves to an unaccusative analysis. Under this analysis, causative affixation adds an external argument Causer to the unaccusative inchoative verb, altering both the argument structure and the lexical semantic representation of the predicate:

- (77) *raivostua* ‘to become furious’ [BECOME [ y <STATE>]]  
↓  
*raivostuttaa* ‘to infuriate’ [x CAUSE [BECOME [ y <STATE>]]]

Because the verb lacks an external argument in the input, no argument gets “internalised”; the Experiencer is the internal argument in both the causative and non-causative versions of these verbs. Once a Causer has been added, however, the derived predicate is an accomplishment, in which the Experiencer object signals the boundedness of the event via objective case.

In order to analyse the causative states, it is necessary to first look at a related construction. The causative affix -TTA may also derive psych verbs from non-psych transitives and unergatives. In these cases, Agent of the input verb resurfaces in the causative as an Experiencer in partitive case, and the Causer argument is unspecified (78b), (79b):

(78) a. Minä laula-n.  
I.nom sing-1s  
'I sing'

b. Minu-a laula-tta-a.  
I-part sing-caus-3s  
'I feel like singing'

(79) a. Hän kirjoitt-i kirjee-n.  
s/he.nom write-past.3s letter-acc  
'S/he wrote a letter'

b. Hän-tä kirjoitu-tt-i.  
s/he-part write-caus-past.3s  
'S/he felt like writing'

The sentences in (78b) and (79b) may be analysed as genuinely subjectless; no agent is specified and the mental state is interpreted as being internally caused (Vilkuna 1996:136-7). Predicates like these do not undergo impersonal passivisation:

(80) Tyttö-jä naura-te-ttiin / itke-te-ttiin.  
girl-pl.part laugh-caus-pass.past / cry-caus-pass.past  
'(They) made the girls laugh/cry'  
#'(They) made the girls feel like laughing/crying'

(81) ??Eilen naura-te-ttiin / itke-te-ttiin  
yesterday laugh-caus-pass.past / cry-caus-pass.past  
'Yesterday (people) felt like laughing / crying'

The only possible input for (80) is a causative sentence as in (72b) above; the “psych” reading is not available in (80), and the the experiencer cannot be suppressed in the impersonal passive in (81). As discussed in section 3.2, this is not evidence for the unaccusativity of these verbs; instead these examples suggest that there is no human (causer) participant in the lexical semantics which can represent the implicit argument in an impersonal passive.

Examples like these turn out to be relevant for the analysis of stative (Class 3) causatives. Intransitive psych verbs like (82) also denote unbounded states, in which the Experiencer cannot be accusative:

- (82) Minu-a / \*minu-t laula-tta-a.  
 I-part / I-acc sing-caus-3s  
 ‘I feel like singing’

However, the partitive Experiencer is clearly an argument of the verb (Vilkuna 1996), and the fact that it appears in partitive case is clearly related to the unbounded interpretation of the predicate. Given the analysis so far, how can the syntactic properties of stative PCs be analysed? Recall that the input for a stative PC is a Class 1 verb, where the Experiencer is linked to external argument (83). The causative version (*hävettää*, ‘to make someone feel ashamed’) behaves like a verb with no external argument (84):

- (83) Pekka häpeä-ä minu-a.  
 Pekka.nom be ashamed-3s me-part  
 ‘Pekka is ashamed of me’
- (84) Pekka häve-tt-i minu-a.  
 Pekka.nom be ashamed-caus-past.3s me-part  
 ‘Pekka made me feel ashamed’

When the Theme of the causative verb is a predicate, the Experiencer may occur in sentence-initial position as a partitive ‘subject’, and the Theme is optional (85b):

- (85) a. Tämä-n kuvalehde-n ostaminen häve-tt-i minu-a.  
 this-acc magazine-acc buying.nom be ashamed-caus-past.3s me-part  
 ‘Buying this magazine made me feel ashamed’
- b. Minu-a häve-tt-i (tämä-n kuvalehde-n ostaminen).  
 me-part be ashamed-caus-past.3s this-acc magazine-acc buying.nom  
 ‘I felt ashamed (to buy this magazine)’

Lexical verbs like *hävettää* ‘to make sby feel ashamed’, then, share important properties with lexical verbs like *laulattaa* ‘to feel like laughing’, although they are derived from different classes of base verb: both allow partitive Experiencer ‘subjects’, both denote mental states or emotions and both are stative. The main difference between these two classes is that verbs derived from transitives like *hävettää* ‘to make sby feel ashamed’ have two arguments, while verbs like *laulattaa* ‘to feel like laughing’ appear to have only one argument.

The analysis proposed here is that the morphological process that derives these two classes of stative verb, namely -TTA affixation, has similar effects on the argument structure of both classes. Recall that when the input to causative affixation is a transitive verb like *kirjoittaa* ‘to write’, the input Agent gets internalised, resurfacing as an oblique (86b):

- (86) a. Aili kirjoitt-i omaelämäkerta-nsa.  
 Aili.nom write-past.3s autobiography(acc)-3Px  
 ‘Aili wrote her autobiography’



- b. Aili kirjoitu-tt-i omaelämäkerta-nsa (kirjailija-lla)  
 Aili.nom write-caus-past.3s autobiography(acc)-3Px (writer-adess)  
 ‘Aili had her autobiography written (by a writer)’
- (87) a. Hän kirjoitt-i kirjee-n.  
 s/he.nom write-past.3s letter-acc  
 ‘S/he wrote a letter’
- b. Hän-tä kirjoitu-tt-i.  
 s/he-part write-caus-past.3s  
 ‘S/he felt like writing’

With the ‘Experiencer causative’ in (87b), however, the external argument of the input verb resurfaces as a partitive object, regardless of the argument structure of the input (87a). In (87b), the direct object of the input verb *kirjoittaa* ‘to write’ is suppressed in the Experiencer causative predicate *kirjoituttaa* ‘to feel like writing’.

When the same morphological process applies to a stative transitive verb like *surra* ‘to grieve’ or *hävetä* ‘to feel ashamed (of)’, the input external argument, i.e. the Experiencer, is internalised to become the partitive object. The Theme, on the other hand, does not end up as an external argument Causer, nor is it a direct object. In sentences like (85b) above, the Theme is like the optional oblique in the transitive causative in (86b). In sentences like (84), the Theme looks superficially like a subject, but as the evidence presented above shows, it is not an external argument. The effect of causative affixation on the argument structure of these predicates is shown below; underlined arguments are external:

- (88) a. LAULAA < x, > → LAULATTAA < x >  
 ‘to sing’ ‘to feel like singing’
- b. SURRA < x, y > → SURETTAA < x, y >  
 ‘to feel sad (about)’ ‘to make sad’

Causative morphology, then, may sometimes add an external argument causer; or it may internalise the input external argument to derive a predicate with no external argument. The syntactic effects on verbs like *laulaa* ‘to sing’ and *surra* ‘to feel sad’ are the same with ‘Experiencer causative’ morphology. In the next section, the interpretation of these verbs is discussed with respect to their argument structure.

## 6 Argument structure and interpretation in causative stative verbs

In section 3.1, evidence from anaphoric binding is presented as evidence that stative PC verbs are unaccusative, with the Experiencer projecting higher than the Theme in the underlying structure. This was proposed because the nominative Theme of a stative PC cannot bind a reflexive pronoun (89), but a partitive Experiencer can (90):

- (89) ??Pekka<sub>i</sub> epäily-tti / häve-tti itse-ä-än<sub>i</sub>  
 Pekka.nom suspect-caus.3s/past / be ashamed-caus.3s/past self-part-3Px  
 ‘Pekka suspected/ shamed himself’ (stative)

- (90) Mikko-<sub>a<sub>i</sub></sub> harmi-tt-i / sure-tt-i itse-nsä<sub>i</sub>.  
Mikko-part annoy.caus-past.3s / grieve- caus-past.3s self.nom-3Px  
'Mikko annoyed himself / made himself sad'

Inchoative PCs, on the other hand, display different binding patterns, suggesting that the Themes in these predicates are external arguments:

- (91) Aili<sub>i</sub> raivostu-tt-i / suutu-tt-i itse-nsä<sub>i</sub>.  
Aili.nom fury-caus-past.3s / get angry.inch-caus-past.3s self(acc)-3Px  
'Aili infuriated / entertained herself' (inchoative)

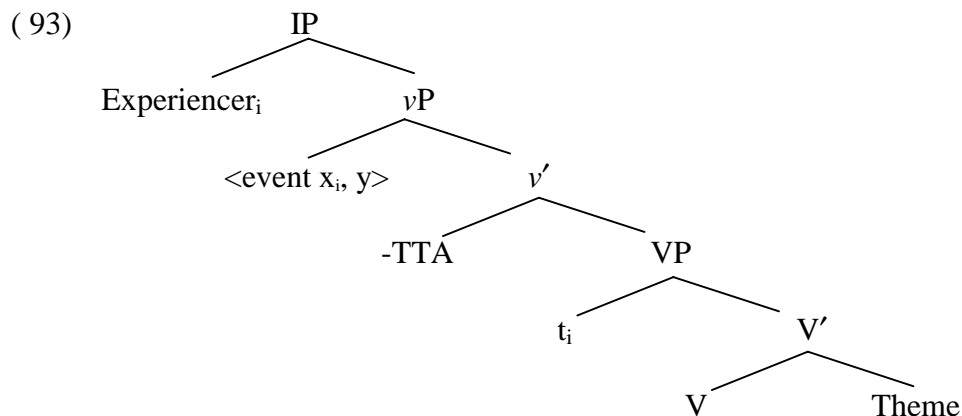
However, a closer look at the semantics of these reflexive binding examples suggests a revision of the analysis in (29) for stative PCs. Examples like (89) are not actually ungrammatical, but rather semantically difficult to interpret. (89) means something like, "someone made Pekka feel ashamed of himself, but Pekka was not the person who acted." Pekka gets a "schizophrenic" reading in which he is an unintentional causer of his own emotion; perhaps he suffers from blackouts during which he acts without being consciously aware of his actions. In other words, this sentence is interpreted as having three participants: the Experiencer; a causing event which triggers the mental state; and the human Theme. But the human Theme cannot be interpreted as the agent of the causing event.

When the partitive Experiencer binds the reflexive pronoun, on the other hand (same lexical verb, but with the surface order of arguments reversed) an interesting effect surfaces:

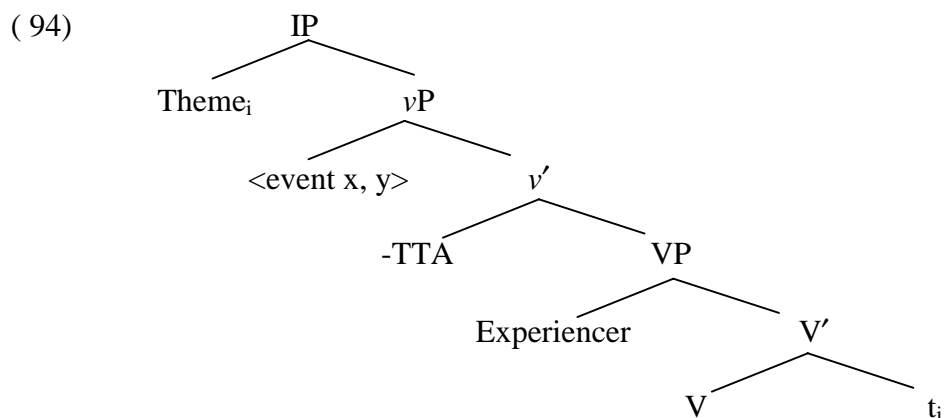
- (92) Mikko-<sub>a<sub>i</sub></sub> harmitt-i / sure-tt-i itsensä.  
Mikko-part annoy.caus-past.3s / grieve- caus-past.3s self.nom-3Px  
'Mikko annoyed himself / made himself sad'

(92) means that some inherent property of Mikko causes him to be annoyed or sad. In other words, some property of Mikko is interpreted as the causer of his own emotion; there is no third party involved doing anything to trigger the emotion. Mikko is simultaneously the causer and the experiencer of the mental state.

These facts suggest that the "causer" of a stative PCs may be an event (cf Pustejovsky 1995, Pykkänen 1999), and that two internal arguments are licensed by the lexical verb. But the interpretation of the causing event depends on the surface position of the internal arguments. If the partitive Experiencer is topicalised, occurring in surface subject position, then the event is interpreted as being **internally caused**; the Experiencer is the causer of the mental state he or she feels, and no 'causing event' is interpreted:



If the Theme moves to subject position, the causing event is interpreted as being **externally caused**, but not by the Theme; the Theme argument does not merge with the agent of the causing event<sup>19</sup>:



In a non-reflexive sentence like (84), this type of interpretation is possible; the Theme is a non-agent Stimulus, not directly associated with the causing event. Reflexive sentences like (89) are difficult to interpret because the Theme and the Experiencer are coreferential.

In the analysis proposed here, the element licensed by *vP* as an external argument in a stative PC is an event, not an argument. Going back to the discussion of impersonal passivisation in section 3.2, this proposal explains why these verbs do not form impersonal passives: the element which undergoes suppression is not a human participant, but an event. This results in a violation of the animacy requirement for forming these constructions.

At the lexical level, stative PCs have been shown to license two internal arguments as the result of the morphosyntactic effects of causative affixation. But the surface word order of these two internal arguments has been shown to affect the way these arguments are interpreted. In this sense, the interpretation of these predicates is compositionally, rather than lexically, determined.

<sup>19</sup> See Pylkkänen (1999) for an independent but related analysis.

## 7 Conclusion

This paper has focused on the relationship between causative morphology and the syntactic and semantic properties of four classes of psych verb in Finnish. These verbs in Finnish present a challenge for several prominent theories of argument linking, because causative morphology may be added to a stative base verb to derive a stative causative verb. The same affix may also derive “well-behaved” transitive psych verbs from inchoative bases. Evidence was presented from impersonal passivisation, binding, case and agentive passivisation to show that the stative psych causatives fail to license the Theme as an external argument as predicted. Instead, these predicates appear to license a subevent, rather than a human agent, as a causer. The analysis presented here attributes the special behaviour of psych causatives to systematic morphosyntactic effects of causative morphology. Depending on the argument structure of the base, the causative affix -TTA may either add an external argument Causer or internalise an argument to yield an unaccusative predicate. The unusual properties of stative causative psych verbs are derived by altering the argument structure of the base verb to yield a stative, unaccusative, but morphologically causative verb. Argument linking in these predicates cannot, on the other hand, be explained by appealing solely to their thematic or aspectual properties.

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*Linking causatives and experiencers*

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