

On the argument structure of object experiencer verbs

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Declaration

I, Youngjin Kim, confirm that the work presented in my thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

This thesis investigates the argument structure of object experiencer verbs, with a focus on Class II verbs (e.g. *frighten*, *annoy*). The widely accepted view of such verbs in Chomskyan linguistics is that they contain three thematic roles, a Cause, an Experiencer, and a Subject Matter (SM), but that the Cause and the SM cannot be realized together (the T/SM restriction). I adopt the null hypothesis that all causatives – whether psychological or not – introduce just two roles, namely a Cause and an undergoer (Theme or Experiencer) and explore whether this hypothesis can be reconciled with various syntactic and semantic characteristics of psych verbs. The first issue I tackle is how one might capture the pervasive eventive/stative ambiguity observed in Class II verbs and show that this can be achieved without resorting to alternative projection patterns, as in the standard view. The second problem I explore is to do with the intensionality of Class II verbs, a topic that has received little or no attention. I first demonstrate that stative Class II verbs are intensional in their subject, but that their eventive counterparts are not. While this data pattern appears to provide an argument for the alternative projection patterns put forward under the standard view, I show that the facts can be equally well accounted for if Class II verbs invariably project a Cause, regardless of their aspectual properties. The last problem I address is that the reduced counterpart of a Class II verb apparently *may* project a SM. I develop and assess two routes for resolving this conundrum (one taking the SM to be an argument, the other taking it to be an adjunct). Overall, I conclude that the null hypothesis is viable, and preferable to the standard view that Class II verbs have three thematic roles.

Impact statement

This thesis contributes to our understanding of how causation is expressed in human language. In particular, by providing evidence that psychological causatives encode only two arguments, contra the widely accepted view that they contain three, it reinforces the idea that there are restrictions in the linguistic representation of causation, which have been mainly established in the study of standard (non-psych) causatives (e.g. Neeleman & van de Koot 2012).

This thesis also engages with and collaborates across other disciplines, such as philosophy and psychology, that study (psychological) causation. In particular, it explores the hypothesis that the Cause argument in the linguistic domain can be linked to different causal participants in the causal chain in the mental domain.

This thesis proposes a simpler, unified theory for causative predicates. It provides evidence that psychological causatives reflect patterns observed in causatives in general, thus drawing a parallel between standard (non-psych) causatives and psychological causatives. It obviates the need to treat psychological causatives as a distinct category requiring special treatment.

Finally, this thesis uncovers an aspect of psychological predicates that has not been previously explored. Specifically, it offers a novel empirical finding that the Cause argument can be intensional depending on the aspectuality of the predicate. This newly discovered characteristic of psychological predicates could potentially spark further study and open new avenues for future research both in syntax and semantics, as well as in other related fields.

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Abbreviations

APH	alternative projection hypothesis
UPH	uniform projection hypothesis
CCF	crucial contributory factor
EXP	experiencer
SM	subject matter
1	first person
2	second person
3	third person
ACC	accusative
CAUS	causative
COMP	complementizer
DAT	dative
DECL	declarative
DIM	diminutive
GEN	genitive
INCH	inchoative
INESS	inessive
IPFV	imperfective
LOC	locative
NOM	nominative
PART	partitive
PAST	past
PFV	perfective
REFL	reflexive
SG	singular

Chapter 1. Introduction

1.1. What the thesis is about

This thesis concerns the argument structure of experiencer verbs, a.k.a., psychological verbs (henceforth psych verbs). Its main focus is what are commonly referred to as Class II psych verbs in which an Experiencer role surfaces as the object:

- (1) a. The newspaper article frightened Mary.
- b. His declining health worried John.

The central claim of this thesis is that Class II psych verbs are causatives projecting two participants, a Cause and an Experiencer. This claim runs counter to a widely accepted view in the literature, according to which the argument structure of such verbs specifies three participants, a Cause, an Experiencer, and a Subject Matter (i.e. an object of emotion). On this view, Class II psych verbs are taken to project either the Cause or the Subject Matter alongside the Experiencer. However, I will argue that there is little to no evidence for the existence of the additional Subject Matter argument in the argument structure of these verbs and in fact various syntactic and semantic characteristics of Class II psych verbs are better captured with the simple view that the argument structure of such verbs only ever contains a Cause and an Experiencer.

1.2. Setting the scene

1.2.1. Psych verbs and their peculiarities

A psych verb is a verb that expresses a psychological state. The argument associated with that state is called the Experiencer.¹ Such verbs are also sometimes referred to as experiencer verbs, emotional verbs, or mental verbs.

Psych verbs are commonly classified according to the position that the Experiencer takes in the sentence. Broadly speaking, they can be divided into two groups: i) the subject

¹ In a broader sense, the Experiencer role can be defined as an entity that holds a mental state (e.g. Andrews 1985). Under this definition, the Experiencer role may also be assigned by propositional attitude predicates such as *believe* and *hope* (Anand & Hacquard 2014), as well as by predicates of personal taste and evaluative predicates such as *tasty*, *fun* and *smart* (Pearson 2013). In this thesis, however, I only consider entities that experience an emotional state.

experiencer verbs, for which the Experiencer surfaces as the subject and ii) the object experiencer verbs, for which the Experiencer surfaces as the object. A more detailed classification of psych verbs proposed by Belletti & Rizzi (1988, henceforth B&R) is outlined in (2). While Class I verbs correspond to subject experiencers, Class II and III correspond to object experiencers.

(2) Belletti and Rizzi's (1988) classification of psych verbs

- a. Class I Nominative Experiencer, Accusative Theme (a.k.a. *temere* 'fear' type)

John fears Mary.

(*love, hate, admire, resent, envy, detest, dread, desire, adore...*)

- b. Class II Nominative Theme, Accusative Experiencer (a.k.a. *preoccupare* 'worry' type)

The show worries John.

(*frighten, scare, surprise, delight, bore, impress, anger, annoy, irritate, disappoint, frustrate, shame, embarrass, disgust, amuse, mesmerize, interest, depress, bother, concern, excite ...*)

- c. Class III Nominative Theme, Dative Experiencer (a.k.a. *piacere* 'appeal to' type)

The show appealed to John.

(*matter (to), appeal (to), please ...*)

B&R's Class I verbs are strictly speaking transitives with a DP/NP object (i.e. the object is an accusative Theme) but there are many subject experiencer verbs in which the Theme is introduced by a preposition, as exemplified in (3). (4) shows some sentences with those verbs. Throughout this thesis I will use the term Class I in a broader sense than B&R, to include both subject experiencer predicates that select a DP/NP object and those with a prepositional object.

- (3) worry (about), fret (over/about), agonize (over/about), bristle (at), chafe (at), rail (against), seethe (at/with), puzzle (over), sympathize (with), grieve (over/at), rejoice (at/in/over) ...

- (4)
- a. John worried about his future.
 - b. Mary fretted over/about what John said.
 - c. Most entrepreneurs bristle at the idea of dealing with the government.²
 - d. He soon chafed at the restrictions of his situation.
 - e. She puzzled over/about the remarks.
 - f. They grieved over/at the loss.
 - g. He sympathizes with others' anxiety and fear.
 - h. She rejoiced at/in/over his success.

Psych verbs have long been a central topic of inquiry due to their peculiar behaviors defiant of established linguistic theories (B&R 1988; Grimshaw 1990; Iwata 1993; Pesetsky 1995; Bouchard 1995; Pylkkänen 2000; Arad 1998,2000; McGinnis 2002; Reinhart 2002; Landau 2010; Fábregas and Mariñ 2015; Temme 2018; a.o.). One of the initial challenges presented by psych verbs lies in the linking between their semantic roles and syntactic structures. Consider the pairs in (5)-(14).

- (5)
- a. Mary fears bears.
 - b. Bears frighten Mary.
- (6)
- a. Mary worries about Chat GPT.
 - b. Chat GPT worries Mary.
- (7)
- a. Mary puzzled over the new problem.
 - b. The new problem puzzled Mary.
- (8)
- a. Mary was annoyed with John.
 - b. John annoyed Mary.
- (9)
- a. Mary was disappointed with/by the book.
 - b. The book disappointed Mary.

² <https://www.bloomberg.com/news/articles/2000-07-09/uncle-sam-wants-you#xj4y7vzkg> [accessed 31/07/23]

- (10) a. Mary was incensed at the stupid prank.
 b. The stupid prank incensed Mary.
- (11) a. Mary was disgusted with John's audacity.
 b. John's audacity disgusted Mary.
- (12) a. Mary was embarrassed with John's performance.
 b. John's performance embarrassed Mary.
- (13) a. Mary was delighted at/with/by the news.
 b. The news delighted Mary.
- (14) a. Mary was surprised at the news.
 b. The news surprised Mary.

A traditional analysis of examples like those in (5)-(14) is that the (a) and the (b) examples share the same theta roles, namely Experiencer and Theme (e.g. B&R 1988; Grimshaw 1990; Zubizarreta 1992). An immediate challenge for this view is to explain how this linking can be reconciled with whatever mapping principles one adopts. While in the (a) examples above the Experiencer and the Theme are mapped to the subject and the object positions, respectively, the (b) examples display the reverse mapping. This would appear incompatible with any linking theory that assumes regularity in the mapping between semantic roles and syntactic structures, however rigid or flexible that regularity may be. It goes without saying that – on the face of it at least – it directly contradicts the radical version of linking theory known as the Uniformity of Theta Assignment Hypothesis (a.k.a. UTAH) proposed by Baker (1988).

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

As stated in (15), the UTAH assumes that a particular semantic role is invariably mapped onto the same syntactic position. However, it has been pointed out that Baker's original UTAH may be too strict (Larson 1988; Speas 1990). Take, for instance, the examples in (16) in which the recipient *John* is realized in different positions. This would not be allowed under the UTAH.

- (16) a. John received a package from Baraboo.
b. Mary sent a package to John from Baraboo. (Speas 1990: 73)

Many authors instead assume a less rigid version of linking theory, which makes use of a thematic hierarchy (Larson 1988; Speas 1990; Grimshaw 1990; a.o.). Under this approach, the realization of the roles is relativized, rather than absolute, depending on the roles co-occurring in the sentence. Although there is no agreement on what exactly the hierarchy should be (see e.g. Fillmore 1968; Jackendoff 1972; B&R 1988; Larson 1988; Bresnan & Kanerva 1989; Pesetsky 1995), here is a version of the hierarchies proposed by Bresnan & Kanerva (1989):

- (17) Agent > Beneficiary > Recipient/Experiencer > Instrument > Theme/Patient > Location
(Bresnan & Kanerva 1989: 23)

The examples in (16) can now be accounted for given that in (16a) the recipient *John* can be projected in the subject position in the absence of an Agent. This is not possible in (16b) where *Mary* is the Agent and must be projected higher than the recipient.

Even with the less rigid mapping theory in (17), however, the linking problem with psych verbs persists. This is because assuming that the pairs in (5)-(14) contain identical roles, the Experiencer is higher than the Theme in the (a) examples but not in the (b) examples. I will return to this issue in the next section.

Apart from the linking problem they present, psych verbs have attracted research interest due to their quirky behaviors, which are mostly found in Class II psych verbs. I will briefly address one of them here, which will be relevant to the discussion in Chapter 2. An unexpected behavior found in Class II psych verbs that drew initial attention in the literature is that anaphors embedded inside the surface subject can be bound by the Experiencer in the object position (see (18a) and (19a)). This phenomenon is referred to as backward binding (Postal 1971; B&R 1988). In normal cases (i.e. in non-psych constructions), such a binding relation typically leads to a Principle A violation, which explains the ungrammaticality of the examples like (18b) and (19b).³

³ More in-depth discussion on backward binding will follow in Chapter 2.

- (18) a. Questi pettegolezzi su di se_i preoccupano Gianni_i piu di
these gossips on himself worry Gianni more
 ogni altra cosa.
any other else
 ‘These rumors about himself_i worry Gianni_i more than anything else.’
- b. *Questi pettegolezzi su di se_i descrivono Gianni_i meglio di
these gossips on himself describe Gianni better than
 ogni biografia ufficiale.
any biography official
 ‘These rumors about himself_i describe Gianni_i better than any official
 biography.’ (B&R 1988: 312)
- (19) a. That book about herself struck Mary as embarrassing.
- b. *That book about herself struck Mary on the head. (Bouchard 1995: 295)

For more unconventional behaviors of Class II psych verbs, I refer the reader to B&R (1988), Arad (1998), Landau (2010) and references cited therein. In the next section, I return to the linking problem, as it is closely tied to the various analyses of the argument structure of Class II verbs.

1.2.2. More on the linking problem and the argument structure of Class II verbs: two vs three participants

The pairs in (5)-(14), some of them repeated here as (20)-(22), present the linking problem under the traditional analysis that the pairs involve the same two theta-roles, namely an Experiencer, and a Theme. This is because the Experiencer is higher than the Theme in the (a) examples, but the reverse appears to be true in the (b) examples.

- (20) a. Mary fears bears.
 b. Bears frighten Mary.
- (21) a. Mary worries about Chat GPT.
 b. Chat GPT worries Mary.

- (22) a. Mary puzzled over the new problem.
b. The new problem puzzled Mary.

In response to this linking anomaly, B&R (1988) offer a solution, namely an unaccusative analysis of object experiencer verbs. They argue that despite their surface difference, subject and object experiencer verbs share the same underlying structure in which the Experiencer is higher than the Theme. However, in subject experiencer verbs, the Experiencer is marked as an external argument, while in object experiencer verbs it is not. The derivations of the two experiencer constructions are as follows: if the Experiencer is marked as external, it moves out of its VP internal position (in line with the VP-internal subject hypothesis) to satisfy EPP and a subject experiencer verb emerges. Because this verb has an external argument, it is able to assign structural accusative case to the Theme argument. Object experiencer verbs, on the other hand, are derived through movement of the Theme instead of the Experiencer. The Experiencer is an internal argument and receives an inherent accusative case. The Theme cannot be case-marked VP-internally and therefore raises to the subject position, where it is assigned nominative case. The movement involved in this latter derivation is what we normally see with plain unaccusatives.

While B&R's unaccusative analysis obviates the linking problem by assuming the same hierarchical ordering of arguments for subject and object experiencer verbs, there are good reasons to reject it. I will briefly discuss a few arguments against this analysis pointed out in the literature. The main argument against it is concerned with the availability of psych passives of object experiencer verbs (Iwata 1993; Pesetsky 1995; Tenny 1998; Arad 1998; Reinhart 2002; Landau 2010; a.o.). If the unaccusative analysis of object experiencer verbs were on the right track, it would not be possible for such verbs to form verbal passives (since unaccusatives lack an external argument). This, however, is contrary to fact, as can be seen in (23)-(24).

- (23) a. Bill was angered by Mary's conduct.
 b. The paleontologist was pleased by the discovery of the fossil.
 c. Bill was irritated by the loud noises coming from next door.
 d. Mary was cheered by the French victory.
 e. John was worried by my remarks.
 f. Harry was puzzled by Sue's curious behavior.
 g. Harry was grieved by the court's decision.
 h. Sue was bored by her work on lexical entries.
 i. Bill was frightened by strange noises. (Pesetsky 1995: 22)

- (24) a. Gianni è disgustato dal la corruzione di questo paese. (Italian)
Gianni is disgusted by the corruption of this Country
 'Gianni is disgusted by the corruption of this country.'
 b. Gianni è affascinato da questa prospettiva.
Gianni is fascinated by this perspective
 'Gianni is fascinated by this perspective.' (B&R 1988: 309)

In response, B&R argue that such passives are not verbal but adjectival (see also Zubizarreta 1987, 1992; Grimshaw 1990). However, the adjectival analysis of psych passives has been comprehensively refuted (e.g. Pesetsky 1995; Bouchard 1995). Let me briefly review this controversy.

One of B&R's arguments for the adjectival status of psych passives is as follows. The authors claim that cliticization in reduced relatives in Italian is only possible with verbal participles, not with adjectival ones. For example, in (25a) the passive participle is verbal, thus the clitic pronoun can be attached to the participle as in (25b). When the clause is adjectival as in (26a), the cliticization is not allowed as shown in (26b).

- (25) a. la notizia che gli è stata comunicata
the news that to him was communicated
 'the news that was communicated to him'
 b. la notizia comunicatagli
the news communicated-to him
 'the news communicated to him' (B&R 1988: 309-310)

- (26) a. la notizia che gli è ignota
the news that to him was unknown
 ‘the news that was unknown to him’
- b. *la notizia ignotatagli
the news unknown-to him
 ‘the news unknown to him’ (B&R 1988: 309-310)

B&R then point out that the *by*-phrase in (27a) can be pronominalized with *ne* as in (27b). However, the *ne*-cliticization is not possible with the passive of a psych verb as shown in (27c). B&R conclude from this that psych passives are adjectival.

- (27) a. la sola persona affascinata da questa prospettiva
the only person fascinated by this perspective
 ‘the only person fascinated by this perspective’
- b. la sola persona che ne è affascinata
the only person who by it is fascinated
 ‘the only person that is fascinated by it’
- c. *la sola persona affascinatane
the only person fascinated-ne (by it)
 ‘the only person fascinated by it’ (B&R 1988: 310)

In response, Pesetsky claims that the argument from *ne*-cliticization in (27) cannot hold, pointing out that *ne*-cliticization to a passive participle in a reduced relative is generally not permitted across predicate types as exemplified in (28)-(30) (see the (b) examples). While Pesetsky acknowledges that he has no explanation for the impossibility of the *ne*-cliticization in (27c), as well as in the (b) examples of (28)-(30), he concludes that the *ne*-cliticization in reduced relatives cannot be used as a supporting argument for the adjectival status of Class II psych verbs.

- (28) a. la sola persona che ne è stata uccisa
the only person that by it was killed
 ‘the only person that was killed by it’
 b. *la sola persona uccisane
the only person killed-ne (by it)
 ‘the only person killed by it’ (Pesetsky 1995: 26)

- (29) a. la sola persona che ne è stata colpita
the only person that by it was struck
 ‘the only person that was struck by it’
 b. *la sola persona colpitane
the only person struck-ne (by it)
 ‘the only person struck by it’ (Pesetsky 1995: 26)

- (30) a. la sola persona che ne è stata toccata
the only person that by it was touched
 ‘the only person that was touched by it’
 b. *la sola persona toccatane
the only person struck-ne (by it)
 ‘the only person touched by it’ (Pesetsky 1995: 26)

Another piece of evidence in favor of the existence of verbal passives of object experiencer verbs comes from Dutch V-raising. In this language, V-raising, which reverses the order of an auxiliary and a verb, can be applied to passives as in (31). However, this phenomenon is not compatible with adjectives, as shown in (32). Crucially, psych passives *can* undergo V-raising as in (33), which indicates that psych passives in this language are verbal, not adjectival (Pesetsky 1995).

- (31) a. dat hem de P.C. Hooft-prijs toegekend werd
that to him the P.C. Hooft-prize awarded was
 ‘that the P.C. Hooft prize was awarded to him’
 b. dat hem de P.C. Hooft-prijs werd toegekend (Pesetsky 1995: 33)

- (32) a. dat Jan de hele dag boos was
that Jan the whole day angry was
 ‘that Jan was angry the whole day’
 b. *dat Jan de hele dag was boos (Pesetsky 1995: 34)

- (33) a. dat ik door het college geboeid werd
that I by the classes fascinated became
 ‘that I got fascinated by the classes’
 b. dat ik door het college werd geboeid (Pesetsky 1995: 36)

Alongside the verbal properties of psych passives, there is another piece of evidence disfavoring the unaccusative analysis of object experiencer verbs. Consider the examples in (34), which are interpreted as middles. Middles are generally taken to be derived through a process that suppresses the external argument and externalizes the internal argument (Iwata 1993: 165). If object experiencer verbs were unaccusatives, then the examples in (34) should be ungrammatical, which is clearly contrary to fact.⁴

- (34) a. Sue frightens easily.
 b. John shocks easily. (Iwata 1993: 165-166)

The above discussion leads to the conclusion that the unaccusative analysis of all object experiencer verbs cannot be maintained. For more arguments for this conclusion, I refer the reader to Pesetsky (1995) and Iwata (1993).

Pesetsky (1995), noting that B&R’s proposals leave the linking problem of psych verbs unsolved, proposes an alternative solution. Recall that the linking problem arises on the premise that we are dealing with identical theta-roles (i.e. Experiencer, Theme) which are realized in different hierarchical relations. If the premise that we are dealing with identical roles is wrong in the first place, the linking problem can be circumvented. This is precisely what Pesetsky argues. Consider the examples in (35). For B&R (and for most authors before Pesetsky (e.g. Grimshaw 1990; Zubizarreta 1992)) *John* and *the television set* in both examples would be

⁴ Note that these sentences are not necessarily derived from agentive verbs. Iwata (1993, p165) notes that (34a) can be construed as Sue has the property that she becomes frightened at the smallest provocation. Similarly, (34b) allows for a reading in which John has the property that he gets shocked even at the mildest swear word but where no one actually does anything to shock him (Iwata 1993, p165 from Fellbaum 1986: 14, and Dixon 1991: 327).

consistently analyzed as an Experiencer and a Theme, respectively. However, Pesetsky convincingly shows that this is not appropriate. He argues that the subject of (35b) is not a Theme but rather a Cause.

- (35) a. John worries about the television set.
b. The television set worries John. (Pesetsky 1995: 57)

Pesetsky remarks about (35b) that “it is sufficient that the television set causes John to experience worry, but the subject matter of his thoughts while experiencing worry could have nothing to do with the television set. There is simply a causal relationship between the set and some state of worry ... He is not worrying about the set. The set merely provokes worries about other matters” (Pesetsky 1995: 57). In short, in (35a) the television set is the object of John’s worry (i.e. the object of emotion), while it denotes the cause of John’s psychological state in (35b). This characterization of the meaning of (35a) and (35b) is confirmed by the fact that (36b), unlike (36a), is not a contradiction.

- (36) a. John worried about Mary's poor health, #but Mary's poor health did not worry John.
b. Mary's poor health worried John, but John did not worry about Mary's poor health. (Pesetsky 1995: 57)

In other words, the traditional ‘Theme’ role breaks down into Cause and Object of emotion. Pesetsky further divides the Object of emotion into two roles, namely Target (T) and Subject Matter (SM). That these two roles (T/SM) are distinct is evident in view of the fact that they may co-occur in the same predicate, as in (37). Nevertheless, there seems to be no satisfactory diagnostic for distinguishing between T and SM. The distinction has been tacitly adopted by most authors (after Pesetsky), but at the same time treated as mostly irrelevant, including by Pesetsky himself. I do not have clear semantic definitions to offer for T and SM either. Throughout the thesis, I will refer to an Object of emotion simply as SM.

- (37) John is angry at Mary (T) about the party (SM).

There is another piece of evidence supporting the claim that the subject of a Class II verb bears a role distinct from SM. Consider the following examples in Hebrew and French:

- (38) a. ha+olam hirgiz et Max.
the world angered (ACC) Max
 ‘The world angered Max.’
- b. Max hitragez.
Max angered+REFL
 ‘Max got angry.’ (Reinhart 2002: 254)

- (39) a. Jean à faché Marie.
John has angered Mary
 ‘John has angered Mary.’
- b. Marie s’est fachée.
Mary REFL-is angered
 ‘Mary got angry.’

The pairs in (38) and (39) illustrate the well-known causative-anticausative alternation (a valency alternation). The (b) examples lack the external argument of the (a) examples, which we may therefore assume is a Cause argument. For ease of exposition, I will assume that the Cause argument of the (a) examples is removed through expletivization (i.e. decausativization), along the lines of Reinhart (2002), but nothing of substance hinges on this. Both in Hebrew and French, the anticausative variants are marked with reflexive morphology. If the argument removed by expletivization was identical to the SM argument, then we would not expect the reduced variants in the (b) examples to be able to realize an SM argument. But this is contrary to fact, as shown in (40).⁵

- (40) a. Max hitragez al ha-mar’amar.
Max angered+ REFLabout/at the article
 ‘Max got angry about the article.’ (Reinhart 2002: 260)
- b. Jean s’est faché à Marie de quelque chose.
Jean REFL anger to Mary of something
 ‘Jean got angry at Mary about something.’

⁵ Expletivization, as well as causative-anticausative alternation in psych predicates, will be discussed in more detail in Chapters 2 and 5.

- (43) a. The article in the *Times* made Bill angry at the government.
 b. The Chinese dinner made Bill satisfied with his trip to Beijing.
 c. The television set made John worry about the veracity of Bill's alibi.
 d. The problem of lexical entries made John bored with his life as a linguist.
 e. Something Bill had said made Mary bothered about her future.
 f. Bill driving at night always makes John worry about the adequacy of his insurance coverage.
 g. The distant rumbling made Mary afraid/fearful of another tornado.

(Pesetsky 1995: 61)

To make sense of these facts on Pesetsky's analysis, one must assume that there is a ban on the simultaneous realization of the Cause and SM arguments in a simplex psych predicate. Pesetsky dubs this ban the T/SM restriction. This restriction is not limited to English. Some cross-linguistic data is provided in (44)-(46). The (a) examples show that SM roles appear freely in the absence of a Cause argument. When the Cause argument is present, the SM can no longer be realized as shown in the (b) examples. The (c) examples demonstrate that the T/SM restriction does not hold for analytical psych causatives.

- (44) a. Jan verbaast zich over dit verschijnsel (Dutch)
John surprises REFL about this phenomenon
 'John is surprised about this phenomenon/statement.'
- b. *Het boek verbaasde Jan over dit verschijnsel.
the book surprised John about this phenomenon
 Intended: 'The book surprised John about this phenomenon/statement.'
- c. Het boek maakte Jan verbaasd over dit verschijnsel.
the book made John surprised about this phenomenon
 'The book made John surprised about this phenomenon/statement.'

- (45) a. Kimiko-ga sono koto-ni odoroi-ta. (Japanese)
Kimiko.NOM that fact.DAT surprise-PAST
 ‘Kimiko was surprised at the fact.’
- b. *sono ronbun-ga Kimiko-o sono koto-ni ororok-asi-ta.
that parper.NOM Kimiko.ACC that fact.DAT surprise-CAUS-PAST
 Intended: ‘That paper surprised Kimiko at the fact.’
- c. sono ronbun-ga Kimiko-o sono koto-ni ororok-ase-ta.
that parper.NOM Kimiko.ACC that fact.DAT surprise-CAUS-PAST
 ‘That paper made Kimiko surprised at the fact.’ (McGinnis 2002: 9)
- (46) a. Bill-i_{Exp} [geu yeonghua-e daehae] nola-ss-da. (Korean)
Bill-NOM that movie-LOC about surprise-PAST-DECL
 ‘Bill was surprised about the movie.’
- b. *Mary-ga_{Cause} Bill-ul_{Exp} [geu yeonghua-e daehae] nola-i-ss-da.
Mary-NOM Bill-ACC thatmovie-LOC about surprise-CAUS-PAST-DECL
 Intended: ‘Mary surprised Bill about the movie.’
- c. Mary-ga_{Cause} Bill-ul_{Exp} [geu yeonghua-e daehae] nola-key
Mary-NOM Bill-ACC thatmovie-LOC about surprise-COMP
 mandl-ss-da.
make-PAST-DECL
 ‘Mary made Bill surprised about the movie.’

Clearly, theories that believe that i) Cause and SM are distinct and that ii) the lexical entry of a Class II includes both Cause and SM alongside Experiencer must offer an explanation for the existence of the T/SM restriction. I will briefly review some of the proposals to account for this restriction in Chapter 5. Subsequently, I will explore an alternative account that abandons the Pesetskyan view of the argument structure of causative psych verbs.

1.2.4. Semantic properties of Class II psych verbs

As mentioned, this thesis also looks at semantic aspects of Class II psych verbs. Specifically, my attention will focus on the following features: their aspectuality and intensionality. In what follows, I will briefly discuss each of them.

1.2.4.1 The aspectual distinction

Many Class II psych verbs are aspectually ambiguous between eventive (or dynamic) and stative readings (e.g., Arad 1998; Reinhart 2002; Landau 2010).⁶ Take for instance (47). (47a) is most easily interpreted as describing an event of change: the doctor's words cause John to become worried. (47b), by contrast, is more naturally interpreted as describing the state of John being worried about his health.⁷

- (47) a. The doctor/the doctor's letter worried John. [eventive]
b. His health worries John. [stative]

In line with the Pesetskyan view, the widely assumed approach to this ambiguity is that while the eventive reading of a Class II psych verb involves a Cause subject, the subject of a stative counterpart is a (raised) SM rather than a Cause (Pylkkänen 2000; Reinhart 2002; (Rothmayr 2009); Landau 2010; a.o). In this thesis, I will show that this characterization of stative Class II verbs is problematical and will advance an alternative characterization of causative psych verbs that can capture the aspectual distinction without assuming the presence of a SM argument.

1.2.4.2 Intensionality

I investigate the arguments of psych verbs from another semantic perspective, namely intensionality. Although originally discussed in the context of intentionality (with a 't') in

⁶ The eventive/stative distinction in Class II verbs is not just an interpretive contrast but also correlates with morpho-syntactic differences such as case marking (e.g. Arad 1998; Pylkkänen 2000; Landau 2010). In Spanish for example the Experiencer of the eventive reading is marked with accusative case, but the dative marked Experiencer signifies the stative reading (White et al. 1998). A similar pattern is found in Finnish (Pylkkänen 2000; Nelson 2000). This will be discussed in more detail in Chapter 2.

⁷ There is another accessible reading for Class II psych verbs. Consider (i).

- (i) John frightened Mary.

Apart from the eventive (i.e. John did something that caused Mary to become frightened) and the stative reading (i.e. Mary experienced fear whenever she thought of him), the example also comes with a reading according to which a deliberate act on the part of John is assumed (i.e. John has the intention to frighten Mary). This so-called agentive reading of Class II verbs has been acknowledged by numerous authors (B&R 1988; Bouchard 1995; Pesetsky 1995; Arad 1998; Reinhart 2002; Landau 2010; a.o.). However, many of them have argued that when psych predicates are used agentively, they behave like normal transitives with a Patient internal argument, rather than an Experiencer. See Arad (1998) and Landau (2010) for extensive discussion of this issue. Along the lines of the general agreement, I will disregard the agentive reading of psych verbs throughout the thesis unless it becomes necessary to discuss it.

philosophy⁸, intensionality (with an ‘s’) is a linguistic phenomenon that can be defined in terms of certain linguistic criteria (Dowty 1979; Forbes 2006). In what follows I will briefly discuss diagnostics for intensionality.

A predicate is taken to be intensional if a sentence containing it exhibits all or some of the following characteristics:

(i) Substituting an expression with a coreferential term need not preserve truth-value.

Consider the examples in (48). Suppose that John does not know that the true identity of Batman is Bruce Wayne. Given this state of affairs, the two sentences in (48) can have different truth values: (48a) can be true without (48b) being necessarily true.

- (48) a. John is looking for Batman.
b. John is looking for Bruce Wayne.

(ii) An expression which has no extension in the actual world need not induce falsity of the sentence.

Another property of intensional predicates is that they can take an argument that lacks an extension in the actual world without jeopardizing the truth of the sentence. Consider the examples in (49). Although there are no such things as unicorns or vampires in the actual world, these sentences can be judged true as long as John believes in their existence.

- (49) a. John wants a unicorn.
b. John is hunting for a vampire.

(iii) There appears a so-called non-specific reading (in addition to a specific reading) with an indefinite expression.

Consider the examples in (50). (50a) can be interpreted as saying that John has a particular camera in mind, and he wants it. But it can also convey a situation in which there is no specific

⁸ Intentionality (with a ‘t’) is proposed to be the mark of the mental (originally by Brentano (1874), but see also Chisholm 1967; Searle 1979, 2018; Aquila 1995; Crane 1995, 1998 a.o.). The link between intentionality and intensionality (with an ‘s’) will be discussed in Chapter 5.

camera that he wants. Likewise, (50b) is ambiguous between the specific and non-specific readings of a member of staff that John is looking for. The non-specific readings of these examples can be detected by looking at their compatibility with the phrase *but no particular one* (Zimmermann 2001).

- (50) a. John wants a camera (, but no particular one).
b. John is looking for a member of staff (, but no particular one).

In the domain of psych verbs, much of the discussion has centered around the intensionality of Class I verbs, of which the consensus is that they are intensional in their object. Consider the examples in (51)-(53). (51) instantiates a substitution failure with a co-referential term as (51a) and (51b) can have a different truth value provided that John is unaware of Batman's true identity. The examples in (52) show that Class I verbs can take an object with no extension in the actual world without making the sentence false. Finally, the examples in (53) illustrate the availability of a non-specific reading with an indefinite object.⁹

- (51) a. John loves/disdains/fears Batman.
b. John loves/disdains/fears Bruce Wayne.
- (52) a. John loves a unicorn.
b. John disdains a mermaid.
- (53) a. John fears a hairy spider.
b. John dislikes a badly brewed coffee.

Meanwhile, little attention has been paid to the potential intensionality of Class II verbs, although Cheung & Larson (2015) tentatively conclude that these are not intensional in their

⁹ In fact, there is more to be said about the availability of non-specific readings in psych verbs. In brief, one might argue that the claimed non-specific reading in the examples like (53) above is not retained without the modifiers in the target DPs. For example, some speakers might judge the objects of the examples in (i) below as specific rather than non-specific. Such modifications may play a role in enhancing the accessibility of a non-specific reading, which I will leave for further research. In Chapter 4, however, it will be argued that there is a more fundamental factor that captures the availability of specific/non-specific readings in psych verbs.

- (i) a. John fears a spider.
b. John dislikes a coffee.

subject argument. I will dispute this claim and instead argue that the intensionality of Class II verbs is correlated with their aspectual properties. Using the diagnostics for intensionality above, I will first show that the subject of stative Class II verbs has intensional properties, whereas the subject of eventive psych verbs never does. I then explore whether this finding helps choose between competing theories of the argument structure of Class II psych verbs.

1.3. Proposals in sketch and the roadmap of the thesis

The central claim of this thesis is outlined in (54).

- (54) The argument structure of a simplex causative psych verb (Class II) specifies two participants, namely a Cause and an Experiencer, and no others.

As mentioned, this claim runs counter to a widely accepted view, according to which the argument structure of Class II verbs concerns three participants, with the addition of another argument, namely a Subject Matter (i.e. an object of emotion). Despite the empirical hurdle that the Cause and the SM cannot be realized simultaneously (the T/SM restriction), the inclusion of the additional SM argument in the argument structure is taken to correlate with the aspectual distinction in Class II verbs. That is, the eventive Class II verbs project a Cause and an Experiencer, but the stative Class II verbs project a SM and an Experiencer. Throughout the thesis I will therefore refer to this view of Class II verbs as the Alternative Projection Hypothesis (APH). Authors who have supported the APH include Pesetsky (1995), Reinhart (2002), Landau (2010), and Fábregas and Marín (2015) among others. In contrast with the APH, I will argue, in line with (54), that Class II psych verbs, either eventive or stative, invariably project two roles, namely the Cause, and the Experiencer. Throughout the thesis I will refer to this alternative view as the Uniform Projection Hypothesis (UPH). Arad (2000) can be construed as a defender of this view.¹⁰ I will get to the nitty-gritty details of these competing views in Chapter 2. But in a nutshell, I will support the UPH in the following way. I will first review its opposite view, the APH. I will examine and refute arguments supporting this hypothesis and provide several further counterarguments. This leads me to conclude that the subject of a Class II psych verb is a Cause across the board. I then take up the task of working out whether the UPH can be reconciled with various syntactic and semantic

¹⁰ Although I and Arad share the same stance that the argument structure of a Class II verb involves two participants (a Cause and an Experiencer) the exact details of our proposals vary. A detailed comparison between my proposal and Arad's (in addition to other similar proposals) will be offered in Chapters 2 and 3.

characteristics of Class II psych verbs. In the course of this work I address some new questions that arise from adopting this hypothesis. Specifically, adopting the UPH requires that we explore the following questions:

- Question 1: If the argument structure of eventive Class II verbs is the same as the argument structure of stative ones, then how should we characterize the aspectual distinction between eventive and stative Class II verbs?
- Question 2: I will demonstrate that the subject of stative Class II verbs is intensional, while the subject of eventive Class II verbs is not. But if both these subjects are Cause arguments, then what determines this split?
- Question 3: If SM is absent in the argument structure of all Class II verbs, then what is the origin of the SM argument that can accompany the reduced (Class I) counterpart of Class II verbs?

Each of these questions will be navigated in subsequent chapters of this thesis. Let me provide a brief sketch of the answers here.

Answer to Question 1: I will argue that while all Class II verbs are causatives, eventive and stative Class II verbs encode different event semantics: the former denotes an event of change, while the latter denotes an event of stative causation (Kratzer 2000), also known as ‘maintenance’ (Neeleman and van de Koot 2012). In the case of causative psych verbs maintenance refers to a situation where a psychological state is maintained as long as the Experiencer’s attention dwells on the cause of the state.

I will argue that eventive and stative uses of psych verbs map onto causal chain of different lengths. Specifically, eventive Class II verbs capture a longer causal chain of which the highest cause is a percept (i.e. an external stimulus) perceived by the Experiencer. By contrast, stative Class II verbs capture a more compact causal

chain of which the cause is an Experiencer-internal stimulus (i.e. a mind-internal cause) dwelled on by the Experiencer.

Answer to Question 2: (Chapter 4) The extensional/intensional distinction exhibited by the subject of eventive and stative Class II verbs follows quite naturally from the variation in the referent properties of the Cause arguments claimed above. In particular, I will argue that the intensionality of the subject of stative Class II verbs is expected since it refers to a mind-internal cause whose content depends on the Experiencer's unique knowledge state. Similarly, the lack of intensionality in the subject of eventive Class II verbs follows from the fact that it refers to an external stimulus whose content is independent of the Experiencer's cognitive state.

Answer to Question 3: (Chapter 5) I will offer two perspectives on the origin of the SM that can accompany the reduced (Class I) counterpart of Class II verbs. These differ in the characterization of the SM in the reduced counterparts of Class II verbs: i) the SM as an argument, ii) the SM as an adjunct.

On the argument analysis, the SM projected in the reduced variants must somehow be derivable from the argument structure of the causative counterparts. I will argue that this is feasible if one adopts a Reinhartian feature-based theta-system (Reinhart 2002). In particular, I will propose that the SM argument in the reduced counterparts can be derived from the Cause in the causative input via a feature deletion analysis of Expletivization.

On the adjunct analysis, the question we face has a deceptively simple answer. Of course, the SM can accompany an expletivized Class II verb, because it can be added as an adjunct. However, if one goes down this track, an old problem presents itself in a new guise: why can the adjunct not accompany a causative psych verb? That is, we are presented with a new version of the T/SM restriction discussed earlier (e.g. *The doctor's letter worried John about his

health). I will argue that the T/SM restriction can be derived from a mapping principle regulating the realization of causal expressions in sentences with simplex causatives generally. Specifically, I will argue that while simplex causatives can denote a complex causal chain, all the causal adjuncts realized in simplex causatives are interpreted in a very restricted way: in particular, they never associate with an event that is not initial in the causal chain. I will dub this mapping principle the Onset Condition and argue that it suffices to capture the T/SM restriction. I will claim that the (T/) SM is a causal role that is always downstream in the causal chain from the Cause argument. Therefore, realizing a SM in the presence of a Cause results in a violation of the Onset Condition. Of course, this is a highly desirable outcome, since it obviates the need for a separate T/SM restriction as it can be derived from an independently required principle regulating the interpretation of causal adjuncts.

Overall, I will conclude that the UPH is viable and preferable to the standard view, the APH.

Chapter 2. The argument structure of Class II verbs

2.1. What this chapter is about

This chapter defends the central claim of the thesis outlined in the previous chapter, repeated here as (55).

- (55) The argument structure of a simplex causative psychological verb (Class II) specifies two participants, namely a Cause and an Experiencer, and no others.

As mentioned, this claim runs counter to Belletti & Rizzi (1988)'s unaccusative analysis as well as to the prevailing current analysis, according to which Class II verbs specify three theta-roles (Cause, Experiencer and Subject Matter). To recap, B&R (1988)'s unaccusative analysis assumes that Class II verbs project two internal arguments, namely an Experiencer and a Theme (SM). This account suffered from serious empirical shortcomings and was largely abandoned in the face of Pesetsky (1995)'s convincing demonstration that (many) Class II verbs are causatives whose subject is therefore an external argument (a Cause) and not a moved internal argument (a Theme/SM) (see Chapter 1). Since Pesetsky's groundbreaking work, the idea that Class II verbs may project a Cause has been taken for granted, but it was only after extensive discussion of aspectual distinctions among the verbs in this class (e.g. Arad 1998, 2000; Pylkkänen 2000) that the claim was put forward that not all Class II verbs project the same arguments (e.g. Pylkkänen 2000; Reinhart 2002; Landau 2010). In particular, it has been argued that while the lexical entry of Class II verbs may contain a Cause, an Experiencer and a SM, eventive Class II verbs project a Cause and an Experiencer, while the stative ones project an Experiencer and a SM. This view, which I have dubbed the alternative projection hypothesis (APH), has become the dominant view in the literature (e.g. Pylkkänen 2000; Reinhart 2002; Landau 2010; Bondaruk 2020).¹¹ The APH combines Pesetsky's proposal with a revival of B&R's unaccusative analysis, with eventive verbs analyzed as causatives and stative Class II

¹¹ It will be discussed in more detail in this chapter, but the exact analysis varies among the proponents of the APH. Pylkkänen (2000) and Landau (2010) argue that stative Class II verbs are unaccusatives in the sense of B&R (1988). Reinhart (2002) claims that these verbs have not undergone reduction as they assign (structural) accusative case to the Experiencer (and lack the morphological marking that often accompanies valency reduction). Similarly, Bennis (2004) and Bondaruk (2020) argue that stative Class II verbs are not unaccusatives but complex ergatives with a little *v* assigning structural accusative case to the Experiencer whilst lacking an external argument. However, all these authors agree that the subject of stative Class II verbs is not a base-generated external argument (Cause) but an internal argument (SM) moved from a VP-internal position.

verbs analyzed as (some sort of) unaccusatives in that they fail to project an external argument and their derived subject is a moved internal argument (SM).

The alternative hypothesis argued for in this thesis contends that Class II verbs project a Cause and an Experiencer regardless of the aspectual distinction. I have dubbed this proposal the uniform projection hypothesis (UPH). The two competing hypotheses are repeated here as (56).

(56) **The argument structure of a simplex causative psych verb (Class II)**

The Alternative Projection Hypothesis (APH): [Cause, Experiencer, SM]

The Uniform Projection Hypothesis (UPH): [Cause, Experiencer]

The APH and the UPH agree on the argument structure of eventive Class II verbs, that is, they are causatives with a Cause external argument. The key distinction between the APH and the UPH is in the argument structure of stative Class II verbs: whether these verbs have a moved SM as a subject or a base generated Cause on a par with eventive Class II verbs. The APH assumes that the basic entry can project, alongside an Experiencer, either a Cause or a SM. It furthermore contends that the alternative projection of a Cause and a SM correlates with the aspectual distinction in Class II verbs: while the realization of a Cause and an Experiencer yields eventive Class II verbs, realizing a SM instead of a Cause derives stative Class II verbs. The derivation for stative Class II verbs is then syntactically unaccusative, in that it lacks an external argument and involves the movement of an internal argument – the SM.

If it can be proved that stative Class II verbs require raising of the SM to subject position, then the UPH is falsified: this derivational option should not be available for the UPH since the SM is not included in the lexical entry of Class II verbs. Conversely, if a derivation of stative Class II verbs involving raising of the SM creates more problems than it solves, then this will cast aspersions on the APH. This chapter evaluates the validity of the movement derivation required under the APH and offers substantial evidence against it. Overall, I will conclude that the APH should be rejected, and that we should instead explore the UPH as a more suitable alternative for Class II psych verbs.

The rest of the chapter is organized as follows. Section 2.2 gives an overview of available derivations of Class II psych verbs under the APH. In particular, I focus on the fact that the lexical entry of Class II verbs assumed under the APH renders one more derivational option than what is available under the UPH due to the presence of an additional argument, namely the SM. Section 2.3 investigates the validity of the movement derivation assumed by

the APH. I will examine and refute arguments supporting this derivation and provide several further counterarguments, which will lead to the conclusion that Class II verbs are not best captured by the APH, and instead, the UPH should be considered as a viable theory for Class II verbs. Of course, it remains to be shown that the UPH can be reconciled with various syntactic and semantic characteristics of Class II psych verbs, a task which is taken up in subsequent chapters.

2.2. The Experiencer derivations

According to the APH, Class II psych verbs can be associated with three distinct derivations, one of which involves a reduction operation. All these derivations originate from the basic entry in (57).

(57) V: [Cause, Experiencer, SM]

Before we consider these three derivations, it should be put on record that a fourth derivation, namely one that realizes all three roles in this entry, is never available. As discussed in the previous chapter, simultaneous realization of a Cause and a SM yields ungrammaticality, the fact known as the T/SM restriction. Some relevant examples are repeated here as (58).

- (58)
- a. *The article in the Times angered Bill at the government.
 - b. *The Chinese dinner satisfied Bill with his trip to Beijing.
 - c. *The television set worried John about the veracity of Bill's alibi.
 - d. *The problem of lexical entries bores John with his life as a linguist.
 - e. *Something Bill had said bothered Mary about her future.
 - f. *Bill driving at night always worries John about the adequacy of his insurance coverage.
 - g. *The distant rumbling frightened Mary of another tornado. (Pesetsky 1995: 60)

Of course, this is a non-trivial empirical hurdle and proponents of the APH have offered several accounts of its existence. However, it should be stated from the outset that the UPH is not immune from problems with the SM argument either. The fact of the matter is that reduced Class II verbs may optionally realize a SM. This raises a difficult question: if the Causative entry to which reduction applies does not contain a SM, then what is the origin of this role in

the reduced counterpart? I put these issues to one side here and discuss them in detail in Chapter 5.

Let us turn then to the three derivations that do appear to be attested. The first is based on the entry in (59) and realizes a Cause as an external argument (marked by underlining) and an Experiencer as an internal argument. The SM is prevented from projection due to projection of the Cause (the T/SM restriction). This is marked with strikethrough.

(59) V: [Cause, Experiencer, ~~SM~~]

This realization is argued to derive eventive Class II verbs. See the (a) examples in (61)-(63) below. The verbs in these sentences have a reduced alternant in which the Experiencer appears in the subject position and a SM is (optionally) realized internally. Reduction of Cause allows SM to project freely. The relevant derived entry is given in (60), where \emptyset stands for the reduced role.

(60) V: [\emptyset , Experiencer, (SM)]

- (61) a. The doctor's letter worried Mary.
 b. Mary worried (about her health).

- (62) a. Jan ergerde Marie. (Dutch)
John annoyed Mary
 'John annoyed Mary.'
 b. Marie ergerde zich (aan haar schuld).
Mary annoyed self (on her debt)
 'Mary was annoyed (with/about her debt).'

- (63) a. ha+olam hirgiz et Max. (Hebrew)
the world angered ACC.Max
 'The world angered Max.' (Reinhart 2002: 254)
 b. Max hitragez (al ha-ma'amar).
Max angered+REFL (about/at the-article)
 'Max got angry (about the article).' (Reinhart 2002: 260)

There is evidence that, as with underived Class I verbs, the Experiencer argument in the reduced (b) examples projects externally, so that the syntactic derivation is not unaccusative. In Reinhart's (2002) feature-based theory of argument structure, θ -roles with only $/+/$ features must be assigned externally, θ -roles with only $/-/$ features must be assigned internally, while θ -roles specified as a mixed cluster are assigned externally when possible and internally otherwise. Experiencers are characterized by the mixed cluster $[-c+m]$ and since nothing prevents their external realization following reduction of the causative entry, that is where they project.

The subject experiencer alternation exemplified above is fairly productive with Class II psych verbs cross-linguistically, although for some unknown reason they are quite rare in English. As pointed out by Pesetsky (1995), together with the verb *worry* in (61) above, the verbs in (64)-(66) below seem to exhaust all possible cases.

- (64) a. Sue's remarks puzzled us.
 b. We puzzled over Sue's remarks.
- (65) a. The court decision grieved Sue.
 b. Sue grieved over/at the court decision.
- (66) a. His new-found wealth delighted Bill.
 b. Bill delighted in his new-found wealth. (Pesetsky 1995: 73)

Other than those few verbs, in English causeless counterparts of Class II verbs make use of passive forms, as exemplified in (67)-(69), which contain adjectival passives.¹²

- (67) a. The news surprised Mary.
 b. Mary was surprised at the news.

¹² For more cross-linguistic discussion about the subject-object experiencer alternation in the psych domain, see Reinhart (2002) for Hebrew, Rozwadowska & Bondaruk (2019) for Polish, Rákosi (2006, 2009) for Hungarian, Alexiadou & Iordăchioaia (2014) for Greek and Romanian, (Engelberg 2018) for German, Rooryck & vanden Wyngaerd (2011), Broekhuis et al (2015), Pijpops and Speelman (2017) for Dutch, Petersen (2016) for Brazilian Portuguese.

- (68) a. John's audacity disgusted Mary.
 b. Mary was disgusted with John's audacity.

- (69) a. The book disappointed Mary.
 b. Mary was disappointed with the book.

As briefly discussed in Chapter 1, the derivational relation between the (a) and (b) examples above resembles the familiar valency alternation, namely the causative-anticausative alternation in normal (non-psych) change of state verbs, which is exemplified in (70)-(73). The (a) examples are causative variants and the (b) examples contain the reduced counterparts of the verbs in the (a) examples. With non-psychological causatives, the reduction operation gives rise to an unaccusative derivation for examples containing the reduced verb. On Reinhart's (2002) feature-based theory of argument structure, this falls out from the fact that the remaining Theme argument is specified as [-c-m] and must therefore project VP-internally.

- (70) a. The wind opened the door.
 b. The door opened.

- (71)¹³ a. Jan heeft de suiker opgelost. (Dutch)
John has the sugar dissolved
 'John has dissolved the sugar.'
 b. De suiker is opgelost.
the sugar BE dissolved
 'the sugar is dissolved'

¹³ Some Dutch verbs, such as *oplossen* 'dissolve' have two reduced forms, one marked with BE as in (71b) and one marked with the reflexive *zich* as below.

- (i) De suiker heeft zich opgelost.
the sugar has REFL dissolved
 'the sugar has dissolved'

- (72) a. Juan abrió la puerta. (Spanish)
John opened the door
 ‘John opened the door.’
 b. La puerta se abrió.
the door REFL opened
 ‘The door opened.’ (Tubino-Blanco 2020: 19)

- (73) a. Gianni ha aperto la porta. (Italian)
Gianni has opened the door
 ‘John opened the door.’
 b. La porta si è aperta.
the door REFL is opened
 ‘The door opened.’ (Levin & Rappaport Hovav 1995: 147)

In both the psych and the non-psych domain, the causative variants project a Cause as an external argument and an undergoer (a Theme for non-psych verbs and an Experiencer for psych verbs) as an internal argument. The reduced variants lack the Cause external argument and instead the undergoer (Theme/Experiencer) appears in the subject position.

The analogy is also evident in the morphology. In many languages, the causative-anticausative alternation exhibits a morphological reflex, often marking reduced alternants with reflexive morphology (e.g. Dutch, Hebrew, Spanish, Italian, French, Polish, Romanian, German, Russian, etc).¹⁴ See the (b) examples in (71)-(73) above. Analogously, in the psych domain, too, the reduced variants are often associated with reflexive morphology. See, for example, the (b) examples in (62) and (63).

The third and final derivation corresponds to the entry in (74). If the Cause is not reduced but rather does not project, the T/SM must be realized alongside the Experiencer.

- (74) V: [Cause, Experiencer, T/SM]

According to the APH, this is the entry for a stative Class II verbs. In sentences containing such a stative verb, the SM argument is moved from its VP-internal position to the subject position.

¹⁴ English shows no such morphological reflex for this alternation: the causative and the reduced anticausative alternant have the same form (see (70)).

Given that the Experiencer is higher on the thematic hierarchy than the SM (see (75)), the non-trivial question arises why the Experiencer does not surface as the subject instead.

(75) Causer > Experiencer > Target/Subject Matter (Pesetsky 1995: 59)

Although the specifics of implementation differ, supporters of the APH rely on Case Theory to explain this fact. Landau (2010) assumes that the Experiencer carries an inherent case¹⁵ (assigned by a null locative preposition) and also that inherent cases are only assigned to internal arguments. Note that if the Experiencer is an internal argument, then of course so is the SM argument given the thematic hierarchy above. Out of the two internal arguments, the SM raises to the subject position where it gets structural nominative case. The Experiencer does not move since it already bears inherent case. Reinhart (2002) arrives at the same conclusion on similar grounds. She assumes that Class II verbs carry an accusative case feature (whether the verb is eventive or stative), and this feature can only be checked by the Experiencer. Therefore, the SM must raise to the subject position. Clearly, then, despite the fact that (74) is not a reduced entry, the derivations in which it participates are unaccusative since they involve movement of an internal argument to the subject position.

A feature of this proposal that has received no attention as far as I am aware is that one cannot simply say that realization of Cause blocks realization of SM and that realization of SM blocks realization of the Cause. A further stipulation is needed that non-realization of Cause forces realization of SM. This stipulation is necessary to account for the fact that SM is obligatory in the stative variant but not in the reduced eventive variant. One might try to reduce this stipulation to the EPP requirement: something must check the EPP feature in I (or whatever head is assumed to carry it). But the question remains why that task cannot be performed by an expletive or why it cannot be achieved by raising the already case-marked Experiencer, as in German examples like *Dem Jungen_{DAT} wurde geholfen* 'The boy was helped'.

In sum, the lexical entry of Class II psych verbs assumed by the APH has the following three realizations: an eventive Class II realization which has a Cause subject (76a), its reduced counterpart (i.e. a derived Class I verb) (76b) in which it is the Experiencer that projects

¹⁵ Landau's assumption is developed upon B&R (1988)'s idea that the Experiencer of (all) Class II verbs carries inherent accusative case, as opposed to structural accusative case. Note that such a proposal is inevitable for B&R to maintain their unaccusative analysis of Class II verbs in the face of a violation of Burzio's generalization according to which a verb can only assign accusative case to an object if it assigns an external theta-role (Burzio 1986). B&R argue that Burzio's generalization only holds for structural accusative case, so unaccusatives lacking an external argument can assign inherent accusative case to an object, which they claim is the case for Class II verbs.

externally while SM projects optionally, and finally a stative Class II realization with an unrealized Cause (76c). This final entry has two internal arguments, Experiencer and SM, and is associated with a derivation that is syntactically unaccusative (in that it involves movement of an internal argument (SM) to the subject position), but the verb is not a reduced form. In what follows, I will refer to this additional derivational option as the ‘third derivation’.

- | | | | |
|------|----|---|-------------------------------|
| (76) | a. | Eventive Class II verb: | [<u>Cause</u> , Experiencer] |
| | b. | Eventive reduced verb (i.e. derived Class I): | [<u>Experiencer</u> , (SM)] |
| | c. | Stative Class II verb: | [Experiencer, SM] |

2.3. Investigating the third derivation

If there are strong arguments supporting the existence of the third derivation, then clearly the APH should be favored over the UPH. This is because the UPH is incompatible with this derivational option for stative Class II verbs: it does not feature SM in the argument structure of these verbs.

In this context, this section critically assesses the third derivation. I will begin by reviewing evidence taken to support this derivation and argue that it does not hold up under close examination. I will then present additional arguments against this derivation. Consequently, I will conclude that the third derivation does not exist, leading to the rejection of the APH and the consideration of the UPH as a more viable alternative theory for Class II psych verbs.

2.3.1. Arguments supporting the third derivation

Reinhart (2002) is among the proponents of the APH who advocates for the third derivation. She offers two arguments in its support. One is concerned with backward binding. As briefly mentioned in the previous chapter it refers to a phenomenon in which anaphors embedded inside the surface subject can be bound by the Experiencer in the object position (Postal 1971; B&R 1988; Pesetsky 1995). Consider the examples in (77) and (78).

- (77) a. Questi pettegolezzi su di se_i preoccupano Gianni_i piu di
these gossips on himself worry Gianni more
 ogni altra cosa.
any other else
 ‘These rumors about himself_i worry Gianni_i more than anything else.’
- b. I propri_i sostenitori preoccupano Gianni_i.
his own supporters worry Gianni
 ‘His own_i supporters worry Gianni_i.’ (B&R 1988: 312, 321)
- (78) a. Each other’s supporters worried Freud and Jung.
 b. Each other’s remarks annoyed John and Mary. (Pesetsky 1995: 43)

B&R take the possibility of backward binding to be a powerful argument supporting their unaccusative analysis of Class II verbs (see also Grimshaw 1990), according to which the surface subject of a Class II verb is a moved Theme which originates in a position where it is c-commanded by the Experiencer. On this account, backward binding falls out since the anaphor contained in the Theme argument is bound by the Experiencer at D-structure.

While Reinhart agrees with the consensus that the unaccusative analysis for all Class II verbs cannot be maintained (see Chapter 1), she is sympathetic to the logic of B&R’s argument regarding backward binding. She points out that backward binding is only available if the subject is construed as an SM. Consider the examples in (79). While the subject of (79a) is best interpreted as a Cause, the subject of (79b) is most naturally understood as an SM. As the contrast between the two examples indicates, backward binding is only possible when the subject is interpreted as SM (that is, on the stative interpretation). Reinhart maintains that this pattern falls out from the fact that (79b) involves movement of the SM argument from a position in which it is c-commanded by the quantified Experiencer. In (79a), on the other hand, backward anaphora is illicit, because the subject is a Cause, which merges externally, so that the pronoun is not in the c-command domain of the quantifier at any point in the derivation.

- (79) a. ??His₁ doctor’s letter worried [every patient]₁
 b. [His₁ health]₂ worried [every patient]₁ *t*₂ (Reinhart 2002: 267)

A second argument Reinhart presents in support of the third derivation concerns the pair of examples in (80). When the SM argument is clausal, she claims, the psych verb allows two

constructions: either the SM is raised to the subject position, yielding (80a), or EPP is satisfied through merger of an expletive, as in (80b), and SM remains in situ in its VP-internal position.

- (80) a. That she said something stupid worried Lucy.
b. It worried Lucy that she said something stupid.

A third argument supporting the third derivation comes from the widely noted observation that, unlike eventive Class II verbs, which happily form passives (Iwata 1993; Pesetsky 1995; Tenny 1998; Reinhart 2002; Landau 2010; a.o.) stative Class II verbs do not passivize (Arad 1998; Landau 2010; a.o.). The examples in (81)-(84) support this claim.

- (81) a. Smith's name escaped us for some reason.
b. *We were escaped by Smith's name for some reason. (Pesetsky 1995: 52)

- (82) a. The correct generalization eluded Panini.
b. *Panini was eluded by the correct generalization. (Pesetsky 1995:52)

- (83) a. This topic interests John.
b. *John is interested by this topic.

- (84) a. Whining children irritate John.
b. *John is irritated by whining children. (on a non-agentive reading)

Similar facts can be observed in other languages. Some examples from Dutch appear in (85)-(86).

- (85) a. Dit onderwerp verveelt Jan.
this topic bores John
'This topic bores John.'
b. *Jan wordt verveeld door dit onderwerp.
John is bored by this topic
'John is bored by this topic.'

- (86) a. Jengelende kinderen ergeren Jan.
whining children annoy John
 ‘Whining children annoys John.’
- b. ??Jan wordt geërgerd door jengelende kinderen.(on a non-agentive reading)
John is annoyed by whining children
 ‘John is annoyed by whining children.’

Understandably, this behaviour follows immediately if these predicates lack an external argument. In fact, this is precisely what Landau (2010) argues: the fact that stative Class II verbs resist passivization is reduced to the fact that they are unaccusative.

If the arguments discussed so far are indeed correct, they lend substantial support to the claim that the argument structure of Class II psych verbs may contain both a Cause and a SM.

2.3.2. Arguments against the third derivation

In this section I provide several reasons to be skeptical about the third derivation. I will begin by reviewing the purported arguments for the third derivation discussed in the previous section and demonstrate that each of them is in fact problematic. I follow this up by presenting some further evidence against this derivation. Finally, I will address the problems associated with the third derivation that have been acknowledged by its proponents, along with the corresponding solutions they have suggested. While these problems do not entirely refute the third derivation – since potential solutions have been offered – they do not arise under the alternative theory, the UPH, according to which stative Class II verbs involve a base-generated external argument. In fact, some of these issues are captured straightforwardly by the UPH. Therefore, the acknowledged problems of the third derivation further highlight the superiority of the UPH.

Let us first consider the argument from backward binding. The claim was that backward anaphora is only enabled when the subject is a moved internal argument, namely, a SM. Relevant examples are repeated here as (87).

- (87) a. ??His₁ doctor’s letter worried [every patient]₁
 b. [His₁ health]₂ worried [every patient]₁ *t*₂ (Reinhart 2002: 267)

The account for this contrast that relies on A-movement of the constituent containing the bound anaphora (B&R 1998; Grimshaw 1990; Reinhart 2002) predicts that this phenomenon will not

be found in analytical causatives. This is because in an analytical causative, an anaphora realized in the higher position (in the subject) is not an argument of the psych verb, but of the causative verb *make* or *cause*. Therefore, no c-command relation can hold between the antecedent (the Experiencer) and the anaphor at any stage of the derivation and hence backward binding should not obtain. However, this is contrary to fact, as has been pointed out by many authors (e.g. Bouchard 1995; Landau 2010). Consider the examples in (88). Alongside (88a), backward anaphora is also enabled in the analytical causative in (88b).

- (88) a. Stories about himself always worry John.
 b. Stories about himself always make John worry.

(Campbell & Martin 1989: 45)

In the same vein, consider the examples in (89). In (89b), the bound pronoun is embedded in the subject DP ‘his declining health’, which is an argument of *made*. Nevertheless, it still can be bound by the quantified antecedent in the lower position. The contrast between (89a) and (89b) therefore cannot be accounted for in terms of c-command.

- (89) a. ??His₁ doctor’s letter made [every patient]₁ worry.
 b. His₁ declining health made [every patient]₁ worry.

Furthermore, the sentences in (90) demonstrate that even if we assume a D-structure in which the surface subject originates in a position c-commanded by the other argument, the intended antecedent of the anaphora in each example (*John*, *John* and *Mary*, respectively) fails to c-command it at D-structure since it is too deeply embedded.

- (90) a. These nasty stories about himself broke John’s resistance.

(Bouchard 1995: 296)

- b. Pictures of himself make John’s head hurt.
 c. Stories about himself cause Mary’s head to ache.

(Campbell & Martin 1989: 45)

In sum, what these sets of data indicate is that A-movement of the subject anaphor cannot be the best account for the existence of backward binding phenomena.¹⁶ Therefore, this phenomenon has little bearing on the validity or otherwise of the third derivation.

Let us now turn to Reinhart's second argument for the third derivation, namely that stative Class II verbs allow constructions like those in (80), repeated here as (91). Recall that while (91a) is assumed to be derived through A-movement of the clausal SM argument, (91b) is supposedly derived through insertion of an expletive in the subject position, leaving the SM argument in situ in its purported VP-internal position.

- (91) a. That she said something stupid worried Lucy.
 b. It worried Lucy that she said something stupid.

However, option (91b) is never attested with nominal SMs. Consider the examples in (92). Applying the same logic as with the examples in (91), one would expect it to be possible for an indefinite SM argument to remain in situ and associate with an expletive in the subject position. However, this is not the case, not even in a language like Dutch where expletives are generally possible in structures lacking an external argument.¹⁷

- (92) a. *There interested John a topic about the war.
 b. *Er interesseerde Jan een onderwerp over de oorlog.
there interested John a topic about the war

The final argument supporting the third derivation was that stative Class II verbs do not form passives. Under this claim, it is expected that verbal passives of Class II verbs should only be interpreted as eventive, not as stative. Contrary to this prediction, there are examples showing that a verbal passive with a stative reading is possible. Consider the Dutch verb *ergeren* 'to annoy' in (93a). Its verbal passive (93b) permits a stative reading.¹⁸

¹⁶ Alternative, semantic, approaches have been proposed for backward anaphora (Sells 1987; Bouchard 1995; a.o.). Bouchard (1995), for example, gives a logophoric analysis.

¹⁷ This problem is in fact noted in Reinhart 2002, fn. 24, where it is qualified as an 'independent question'.

¹⁸ At first blush, there are examples in English too where a verbal passive of a Class II verb seems to be interpreted as stative. See the examples in (i) – (ii). (iia), for instance, is naturally interpreted as involving a state of bother which continues as long as the allergies are present. However, Yasutada Sudo (p.c.) pointed out that all these examples involve a verb in the progressive aspect, which could be the source of the stative interpretation. I acknowledge this point and admit that these examples may be irrelevant to demonstrating the existence of a verbal

- (93) a. Marie dacht dat het constante lawaai Jan ergerde.
Mary thought that the constant noise John annoyed
 ‘Mary thought that the constant noise annoyed John.’
- b. Marie dacht dat Jan werd geërgerd door het constante lawaai.
Mary thought that John was annoyed by the constant noise
 ‘Mary thought that John was annoyed by the constant noise.’

More compelling examples can be constructed with the Dutch verbs *boeien* ‘fascinate’ and *intrigeren* ‘intrigue’. These verbs do not permit the eventive reading at all, as can be shown by their incompatibility with the Dutch progressive (see (94)).

- (94) *Het verhaal was Jan enorm aan het boeien/intrigeren.
the story was John enormously on the fascinate/intrigue

Nevertheless, they do form verbal passives:

passive with a stative reading in English. Note that verbal passives in the Dutch examples given in the main text appear in a non-progressive form.

- (i) a. The constant noise was irritating John.
 b. John was being irritated by the constant noise.
- (ii) a. The driver, Shanna Shaw, 42, told investigators after the crash at about 7:30 a.m. Sunday that she was being bothered by allergies and a sneezing fit caused her to close her eyes, fall to the floor and lose control of the bus. (<https://www.wbur.org/news/2014/05/20/bus-crash-driver-cell-phone> [accessed 29/04/22])
 b. Moore has appeared in every game this season and is averaging 11.2 mpg, but was limited to three minutes in the last contest against Alabama when it first became apparent that he was being bothered by an injury. (<https://www.foxsports.com/college-basketball/chris-moore-7-player> [accessed 29/04/22])
 c. Very few people are able simply to enjoy God’s presence without being bothered by guilt and a sense of failure. (<https://www.scholarscorner.com/pardoned-or-paroled/> [accessed 29/04/22])
 d. As he was being amused by his own stream of thoughts and presumptions, something broke through it. (<https://jothinathansanthosh.wordpress.com/tag/short-stories/> [accessed 13/06/22])
 e. As two men walked across an eastern university campus, they were attracted by a crowd of people surrounding a large maple tree. As they approached, they noticed that the crowd was being amused by the antics of a fox-tailed squirrel circling the tree, climbing it, and running back down again. (<https://www.thechurchnews.com/archives/1994-08-27/ezekiels-watchman-metaphor-has-modern-day-application-139000> [accessed 13/06/22])
 f. Friederich said he was being tortured by thoughts of the many sins he had committed as a youth, thoughts he could not banish from his mind. (https://familyhistory.stembel.org/JOHAN_FR.htm [accessed 13/06/22])

- (95) a. Marie zag dat het verhaal Jantje enorm boeide/intrigeerde.
Mary saw that the story John.DIM enormously fascinated/intrigued
 ‘Mary saw that the story fascinated Johnny a lot.’
- b. Marie zag dat Jantje enorm door het verhaal werd geboeid.
Mary saw that John.DIM enormously by the story was fascinated
 ‘Mary saw that Johnny was enormously fascinated by the story.’
- c. Marie zag dat Jantje enorm door het verhaal werd geïntrigeerd.
Mary saw that John.DIM enormously by the story was intrigued
 ‘Mary saw that Johnny was enormously intrigued by the story.’

Note that the order of auxiliary and verb in the embedded clauses of (93b) and (95b,c) precludes an interpretation of the participle as adjectival (Besten 1989). I conclude that the existence of these examples undermines the effectiveness of passivization as a strong argument in favor of the third derivation.

Having demonstrated weaknesses in the supporting arguments for the third derivation provided in the literature, I continue by offering some further evidence against this derivation.

The first further argument against the third derivation has to do with the constructions claimed to be available for stative Class II verbs taking a clausal argument, exemplified earlier in (80) and repeated here as (96). As already mentioned, it is explicitly argued in Reinhart (2002) that the *that*-clauses in both examples are a SM. According to her, the one in (96a) has undergone A-movement to the subject position, while the one in (96b) has remained in-situ because the subject position is filled with an expletive.

- (96) a. That she said something stupid worried Lucy.
 b. It worried Lucy that she said something stupid.

Now consider example (97). As briefly discussed in the previous section, on Reinhart’s account, the verb used in (97) is derived through a reduction operation, Expletivization, which deletes the Cause role in the basic Class II entry ([Cause, Experiencer, SM]) of the verb used in (96a,b). This in turn results in the realization of the Experiencer (as an external argument) and of the SM.

- (97) Lucy worried that she said something stupid.

Unexpectedly on this assumption, the embedded clauses of (96b) and (97) have different interpretations. Example (96b) presupposes the truth of the proposition expressed by the embedded clause. In other words, Lucy did indeed say something stupid. The embedded clause of (97), by contrast, does not come with this presupposition. Consider a scenario in which Lucy arrived for a meeting very drunk. A few hours after the meeting, when she has sobered up somewhat, she cannot recall whether she said anything during the meeting and if she did, what it was that she said. Suppose that in fact Lucy was asleep throughout the meeting and so did not say a word. Only (97), but not (96b) is felicitous in this context. The contrast between (96b) and (97) with respect to the scenario implies that only the *that*-clause in (97) can be understood in relation to the Experiencer's knowledge state. This is unexpected if both *that*-clauses are internal SM arguments. Note that the relevant interpretative contrast cannot be attributed to the fact that the *that*-clause in (96b) is associated with an expletive subject. Consider (98). Neither example presupposes that Lucy said something stupid, as can be shown by their compatibility with the additional phrase 'but in fact she did not'.

- (98) a. John believed that Lucy said something stupid, but in fact she did not.
b. It was believed that Lucy said something stupid, but in fact she did not.

The interpretive contrast between (96b) and (97) indicates that only the *that*-clause in (97) can receive a non-factive interpretation. This is unexpected if both clauses are internal arguments. By contrast, if only the clause in (97) is an object, it meshes nicely with the consensus view in the literature that subject experiencer verbs are intensional in their object (see Cheung & Larson 2015 and den Dikken et al. 2018). The *that*-clause in (96b) might then most plausibly be analyzed as an (extraposed) Cause.

In fact, Bennis (1986) analyzes expletive *it* (and *het* in Dutch) as a pseudo-argument (a referential pronoun rather than a dummy pronoun) that gets its referential content by being associated with a clausal adjunct (see also Ruys 2010). This proposal predicts that the *that*-clause in *it* expletive constructions will exhibit island effects. To set the stage, let us first demonstrate the island status of adjunct clauses in English and Dutch. In English, adjuncts are weak islands for extraction of an argument and strong islands for extraction of an adjunct (see

(99)). In Dutch adjuncts are absolute islands for either type of extraction (see (100); Broekhuis et al. 2015).¹⁹

- (99) a. ??I wondered who₁ Bill worked hard all day [without chatting to *t*₁ using Skype].
 b. *I wondered how₁ Bill worked hard all day [without chatting to Susan *t*₁].

- (100) a. *Wat₁ zal Jan blij zijn [als Marie *t*₁ morgen zal kopen]?
what will John happy be if Mary tomorrow will buy
 b. *Wanneer₁ zal Jan blij zijn [als Marie dit boek *t*₁ zal kopen]?
when will John happy be if Mary this book will buy

(Broekhuis et al. 2015: 757)

If we apply Bennis's proposal to examples like (96b) and (98b) and analyze the *that*-clauses as extraposed, we correctly predict the island effects in (101) and (102). Example (103) shows comparable islands effects for a corresponding *het*-expletive sentence in Dutch.

- (101) a. ??What₁ did it worry Mary [that she said *t*₁]?
 b. *How₁ did it worry Mary [that she said something stupid *t*₁]?

- (102) a. ??What₁ was it believed [that Mary manipulated *t*₁]?
 b. *How₁ was it believed [that Mary manipulated stock price *t*₁]?

- (103) a. *Wat₁ werd het geloofd [dat Marie manipuleerde *t*₁]?
what was it believed that Mary manipulated
 b. *Hoe₁ werd het geloofd [dat Marie de aandelenkoers manipuleerde *t*₁]?
how was it believed that Mary the stock price manipulated

If this proposal is accepted, it may also be inferred that the stativity of a stative Class II verb does not rely on the realization of an internal argument (SM) since (96b) admits a stative reading.

¹⁹ Examples like (99b) achieve marginal acceptability with extraction of *when* or *how*. The Dutch counterparts, however, all remain completely unacceptable.

A further issue with the third derivation is presented by the fact that reduced Class II verbs can be eventive (as in (104)) or stative (as in (105)).

- (104) a. Max hitragez.
Max angered.REFL
 ‘Max got angry.’
- b. Jean s’a enragé.
Jean REFL ’has angered
 ‘John got angry.’
- (105) a. Jan verveelde zich.
John bored self
 ‘John was bored.’ (NOT: John got bored)
- b. Jan ergerde zich.
John irritated self
 ‘John was irritated.’ (NOT: John got irritated with his debt)

Suppose we assume, following Reinhart (2002), that the subject experiencer verbs are derived from their causative counterparts through Expletivization of the Cause role.^{20,21} This entails that we must allow for the existence of stative Class II verbs that present a Cause argument. In other words, we cannot represent the eventive/stative contrast as we did in (76a) and (76c), repeated here as (106).

- (106) a. Eventive Class II verb: [Cause, Experiencer]
 b. Stative Class II verb: [Experiencer, SM]

Rather we need something like the entry in (107), which contains three roles, together with the stipulation that non-projection of SM yields the eventive reading, while non-projection of Cause yields the stative reading.

²⁰ The problem I identify also arises under other conceptions of the relation between Class II verbs and their subject experiencer counterparts.

²¹ This operation reduces accusative case and is often morphologically marked (on either the input or the output form).

(107) Class II verb: [Cause, Exp, SM]

However, following Expletivization, we have the single entry in (108) for reduced Class II verbs with no obvious way to capture the eventive/stative contrast, which is clearly an undesirable result.

(108) Reduced form: [Exp, (SM)]

Landau's analysis does not derive the stative subject experiencer variants from a causative entry. Rather, if I understand his proposal correctly, (105a) and (105b) are derived from their stative counterparts through a lexicon operation that eliminates the verb's inherent case (Landau 2010, Chapter 3, fn. 10). But this proposal also raises difficult questions. It assumes that subject experiencer verbs can be derived from two different sources. Eventive subject experiencer verbs (e.g. Hebrew *hitragez* or French *s'enrager*) will have an eventive source ([Cause, Exp]) and stative ones a stative source ([Exp, SM]). But the required reduction operations are not the same (even though they are marked in the same way). While both must involve elimination of the experiencer's inherent case, the reduction of the eventive entry must also eliminate the Cause argument (and introduce the SM argument – unless it is assumed to be in the entry all along, along the lines of Reinhart 2002). This is not very parsimonious.

Alternatively, as Landau mentions in passing, one may assume that subject experiencers emerge from some sort of specification of lexical entries. If the entry prescribes that inherent case is assigned to the Experiencer, the object experiencer is yielded. If, on the other hand, no assignment of inherent case to the Experiencer is specified in the entry, the subject experiencer emerges. However, this approach too, does not seem so appealing. After all, Landau's whole theory is based on the contention that Experiencers are locative arguments. Why should the Experiencer of subject experiencers not be locative? It seems that both Reinhart's proposal and Landau's must introduce some stipulative assumptions in order to account for the full range of derived subject experiencer predicates.

Another problem with the third derivation is that it is a mystery why the SM argument of a derived subject experiencer (Class I) is introduced with a preposition (see the (b) examples below), while the SM argument of a stative object experiencer verb (Class II) is not (see the (a) examples below). Assuming as before that the subject experiencer variants are derived through a lexicon operation, one must further stipulate that the operation also has the effect of turning SM into an oblique argument. This does not look like a unified operation at all.

- (109) a. The doctor's letter worried Mary.
 b. Mary worried about her health.
- (110) a. Jan ergerde Marie. (Dutch)
John annoyed Mary
 'John annoyed Mary.'
 b. Marie ergerde zich aan haar schuld.
Mary annoyed self on her debt
 'Mary was annoyed with/about her debt.'
- (111) a. ha+olam hirgiz et Max. (Hebrew)
the world angered ACC.Max
 'The world angered Max.'
 b. Max hitragez. al ha-mar'amar.
Max angered+REFL about/at the article
 'Max got angry (about the article).' (Reinhart 2002: 254)

Having provided additional evidence against the third derivation, let me further address issues associated with the third derivation that have been acknowledged by its proponents. As mentioned earlier, they do not completely undermine the third derivation to the extent that potential solutions have been offered. However, I will argue that these problems do not arise under the alternative theory, the UPH, according to which stative Class II verbs involve a base-generated external argument, and that some of the issues are in fact accounted for straightforwardly by the UPH, which further establishes the superiority of this view.

The first two issues derive from the hypothesis that verbs participating in the third derivation have not undergone a reduction operation and yet do not project an external argument. Consider the fact that in some languages, as exemplified in (112)-(114), the Experiencer object of stative Class II verbs, just like that of eventive ones, is marked with accusative case. If this case is structural, then verbs participating in the third derivation violate Burzio's generalization: they lack an external argument, but still assign accusative case to an object (namely the Experiencer).

- (112) a. The low interest rates of her country concerned her.
 b. The continuous heatwave worried him.
 c. The constant buzzing noise from the upstairs neighbor bothered her.
 d. The exotic taste of the new dish fascinated him.
- (113) Questo lo preoccupa. (Italian)
this him (ACC) worries
 ‘This worries him.’ (B&R 1988: 331)
- (114) Ø hirgiz et Max [she+hu nixshal]. (Hebrew)
it angered ACC.Max that he failed
 ‘It angered Max that he failed.’ (Reinhart 2002: 270)

Two reactions to this issue have been suggested by the authors who analyze stative Class II verbs as lacking an external argument. One is to deny that the Experiencer bears structural case. For example, B&R (1988), who argue for the unaccusative analysis for all Class II verbs, meet this challenge by assuming that the accusative case of the Experiencer is inherent and that Burzio’s generalization only governs structural case (see also fn.15). Therefore, the assignment of inherent accusative case by unaccusative Class II verbs is unproblematic. Landau (2010), too, assumes that the Experiencer carries inherent accusative case and therefore also evades issues with Burzio’s Generalization (although he does not explicitly address this point).

The other option for addressing the case issue is to argue that the Experiencer of stative Class II verbs receives structural accusative case, and that this case can be assigned in the absence of an external argument. This line of attack implies that Burzio’s generalization is empirically wrong. Bennis (2004), Bondaruk et al. (2017a), and Bondaruk (2020) take this route. These authors contend that accusative case on the Experiencer of stative Class II verbs is structural (just as the case on the Experiencer of eventive ones). In fact, Bondaruk et al. (2017a) offers compelling evidence supporting the structural status of the accusative case borne by the Experiencer argument of stative Class II verbs in Polish. In Slavic languages, sentential negation has the effect of turning structural case into genitive case. Crucially, the genitive of negation rule which is responsible for this alternation can only affect structural case (Landau 2010). To illustrate, consider the examples in (115). The accusative marked on the second object in (115a) turns into the genitive under negation, as shown in (115b). However, the dative cannot turn into the genitive.

- (115)a. Marek wysłał Marcie kwiaty. (Polish)
Mark.NOM sent Martha.DAT flowers.ACC
 ‘Mark sent Martha flowers’
- b. Marek nie wysłał [Marcie /*Marty] [*kwiaty /kwiatów].
*Mark.NOM not sent [Martha.DAT/*Martha.GEN] [*flowers.ACC/flowers.GEN]*
 ‘Mark sent Martha flowers’ (Bondaruk et al. 2017a: 69)

Crucially, the case on the Experiencer argument of stative Class II verbs must turn into genitive under sentential negation. The examples in (116) illustrate this. This strongly suggests that accusative case on the Experiencer is structural.

- (116)a. Problemy rodzinne martwiły Martę.
problems.NOM family worried Martha.ACC
 ‘Family problems worried Martha.’
- b. Problemy rodzinne nie martwiły [Marty /*Martę].
*problems.NOM family not worried [Martha.GEN /*Martha.ACC]*
 ‘Family problems did not worry Martha.’ (Bondaruk et al. 2017a: 69)

Bondaruk then assumes following Bennis (2004) that Burzio’s generalization is empirically wrong: structural accusative case can be assigned in the absence of an external argument. It is beyond the scope of this thesis to investigate the theoretical status or empirical adequacy of Burzio’s generalization. But it appears somewhat convenient to claim that stative Class II verbs form an exception to Burzio’s generalization merely to preserve the claim that these verbs lack an external argument. Indeed in the absence of any novel insights into how to capture the patterns that do conform to the generalisation, Bondaruk’s proposal is essentially circular.

Reinhart (2002) also addresses the case issue with the Experiencer of unreduced Class II verbs that do not project their Cause. However, she neither resorts to inherent case of the Experiencer nor diminishes the Burzio’s generalization. Rather, she maintains that the Experiencer of stative Class II verbs receives structural accusative case just like the Experiencer of eventive Class II verbs. She holds that this is possible because the case properties of the verb are determined on the basis of the full entry of a Class II verb (i.e. where a Cause role is present. Since, by assumption, an SM role can be realized without reduction of the entry, the accusative case is not eliminated and requires checking (by the Experiencer).

A related thorny question concerns the choice of auxiliaries for stative Class II verbs. In some languages, verb classes can be distinguished by the auxiliary choice of ‘HAVE’ and ‘BE’ (e.g. Italian, French, German, Dutch). In general, transitives and unergatives select ‘HAVE’ while verbs lacking an external argument select ‘BE’. Consider the Dutch (117) and Italian (118) examples below. In Dutch *hebben* is equivalent to ‘HAVE’ and *zijn* to ‘BE’. In Italian, *avere* is to ‘HAVE’ and *essere* to ‘BE’.

- (117) a. Ria heeft de schuur geverfd. (Transitive)
Ria has the shed painted
 ‘Ria has painted the shed.’
- b. Karel heeft hard gewerkt. (Unergative)
Karel has hard worked
 ‘Karel has worked hard.’
- c. Onze nieuwe piano is eindelijk gearriveerd. (Unaccusative)
Our new piano is finally arrived
 ‘Our new piano has finally arrived.’ (Ackema and Sorace 2017: 2)
- (118) a. L’artiglieria ha affondato due navi nemiche. (Transitive)
the artillery have sunk two enemy ships
 ‘The artillery has sunk two enemy ships.’
- b. Giovanni ha telefonato. (Unergative)
Giovanni has telephoned
 ‘Giovanni has telephoned.’
- c. Giovanni è arrivato. (Unaccusative)
Giovanni is arrived
 ‘Giovanni has arrived.’ (Schäfer 2009): 10)

If the third derivation is on the right track, it is expected that stative Class II verbs would occur with ‘BE’, not with ‘HAVE’. However, this is contrary to fact. In Dutch, stative Class II verbs cannot take *zijn* but take *hebben*.

- (119) Haar schuld heeft /*is Lucy jarenlang geërgerd.
her debt have / is Lucy for years annoyed

In (standard) Italian, too, stative Class II verbs select *avere* ('HAVE') as their auxiliary:

- (120) Il suo debito ha / *è preoccupato Maria per anni.
the her debt have / be worried Mary for years

These verbs exhibit a different pattern than Class III verbs (dative object experiencer verbs) which select the auxiliary 'BE'. See the Dutch²² and Italian examples below:

- (121) Dit onderwerp is/??heeft Jan goed bevallen.
this topic is/ have John good pleased.

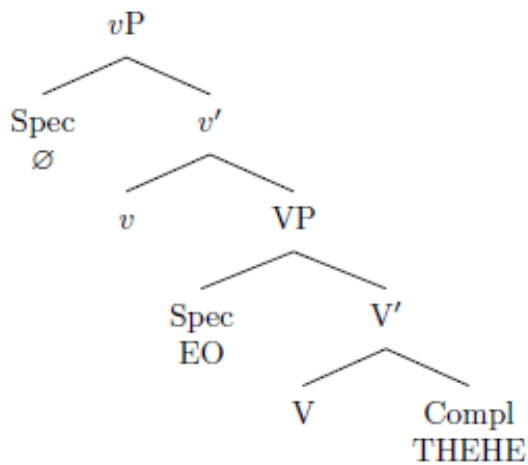
- (122) La musica è/*ha sempre piaciuta a Gianni.
the music be/have always pleased to Gianni

Solutions to this issue have been suggested but they appear to be ad-hoc and stipulative. Belletti & Rizzi (1988) tackle it by revising the generalization on auxiliary selection such that 'a verb takes *avere* ('HAVE') if it has the capacity to assign accusative case (either structural or inherent), and *essere* ('BE') otherwise' (Belletti & Rizzi 1988: p333). Bennis (2004)'s explanation is as follows. He analyzes (stative) Class II verbs as complex ergatives that lack an external argument but their structure contains a vP layer with a v capable of assigning structural accusative case (see footnote 1, also Chapter 1). The proposed syntactic structure is repeated here as (123).

²² Note that modern Dutch does not distinguish between accusative and dative case. It therefore cannot be straightforwardly demonstrated that a verb like *bevallen* ('please') is Class III and takes a dative Experiencer. However, it can be established by looking at its German equivalent *gefallen* ('please'), which is indeed a Class III verb (Broekhuis et al. 2015). As can be seen in the examples below, *gefallen* takes a dative Experiencer.

- (i) Dat jouw verhalen mijn broer niet bevallen. (Dutch)
 dass deine Geschichten.NOM meinem Bruder.DAT nicht gefallen. (German)
that your stories my brother not please
 'that your stories don't please my brother.' (Broekhuis et al. 2015: 30)

(123)



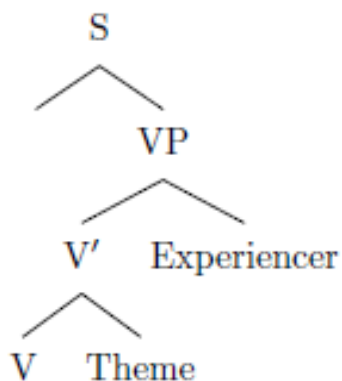
(Bennis 2004: 31)

Bennis suggests, admitting that it is a provisional answer, that *hebben* ('HAVE') is selected if the complement is vP, otherwise *zijn* ('BE') is selected (Bennis 2004: p34).

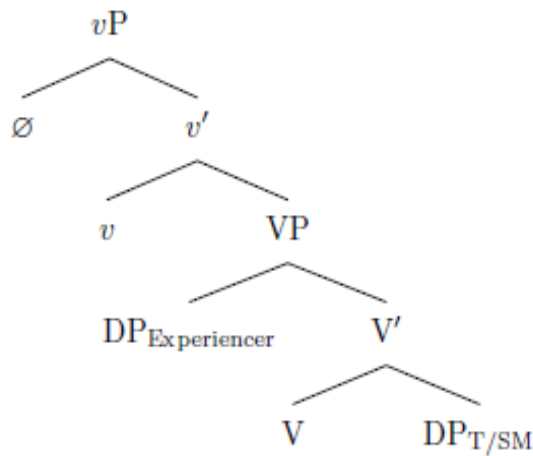
Under the UPH, the auxiliary choice for stative Class II verbs is a straightforward matter: these verbs select the auxiliary 'HAVE' not 'BE' since they are causatives with an external argument.

The final issue with the third derivation acknowledged by its proponents concerns the fact that movement of a Theme/SM to the subject position should incur a locality violation since it crosses the c-commanding Experiencer. To illustrate this point, I repeat some tree structures projected by stative Class II verbs, as proposed by proponents of the third derivation.

(124) Belletti & Rizzi (1988):



(125) Bennis (2004 – see (123)); Bondaruk et al. (2017b); Bondaruk (2020):



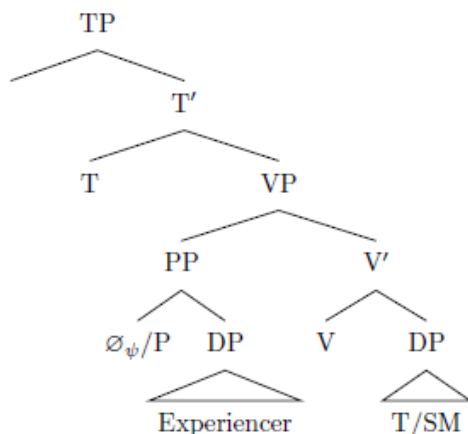
(slightly adjusted from
Bondaruk (2020: 194))

Although the exact structure varies depending on the analysis, the third derivation requires the raising of the Theme (T/SM) argument to the subject position across the intervening argument, namely the Experiencer, which asymmetrically c-commands the Theme. This violates locality.²³

Belletti and Rizzi (2012) address the locality violation of their unaccusative analysis for object experiencer verbs (Class II and Class III) and resolve it by adopting a so-called smuggling movement first proposed by (Collins 2005) for the English passive construction. The gist of this movement operation is to move the lower verbal chunk [V+Theme(T/SM)] to

²³ Note that this issue does not arise in Landau (2010)'s analysis, according to which object experiencers are oblique arguments introduced by a (null) preposition (\emptyset_{ψ}/P). Consider the structure reproduced below from Landau (2010). The Experiencer does not c-command the T/SM, therefore it does not intervene in the raising of the T/SM to the subject position.

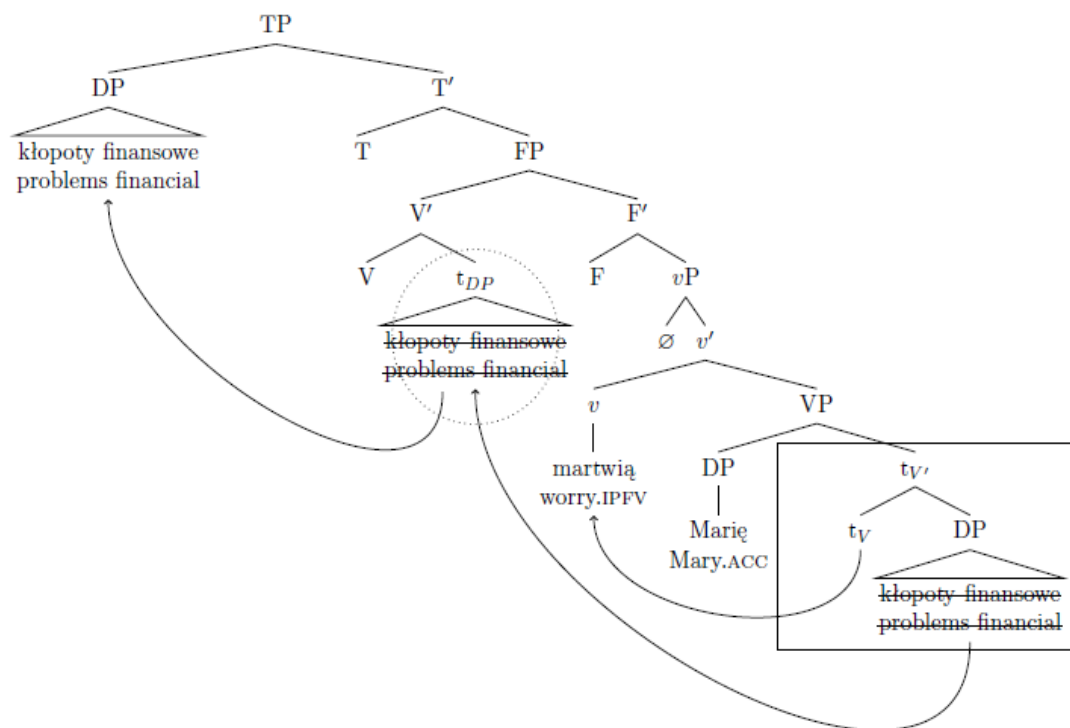
(i) Landau (2010: 84), slightly adjusted:



the position above the Experiencer, which can be described as saying that the verbal chunk [V+Theme(T/SM)] (i.e. the smuggler) smuggles the Theme (i.e. the smugglee) past the Experiencer (i.e. the blocker) (Collins 2005). As a result, the smuggled Theme(T/SM) argument ends up closer to the subject position (i.e. Spec IP/TP) than the Experiencer. Therefore, the Theme(T/SM) moves to this position without violating locality.

Essentially the same solution is adopted by Bondaruk et al. (2017b) and Bondaruk (2020), following Wiland (2016), for the stative Class II verbs derivation in Polish. Consider the tree in (126), reconstructed based on Bondaruk (2020: 198) for more clarity. The whole derivation for a stative Class II verb is as follows. First, V moves to v. This creates a remnant, namely V' (containing the trace of V and T/SM). Then a remnant movement occurs, which moves the remnant V' to a specifier of FP, a functional projection situated above the vP. As a result of this remnant movement, the T/SM ends up closer to T than the Experiencer (, which is in Spec, VP), and hence the T/SM moves to Spec, TP, the subject position (to satisfy EPP).

(126)



I acknowledge that adopting such mechanics, namely the smuggling/remnant movements can spare the third derivation from the locality issue. However, some fundamental questions remain: what is the exact nature and/or label of the functional projection FP? What triggers the (obligatory) movement of the remnant (V') to the specifier of FP? These issues are

acknowledged by authors that adopt this solution, but they concede that they remain agnostic about them (e.g. Bondaruk et al. 2017b; Bondaruk 2020: 197, fn 64).

The unified analysis of Class II verbs under the UPH does not face these issues. No locality problem arises under the UPH to begin with because the analysis of stative Class II verbs entailed by this hypothesis involves no movement of an SM argument. Rather, the subject of stative Class II verbs is a base-generated Cause, which is of course generated higher than the Experiencer.

2.4. Conclusion

In the previous section, I have provided several arguments against the third derivation. To summarize, it has been shown (i) that it is dubious that the third derivation is the source of backward anaphora, (ii) that stative Class II verbs with an indefinite SM argument are expected to be compatible with an expletive subject but never are, (iii) that it is unclear that passives of stative Class II verbs are uniformly absent cross-linguistically, (iv) that the *that*-clause following a Class II verb does not behave like the *that*-clause following a subject experiencer verb, and is therefore unlikely to be an internal argument, (v) that both Reinhart's and Landau's proposals must rely on unappealing stipulations to account for the full range of derived subject experiencers (reduced from Class II verbs), (vi) that neither analysis captures the fact that the T/SM argument of a derived subject experiencer is introduced with a preposition, while that of a stative object experiencer verb is not.

In addition, I have discussed several further problematical aspects of the third derivation: (vii) the accusative case of the Experiencer, (viii) unexpected auxiliary choice ('HAVE' not 'BE'), and (xi) the long movement of the Theme/SM across the Experiencer, which should incur a locality violation but does not. While these further problems do not entirely refute the third derivation, they simply do not arise under the alternative theory (based on the UPH), according to which stative Class II verbs have the same argument structure as their eventive counterparts.

All things considered, there are sufficient grounds to reject the APH and with it the third derivation. Instead, I will explore the alternative analysis of Class II verbs based on the UPH according to which all such verbs – whether eventive or stative – are causatives that project a Cause external argument and an Experiencer internal argument.

2.5. What the next chapter is about

The key task now is to answer the questions inherited from adopting the UPH. As outlined in the previous chapter, I will focus on the following questions, which will be navigated through the rest of the thesis:

- Question 1: If the argument structure of eventive Class II verbs is the same as the argument structure of stative ones, then how should we characterize the aspectual distinction between eventive and stative Class II verbs?
- Question 2: I will demonstrate that the subject of stative Class II verbs is intensional, while the subject of eventive Class II verbs is not. If both these subjects are Cause arguments, then what determines this split?
- Question 3: If the SM is absent in the argument structure of all Class II verbs, then what is the origin of the SM that can accompany the reduced (Class I) counterpart of Class II verbs?

In the next chapter, I will address the first of these questions.

Chapter 3. Towards an analysis of the aspectual distinction in Class II verbs

3.1. What this chapter is about

This chapter addresses the first question inherited from adopting the Uniform Projection Hypothesis (UPH):

Question 1: If the argument structure of eventive Class II verbs is the same as the argument structure of stative ones, then how should we characterize the aspectual distinction between eventive and stative Class II verbs?

As discussed in the previous chapters, Class II psych verbs do not form an aspectually homogeneous group. Three readings can be identified in these verbs: agentive, eventive, and stative (e.g. Arad 1998, 2000; Reinhart 2002; Landau 2010: a.o.). The agentive use has the interpretation that the subject deliberately does something to cause a change of state in the Experiencer. For example, (127a) is most naturally interpreted as saying that Mary deliberately caused John to become frightened. On the eventive use, it is understood that the subject causes a change of emotional state in the Experiencer but no intention on the part of the subject is assumed. Consider (127b) which describes a situation where the thunderstorm caused John to become frightened. Finally, the stative use, unlike the other two uses, does not express a change of state in the Experiencer. Rather, it describes an emotional state of the Experiencer in relation to the subject. (127c), for instance, can be construed as describing a situation in which John's state of fright was maintained throughout a period of utter silence from his wife.

- (127) a. Mary frightened John. [Agentive]
b. The sudden thunderstorm frightened John. [Eventive]
c. The utter silence from his wife frightened John the whole evening. [Stative]

In addition to these interpretive differences, the three-way aspectual ambiguity found in Class II psych verbs is manifested morphologically in some languages. For example, in Russian, all three readings are distinguished through different morphology. Consider the examples in

(128).²⁴ The agentive and eventive uses of the verb *pugat* (пугать) ‘frighten’ only differ in the prefix *na-* and *is-*. These prefixes result in a perfective aspectual reading of a verb in Russian (e.g. Slabakova 2005; Borik 2006; a.o.). The verb in (128a), *napugat* (напугать), denotes a deliberate action of causing a state of fear. The verb in (128b), *ispugat* (испугать) denotes an action that unintentionally causes the state of fright. On the stative use, as in (128c), however, the verb lacks such prefixes and is in the imperfective aspect.

- | | | | |
|----------|--|---------------------------|-------------------|
| (128) a. | Marija namerenno napugala
<i>Maria intentionally frightened.PFV</i>
‘Maria intentionally frightened Ivan.’ | Ivana.
<i>Ivan.ACC</i> | [Agentive] |
| b. | Pis'mo doktora ispugalo
<i>letter doctor.GEN frightened.PFV</i>
‘The doctor’s letter frightened Ivan.’ | Ivana.
<i>Ivan.ACC</i> | [Eventive] |
| c. | Ego zdorov'e pugaet
<i>his health frightens.IPFV</i>
‘His health frightens Ivan.’ | Ivana.
<i>Ivan.ACC</i> | [Stative] |

As already discussed in Chapter 1, many authors have argued that when psych predicates are used agentively, they behave like normal transitives with a Patient internal argument, rather than an Experiencer (e.g. B&R 1988; Arad 1998; Landau 2010; a.o.).²⁵ In line with the general agreement, I will disregard the agentive reading of psych verbs throughout the discussion on the aspectual distinction between the various uses unless it becomes necessary to discuss it. Rather I will focus on the eventive and stative readings. A crucial property that distinguishes the eventive and stative uses is whether there is a change of state in the Experiencer: eventive usage involves a change of state in the Experiencer and hence is understood as telic. In this sense, this usage can also be referred to as dynamic. By contrast, stative usage does not involve a change of state, rather it denotes a durative, atelic situation. That eventive Class II verbs involve a change of state in the Experiencer, but stative ones do not is evident in languages whose morphology is sensitive to that distinction, as shown above for Russian. A further language illustrating this point is Finnish in which case marking on the object is associated with telicity. In this language, while accusative marked objects encode telicity or change of

²⁴ The examples are due to Elena Titov (p.c.).

²⁵ See Arad (1998) and Landau (2010) for extensive discussion of this issue.

state (Arad 2000 based on Pylkkänen p.c.), partitive objects imply atelicity (e.g. Pylkkänen 2000; Nelson 2000; Sardinha 2017). In line with this generalization, the Experiencer of eventive Class II verbs is marked with accusative case (see (129a)). The Experiencer of stative ones on the other hand is marked with partitive case (see (129b)).

- (129) a. Asia raivo-stu-tti-i minu-t. [Eventive]
matter.NOM fury-INCH-CAUS-PAST.3S me-ACC
 ‘The matter infuriated me.’
- b. Asia raivo-stu-tti-i minu-a. [Stative]
matter.NOM fury-INCH-CAUS-PAST.3S me-PART
 ‘The matter was infuriating me.’ (Nelson 2000:154)

The aim of this chapter is to provide an answer to the question asked at the beginning: how do we characterize the aspectual distinction between eventive and stative Class II verbs while maintaining uniformity in their argument structure (i.e. the UPH)? Recall the competing view, the Alternative Projection Hypothesis (APH), which argues that Class II verbs may project either a Cause or a SM. On this view, the aspectual distinction is aligned with a difference in argument structure. The projection of the Cause is assumed to be associated with the eventive reading, while the projection of the SM is assumed to give rise to a stative reading. This account is not available on the UPH, according to which Class II verbs never project a SM; rather, all Class II verbs, either eventive or stative, are causatives projecting a Cause and an Experiencer. In what follows, I will show how the aspectual distinction in Class II verbs can be accounted for under the UPH. I will explore two potential approaches.

The first is to assume that all Class II verbs have traditional eventive semantics, while a stative variant is treated as a generic counterpart of the basic eventive verb. Specifically, a stative reading is derived when a generic operator quantifies over the event variable introduced by the basic eventive verb. I will refer to this account as the generic analysis.

The alternative account is to assume that the two types of Class II verbs encode different event semantics: while eventive Class II verbs encode a caused change, stative Class II verbs encode a caused lack of change. This view is defended in Pylkkänen (2000) and Arad (2000), where it is assumed that stative Class II verbs express so-called stative causation (Kratzer 2000). Unlike eventive (dynamic) causation, stative causation does not express an event of change but expresses a situation in which a state is maintained by another state or activity. For instance, ‘the wall protects the city’ expresses a situation in which the presence of the wall maintains the

safety of the city (N&vdK 2012). In the psych domain, stative Class II verbs can be understood as expressing a situation where a psychological state is maintained as long as the Experiencer's attention dwells on the cause of the state.

I will argue that evidence strongly favors an account based on stative causation over the generic analysis.

I will further propose that the eventive/stative contrast in Class II verbs is correlated with a difference in the size of the causal chain each use is mapped onto. Following a more in-depth exploration of the causation of a psychological state, which is argued to involve multiple causal factors (e.g. Nussbaum 2001; Scherer 2004; a.o.), I will hypothesize that eventive Class II verbs capture a longer causal chain of which the highest cause is a percept (i.e. an external stimulus) perceived by the Experiencer. By contrast, stative Class II verbs capture a more compact causal chain of which the cause is an Experiencer-internal stimulus (i.e. a mind-internal cause) dwelled on by the Experiencer. In other words, I will argue that while Class II verbs invariably realize a Cause as their subject, the referent of the Cause varies depending on the aspectual type of the verb.

The chapter is organized as follows. In section 3.2, I explore the generic analysis as a potential account of the aspectual distinction in Class II psych verbs. I will argue that while generic counterparts of Class II verbs do exist, it is erroneous to equate stative Class II verbs with generics. In particular, I will show that stative Class II verbs do not exhibit the characteristics of generic predicates. In section 3.3, I will instead argue for the alternative account, according to which stative Class II verbs are analyzed as stative causatives (verbs of maintenance in the terminology of N&vdK 2012). In section 3.3.1 I will introduce the concept of stative causation. It will be argued that the contention that Class II psych verbs may denote an event of change (which expresses eventive/dynamic causation) or an event of caused lack of change (which expresses stative causation/maintenance) reflects a pattern observed in causatives in general, drawing a welcome parallel between normal (non-psych) causatives and psych causatives. In section 3.3.2, I will point out that there is, however, a distinction between psych and non-psych causatives regarding the interpretation of the causing eventuality. In particular, the causing eventuality of psych verbs (either eventive or stative) is invariably interpreted as a perception event, while this is not the case for non-psych causatives. Such a distinction will be discussed in the context of the "direct perception requirement" (Engdahl 1990; Dowty 1991; Croft 1993; Hartman 2012). After conducting a finer-grained dissection of the causation of a psychological state, I will propose that the eventive/stative contrast in Class

II psych verbs is correlated with a difference in the length of the causal chain each use is mapped onto. Section 3.4 concludes.

3.2. The generic analysis of stative Class II verbs

Consider the sentence in (130), which contains a prototypical example of a stative Class II verb.

(130) Blood sausage disgusts Nina. (Arad 2000: 6)

On its most accessible reading, this sentence means that blood sausage generally disgusts Nina. In other words, it describes a property of Nina that holds whether she is engaged in the perception of blood sausage or not.²⁶

Consider some further examples in (131). These sentences all have a generic reading. Example (131a), for example, readily admits the interpretation that John experiences a puzzling emotion whenever he is confronted with Mary's behavior. Similarly, example (131b) may express that Susan habitually feels fright in relation to the teacher.²⁷ Crucially, these statements hold true irrespective of time and space. They do not assert the existence of any particular episode in which the referent of the object perceives or thinks of the referent of the subject and experiences the relevant emotion. On the generic reading, these sentences express a property of their subject that holds even when they are asleep.

- (131) a. Mary's behavior puzzles John.
b. The teacher frightens Susan.
c. The student annoys Chris.
d. The politician embarrasses Lily.
e. Kimchi disgusts Tim.
f. Syntax excites Kim.

²⁶ Arad (1998, 2000) acknowledges this reading for stative Class II verbs, which she also refers to as habitual, but she sets it aside for future research (Arad 2000: p7, fn 3).

²⁷ Sentences like (131b-d) seem to allow for another generic reading, which describes a characterizing property of the subject. For instance, (131b) can be interpreted as the teacher habitually frightens Susan intentionally. I will ignore this reading here. Note, however, that it is common for a generic sentence to have more than one generic reading (see Carlson 1989; Krifka et al. 1995 among others and references therein). Consider (i) for an example. Such ambiguity is assumed to be related to stress placement, intonation, and word order (Krifka et al. 1995; Krifka 1995; Rooth 1995).

- (i) A computer computes the daily weather forecast.
a. Computers in general have the task of computing the daily weather forecast.
b. The daily weather forecast is computed by a computer. (Krifka et al. 1995: 24)

These sentences can therefore be analyzed on a par with those in (132), which are referred to as habitual generic or characterizing sentences.

- (132) a. John smokes.
b. Mary cycles to work.
c. Kim goes to rugby every Thursday.

Habitual generic or characterizing sentences, such as those in (132), are to be contrasted with episodic or particular sentences, such as those in (133), which depict an episodic, particular situation (Krifka et al. 1995). While the former expresses a generalization about events or situations, the latter expresses a particular event or situation.

- (133) a. John smoked yesterday.
b. Mary is cycling to work (now).
c. Kim will go to rugby next Thursday.

These contrasts notwithstanding, many sentences exhibit ambiguity between an episodic and a habitual generic interpretation (Carlson 1980; Carlson & Spejewski 1997). For English, this is particularly easily demonstrated with sentences in the simple past that lack a modifier to ground an episodic reading. Thus, the sentences in (134) can be interpreted episodically or generically, depending on the context in which they are uttered.

- (134) a. John smoked.
b. Mary cycled to work.

It is widely assumed that habitual generics are derived from episodic predicates via a process involving a generalization operator (e.g. Lawler 1972; Dahl 1975; Chierchia 1995; Krifka et al. 1995; Cohen 1996). On this view, the ambiguity of the examples in (134) can be attributed to the absence or presence of this operator (*Gen*) in the syntactic structure. This operator quantifies over the event or situation introduced by the predicate it takes scope over and in doing so turns an episodic predicate into a generic one. A simple semantic formalization of this operation is illustrated in (135). When the *Gen* operator is combined with the episodic predicate *smoke* in (135a), it yields the generic counterpart in (135b). Given that all generics are statives

(Krifka et al. 1995), this type of derivational process is sometimes referred to as stativization (e.g. Rothmayr 2009).

- (135) a. **smoke(John)** : John is smoking.
b. **Gen(smoke)(John)** : John smokes. (Krifka et al. 1995: 20)

Given the availability of this operation, one might entertain the possibility that insertion of Gen is responsible for the eventive/stative distinction in Class II psych verbs. In other words, could we not treat stative Class II verbs as eventive Class II verbs in the scope of a Gen operator? For example, the stative variant of *frighten* in (136b) would be derived from the basic eventive use of *frighten* in (136a).

- (136) a. **frighten(John)** : Eventive
b. **Gen(frighten)(John)**: Stative

Attractive though this approach may seem, there are good reasons why it cannot be maintained.

A first, although perhaps not insurmountable, problem is presented by the existence of Class II verbs that are unambiguously stative (e.g. *bore*, *concern*, *interest* as well as Dutch verbs like *boeien* ‘fascinate’ and *intrigeren* ‘intrigue’). That is to say, they have no eventive counterpart with which a Gen operator could have combined.²⁸

However, the key objection to the approach based on genericity is this: while Class II psych verbs do have generic counterparts, which are undoubtedly statives, it is erroneous to equate stative Class II verbs with generics. It can easily be shown that genericity is not the correct characterization of the stativity expressed by a stative Class II verb: contrary to generics, stative Class II verbs *can* in fact express an episodic, temporary state, a claim explicitly defended by Pylkkänen (2000) for Finnish.²⁹

²⁸ As discussed in Chapter 2, that these verbs do not permit an eventive reading at all is evidenced more clearly in Dutch where they are incompatible with the progressive:

- (i) *Het verhaal was Jan enorm aan het boeien/intrigeren.
the Story was John enormously on the fascinate/intrigue

²⁹ The same claim is made by Fábregas & Marín (2015) on Spanish, as well as Cançado et al. (2024) on Brazilian Portuguese. The actual data these authors base their conclusions on will be discussed in section 3.3.1.2.

Before demonstrating this point with some English examples, however, it is worth noting that it is not easy to get an episodic, temporary state reading with stative Class II verbs in the simple present tense, such as those given earlier in (130) and (131). This is because in English the simple present tense is strongly correlated with a generic/habitual reading (e.g. Mathew 2009). Consider the examples in (137). While the predicate *walk* supports an episodic reading in the simple past, the present progressive, and the future, as shown in (137a), it acquires a generic (habitual) reading in the simple present tense, as evidenced by the example in (137b).

- (137) a. John walked/is walking/will walk.
b. John walks.

Let us then consider the examples in (138) where the issue with the simple present tense is addressed. In addition, these sentences make use of durative modifiers like *for hours*, *all day*, which will ensure that the verbs in question are interpreted statively. These modifiers are only compatible with atelic predicates, not with telic predicates (unless interpreted iteratively). Consider (139) which illustrates this point. A durative *for* adverbial is compatible with atelic predicates (states, activities) as shown in (139a) and (139b), but not with telic predicates as shown in (139c) and (139d).

- (138) a. Mary('s behavior) puzzled John for hours.
b. The teacher('s behavior) frightened Susan for hours.
c. The student('s behavior) annoyed Chris for hours.
d. The politician('s behavior) embarrassed Lily all day.

- (139) a. John was sick for 2 days.
b. John cycled for 2 hours.
c. John recovered (*for 2 hours).
d. John died (*for 2 hours).

Crucially, the sentences in (138) can be construed as expressing a past episodic state which held for the amount of time denoted by the modifier. The episodic interpretation of these examples can be brought out even more clearly by adding a temporal modifier that provides a narrow window within which the episode in question must be located:

- (140) a. Last Monday Mary('s behavior) puzzled John for hours.
 b. Yesterday evening the teacher('s behavior) frightened Susan for hours.
 c. Yesterday the student('s behavior) annoyed Chris for hours.
 d. Last Tuesday the politician('s behavior) embarrassed Lily all day.

Note that alongside the episodic state reading, the sentences in (138) also admit a habitual generic reading (even in the past tense), where the temporal modifiers are interpreted in the scope of the generic operator. Example (138a), for instance, can be interpreted as saying that Mary's behavior habitually caused John to feel puzzled for hours. Given the semantic characterization of habitual generic sentences, this is of course not surprising. The verbs in (138) are able to express an episodic state. It is to be expected that, like any other verb expressing an episodic eventuality, they may combine with the Gen operator to yield the habitual generic reading.

I used the data in (138) and (140) to support the claim that stative Class II verbs should not be characterized as generics because they are capable of expressing an episodic state. At the risk of flogging a dead horse, I conclude this section with some further observations that support this conclusion.

Krifka et al. (1995) propose a test for distinguishing between generic and episodic/particular sentences. They suggest that if adding adverbs like *usually* or *typically* to a sentence causes at best a slight change in meaning, the original sentence is generic (see (141)). With episodic/particular sentences, however, these adverbs shift the meaning drastically, transforming a statement about a specific eventuality into a general rule (see (142)).

- (141) a. A lion has a bushy tail.
 b. A lion usually has a busy tail. (Krifka et al. 1995: 9)

- (142) a. A lion stood in front of my tent.
 b. A lion usually stood in front of my tent. (Krifka et al. 1995: 9)

With stative Class II verbs, the meaning change from the (a) examples to the (b) examples in (143) and (144) is drastic, resembling the change witnessed in (142). This suggests that the original sentences containing stative Class II verbs are not generic.

- (143) a. The teacher's behavior frightened Susan for hours.
 b. The teacher's behavior typically frightened Susan for hours.
- (144) a. The noise annoyed John for hours.
 b. The noise usually annoyed John for hours.

Another test that can be used to distinguish a generic from an episodic predicate concerns interpretation with bare plural subjects (Carlson 1980; Kratzer 1995; a.o.). While bare plural subjects in generic sentences have an universal/generic interpretation and lack an existential reading (see (145a)), bare plural subjects in episodic sentences *can* be interpreted existentially (see (145b)) (and also arguably universally (Kratzer 1995; Chierchia 1995)).

- (145) a. Firemen are altruistic.
 b. Firemen are available. (Kratzer 1995: 125)

Bare plural subjects of stative Class II verbs behave like episodic predicates in that they can be interpreted existentially. Consider the examples in (146).

- (146) a. Teachers frightened Susan all day.
 b. Students annoyed Chris all day.
 c. Politicians embarrassed Lily all day.
 d. Family members worried Tim all day.
 e. Fleas disgusted Kim all day.

Taken together, I conclude that there is overwhelming evidence for the existence of episodic stative readings of Class II verbs. Such readings are completely unexpected and unexplained if all stative readings of Class II verbs are treated as generic, since in that case all episodic readings of Class II verbs should be eventive.

3.3. The stative causative/maintenance analysis of stative Class II verbs

In this section, I explore the alternative analysis of the aspectual distinction in Class II verbs. This analysis rests on the hypothesis that eventive and stative Class II verbs encode different event semantics. In particular, I will explore the hypothesis that while eventive Class II verbs

encode a caused change of state (i.e. there is a change of state caused by a Cause), stative Class II verbs do not; rather, they express a caused state but without change.

It is well established in the non-psych domain that causatives do not always encode a change of state (i.e. eventive/dynamic causation) but may also encode a caused state without an event of change. The latter case is often referred to as ‘stative causation’, a term due to Kratzer (2000), or ‘maintenance’, the term used by N&vdK (2012). To get a feel for what stative causation/maintenance relation refers to, consider the following example from Kratzer (2000: 9): ‘(Because of a congenital malformation,) tissue obstructed the blood vessel’. The sentence describes an obstructed state of the blood vessel, which was being sustained in the presence of the tissue. This interpretation does not involve an event of obstruction that causes the blood vessel to become blocked. Take another example ‘the wall protects the city’ from N&vdK (2012: 39). This sentence describes a situation in which the presence of the wall maintains the safety of the city. In other words, the state of the city being safe is maintained by another state, namely, the presence of the wall. The causal relation holds between the maintaining state and the maintained state. This particular type of causation has also been explored in studies of psych causatives. Pylkkänen (2000) and Arad (2000) analyze stative Class II verbs with stative causation. They contend that a stative Class II verb expresses a situation where the mental state holds as long as the perception of the stimulus (i.e. the subject of these verbs) holds. In line with these authors, I will assume that stative Class II verbs are stative causatives (a.k.a. verbs of maintenance) denoting a situation where a psychological state persists contingent upon the Experiencer’s attention dwelling on the cause of the state.

3.3.1. Stative causation/Maintenance relation

3.3.1.1 What stative causation/maintenance relation is

Let us reconsider the verb *obstruct* in (147), based on Kratzer (2000). It has an eventive use as illustrated in (147a) of which the reading involves an event of change (i.e. dynamicity) in the sense that the blood vessel became obstructed. It may correspond to a scenario where a scar tissue created an obstruction in the blood vessel. The verb also has a stative use, however, as illustrated in (147b). This use does not imply the dynamicity of the eventive use, rather, it denotes a situation in which the state of the blood vessel being obstructed was held due to another state - the tissue being where it was.

- (147) Tissue obstructed the blood vessel.
- a. The tissue caused the blood vessel to become obstructed
 - b. The tissue being where it was caused the blood vessel to remain obstructed.

Research on stative causation is further developed in N&vdK (2012). They offer a more detailed explanation of stative causation, according to which the stative use of these verbs expresses what they term as a maintenance situation. Maintenance is a relation in which the continuation of a particular state of affairs is dependent on the continuation of an activity or a second state of affairs (N&vdK 2012: 39). The former eventuality corresponds to a maintained state, and the latter to a maintaining event or state. N&vdK point out that the maintaining eventuality need not be understood as a state: “if the cavalry protects the city, presumably it does so by riding around on horses. In this case, the maintaining eventuality is an activity” (N&vdK 2012: p39). Consider the formal definition of maintenance formulated by N&vdK (2012):

- (148) **Maintenance** (N&vdK 2012: 39)
- a. Maintenance is a relation between two eventualities: a maintaining state or event and a maintained state.
 - b. Maintenance lacks a temporal dimension: the maintaining state or event must be contemporaneous with the maintained state.
 - c. Maintenance is counterfactual: if the maintained state is absent, then the maintaining eventuality must be absent as well.

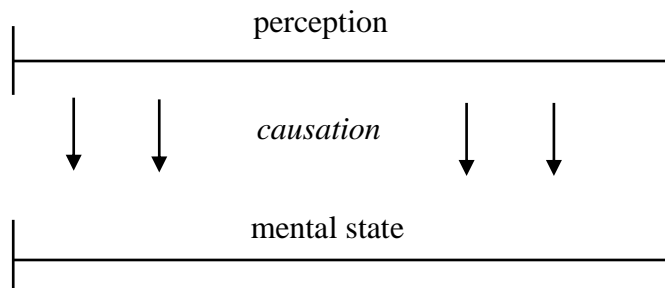
The maintenance relation is indeed what we get with the stative use of *obstruct* in (147b) discussed above: the state of obstruction of the blood vessel was maintained by the presence of the tissue. More examples expressing a maintenance relation are in (149). What (149a), for instance, means is that the state of the city being safe is maintained by the presence of the wall.

- (149) a. The wall protects the city.
 b. John’s uncle supports him financially.
 c. The beam carries the wall above it.
 d. The sheriff upholds the law. (N&vdK 2012: 39)

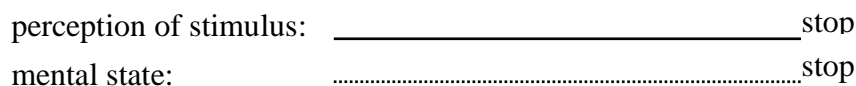
Maintenance sentences in general can be rephrased using the verb *keep* (N&vdK 2012). (147b), for example, can be paraphrased into the presence of the tissue kept the blood vessel obstructed. (149d) likewise can be rephrased as the sheriff keeps the law upheld.

In the psych domain, Kratzer (2000) treats experiencer verbs *depress* and *worry* on a par with *obstruct*. The stative causative/maintenance analysis of psych verbs is especially prominent in the works of Pylkkänen (2000) and Arad (2000) according to which stative Class II verbs are systemically analyzed as expressing stative causation. Consider the pictures in (150) - (151) illustrating their analyses of stative Class II verbs:

(150) Pylkkänen (2000: 432):



(151) Arad (2000: 5):



As is clear from the illustrations, both Pylkkänen and Arad argue for a concurrent relation between the causing eventuality, which is understood as a perception event on the part of the Experiencer, and the caused emotional state.³⁰ In line with these authors, I will assume that stative Class II verbs express a mental state that holds as long as the perception of the referent of the subject of these verbs continues. This claim amounts to saying that stative Class II verbs

³⁰ There is, however, a crucial difference between Pylkkänen (2000)'s and Arad (2000)'s stative causative analysis of stative Class II verbs. While they both argue that the causing eventuality of a stative Class II psych verb is a perception event, the argument of the perception event (i.e. what is perceived) differs: for Pylkkänen, it is a Theme (SM), which originates VP-internally, for Arad, on the other hand, it is a stimulus, which is a true Cause. Recall that Pylkkänen is a proponent of the APH, taking B&R's unaccusative analysis for stative Class II verbs. By contrast, Arad, a proponent of the UPH, argues that stative Class II verbs, as well as eventive ones, project the Cause external argument.

are analyzed on a par with stative causatives (verbs of maintenance) in the non-psych domain. I will make some minor adjustments to this analysis in later section (section 3.3.2).

In the next sub-section, I will look more closely at the nature of the stativity expressed by stative causation. I will argue that the stativity expressed by stative causatives in the non-psych domain has the same nature as the stativity expressed by stative Class II verbs: they denote a stage-level state, rather than an individual-level state.

3.3.1.2 Stativity expressed by stative causatives/maintenance verbs

Recall the discussion in section 3.2 regarding the nature of stativity expressed by stative Class II verbs. These verbs were shown to express an episodic, temporary state, rather than a generic, (near) permanent state. As briefly mentioned in that section, the same conclusion had already been arrived at in the literature but using the term “stage-level” state (the terminology adopted in Carlson 1980). Pylkkänen (2000), Fábregas & Marín (2015), and Cançado et al. (2024) argue that stative Class II verbs in Finnish, Spanish, and Brazilian Portuguese, respectively, are s-level states. Stage-level (henceforth s-level) predicates express transient, episodic properties or situations. They are to be contrasted with individual-level (henceforth i-level) predicates which express more permanent, stable situations or properties of an individual. On this classification, generics expressing non-episodic situations or characterizing properties are i-level predicates (Chierchia 1995). I will repeat some of the examples from the previous section (section 3.2) which illustrate that stative Class II verbs in English express an episodic, particular, transient situation and hence have s-level properties. Recall the examples in (138), repeated here as in (152). These examples can be construed as describing episodic situations:

- (152) a. Mary(’s behavior) puzzled John for hours.
b. The teacher(’s behavior) frightened Susan for hours.
c. The student(’s behavior) annoyed Chris for hours.
d. The politician(’s behavior) embarrassed Lily all day.

It is a property of s-level predicates that they allow spatio-temporal modifiers. I-level predicates, on the other hand, do not tolerate such modifiers (Kratzer 1995; Chierchia 1995). S-level predicates express episodic, particular situations that take place in a particular space and at a particular time, thus they allow modification by temporal and locational adverbials. I-level predicates, on the contrary, express (near) permanent situations or inherent properties of

an individual that hold true irrespective of time and place and as such they do not easily license spatio-temporal modifications.³¹ The contrast shown in (153)-(154) illustrates this point.

- (153) a. ??John was tall last night. i-level
b. John was drunk yesterday. s-level
- (154) a. ??John has blue eyes in the office. i-level
b. John was sick in Italy. s-level

In section 3.2, we have already seen that stative Class II psych verbs as in (152) are compatible with temporal modifiers. The relevant examples are repeated here as (155).

- (155) a. Last Monday Mary('s behavior) puzzled John for hours.
b. Yesterday evening the teacher('s behavior) frightened Susan for hours.
c. Yesterday the student('s behavior) annoyed Chris for hours.
d. Last Tuesday the politician('s behavior) embarrassed Lily all day.

The examples (156) below show that these verbs allow locational modifiers that specify a location of the eventuality denoted by the verbs as well.

- (156) a. The repetitive banging sound from his neighbor annoyed Chris for a few hours in his room.
b. The unknown beeping sound from her car frightened Susan for a few minutes in her car.

The modification facts confirm that stative Class II verbs behave like s-level rather than i-level predicates.

Now recall the discussion that bare plurals with Class II psych verbs are interpreted existentially, rather than universally or generically, which was taken to support the claim that these verbs are episodic, particular predicates, not generics. The relevant examples are repeated here as (157).

³¹ Diesing (1992) and Kratzer (1995) capture the contrast regarding the (in-)compatibility spatio-temporal modification by assuming that s-level predicates have an extra Davidsonian argument for space-time locations, but i-level predicates lack such an argument.

- (157) a. Teachers frightened Susan all day.
 b. Students annoyed Chris all day.
 c. Politicians embarrassed Lily all day.
 d. Family members worried Tim all day.
 e. Fleas disgusted Kim all day.

The interpretations of bare plurals are also used in distinguishing between s-level and i-level predicates. While s-level predicates select an existential reading for bare plurals, i-level predicates give rise to an universal or generic interpretation of bare plurals (Kratzer 1995; Chierchia 1995). That the bare plurals of the stative Class II verbs in the example above can be interpreted existentially further suggests that these verbs are s-level predicates.

Having explored the s-level characteristics of stativity expressed by stative Class II verbs, an important question arises: what about stativity expressed by stative causatives/maintenance verbs in the non-psych domain? Specifically, do these verbs express s-level states or i-level states? Given my position that stative Class II verbs should be analyzed on a par with stative causatives/maintenance verbs in the non-psych domain, this stance can be maintained if stativity expressed by normal (non-psych) stative causatives/maintenance verbs also exhibit s-level properties. I will argue that these verbs are indeed s-level predicates, expressing s-level states. For a first piece of evidence, note that non-psych stative causatives/maintenance verbs can describe an episodic situation. See (158).

- (158) a. Some fallen trees obstructed the road for a few hours, so I was late for work.
 b. Yesterday, an unknown vehicle blocked your driveway for about an hour, so I called the police.

Second, these verbs also allow spatio-temporal modification. See (159).

- (159) a. On 54 Highway, some fallen trees obstructed traffic for a few hours.
 b. Yesterday, an unknown vehicle blocked your driveway for about an hour.

In addition, bare plurals with stative causatives/maintenance verbs can be interpreted existentially. (160a), for example, is interpreted as saying that there were some fallen trees that obstructed traffic for a few hours.

- (160) a. Fallen trees obstructed traffic for a few hours.
 b. Walls protect my house.

Taken together, I conclude that non-psych verbs on their stative causative/maintenance use exhibit s-level properties. This finding supports the overarching claim that stative Class II verbs can be analyzed on a par with stative causatives/maintenance verbs in the non-psych domain as they share the same semantic property, namely that they express s-level states.

Before moving to the next section, I would like to take a brief detour to further elaborate on stativity expressed by psych verbs in general. In much of the literature, it is argued that in many languages the s-level and i-level distinction aligns with Class II and Class I distinction (e.g. Pyllkkänen 2000; Fábregas & Marín 2015; Cançado et al. 2024). However, I contend that this correlation does not hold at least for English psych verbs.

Pyllkkänen (2000), Fábregas & Marín (2015), and Cançado et al. (2024) argue that stative Class II verbs in Finnish, Spanish, and Brazilian Portuguese, respectively, are classified as s-level predicates which are to be contrasted with stative Class I verbs, which they all argue are i-level predicates. Pyllkkänen (2000) claims that the contrast between the (a) and the (b) examples in (161) with respect to the context suggests that stative Class II verbs behave like s-level predicates, while stative Class I verbs are i-level. Only stative Class II verbs (as in (161a)), not stative Class I verbs (as in (161b)), are compatible with episodic contexts.

(161) [Context: Yesterday I went to the fish market, but I didn't buy anything. They handled the fish with bare hands and ...]

a. se inho-tti minu-a. [stative Class II]
that.NOM findDisgusting-CAUS.PAST I-PART
 'That disgusted me.'

b. ??minä inho-si-n sitä. [stative Class I]
I.NOM findDisgusting-PAST-1SG that-PART

'I found that disgusting.' (Pyllkkänen 2000: 428)

In addition, she supports her conclusion with the claim that while stative Class II verbs allow spatio-temporal modification, stative Class I verbs do not. Consider the contrast between the (a) and the (b) examples of (162)-(163). As discussed previously, in Finnish, that these verbs are stative is signaled by the partitive case on the object.

- (162) a. ??Jussi inho-si Mikko-a **stative Class I**
Jussi.NOM findDisgusting-3SG.PAST Mikko-PART
 ruokapöydä-ssä.
dinner-table-INESS
 ‘Jussi found Mikko disgusting at dinner table.’
- b. Mikko inho-tti Jussi-a **stative Class II**
Mikko.NOM findDisgusting-CAUS.PAST.3SG Jussi-PART
 ruokapöydä-ssä.
dinner-table-INESS
 ‘Mikko disgusted Jussi at dinner table.’ (Pylkkänen 2000: 426)
- (163) a. ??Inhosi-n sinu-a eilen kello 3. **stative Class I**
findDisgusting-1SG you-PART yesterday clock 3
 ‘I found you disgusting yesterday at 3 o’clock.’
- b. Sinä inho-tit minu-a eilen **stative Class II**
you.NOM findDisgusting-CAUS.PAST.2SG me-PART yesterday
kello 3.
clock 3
 ‘You disgusted me yesterday at 3 o’clock.’ (Pylkkänen 2000: 426)

Fábregas & Marín (2015) give a further argument in support of the claim that stative Class II verbs in Spanish are s-level predicates whereas stative Class I verbs are i-level predicates. I-level predicates (in the past tense) induce a so-called lifetime inference, which is absent in s-level predicates (e.g. Kratzer 1995; Mittwoch 2008). Consider the examples in (164)-(165) which illustrate this phenomenon. When an i-level predicate is used in the past tense, there is an inference that the argument of the predicate no longer exists. (164b), in an out-of-the-blue context, has the inference that John is dead, which is not available in (164a) (Mittwoch 2008). Similarly, (165b) has the inference that Carthage no longer exists, while (165a) has the inference that Tunis still exists.

- (164) a. John is from Cardiff.
 b. John was from Cardiff. (Mittwoch 2008: 167-168)

- (165) a. Tunis is in North Africa.
 b. Carthage was in North Africa. (Mittwoch 2008: 168)

In contrast with i-level predicates, s-level predicates do not have such lifetime inference with respect to past tense. The examples in (166), for instance, do not have the inference that John is dead.

- (166) a. John was drunk.
 b. John danced.

Fábregas & Marín (2015) argue that in Spanish stative Class I verbs, but not stative Class II verbs have the lifetime effect in the past tense. (167a), for instance, has a salient interpretation that either Juan or Maria has died. By contrast, (167b) does not come with an inference that the crisis is over or that Maria has died. It is simply interpreted as saying that Maria is not worried anymore about the crisis (Fábregas & Marín 2015: 184). They take this contrast as a supporting argument for the claim that stative Class I verbs are i-level predicates but stative Class II verbs are s-level.

- (167) a. Juan amó a María. **stative Class I**
Juan loved ACC Maria
 ‘Juan loved Maria.’
- b. La crisis preocupó a María. **stative Class II**
The crisis worried ACC Maria
 ‘The crisis worried Maria.’

It seems that the systematic distinction between stative Class I verbs and stative Class II verbs that the former denotes i-level states and the latter denotes s-level states does not hold for English psych verbs. That stative Class II verbs are s-level states is maintained in English as well given the conclusion reached in section 3.2. However, I argue that not all stative Class I verbs in English can be classified as i-level states. While some Class I verbs have i-level properties, other Class I verbs behave like s-level predicates. Take, for instance, the verb *love*, which is typically classified as an i-level predicate (e.g. Chierchia 1995; Manninen 2001). (168) seems to denote a rather stable property of John, that is, he is in love. The examples in (169) show that this verb does not tolerate spatio-temporal modifiers easily.

(168) John loves Mary.

- (169) a. ??John loved Mary this morning.
b. ??John loved Mary in his car.

In addition, the lifetime effect with the past tense appears to hold. (170) seems to have a (weak) inference that either John or Mary has died.

(170) John loved Mary.

Now, take the verb *fear*. This verb is able to describe an episodic situation, which is confirmed by its compatibility with the episodic context in (171).

- (171) [Context: John's daughter left his house and drove on icy roads. As he waited for her call...]
John feared an accident.

In addition, *fear* does allow modification with spatio-temporal adverbials. See (172).

- (172) a. Last night, John feared an accident.
b. At the edge of the cliff, John feared a fall.

There seems to be no strong lifetime inference under the past tense either. Even if (173) is uttered in an out-of-the-blue context, the inference that either John or Mary has died is not attained.

(173) John feared Mary.

Taken together, *love* behaves like an i-level predicate while *fear* exhibits s-level properties. As far as English is concerned, then, Class I psych verbs do not form a uniform class with respect to i-level and s-level classification.

3.3.1.3 Stative causation/maintenance as an instance of causation

The aforementioned authors who study stative causatives/maintenance verbs either in the non-psych or psych domain (including Kratzer 2000, Pylkkänen 2000, and Arad 2000) all assume that alongside the eventive use of causatives, the stative/maintenance use of these verbs are causatives expressing a causal relation. However, it is not a trivial question whether the maintenance variants are indeed an instance of causation, especially when we consider a more traditional definition of causation, as in (174), from N&vdK (2012).

(174) *Causation* – (N&vdK 2012: 21)

- a. Causation is a relation between a two events: a causing event and a caused event.
- b. Causation has a temporal dimension: the causing event must precede the caused event.
- c. Causation is counterfactual: if the causing event had not occurred, the caused event would not have occurred either.

Under this definition, maintenance cannot be construed as an instance of causation. Firstly, while the causing eventuality on the standard view of causation is a (dynamic) event (see (174a)), it can be a state or an activity in the case of maintenance. Secondly, the temporal precedence between the causing and the caused eventualities, that is, the causing event must precede the caused one (see (174b)) does not hold in maintenance since the two eventualities in maintenance are temporally concurrent. However, many authors either directly or indirectly have pointed out a narrowness and inadequacy of such a traditional definition of causation (see Neeleman & van de Koot 2020; Martin & Schäfer 2014; a.o.). The restriction to an event as a causing eventuality should be lifted as non-events like state, too, can have a causal effect as illustrated in the examples in (175).³²

³² It seems that even non-eventualities can have a causal effect. For example, a fact can be causal. See (i), thanks to Ad Neeleman (p.c.)

- (i) The fact that he knew too many secrets killed him (/caused him to die).

A possibility, too, can have a causal effect. See (ii) from Google (<https://www.fastercapital.com/content/Market-Volatility--Market-Volatility--Understanding-Its-Material-Adverse-Effect-on-Investments.html> [accessed 12/9/24])

- (ii) The possibility of the UK leaving the EU caused significant fluctuations in European markets.

- (175) a. John's dementia caused his dogs to be adopted by other families.
b. John's prolonged unconsciousness caused his family to struggle financially.
c. John's broken leg caused him to withdraw from the upcoming marathon.
d. John's being of a different racial background caused him to face difficulties blending in when he first immigrated.
e. John's being in a bad mood caused his children to be silent at the dinner table.
f. John's ignorant nature caused his marriage to be wrecked.
g. John's family background caused him to secure a job successfully.

The requirement of temporal precedence between the two eventualities (in (174b)) also turns out to be too strong. Martin & Schäfer (2014), for instance, note that “no philosophical theory of causation requires more than that the causing eventuality start before the caused one starts (cf. Copley & Wolff 2014). In practice, this generally means that either the causing eventuality can finish as the caused eventuality begins, or that it can take place at roughly the same time as the effect” (Martin & Schäfer (2014: p226). N&vdK (2020), too, point out the strictness of the precedence requirement, as causation can be instantaneous, as when someone slashes a painting with a knife: the slashing event and the event of a hole opening up in the painting are simultaneous. A revised definition of causation can be found in N&vdK (2020), where the two issues of the traditional definition of causation are addressed.

(176) **Causation** (*revised*) – (N&vdK 2020: 56)

- a. Causation is a relation between one or more causing eventualities and a caused eventuality.
- b. Causation obeys a temporal restriction: no causing eventuality may follow the caused eventuality.
- c. Causation is counterfactual: if the caused eventuality did not occur, then one of the causing eventualities did not occur either.

On this revised definition of causation, maintenance can be construed as an instance of causation in the sense that i) it is a relation between a causing (i.e. maintaining) eventuality and a caused (i.e. maintained) state, ii) the maintaining eventuality does not follow the maintaining eventuality, iii) if the maintaining eventuality did not occur, the maintained state would not exist either.

Having discussed how maintenance can be understood as expressing a causal relation, let us see how the eventive and stative variation can be captured. Consider the semantic representation in (177) proposed by Jackson (2005) based on Kratzer (2000). These authors capture the eventive/stative variation in causative verbs by assuming that the Davidsonian variable e can range over an event or a state. Jackson notes that the semantics of these verbs should not include an additional BECOME operator (λ , which is pervasive in the semantic representation of a typical eventive causation) since its presence would prevent capturing the stative reading.

(177) obstruct = $\lambda x \lambda s \lambda e$ [CAUSE(s)(e) & OBSTRUCTED(x)(s)] (Jackson 2005: 91)

N&vdK (2012) propose that the eventive and stative ambiguity of verbs like *obstruct* can be captured by assuming that these verbs have the semantics in either (178a) (for an eventive reading) or (178b) (for a stative reading). N&vdK use the term ‘CCF’ (acronym for Crucial Contributory Factor) instead of ‘Cause’.

(178) a. $\lambda y \lambda x$ [[e x [s . . . y . . .]] & x = CCF]
 b. $\lambda y \lambda x$ [[s x [s . . . y . . .]] & x = CCF] (N&vdK 2012: 18)

In either analysis, the eventive and stative variants are causatives with the same argument structure but they only differ in their event semantics: the event variable is construed as either an event (in the case of eventive variants) or a state (in the case of stative/maintenance variants). In what follows, I will eventually argue that the eventive/stative ambiguity in the psych domain can be understood essentially the same way. I will put forward a proposal in the spirit of Arad (2000) and N&vdK (2012, 2020) that stative/maintenance variants involve a true external argument namely the Cause, maintaining that eventive and stative Class II verbs have the same argument structure. I will work this idea out in the following section, once I have considered causation in the psych domain in detail and a further factor that sets apart the eventive uses and the stative uses.

3.3.2. Causation in the psych domain and the referent properties of the subject of Class II verbs

The UPH and the analysis I have adopted for the eventive/stative ambiguity in causatives across the board both highlight the parallel between non-psych and psych causatives: in both a

causative verb projects a Cause and an undergoer (a Theme for non-psych verbs and an Experiencer for psych verbs). What a causative verb expresses is that the Cause causes the undergoer to be in a certain state (physical state in non-psych causative vs psych/emotional state in psych causatives).

It can be argued, however, that there is a notable difference between psych causatives and non-psych causatives as regards the nature of the causing eventuality. In short, the understood causing eventuality of a psych causative is always a perception event, the perception of a Cause by the Experiencer. Such an interpretive restriction does not hold in non-psych causatives, where the causing eventuality is typically not a perception eventuality. This has an important consequence for the causal chains that these verbs can denote. In the causal chain denoted by non-psych causatives, the undergoer can be far removed from the Cause. Consider the examples in (179) from N&vdK (2012), who argue that simplex causatives can describe situations of indirect causation.

- (179) a. As usual, a kind word with the manager opened the door to the Stardust nightclub.
 someone speaks to manager → manager speaks to doorman → doorman opens door
- b. Opening bus lanes to motorcycles will redden the streets of London with cyclists' blood.
 Opening of bus lanes → increase of accidents → cyclists' blood on London streets
- c. The launch of new iPhone contracts in May has dramatically enlarged T-Mobile's UK market share.
 availability of contract → people enter contract → improved market share
- d. A slip of the lip can sink a ship.
 loose talk → information obtained by spy → spy informs foreign navy → submarine torpedoes ship
- e. Anglican Church says overpopulation may break eighth commandment.
 overpopulation → poverty → theft → theft breaks eighth commandment
- f. A large fleet of fast-charging cars will melt the grid.
 many electric cars on roads → many cars charging simultaneously → high electricity demand → heating of electric cables → melting of the grid

(N&vdK 2012: 7)

The situation is very different for psych causatives, which have been described as obeying a direct perception requirement. It has been observed by several authors (e.g. Engdahl 1990; Dowty 1991; Croft 1993; Hartman 2012) that for a psychological state to hold the Experiencer must either perceive the cause or direct their attention to it. If such a direct perception requirement fails to hold, a psychological state cannot hold either. Consider (180), which

illustrates this point. The context ensures that Mary has no direct perception of the cause (i.e. the new iOS). As a result, the example in (180) is contextually inappropriate.

(180) [Context: The recently released iOS version has a glitch—it keeps signing people out of Zoom. Mary, who is an Android user (and has never heard of iOS), was hosting a webinar on Zoom with 50 participants. During the webinar, she suddenly noticed that only 10 people were left. She felt embarrassed, assuming people might have left because the webinar was boring. Mary’s boss hires Poirot, who investigates and concludes that ...]

#The new iOS version embarrassed Mary.

The discussion on the direct perception requirement for Class II psych verbs is often centered around stative uses. Pylkkänen (2000), for example, proposes that stative Class II verbs contain a causative head that introduces an event of perception. In particular, the causing eventuality of these verbs is claimed to be the perception of the Theme (i.e. object of emotion), which in turn sustains a psychological state in line with the stative causative analysis of these verbs. Notice, however, that (180) has an eventive flavor and involves a change of state in Mary. This can be reconciled with the direct perception requirement, I suggest, if the causing eventuality for a psychological state is invariably construed as a perception event, whether the verb is construed as eventive or stative. On this hypothesis, the Cause argument of a psychological causative invariably corresponds to a participant (namely a Theme) in the perception event while the perceiver is of course the Experiencer.

At first blush, this inverse mapping seems problematical when it is considered from the perspective of Thematic Hierarchy. However, there are both empirical and theoretical reasons to put these worries aside. As shown by N&vdK (2012), there is no evidence that the semantics of a causative makes reference to a causing event. The Cause (i.e. CCF) is an argument of the event of change, as is the undergoer. Therefore, the Thematic Hierarchy is irrelevant. Empirically, this kind of inverse mapping is also observed in non-psychological causatives. Consider a context in which five friends eat at the restaurant and end up dead because the starter they ate contained a poisonous substance. In such a context, (181a) is fully acceptable, but (181b) is not. The point is that the causing event in this scenario is an eating event in which the five people eat the poisoned starter. However, the Theme of the eating is projected as a Cause whereas the Agent of the eating is projected as the undergoer (as the Theme).

- (181) a. The poisoned starter killed five people.
b. #The five people killed themselves.

Consider now causation in the psych domain. Selecting the Theme participant (i.e. object of emotion, subject matter) of the understood perception event, rather than the Experiencer, as the Cause amounts to the claim that the Theme participant is identified as the crucial contributory factor in the coming about the resultant psychological state, while the act of perception by the Experiencer is taken for granted.

To the best of my knowledge, the direct perception requirement has not been discussed with regard to agentive uses of psych verbs. But crucially this requirement does not hold when psych verbs are used agentively. Consider the contrast between (180) and (182). Unlike (180), the example in (182) is felicitous to the context. In both contexts, the experiencer has no direct perception of the cause. But the crucial difference lies in the agentivity of the subject: only in (182) is the subject an agent.

- (182) [Context: Mary was hosting a webinar on Zoom with 50 participants. Fred, who doesn't like her, was her co-host. Without Mary noticing, he kept kicking participants out of the webinar. Suddenly Mary noticed that only 10 people were left. She felt embarrassed, assuming people might have left because the webinar was boring. Mary's boss hires Poirot, who investigates and concludes that ...]
Fred deliberately embarrassed Mary.

It is trivial that non-psych causatives impose no direct perception requirement by the Experiencer, given that these verbs lack the Experiencer argument. Consider the contrast between (183a) and (183b). (183b) can only be used in a context where it is understood that John has perceived the thunderstorm. For (183a), by contrast, John's perception of the cause of his death is completely irrelevant for the killing event to hold. That agentive psych verbs pattern with non-psych causatives with respect to the direct perception requirement aligns with the general agreement in the literature that when a psych verb has an agentive subject, it is no longer a psych verb but a normal transitive with a Patient internal argument, rather than an Experiencer (B&R 1988; Bouchard 1995; Pesetsky 1995; Arad 1998; Reinhart 2002; Landau 2010; a.o.).

- (183) a. The thunderstorm killed John. Non-psych causation
 b. The thunderstorm surprised John. Psych causation

The discussion so far can be summarized as below:

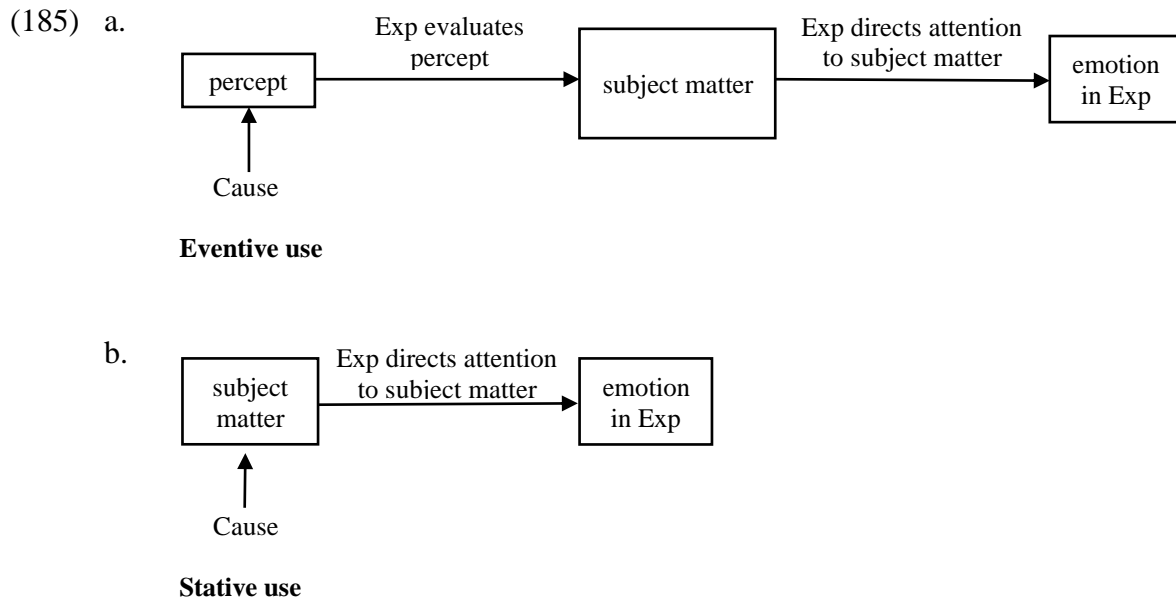
(184)	<i>the causing event is not a perception event (i.e. non-psych use)</i>	<i>the causing event is a perception event (causative psych verbs)</i>
<i>change</i>	eventive (dynamic) causation agentive uses of Class II verbs	eventive uses of Class II verbs
<i>no change</i>	stative causation/maintenance	stative uses of Class II verbs

With this background in place, I am now in a position to consider a further factor distinguishing eventive and stative uses of Class II psych verbs.

It has been argued that a central component in the causation of a psychological/emotional state is a cognitive process on the part of the Experiencer (Arnold 1961; Schachter 1964; Solomon 1976; Nussbaum 1990, 2001; Lazarus 1991; Scherer 2001, 2004; a.o.). In a somewhat simplified manner, an emotion arises in the following way: there is an external stimulus presented to and perceived by the Experiencer. The Experiencer evaluates what is perceived, and the output of such an evaluation process leads to an emotional state. The ‘evaluation’ means that the stimulus gets interpreted against the background of the experiencer’s cognitive state, giving rise to an experiencer-internal counterpart to the stimulus, which we may refer to as the subject matter. It is the experiencer’s relation with the subject matter that gives rise to the emotion.

I hypothesize that the eventive/stative contrast is correlated with a difference in the size of the causal chain each reading denotes and subsequently with a difference in the referent of their Cause argument. Specifically, eventive Class II verbs capture the broader causal chain of which the highest cause is a percept (i.e. an external stimulus) perceived by the Experiencer. The eventive interpretation obtains because perception of the stimulus gives rise to a brand-new subject matter on which the experiencer has not previously dwelled. Stative Class II verbs capture a more compact causal chain of which the cause is an Experiencer-internal stimulus, namely a subject matter. This mind-internal cause has properties that reflect the Experiencer’s knowledge state. The maintenance interpretation obtains because the subject matter causes the

emotional state to be maintained for as long as the experiencer’s attention dwells on it. In other words, while Class II verbs invariably realize a Cause as their external argument, its referent varies depending on the aspectual type of the verb: on the eventive interpretation, the Cause is a mind-external percept (stimulus) while on the stative interpretation the Cause is a mind-internal object to which the attention of the Experiencer is directed. (185) illustrates the contrast:



It is difficult if not impossible to fully isolate an eventive use of Class II verbs. This is because by hypothesis, an external stimulus gives rise to a mind-internal counterpart. In other words, on the eventive reading, the existence of an internal stimulus is always entailed, no matter how fleeting the internal stimulus is. That said, it is nevertheless possible to favor the eventive reading in contexts that home in on the external stimulus. Consider (186). As a continuation of the context given, the sentence ‘this frightened Jonny a lot’ is most naturally construed as eventive where the subject ‘this’ refers to the external stimulus, namely the sudden growling noise and touching.

(186) [Yesterday Johnny and Freddie were in the woods playing a game where one of them would wear a blindfold and the other would lead him by telling him which way to go. When Johnny was wearing the blindfold, Freddie first led him safely past a few trees and then suddenly made a growling noise and touched his back. Unsurprisingly...] *this frightened Johnny a lot, which made Jonny run straight home, without looking back.*

The hypothesis also predicts that it is certainly possible to isolate a stative use. This is because a stative reading does not presuppose a new perception event of an external stimulus. Of course, in order for a stative reading to hold, it is understood that there should be an initial event in which an external stimulus comes into contact with the Experiencer for the first time, which then gives rise to a mind-internal counterpart.³³ However, this mind internal counterpart can be stored in the Experiencer's cognitive system and its causal effect is re-activated when the Experiencer directs their attention to it. It is precisely this state of affairs that is referenced on a stative reading of a Class II verb. Given this, it is expected that a stimulus that cannot be perceived by the Experiencer again (e.g. it ceases to exist) can only induce a stative reading, but not an eventive reading. This prediction is borne out. Suppose a scenario in which Mary lost her dog a few months ago. In this situation, sentences like *'Her dead dog saddened/pained/disturbed Mary'* can only be interpreted statively.

A perk of the proposal that I just put forward is that the aspectual distinction found in Class II psych verbs does not need special treatment. We can understand that such a distinction reflects the properties found in normal (non-psych) causatives in general. That is, causatives (either psych or non-psych) can either describe an event of change (i.e. dynamic/eventive causation) or a caused lack of change (i.e. stative causation/maintenance):

(187)	Dynamic causation entailing event of change	Stative causation entailing no event of change
Non-psych causatives	<i>The surgeon accidentally obstructed the blood vessel.</i>	<i>(Because of a congenital malformation,) tissue obstructed the blood vessel.</i>
Psych causatives (Class II verbs)	<i>The doctor's letter worried John.</i>	<i>His declining health worried John.</i>

³³ The 'perception event' can take place in Experiencer's inner world, as with imagined worlds.

This once again highlights the uniformity between psych causatives and non-psych (normal) causatives.

There is, however, one property that psych causatives apart from non-psych causatives. Recall that cross-linguistically many causative verbs allow expletivization to form a reduced counterpart. Consider (188). (188b) is derived through Expletivization, which eliminates the Cause argument of (188a).

- (188) a. The wind broke the window.
b. The window broke.

However, stative causatives (maintenance verbs) cannot undergo this operation. The verb *obstruct*, for instance, does not have a reduced counterpart:

- (189) a. The hairs obstructed the sink.
b. *The sink obstructed.

- (190) a. The walls protect the city.
b. *The city protects.

As discussed in the previous chapter, in the psych domain, however, cross-linguistically stative Class II verbs do have their reduced counterparts derived via expletivization. Some of the relevant examples are repeated here in (191)-(195).

- (191) a. Her health worried Mary.
b. Mary worried about her health.

- (192) a. Sue's remarks puzzled us.
b. We puzzled over Sue's remarks.

- (193) a. The court decision grieved Sue.
b. Sue grieved over/at the court decision.

- (194) a. His new-found wealth delighted Bill.
 b. Bill delighted in his new-found wealth. (Pesetsky 1995: 73)

- (195) a. Dit onderwerp verveelt Jan. (Dutch)
this topic bores John
 ‘This topic bores John.’
 b. Jan verveelde zich.
John bored self
 ‘John was bored.’ (NOT: John got bored)

It is unclear what prohibits causative verbs on the stative/maintenance use in the non-psych domain from undergoing expletivization. I leave this issue for future research.

3.4. Conclusion

In this chapter, I addressed the question of how the eventive and stative distinction in Class II verbs can be understood under the UPH, which holds that the eventive and stative Class II verbs have the same argument structure. Two potential answers were explored. The first approach was to posit that while all Class II verbs have traditional eventive semantics, a stative variant is derived through an operation applied to the basic eventive input that inserts a Gen operator. This account was rejected on the basis that genericity is not the correct characterization of the stativity expressed by a stative Class II verb. Instead, I argued for the alternative account, which rests on the premise that eventive and stative Class II verbs encode different event semantics: the former denotes an event of change and the latter denotes an event of maintenance, which describes a situation where a psychological state is maintained as long as the Experiencer’s attention dwells on the cause of the state. The fact that a verb may express either an event of change or an event of maintenance had already been established in normal (non-psych) causatives; therefore, the eventive/stative contrast in Class II psych verbs can be reduced to the eventive/stative ambiguity found in causatives in general. Based on this account, I further hypothesized that the eventive/stative contrast in these verbs is correlated with a difference in the size of the causal chain each use is mapped onto. Specifically, eventive Class II verbs capture a longer causal chain of which the highest cause is a percept (i.e. an external stimulus) perceived by the Experiencer. By contrast, stative Class II verbs capture a more compact causal chain of which the cause is an Experiencer-internal stimulus (i.e. a mind-internal cause), which we may refer to as the subject matter, dwelled on by the Experiencer. In

other words, while Class II verbs invariably realize a Cause as their subject, the referent of the Cause varies depending on the aspectual type of the verb. The proposal will also play a key role in answering the second and the third questions from adopting the UPH, which will be the topic of chapters 4 and 5, respectively.

Chapter 4. An intensional split in Class II verbs

4.1. What this chapter is about

This chapter addresses the second question inherited from adopting the Uniform Projection Hypothesis (UPH).

Question 2: I will demonstrate that the subject of stative Class II verbs is intensional, while the subject of eventive Class II verbs is not. If both these subjects are Cause arguments, then what determines this split?

The topic of the question concerns a semantic property of psych verbs, namely intensionality. Although originally discussed in the context of intentionality (with a ‘t’) in philosophy (for it being a mark of the mental - Brentano 1874; Chisholm 1967; Aquila 1974; Searle 1979, 2018; Crane 1998; a.o.), intensionality (with an ‘s’) is a linguistic phenomenon that can be defined in terms of certain linguistic criteria. A predicate is taken to be intensional in one of its arguments if a sentence containing it exhibits at least one of the following characteristics: (i) substituting an expression with its coreferential term need not preserve truth-value; (ii) an expression which has no extension in the actual world (i.e. non-existential expression) need not induce falsity of the sentence; (iii) there appears a so-called non-specific reading (in addition to a specific reading) with an indefinite expression (Forbes 2000, 2006; Pearson 2015; Schwarz 2020; a.o.). Using these diagnostics, my investigation will focus on the question of whether Class II verbs are intensional in their subject argument. The main claim I will make is that the subject of a Class II verb is intensional when the verb is stative, but not when the verb is eventive.

As far as I know this intensional split has not previously been discussed in the literature and therefore neither has its potential implications for the argument structure of Class II verbs and this is the central question to which the rest of the chapter is devoted. In particular, I will ask whether the distinction between stative and eventive Class II verbs as regards intensionality of their subject can be reconciled with the argument structure of these predicates advocated in this thesis, namely the UPH, according to which the subject of a Class II verb is invariably a Cause (i.e. an external argument), regardless of their aspectual properties. I will answer this question in the affirmative and argue that the variation in the subjects of Class II verbs regarding intensionality follows quite naturally from the referential properties of their

respective Cause arguments: as proposed in Chapter 3, the Cause of an eventive Class II verb refers to a mind-external cause, while the Cause of a stative one refers to a mind-internal cause.

Furthermore, I will argue that the account developed here is superior to a potential alternative account based on the Alternative Projection Hypothesis (APH) for Class II verbs. According to the APH the subject of a stative Class II verb is a moved Subject Matter argument, whereas the subject of an eventive Class II verb is analyzed as a Cause. This approach predicts that Class II verbs pattern with Class I verbs as regards intensionality only on their stative reading, given that they project the same roles, namely an Experiencer and a SM. While this prediction is correct on the whole, I will demonstrate that it fails to capture a finer-grained distinction between (the subject of) a stative Class II verb and (the object of) a Class I verb with respect to the types of intensional properties displayed by them. In particular, while an indefinite object of a Class I verb may exhibit specific/non-specific ambiguity, an indefinite subject of a Class II verb never does; it only ever admits a specific reading. I will argue that this split in the data can be accommodated by the proposal I put forward in Chapter 3 but remains elusive on the APH.

The organization of this Chapter is as follows. Section 4.2 will outline the diagnostics for intensionality introduced in the literature. In section 4.3, I will review the arguments supporting the conclusion in the literature that Class I verbs are intensional in their internal argument (i.e. SM). I will reach the same conclusion but will delve deeper into the specific/non-specific ambiguity diagnostic than has previously been done in the literature. I will show that this ambiguity is present in only a limited set of Class I verbs and suggest that the availability of a non-specific reading of an indefinite expression is tied to a sense of futurity expressed by the predicate. In section 4.4, I turn my attention to Class II verbs, whose intensional properties have not been studied much in the literature. I will show that there is a correlation between the aspectual properties of Class II verbs (eventive vs stative) and their intensionality, with only stative Class II verbs satisfying any intensionality diagnostics. In section 4.5, I will argue that this novel finding can be captured by the proposal advanced in the previous chapter, according to which all Class II verbs invariably project a Cause argument. As argued there, the referential properties of the Cause argument differ depending on the aspectual type of the verb and this provides a sufficient basis for understanding when intensional properties are able to manifest themselves. I will subsequently compare the approach I advocate to an account based on the APH for Class II verbs and conclude that the former is preferable to the latter. Section 4.6 concludes.

4.2. Diagnostics for intensionality

In this section I present the intensionality diagnostics from the literature on which my analysis in this chapter will be based. A predicate is taken to be intensional if a sentence containing that predicate exhibits at least one of the following characteristics: (i) substituting an expression with a coreferential term need not preserve truth-value; (ii) an expression which has no extension in the actual world (i.e. non-existential expression) need not induce falsity of the sentence; (iii) there appears a so-called non-specific reading (in addition to a specific reading) with an indefinite expression (Forbes 2000, 2006; Cheung & Larson 2015; Pearson 2015; den Dikken et al. 2018; Schwarz 2020; a.o.). Let me expand on each of these diagnostics for intensionality in turn.

Consider the examples in (196). Suppose that John does not know that the true identity of Batman is Bruce Wayne. Given this state of affairs, the two sentences in (196) can bear a different truth value: (196a) can be true while (196b) is false.

- (196) a. John believes that Batman drives a Dodge Charger.
b. John believes that Bruce Wayne drives a Dodge Charger.

Consider some further examples in (197). Assuming the same scenario as before where John is unaware of the fact that Batman is Bruce Wayne, (197a) can be true without (197b) being necessarily true.

- (197) a. John is looking for Batman.
b. John is looking for Bruce Wayne.

These examples illustrate the first mark of intensional predicates, that is, substituting an expression with a co-identified term does not preserve the truth value of the sentence. Non-intensional predicates do not exhibit this substitution opacity, which is illustrated in (198). The truth value of the two sentences does not vary: if (198a) is true, then (198b) is true as well, regardless of John's knowledge state about the identity of Batman.

- (198) a. John met/hugged Batman.
b. John met/hugged Bruce Wayne.

As will be intuitively clear, a semantic theory able to capture the distinction between intensional and non-intensional predicates must treat the former as involving reference to the belief worlds of one of its arguments (the ‘attitude holder’ John in (196) and (197)).

The second property of intensional predicates is that they can take an argument that lacks an extension in the actual world without jeopardizing the truth of the sentence. Consider the examples in (199).

- (199) a. John is looking for a unicorn.
b. John is hunting for a vampire.

Although people are generally in agreement that there are no such things as unicorns or vampires in the actual world we live in, the sentences above can be judged true, as long as we attribute to John a belief in the existence of the relevant creatures. Consider some further examples in (200):

- (200) a. John thinks that a werewolf stole his dog’s food.
b. John believes that he invited a mermaid to his party.

Again, these sentences may be judged true regardless of the fact that werewolves and mermaids have no extensions in the real world, as long as it is assumed that they do feature as real in John’s beliefs about the world. Now compare the sentences in (200) to sentences with non-intensional predicates, such as those in (201). The lack of extensions of werewolves and vampires in the real world results in the falsity of these examples. In other words, non-intensional predicates are subject to an existential commitment, because their interpretation has no recourse to the beliefs of an attitude holder.

- (201) a. John sued a werewolf for theft.
b. John hired a vampire as his gardener.

The final property of intensional predicates is that they allow a non-specific reading of an indefinite object (or a quantified object), alongside a specific reading.³⁴ Consider the examples

³⁴ It is worth noting that there is debate about the environment(s) in which non-specific readings arise. The general contention in the literature is that the availability of non-specific readings is restricted to cases where the object is

in (202). (202a) can be interpreted as saying that John has a particular camera in mind, and he wants it. But it can also convey a situation in which he just wants some camera but there is no specific camera that he wants. Likewise, (202b) is ambiguous between the specific and non-specific readings of a member of staff that John is looking for.

- (202) a. John wants a camera.
b. John is looking for a member of staff.

The non-specific readings of these examples can be detected by looking at their compatibility with the phrase *but no particular one* (Zimmermann 2001). It can be added to the examples in (202) without contradiction, as shown in (203):

- (203) a. John wants a camera, but no particular one.
b. John is looking for a member of staff, but no particular one.

Compare these examples to sentences with non-intensional predicates as in (204). Non-specific readings are unavailable in these examples, which is supported by their incompatibility with the phrase *but no particular one*.

a singular indefinite introduced by *a(n)* (Zimmermann 2001; Cheung & Larson 2015; see Quine 1960 and Dowty 1979 as well). Others however consider a richer environment, including where the object occurs with determiners like *every*, *most*, and even the definite *the* (Forbes 2006, 2020). Forbes (2020) claims that (ia) can express a situation in which Guercino is looking for every dog on Aldrovandi's estate but there are no particular dogs he is looking for (Forbes 2020). Likewise, the non-specific reading of the definite object in (ib) (i.e. *the exit*) is not hard to notice when imagining a situation where John is driving around an unfamiliar airport rental car lot, looking for the exit. As Forbes points out, in this case the driver has no particular exit in mind.

- (i) a. Guercino is looking for every dog on Aldrovandi's estate (, but no particular dogs).
b. John is looking for the exit (but there is no specific exit that is being sought).

However, as Forbes also makes it clear, these extra determiners (other than *a(n)*) do not always work for this particular diagnostic. Intensional predicate *draw*, for example, admits a non-specific reading but only when its object is introduced with *a(n)*, not with those other determiners suggested by him. Consider the contrast between (iia) and (iib). Forbes explains that the fact that (iia) has a non-specific reading is corroborated by the wall label for Guercino's *The Aldrovandi Dog* (ca. 1625) in the Norton Simon Museum. The label says: 'this must be the portrait of a specific dog'. This suggests that there exists an alternative interpretation of the portrait, namely that it is not of a particular dog and that the painter just made one up (Forbes 2020).

- (ii) a. Guercino drew a dog (, but no particular one).
b. Guercino drew every/most/the dog(s) (, #but no particular one).

Given the somewhat more delicate situation with determiners other than *a(n)*, I will make use of the indefinite singular *a(n)* for the non-specificity test throughout this paper, so as to avoid controversy.

- (204) a. John sold a camera (, #but no particular one).
b. John met a member of staff (, #but no particular one).

Having introduced these standard diagnostics for intensionality, it should be noted that passing all three of them is not usually taken to be a necessary condition for a predicate to be considered intensional. Intensional predicates may differ in the marks of intensionality they exhibit. For instance, the verb *need* displays the specific/non-specific ambiguity and allows for a non-existential object, but it does not exhibit substitution opacity with co-referential terms (Forbes 2006, 2020). Forbes states that “a sports team might need a better coach, though no specific better coach, and might need a better coach even if there are none to be had. So two out of three marks of intensionality are present. However, *need* contrasts with *want* as regards substitution: our dehydrated subject who does not want H₂O because he believes it to be a kind of rat poison, nevertheless *needs* H₂O. It seems that co-denoting terms may be interchanged in the complement of *need*” (Forbes 2020: p.5). See Forbes 2006, 2020 for more examples of intensional predicates that react differently to the three diagnostics.

Before I turn to an investigation of intensionality in the domain of psychological verbs, I would like to say a few additional words about the standard semantic analysis of intensional properties I hinted at previously. While I will not delve into extensive details, a brief overview will be useful in the following sections for understanding and accounting for intensional behaviors of psych verbs.

Possible worlds semantics is the most commonly used approach for analyzing intensional properties (e.g. Hintikka 1969; Heim & Kratzer 1998; von Stechow & Heim 2011; Pearson 2015; a.o.). Consider the substitution opacity discussed previously. The relevant examples are repeated here as (205). Recall that the truth value of (205a) does not carry over to (205b) even though Batman and Bruce Wayne have the same extension in the world compatible with our beliefs and knowledge. What matters in determining the truth value of these sentences is how things are in *John’s* worlds, more precisely, the worlds compatible with John’s beliefs (i.e. doxastic possible worlds). Insofar as in all³⁵ John’s doxastic possible worlds, Batman is not Bruce Wayne, (205a) and (205b) can have different truth values.

³⁵ *Believe* is standardly analyzed as a universal quantifier over doxastic possible worlds (Hintikka 1969; von Stechow & Heim 2011; Pearson 2015; a.o.). For example, a sentence like (i) is true if and only if in all John’s doxastic possible worlds, it is the case that Mary is married.

(i) John believes that Mary is married.

- (205) a. John believes that Batman drives a Dodge Charger.
b. John believes that Bruce Wayne drives a Dodge Charger.

Similarly, possible worlds semantics can capture the fact that examples like those in (200), repeated here as (206) can be judged true even though things such as werewolves or mermaids have no extensions in the actual world we live in. All that it takes for these sentences to be true is that in all doxastic possible worlds of John, such things have an extension.

- (206) a. John thinks that a werewolf stole his dog's food.
b. John believes that he invited a mermaid to his party.

Finally, let us see how the specific/non-specific ambiguity can be accounted for using possible worlds semantics. Consider (202a), repeated here as (207). Note that *want* is taken to express a universal quantification over the attitude holder's desire worlds (a.k.a. bouletic worlds) (Hintikka 1969; Pearson 2015; a.o.). The specific reading of the indefinite in (207) can be understood as having a single, constant camera across all bouletic worlds of John. The non-specific reading of the indefinite, on the other hand, can be explained by assuming that different cameras may be selected in different bouletic worlds (see Del Prete (2014) for more details).

- (207) John wants a camera.

In the next sections I will use the three core properties of intensional predicates to investigate the intensionality of Class I psych verbs (section 4.3), and Class II verbs (section 4.4). While intensionality of the former class has been much discussed in the literature (Larson et al. 1997; Larson 2002; Forbes 2006, 2020; Moltmann 2008; Cheung & Larson 2015; den Dikken et al. 2018; a.o.), no full-fledged investigation has been conducted into the role of intensionality in the semantics of Class II verbs.

4.3. Intensionality of Class I verbs

It is well established in the literature that Class I psych verbs are intensional in their internal argument (i.e. the Subject Matter) (Larson et al. 1997; Larson 2002; Forbes 2006, 2020; Moltmann 2008; Cheung & Larson 2015; den Dikken et al. 2018; a.o.). I will briefly go through applications of the intensional diagnostics to Class I verbs. I will reach the same conclusion as

has been reached in the literature but will delve deeper into the non-specificity test than has been done so far.

(i) Substitution failure with a co-referential term

Firstly, when substituting an object of a Class I verb with a co-referential term, the truth value of the original sentence does not carry over to the sentence with the substituted object. Consider (208). Let us assume the same scenario as before where John does not know that the identity of Batman is Bruce Wayne, that is, in all John's doxastic worlds there is no world such that Batman is Bruce Wayne. In this case, (208a) can be true while (208b) is false.

- (208) a. John loves/admires/disdains/fears Batman.
b. John loves/admires/disdains/fears Bruce Wayne.

Therefore, these Class I verbs pass the first diagnostic for intensionality.

(ii) Truth with a non-existential term

Secondly, Class I verbs can take an object that has no extension in the actual world without making the sentence false. Some examples in (209) illustrate this point. As long as in John's doxastic worlds, things like unicorns, mermaids, and unobtainium exist, the sentences can be judged true.

- (209) a. John loves a unicorn.
b. John disdained a mermaid.
c. John fears unobtainium.

(iii) Availability of a non-specific reading with an indefinite expression

There is debate on whether Class I verbs allow a non-specific reading with indefinite objects. Forbes (2006, 2020) argues that predicates like *admire*, *respect*, *disdain*, *worship*, and *fear* only admit a specific reading with their indefinite objects. Consider the examples in (210) from Forbes 2006 and 2020. (210a), for instance, is interpreted as saying that there is a particular extraterrestrial such that John admires it.

- (210) a. Lois admires an extraterrestrial.
b. John worships a Greek goddess.

As Forbes points out, these sentences also have the additional generic reading. Example (210a), for example, can be interpreted as describing a characteristic property of Lois, namely that she admires extraterrestrials in general. As discussed in Chapter 3, generic sentences do not express a specific situation or eventuality but describe a generalized one. The indefinite expressions in (210) on the generic reading are interpreted non-specifically. However, the generic reading apart, the indefinite objects are interpreted specifically.

Nevertheless, Cheung & Larson (2015) claim that an indefinite object of predicates like *fear* admits a non-specific reading. Consider (211). They hold that “John could have feared a poor result on his exams without there having been a specific bad result” (Cheung & Larson 2015: p136).

- (211) John feared a poor result (on his entrance exam). (Cheung & Larson 2015: 136)

Such examples indicate that it seems inappropriate to maintain that non-specific readings are uniformly absent or present in all Class I verbs. Rather, the availability of non-specific readings must depend on some more fine-grained semantic property of the verb.

In fact, I believe that a good case can be made that non-specific readings are available only with predicates that are able to express an attitude towards a future eventuality. Consider the case of *fear*. The semantics of this verb is compatible with the Experiencer considering the possibility that something undesirable might happen in the future. The sentence in (211), for example, describes a situation where John felt fear regarding receiving a result that was not known yet. Indeed, at the time that John felt fear the exam might not even have been marked yet. In other words, John believed that there was a possibility that he might receive a poor result in the future and of course this was not the desired future for him. In terms of Anand & Hacquard’s (2013) analysis of epistemics and attitudes, it amounts to saying that John getting a poor result is one of his doxastic possibilities (alternatives), and he disfavors it to other doxastic possibilities (where it is not true that John gets a poor result). A poor result belongs to a future doxastic possible world of John, so that it inherently lacks a specific referent at the time of the utterance. The availability of the non-specific reading with this verb then falls out naturally.

As a further example, consider the predicate *hope* which can be analyzed on a par with *fear* in that it is compatible with the experiencer having some sort of anticipation towards a future event: the attitude holder has ranked possibilities for future doxastic alternative worlds and ‘hoping for X’ is a wish for some higher ranked alternative that contains X to come true. This explains the non-specific reading of ‘a good result’ in (212) below.

(212) John hoped for a good result (on his entrance exam).

Analogous to *fear* and *hope*, the semantics of predicates like *dread* and *worry (about)* is compatible with doxastic possibilities associated with future worlds. Consider (213). The indefinite objects *a stranger* and *an accident* can be interpreted non-specifically.

- (213) a. John dreaded a stranger in the deserted alley (, but no particular one).
b. John worried about an accident (, but no particular one).

In contrast, consider predicates like *regret*, *be disappointed*, and *be surprised*. These refer to mental states involving eventualities in past or present worlds or to facts. As such their semantics does not make reference to future possible worlds: one can only regret/be disappointed/be surprised about things that have happened already or that are known already. Thus, one can be surprised by/regret the fact that rain is predicted for tomorrow, but one cannot be surprised at or regret tomorrow’s rain. This class of predicate does not allow for a non-specific reading of an indefinite object. Consider (214).

- (214) a. John regretted a house purchase (#but no particular one).
b. John was disappointed with a foolish decision (#but no particular one).
c. John was surprised at a news report (#but no particular one).

The correlation between a predicate of which the semantics involves reference to future worlds and the availability of a non-specific reading with its object seems to hold across intensional predicates in general, not just with psychological predicates. For instance, predicates like *want* and *look for*, as previously discussed, admit a non-specific reading with their indefinite objects. The relevant examples are repeated here as (215). These predicates are associated with an object that is lacking in the attitude holder’s world at the reference time but may exist in the

future possible worlds (and these worlds are what the attitude holder prefers). Some other predicates of this type may include *wish (for)*, *seek*, and *expect* as shown in (216).

- (215) a. John wants a camera (, but no particular one).
b. John is looking for a member of staff (, but no particular one).
- (216) a. John wished for a friend (, but no particular friend in mind).
b. John has been seeking a new job (, but no particular job in mind).
c. John expected a raise (, but no particular raise in mind).

As briefly mentioned in the previous section, intensional properties are most widely treated with possible worlds semantics. The substitution failure with co-referential terms and the lack of existential commitment can be captured by looking at the Experiencer's unique possible worlds. Considering the discussion regarding the non-specificity above, I will assume that the non-specific reading with indefinites, unlike the two other marks of intensionality, requires the relevant possible worlds to be concerned with *future* worlds.

On reflection, this asymmetry in the availability of nonspecific indefinites seems rather unremarkable. We can use possible world semantics to specify an attitude holder's candidates for the actual world (or for some past world), but that does not mean that the attitude holder literally believes that there are alternative past or present worlds. The attitude holder may be uncertain about what has happened but nevertheless what has happened has happened (rather than something else that could have happened). In other words, the past and the present are understood as fully determined and it is presupposed that if the attitude holder were omniscient they would know exactly which world is the actual world at any point preceding and including the reference time. This implies that there can be no universal quantification over these alternative worlds and hence that nonspecific interpretations of indefinites will not be licensed. By contrast, the future is open and from where the attitude holder is at the reference time none of the alternative future worlds we specify has ontological primacy. It is this property of the future that underlies the quantification over alternatives that yields nonspecific readings.

A few further remarks are in order concerning the claim I have made about the availability of the non-specific reading of indefinites. First, the suggested claim does not amount to saying that those predicates whose indefinite singular objects can admit a non-specific reading are only able to take an object of the future. Take *fear* and *hope* for instance. One can experience fear and hope with regard to something that might have happened in the past (past possibility)

but they are not sure whether it has really happened, something that might be happening now (present possibility) but again they are not sure whether it is really happening, or something that might happen in the future (future possibility), in which case it is given that they are not sure whether it will happen. This point can be illustrated with the clausal complements in (217).

- (217) a. I fear that it has rained but I hope that it hasn't. (Past)
 b. I fear that it is raining but I hope that it isn't. (Present)
 c. I fear that it will rain but I hope it won't. (Future)

Second, consider the point that experiencing these emotions (e.g. fear, hope) involves the Experiencer (or the attitude holder) being unsure about the truth of the past, present, and future possibility. This characteristic, which is often referred to as the uncertainty feature, is much discussed in the philosophical literature (Gordon 1987) and in linguistic works (Anand & Hacquard 2013; Uegaki 2021; Williamson 2021), where it has been argued that in addition to the doxastic and preference components (as previously mentioned) the uncertainty condition is encoded in the lexical semantics of these predicates, which are referred to as emotive doxastics by Anand & Hacquard (2013). According to these authors, *fear/hope* that p for example, conveys that the attitude holder asserts that p is a doxastic possibility, and they are uncertain about the truth of p (i.e. in addition to p, $\neg p$ is also possible). P is disfavored by the attitude holder (i.e. $\neg p$ is preferred) for the case of *fear*, whereas p is preferred by them for the case of *hope*. Consider (218), an illustration of this semantics from Anand & Hacquard (2013).³⁶

(218) John hopes that it is raining.

Uncertainty There is a non-trivial subset of John's belief worlds where it is raining and a non-trivial subset where it is not raining.

Doxastic There is a world compatible with John's beliefs where it is raining.

Preference Rain is more desirable to John than no rain.

(Anand & Hacquard 2013: 33)

One might wonder whether it is the uncertainty condition rather than the association with the future world that is responsible for making available the non-specific reading of indefinite

³⁶ The uncertainty condition is taken to be present in the semantics of *worry (about)* and *expect* (Anand & Hacquard 2013; Williamson 2021).

objects. This is because if the Experiencer is uncertain about (the truth of) x then it follows that x cannot have a specific referent. I argue that this conjecture, however, cannot be maintained.

Consider the predicate *doubt* (which is dubbed as a dubitative predicate) whose lexical semantics, analogous to *fear* and *hope*, is argued to involve the uncertainty condition (Anand & Hacquard 2013; Uegaki 2021). Consider (219).

(219) John doubts that it is raining.

Uncertainty There is a non-trivial subset of John's belief worlds where it is raining and a non-trivial subset where it is not raining.

Doxastic There is a world compatible with John's beliefs where it is raining.

Preference No rain is more likely to John than rain.

(Anand & Hacquard 2013: 36)

Now consider (220). The indefinite objects in these examples are only interpreted specifically (excluding generic readings): there was a specific rumor or claim such that John doubted it.

- (220) a. John doubted a rumor.
b. John doubted a claim.

Crucially, when an object of *doubt* is associated with the future, it can be interpreted non-specifically. Consider the example (221) from Google.³⁷

(221) We left the Philippines after a Muslim terrorist group kidnapped three Americans and 17 Filipinos from a ritzy resort at a nearby island. Even though we doubted a similar terrorist attack at our popular budget backpacker island (not as much potential for ransom \$), we felt no need to take unnecessary risks.

Consider (222) for another piece of evidence suggesting that the uncertainty property of a predicate cannot be the source of non-specificity. The context ensures that John's uncertainty is associated with the past but not the future. If the uncertainty feature alone is responsible for the possibility of an indefinite to have a non-specific reading, then the example in (222) should be felicitous in the given context.

³⁷ <https://blog.andreajohnsonphotography.com/2001/08/> [accessed 13/06/24]

(222) [Context: John read an article about shingles saying that only those who had chickenpox could develop shingles. He began to worry that he might have had a chickenpox infection before, realizing that this would put him at risk for shingles.]
#John worried about a chickenpox infection.

The example is only felicitous in a context in which a chickenpox infection is a future possibility. Consider (223).

(223) [Context: John read an article about chickenpox saying that it tends to display more severe symptoms and complications in adults than in children. John, a 41-year-old man, had never had a chickenpox before, and he began to worry that he might get it in the future.]
✓John worried about a chickenpox infection.

In addition, consider the cases of *want*, *look for*, and *seek* whose indefinite objects admit a non-specific reading. It is unclear that these predicates have the uncertainty condition in their lexical semantics. Anand & Hacquard (2013) analyze *want* as not requiring this condition, which they claim is supported by the contrast in the examples in (224) presented by Scheffler (2008), but originally from Truckenbrodt (2006). They explain that since *hope* p conveys uncertainty about p, it is infelicitous with the statement that entails that the attitude holder is certain about p, which is shown in (224a). By contrast, (224b) can felicitously follow the same statement, which would not be possible if the semantics of *want* (which is dubbed as desiderative) requires the uncertainty condition just like the semantics of *hope* and *fear*.

- (224) It is raining.
- a. #I hope it is raining. / That is what I hope.
 - b. ✓I want it to be raining. / That is what I want. (Anand & Hacquard 2013: 26)

The contrast in the examples in (225) illustrates the same point. The uncertainty requirement of *hope* can explain the infelicity of (225a) as a continuation to the statement asserting the certainty of $\neg p$ (it isn't raining). On the contrary, *want* does not carry such an uncertainty condition, which accounts for the compatibility of (225b) with the same statement.

- (225) It isn't raining.
- a. #I hope it is raining. / That is not what I hope.
 - b. ✓I want it to be raining. / That is not what I want. (Anand & Hacquard 2013: 26)

We must conclude therefore that predicates like *want* that lack the uncertainty requirement in their lexical semantics *can* admit a non-specific reading with their indefinite object.

As a final point, it is worth mentioning that while I suggest that the requirement of future possible worlds semantics for non-specific indefinites holds for intensional predicates, the claim does not amount to saying that it is the only environment in which non-specific indefinites can arise. There are other methods that license non-specific indefinites, the effects of which extend beyond intensional predicates. We have already seen one such case: a generic construction. Recall the examples in (210), repeated here in (226). The indefinite objects in these examples are interpreted specifically, which is expected assuming that the semantics of the predicates like *admire* and *worship* does not make reference to future possible worlds. However, these indefinite objects can be construed as non-specific if these sentences are read generically.

- (226) a. Lois admires an extraterrestrial.
b. John worships a Greek goddess.

Consider more examples in (227) which illustrate the same point. The indefinite objects under the generic usages can be interpreted as non-specific.

- (227) a. People grieve over a loss.
b. When under stress, people easily get disappointed even at a small mistake.
c. People often get frustrated with a laggy computer.
d. People often regret a decision they make under pressure.

Such an effect of genericity is found in non-psych, non-intensional predicates as well. Consider (228). The indefinite expressions can be interpreted non-specifically.

- (228) a. John prepares a meal every evening.
b. John smokes a cigarette after dinner.

Another environment that licenses a non-specific reading of an indefinite expression is when modal expressions are involved. When there is an overt modal expression in the sentence, its indefinite subject can be interpreted as non-specific. Consider (229).

- (229) a. My father may get infuriated with a laggy computer.
b. My boss might snap at a slow employee.
c. John might have appreciated a friend.
d. I would have liked a cold drink.

As it was the case with genericity, modal expressions can yield non-specific readings of indefinite expressions even with non-psych, non-intensional predicates, which otherwise do not permit non-specific readings. Consider (230).

- (230) a. John might buy a plant.
b. You may bring a pencil.
c. You can make a friend.
d. You should see a doctor.
e. You should have called a plumber.

All this is rather unsurprising given that the semantics of modals involves possible world semantics. But we do of course expect the availability of true nonspecific indefinites to require reference to future worlds. The fact that the nonspecific reading seems inaccessible for the indefinites in the examples in (231) suggests that this expectation is borne out.

- (231) a. My father may have got infuriated with a laggy computer.
b. My boss may have snapped at a slow employee.

To summarize this section, it can be concluded that Class I verbs are intensional in their objects (i.e. SM) as they show hallmarks of intensionality. Although not all Class I verbs allow for a nonspecific reading in their object, it is certainly possible with some of them and specifically with those whose semantics is associated with future possible worlds.

4.4. Intensionality of Class II verbs

Although the intensionality of Class I verbs has been discussed quite extensively, little attention has been paid to the role of intensionality in Class II verbs. It receives a brief mention in Cheung & Larson 2015 (p135, fn. 12) and these authors hold that these verbs are not intensional in their subject, although they admit that this conclusion is tentative. The argument they offer for this conclusion is that subjects of Class II verbs do not pass two of the three familiar diagnostics: they do not display substitution failure with co-referential terms, and non-specific readings are not found either. While they concede that Class II verbs allow non-referring terms in the subject position, they diminish this evidence by casting doubt on the decisiveness of truth with non-existential terms as a test for intensionality, referring to Bennett (1974) and Dowty (1979). The focus of Cheung & Larson's discussion of intensionality is to demonstrate that Class I verbs are intensional in their object but that Class II verbs are not, and they note that aspectuality is irrelevant to the intensionality of the object of Class II verbs (Cheung & Larson 2015: p133–134, fn. 9).

Remarkably, the authors do not pay any attention to the distinction between eventive and stative readings in their discussion of the potential intensionality of the subject of Class II verbs. As I will show in this section, this was an unfortunate oversight, since a full-fledged investigation will reveal that the aspectual distinction in Class II verbs is not orthogonal to the question of intensionality, and in particular that the subject of a Class II verb is intensional if and only if the verb is stative. I will show that the subject of stative Class II verbs displays two of the three intensional properties, while the subject of eventive Class II verbs exhibits none.

(i) Substitution failure with a co-referential term

Take the Class II verb *frighten*, which is ambiguous between an eventive (see (232)) and a stative reading (see (233)). When the verb is eventive, its subject is transparent to substitution of co-referring terms. If (232a) is true, then (232b) must be true as well, regardless of John's knowledge state about the identity of Batman. By contrast, we do get substitution failure with the subject of the stative counterpart. (233a) can be true without (233b) being necessarily true, provided that John does not know that Batman is Bruce Wayne.

- (232) a. Batman accidentally frightened John. [Eventive]
b. Bruce Wayne accidentally frightened John.

- (233) a. Batman frightened John all night. [Stative]
 b. Bruce Wayne frightened John all night.

If substitution failure is susceptible to the eventive/stative contrast, then it is predicted that the subject of Class II verbs that only admit a stative reading (e.g. *fascinate*, *intrigue*, *concern*) should be opaque to substitution. This prediction is borne out. In a situation where John does not know that Alaska is the 49th state of the U.S. it may well be regarded that (234a) is true while (234b) is false.

- (234) a. Alaska {fascinates/intrigues/concerns} John.
 b. The 49th state of the U.S. {fascinates/intrigues/concerns} John.

(ii) Truth with a non-existential term

Let us turn to the second test, namely truth with a non-existential term. As was the case for substitutivity, the acceptability of non-existential subjects with Class II verbs is sensitive to their aspectuality. Only stative Class II verbs allow for non-existential subjects. Subjects of the eventive counterparts must have an extension in the real world just like arguments of non-intensional predicates. The contrast between (235a) and (235b) illustrates this point. (235a), where the adverb *accidentally* forces an eventive reading of *frighten*, is judged false since there are no such things as vampires or Nessie in the actual world, and thus they cannot do anything (whether accidentally or not) that makes Mary feel frightened. By contrast, (235b) can be regarded true on the reading in which vampires or Nessie have properties such that as long as Mary thinks about one or the other she experiences fear.

- (235) a. #Vampires/Nessie accidentally frightened Mary. [Eventive]
 b. Vampires/Nessie frightened Mary (all night). [Stative]

(iii) Availability of a non-specific reading with an indefinite expression

Finally, let us consider the third mark of intensionality, i.e., non-specific readings with indefinite expressions. The indefinite subjects of eventive Class II verbs do not admit non-

specific readings. The only sensible reading of (236a), for instance, is that there is a specific guy who frightened John.

- (236) a. A guy accidentally frightened John (, #but no particular one).
b. A member of Parliament accidentally perturbed John (, #but no particular one).
c. A victory last night surprised John (, #but no particular one).
d. A news story delighted John (, #but no particular one).

Crucially, examples with stative Class II verbs show the same restriction: non-specific readings are absent. This is shown in (237).

- (237) a. A spider frightened John all night (, #but no particular one).
b. An upcoming match excited John all day (, #but no particular one).
c. A Tory perturbed John all day (, #but no particular one).
d. A good cup of coffee pleased John for a few hours this morning (, #but no particular one).

In line with this observation, subjects of Class II verbs that are exclusively stative do not license non-specific readings either. See (238).

- (238) A hairy spider {fascinated/intrigued/concerned} John (, #but no particular one).

Note that as was the case with (the indefinite objects of) Class I verbs, under a generic usage of Class II verbs, the indefinite subject can be interpreted as non-specific. This is illustrated by the examples in (239), which can be read generically and yield the nonspecific reading of their subjects on that reading.

- (239) a. A(n) hairy spider frightens John (, but no particular one).
b. A Greek wedding excites John (, but no particular one).
c. A Tory perturbs John (, but no particular one).
d. A good cup of coffee pleases John (, but no particular one).

Apart from the generic usage, the indefinite subject of stative Class II verbs only admits a specific reading. In a word, we do not find a contrast between the subject of eventive and that

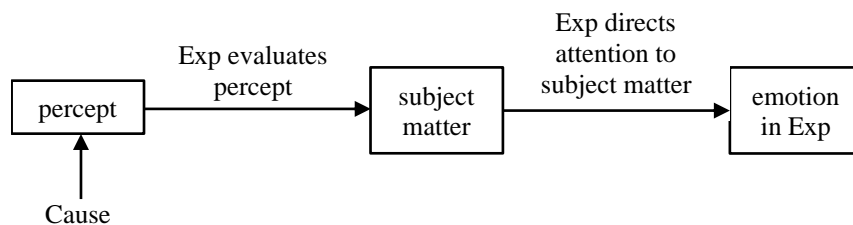
of stative Class II verbs with respect to (un)availability of non-specific readings of indefinites. This finding, per se, does not disconfirm the correlation between intensionality and aspectuality of Class II verbs. The eventive uses of Class II verbs do not exhibit any properties of intensionality in their subject, whereas stative uses exhibit two out of three. The split presents a pretty clear picture.

In the following section, I will provide an account of the intensional split in Class II verbs. In addition, I will argue that this account should be preferred to an account based on the APH. The absence of a non-specific reading with an indefinite subject of stative Class II verbs will be used as supporting evidence for this argument.

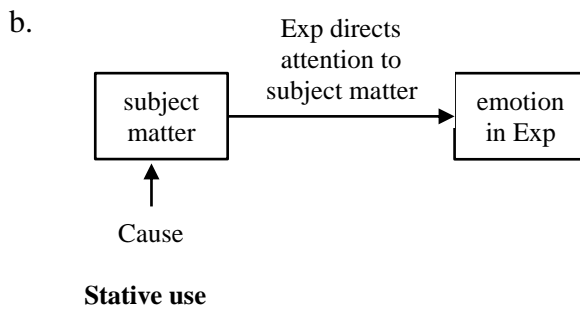
4.5. The analysis: the referent properties of the subject of Class II verbs

I argue that the distinction in intensionality of the subject of Class II verbs naturally falls out from the proposal advanced in Chapter 3 regarding the referent of the Cause argument of Class II verbs. I have claimed that while Class II verbs invariably project a Cause as their subject, the referent of the Cause varies depending on the aspectual type of the verb. I repeat the figures outlining this proposal as (240) below. The eventive Class II verbs capture a causal chain of which the highest cause is a percept (i.e. an external stimulus) perceived by the Experiencer. Such a percept can then further be evaluated by the Experiencer, which gives rise to an Experiencer-internal counterpart to the percept, which we may refer to as a subject matter. The Experiencer's relation with the subject matter then gives rise to an emotion. The subject of such an eventive use of Class II verbs refers to the percept-Cause. Stative Class II verbs on the other hand capture a more compact causal chain that describes a maintenance relation whereby the emotional state is maintained by the Experiencer's attention dwelling on the subject matter. The subject matter is the referent of the Cause subject of this stative use of Class II verbs.

(240) a.



Eventive use



Recall the discussion in the previous chapter that the percept itself is not affected by the perceiver’s knowledge state. By contrast, the subject matter is, as this is the output of evaluation of the percept on the part of the Experiencer, where such an ‘evaluation’ means that the percept gets interpreted against the background of the Experiencer’s knowledge state. This is exactly the reason why I treat the percept, the Cause of eventive Class II verbs, as a mind-external cause, whereas I treat the subject matter, the Cause of stative Class II verbs, as a mind-internal cause. With this distinction in place, the contrast between the two types of Class II verbs with respect to the presence or absence of intensional properties in their subject position can be accounted for. If the referent of the Cause argument is construed as the subject matter, that is as the mind-internal cause, then its intensionality – and the corresponding opacity effects – is not surprising, as its characteristics are subject to peculiarities of the Experiencer’s knowledge state. If, on the other hand, the referent of the Cause argument refers to the percept, that is to the mind-external cause, it is transparent, just like the Cause of non-psychological causatives (that is, it is extensional).

Having shown how the intensional split in Class II verbs can be captured under the Uniform Projection Hypothesis, I will now argue that this account is in fact superior to the Alternative Projection Hypothesis in predicting the exact properties of the Cause arguments of Class II verbs.

The account based on the APH maintains that eventive Class II verbs project a Cause and an Experiencer, while stative Class II verbs project two internal arguments, an Experiencer and a SM. On this analysis, eventive Class II verbs are causatives (that is predicates with a Cause external argument), but stative ones are unaccusative and derivations involving these stative counterparts involve movement of the internal SM argument to the subject position. Given the observations in section 4.3 showing that the SM of Class I verbs is intensional, this alternative proposal would lead one to expect that Class II verbs pattern with Class I verbs as regards intensionality only on their stative reading. As we have already seen in section 4.4, this prediction is correct, providing strong supporting evidence for this analysis.

Nevertheless, the analysis based on the alternative projection hypothesis faces a severe empirical hurdle. Recall that the indefinite object of a Class I verb allows a non-specific reading provided the predicate can make reference to future eventualities. The raising analysis of stative Class II verbs then predicts that this property should carry over to these predicates, but as we have seen this is not true: the indefinite subject of a stative Class II verb never exhibits the specific/non-specific ambiguity – it only allows a specific reading.

Let me present the relevant data. The internal argument of Class I verbs (i.e. the SM) can be interpreted as non-specific, depending on the type of the verb. Some relevant examples are repeated in (241).

- (241) a. John feared a leak in the roof during the storm (, but no particular one).
b. John dreaded a stranger in the deserted alley (, but no particular one).
c. John worried about an accident (, but no particular one).

Furthermore, it can be observed that the non-specific reading of an indefinite SM is retained if it undergoes A-movement. Compare the pairs in (242) and (243). The (b) examples are passive counterparts of the (a) examples and therefore involve A-movement of the internal argument (SM) to the subject position. The raised SM in the subject position can be interpreted non-specifically.

- (242) a. Many feared an accident (, but no particular one).
b. An accident was feared by many (, but no particular one).

- (243) a. The village people dreaded a further earthquake (, but no particular one).
b. A further earthquake was dreaded by the village people (, but no particular one).

Given that an indefinite SM internal argument of (some) Class I verbs can be interpreted non-specifically, the analysis of stative Class II verbs based on the Alternative Projection Hypothesis leads one to predict that at least some stative Class II verbs should allow their indefinite subject to admit a non-specific reading, analogous to what we see in (242) and (243). However, this prediction is not empirically supported as the finding in the previous section indicates: stative Class II verbs do not ever admit a non-specific reading with their indefinite subjects. Consider the example pairs in (244) and (245). While the SM objects of the Class I

verbs in the (a) examples can be interpreted as non-specific, the alleged raised SM arguments in the subject position of the (b) examples cannot.

- (244) a. The residents feared a leak in the roof during the storm (, but no particular one).
b. A leak in the roof frightened the residents during the storm (, #but no particular one).
- (245) a. My parents worried about a plane crash the entire time I was on the plane (, but no particular one).
b. A plane crash worried my parents the entire time I was on the plane (, #but no particular one).

The UPH defended in this thesis does not make the prediction that the subject of a stative Class II verb must pattern with the object of a Class I verb. On the analysis I have advanced, the subject of every Class II verb is a Cause. Therefore, the subject of stative Class II verbs is analyzed as an external argument, not as a raised SM.

Of course, this does leave us with the unanswered question of why the Cause of stative Class II verbs does not exhibit the third property of intensionality (the non-specific interpretation of indefinites), while it does display the other two intensional properties. In the remainder of this section I will explore two potential approaches to address this issue and argue in favor of one over the other.

As previously discussed, opacity effects of intensional predicates can be accounted for by adopting possible worlds semantics: the substitution failure with co-referential terms and the lack of existential commitment can be captured by looking at the Experiencer's unique possible worlds. However, I have argued that the third mark of intensionality, the non-specificity with an indefinite expression, requires the relevant possible worlds to be concerned with *future* worlds. In other words, they are participants in eventualities in future possible worlds of the Experiencer. Consider once more the (a) examples of (244) and (245) above. The indefinite internal arguments (SM) are interpreted as describing incidents that might happen in the future.

It would seem, then, that the possible worlds semantics for the subject of a stative Class II verb cannot be associated with future worlds, as opposed to the possible world semantics for the object of a Class I verb. Rather, possible worlds semantics for the subject of a stative Class II verb can only be concerned with worlds at the reference time of the sentence. Why would this be so? I explore two potential answers.

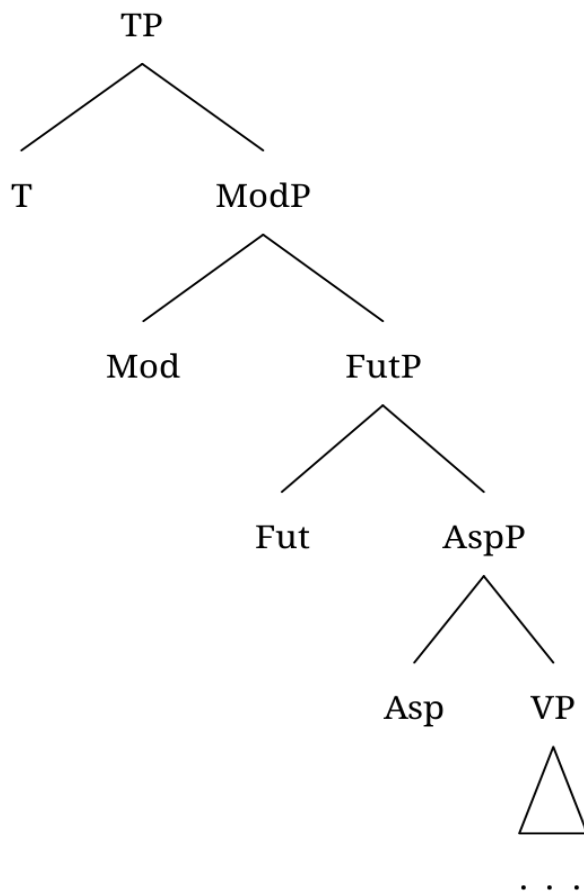
Given the structural difference between Class I verbs and stative Class II verbs advocated throughout the thesis, it is tempting to base an analysis on this contrast. In particular, one can entertain the notion of scope here, and speculate that the semantics of the external argument of a Class II verb cannot be concerned with future worlds because the syntactic position of the external argument is outside the scope of the operator that is responsible for licensing futurity in the attitude predicates under consideration. For concreteness' sake, I explore this proposal for a decompositional theory of word meaning and assume that the temporal operator is something like the future operator FUT proposed by Williamson (2021). This author introduces this operator to capture the future-oriented readings of the (infinitival) complement of predicates like *hope*, *want*, *expect*, *aim*, and *promise*, among many others.

Unlike external arguments, internal arguments are in the scope of this operator, so it is not unexpected that internal arguments can be associated with future worlds. Consider the contrast between the (a) and the (b) examples in (246) and (247) below. A future eventuality (e.g. the outcome of tomorrow's football match or his health) is compatible with the internal argument position (the (a) examples) but not with the external argument position (the (b) examples).

- (246) a. I worry about the result of tomorrow's football match.
 b. #The results of tomorrow's football match worry me.
- (247) a. John worries about his health (even though he knows he is perfectly healthy).
 b. His health worried John (#even though he knows he is perfectly healthy).

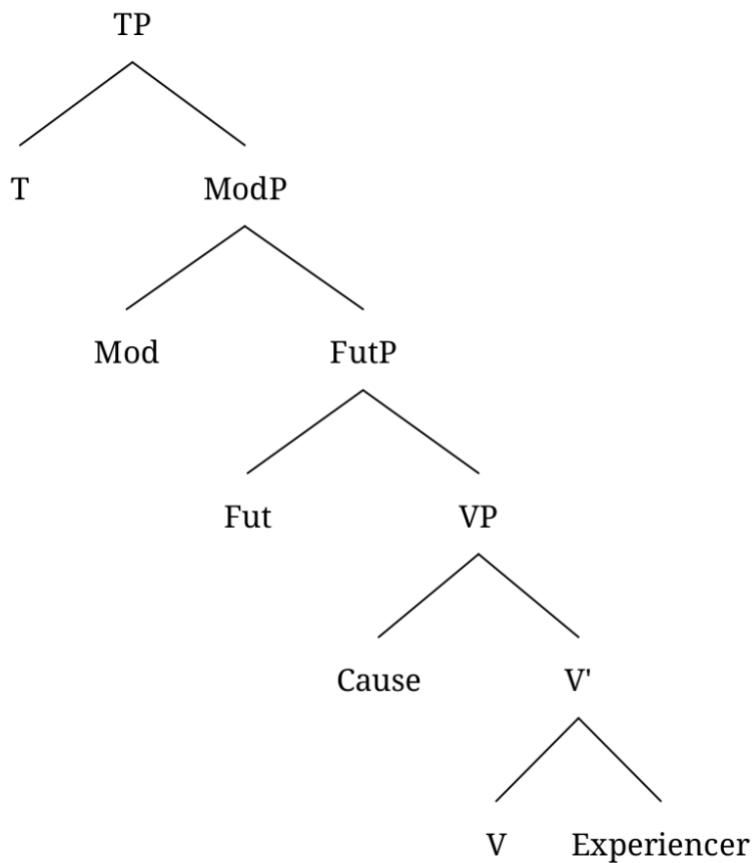
Despite the apparent attraction of a proposal based on scope, its practical implementation remains obscure. In order for it to be viable, it must be established that the subject of a stative Class II verb (i.e. the Cause) is outside the scope of the FUT operator while it is within the scope of an operator responsible for possible worlds semantics (modal operator). However, it is not obvious how this would be achieved. Consider (248) from Williamson (2017: 14) illustrating the relative locations of the operators under discussion in a tree. Williamson argues that the FUT operator is syntactically independent of modal operators but is locally licensed in their scope.

(248)



Now consider (249) in which the VP is specified further for stative Class II verbs. The Cause argument is not only within the scope of the modal operator (responsible for possible worlds semantics) but also in the scope of FUT. Therefore, it is expected that the Cause can be interpreted with respect to future possible worlds, which would then allow for a non-specific reading of it, contrary to fact.

(249)



In a bid to salvage the scope account, one might speculate that the Cause argument can for some reason not appear/remain in the scope of the FUT operator. As I hope to make clear below, this effectively reduces the scope proposal to a simpler alternative that I explore below.

The alternative proposal addresses the issue head-on and attributes the impossibility of the Cause's association with future possible worlds to a semantic property inherent to the role of Cause. That is to say, a referent of a Cause role cannot correspond to a participant of a future eventuality. This is hardly an unreasonable claim: it relies on an essential property of causation, widely discussed in the literature on causation, namely that an entity or eventuality in the future cannot cause something in the present.

Recall the definition of causation that I adopted in the previous chapter, which is repeated here as (250):

(250) *Causation* – (N&vdK 2020: 56)

- a. Causation is a relation between one or more causing eventualities and a caused eventuality.
- b. Causation obeys a temporal restriction: no causing eventuality may follow the caused eventuality.
- c. Causation is counterfactual: if the caused eventuality did not occur, then one of the causing eventualities did not occur either.

Clause b. of this definition captures the essential property on which I want to rely here: a causing event cannot follow a caused event. This restriction on causation forbids the existence of a causative verb whose Cause argument is associated with an event located after the reference time of the causation event. The lack of non-specific readings in indefinite subjects of stative Class II verbs (see (244b) and (245b), repeated below as (251b) and (252b)) then follows without further ado. Sentences with an SM argument do not denote events of causation (they do not contain a Cause argument) and as a result SM is not subject to the same semantic restriction: it is compatible with the future possible worlds semantics, so that non-specific readings are allowed for the indefinite objects of (251a) and (252a).

- (251) a. The residents feared a leak in the roof during the storm (, but no particular one).
b. A leak in the roof frightened the residents during the storm (, #but no particular one).

- (252) a. My parents worried about a plane crash the entire time I was on the plane (, but no particular one).
b. A plane crash worried my parents the entire time I was on the plane (, #but no particular one).

Note that the contrasts observed in examples (246) and (247), also repeated here, as (253) and (254) are also captured by this approach. A future eventuality (e.g. the outcome of tomorrow's football match or one's future health) is a poor choice of subject for the stative Class II verb in the (b) examples since the subject is a Cause. On the contrary, these expressions make a fine object for the Class I verb in the (a) examples.

- (253) a. I worry about the result of tomorrow's football match.
 b. #The outcome of tomorrow's football match worried me.

- (254) a. John worries about his health (even though he knows he is perfectly healthy).
 b. His health worried John (#even though he knows he is perfectly healthy).

It is worth noting that it is possible to have a non-specific indefinite expression inside the subject of a stative Class II verb. Consider the contrast in the examples in (255)-(257). The (a) examples again illustrate that an indefinite subject of a stative Class II verb does not allow a non-specific reading. However, as shown by the (b) examples, when the indefinite is embedded under the phrase *the possibility of ~*, it *can* be interpreted as non-specific. This is not surprising as *the possibility of ~* does have a denotation at reference time and is therefore a fine Cause.

- (255) a. #An accident frightened John (on a non-specific reading).
 b. The possibility of an accident tomorrow frightened John.

- (256) a. #A leak in the roof frightened the residents during the storm.
 b. The possibility of a leak in the roof frightened the residents during the storm.

- (257) a. #A plane crash worried my parents the entire time I was on the plane.
 b. The possibility of a plane crash worried my parents the entire time I was on the plane.

The same observation holds for causatives in general, witness the contrasts in (258) and (259).

- (258) a. #A chemical spill caused the evacuation. (on the non-specific reading)
 b. The possibility of a chemical spill caused the evacuation.

- (259) a. #A terror attack stopped the match. (on the non-specific reading)
 b. The possibility of a terror attack stopped the match.

In conclusion, then, the nonavailability of a nonspecific reading for the indefinite subject of a Class II verb has a natural explanation under the UPH, according to which this subject is a Cause, while it must remain a mystery under the APH, which classifies it as an SM.

4.6. Conclusion

In this chapter I have argued that the intensionality of Class II verbs in their subject correlates with their aspectual properties. Using the standard diagnostics for intensionality, I showed that the subject of a Class II verb is intensional when the verb is stative, but not when the verb is eventive. I maintained that this novel finding is not at odds with the unified causative analysis of Class II verbs implied by the Uniform Projection Hypothesis (UPH), according to which all Class II verbs – whether eventive or stative – have a Cause as their external argument.

In particular, the variation in the subjects of Class II verbs with regard to intensionality can be captured by the proposal laid out in the previous chapter that the subject of eventive Class II verbs refers to a percept (a mind-external cause), while the subject of stative Class II verbs refers to an Experiencer internal counterpart of the percept (a mind-internal cause). Intensional properties exhibited by the subject of stative Class II verbs are expected since the subject corresponds to the mind-internal cause, which is the output of the Experiencer's cognitive activity. The lack of intensionality in the subject of eventive Class II verbs also follows as it refers to a mind-external cause.

The final part of the chapter focused on an asymmetry between the object of Class I verbs and the subject of stative Class II verbs. While both exhibit the hallmarks of intensionality, an indefinite subject of a stative Class II verb cannot receive a nonspecific interpretation while the indefinite object of a Class I verb can. I argued that this asymmetry has a natural explanation under the UPH (it follows from the nature of causative semantics) but remains a mystery under the widely accepted APH (according to which stative Class II verbs do not project a Cause).

Chapter 5. The Subject Matter Problem

5.1. What this chapter is about

This chapter addresses the last question inherited from adopting the Uniform Projection Hypothesis (UPH):

Question 3: If Subject Matter (SM) is absent in the argument structure of all Class II verbs, then what is the origin of the SM argument that can accompany the reduced (Class I) counterpart of Class II verbs?

Consider the pair in (260) below. As discussed in Chapter 1, I assume that the verb in (260b) is derived from its causative counterpart in (260a). On this assumption, the presence of the SM in (260b) is surprising since according to the UPH this role is absent in the lexical entry of the causative counterpart.

- (260) a. The doctor_{Cause} worried John_{Exp}. Class II (causative)
 b. John_{Exp} worried about his health_{SM}. Class I (anticausative/reduced)

I will offer two kinds of solutions to this conundrum, which differ in the characterization of the SM accompanying reduced variants. Consider the examples in (261). In sentences with reduced psych verbs, a SM is introduced by a preposition. The PPs in these examples can potentially be analyzed as arguments or adjuncts.

- (261) a. John worries about his future.
 b. Mary puzzled over what her student said.
 c. Susan grieved for the loss of her dog.
 d. Chris was annoyed at how he had been treated.

It seems that the general practice in the literature is to treat SM as an argument (Pesetsky 1995; Reinhart 2002; Fábregas & Marín 2015; Broekhuis et al. 2015; a.o.). Of course, Pesetsky's characterization of stative Class II verbs as having a SM subject requires this assumption. Only a few, like Bouchard (1995), take the alternative view according to which a SM is an adjunct. Neither side provides good evidence for their assumption. To the best of my knowledge there

is no full-fledged research on the argument/adjunct status of these PPs. In this chapter, I will explore both options.

If the PP introducing SM is an argument of the reduced psych verb, then the SM projected in the reduced variants must somehow be derivable from the argument structure of the causative counterparts. I will argue that this is feasible if one adopts a Reinhartian feature-based theta-system (Reinhart 2002). In particular, I will propose that the SM argument in the reduced counterparts can be derived from the Cause in the causative input via a feature deletion analysis of Expletivization.

On the alternative option, namely that the PP introducing SM is an adjunct of the reduced psych verb, the question we face has a deceptively simple answer. Of course, the SM can accompany a reduced (i.e. expletivized) Class II verb, because it can be added as an adjunct. However, if one goes down this track, an old problem presents itself in a new guise: why can the adjunct not accompany a causative psych verb? That is, we are presented with a new version of the T/SM restriction discussed in Chapter 1. A relevant example is repeated here as (262):

(262) *The doctor's letter worried John about his health.

I will argue that the ungrammaticality of examples like (262) on the adjunct analysis of the PP introducing SM can be derived from a mapping principle that regulates the realization of causal expressions in sentences with simplex causatives generally. Specifically, I will argue that while simplex causatives can denote a complex causal chain, all the causal adjuncts realized in simplex causatives are interpreted in a very restricted way: in particular, they never associate with an event that is not initial in the causal chain. I will dub this mapping principle the Onset Condition and argue that it suffices to capture the T/SM restriction. I will claim that the SM is a causal role that is always downstream in the causal chain from the Cause argument. Therefore, realizing a SM in the presence of a Cause results in a violation of the Onset Condition. Of course, this is a highly desirable outcome, since it obviates the need for a separate T/SM restriction as it can be derived from an independently required principle regulating the interpretation of causal adjuncts.

The organization of this chapter is as follows. Sections 5.2 and 5.3 will be devoted, respectively, to the argument analysis and the adjunct analysis of the PP introducing SM in the reduced psych verbs. The chapter closes with section 5.4, in which I evaluate which of the two analyses should be preferred once various diagnostics for the argument/adjunct distinction are taken into account, but it proves difficult to draw any firm conclusions. Section 5.5 concludes.

5.2. The argument analysis of SM accompanying reduced psych verbs

In this section, I explore whether it is possible to analyze the PP introducing SM as an argument of the reduced psych verb. Consider the pairs in (263)-(266). As discussed in Chapters 1 and 2, the derivational relation between the (a) and (b) examples above parallels the familiar causative-anticausative alternation in the non-psych domain shown in the pairs in (267)-(268). One way to understand this alternation is to posit that the (b) variants are derived from their causative counterparts through a lexical operation, so-called Expletivization (along the lines of Reinhart 2002), that eliminates the Cause argument of the causative variants. In this sense, the (a) examples are causative variants and the (b) examples are their reduced counterparts.

- (263) a. Chat GPT worries Mary.
 b. Mary worries about Chat GPT.

- (264) a. Haar schuld ergerde Marie. (Dutch)
her debt annoyed Mary
 ‘Her debt annoyed Mary.’
 b. Marie ergerde zich aan haar schuld.
Mary annoyed self on her debt
 ‘Mary was annoyed with/about her debt.’

- (265) a. ha+olam hirgiz et Max. (Hebrew)
the world angered (ACC)Max
 ‘The world angered Max.’
 b. Maxhitragez. al ha-mar’amar.
Max angered+REFL about/at the article
 ‘Max got angry about the article.’ (Reinhart 2002: 254)

- (266) a. Jean à fâché Marie. (French)
John has angered Mary
 ‘John has angered Mary.’
 b. Jean s’est fâché à Marie de quelque chose.
Jean REFL anger to Mary of something
 ‘Jean got angry at Mary about something.’

- (267) a. The wind opened the door.
 b. The door opened.

- (268) a. Jan heeft de suiker opgelost. (Dutch)
John has the sugar dissolved
 ‘John has dissolved the sugar.’
 b. De suiker is opgelost.
the sugar BE dissolved
 ‘the sugar is dissolved’

Let me walk through the derivation of the reduced variants in detail. Consider (269). (269a) represents a lexical entry of a causative predicate. When the lexical operation Expletivization is applied to this causative entry, it removes the Cause argument from the entry, leaving only the Theme argument. This yields the reduced entry (269b). The verb *open* in (267a) above, for instance, is a causative verb with the entry of (269a). The two arguments Cause and Theme in this entry are realized as the subject (*the wind*) and the object (*the door*), respectively. The verb *open* in (267b) is the reduced counterpart of the causative *open*, whose entry corresponds to (269b), of which the sole argument is the Theme (*the door*), which surfaces in the subject position after A-movement.

- (269) a. $V_{\text{causative}}$ [Cause, Theme]
 b. $V_{\text{anticausative}}$ [Theme].

Assuming the same operation for the derivation of reduced psych verbs, we would expect that the reduced entry would only have the Experiencer argument. This is because according to the UPH, the entry of a psych causative (Class II) contains two arguments, the Cause and the Experiencer. If Expletivization is applied to this entry, which removes the Cause argument, only the Experiencer argument is left in the reduced entry. However, as can be seen in the (b) examples of (263)-(266), alongside the Experiencer, reduced psych verbs can project another role, namely a SM. The puzzling question is if the SM is not present in the entry of Class II psych verbs, then how does this role appear in their reduced counterparts?

I offer an answer to this question adopting the approach to argument structure of Reinhart’s (2002) feature-based Theta System. I will propose that the SM argument in the reduced counterpart can be derived from the Cause in the causative input by reinterpreting the operation

of Expletivization as involving feature deletion rather than role deletion. This proposal will be worked out in detail below but let me first present it in a nutshell.

In Reinhart's feature-based Theta System, theta roles are encoded using the two binary features $\pm c$ (c for cause) and $\pm m$ (m for mental state). As already discussed, she assumes that the lexical entry of a Class II psych verb contains three roles, a Cause, an Experiencer, and a SM (i.e. the APH). In this system, the Experiencer is specified as $[-c+m]$, and the SM as $[-m]$. The Cause argument of a Class II psych verb is coded as $[+c]$, just like the Cause of any normal causative predicate.

My proposal takes its cue from the general agreement in the literature that when a psych verb has an agentive subject whose mental state is relevant for the eventuality described by the verb, it is no longer a psych verb: it selects a Patient rather than an Experiencer as its internal argument (B&R 1988; Bouchard 1995; Pesetsky 1995; Arad 1998; Reinhart 2002; Landau 2010; a.o.). This insight can be captured in Reinhart's system by specifying the Cause role of a psych verb as $[+c-m]$. This feature specification makes explicit that a psychological Cause either lacks a mental state altogether or has a mental state that is irrelevant to the causal event it denotes. With this modification in place, I propose to revise the Expletivization operation in such a way that it deletes a $+c$ feature rather than the cluster $[+c]$. When this revised Expletivization rule applies to a Class II psych verb, it turns its $[+c-m]$ Cause argument into an $[-m]$ argument, that is, into a SM. In this way, the presence of the SM argument in the reduced variant (i.e. derived Class I counterpart) can be captured, without assuming that it is present in the source Class II entry (i.e. the causative variant).

Executing these ideas requires amendments to Reinhart's Theta System. In what follows, I will first give a brief introduction to her original work, and subsequently introduce the revised Theta System and explore its consequences.

5.2.1. Reinhart's feature-based Theta-system

Assuming Chomsky and Fodor's modular view of cognitive systems, namely that each input system operates independently, there must be a central system responsible for their communication. In Reinhart's (2002) view the Theta System is the central system that enables the interface between the systems of concepts, the computational system (syntax), and the inference systems (semantics).

The Theta System is comprised of lexical entries (coded concepts), operations on entries, and merging instructions (linking/mapping rules). In a nutshell, the Theta System works in the

following manner: the inputs of the Theta System are the abstract concepts contained in the systems of concepts. The outputs of the Theta system are the inputs to the computational system (lexical items with theta features). The computational system does not erase these theta features but passes them on to the Inference systems, where they are legible.

Reinhart assumes that in order for the outputs of the Theta System to be legible to the other systems (the computational system and the systems of Inference), they need to be formally coded. Reinhart proposes to do this by using two binary features, $\pm c$ (cause change) and $\pm m$ (mental state), to define feature clusters that correspond to what are usually called theta roles. Out of the two binary features, we get the eight possible combinations in (270), if it is assumed that roles may be underspecified but that the empty cluster is not available. Following Reinhart, I indicate for each feature cluster to what traditional theta-role it can correspond. This is the interpretation it is most likely to be associated with. However, there is no one-to-one correspondence between feature clusters and the traditional theta roles. Some feature clusters, especially the underspecified ones can have a range of thematic interpretations.

(270)	[+c+m]	Agent
	[+c-m]	Instrument
	[-c+m]	Experiencer
	[-c-m]	Theme/Patient
	[+c]	Cause
	[-c]	Goal/Benefactor
	[+m]	Sentient ³⁸
	[-m]	Subject Matter/Source

While the clusters in the upper half are fully specified, the ones in the bottom half are not. For example, the cluster [+c] is underspecified for the m feature, which means that it is compatible with an argument interpreted (or specified) as [+c-m] or as [+c+m]. In other words, it is compatible with an Instrument and Agent interpretation, alongside an interpretation as a simple Cause. This distinction (fully specified vs underspecified) is critical to the Theta system, as will soon become evident.

³⁸ Reinhart (2002) does not specify a corresponding theta-role for this feature cluster. She instead remarks that candidates for this cluster are arguments of unergatives (e.g. *laugh*, *cry*, *sleep*) as well as subjects of verbs like *love*, *know*, and *believe*. She assumes that these arguments are always merged externally. The label ‘sentient’ in (270) is taken from Marelj (2004).

For extensive discussion of how each of the eight feature clusters is attested in natural language, I refer the reader to Reinhart (2002), and (Marelj 2004). For present purposes, it will be sufficient to consider causative and agentive verbs.

Non-psychological causatives have a Cause and a Theme/Patient role. Since a Cause is underspecified for the m-feature, the external argument is compatible with a wide range of interpretations, as illustrated in (271).

- (271) V([+c], [-c-m]) – break, open, ...
- a. The wind / Max / the key opened the door.
 - b. The storm / Max / the stone broke the window. (Reinhart 2002: 233)

On Reinhart's analysis, psychological causatives also have a [+c] argument, but their second θ -role is an Experiencer ([-c+m]). Additionally, these predicates are assumed to contain the optional Subject Matter role ([-m]). Consider (272):

- (272) V([+c], [-c+m], ([-m])) – worry, amuse, scare, surprise, ...
- a. Max / the noise / the gun worried Lucie.
 - b. Fred / Fred's gedrag / de discussie verbaasde Lucie.
Fred / Fred's behaviour / the discussion surprised Lucie (Reinhart 2002: 234)

Agentive verbs have an external role that contains the +m feature (alongside +c), while their internal role is again a Theme/Patient ([-c-m]). These verbs are therefore selective in their external argument, unlike pure causatives:

- (273) V([+c+m], [-c-m]) – eat, shave, dress, ...
- a. The baby / *the spoon / *hunger ate the soup.
 - b. Lucie / *the snow / *the desire to feel warm dressed Max. (Reinhart 2002: 235)

The lexicon contains the basic verb entries like those listed in (271)-(273). The projection of the arguments of a verb is regulated by the linking rules, which are given in (275). (274) provides the notational conventions that (275) relies on. (276) states merging instructions in the computational system.

(274) *Notational conventions*

- a. $/\alpha$ = Feature (and value) α .
- b. [+] = A cluster all of whose features have the value +.
- c. [-] = A cluster all of whose features have the value -.

(275) *Lexicon Marking*

Given an n-place verb entry, $n > 1$,

- a. Mark a [-] cluster with 2.
- b. Mark a [+] cluster with 1.
- c. If the entry includes both a [+] cluster and a fully specified cluster $[/\alpha, -c]$, mark the verb with the ACC feature.

(276) *CS merging instructions*

- a. When nothing rules this out, merge externally.
- b. An argument realizing a cluster marked 2 merges internally.
- c. An argument with a cluster marked 1 merges externally.

Lexical entries may undergo two kinds of operation: saturation and reduction.³⁹ Saturation operations existentially close one of the arguments of a lexical entry it applies to. Passives and middles are derived with this operation (Reinhart 2002; Marelj 2004). Reductions on the other hand eliminate a role altogether. Expletivization is a case in point:⁴⁰

(277) *Expletivization: Reduction of an external [+c] role (semantically null function)*

$$V_{acc}(\theta_{1[+c]}, \theta_2) \rightarrow V(\theta_2)$$

Both operations are assumed to apply *after* lexicon marking:

³⁹ Irrelevant to our current discussion, there is in fact another lexical operation Reinhart assumes, called expansion (a.k.a. Causativization). This adds an agent role ([+c+m]) to a lexical entry. For instance, (ib) is derived through adding an agent role to the entry of (ia).

(i) a. They ran/gallop/walked.
b. She ran/gallop/walked them. (Reinhart 2002: 242)

⁴⁰ If an internal role is reduced, it gives rise to a reflexive alternant, whereas removing an external role yields an unaccusative entry. The operation of the first kind is called Reflexivization, while that of the latter is referred to as Expletivization.

(278) *Relevant generalizations of lexical operations*

- a. Saturation and reduction apply to the marked entry (i.e. after marking).
- b. Reduction eliminates the accusative feature of the verb (fully or partially).

To get a feel for how the system works, consider again the causative entries in (271). The output of Lexicon Marking for the verb *open* is given in (279a). If no lexical operations apply, then the Cause argument projects externally, while the internal Theme checks the [acc] feature on the verb. This yields examples like (280a). If, on the other hand, the operation of Expletivization in (277) applies, we obtain the monadic entry in (279b), in which the Theme must project internally (since it has previously been marked with the index 2). This yields unaccusative examples like (280b).

(279) $V([+c], [-c-m])$ – open

- a. Lexicon marking: $V_{[acc]}([+c]_1, [-c-m]_2)$
- b. Expletivization: $V([-c-m]_2)$

- (280) a. The wind opened the door.
b. The door opened.

Psychological causatives work somewhat differently than normal causatives due to the presence of a mixed cluster $[-c+m]$ (i.e. Experiencer) and the additional SM role in the lexical entry. Consider the output of Lexicon marking in (281). By the marking rules in (275), the mixed cluster is not assigned any index, which in principle gives rise to flexibility in the merging of the role. Without any operation, the merging output of (281a) yields examples like (282a). This is because the [+c] argument is already marked with index 1, which must merge externally. The Experiencer role should then be realized internally. This unmarked cluster, however, can also merge externally if Expletivization applies as in (281b). In this case, since the [-m] cluster receives index 2, the Experiencer is realized externally as nothing prevents this (following (276a)). Its output is given in (282b), which is the Class I subject experiencer variant. Note that this derivation is not strictly speaking unaccusative like the one in (280b). Both entries in (279) and (281) have gone through the Expletivization reduction as in (279b) and (281b), respectively, but the syntactic realization of the former is unaccusative (the

Theme/Patient role is merged internally, and subsequently raises to the subject position to satisfy EPP). The latter, by contrast, is unergative (the Experiencer role is merged externally).

(281) $V([+c], [-c+m], ([-m]))$ – worry

- a. Lexicon marking: $V_{[acc]}([+c]_1, [-c+m], ([-m]_2))$
- b. Expletivization: $V([-c+m], ([-m]_2))$

(282) a. The doctor worried Lucy.

b. Lucy worried about her health.

c. [Her health]₁ worried Lucy *t*₁.

There is yet another derivation that can be yielded from the basic entry in (281). Instead of realizing the cluster [+c], the [-m] cluster can be realized. Reinhart argues that although the lexical entry for causative psych verbs selects both a [+c] and a [-m] clusters, Cluster Distinctness, defined in (283), rules out the simultaneous realization of the two clusters in the same predicate.⁴¹

(283) *Cluster Distinctness*

Two feature-clusters α , β , are distinct iff a. they share at least one feature, and b. there is at least one feature or value which they do not share. (Reinhart 2002: 264)

The realization of the [-m] instead of the [-c] yields what we have called the third derivation. By lexicon marking in (275), the [-m] cluster will be marked 2, while [+c-m] will receive no index. Crucially, this derivation is not concerned with any lexical operation, therefore the accusative feature assigned by (275c) will be intact and needs to be checked. In Reinhart's system, only fully specified clusters can check the [acc] feature. Therefore, the Experiencer role ([-c+m]) must merge internally to check this feature, while the [-m] argument, marked 2, is raised to satisfy the EPP. The output of this derivation is given in (282c).

⁴¹ The theoretical upshot of this restriction is not far from what is often called Thematic Diversity (Pesetsky 1995), the widely assumed generalization that the same theta role cannot occur twice in the same predicate. This generalization is restated in Kremers (1999) as Cluster Distinctness as in (i).

(i) *Cluster Distinctness*
Two indistinct θ -clusters cannot be both realized on the same predicate. (Kremers 1999)

5.2.2. Revising the Theta System

As outlined previously, the key components of my proposal are (i) the Cause argument of a causative psych verb (Class II) is coded as [+c-m], and (ii) Expletivization erases a +c feature from a cluster rather than an entire cluster. Consider (284). The basic entry of a Class II psych verb is in (284a). Applying the revised Expletivization rule in (285) to this entry derives the reduced counterpart in (284b).

- (284) a. Class II psych verb: $V_{[acc]} ([+c-m], [-c+m])$
b. Reduced counterpart of Class II (Derived Class I verbs): $V([-m], [-c+m])$

(285) *Expletivization: Deletion of +c feature*

$$V_{acc} (\theta_{[+c (\alpha)]}, \theta) \rightarrow V(\theta_{[(\alpha)]}, \theta)$$

There are two technical issues to resolve. First, Lexicon marking in (275) neither assigns an index to any of the clusters in (284a) nor marks the verb with the accusative feature. This is because mixed clusters do not receive an index, and the ACC feature is only assigned to an entry that includes a [+] cluster alongside a fully specified cluster $[\alpha, -c]$. Given the CS merging instructions in (276), either cluster could merge externally, which is not the right derivation for (284a). The lack of the ACC feature on the verb is also an unacceptable outcome.

Second, the Expletivization rule in (285) yields the [-m] cluster for (284b), which should merge internally. However, since Lexicon Marking is applied *before* lexical operations, the clusters in the reduced entry in (284b) would still lack any index. This again could in principle render either cluster to merge externally, following the CS merging instructions. I will address these issues by proposing further adjustments to the original system.

I hold that the first issue can be tackled with adjustments to the requirement of the [acc] feature assignment in Lexicon Marking, and the checking of this feature. The verb in (284a) will get the accusative feature if the requirement for a [+] cluster in (275c) in Lexicon Marking is weakened to a $[/+\alpha]$ cluster. The revised version of Lexicon Marking is given in (286). It will be shown shortly that the proposed adjustment neither harms any other outcomes nor gives rise to unwanted outcomes.

(286) *Lexicon Marking (to be further revised)*

Given an n-place verb entry, $n > 1$,

- a. Mark a [-] cluster with 2.
- b. Mark a [+] cluster with 1.
- c. If the entry includes both a $[/+\alpha]$ cluster and a fully specified cluster $[/\alpha, -c]$, mark the verb with the ACC feature.

However, the adjustment to Lexicon Marking on its own is insufficient to obtain the right result for a Class II psych verb. Since the entry in (284a) contains two mixed clusters, either should in principle be able to merge either externally or internally (after all, neither is assigned a merging index by Lexicon Marking). The most obvious approach to handling this issue is to assign the cluster $[+c-m]$ the index 1 so that it merges externally. This would force the cluster $[-c+m]$ to merge internally, as desired. However, this move runs into a problem. In some predicates, the cluster $[+c-m]$ can be realized internally as an Instrument PP. Consider (287). A verb like *peel*, a so-called manner verb, selects three clusters: an agent ($[+c-m]$), a theme ($[-c-m]$), and an instrument ($[+c-m]$). Reinhart stipulates that when a verb selects two $[/+c]$ roles, only one is obligatorily realized. Hence, it is possible to realize the agent without the instrument (see (287a)), but it is also possible to realize the instrument without the agent (see (287b)). In the latter case, the $[+c-m]$ cluster is external, but it projects internally in the presence of an agent. This is because the agent will have been marked with the index 1, so that the mixed cluster cannot project externally. This mixed behavior of the $[+c-m]$ cluster implies that it should not be marked 1.

(287) $V([+c+m], [-c-m], [+c-m])$ – *peel, cut, screw, sow, drill, ...*

- a. Max peeled the apple (with the knife).
- b. The knife peeled the apple.

An alternative route to handling this issue can be found by relying on accusative checking requirements instead. If we ensure that the cluster $[-c+m]$ can check the accusative feature but that the cluster $[+c-m]$ cannot, then we get the right result. It has the effect that the cluster $[-c+m]$ must merge internally to check the acc feature, while $[+c-m]$ merges externally, as nothing rules out this (given the CS merging instructions in (276)). Let me explain this in more detail.

Reinhart holds that the unary [-] clusters ([-c] and [-m]) cannot check the accusative case feature: they require inherent dative or prepositional case. She stipulates that only fully specified clusters [/ α / β] are able to check the accusative case feature. The following four are such clusters: [+c+m], [+c-m], [-c+m], and [-c-m]. The Theme cluster [-c-m] merges in object position in a normal causative verb, so it should be assumed to check the accusative case. Crucially, the Experiencer cluster [-c+m] must also be assumed to do so since it can be merged internally (in derivations involving a causative Class II psych verb). The Agent cluster [+c+m], however, would not check this case at any rate since it is marked with the index 1 and therefore always merges externally. What about the cluster [+c-m]? For being a mixed value cluster, it can either merge externally or internally. However, as discussed above, when it merges internally (due to the presence of an Agent cluster, which must be realized externally), it is invariably realized as oblique, an Instrument PP (e.g. *with the knife* in (287b)). As such, there is no empirical evidence to suggest that it ever checks accusative case. This leaves us free to assume that only a fully specified cluster with [/ α , -c] can check the accusative case. It then follows that in (284a), the Experiencer cluster [-c+m] merges internally to check the acc feature while the cluster [+c-m] merges externally.

Let us turn to the second issue, arising from ordering Expletivization after Lexicon Marking. The revised Expletivization rule in (285) yields the [-m] cluster for (284b), which should merge internally. However, if Lexicon Marking applies *before* lexical operations, as assumed in Reinhart's original system (see (278)), the clusters in the reduced entry in (284b) end up without an index. As a result, either cluster should be able to merge externally, which is not the right result for this derivation. To ensure that the cluster [-m] merges internally, it must be assumed that assignment of an index happens *after* Expletivization. This way the derived cluster [-m] would be marked 2, as desired. At the same time, assignment of the acc feature must apply *before* Expletivization to ensure that the additional effect of Expletivization, namely, reducing the accusative case of the verb is exerted. These requirements can be dealt by splitting the Lexicon Marking in (286) into two separate processes as in (288) and (289), and ordering them as in (290).

(288) [*acc*] assignment (marking)

Given an n-place verb entry, $n > 1$,

If the entry includes both a [/ α] cluster and a fully specified cluster [/ α , -c], mark the verb with the ACC feature.

(289) *Index assignment (marking)*

Given an n-place verb entry, $n > 1$,

- a. Mark a [-] cluster with 2.
- b. Mark a [+] cluster with 1.

(290) *The order of operations*

[acc] assignment >> lexical operations (saturation and reduction) >> Index assignment

There is one final issue to address. Following Reinhart's original system, the assignments of [acc] feature and index are subject to the arity constraint, namely that the arity of the verb's entry should be greater than 1. Given that in the revised system, index assignment can take place after lexical operations (if there are any), the upshot is that index assignment can happen if and only if the entry after the lexical operation has an arity greater than 1. Suppose that we apply the revised Expletivization in (285) to a normal causative verb that has the entry V ([+c], [-c-m]). Since this operation targets the +c feature of a cluster rather than wipes out the entire cluster, the [+c] cluster will turn into the empty cluster []. The reduced entry then would look like V ([], [-c-m]). Given that the [-c-m] must merge internally in the reduced entry of normal causatives (i.e. unaccusatives), it must be ensured that this cluster gets marked with index 2. There are two ways to achieve this. The first option is to stipulate that the empty cluster is visible to the marking system. If so, the reduced entry V ([], [-c-m]) counts as the entry having an arity greater than 1. Consequently, this entry can enter into index assignment, and the [-c-m] will be marked with index 2 and must therefore merge internally. An alternative route, which does not rely on the stipulation that an empty cluster is visible to the marking system, is to get rid of the arity constraint for the marking procedures, so that even if the reduced entry V ([], [-c-m]) counts as a unary entry, the [-c-m] cluster will get assigned an index 2. In fact, such a route is explored by (Potashnik 2012) for an independent reason. He points out that the arity constraint in Reinhart's original system is only there to deal with a specific set of verbs called theme unergatives (a.k.a. emission verbs) such as *glow*. Reinhart analyzes these verbs as having a unary entry containing the [-c-m] cluster, which must project externally. Reinhart achieves this by imposing the arity constraint for the marking rules, namely the $n > 1$ condition, so that a [-c-m] cluster in a unary entry does not get an index. This in turn allows it to merge externally. Potashnik provides some evidence that the sole argument of these verbs is in fact

interpreted as a causal argument and analyses the entry of emission verbs as containing the [+c-m] cluster. This mixed cluster will project externally even if left unmarked. Therefore, this approach would allow the arity constraint ($n > 1$) on the marking procedure to be removed. Given that there is no empirical evidence, to the best of my knowledge, for the stipulation that an empty cluster counts for determining the arity of an entry⁴², and that the arity constraint for the marking procedures can be abandoned if we assume Potashnik's analysis of theme unergatives, I will take this second route to solve the issue. The final version of the revised Theta System is then as follows (the CS merging instructions, repeated here as (295), stay the same as in Reinhart's original system):

(291) *[acc] assignment (marking)*

If the entry includes both a [+α] cluster and a fully specified cluster [/ α , -c], mark the verb with the ACC feature.

(292) *Index assignment (marking)*

- a. Mark a [-] cluster with 2.
- b. Mark a [+] cluster with 1.

(293) *Expletivization: Deletion of +c feature*

$$V_{acc}(\theta_{[+c(\alpha)]}, \theta) \rightarrow V(\theta_{[/(\alpha)]}, \theta)$$

(294) *The order of operations*

[acc] assignment >> lexical operations (saturation and reduction) >> Index assignment

⁴² Marelj (2004) also contends that an empty cluster does not count for the Marking Procedures: an entry that has an empty cluster as in ([], [-c-m]) (, which is the entry of a middle according to her) is treated as a one-place entry (with a Theme role). As a result, even the [-c-m] in the entry is not assigned an index, which then would merge externally. This is analogous to the derivation of Theme-unergatives proposed by Reinhart (2002). However, she acknowledges the possibility of the opposite route, which I assume here, whereby the empty cluster counts for the Marking Procedures, which consequently treats the middle entry like above as an $n > 1$ entry. This leads to assignment of index 2 to the cluster [-c-m], which must merge internally. This derivation then is along the same lines as the derivation of unaccusatives. She holds that such a route is feasible if future research were to uncover empirical evidence showing exclusively and conclusively that middles in lexicon languages are syntactically unaccusative and not unergative entries. See Marelj (2004), p. 203-204.

(295) *CS merging instructions*

- a. When nothing rules this out, merge externally.
- b. An argument realizing a cluster marked 2 merges internally.
- c. An argument with a cluster marked 1 merges externally.

Let us now examine how the revised system applies to normal causatives, psychological causatives, and their reduced counterparts.

For a normal causative verb, consider (296). [acc] assignment will be applied before index assignment following the order in (294). This yields a sentence like (296c).

(296) Causative verb: $V([+c], [-c-m])$ – open

- a. [acc] assignment: $V_{[acc]}([+c], [-c-m])$
- b. Index assignment: $V_{[acc]}([+c]_1, [-c-m]_2)$
- c. Merge: The wind opened the door.

For its reduced counterpart, consider (297). Expletivization in (293) will be applied to the input entry following [acc] assignment in (297a). As mentioned, since this operation targets the +c feature of a cluster instead of wiping out the entire cluster, the [+c] cluster will turn into the empty cluster []. Therefore, following this operation the entry looks like the one in (297b). An empty cluster is not projected as a role and does not count for the arity of an entry. However, since the revised system no longer imposes the arity restriction on the marking procedures, the entry in (297b) enters into index assignment, yielding (297c), in which the cluster [-c-m] is assigned index 2 and must hence merge internally. A sample output of the derivation is given in (297d).

(297) Reduced (anticausative) verb

- a. [acc] assignment: $V_{[acc]}([+c], [-c-m])$
- b. Expletivization: $V([], [-c-m])$
- c. Index assignment: $V([], [-c-m]_2)$
- d. Merge: The door opened.

Let us now turn to the derivation of causative psych verbs and their reduced counterparts. Consider first (298), for a causative psych verb. Such entries are assigned the [acc] feature, as shown in step (298a). The marking procedure leaves all clusters unmarked, since they are all

mixed clusters (see (298b)). The cluster $[-c+m]$, however, must merge internally to check the $[\text{acc}]$ feature. The $[+c-m]$ then merges externally since nothing prevents this. This yields an example like (298c).

- (298) Causative psych verb (Class II): $V([+c-m], [-c+m])$ – *worry*
- a. $[\text{acc}]$ assignment: $V_{[\text{acc}]}([+c-m], [-c+m])$
 - b. Index assignment: $V_{[\text{acc}]}([+c-m], [-c+m])$
 - c. Merge: The doctor/her health worried Lucy.

The derivation of their reduced counterparts is shown in (299). After $[\text{acc}]$ assignment, Expletivization creates the cluster $[-m]$ by deleting the $+c$ feature from the cluster $[+c-m]$ in the input (see (299b)). The entry after this operation enters Index Marking, where the cluster $[-m]$ is marked with index 2. This cluster therefore merges internally. The cluster $[-c+m]$ merges externally as nothing prevents this. (299d) illustrates a sample output of this derivation.

- (299) Reduced Class II psych verb (derived Class I verbs)
- a. $[\text{acc}]$ assignment: $V_{[\text{acc}]}([+c-m], [-c+m])$
 - b. Expletivization: $V([-m], [-c+m])$
 - c. Index assignment: $V([-m]_2, [-c+m])$
 - d. Merge: Lucy worried about her health.

Having shown that the modified Theta System successfully derives normal and psych causatives and their reduced counterparts, let us consider whether it gives rise to any unwanted side effects.

First, recall that the new system assumes a weakened version of $[\text{acc}]$ assignment requirements, compared to Reinhart's original rule. The two versions are repeated below:

- (300) *Lexicon marking* (Reinhart 2002)

Given an n-place verb entry, $n > 1$,

If the entry includes both a $[+]$ cluster and a fully specified cluster $[/\alpha, -c]$, mark the verb with the ACC feature.

(301) *[acc] assignment*

(New version)

If the entry includes both a $[/+\alpha]$ cluster and a fully specified cluster $[/\alpha, -c]$, mark the verb with the ACC feature.

The question arises whether the new rule over-generates, that is whether it generates unattested verb entries that can be assigned the $[acc]$ feature. Under Reinhart's original rule, the $[acc]$ feature can be assigned to the six combinations listed in (302).

(302) Verb entry

- a. $([+c], [-c+m])$
- b. $([+c], [-c-m])$
- c. $([+m], [-c+m])$
- d. $([+m], [-c-m])$
- e. $([+c+m], [-c+m])$
- f. $([+c+m], [-c-m])$

The new rule, on the other hand, generates three more combinations in (g)-(i) beyond the ones in (303):

(303) Verb entry

- a. $([+c], [-c+m])$
- b. $([+c], [-c-m])$
- c. $([+m], [-c+m])$
- d. $([+m], [-c-m])$
- e. $([+c+m], [-c+m])$
- f. $([+c+m], [-c-m])$
- g. $([+c-m], [-c+m])$
- h. $([+c-m], [-c-m])$
- i. $([-c+m], [-c-m])$

I maintain that the additional entries in (303g)-(303i) are attested. First, (303g) is the entry of a causative psych verb (Class II). For (303h), I argue that what Hartman (2008) dubs *dwarf* class verbs correspond to this entry. Verbs that belong to this previously unnoticed class include

dwarf, accentuate, and obscure, among others. Consider the examples in (304) from Hartman (2008):

- (304) a. The mansion dwarfs the house next door.
 b. That necklace accentuates her eyes.
 c. The pillar obscures the stage.

The subject of a verb of this class is a non-agentive Cause, whereas the object is a Theme. Hartman labels the objects of *dwarf*-class verbs SM. However, this by no means entails that they featurally correspond to [-m]. On the contrary, the objects of such verbs do not have causal efficacy, unlike [-m] arguments, which are consistent with +c. Thus, the objects of *dwarf*-class verbs are more plausibly analyzed as a traditional Theme/Patient ([-c-m]). As for (303i), a verb like *love* could potentially be analyzed as relevant to this entry, instead of the entry in (303d), which Reinhart assumes. If x feels love for y, can we say that x is causally implicated in the existence of this state? If not, then x should be specified as [-c+m], rather than as the unspecified cluster [+m], which is compatible with /+c.

Some examples associated with each entry are given in (305):

(305)	Verb entry	Examples
a.	([+c], [-c+m])	<i>awake, alienate, bias, ...</i>
b.	([+c], [-c-m])	<i>open, break, ...</i> (normal causatives)
c.	([+m], [-c+m])	
d.	([+m], [-c-m])	<i>receive, notice, believe, know, ...</i>
e.	([+c+m], [-c+m])	<i>interrogate, ...</i>
f.	([+c+m], [-c-m])	<i>eat, read, suss out, ...</i>
g.	([+c-m], [-c+m])	<i>worry, anger, frighten, ...</i> (psych causatives)
h.	([+c-m], [-c-m])	<i>dwarf, accentuate, obscure, ...</i>
i.	([-c+m], [-c-m])	<i>love, ...</i>

Another question to consider is whether the new system correctly derives sentences involving lexical operations other than Expletivization. What about Reflexivization and Saturation?

Reflexivization is a reduction operation that applies to a transitive entry and reduces the internal argument. The rule is formulated in (306), in which the operation (R_s) is defined as an

identity (a.k.a. SELF) function. Reflexivization also has the effect of eliminating the accusative case.

(306) *Reflexivization: Reduction of an internal role - SELF-function*

$$V_{\text{acc}}(\theta_1, \theta_2) \rightarrow R_s(V)(\theta_1) \quad (\text{Reinhart 2002: 239})$$

To get a feel for how a reflexive verb is derived in the new system, let us take the verb *shave*, illustrated in (307). The input entry is transitive, so that the verb is assigned the [acc] feature (step (307a)). Reflexivization applies to this entry (step (307b)), by which the internal role (the [-c-m] cluster) is reduced. On a par with the feature deletion analysis of Expletivization, I will assume that Reflexivization works in such a way that the feature(s) of the internal argument are deleted, leaving an empty cluster []. The entry after Reflexivization then enters index assignment (step (307c)), by which the [+c+m] cluster is marked with index 1, and merges externally.

(307) $V([+c+m], [-c-m]) - \textit{shave}$

- a. [acc] assignment: $V_{[\text{acc}]}([+c+m], [-c-m])$
- b. Reflexivization: $R_s(\textit{shave})([+c+m], [])$
- c. Index assignment: $R_s(\textit{shave})([+c+m]_1, [])$
- d. Merge: Max shaved.

Saturation (a.k.a. variable binding) existentially closes one of the arguments of a verb (either the external or the internal argument). The existentially closed argument is not realized syntactically but still present semantically. Passivization is an instance of saturation which existentially closes the external argument of a verb. This operation removes the accusative case as well. For an illustration, consider (308). Following [acc] assignment for the input entry (step (308a)), Saturation applies, causing the external role to be existentially closed (step (308b)). Although existentially closed, this role is not wiped out from the entry completely and hence the entry is still considered to have an arity greater than one. Consequently, the cluster [-c-m] receives index 2 at index assignment (step (308c)), so that it merges internally. It subsequently moves to the subject position for EPP.

- (308) $V([+c+m], [-c-m]) - wash$
- a. [acc] assignment: $V_{[acc]}([+c+m], [-c-m])$
 - b. Saturation: $\exists x (wash(x, [-c-m]))$
 - c. Index assignment: $\exists x (wash(x, [-c-m])_2)$
 - d. Merge: Max was washed *t*. (raising of the internal argument for EPP)

I conclude that derivations involving Reflexivization and Saturation continue to work properly under the new system.

5.3. The adjunct analysis of SM accompanying reduced psych verbs

In this section, I explore the competing analysis of the PP introducing a SM, namely that it is an adjunct. On this characterization, the question inherited from the UPH has a simple answer: a SM can accompany a reduced psych verb as an adjunct.

However, an old problem presents itself in a new guise. Why can the adjunct not accompany a causative psych verb? Recall the unacceptability of examples like (309) below, repeated from Chapter 2.

- (309) *The doctor worried John about his health.

The ungrammaticality of such an example is essentially an instantiation of the T/SM restriction, which was discussed in Chapter 1:

- (310)
- a. *The article in the Times angered Bill at the government.
 - b. *The Chinese dinner satisfied Bill with his trip to Beijing.
 - c. *The television set worried John about the veracity of Bill's alibi.
 - d. *The problem of lexical entries bores John with his life as a linguist.
 - e. *Something Bill had said bothered Mary about her future.
 - f. *Bill driving at night always worries John about the adequacy of his insurance coverage.
 - g. *The distant rumbling frightened Mary of another tornado. (Pesetsky 1995: 60)

The restriction has mainly been analyzed from the perspective that a SM is an argument. This is because the T/SM restriction is a challenge that must be answered by theories adopting the APH, according to which a SM is a role projected in the argument structure of a Class II verb, alongside a Cause and an Experiencer. After all, if Class II verbs select both Cause and SM, then why can these arguments not co-occur? Various ideas have been advanced to address this challenge. All of them treat the T/SM restriction as some kind of incompatibility between Cause and (T/SM), either syntactic (Pesetsky 1995; McGinnis 2000, 2002) or semantic (Reinhart 2002), that prevents the simultaneous projection of these arguments.

The T/SM restriction, however, requires a different explanation if SM is analyzed as an adjunct, crucially a causal adjunct. The idea that SM can be construed as causal is not new. As mentioned in the previous section, Reinhart (2002) analyzes SM as a unary cluster [-m] which is unspecified for /c. This leaves an interpretative leeway as this cluster is compatible with interpretations that assume either +c or -c as an additional feature. Specifically, she points out that “in our perception of the world, it is possible that the SM of emotion is itself the cause of the emotion” (Reinhart 2002: p262). A stronger version of this idea is found in the proposal I put forward in Chapter 3, which is based on the contention that the causation of an emotional psychological state involves multiple causal factors. In a simplified manner, an emotional psychological state arises in the following way: there is an external stimulus presented to and perceived by the Experiencer. The Experiencer evaluates what is perceived, which gives rise to an experiencer-internal counterpart to the stimulus, which we refer to as the subject matter. It is the experiencer’s relation with the subject matter that gives rise to the emotion. There are two causal factors involved in this process: i) the external stimulus that is perceived by the Experiencer, which I also dubbed the mind-external cause, and ii) the experiencer-internal stimulus of the mind-external cause, a.k.a, the subject matter, which I also dubbed the mind-internal cause. In this sense, realizing the subject matter/mind-internal cause as the role Subject Matter (SM) in an adjunct amounts to realizing the SM as a causal adjunct.

Now, consider the examples in (311). These examples illustrate that a variety of causal adjuncts can co-occur with a Cause argument in normal (non-psychological) causatives. In (311a), for example, an instrument is realized in the form of a *with*-PP. Example (311b) contains an eventive cause introduced in *by*-PP, while in example (311c) it is a *with*-PP that introduces such a cause.

- (311) a. The doctor cured the patient with a scalpel.
b. Mary killed Bill by poisoning him.
c. John broke the window with a blow of the hammer.

Since such examples show that causal adjuncts can accompany a Cause or Agent, we have the following non-trivial question: if a SM is a causal adjunct, then why can it not accompany a causative psych verb? This section will offer an answer to this question. In a nutshell, I will show that while causal adjuncts can be realized alongside the Cause argument in simplex causatives, these adjuncts are interpreted in a very restricted way: in particular, they can only be linked to the same location in the causal chain as the Cause argument (namely at the onset). I will formalize this requirement as a mapping principle, which I dub the Onset Condition, that restricts what mental models are compatible with causative sentences. I will then argue that the Onset Condition suffices to capture the T/SM restriction. The logic of the argument is straightforward: a SM is a causal role that corresponds to an Experiencer-internal counterpart of an external cause. Therefore, Cause and SM cannot occupy the same location in the causal chain denoted by a causative predicate. It follows that realizing a SM in the presence of a Cause results in a violation of the Onset Condition. The advantage of this route is that the T/SM restriction can be derived from an independently required principle regulating the interpretation of all causal adjuncts.

I begin by motivating the Onset Condition on the basis of non-psychological causatives. Consider the scenario in (312), which involves an extended causal event that can be described as a *killing*. Alongside the Cause argument, other causal expressions can be realized as adjuncts as shown in (313). Crucially, however, the examples in (314), which mention causal factors that cannot be construed at the onset of the causal chain, are either unacceptable or contextually inappropriate.

- (312) [Context: John, a cabbage farmer, finds his crops repeatedly ravaged by water deer. Frustrated and seeking resolution, he resorts to drastic measures, secretly paying a poacher to kill them. Several weeks later, the lifeless bodies of the water deer are found in the vicinity, each having a fatal gunshot wound in the body from a hunting rifle. Since the water deer are an endangered species, the authorities launch a thorough investigation. They conclude that ...]

- (313) a. John killed the water deer by hiring a poacher.
 b. John killed the water deer with a payment to a poacher.
- (314) a. *John killed the water deer by the poacher shooting them.
 b. #John killed the water deer with a hunting rifle/with a shot to the body.

The key contrast between the examples in (313) and (314) concerns the locus of the causal factor targeted by the causative adjuncts. In the examples in (313) – consistent with the context in (312) – the event of hiring the poacher or of paying him is interpreted as the initial event in the causal chain that leads to the death of the water deer. The Cause argument, John, is a participant of this initial event. In (314a), however, the event of the poacher shooting the water deer is not the initial event of the causal chain, but an event downstream to that. Similarly, the instrument or the means introduced by *with* in (314b) is not associated with the initial event.

Note that the complete unacceptability of examples like (314a) cannot be attributed to an absolute requirement that a by-phrase needs obligatory control. *By*-phrases can appear in the absence of a controller, for example, in unaccusatives:

- (315) a. She died by someone poisoning her.⁴³
 b. The child had died by someone intentionally shaking him and banging his head against something.⁴⁴

Even for speakers who consider such examples marginal, there is a clear contrast with the examples in (314).

We can capture the data discussed so far by adopting a mapping principle that regulates the realization of causal expressions in causative sentences:

(316) *The Onset Condition*

A semantically integrated causal participant in the projection of a causal predicate must be mapped to the onset of the causal chain denoted by that predicate.

⁴³ https://www.inquirer.com/philly/news/20170128_Lansdale_woman_charged_in_OD_death.html [accessed 25/01/22]

⁴⁴ <https://mississippitoday.org/2020/02/04/shaken-baby-syndrome-mississippi-woman-jailed-for-nearly-20-years-questions-science-in-2000-conviction/> [accessed 25/01/22]

Consider causal adjuncts introduced by a *by*-PP and a *with*-PP. When they modify a predicate as in (317), they introduce an event that is integrated into the main event denoted by the predicate.

- (317) a. John died by jumping off the cliff.
b. John died with a blow to the head.

The semantic integration of the event introduced by these adjuncts into the initial event denoted by the main predicate is evidenced by the data in (318)-(319). In both contexts, the event denoted by the verb (i.e. the dying event) took place on Friday. However, the events expressed by the *by*-PP in (318) and the *with*-PP in (319) happened before that, namely, on Monday. As such, they are not the onset of the become event denoted by the verb. Hence their infelicity in these examples.

- (318) [Context: On Monday, John jumped off a cliff. He was rushed to the hospital, but on Friday, he died.]
#John died on Friday by jumping off the cliff.

- (319) [Context: On Monday, John received a blow to the head. He was rushed to the hospital, but on Friday he died.]
#John died on Friday with a blow to the head.

Now consider the behavior of another causal adjunct, a *from*-PP. Unlike a *by*- and a *with*-PP, the event expressed by a *from*-PP is not integrated into the event introduced by the main predicate at all, but rather causes that main event. Consider (320)-(321). Assuming the same contexts as above, the examples with the *from*-PPs are appropriate in reporting the situations.

- (320) [Context: On Monday, John jumped off a cliff. He was rushed to the hospital, but on Friday, he died.]
John died on Friday from jumping off the cliff.

(321) [Context: On Monday, John received a blow to the head. He was rushed to the hospital, but on Friday, he died.]
John died on Friday from a blow to the head.

The Onset Condition correctly predicts control relations regarding causal *by*- and *with*-PPs found in causative sentences. As already discussed, *by*-PPs accompanying unaccusatives can have an overt subject (see (315)) or an uncontrolled PRO as shown in (322).

- (322) a. The prisoner died by (PRO) administering a lethal injection.
b. The door opened by (PRO) kicking it.

However, when *by*-PPs appear in a causative sentence, it seems that they must have either a PRO subject controlled by the Cause (the subject) of the main verb, or a pronoun coindexed with the Cause, as can be seen in (323).

- (323) a. John_i killed Mary by { *Bill/PRO_i/him_i } poisoning her.
b. Mary_i destroyed the book by { *someone/PRO_i/her_i } tearing out pages.
c. The director_i ruined the film by { *the casting director/PRO_i/them_i } casting an inappropriate actor.

When it comes to causal eventive *with*-PPs accompanying causatives, too, there holds a restriction comparable to the one above with causal *by*-PPs in causatives. The understood agent (or controller) of such a *with*-PP is the Cause of the main predicate. Consider (324). The example is interpreted such that John is the one who shot Mary. It does not permit a reading where someone else shot her to her death.

- (324) John killed Mary with a shot to the head.

That *by*- and *with*-PPs accompanying a causative are obligatorily controlled by or associated with the Cause subject of the matrix sentence is expected, given the Onset Condition. Since the Cause is the sole non-patient argument of the become event, the Onset Condition requires it to be mapped to the onset (event) of the causal chain denoted by that predicate. The Onset Condition also requires the event denoted by the adjunct PP to be mapped to that same location in the causal chain. The obligatory control or association relation then falls out, as required.

Let us now return to the SM adjunct. The SM corresponds to a mind-internal cause, which is an Experiencer-internal counterpart to the perceived external stimulus. As such, the referent of the SM is an intermediate cause, which is always downstream to the external cause in the causal chain. In a psych predicate, therefore, in the presence of a Cause (i.e. the external stimulus), realization of a SM violates the Onset Condition as the SM cannot be interpreted at the onset of the causation event. In other words, the T/SM restriction can be understood as a violation of a mapping principle that applies to all causative predicates. Indeed, the Onset Condition suffices to capture the T/SM restriction regardless of the competing characterizations of the SM – i.e. as an adjunct or an argument.

5.4. Evaluating the two approaches: the PP introducing a SM as an argument vs an adjunct

This chapter focused on the origin of a SM in a reduced counterpart of a Class II psych verb on the premise that the argument structure of Class II verbs only contains a Cause and an Experiencer (the UPH). I offered two answers, each exploring a competing characterization of the PP introducing a SM, namely as an argument and as an adjunct. I also dealt with any additional questions raised by the proposals I advanced.

In this section, I evaluate the two analyses in an attempt to determine which route should be favored. I will make use of various known diagnostics for the argument/adjunct distinction, primarily those discussed in Schütze 1995 and Schütze and Gibson 1999. I will conclude that the argument/adjunct status of PPs introducing a SM is inconclusive. This is mainly because there do not seem to exist reliable, let alone definitive, diagnostics for the argument/adjunct distinction (Dowty 2013).

Test 1: Head-dependency/Idiosyncratic selection

As widely assumed, arguments are selected by a head, but adjuncts are not (Pesetsky 1995). This gives rise to the distinctive differences between PP-arguments and PP-adjuncts. First, if the choice of the preposition is fixed by a verb, then the PP accompanying that verb is an argument (Pollard & Sag 1988) (see (325)). Second, PP-arguments occur with a more restrictive range of heads than adjuncts do (Schütze 1995) (see (326)).

- (325) a. John relies {on/*in/*at/*to} Mary.
 b. It depends {on/*in/*at/to} the context.
 c. Lily blamed {on/*in/*at/*to} them
 d. Susan believes {in/*on/*at/*to} Bill.
 e. Chris listens {to/*in/*on/*at} music.
 f. They agreed {to/*in/*at/*for} the terms of the contract.
 g. He cares {for/*in/*on/*at/*to} you.
- (326) a. John {died/sneezed/explored/broke his arm/saw Fred/laughed at Bill} in the afternoon
 b. John {informed/*saw/*hit/*admired/*surprised} his friend of the danger.
- (Schütze 1995: 102)

For PPs introducing a SM appearing in the psych domain, it seems that predicates do select the preposition accompanying them. Consider (327).

- (327) a. John sympathized {with/*on/*in/*at/*to} her loss.
 b. Chris worried {about/*with/*on/*at} his financial status.
 c. Lily puzzled {over/*in/*at/*to} her remarks.
 d. Susan grieved {over/for/*in/*on/*at/*to} the loss of her dog.
 e. John was annoyed {at/with/*on/*in/*to} the decision.
 f. They were infuriated {at/over/with/*in/*to} his behavior.
 g. He was disgruntled {at/with/*in/*on/*to} the way he had been treated.
 h. She was disappointed{at/with/*on/*to/*for} the result.

In this test, then, PPs introducing a SM in reduced psych verbs behave like arguments.

Test 2: Optionality

One of the other most commonly used diagnostics for the argument/adjunct distinction is optionality. It is considered that PP arguments are obligatory (see (328a)), whereas PP adjuncts are optional (see (328b)).

- (328) a. John put the book *(in the library).
 b. John read the book (in the library).

However, as is equally well known, the reliability of this test is dubious as there are non-obligatory (optional) arguments (Jackendoff 1999) as in (329), and obligatory adjuncts (Levin 1993; Goldberg & Ackerman 2001; Sailor and Schütze 2013) as exemplified in (330).

(329) John ate (the cake).

- (330) a. John {meant/acquitted himself} *(well)
 b. Mary behaved *(badly). (Sailor & Schütze 2013: 1)

It seems that most of the PPs in (327) can be omitted without repercussions. Given the inherent limitations of this test, it is impossible to draw any firm conclusions about their argument/adjunct status.

Test 3: Iterativity

Related to the point that arguments are selected by a head, whereas adjuncts are not, PP adjuncts can iterate (see (331a)) but PP arguments cannot (see (331b)).

- (331) a. Kim met Sandy in Baltimore in the hotel lobby in a corner.
 b. *Chris rented the gazebo to yuppies, to libertarians. (Schütze 1995: 102)

PPs introducing a SM in psych predicates do not seem to iterate. Consider (332). Only with a clear prosodic break between two PPs do these examples become acceptable.

- (332) a. ?John sympathized with the death of the dog, with the loss of the house.
 b. ?Chris worried about his financial status, about the fate of his company.
 b. ?John was annoyed about the lockdown rule, about not being able to go to pubs.
 c. ?She was disappointed at Mary, at the poor results.

In this sense, these PPs appear to behave like arguments. However, careful analysis suggests that the facts are a bit more subtle than that. Stacking PPs imposes interpretive requirements

on the stacked PP. For example in (331a) the location introduced by the second locative PP must be interpreted as being located inside the location introduced by the first PP. A similar restriction is at play when stacking temporal adjuncts, where the second adjunct must narrow down the interval denoted by the first. If SMs introduce a causal factor, the second SM would have to introduce a causal factor that is interpreted inside the causal factor introduced by the first. It is unclear whether this is feasible.

Test 4: Do-so test

Arguments cannot be stranded under do-so substitution (see (333)), but adjuncts can (see (334), originally from Lakoff and Ross 1976). In short, in a V-XP sequence, if XP can be stranded by *do-so* substitution, it is an adjunct. If not, it is an argument.⁴⁵

- (333) a. *Sue cooked lunch, and Fred did so dinner.
b. *John described the film to Mary, and Fred did so to Sue.
c. *John put a book on the table, and Sue did so on the shelf. (Schütze 1995: 105)

- (334) a. Sue asked Fred to cook dinner, and he did so.
b. John filled out the form in pen, and Mary did so in pencil.
c. John put a book on the table in the morning, and Sue did so in the afternoon.
(Schütze 1995: 105)

It seems that PPs introducing a SM must be replaced together with a verb under do-so substitution. Stranding them results in ungrammaticality. Compare (335) and (336). In this sense, the PPs act like arguments than adjuncts.

- (335) a. I sympathized with the loss of the dog, and he did so too.
b. John worried about money, and Mary did so too.

⁴⁵ Note that this test can only be applied when verbs are non-stative:

- (i) *Bill knew the answer, and Harry did so too. (Schütze 1995: 105)

- (336) a. ?I sympathized with the loss of the dog, and he did so with the loss of money.
b. *John worried about money, and Mary did so about her health.

However, this test, too, is not without problems. Neeleman (1997) claims that some PP adjuncts also resist stranding under *do-so* substitution, as shown in (337). The reliability of this test, hence, is questionable.

- (337) a. ?John spoke with Mary about chemistry and Bill did so about physics.
(Neeleman 1997: 124, fn 15)

On balance, it is not obvious whether PPs introducing a SM in sentences containing a reduced psych verb are arguments or adjuncts. They seem to pattern with arguments in one diagnostic, namely head-dependency/idiosyncratic selection. However, the adjunct analysis cannot be completely ruled out considering the fact that there is no hard and fast diagnostics for the argument/adjunct distinction: they seem to have complications and/or limitations one way or the other.

5.5. Conclusion

In this chapter, I addressed the last question arising from adopting the Uniform Projection Hypothesis for Class II verbs: If Subject Matter (SM) is absent in the argument structure of all Class II verbs, then what is the origin of the SM argument in their reduced counterparts? I explored two potential characterizations of PPs introducing a SM accompanying reduced psych verbs: the PP introducing a SM is an argument and ii) the PP introducing a SM is an adjunct. I offered two competing accounts for each characterization and tackled the obstacles these competing accounts face.

On the argument analysis, the SM projected in reduced psych verbs must be derivable from the argument structure of the causative counterparts. I argued that this is feasible if one adopts a Reinhartian feature-based theta-system (Reinhart 2002). In particular, I proposed that the SM argument in the reduced counterpart can be derived from the Cause in the causative input via a feature deletion analysis of Expletivization.

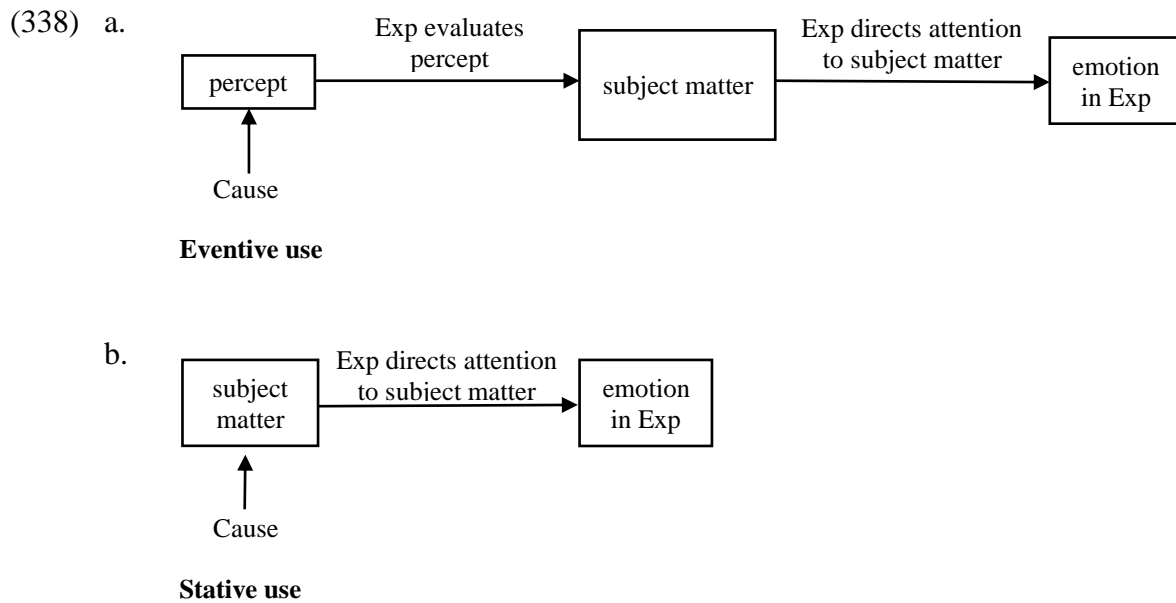
On the adjunct analysis, we can easily account for the presence of a SM in reduced psych verbs. It can accompany them as an adjunct. However, this revives the problem that a separate T/SM restriction is needed: why can the adjunct not accompany a causative psych verb? After all, all kinds of causal adjuncts can be realized alongside a Cause argument in normal

causatives. I argued that the T/SM restriction can be derived from the Onset Condition, a mapping principle that regulates the realization of causal expressions in simplex causatives. In the last section of this chapter, in an attempt to answer the question which of the two analyses should be preferred, I applied various diagnostics for the argument/adjunct distinction for PPs introducing a SM in psych verbs. However, it proved difficult to draw any firm conclusions.

Chapter 6. Conclusion

The central claim of this thesis is that the argument structure of Class II verb only contains two arguments, namely a Cause, and an Experiencer. In particular, I argued that all Class II verbs, either eventive or stative, are causatives projecting a Cause external argument and an Experiencer internal argument (i.e. the Uniform Projection Hypothesis (UPH)). This is contra the widely accepted view according to which the argument structure of such verbs concerns three participants, with the addition of another argument, namely a Subject Matter (SM). On this view, the inclusion of the additional SM argument in the argument structure is taken to correlate with the aspectual distinction in Class II verbs. That is, the eventive Class II verbs project a Cause and an Experiencer, but the stative Class II verbs project a SM and an Experiencer (i.e. the Alternative Projection Hypothesis (APH)). I have argued that there are sufficient grounds to reject the APH, based on the evaluation of the validity of the movement derivation for stative Class II verbs required under the APH, that is, these verbs are derived by raising the internal argument, SM. I have offered substantial evidence against this derivation and concluded that Class II psych verbs are not best captured by the APH. I claimed that the UPH should instead be explored as a viable alternative for Class II psych verbs. I then investigated whether this hypothesis can be reconciled with various syntactic and semantic characteristics of psych verbs.

The first question I addressed was how one might capture the pervasive eventive/stative ambiguity observed in Class II psych verbs under the UPH. I argued that this can be achieved by assuming that while all Class II verbs are causatives, eventive and stative Class II verbs encode different event semantics: the former denotes an event of change and the latter denotes an event of maintenance. Based on this account, I further hypothesized that the eventive/stative contrast in these verbs is correlated with a difference in the size of the causal chain each use is mapped onto. Specifically, eventive Class II verbs capture a longer causal chain of which the highest cause is a percept (i.e. an external stimulus, a.k.a., mind-external cause) perceived by the Experiencer. By contrast, stative Class II verbs capture a more compact causal chain of which the cause is an Experiencer-internal stimulus (i.e. a mind-internal cause), which we may refer to as the subject matter, dwelled on by the Experiencer. In other words, while Class II verbs invariably realize a Cause as their subject, the referent of the Cause varies depending on the aspectual type of the verb. The outline of the proposal is repeated here as (338):



The second question I explored was to do with the intensionality of Class II verbs, a topic that has received little or no attention. I first offered a novel finding that stative Class II verbs are intensional in their subject, but that their eventive counterparts are not. I then argued that the variation in the subjects of Class II verbs with regard to intensionality follows naturally from the variation in the referent properties of the Cause arguments claimed by the proposal above. The intensionality of the subject of stative Class II verbs is expected since it refers to a mind-internal cause whose content depends on the Experiencer's unique knowledge state. The lack of intensionality in the subject of eventive Class II verbs also follows as it refers to an external stimulus (i.e. a mind-external cause) whose content is independent of the Experiencer's cognitive state. In addition, I further discussed a new observation regarding an asymmetry between the object of Class I verbs and the subject of stative Class II verbs. While both exhibit the hallmarks of intensionality, an indefinite subject of a stative Class II verb cannot receive a nonspecific interpretation while the indefinite object of a Class I verb can. I argued that this asymmetry has a natural explanation under the UPH (it follows from the nature of causative semantics) but remains a mystery under the widely accepted APH (according to which stative Class II verbs do not project a Cause).

The last problem I tackled was that the reduced (expletivized) counterpart of a Class II verb apparently may project a SM. The question was if this role is absent in the argument structure of all Class II verbs, then what is the origin of the SM argument in their reduced counterparts? I offered two competing accounts based on the different characterizations of PPs introducing a SM accompanying reduced psych verbs: the PP introducing a SM is an argument

and ii) the PP introducing a SM is an adjunct. I offered two competing accounts for each characterization and tackled the obstacles these competing accounts face. On the argument analysis, the SM projected in reduced psych verbs must be derivable from the argument structure of the causative counterparts. I argued that this is feasible if one adopts a Reinhartian feature-based theta-system (Reinhart 2002). In particular, I proposed that the SM argument in the reduced counterpart can be derived from the Cause in the causative input via a feature deletion analysis of Expletivization. On the adjunct analysis, we can easily account for the presence of a SM in reduced psych verbs. It can accompany them as an adjunct. However, this revives the problem that a separate T/SM restriction is needed: why can the adjunct not accompany a causative psych verb? After all, all kinds of causal adjuncts can be realized alongside a Cause argument in normal causatives. I argued that the T/SM restriction can be derived from the Onset Condition, a mapping principle that regulates the realization of causal expressions in simplex causatives generally (either psych or non-psych). This is a highly desirable outcome, since it obviates the need for a separate T/SM restriction as it can be derived from an independently required principle regulating the interpretation of all causal expressions.

The answers to the questions inherited from adopting the UPH reveal that the various syntactic and semantic characteristics of Class II psych verbs are either equally well or better captured by the simple view that the argument structure of Class II psych verbs only ever contains two roles, a Cause, and an Experiencer. Overall, I conclude that the UPH is viable, and preferable to the widely accepted APH, which assumes that Class II verbs have three thematic roles. A potentially great reward from adopting the UPH is that it predicts that Class II psych verbs should reflect patterns observed in causatives in general, thus drawing a parallel between normal (non-psych) causatives and psych causatives.

I acknowledge that this thesis leaves some questions and issues unresolved. For example, the backward binding phenomenon discussed in Chapter 2, which is only found with the stative uses of Class II verbs, remains unexplained. While I argued that this phenomenon has little bearing on the validity of the raising analysis of stative Class II verbs and therefore cannot serve as a supporting argument for the APH, I have yet to provide an analysis that fully reconciles it with the UPH. Addressing this question will be a goal for my future research. Nonetheless, I hope that the empirical findings and theoretical insights presented in this thesis have advanced our understanding of the long-studied, yet still enigmatic subject, experiencer verbs and also have provided new perspectives and potential avenues for future investigation.

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