

Ph.D. Dissertation

**Evaluative Adjectives
as a Window onto
Inner-Aspect**

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Abstract

This thesis proposes that Evaluative Adjectives (EA), such as *brave*, *intelligent*, *rude*, are stative causative predicates that undergo the causative alternation just as verbs such as *break* do. It is argued that once EAs are understood to be stative causatives their syntactic and inner-aspectual properties follow from a single lexical entry. The analysis of EA aspectual properties leads to an investigation of inner-aspectual primitives more generally, and to the conclusions that the only primitive aspectual argument denotes a state, and that Davidsonian eventivity is epiphenomenal.

EAs are compared with adjectives of psychological experience (*eager*, *willing*) and relational adjectives and adjectives denoting physical states (*Canadian*, *tall*). Adjectival argument structures are shown to be as complex as verbal ones, and it is argued that the category distinction between verbs and adjectives is morphological, and not syntactic.

Although EAs produce agentive inferences, these inferences are argued to be implicatures that derive from a causative aspectual structure and an animate external argument. They are not entailments that merit a non-stative variant. On the contrary, EAs are shown to be stative on all their usages. In showing this, arguments against an activity analysis and a coercion analysis of EAs are given, together with an extended argument against the non-stative copula “active” *be*.

EAs are also often analysed as Individual-Level (IL) predicates. It is shown that EAs only partially overlap with IL predicates, and that they have a distinct aspectual signature that matches verbs classified as Davidsonian-States (Maienborn 2007) and stative causatives (Rappaport Hovav and Levin 2000). In arguing against an IL analysis of EAs an argument against the Individual/Stage distinction (Carlson 1977) is given.

Once EAs are diagnosed as stative causatives it is shown that there is no primitive event argument. Eventivity effects are shown to be derivative of causation, and ultimately pragmatic. A consequence is that the notions of *change* or *process* are not represented in inner-aspect decomposition. This leads to the development of a new theory of inner-aspect in which the only aspectual distinction is between states and causatives built out of states. This theory supports the proposal that EAs are stative causatives that undergo the causative alternation, while substantially reducing the number primitives involved in the composition of inner-aspect.

Key Words: Evaluative Adjectives, Causative Alternation, Argument Structure, Inner-Aspect, Event Semantics

Resumen

El objetivo de esta tesis es el de desarrollar un análisis que explica las propiedades sintácticas y aspectuales de los Adjetivos Evaluativos (EA), tales como ‘kind’ *amable*, ‘rude’ *maleducado*, o ‘careful’ *prudente*. El principal reto teórico que plantean, por lo menos desde Lakoff (1966), es el de explicar sus dos caras aspectuales de forma fundada.

Por un lado, parecen portarse como estados prototípicos en muchos de sus usos, como por ejemplo, en el presente simple ((1a)). Por el otro, parecen tener propiedades agentivo-eventivas en otros usos, como por ejemplo, en el progresivo ((1b)), o cuando son modificados por un adverbial que expresa intencionalidad ((1c)). El aspecto más curioso de este comportamiento dual estativo/eventivo es que se da con adjetivos –la categoría léxica que, tradicionalmente e intuitivamente, tiene denotación únicamente estativa.

- (1) a. María es amable/maleducada/prudente
b. María está siendo amable/maleducada/prudente
c. María fue amable/maleducada/prudente a propósito

Los análisis antecedentes de los EAs se pueden caracterizar de dos formas: o se analizan como inherentemente ambiguos en términos aspectuales y/o sintácticos (Partee 1977; Dowty 1979; Stowell 1991; Bennis 2000, 2004; Landau 2009); o se propone que tienen una naturaleza base estativa que se coacciona en determinados contextos gramaticales para conseguir un uso eventivo (*cf.* Fernald 1999; Arche 2006; Kertz 2006, 2010). Las dos opciones son plausibles y tienen el mérito de ser intuitivas, pero las limitaciones son iguales para las dos: no consiguen explicar ni por qué los EAs –y no otros adjetivos– se portan así de forma predictiva, ni cómo relacionar el comportamiento de justamente estos adjetivos a una teoría general de la composición del aspecto léxico.

En esta tesis se propone un análisis de carácter diferente. Combina las dos líneas de investigación existentes sobre los EAs, es decir, la aspectual y la sintáctica, para demostrar que se complementan, y que a pesar de la primera impresión, los EAs no son nunca ambiguos. Para dar cuenta del carácter aparentemente polivalente de los EAs, la clave está en reconocer que en términos aspectuales, son causativos, a saber:

Propuesta principal: los EAs son predicados causativos estativos que tienen un argumento externo animado y un complemento proposicional, y además, están sujetos a la alternancia causativa, al igual que los verbos como *romper*.

Una vez clasificados como causativos, sus propiedades agentivas reciben una explicación natural que se demuestra: en vez de ser entrañadas, son implicaturas generadas por la combinación del aspecto léxico causativo de los EAs y de sus argumentos externos animados.

Con respecto a la parte de la propuesta que hace referencia a la alternancia causativa, la investigación de los EAs ha demostrado que los EAs son únicos entre las clases de adjetivos en tener una diversidad de estructuras sintácticas en las cuales legitiman sus argumentos animados y proposicionales (Wilkinson 1970, 1976; Stowell 1991; Bennis 2000, 2004; Arche 2006; Kertz 2006, 2010; Landau 2009).

La innovación de esta tesis es la de organizar los datos para poder apreciar el paradigma en (2), y demostrar que no es más que un caso especial de la paradigmática alternancia causativa verbal en (3).¹

(2) Inglés

a. *Causativo inacusativo*

That Emma left was prudent

‘Que Emma se marchara fue prudente’

b. *Causativo inacusativo + extraposición*

It was prudent that Emma left

‘Fue prudente que Emma se marchara’

c. *Causativo transitivo*

Emma was prudent to leave

(*)‘Emma fue prudente marcharse’

¹ El paradigma en (2) se da en inglés porque el ejemplo (2c) es agramatical en castellano, y por lo tanto el inglés ilustra el paradigma completo de forma abierta. El capítulo 5 compara el paradigma en numerosas lenguas germánicas, romances, y en el euskera. De todo el paradigma, la estructura de (2c) es el único punto de variación entre las lenguas, con la excepción del euskera, que además de no admitir la estructura de (2c), tampoco admite las estructuras (2e, f). Pero la agramaticalidad de estas dos últimas se explica porque, bajo este análisis, son estructuras pasivas, y el euskera tampoco tiene una pasiva verbal. Así que estos dos ejemplos se excluyen por motivos generales y consistentes con la lengua.

d. *Causativo transitivo con infinitivo implícito*

Emma was prudent

‘Emma fue prudente’

e. *Causativo transitivo + pasiva*

To leave was prudent (of Emma)

‘Marcharse fue prudente (por parte de Emma)’

f. *Causativo transitivo + extraposición + pasiva*

It was prudent (of Emma) to leave

‘Fue prudente (por parte de Emma) marcharse’

(3) Inglés

a. *Causativo inacusativo*

The window broke

‘La ventana se rompió’

b. *Causativo transitivo*

Peter broke the window

‘Pedro rompió la ventana’

c. *Causativo transitivo + pasiva*

The window was broken (by Peter)

‘La ventana fue rota (por Pedro)’

La propuesta de analizar el patrón de los EAs como una manifestación de la alternancia causativa lleva a muchas preguntas porque la alternancia es considerada un fenómeno verbal que no se plantea nunca en las otras categorías léxicas. Para explicar cómo la alternancia puede darse tanto en los verbos como en los adjetivos, se desarrolla y defiende en esta tesis una nueva teoría de la composición del aspecto léxico, en la cual el argumento eventivo espacio-temporal (Davidson 1967) no existe:

Propuestas auxiliares:

- i. El único argumento aspectual primitivo denota un estado.
- ii. CAUSA es la única relación aspectual.
- iii. La única distinción aspectual especificada por medio de argumentos aspectuales es entre estados simples y estados causativos.

Esta teoría de aspecto léxico de dos elementos, a saber, un argumento estativo y la relación CAUSA, predice que los diagnósticos clásicos de eventividad que acreditan la existencia de un argumento eventivo no darán resultados consistentes entre sí porque el componente locativo de la espacio-temporalidad eventiva no está representado en la teoría de aspecto léxico propuesta. Se demuestra que esta predicción es correcta y que los resultados de los diagnósticos de eventividad están sujetos a los factores independientes en (4).

- (4) *Factores independientes que afectan a los diagnósticos de eventividad*
- a. Si el predicado es causativo frente a un estado simple
 - b. Si el predicado implica un cambio o no
 - c. Si el predicado denota una cualidad física frente a una abstracta
 - d. Si el argumento externo es animado frente a inanimado

La consecuencia de un análisis detallado de los diagnósticos de eventividad es que las pruebas que justificaban un argumento eventivo son más bien señales de la naturaleza causativa del predicado. Al mismo tiempo, estos diagnósticos son sensibles a los detalles de la descripción de la predicación y al conocimiento conceptual asociado al predicado mismo. La implicación es que el argumento eventivo no es un primitivo de la representación de aspecto léxico.

A raíz del análisis detallado del aspecto léxico de los EAs y la comparación entre los adjetivos y los verbos también se proporcionan argumentos consistentes en contra de la existencia de los siguientes sistemas aspectuales:

- | | | |
|------|---|----------------|
| i. | La distinción entre predicados de individuo y estadio | (Carlson 1977) |
| ii. | La clasificación aspectual de Vendler | (Vendler 1967) |
| iii. | La existencia de una cópula activa | (Partee 1977) |
| iv. | Los operadores aspectuales BECOME y DO | (Dowty 1979) |
| v. | Papeles temáticos | |

La tesis se divide en seis capítulos. El capítulo 1 presenta un argumento deductivo en contra de la existencia del argumento eventivo, y a favor de la conclusión de que los efectos de la eventividad se derivan de una relación estativa causativa. Una

consecuencia del argumento es que los verbos y los adjetivos tienen el mismo grado de complejidad aspectual: los dos pueden denotar estativos simples y estativos causativos. El capítulo concluye con una presentación de las propiedades sintácticas de los EAs y de los análisis sintácticos alternativos.

El capítulo 2 se centra en el diagnóstico de las propiedades sintácticas de los adjetivos para demostrar que sus estructuras son tan complejas como las de los verbos. Para ello se lleva a cabo una comparación entre verbos de distintas clases por un lado, y por el otro adjetivos como los EAs, los adjetivos de experiencia psicológica (PA), como *ansioso* o *deseoso*, y los adjetivos relacionales y los adjetivos que denotan estados físicos (RA), como *canadiense* o *alto*, entre otros. Las conclusiones que se extraen son las siguientes: (i) que las estructuras argumentales de los adjetivos son tan complejas como las estructuras argumentales de los verbos; (ii) que la estructura argumental es neutra con respecto a la categoría léxica; y (iii) que las estructuras sintácticas de los EAs tienen las propiedades de la alternancia causativa.

El capítulo 3 argumenta que en términos aspectuales los EAs son únicamente y siempre estativos causativos. Analizando el aspecto léxico de los EAs, PAs, y los RAs, se define una clasificación tripartita entre los que muestran señales de eventividad (EAs), los que son estativos con lecturas existenciales típicas de los predicados de estadio (PAs), y los que son estativos y se comportan como predicados de individuo (RAs). Al mismo tiempo, se demuestra que los verbos encajan en la misma clasificación, y se introducen los resultados de los estudios de Maienborn (2005b, 2007) y de Rappaport Hovav y Levin (2000). Estos estudios investigan la misma clase de verbos, a saber, verbos de emisión como *oler* y *brillar*, desde dos direcciones diferentes. Maienborn los clasifica como *estativos Davidsonianos* y Rappaport Hovav y Levin como *causativos estativos*. Aquí se establece la conexión empírica entre la eventividad, la estatividad, y la causatividad, y lo importante es que se establece la conexión con verbos. El siguiente paso es el de demostrar que el patrón del aspecto léxico de los EAs es el mismo que el de los verbos de emisión, es decir causativo estativo.

El capítulo 4 desarrolla la presente teoría de aspecto léxico aportando argumentos a favor de que la única distinción aspectual sea entre los estados simples y los estados causativos. Se ofrecen cuatro argumentos en contra del argumento eventivo y a favor de la presente teoría de aspecto léxico. Los primeros dos siguen de los análisis desarrollados de la pasiva y el progresivo. Se argumenta que estos dos fenómenos son operaciones que hacen referencia a la naturaleza estativa causativa del predicado, y se

definen y restringen únicamente de esta manera. El tercer argumento viene de la estatividad de oraciones existenciales. Se argumenta que la función gramatical de estas oraciones es la de convertir un argumento estativo del predicado en el sujeto de la oración. El cuarto argumento es una demostración de la inconsistencia de los diagnósticos de eventividad que es predecible si la eventividad es pragmática, y no un primitivo semántico. Además, se especifican los mecanismos de interpretación de aspecto léxico y su mapeo al dominio de la interpretación temporal de la cláusula; se proporcionan análisis formales de la voz activa y pasiva, el progresivo, y oraciones existenciales. Concluye argumentando que la causatividad es una propiedad léxica, y no una cabeza sintáctica ni una regla de interpretación.

El capítulo 5 aplica el sistema aspectual del capítulo anterior al paradigma de los EAs en (2), analiza la alternancia causativa, y compara el paradigma de los EAs en numerosos idiomas germánicos, en romances y en el euskera.

El capítulo 6 recoge los resultados, las implicaciones para la representación lingüística del aspecto léxico, e indica las líneas de investigación.

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Glossary of Abbreviations

1	First Person	INF	Infinitive
2	Second Person	LOC	Locative
3	Third Person	MASC	Masculine Gender Agreement
3-CL	Third Person Clitic Pronoun	NEG	Negation
ABS	Absolutive Case	NEUT	Neutral Gender Agreement
ACC	Accusative Case	NOM	Nominative Case
AUX	Auxiliary Verb	PART	Participle
CAUS	Causative Morpheme	PAST	Past Tense
COMP	Complementiser	PL	Plural Number
CONT	Continuous Aspect Morpheme	PREP	Preposition
DAT	Dative Case	PRES	Present Tense
DET	Determiner	PRT	Particle
ERG	Ergative Case	SE	Third Person Reflexive Pronoun
FEM	Feminine Gender Agreement	SING	Singular Number
GEN	Genitive Case	SUBJ	Subjunctive Mood
IND	Indicative Mood	TOP	Topic Morpheme

Chapter 1:

Laying the Groundwork

1 Introduction

Evaluative adjectives¹ (EAs), such as *brave*, *nice*, and *rude*, stand out because they violate basic assumptions about what lexical categories do. While verbs can denote both events and states, adjectives are supposed to be limited to denoting states. EAs seem to be the exception to the rule. They have stative readings, such as in the present simple in (1a). But they also produce agentive inferences when they appear in the continuous aspect ((1b)) or modified by an intention adverbial ((1c)).²

- (1) a. Emma is arrogant/brave/nice/obnoxious/rude
- b. Sam was being arrogant/brave/nice/obnoxious/rude
- c. Victoria was arrogant/brave/nice/obnoxious/rude on purpose

EAs' acceptability in agentive environments motivates specific extensions in theories of aspectual composition. Lakoff (1966) assigns EAs a non-state feature. Partee (1977) proposes a non-stative copula "active" *be*. Dowty (1979) posits the abstract predicate-modifier DO to capture a shift from states to activities. EAs thus seem to instantiate a unique stative/eventive ambiguity that is particularly striking because it occurs in adjectives. They have a long history and represent an interesting puzzle.

This thesis proposes that a principled understanding of EAs has important consequences for the analysis of inner-aspect (*i.e.* lexical aspect). Rather than concluding that EAs are outliers that require stipulation, it aims to show that thorough examination of EAs justifies turning standard assumptions about aspectual composition on their head. So this thesis does two things at once: it analyses EAs and it follows the consequences for the theory of inner-aspect.

¹ I adopt the *evaluative* label because it is the term for these adjectives that is used in the recent literature (Kertz 2006, 2010; Landau 2009). All the labels used to categorise the different adjective classes are for descriptive purposes only.

² I will use the term *continuous aspect* from traditional grammar (*cf.* Quirk *et al.* 1985; Side and Wellman 2002) rather than *progressive aspect* in order to avoid a terminological confound. As will become apparent below, I will argue throughout this thesis that the notion of a process or change is conceptual and not represented in the aspectual decomposition of the predicate. So, I use the former rather than the latter term to avoid the inference that a process is involved in the progressive.

1.1 Front 1: the Proposal for EAs

The start point is a new perspective on EAs:

Proposal: EAs are stative causatives with an animate external argument and a propositional complement that undergo the causative alternation just as many causative verbs do.

The causative alternation is a verbal phenomenon that this proposal extends to adjectives. The verb *break* in (2) provides a prototypical example of the alternation. We will return to detailed discussion of the alternation and this paradigm in chapter 2. For the moment, (2a) can be described as an intransitive predication with the logical direct object as its sole argument (*i.e.* unaccusative). Example (2b) is a transitive predication that now includes a causing individual. These two data points illustrate the causative alternation: the alternation between two syntactic structures, one that specifies the cause ((2b)), and one that does not ((2a)).

- | | | |
|-----|-------------------------------------|----------------------------------|
| (2) | a. The window broke | = Causative Unaccusative |
| | b. Peter broke the window | = Transitive Causative |
| | c. The window was broken (by Peter) | = Transitive Causative + Passive |

Example (2c) is the passive of (2b). Passives provide a counterpoint to unaccusatives in that the causing argument can be made overt in passives, but not in unaccusatives (*cf.* **The window broke by Peter*). In extending the phenomenon from verbs to adjectives this thesis raises questions about the nature of the causative alternation. We consider some below.

With regard to EAs, I propose the causative alternation paradigm in (3). Examples (3a, c, e) are the respective parallels to the examples in (2).

- (3)
- | | |
|-----------------------------------|---|
| a. That Emma left was rude | = Causative Unaccusative |
| b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| c. Emma was rude to leave | = Transitive Causative |
| d. Emma was rude | = Transitive Causative with Implicit CP |
| e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |

Chapter 2 addresses the differences between the paradigms. The central observation at this introductory stage is that, just as EAs are unique in producing agentive inferences, so they are in showing the argument structure pattern in (3).

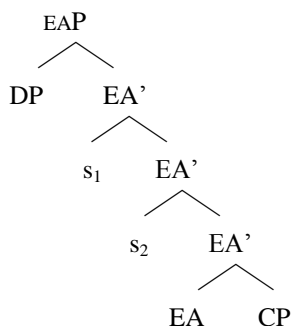
This thesis takes the perspective that EAs' exceptional agentive inferences and their exceptional argument structure are the two faces of one problem that finds its solution in a causative alternation analysis. So rather than positing an ambiguity in EAs, this thesis explores the consequences of a unified analysis.

It is organised as follows. Chapter 2 shows that predicative adjectives have argument structures of varying complexity. EAs are compared with psychological experience adjectives (PA), and relational/physical property adjectives (RA). I propose that their argument structures are as shown in (4). The inner-aspectual variable *s* is an argument of the predicate that denotes a state.

(4) *Argument Structures of the Three Main Adjective Classes*

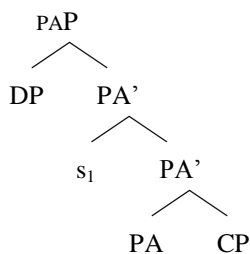
a. EAs:

Emma was rude to leave



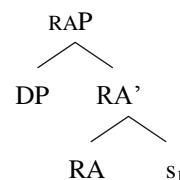
b. PAs:

Sam was eager to help



c. RAs:

Victoria was Canadian/tall



Chapter 2 shows that EAs have an animate external argument and a CP complement ((4a)), just as PAs do ((4b)). RAs also have an external argument, but their complement is the state argument itself ((4c)). In the process of diagnosing adjectival argument

structure, significant parallels with verbs emerge that support this causative alternation analysis.

Chapter 3 is dedicated to the diagnosis of inner-aspect. It is shown that EAs are unambiguously stative, and that the agentive inference they produce is an implicature and not an entailment. We will also see that EAs' aspectual signature—rather than being exceptional—matches that of verbs independently classified as stative causatives (*e.g. glow, sleep, wait*).³ More specifically, it is argued that the occasional agentive implicature that EAs produce is due to their causative nature, not an aspectual ambiguity. PAs and RAs, on the other hand, are simple states. The two kinds of stativity are represented in (4) by the difference in aspectual argument complexity: the two state arguments in (4a) represent a causing-state and a result-state, respectively, while PAs and RAs each have a single state argument. Once again, in diagnosing the inner-aspect of adjectives, significant parallels with verbs emerge.

Chapter 4 addresses the interpretation of argument structure, and its mapping to the inflectional domain of the clause. It presents arguments for the representation of the state arguments in the syntax as shown in (4). It also presents analyses of the active and passive voices, the continuous aspect, the present simple, the auxiliary and copula *be*, existential *there*, and the representation of causation, thematic roles, and spatio-temporal modification.

Chapter 5 returns to the analysis of the EA paradigm in (3) and the causative alternation in general. It concludes with a comparison of the EA paradigm in a number of Germanic and Romance languages, as well as Basque.

Lastly, chapter 6 summarises the results and reflects on some of the broader consequences of this thesis for the organisation of the grammar.

1.2 Front 2: the Theory of Inner-Aspect

Developing a causative alternation analysis of EAs and accounting for their aspectual properties immediately opens up a second front. A theory of inner-aspect is needed that can support the analysis—a theory that makes the analysis principled and not *ad hoc*. To avoid an *ad hoc* analysis, relevant parallels need to be found. For this reason, adjectives

³ Since we will be concerned with stative predicates, I introduce some terminology to avoid confusion. *Stative causatives* are stative predicates that, in some environments, naturally produce agentive inferences and/or give signs of being eventive rather than stative. *Simple states*, in contrast, do neither of these things and are transparently stative. We return to these differences in the next section.

and verbs are compared throughout the thesis. The next section discusses the differences between adjectives and verbs, and presents the core argument for the theory of inner-aspect that emerges in the course of chapters 2, 3, and 4. The subsequent section presents the representation of causation.

1.2.1 The Adjective Category and the Argument for the State Argument

The comparison with verbs will be fundamental in the development of this proposal that EAs are causative alternating predicates. To my knowledge, the causative alternation has never been posited outside the verbal domain, so this section will justify the validity of extending the alternation to adjectives. To begin with, at the most general level, verbs and adjectives differ in three ways:⁴

- (5) a. Adjectives do not assign case to their complement ((6)).
b. Adjectives do not carry temporal or aspectual morphology ((7a) vs. (7b)).
c. Adjectives do not convey a notion of change, whether spatial ((7b)) or temporal/physical ((8)).
- (6) Emma is proud *(of) Peter (cf. Chomsky 1981: 49, ex. (4))
- (7) a. Emma was rude
b. Victoria pushed the cart
- (8) Peter broke the window

Differences (5a) and (5b) are morphological reflexes. They do not track inner-aspectual differences, but they do account for significant swathes of surface distribution facts. For example, since adjectives require a preposition to license a nominal complement EAs cannot have a transitive surface structure that parallels (9a). But since clauses do not require case, they can realise a transitive structure with a clause ((9b)).⁵

⁴ At the theoretical level adjectives and verbs are also considered to differ fundamentally in their argument structures. One of the conclusions offered here is that adjectives and verbs in fact have argument structures of parallel complexity. The comparisons between adjectives and verbs throughout the thesis substantiate this.

⁵ A couple of comments are in order here. First, case theory generally falls outside the scope of this thesis. In this respect, the proper treatment of clauses does, as well. For descriptive simplicity I will assume that the surface pattern indicates that clauses do not require case. While further research may lead to the

- (9) a. Peter broke the window
 b. Emma was rude to leave

Similarly, since only verbs carry temporal and aspectual morphology, only they passivise with overt passive participle morphology ((10a)). Nevertheless, structures with the properties of the passive are found in the nominal and adjectival domain ((10b, c)). So, differences (5a) and (5b) explain some surface effects. Difference (5c), in contrast, goes straight to the heart of inner-aspect.

- (10) a. The window was broken (by Peter)
 b. The city's destruction (by the barbarians)
 c. To leave was rude (of Emma)

Difference (5c) picks up on the notion that might appear to be the dividing line between an event and a state. In fact, Davidson proposed the event argument, *e*, only in the analysis of action verbs (1967: 93). These can be characterised as verbs conveying some change. The event argument was defined as an entity that is mapped to space and time, *i.e.* it is spatio-temporal. Stative predicates required a different analysis.

However, Maienborn (2005b, 2007) shows that the line between eventivity and stativity is not the notion of change. On the one hand, there are verbs (*e.g. assassinate, break, push*) that convey change and that are spatio-temporal, satisfying Davidson's criteria. On the other, there are verbs (*e.g. own, resemble, weigh*) that do not convey change and that are temporal, but not spatial. This is the traditional characterisation of a stative predicate (*i.e. simple states* here), and it justifies the conclusion that not all verbs

modification of this assumption, at the time of writing I believe that it will not invalidate the specific proposals that are the subject of this thesis.

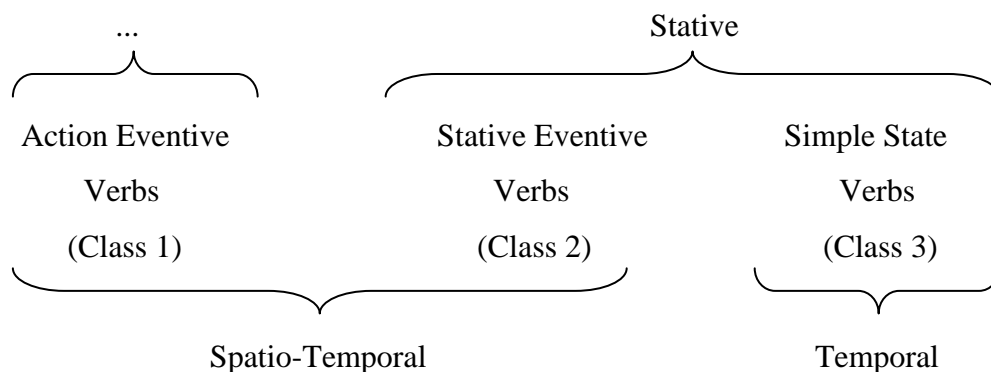
Second, the appearance of the preposition *of* in the adjective example (6) and in nominalisations ((i.a)) is traditionally proposed to be two manifestations of the same *of*-insertion operation (Chomsky 1981). In contrast, I would like to propose that these two environments should not be unified under *of*-insertion because *of*-insertion in the licensing of a complement in nominalisations is morphologically regular and clearly tied to nominalisation itself (*cf.* i.a, b), while adjectives take complements introduced by whatever preposition they select for (*cf.* (6), (i.c), (i.d)). So while both nominalisations and adjectives require prepositions to license a noun complement, it seems that *of*-insertion is restricted to nominalisation and is not involved in the licensing of an adjective's complement. Additional data supporting this are provided in section 2.2.3.2.

- (i) a. The destruction of the city
 b. The rudeness of the response
 c. Emma was rude to Peter
 d. Victoria was angry at Peter

are eventive. Following the logic of the event argument, a state argument, *s*, can be defined as an entity that is mapped only to time.

But Maienborn identifies verbs (*e.g. shine, sleep, wait*) that pass standard eventivity diagnostics (chapter 3) while otherwise providing consistent evidence that they are aspectually stative, *i.e.* they do not convey change (chapter 3). Maienborn's finding establishes the three-way empirical pattern that I diagram in (11) between action spatio-temporal verbs (Class 1), stative statio-temporal verbs (Class 2), and simple state verbs (Class 3). The top line in (11) tracks the aspectual nature of the predicate, and the bottom line tracks the mapping to space and/or time.

(11) *Eventivity versus Stativity versus Spatio-Temporality (Version 1 of 5)*



The properties of Class 2 make the eventive/stative distinction inconsistent. On the one hand, they show that the dividing line between stativity and eventivity is not related to the notion of change, because Class 2 is spatio-temporal but aspectually stative. This makes Class 1 aspectually undefined because eventivity is no longer the counterpoint to stativity. On the other hand, Class 2 shows that stativity cannot be defined by mapping to time because Class 2 is stative and spatio-temporal.

Because Class 2 overlaps with both of the other classes, the empirical pattern in (11) cannot be accounted for by positing two primitive aspectual arguments, *i.e.* one for events and one for states.⁶ Three primitive types would have to be posited to cover the particular cluster of properties of each class. But then, there would be no explanation for the overlap in their properties.

⁶ Maienborn maintains two primitive aspectual sorts, one for events and one for states, and posits that stative eventive verbs (her *Davidsonian-States*) are—together with action eventive verbs—a sub-type of concrete entity (*cf.* Davidson 1970), while simple states (her *Kimian-States*) are a sub-type of abstract entity (2005b: 303). Classifying simple states as abstract entities does not resolve the tension because its source is the spatio-temporal class that tests stative, *i.e.* Class 2. The conclusion here will be that only the state argument exists.

Assuming that the ontology should be kept as small as possible, something here has to be derived, and so something independent is needed to derive it. I will propose that that something is causation.

Since it is intuitively true that there are verbs that denote simple states (Class 3) and states are simpler than events in that they are mapped only to time, let's assume that a state argument, *s*, exists.

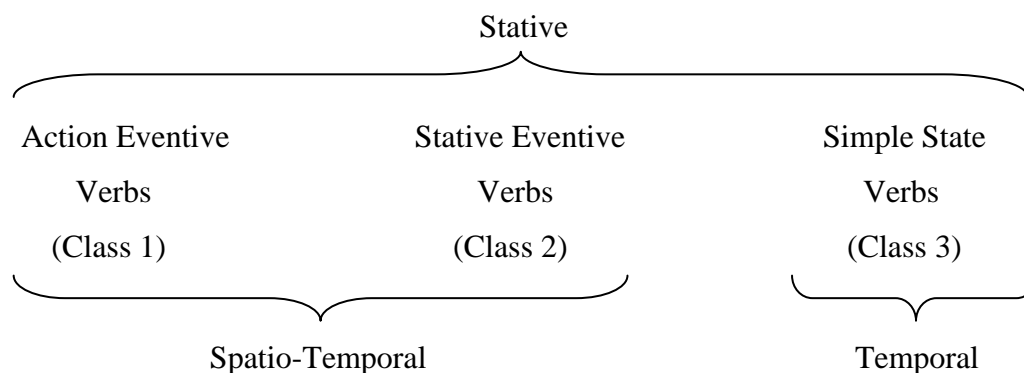
Correspondingly, the properties of a Class 3 verb are accounted for by predicating it of a state argument. The state argument is mapped to time, so it is aspectually stative, and temporal.

Turning to Class 2, let's suppose that there is no primitive event argument defined by spatio-temporality. Rather, let's suppose that two state arguments in a causative relation (*i.e.* cause-result) produce *eventivity effects*. A causative relation that takes only state arguments denotes in turn a stative relation, *i.e.* a relation that is mapped to time.

Since space is not represented in the relation, when a causative predicate is modified by a locative, the locative is interpreted inferentially to the extent that the causative relation expressed by the predicate can be located in space (chapters 3 and 4). This means that the location is not a primitive property of the predicate itself, or an aspectual argument, *i.e.* spatio-temporality is epiphenomenal.

It also means that Class 2 is no longer a contradiction: it is aspectually stative because it contains only state arguments, and it tests positive for spatio-temporality because it is causative. So (11) becomes (12). Since spatio-temporality is derived, the stativity of Class 2 is now expected.

(12) *Eventivity versus Stativity versus Spatio-Temporality (Version 2 of 5)*



However, adopting this line of reasoning also extends stativity to Class 1: the class of verbs that convey change—the one that originally motivated the event argument. The

semantics of (15a) produces precisely stative causation, and the more complex (15c) is required to get causal change.⁷

- (15) a. CAUSE(α , β)
 b. BECOME(α)
 c. CAUSE(α , BECOME(β))

In this connection, RH&L (2000) investigate a sub-set of the Class 2 verbs analysed by Maienborn, namely, emission verbs such as *glow*, *shine*, and *smell*. On the one hand, RH&L (2000: 284) inspect these verbs and classify them as stative because they do not entail change and because inner-aspect diagnostics have them patterning with other statives (chapter 3). On the other hand, they also analyse them as causative because, among other indications, their subject is interpreted as a Causer. For example, in (16) the sun is the cause of the shining. Their conclusion is that these verbs are *stative causatives*.

- (16) The sun shone

Taken together, Maienborn (2005b, 2007) and RH&L (2000) strongly support the present line of argumentation: they pick out the same class of verbs and classify them as eventive (Maienborn), stative (Maienborn and RH&L) and causative (RH&L). This shows that eventivity does co-occur with stative causation. In the present argument, the implication is that eventivity is epiphenomenal (chapter 3 and 4).

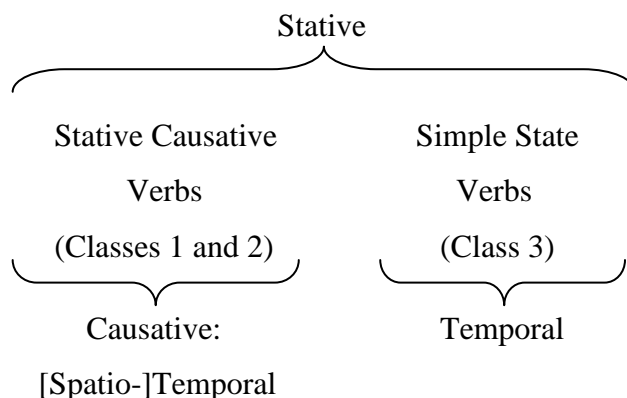
The consequence for verbs that convey change (*i.e.* Class 1) is that the notion of change is independent of the event argument. This follows because their spatio-temporal properties—the properties that define eventivity—are accounted for in the same way that the spatio-temporal properties of stative causative Class 2's are: state arguments in a causative relation. Since their spatio-temporality is accounted for without an event argument, the notion of change it was originally meant to convey has to lie elsewhere.

⁷ In Dowty's system states are the only primitive type. While BECOME produces a change-of-state, the predicate-modifier DO is required to distinguish states from activities: “[...] I am supposing that both stative and active verbs are constructed from the same homogeneous class of primitive stative predicates, thus the presence of DO is the *only* thing that distinguishes the meaning of a stative from that of an active verb” (1979: 113; emphasis Dowty's). So, on its own (15a) is stative causative.

I would like to suggest that the notion of change is represented as conceptual knowledge associated with the predicate, and independent of the aspectual decomposition inner-aspect. This is why I have used the phrase *convey the notion of change* rather than *entail change* throughout this discussion. Importantly, this line of reasoning makes the properties of Classes 1, 2 and 3 logically consistent, and positing an event argument necessarily re-introduces the inconsistency.

The present argument leads to (17). There is only one aspectual distinction stated over aspectual arguments: simple states versus stative causatives built out of state arguments.

(17) *Eventivity versus Stativity versus Spatio-Temporality (Version 4 of 5)*



This argument in favour of the primitive state argument, and the epiphenomenal nature of eventivity began with the third and final difference between verbs and adjectives: adjectives do not convey a notion of change, whether spatial or temporal/physical. I have just argued that change is represented as conceptual knowledge, and not as part of the aspectual decomposition. This means that the category difference between verbs and adjectives is tracking a conceptual/morphological difference (*i.e.* that verbs can convey change and adjectives do not), and not a syntactic/LF one (*i.e.* an event argument).

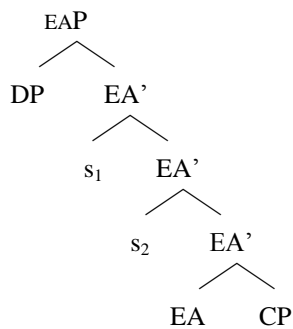
Importantly, the conclusion about the representation of inner-aspect was reached by looking at verbs. However, the adjective argument structures proposed in section 1.2 represent the same aspectual distinction as in (17) ((18) repeated from (4)). Namely, adjectives are aspectually simple states (containing one state argument in (18b, c)) or stative causatives (containing two state arguments in (18a)). Therefore, (17) can be

generalised to (19), which now refers to predicates (*i.e.* adjective and verbs) rather than verbs.

(18) *Argument Structures of the Three Main Adjective Classes*

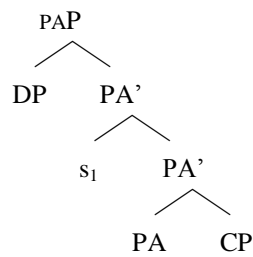
a. EAs:

Emma was rude to leave



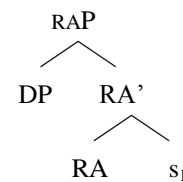
b. PAs:

Sam was eager to help

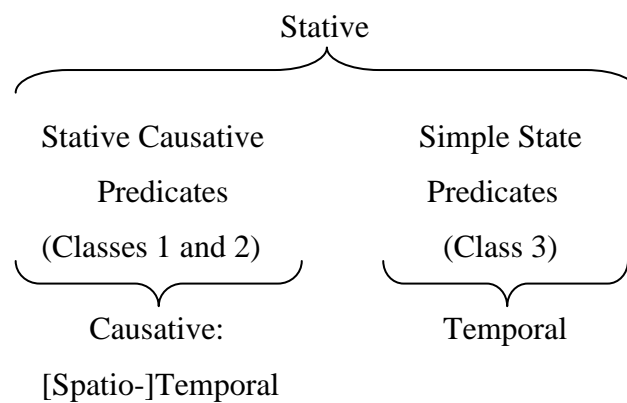


c. RAs:

Victoria was Canadian/tall



(19) *Eventivity versus Stativity versus Spatio-Temporality (Version 5 of 5)*

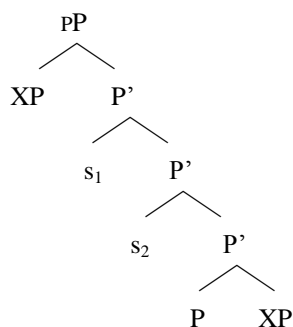


Similarly, the adjective argument structures in (18) can be generalised to (20), where PP is the maximal projection of the predicate:⁸

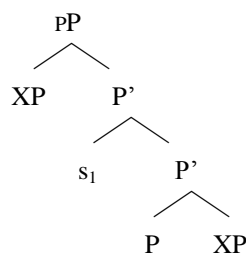
⁸ In chapter 4, one refinement will be made to type 2 simple state structures ((20c)). It will be proposed that there are type 2 simple state predicates that reverse the order of their state argument and DP with a corresponding interpretative difference. This is set aside until it becomes relevant.

(20) *Generalised Argument Structures (Adjectives and Verbs)*

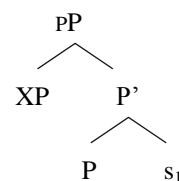
a. Lexical Causatives



b. Type 1 Simple States



c. Type 2 Simple States



This unification of verbs and adjectives leads to the proposal for the representation of inner-aspect decomposition that emerges from the analyses and evidence presented in this thesis:

Auxiliary Proposals:

- (i) The only primitive aspectual argument denotes a state.
- (ii) CAUSE is the only aspectual relation.
- (iii) The only aspectual distinction stated over aspectual arguments is between simple states and stative causatives.

The argument just given for the uniqueness of the state argument will be supported by theory-internal and theory-neutral evidence throughout the thesis. The first kind will emerge naturally from the analyses of the passive voice, the continuous aspect, existential *there*, and the present simple in chapter 4.

Evidence of the second kind will be presented in chapters 3 and 4. By carefully applying event diagnostics to a range of predicate classes, we will see that the diagnostics are sensitive to the factors in (21). Importantly, since event diagnostics are supposed to be providing evidence for a primitive event argument, they should not be sensitive to these factors. The conclusion will be, again, that eventivity effects are parasitic on causation, but sensitive to the properties of the predication description and the conceptual knowledge associated with the predicate as a whole.

(21) *Factors Affecting the Results of Eventivity Diagnostics*

- a. Causative versus simple state
- b. The notion of change versus no change
- c. The physical versus the abstract quality of the predicate
- d. The animacy versus the inanimacy of the external argument

So, verbs and adjectives have the same range of inner-aspect decompositions. This goes a long way to explaining why verbs and adjectives differ in only three ways, two morphological, the other conceptual ((5)).⁹ And, it validates the comparison of verbs and adjectives that is used in this thesis to argue for the causative alternation analysis of EAs. Indeed, since verbs and adjectives have parallel syntactic and LF representations of inner-aspect, the null hypothesis is that there should be adjectives that undergo the causative alternation. The proposal here is that EAs confirm it.

In closing this section, we can foreshadow some of the consequences of this theory of inner-aspect. As mentioned in the introduction, the apparent aspectual ambiguity of EAs has led to many different analyses. These analyses invoke theoretical posits such as:

- | | |
|--|----------------|
| (i) The Individual/Stage distinction | (Carlson 1977) |
| (ii) The Vendlerian predicate classification | (Vendler 1967) |
| (iii) “Active” <i>be</i> | (Partee 1977) |
| (iv) The abstract aspectual predicates BECOME and DO | (Dowty 1979) |
| (v) Thematic roles | |

The development of the present theory of inner-aspect and EAs makes a strong case that are that these posits, like the event argument, are epiphenomenal.

The CAUSE relation is the only relation that remains in aspectual decomposition and the state argument the only aspectual argument: the set of aspectual primitives is reduced to two members. Importantly, in addition to its reduced number of primitives, the proposal is compositional and predictive. Given the simplicity of states and the cognitive importance of causation, the theory has psychological plausibility and sheds

⁹ If lexical category is considered a morphological property, the final difference is also morphological. I assume that this is the case. In this connection, since the nature of the differences between verbs and adjectives is morphological, this thesis supports Baker’s (2003: 77-88) conjecture that verbs and adjectives are the same underlying predicative category.

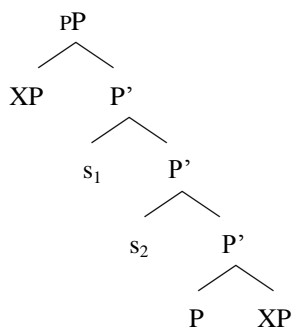
light on the computational structure of language. In this connection, let's turn now to the representation of causation.

1.2.2 *The Lexical Representation of Causation*

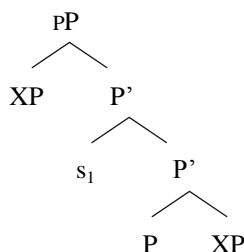
Beginning with the syntax, in (22a) (repeated from (20a)) lexical causatives have an external argument, two state arguments, and a complement. The most important contrast with simple state structures is in the number of state arguments ((22b, c) repeated from (20b, c)): simple states have only one.

(22) *Generalised Argument Structures (Adjectives and Verbs)*

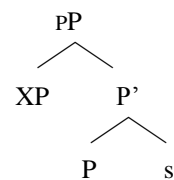
a. Lexical Causatives



b. Type 1 Simple States



c. Type 2 Simple States



Regarding interpretation, this thesis will argue that predicates have lexical entries that make reference to argument selection. In particular, they have a denotation that does this. The denotation is a proper part of a lexical entry, together with morphological, phonological, and conceptual information.

In chapter 4 it will be argued that causation is a property of the lexical predicate's denotation. The template denotation of a causative predicate is in (23a). The CAUSE relation partitions the predicate and its arguments into a causing-state description and a result-state description. The CAUSE relation is inside the predicate, and the predicate's arguments map onto the binary-branching syntax in (22a). The denotations of simple state predicates also map onto their respective syntaxes ((23b, c), (22b, c)).

(23) a. *Template Causative Denotation*

$$\|P\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. [\text{CAUSE}(P(x, s_1), P(s_2, y))]$$

b. *Template Type 1 Simple State Denotation*

$$\|P\| = \lambda y \lambda s_1 \lambda x. [P(x, s_1, y)]$$

c. *Template Type 2 Simple State Denotation*

$$\|P\| = \lambda s_1 \lambda x. [P(x, s_1)]$$

In support of this analysis of causation, chapter 4 provides evidence that the state arguments are realised in the syntax, as shown in (22). It will also be argued that CAUSE is not a functional head in the syntax, or an interpretation rule.

Regarding EAs, the motivating proposal of this thesis is that their apparent aspectual ambiguity follows from the single stative causative denotation in (24). There is one particularity here. In chapter 2 we will see that EAs are factive, and so they presuppose that the content of their complement CP is true. This presupposition is represented in (24) with Beaver's (1992) presupposition operator, ∂ .¹⁰

(24) *Template EA Denotation* (Version 1 of 2)

$$\|EA\| = \lambda s_2 \lambda s_1 \lambda x. \partial \exists q [\text{CAUSE}(EA(x, s_1), EA(s_2, q))]$$

In making use of denotations this thesis is Lexicalist, understood in the sense that lexical entries contain argument-related information. It is important to state that this is a research result and not an assumption. The development of this thesis supports the existence of denotations in that the theory that emerges both captures empirical generalisations and allows for the characterisation of phenomena as conceptual, syntactic, semantic, pragmatic, or morphological. In contrast, theories that do not posit argument-related information in the lexicon allow for variability in meaning that is not instantiated (*cf.* Marantz 1997; Borer 2005a, b, a.o.).

EAs are useful in this regard because they are a prime example of apparent ambiguity. We will see however, that once conceptual knowledge and pragmatic inference are sifted out, they are syntactically and semantically constant. In contrast,

¹⁰ In this thesis I do not analyse factivity itself. The factive presupposition is marked in the denotation in (24) for convenience: it visually reinforces that EAs are factive, while PAs and RAs are not. It is more likely that factivity is not recorded in the denotation but calculated at a different level (*cf.* Stalnaker 1974; Abrusan 2011a; Anand and Hacquard 2014). In chapter 5, when we turn to the derivations of the EA structures, the presupposition operator is removed from the final version of the denotation.

supposing that there is no reference to arguments in the lexicon allows for the possibility of variability in EA syntax and meaning that does not occur.

So what exactly does the denotation do? Expanding on RH&L (2012), I propose that the function of a denotation is to encode a predicate's argument-related entailments that are present on its every usage. So, the arguments listed in (24) are the arguments that EAs always entail. In other words, the role of the denotation in this thesis is to encode a predicate's immutable argument-related entailments. I aim to show that EAs are always causative. Likewise, they always entail an individual external argument and a propositional complement. These are the properties that are encoded in the denotation in (24).¹¹

In conclusion, the focus of this thesis is an analysis that normalises EAs. A causative alternation approach is interesting because it requires the scrutiny of many standard assumptions. The result is a novel theory of inner-aspect that is simple, predictive, and compositional.

1.3 Basic Data and Alternative Analyses

Before embarking upon the detailed examination of EA argument structure and inner-aspect in the following chapters, the final two sections here describe the EA paradigm in enough detail to review alternative analyses of EA argument structure.

The overview minimises questions of technical implementation. It provides a general notion of how EA data have been analysed and draws attention to the fundamental differences between those approaches and the present one. In different ways, each of the alternatives posits multiple denotations and/or optionality in how EAs take their arguments. In contrast, the present proposal develops a unified analysis based on a causative structure, an animate external argument, and a factive CP complement.

¹¹ Thus, this thesis positions itself opposite the proposals that (i) external arguments are not arguments of the predicate (Marantz 1984; Kratzer 1996; Alexiadou *et al.* 2015; *cf.* Horvath and Sioni 2002; Rothstein 2004; Muller and Wechsler 2014), and that (ii) predicates do not specify their complements (Alexiadou 2014; Borer 2014; *cf.* RH&L 2012).

1.3.1 Basic EA Syntax Data

The proposal here is that the basic EA paradigm in (25) (repeated from (3)) is a particular manifestation of the causative alternation.

- | | |
|-----------------------------------|---|
| (25) a. That Emma left was rude | = Causative Unaccusative |
| b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| c. Emma was rude to leave | = Transitive Causative |
| d. Emma was rude | = Transitive Causative with Implicit CP |
| e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |

The examples in (25a, b) show that the EA *that*-clause can occupy the subject position directly and that it can be extraposed. Although mention of EA *that*-clause data is found in the literature, the present study is the first to observe the general ability of EAs to predicate of *that*-clauses and incorporate them into the basic paradigm. For example, Bennis (2000) indicates that EAs do *not* take an animate argument and a *that*-clause at the same time in Dutch ((26a)).

- (26) Dutch
- | | | | |
|--------------------------------|-------------------|--------------------|------------------------------|
| a. ??Jan is gemeen [dat hij zo | over | dat onderwerp | praat] |
| John is mean | that he like-that | about that subject | talks |
| | | | (Bennis 2000: 42, ex. (41b)) |
| b. Het is gemeen [dat Jan | over | dat onderwerp | praat] |
| it is mean | that John | about that subject | talks |
| | | | (Bennis 2000: 42, ex. (43b)) |

He also introduces an example of an EA taking a *that*-clause alone, but does not analyse it ((26b)). Chapter 2 will argue that EAs with a *that*-clause are unaccusatives: the *that*-clause is a complement and the external argument is non-referential. This will account for the deviance of (26a).

Moving on to the structures with an animate subject, example (27a) illustrates that EAs can appear with just an animate subject and that, in the present simple, they are

interpreted as describing a permanent property, *i.e.* the so-called Individual-Level (IL) reading (Carlson 1977).

- (27) a. Emma is rude
b. Emma was rude (to leave)

Example (27b) shows that, in English, an infinitive can follow the adjective and that in the past simple, in addition to the IL reading, an existential reading becomes available, *i.e.* a Stage-Level (SL) reading.

On this proposal the alternation between the EA *that*-clause and the infinitive tracks the presence of a referential external argument. In addition, both of the structures in (27) are analysed as transitive causatives; the difference being that the CP is interpreted implicitly when not overt. The IL/SL distinction is discussed in chapter 3. The availability of the infinitival structure in (27b) is a point of cross-linguistic variation that we take up in chapter 5.

The examples in (28) show that the subject and infinitive of (27b) can appear in a passive-like structure, either by placing the infinitive directly in subject position ((28a)) or extraposing it ((28b)). The animate DP from (27b) can now appear in an optional PP.

- (28) a. To leave was rude (of Emma)
b. It was rude (of Emma) to leave

Lastly, (29) illustrates the ability of a sub-set of EAs to take a *to*-PP.

- (29) Peter was rude to Emma

Throughout this thesis I treat the EA causative alternation paradigm in (25) as the core phenomenon, and the *to*-PP data ((29)) as peripheral. This is because, as we will see in chapter 3, EAs do not always entail a *to*-PP.

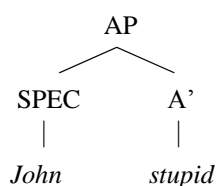
With the EA data pattern in mind the properties of some alternative approaches to EA argument structure are presented in the next section. Semantic approaches are examined in chapter 3.

1.3.2 *Alternative Syntactic Analyses*

In a seminal paper **Stowell (1991)** analyses EA argument structure and proposes that EAs can take two arguments: an animate mental property holder and an event (realised by the infinitive in our paradigm). When both arguments are realised, they are generated externally in the specifiers of Larsonian shells, with the animate argument occupying the inner-most shell and the event argument the outer one ((30)).

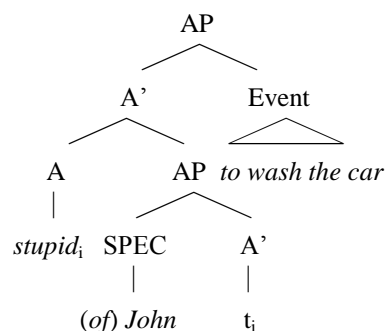
(30) *Stowell's (1991) EA Argument Structures*

a. IL Reading ((27a)):



(cf. Stowell 1991: 122, ex. (32a))

b. SL Reading ((27b), (28)):



(cf. Stowell 1991: 128, ex. (56))

Stowell's analysis invokes the Individual/Stage distinction. If the EA projects only the inner shell, with the animate DP in its specifier, the subject receives an IL property interpretation (e.g. *John is stupid* (30a)). If the optional additional infinitive AP-shell is projected, it is assigned the Event thematic role, inducing a SL interpretation (e.g. *John was stupid to wash the car* (30b)).

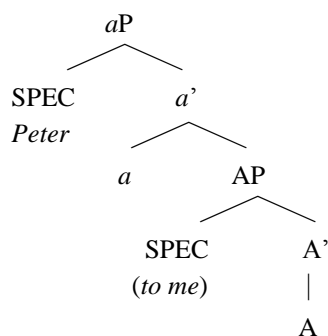
Regarding the infinitive data, Stowell assumes that the infinitive in the upper AP-shell does not intervene for case purposes. He further assumes that genitive case is optionally assigned to the animate external argument by the preposition *of*. Examples (27b) (e.g. *John was stupid to wash the car*) and (28) (e.g. *To wash the case was stupid (of John)*) follow from the raising of either external argument to Spec, IP: if the animate argument is assigned genitive case, then the infinitive raises; if the animate argument is not assigned genitive case, then it raises.

Three notable aspects of Stowell's analysis are **(i)** the conclusion that the EA animate argument tests like an external argument, **(ii)** the proposal that the infinitive data are derived from the same argument structure ((30b)), and **(iii)** the proposal that an IL interpretation versus a SL one is dependent on the absence/presence of the infinitive.

Bennis (2004) examines Dutch adjectives and also concludes that the EA animate argument is external. This is shown in the structures in (31). The head *little a* is proposed by Bennis to be conceptually parallel to *little v*—implying that adjectives and verbs project isomorphic argument structures—but differs in that *little a* is aspectually stative and unable to assign accusative case (Bennis 2004: 93).

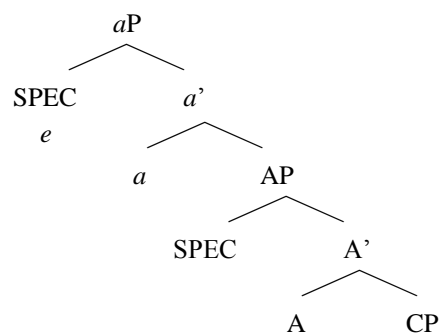
(31) *Bennis' (2004) EA Argument Structures*

a. *Peter is nice (to me)*



(cf. Bennis 2004: 92, ex. (14b))

b. *To say that is nice (of him)*



(cf. Bennis 2004: 92, ex. (27a))

In terms of the derivations, Bennis analyses infinitive structures such as (31b) as analogous to the verbal passive, observing the intuitive parallel optionality of the EA *of*-phrase and the passive *by*-phrase (cf. *The window was broken (by Peter)*).

In the passive-like structure in (31b) the derivation has the following properties: (i) an empty category *e* occupies the canonical external argument position, (ii) the CP raises from complement position for case (cf. Stowell 1991), and (iii) the *of*-phrase is optionally realised as an adjunct (cf. Baker *et al.* 1989). The passive analogy thus accounts for the passive-like infinitive structures ((28)).

The *to*-PP examples come from the active structure in (31a), where a referential external argument is generated in Spec, *a* (e.g. *Peter is nice (to me)*). *To*-PPs are assumed to be generated optionally in Spec, A. Notice that in (31b) Spec, A is left empty, while in (31a) there is no CP.

Beginning with the empty Spec, A in (31b), it addresses a restriction first observed in English by Stowell (1991) that has since been found with EAs in every language tested. Namely, an EA cannot license its CP and PP simultaneously ((32)). I will refer to this as the CP/PP restriction. In (32), the demonstrative *that* stands in for the propositional content of a CP:

(32) *That was kind to me (Stowell 1991: 129, ex. (60b))

For Bennis this CP/PP restriction follows from minimality: on the assumption that the CP needs to move for case purposes, the *to*-PP blocks the movement if it is present in Spec, A. So Spec, A must be empty for the derivation of the passive structure to converge ((31b)). This means that the CP and the PP cannot be licensed simultaneously, which captures (32).

In section 2.3.3.2 we return to the CP/PP restriction paradigm at length. I argue that the explanation is not minimality, but that the CP and PP compete for a single complement position. Since they compete for the same position, they do not co-occur.

Turning now to the absence of the CP in (31a), there is one point of notable difference between Stowell's and Bennis' analyses. Whereas Stowell derives (33a) (repeated from (27b)) and passive-like structures such as (33b) (repeated from (28b)) from the same base structure, Bennis does not.

(33) a. Emma was rude (to leave)
 b. It was rude (of Emma) to leave

Bennis observes that the structures in (33) behave differently with respect to adjunct extraction. In (34), (34a) corresponds to (33a), and (34b) to (33b).

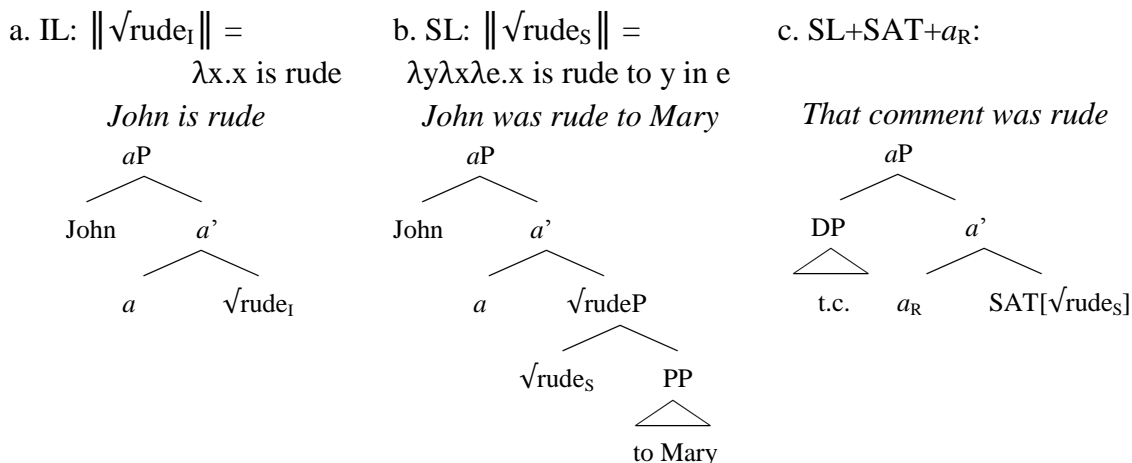
(34) Dutch
 a. *Warr_i is Jan gemeen [om PRO zo t_i over te praten]?
 where is John mean for PRO like-that *t* about to talk
 (Bennis 2000: 42, ex. (41c))
 b. [?]Waar is het gemeen [om PRO *t* over te praten]?
 where is it mean for PRO *t* about to talk
 (Bennis 2000: 42, ex. (43c))

The difference in the acceptability of adjunct extraction leads Bennis to propose that the infinitive is a complement to the adjective in the passive-like structures ((34b)), but an adjunct when the animate argument is in subject position ((34a)). So, the CP is absent in (31a) because Bennis analyses it as an adjunct.

Key aspects of Bennis' study are that **(i)** EAs in Dutch also introduce their animate argument externally, **(ii)** it capitalises on similarities with the verbal passive, and **(iii)** EAs optionally generate complement and adjunct infinitives.¹²

Turning now to **Landau (2009)**, this proposal returns to using IL/SL lexical entries to partition the data ((35a, b)).

(35) *Landau's (2009) EA Argument Structures*



(cf. Landau 2009: 339, ex. (51a)) (cf. Landau 2009: 339, ex.(51b)) (cf. Landau 2009: 340, ex. (52))

The IL lexical entry ((35a)) is a property predication, while the SL one ((35b)) minimally includes an event argument, which is not realised in the syntax.

On Landau's proposal, neither EA denotation makes reference to a CP. In order to derive the passive-like structures, two operations are proposed: SAT(uration) and REALIZE (a_R). The former is a lexical operation that saturates all argument positions except the event argument. The latter is a syntactic operation that introduces a new external argument. When these operations apply to the SL entry in (35b), an infinitive or an event denoting nominal can be merged in Spec, a , and the *of*-phrase is optionally realised as an adjunct, returning (35c) (e.g. *That comment was rude (of John)*).

In the examples where the animate argument appears in subject position (i.e. *Emma was rude to leave*), the infinitive is analysed as an adjunct to the structure in (35b). So, the infinitive is either an external argument or an adjunct, but never a complement.

¹² I do not discuss Bennis (2000) in order to simplify this summary of alternative analyses, but two points should be mentioned. First, to my knowledge, Bennis (2000; 2004) was the first to connect passivisation with EA alternation, and I will follow him in this, although the assumptions and implementation differ.

Second, in place of Bennis' (2004) *little a*, Bennis (2000) proposes that EAs project a head X . While settling on associating X with *Cause*, he is non-committal and suggests that X could be labelled *Stage* or *Event* (2000: 64, fn. 13). In that analysis, causation plays no distinguishing role. In contrast, in this thesis causation and the causative alternation are the necessary notions to understanding EAs' global behaviour.

Key aspects of Landau's proposal are that the animate DP is again external when introduced as an argument, and that there is some transformational relation between some of the structures. However, multiple denotations are posited (*i.e.* IL and SL) and the positions that arguments occupy vary.

Kertz (2010) goes further still in disassociating the different structures. EAs are argued to be monadic IL predicates that introduce their sole argument in an external position; there is no derivational relation between the various configurations. Structures such as *Emma was rude (to leave)* are monadic with an animate subject and an adjunct infinitive. On the other hand, structures such as *To leave was rude (of Emma)* are also monadic, but with an infinitival subject and an adjunct *of*-PP.

The only EAs that are taken to be ambiguous between a monadic IL reading and an eventive SL one are those that take a *to*-PP (*i.e.* *Peter was rude to Emma*). On Kertz's proposal, an EA is eventive only when the *to*-PP is present; otherwise it is simply a monadic IL predicate. Therefore EAs are again always taken to generate their animate DP as an external argument, but EA ambiguity is also posited.

This overview is summarised in (36), with the last column indicating how the present proposal will ultimately compare.

(36) *Summary of Points of Comparison*

	Stowell	Bennis	Landau	Kertz	Leferman
EAs are dyadic	S	S	S	S	A
Animate DP is external	A	A	A	A	A
<i>of</i> -PP is an adjunct	N	A	A	A	N
Analyses <i>that</i> -clause data	N	N	N	N	Y
Infinitive is external	A	N	S	S	N
Infinitive is an adjunct	N	S	S	S	N
Infinitive is a complement	N	S	N	N	A
<i>to</i> -PP is a complement	A	N	A	A	A
CP/PP restriction is structural ¹³	N	N	N	N	Y
IL/SL lexical entries	Y	N	Y	Y	N
Derivational relationships between structures	A	S	S	N	A
EAs are factive	N	N	N	N	Y

Key: Y: Yes; N: No; A: Always; S: Sometimes

¹³ Here by *structural* I mean the CP and PP compete for the same syntactic base position.

This presentation of the alternative analyses has **(i)** introduced some of the empirical points that emerge (*e.g.* the external position of the animate DP, IL/SL readings, the optional character of both the animate argument and the CP depending on the structure, the CP/PP restriction, extraction violations), and **(ii)** provided some idea of the heterogeneity that has been proposed in order to account for EA syntax.

This thesis explores a unified approach based on an unambiguous denotation and general derivational operations. We will see that analysing EAs as stative causative alternating predicates illuminates their character, and that extending the causative alternation to adjectives has interesting implications for the representation of inner-aspect.

Chapter 2: EA Argument Structure

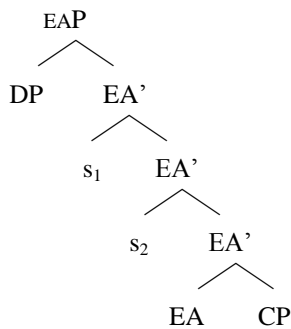
2 Introduction

This chapter surveys the syntactic properties of a variety of predicative adjective classes in order to make the case for a three-way syntactic classification between evaluative adjectives (EA) (*e.g. nice, rude, wise*), psychological experience adjectives (PA) (*e.g. anxious, eager, willing*), and relational/physical property adjectives (RA) (*e.g. Canadian, old, tall*). The argument structures that I propose for these classes are repeated from chapter 1 in (1). The structures illustrate the classes' argument selection differences. In the process of surveying, I highlight parallels in the verbal domain in order to show that adjective argument structure complexity is comparable to that of verbs (*cf.* Bennis 2000, 2004).

(1) *Argument Structures of the Three Main Adjective Classes*

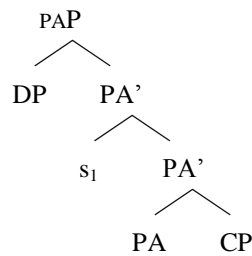
a. EAs:

Emma was rude to leave



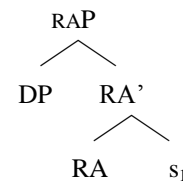
b. PAs:

Sam was eager to help



c. RAs:

Victoria was Canadian/tall



All of the structures in (1) are stative, but the salient difference is that the EA argument structure contains two state arguments (*i.e. s₁ and s₂*), and the PA and RA structures contain one. I will argue that a predicate with two state arguments, as in (1a), is lexically specified as causative.¹ So the argument structure in (1a) says that the inner-aspect (*i.e. lexical aspect*) of EAs is *stative causative*. In contrast, PAs and RAs contain a single state argument and aspectually, they are *simple states*.

¹ We return to the issue of lexical specification in depth in chapter 4.

This chapter will provide initial evidence that EAs are distinguishable from other adjectives in being causative. Here I assume that EAs are always stative; chapter 3 provides the evidence for a stative causative aspectual classification. Chapter 4 will argue for the stative content of the aspectual arguments in (1).² For the moment, the central claim made by the argument structures in (1) is that EAs are causative, while PAs and RAs are not.

In addition to being causative, this thesis proposes that EAs undergo the causative alternation. The causative alternation is a phenomenon in which a causative verb licenses its arguments in two configurations. Illustrating with *break*, one configuration is overtly transitive with a subject and direct object, interpreted as an Agent or Causer, and a Theme, respectively ((2a)). The other is apparently intransitive with the logical direct object, the Theme, being the only overt argument in the syntax ((2b)).

- (2) a. Peter broke the window
b. The window broke

The principle proposal here is that the causative alternation extends across lexical categories to include EAs, and so it is not limited to verbs. The EA data that are structurally parallel to (2) in the relevant respects are in (3).

- (3) a. Emma was rude to leave
b. That Emma left was rude

Looking at the syntax of (2) and (3), the verb *break* selects a DP direct object complement and the adjective *rude* selects a CP. We can attribute this difference—specifically EAs selecting a CP—to the general inability of adjectives to assign accusative case to their complements (*cf.* Chomsky 1981; Stowell 1981). Example (4) shows that a preposition is required to case-mark an adjective's complement DP.

- (4) Emma is proud *(of) Peter (*cf.* Chomsky 1981: 49, ex. (4))

² More precisely chapter 4 follows up on chapter 1 and argues that the state argument is the only primitive sort of aspectual argument, and that eventivity (represented in the form of a primitive Davidsonian spatio-temporal event argument, *e* (Davidson 1967)), is epiphenomenal.

Looking at the complement category selection pattern in (2)-(4), the assumption that CPs do not require case accounts for adjectives' ability to take a CP complement without a preposition's intermediation.³ Therefore, this difference in complement category selection falls under a broader generalisation regarding case-marking, and does not bear on the causative nature of the predicate.

Beyond this category difference (*i.e.* DP versus CP), in this chapter we will see that (2b) and (3b) share the property of unaccusativity—the referential argument in both examples originates in complement position. On the other hand, the overtly transitive examples (2a) and (3a) share the property of having two referential arguments ((1a)).

With respect to meaning, the unaccusative examples in (2b) and (3b) make the same kind of assertion: they assert something about a result—an object being broken and a situation being rude—while responsibility for the result is backgrounded. The transitive examples in (2a) and (3a) go a step farther and include the individuals responsible for the broken object and the rude situation: the predicate now specifies the cause of the result.

Looking ahead to one of the consequences of this EA causative alternation analysis, I propose that it exposes the source of their apparent stative/eventive ambiguity. It is well-documented that EAs produce agentive inferences in the continuous aspect ((5a)) or when modified by intention adverbials ((5b)) (*cf.* Lakoff 1966; Partee 1977; Dowty 1979, *a.o.*).

- (5) a. Sam was being arrogant/brave/nice/obnoxious/rude
 b. Victoria was arrogant/brave/nice/obnoxious/rude on purpose

In chapter 3 I show that EAs are uniformly stative on all their usages, and so EAs are not aspectually ambiguous between stative and non-stative instantiations. Rather, EAs' animate external argument and their aspectual complexity—the causative component that other adjectives lack—combine to produce an agentive implicature in environments such as these.⁴

³ Section 2.3 shows that the EA CP always originates in complement position. Section 4.2.1.3 discusses case-marking with the passive *by*-phrase, but otherwise, as mentioned in chapter 1, case theory falls outside the scope of this thesis.

⁴ An implicature is an aspect of meaning that is implied, but not entailed (Blackburn 1996; Chierchia and McConnell-Ginet 2000). The examples in (i) show that when an inference is entailed (*i.e.* someone's death), negating it is contradictory ((i.b)), and repeating it is redundant ((i.c)). Implicature, in contrast,

This chapter is structured as follows. Section 2.1 introduces EAs as a class and a basic characterisation of the causative alternation, as well as some assumptions about argument structure interpretation. Section 2.2 compares EAs with four other adjective classes in order to flesh out the evidence for adjectival complexity. While discussing the basic syntactic facts I identify semantic differences between the various adjective classes, and further substantiate the proposal that EAs undergo the causative alternation. Section 2.3 shows that the EA CP always originates as a complement of the adjective. In 2.4 I argue that the building blocks of argument structure/inner-aspect are independent of lexical category. Thus lexical category is not a barrier to a causative alternation analysis of EAs. Lastly, section 2.5 presents the conclusions.

2.1 The EA Class, the Causative Alternation, and Causation

Section 2.1.1 introduces EAs as a class, presents its causative alternation paradigm, and compares it with the corresponding verbal paradigm. Then, section 2.1.2 relates EAs to the basic properties of causative verbs and the causative alternation.

2.1.1 The EA Class and Its Causative Alternation Paradigm

The EA class is very large in English and other languages with a substantive adjective category.⁵ The list in (6) provides a sample.⁶

does not create these conflicts. On its own, example (ii.a) can be understood to mean that Emma no longer swims.

- (i) a. Peter killed Philip
b. #Peter killed Philip, but Philip didn't die
c. #Peter killed Philip, in fact Philip died
- (ii) a. Emma used to swim (cf. Chierchia and McConnell-Ginet 2000: 22, ex. (23))
b. Emma used to swim, but she doesn't now
c. Emma used to swim, in fact she still does

But examples (ii.b, c) show that repeating or denying that inference is coherent, and not contradictory or redundant. In chapter 3 we will see that EA agentive inferences are implicatures, and not entailments.

⁵ Some languages, in contrast, seem to lack adjectives, or to have so few that they are in the single digits. Dixon places the adjective classes labelled here as EA and PA in the semantic field of HUMAN PROPENSITY. He reports that, in a given language, “only when an adjective class is much bigger [...] is it likely to include terms referring to human propensity” (2004: 4). In contrast, RAs are amongst the first to appear. There is a temptation to see a correlation in the syntactic complexity of an adjective class's argument structure (*i.e.* EAs and PAs versus RAs in (1)) and the broader hierarchy of semantic fields that Dixon identifies (2004, 2010), but the attempt to establish the correlation would require a different methodology than that of this thesis. It is interesting, however, to note that the typological literature supplies an adjective hierarchy that suggests a correlation with argument structure complexity.

(6) *Evaluative Adjectives*

arrogant, bold, brave, careful, clever, clumsy, considerate, courteous, cowardly, crazy, cruel, cunning, dumb, farsighted, foolish, generous, greedy, hostile, humble, idiotic, impudent, intelligent, kind, loyal, mad, masochistic, mean, mischievous, modest, nice, noble, obedient, obnoxious, polite, prudent, rude, sadistic, selfish, silly, sincere, skilful, smart, stupid, thoughtful, wise, ...

Since the proposal here is that EAs are causative, the fact that the group is large is a parallel to the verbal domain, where causative verbs are also numerically conspicuous. From the perspective of this thesis, causatives should be and are abundantly represented as verbs and adjectives.

The EA causative alternation paradigm is in (7).⁷ In section 2.2.1 I argue that when an EA appears with a *that*-clause ((7a, b)), the structure is unaccusative. I also propose, with Alexiadou *et al.* (2015), Koontz-Garboden (2009), Kratzer (2005), and Levin and Rappaport Hovav (L&RH) (1995), among others, that the unaccusative structure of causative alternating predicates is aspectually causative.⁸

- | | |
|-----------------------------------|---|
| (7) a. That Emma left was rude | = Causative Unaccusative |
| b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| c. Emma was rude to leave | = Transitive Causative |
| d. Emma was rude | = Transitive Causative with Implicit CP |
| e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |

⁶ This list is modified from Fabregas *et al.* (2013).

⁷ English is used in (7) because it illustrates the complete paradigm. Chapter 5 presents paradigms from a number of Germanic and Romance languages, as well as Basque. Cross-linguistic paradigm differences are discussed there.

⁸ I use the term *causative unaccusative* ((7a, b)) because there are unaccusatives that are not aspectually causative, *e.g. exist, seem*. I eschew the term *anti-causative* in order to avoid confusion regarding the aspectual status of the superficially intransitive half of the causative alternation; in chapter 4 I provide theory-internal motivation for the position that the two configurations of the causative alternation are both aspectually causative. The sources just cited in the main text take the same position, but for independent reasons. Further, I do not use the term *inchoative* in order to avoid the inference that the syntax of the intransitive half of the causative alternation contains an abstract BECOME operator/predicate. A conclusion advanced from chapters 3 and 4 is that the abstract operators/predicates DO, CAUSE, BECOME do not exist in natural language syntax (*cf.* Dowty 1979). Lastly, since I am focussed the causative alternation, I will use *unaccusative* to mean *causative unaccusative*, unless specific disambiguation is necessary.

Sections 2.2 and 2.3 show that example (7c), with an animate DP and an infinitive, is a transitive structure. In chapter 3 I argue that the apparently monadic example (7d) contains an implicit CP variable, and is otherwise parallel to (7c). Chapter 5 presents the analysis of this. Lastly, examples (7e, f) are passives derived from the transitive causatives.⁹

Organising the EA configurations into (7) reveals a special case of the verbal causative alternation paradigm shown in (8).

- | | | |
|-----|-------------------------------------|----------------------------------|
| (8) | a. The window broke | = Causative Unaccusative |
| | b. Peter broke the window | = Transitive Causative |
| | c. The window was broken (by Peter) | = Transitive Causative + Passive |

The passive example (8c) is included in the paradigm for two reasons. First, the referential external argument in passives is an important counterpoint to unaccusatives. In connection with EAs, note that the passive *by*-phrase in (8c) has the same optional behaviour as the EA *of*-phrase in (7e, f). Second, as we will see in the next section and in Chapter 4 in more detail, passivisation is a general property of causative verbs.

Let's begin by contrasting the two paradigms. There are five differences:

- (i) *Break* selects a DP complement, and EAs a CP. This can be accounted for as an independent case-marking restriction as discussed in the introduction.
- (ii) CPs can extrapose, and since EAs select CPs, the EA paradigm has the corresponding additional data points ((7b, f)). Like case-marking, Extraposition is a phenomenon that is independent of the causative alternation itself, so it does not affect the relevant parallelism between the two paradigms.
- (iii) EAs allow a null complement ((7d)), where *break* does not: if (8b) is reduced to *Peter broke*, it has only a causative unaccusative interpretation along the lines of *Peter broke (down) under the pressure (of the job)*. The formal conditions under which a predicate (class) allows a null complement are generally not well-understood, so this difference between *break* and EAs does not flag a problem for

⁹ Section 2.2.2.2 presents evidence that EAs are factive whenever factivity is testable, *i.e.* when they appear with a CP. Kiparsky and Kiparsky (1970: 145) observe that Extraposition is optional with factive predicates, so the optionality of having the CP in subject position or extraposing it in (7a, b) and (7e, f) is a first piece of evidence that EAs are factive.

the proposal. As just mentioned, these apparently monadic examples are discussed in later chapters.

- (iv) In English, the verbal passive can appear with the external argument inside a *by*-phrase ((8c)), but EAs appear with an *of*-phrase ((7e, f)). Chapter 5 provides examples of languages that use the same preposition in these cases (*e.g.* German, Spanish, Swedish), thus supporting the unification. I assume that when a language uses a different preposition (*e.g.* Dutch, English, Romanian), the difference is superficial, plausibly marking the category difference between verbs and adjectives.
- (v) In (8b, c) *break* bears tense and participle morphology, respectively, while in (7) EAs do not. These are independent facts about morphology: verbs carry temporal and aspectual morphology, and adjectives do not. Just as the passive appears in the nominal domain without participial morphology (*e.g. The city's destruction by the barbarians*), I follow Bennis (2000, 2004) and Landau (2009) in applying the passive to EAs. The fact that adjectives do not manifest this kind of morphology is independent of the application of the passive as a syntactic operation.¹⁰

So, all the differences between the paradigms in (7) and (8) plausibly follow from independent considerations. What remains is the parallelism between (7a) and (8a), (7c) and (8b), and (7e) and (8c), respectively. This is the first identification that I am aware of of the causative alternation applying outside of the verbal domain. In order to substantiate the identification further, let's consider additional criteria that a causative alternation analysis of EAs must meet.

2.1.2 *Properties of Causatives and the Causative Alternation*

If a causative alternation analysis is to be viable for the pattern in (7), there are three conditions that must be satisfied:

¹⁰ I incorporate Collins's (2005) analysis of the passive in chapter 4.

(9) *Properties of Causatives and the Causative Alternation*

- a. Causative alternating verbs have a thematically underspecified external argument.
- b. Causative verbs passivise.
- c. Causative Unaccusatives lack referential external arguments.

(cf. Martin and Schafer 2014)

Beginning with (9a), the verbal causative alternation is very productive, but not every causative verb has both a transitive and an unaccusative structure. Comparing the causative verbs *break* and *assassinate* in (10) and (11), respectively, (10a) and (11a) show that both accept an Agent external argument. The (b) examples, however, show that only *break* accepts an external argument interpreted as a Causer. Likewise, the (c) examples show that only *break* has an unaccusative structure.

- (10) a. The terrorist broke the window = Transitive Causative
 b. The explosion broke the window = Transitive Causative
 c. The window broke = Causative Unaccusative
 (cf. Martin and Schafer 2014: 211, ex. (5))

- (11) a. The terrorist assassinated the senator = Transitive Causative
 b. *The explosion assassinated the senator = Transitive Causative
 c. *The senator assassinated = Causative Unaccusative
 (cf. Martin and Schafer 2014: 211, ex. (3))

The generalisation regarding the interpretation of external arguments and the causative alternation is:

(12) *Underspecified External Argument Generalisation*

Only transitive verbs that do not restrict the Θ -role of their external argument to Agents enter the causative alternation.

(cf. Schafer and Vivanco 2016: 7, ex. (12))

In positive terms, *break*'s pattern in (10) shows that the verbs that enter into the causative alternation allow a Causer external argument.

The next examples show that some alternating verbs impose an even stronger restriction. While unaccusative *break* is compatible with a situation in which it turns out that an Agent did the breaking, some verbs restrict to a Causer interpretation in their unaccusative form. For example, in (13a) the verb *clear* takes an Agent external argument, but the unaccusative structure based on this agentive interpretation is unavailable. So (13b) is ungrammatical in correspondence to the agentive scenario in (13a).

- (13) a. The waiter cleared the table
b. *The table cleared

(cf. Rappaport Hovav and Levin 2012: 157, ex. (8))

But the examples in (14) show that when *clear* takes a Causer external argument ((14a)), the unaccusative can be used to describe this situation ((14b)).

- (14) a. The wind cleared the sky
b. The sky cleared

This contrast within *clear* shows that there are alternating verbs that restrict to a Causer interpretation in the unaccusative form. The verb *narrow* in (15) and (16) is like *clear* in this regard:

- (15) a. The seamstress narrowed the skirt
b. *The skirt narrowed

- (16) a. I like how the band narrows the skirt a bit

(Rappaport Hovav 2014: 14, ex. (28a))

- b. The skirt narrows at the bottom

(Rappaport Hovav 2014: 14, ex. (26b))

Example (16), however, makes an additional point that supports the present proposal. The verbs *break* and *clear* both involve a change-of-state. For example, in (17) (repeated from (2)) there is a transition from an unbroken window to a broken one.

- (17) a. Peter broke the window
 b. The window broke

Yet as Rappaport Hovov (2014: 14) observes, both sentences in (16) are stative.

If we focus on verbs such as *break* or *clear*, it might seem that a change-of-state is constitutive of the causative alternation. But (16) shows that a change-of-state is not necessary, and that the causative alternation applies to stative relations, as well. What is more, the contrast between (15) and (16) shows that *narrow* is a case where the alternation occurs only on a stative interpretation.

Crucially for our purposes here, this removes another barrier to a causative alternation analysis of EAs. Just as in (16), the transitive/unaccusative EAs pair in (18) (repeated from (3)) is stative.

- (18) a. Emma was rude to leave
 b. That Emma left was rude

So, the lack of a change-of-state is not a problem for this causative alternation analysis of EAs; what matters is that the predicate allows its external argument to be interpreted as a Causer.

In this connection, the difference between the stative causative alternation of *narrow* in (16) and EAs in (18) is that EAs select an animate external argument. In chapter 3 we will see that EAs are always stative. This means that their external argument can only be interpreted as a Causer, and so they meet this Causer criterion. In this regard, EAs fill out the empirical range of the causative alternation in an interesting way: moving from the interpretative properties of *break*, to *clear* and *narrow*, we find EAs, stative causative alternating adjectives with an animate Causer.¹¹

¹¹ In section 4.4.3 I propose that thematic roles are derived from the restricted nature of this theory of inner-aspect, and the general cognitive function of establishing a *figure* and a *ground* (Talmy 2000). In the meantime I will use thematic role labels for descriptive purposes. It is worth mentioning now, however, that since causation is always stative on this theory (chapter 1), the semantic interpretation of a causative external argument is a Causer (descriptively speaking). An Agent interpretation of the external argument (*i.e.* an animate being that can produce change) is the result of conceptual enrichment because change is represented conceptually. This is taken up in section 4.4.3.

The important result, however, is that EAs meet the causative alternation Causer generalisation ((12)) in two ways: (i) they are always aspectually stative; and (ii) since they are adjectives, their lexical category tracks the fact that they do not imply change conceptually, and so their external argument is not conceptually enriched to an Agent interpretation, either. This means that EAs' external argument is consistently interpreted as a Causer, and so EAs are actually freer to participate in the causative

The remaining general properties of causatives and the causative alternation are passivisation ((9b)), and the lack of a referential external argument in unaccusatives ((9c)). Chapter 4 will show that passivisation is a general property of causative predicates. Passives contrast with unaccusatives in providing evidence for a referential external argument in the syntax. Example (19b) is the passive of (19a). In the passive the external argument can be realised in a *by*-phrase.

- (19) a. Peter/The explosion broke the window
b. The window was broken by Peter/the explosion

In this respect, passives contrast sharply with unaccusatives ((20)). Example (20b) shows that unaccusatives cannot license an external argument in the same way.

- (20) a. The window broke
b. *The window broke by Peter/the explosion

In chapter 5 we will see more data that contrasts passives and unaccusatives with respect to external arguments. Although unaccusatives do not licence a referential external argument, I will argue that they do entail some causer, and so an external argument is part of their lexical entry. In order to maintain a transparent syntax/LF mapping, I will present an argument that implicit arguments without pronominal properties are variables bound under Existential Closure.

One alternative analysis that proposes that the external argument is present in the syntax is the reflexive analysis of the causative alternation. On a reflexive analysis, unaccusatives such as *The window broke* mean that the overt argument acts upon itself, *i.e.* the window caused itself to break (Koontz-Garboden 2009: 106; Schafer and Vivanco 2016: 4, fn. 5). This paraphrase illustrates that, on a reflexive analysis, the external argument is realised in the syntax in a reflexive relation.

A further property of a reflexive analysis, however, is that there is no entailment relation between the transitive and unaccusative structures. For example, since (21b) is taken to mean *the window caused itself to break*, there is no external cause, and so a

alternation than verbs are because the Agentive interpretations of verbs place intricate restrictions on the acceptability of their unaccusative structures ((13)-(17)) (*cf.* Rappaport Hovav and Levin 2012). In short, EAs' dual satisfaction of the "Causer" criterion implies that they should enter freely into the causative alternation, and indeed, the whole class does.

transitive causative such as (21a) does not entail the unaccusative (21b) (*cf.* Koontz-Garboden 2009: 106, fn. 25; Chierchia 2004: 53-59; Schafer and Vivanco 2016: 25).

- (21) a. Peter broke the glass
 b. The glass broke

Instead of a reflexive analysis, I adopt the position that there is indeed an entailment relation in (21), specifically, that (a) entails (b). Further, I follow Schafer and Vivanco (2016) in indentifying unaccusatives as weak scalar expressions. Namely, the transitive and unaccusative structures in the causative alternation are ordered on a scale of informational strength. The transitive expression includes the external argument, so it is more specific and it makes a stronger assertion. In contrast, the unaccusative is less specific, and its use leads to the inference that a stronger assertion is not possible (Horn 1985; Grice 1989). Reasons for this can be that the speaker cannot or will not identify the cause, or that the cause is irrelevant to the discourse (Schafer and Vivanco 2016: 11; Rappaport Hovav 2014; *cf.* RH&L 2012; Levin 2015).

An implicature analysis accounts straightforwardly for the contrast in (22). Examples (22a, b) are felicitous. They begin with the unaccusative, and then enrich it with the more specific transitive continuation.

(22) Spanish

- a. Se rompió el vaso. De hecho, Juan lo rompió

SE broke the glass of fact John it broke

‘The glass broke. In fact, John broke it’

(Schafer and Vivanco 2016: 25, ex. (70))

- b. Se rompió el vaso. De hecho, el terremoto lo rompió

SE broke the glass of fact the earthquake it broke

‘The glass broke. In fact, the earthquake broke it’

(Schafer and Vivanco 2016: 25, ex. (71))

- c. #Juan/el terremoto rompió el vaso. De hecho, se rompió

John/the earthquake broke the glass of fact SE broke

#‘John/The earthquake broke the glass. In fact, it broke’

(*cf.* Schafer and Vivanco 2016: 25, fn. 30))

Example (22c) flips the order of the two sentences, and is infelicitous. On the implicature account this is because the first sentence is more informative than the second, so the continuation is superfluous and confusing. I refer the reader to Schafer and Vivanco (2016) for detailed support of the implicature component of the causative alternation, as well as a detailed argument against a reflexive account.¹² In chapter 5 I incorporate this implicature perspective.

Regarding the three criteria of causative alternating predicates presented in this section, evidence presented throughout the thesis will show that EAs have an external argument that meets the Causer criterion, they passivise, and they have an unaccusative form. Importantly, the example of *narrow* ((16)) shows that the causative alternation can be necessarily unambiguously stative. So, a significant barrier to a causative alternation analysis of the EA paradigm in (23) (repeated from (7)) has been removed.

- | | |
|-----------------------------------|---|
| (23) a. That Emma left was rude | = Causative Unaccusative |
| b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| c. Emma was rude to leave | = Transitive Causative |
| d. Emma was rude | = Transitive Causative with Implicit CP |
| e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |

2.2 EAs versus Other Adjective Classes

This section surveys some of the syntactic and semantic features that distinguish EAs from other adjective classes that appear with an animate subject and/or a clause in order to justify the adjective argument structures in (1).

In section 2.2.1 I examine EA *that*-clause data and argue that they are unaccusative. Section 2.2.2 compares the EAs with PAs (*e.g. anxious, eager, willing*), the class that will function as a minimal pair with EAs. In 2.2.3, EAs and PAs are shown to be distinguishable from raising adjectives (*e.g. certain, likely*). These three classes are then contrasted with two others that can appear either with a DP or a CP, but not both, namely (i) relational/physical property adjectives (RA) (*e.g. Canadian, old, tall*), and

¹² See also Martin and Schafer (2014) and Alexiadou *et al.* (2015) for arguments against an approach that assimilates unaccusatives and passives (*cf.* Kallulli 2007).

(ii) adjectives such as *important* and *crucial* (IA). The remainder of this thesis will be concerned only with a direct comparison between EAs, PAs and RAs, but I briefly discuss raising adjectives and IAs in order to show that a raising analysis is infeasible for EAs and PAs, and to illustrate the diversity that exists in adjective syntax.

2.2.1 *EA That-Clause Structures are Unaccusative*

This section presents evidence arguing that EA *that*-clause data do not license a referential CP-external subject, thus supporting an unaccusative analysis. The comparison between verbal active voice transitive sentences, their passives, and unaccusatives in (24) and (25) (repeated from (19) and (20), respectively) show that unaccusative structures bar the realisation of a referential external argument ((25b)).

- (24) a. Peter/The explosion broke the window
 b. The window was broken by Peter/the explosion
- (25) a. The window broke
 b. *The window broke by Peter/the explosion

Since EAs can appear with an external argument and a CP ((26a-c) repeated from (7a-c)), I will compare EAs with *manage*, *forget*, and *happy* (*i.e.* predicates that also select an external argument and a CP) in order to show that EAs display a restriction on disjoint reference (section 2.2.1.1) and co-reference (section 2.2.1.2). This restriction is explained by an unaccusative analysis of EA *that*-clause data.

- (26) a. That Emma left was rude = Causative Unaccusative
 b. It was rude that Emma left = Causative Unaccusative + Extraposition
 c. Emma was rude to leave = Transitive Causative

2.2.1.1 *EA That-Clause Structures Reject Disjoint Reference*

The examples in (27) illustrate what happens when an EA external argument appears with a *that*-clause containing a disjoint subject.

- (27) a. *That Emma left was rude (of Peter)
b. *It was rude (of Peter) that Emma left
c. *Peter was rude that Emma left

The grammaticality of the examples in (26) versus the ungrammaticality of those in (27) is explained by the conclusion that a referential external argument is not licensed with an EA *that*-clause, just as it is not licensed in verbal unaccusatives.

A comparison with predicates with similar selection properties to EAs justifies this conclusion. Examples (28)-(31) compare EAs with other predicates that take clausal complements. In section 2.2.2.3 we will see that EAs are Obligatory Control (OC) predicates in all their infinitival structures. In (28a), the implicit subject of the infinitive is interpreted as Peter. The verbs *manage* and *forget*, and the adjective *happy* are also OC when they take an infinitive, and the implicit subject of their infinitives in (29a), (30a), and (31a) is also Peter.

- (28) a. Peter was rude to leave
b. *Peter was rude that Emma left
c. That Emma left was rude
- (29) a. Peter managed to leave
b. *Peter managed that Emma left
c. *That Emma left managed
- (30) a. Peter forgot to leave
b. Peter forgot that Emma left
c. *That Emma left forgot
- (31) a. Peter was happy to leave
b. Peter was happy that Emma left
c. *That Emma left was happy

The (b) and (c) examples show that these four OC predicates behave differently when the infinitive is exchanged for a *that*-clause containing a disjoint referent. The (b) examples are transitive *that*-clause structures. The EA example is ungrammatical ((28b)), as is the example with *manage* ((29b)), but on the other hand, *forget* and *happy* allow disjoint reference ((30b), (31b)).

The (c) examples are intransitive. Now, EAs are grammatical ((28c)), but *manage* and *forget* are ungrammatical with an unaccusative verb form ((29c), (30c)), as is *happy* in (31c). Example (31c) highlights the uniqueness of the grammaticality of the EA in (28c) even among adjectives.¹³

This comparison among OC predicates reveals a pattern that is explained by the conclusion that *manage*, *forget*, and *happy* are transitive, while EAs alternate between a transitive structure with an infinitive ((35a)) and an unaccusative structure with a *that*-clause ((35b)). So, OC predicates behave differently with respect to an infinitive or a *that*-clause complement, but specifically the EA pattern is explained by a causative alternation analysis.

This pattern of (un)grammaticality on the disjoint interpretation repeats itself cross-linguistically. Examples (32)-(34) are representative.

(32) Central Flemish

- a. Dat Jan weg ging, was grof
COMP John away GO-PAST WAS rude
'That John left was rude'
- b. Het was grof dat Jan weg ging
it was rude COMP John away GO-PAST
'It was rude that John left'
- c. *Dat Jan weg ging, was grof van Peter
COMP John away GO-PAST, was rude from Peter
'That John left was rude of Peter'
- d. *Het was grof van Peter dat Jan weg ging
it was rude from Peter COMP John away GO-PAST
'It was rude of Peter that John left'
- e. *Peter was grof dat Jan weg ging
Peter was rude COMP John away GO-PAST
'Peter was rude that John left'

¹³ In (31c) *happy* is not naturally interpreted as *fortunate*, as it sometimes is in other environments (*cf. Happily, Emma left*). If *happy* is switched with *fortunate* in (31c), the example becomes grammatical. I have used *happy* in (31) in order to show that not all Control adjectives behave like EAs, while illustrating a minimal contrast with *forget* in (30).

(33) Spanish

- a. Que Juan se marchara fue prudente
COMP John SE leave-SUBJ was prudent
'That John left was prudent'
- b. Fue prudente que Juan se marchara
was prudent COMP John SE leave-SUBJ
'It was prudent that John left'
- c. *Que Juan se marchara fue prudente por parte de Pedro
COMP John SE leave-SUBJ was prudent by part of Peter
'That John left was prudent on Peter's part'
- d. *Fue prudente por parte de Pedro que Juan se marchara
was prudent by part of Peter COMP John SE leave-SUBJ
'It was prudent on Peter's part that John left'
- e. *Pedro fue prudente que Juan se marchara
Peter was prudent COMP John SE leave-SUBJ
'Peter was prudent that John left'

(34) Swedish

- a. Att Johan gick var ohövligt
COMP John leave-PAST was rude
'That John left was rude'
- b. Det var ohövligt att Johan gick
it was rude COMP John leave-PAST
'It was rude that John left'
- c. *Att Johan gick var ohövligt av Petter
COMP John leave-PAST was rude by Peter
'That John left was rude of Peter'
- d. *Det var ohövligt av Petter att Johan gick
it was rude by Peter COMP John leave-PAST
'It was rude of Peter that John left'
- e. *Petter var ohövligt att Johan gick
Peter was rude COMP John leave-PAST
'Peter was rude that John left'

Lastly, Italian provides independent verification of the non-licensing of a referential external argument with a *that*-clause. One characteristic of the Italian subjunctive is to allow for the possibility of the matrix and embedded subject to be disjoint. One difference between (35a) and (35b) is that the former, with the embedded infinitive, requires that the matrix subject and the subject of the infinitive be co-referential, *i.e.* it has to be Peter in both cases. In contrast in (35b), with the subjunctive in the embedded clause, the two subjects must be disjoint (*cf.* Giorgi 2009: 1841).

(35) Italian

a. Piero credeva di aver risposto

Peter believed of have-INF answered

‘Peter believed that he had answered’

b. Piero credeva che (Emma) avesse risposto

Peter believed COMP (Emma) have-SUBJ-PAST answered

‘Peter believed that (Emma) had answered’

Yet, this is not possible with EA *that*-clause structures in Italian. The examples in (36) show that EA *that*-clause structures appear in subjunctive mood, but the ungrammaticality of (37) shows that a disjoint CP-external argument is blocked.

(36) Italian

a. Che (Emma) abbia fatto quel commento è stato maleducato

that (Emma) have-SUBJ-PRES made that comment is be-PART rude

‘That Emma made that comment was rude’

b. È stato maleducato che (Emma) abbia fatto quel commento

is be-PART rude that (Emma) have-SUBJ-PRES made that comment

‘It was rude that Emma made that comment’

(37) Italian

- a. *Che (Emma) abbia fatto quel commento è stato maleducato
 that (Emma) have-SUBJ-PRES made that comment is be-PART rude
 da parte di Peter
 by part of Peter
 ‘That Emma made that comment was rude on Peter’s part’
- b. *È stato maleducato da parte di Piero che (Emma) abbia fatto
 is be-PART rude by part of Peter that (Emma) have-SUBJ-PRES made
 quel commento
 that comment
 ‘It was rude on Peter’s part that Emma made that comment’¹⁴
- c. *Piero è stato maleducato che (Emma) abbia fatto quel commento
 Peter is be-PART rude that (Emma) have-SUBJ-PRES made that comment
 ‘Peter was rude that Emma made that comment’

So while (35b) showed that when a referential external argument is licensed, disjoint reference is exactly what the subjunctive allows for in Italian, EAs still do not allow disjoint reference. The unavailability of a disjoint external argument in EA *that*-cause structures and the contrast in this respect with other predicates that appear with complement *that*-clauses follow from this unaccusative analysis.

2.2.1.2 EA That-Clause Structures Reject Co-Reference

Considering co-referential data now, Stowell (1991: 114, ex. (23)) provides the EA *that*-clause data in (38) and judges them to be degraded. Example (38a), with the external argument in subject position, is ungrammatical. With the external argument inside an *of*-PP, Stowell judges (38b) to be worse than (38c), but (38a) is the worst of the three.

¹⁴ In (35b), the complementiser *che* is optional, but in (36b) and (37b,c) it would be obligatory. Section 2.2.2.2 shows that EAs are factive wherever factivity is testable. The obligatory character of the complementiser in these examples is expected if EAs are factive because complementisers are generally obligatory with factive subjunctive embedding in Italian ((i)) (Giorgi 2009: 1853). Therefore, this represents another piece of evidence that EAs are factive. In (36a) and (37a) the complementiser is independently required with the CP in subject position.

(i) Gianni rimpiange *(che) sia partita
 ‘Gianni regrets that (she) has (PRES SUBJ) left’ (Italian; cf. Giorgi 2009: 1852, ex. (56))

- (38) a. *John_i was cruel that he_i shot Mary
 b. *That he_i shot Mary was cruel of John_i
 c. ??It was cruel of John_i that he_i shot Mary

I add (39) because it goes in the same direction as (38), indicating a cline in degradation on the co-referential interpretation.

- (39) ³That John_i shot Mary was cruel of him_i

That (38a) is robustly ungrammatical points to the same violation observed with disjoint subjects above—a referential external argument is not licensed—and the strength of the violation is predicted on an unaccusative analysis of EA *that*-clauses.

This serves to reinforce the contrast with other predicates that select a *that*-clause. In the previous section we saw that *forget* and *happy* both select a *that*-clause and allow a disjoint interpretation. Likewise, the examples in (40) show that both predicates have an unremarkable co-referential interpretation, as well.

- (40) a. Peter_i forgot that he_i left
 b. Peter_i was happy that he_i left

The fact that EA *that*-clause data remain ungrammatical on the co-referential reading ((39a)) is important because it rules out the possible intuition that EAs disallow disjoint reference because there is a semantic/conceptual clash between disjoint reference and EA meaning, e.g. that no coherent relation can be established between *rude*, Peter, and Emma leaving in (28b), i.e. *Peter was rude that Emma left. If the problem were disjoint reference, then one would predict EA *that*-clauses to have a co-referential reading that parallels *forget* and *happy* ((40)). However, an appeal to a conceptual clash sheds no light why the co-referential reading in *John_i was cruel that he_i shot Mary* is also out.

It is only once the external argument appears as an *of*-PP that we find relative acceptability ((38b, c), (39)). Each of these examples, however, is degraded and has an emphatic, if not redundant character.

The relative deviance of just these co-referential *of*-PP *that*-clauses can be explained by considering the broader EA paradigm. EAs do license a referential

external argument inside an *of*-phrase in the passivised transitive EA *infinitival* structures, e.g. *To leave rude of Emma* ((7e)). The switch from a *that*-clause to an infinitive is plausibly tracking the syntactic presence of a referential external argument that acts as a Controller. Interestingly, these passivised infinitival structures do allow the *of*-PP to be co-referential with an overt subject of the infinitive, although it also comes with an emphatic feel:^{15,16}

- (41) a. It was rude of him for him to hang up on me (Internet)
 b. It is her money. As makeup is not a necessity, it is quite nice of her for her to buy you any at all. (Internet)
 c. It would be stupid of them for them to just ignore it (Internet)

The explanation goes like this: to the extent that the *of*-phrase is available with EA *that*-clause structures, it *must* be co-referential with the subject of the CP because the *of*-phrase is not licensed syntactically. More specifically, it is appended at the discourse level on analogy with data such as (41), picking up the referent of the *that*-clause subject for emphasis. If the *of*-phrase were licensed syntactically with an EA *that*-clause, then the full range of disjoint and co-referential interpretations across the different structures should be natural and productive (*cf. forget* and *happy*), contrary to fact.

So, the outright ungrammaticality of *Peter_i was cruel that he_i shot Mary*, with the animate argument in subject position, follows from the blunt unaccusativity of EA *that*-clauses. On the other hand, the relative degradedness of *That he_i shot Mary was cruel of Peter_i*, with the animate argument marginalised inside a prepositional phrase, can be understood as discourse emphasis on an argument that is not licensed in the narrow syntax, but on analogy with superficially similar expressions.

¹⁵ The data in (41) are discussed further in section 2.2.2.3.

¹⁶ This thesis employs authentic examples found in various on-line sources, such as chat rooms, social media, and edited publications including national newspapers, published books and peer reviewed academic journals. The appendix provides extended context, URLs, and references.

2.2.1.3 *Summary of EA That-Clause Unaccusativity and Connections to the Causative Alternation Paradigm*

An unaccusative analysis of EA *that*-clause data accounts for the pattern we have seen. Namely, (i) disjoint reference is impossible cross-linguistically, (ii) co-reference is impossible with the animate argument in subject position, and (iii) co-reference is only marginally possible with an *of*-PP structure.

Adopting this analysis, the absence of a referential external argument in the presence of an EA *that*-clause is parallel to the unaccusative half of causative alternating predicates ((42a)).

- (42) a. *The window broke by Peter
 b. Peter broke the window

And if the switch from a *that*-clause to an infinitive correlates with the presence of a referential Causer/Controller, *Emma was rude to leave* ((7c)) is parallel to (42b).

Regarding these infinitival data, we will see that EAs are OC predicates. A generalisation from the Control literature is that OC predicates control the null subject position in the embedded infinitive (*i.e.* PRO) locally (*cf.* Bhatt and Izvorski 1998; Landau 1999). The EA alternation between a *that*-clause and a controlled infinitive thus correlates with this proposal: there is no referential argument to Control with a *that*-clause, there is one with the infinitive.

Lastly, the EA infinitival examples with an *of*-PP (*e.g.* *To leave was rude (of Emma)* (7e, f)) are strongly reminiscent of passivisation:

- (43) The window was broken (by Peter)

Bennis (2000; 2004) and Landau (2009) associate their analyses of these EA structures with the grammatical operations that produce verbal passives, though their proposals for how this is done are embedded in different assumptions.

In intuitive support of a connection to passives, Bennis (2004) observes that, in Dutch as in English, the equivalent of the *of*-phrase that appears in these infinitival structures is interpreted implicitly if not present, just as the *by*-phrase of passives is.

The present analysis is unique in associating EAs with the causative alternation, and indeed, in it we have found strong theoretical support for Bennis's passive intuition: one property of causative predicates is that they passivise (chapter 4). So as causatives, we correctly predict EAs to passivise, whereas alternative accounts lack independent motivation for the passivisation of just this class of adjective. In the following sections we shall see that EAs are the only adjectives to alternate in this way.

2.2.2 *EAs and PAs: an Initial Comparison*

This section contrasts EAs with psychological experience adjectives (PA) with a subject Experiencer, *e.g. afraid, angry, anxious, eager, nervous, ready, reluctant, willing*. We will see that these two classes share the properties of having an animate external argument and a complement CP:

- (44) a. Emma was rude to leave
 b. Emma was eager to leave

However, the following sub-sections show that EAs appear in alternated structures, but PAs do not (section 2.2.2.1); EAs are factive, but PAs are not (section 2.2.2.2); and EAs have a Causer external argument, while PAs have an Experiencer (section 2.2.2.3).

2.2.2.1 *EAs Alternate, PAs Do Not*

Beginning with *that*-clauses, unlike EAs ((45)), PAs cannot appear with a *that*-clause alone ((46)), but they do allow for a disjoint CP-external subject to co-occur with a *that*-clause ((47a) vs. (47b)).

- (45) a. That Emma left the party was rude
 b. It was rude that Emma left the party
 (46) a. *That Emma helped was eager
 b. *It was eager that Emma helped
 (47) a. Peter was eager that Emma should help
 b. *Peter was rude that Emma left/had left/should leave/would leave the party

The contrast in (47) is pertinent because, while modulation of the mood of the PA *that*-clause makes the structure in (47a) grammatical, there is no change in mood that will save (47b). Lastly, the examples in (48) (repeated from (44)) show that EAs and PAs are alike in appearing with an animate subject and an infinitive.

- (48) a. Emma was rude to leave
 b. Emma was eager to leave

The pattern in (45)-(48) implies that PAs are necessarily transitive, while EAs have a causative unaccusative and a transitive causative form.

Considering the infinitival data further, the EA examples in (49) (partially repeated from (7)) contrast with the PA data in (50). While EAs appear in passive-like structures, PAs do not. PAs take neither an infinitival ((50a)) nor an extraposed *it* subject ((50b)), nor do they allow their external argument to reappear as a PP.

- (49) a. To leave was rude (of Emma)
 b. It was rude (of Emma) (to leave)
 (50) a. *To help was eager (of Emma)
 b. *It was eager (of Emma) to help

So, EAs and PAs share a structure with an animate external argument in subject position and a complement CP ((48)), but the rest of the EA paradigm is unique.

2.2.2.2 *EAs are Factive, PAs are Not*

These two groups of adjectives also establish different semantic relations with their CP. Beginning with EAs, they are factive: they presuppose the truth of their complement ((51)), and they produce weak island violations (*cf.* (52) and (53)-(55)).^{17, 18}

¹⁷ Following Stalnaker (1974) and Abrusan (2011a), among others, I take presuppositions to be a kind of entailment.

¹⁸ Examples with extraction from *that*-clause subjects are not included because they give rise to independent subject extraction violations, *i.e.* *Who was rude that ___ ignored Mark?

- (51) a. #It was rude that Peter left, but in the end he didn't
b. #Peter was rude to leave, but in the end he didn't
c. #It was rude of Peter to leave, but in the end he didn't
- (52) a. Who do you regret that Peter invited _?
b. ??When do you regret that Peter invited Mark _?
- (53) a. Who was it rude that Peter ignored _?
b. ??When was it rude that Peter ignored Mark _?
- (54) a. Who was Peter rude to ignore _?
b. ??When was Peter rude to ignore Mark _?
- (55) a. Who was it rude of Peter to ignore?
b. ??When was it rude of Peter to ignore Mark

The examples in (56) show that EAs are factive, and not implicative. A property of factive predicates is that the entailed truth of their complement is not affected by negation in the main clause.

- (56) a. It wasn't rude that Peter left \Rightarrow Peter left
b. Peter wasn't rude to leave \Rightarrow Peter left
c. It wasn't rude of Peter to leave \Rightarrow Peter left

In contrast, negation of a main clause implicative predicate, such as *manage* in (57), does entail the negation of its complement. So, the data in (56) confirm that EAs are factive whenever they appear with a CP.¹⁹

¹⁹ Karttunen *et al.* (2014) study attested EA data that are meant to be implicative, and that a minority accepts on an implicative interpretation:

- (i) This was my first trip to Italy, so I was not brave to venture out alone
(Karttunen *et al.* 2014: 234, ex. (5b))

I refer the reader to Karttunen *et al.* for details and discussion, but I would like to elaborate on one of their observations.

They observe that an implicative interpretation is attested only in the *NP was not EA to V* structure ((i)), and never in the *It was EA (of NP) to V* structure (2014: 235, fn. 1). In the latter structure, EAs are only factive. They also note that “many speakers of English’s determinedly factive majority of speakers profess that sentences like [(i)] are mistakes; the producer must have inadvertently omitted *enough* before the *Adj*” (2014: 247).

In this connection I would like to add that, more generally, EAs are factive in all their CP structures ((56)). What is interesting about the restriction of the implicative interpretation to the *NP was not EA to V* and the comment regarding *enough* is that *enough* is an element that introduces its own infinitive regardless of whether the predicate takes an infinitive itself. And, the *enough* structure itself is implicative:

(57) Peter didn't manage to leave \Rightarrow Peter did not leave

With respect to the representation of factivity, following Abrusan (2011b) I take examples such as (58) to show that weak island violations are an interpretative effect, and not syntactic. The contrast in (58) shows that weak island extraction violations can ameliorate in the presence of modals.

- (58) a. *How tall isn't John? (Abrusan 2011b, ex. (8a))
 b. How tall isn't John allowed to be? (Abrusan 2011b, ex. (9a))

If the source of the violation in (58a) were syntactic, then the modal itself should make no difference with respect to the extraction from the adjunct. Throughout this thesis I will assume that factivity is a lexical property, and leave its formal treatment to future research.²⁰

In line with (58), the EA examples in (59) show that their extraction violations disappear under a modal with the infinitive data ((59b, c)). Although they remain with the *that*-cause ((59a)), an interpretative analysis can account for this.

- (59) a. ??When would it have been rude that Emma left?
 b. When would Emma have been rude to leave?
 c. When would it have been rude of Emma to leave?

Considering PAs now, they neither presuppose the truth of the CP ((60)) nor produce extraction violations ((61)).

(ii) Victoria is not tall enough to reach the top shelf \Rightarrow Victoria does not reach

Further, the linear order of the *NP was not EA to V* structure is minimally different from the *enough* structure. From the perspective of the analysis of EA argument structure in this thesis, one difference between the *NP was not EA to V* structure and the *It was EA (of NP) to V* structure is that in the former the CP is interpreted in complement position, and in the latter it is interpreted in Spec, T (*i.e.* the pronoun *it* is bound to the CP). (Chapters 4 and 5.) I would like to suggest that a possible explanation for the restricted, minority status of the implicative interpretation is that interpreting the CP in Spec, T blocks a re-analysis along the lines of an *enough* structure. Lastly, the fact that the implicative interpretation is restricted in just this way supports a derivational analysis of EA structures because (a) EAs are otherwise consistently factive ((56)), and (b) a derivational analysis allows for an account of the blocking effect of a peripheral phenomenon.

²⁰ See chapter 1 footnote 10 for qualifications on this statement.

(60) Emma was eager to help, but in the end she couldn't

(61) a. Who was Emma eager to help _?

b. When was Emma eager to help _?

Among other diagnostics, the lack of extraction violations in the case of PAs has fostered agreement that the PA infinitive is a complement of the adjective (*cf.* Stowell 1991; Bennis 2000, 2004; Landau 2009; Kertz 2006, 2010). This is important because it independently establishes the existence of a class of transitive adjectives with an external argument and a complement infinitive. If we abstract away from the grammatical category of their complements, PAs are parallel to transitive subject Experiencer verbs, such as *admire*, *fear*, *hate*, and *love*.

Regarding the factivity of EAs, there is corroborating morphological evidence. Kiparsky and Kiparsky (K&K) (1970: 144) observe that only factive predicates take *The fact that*-subjects ((62a)). In English, this is a possibility when the EA *that*-clause appears in subject position ((62b)). In Romanian, when the *that*-clause is in subject position, the DP *the fact* is obligatory ((63a) vs. (63b)).

(62) a. The fact that the dog barked during the night bothers me

b. The fact that Peter left was rude

(63) Romanian

a. Faptul că Maria a plecat a fost nepoliticos

fact that Maria has leave-PART has be-PART rude

'The fact that Mary left was rude'

b. *Că Maria a plecat a fost nepoliticos

that Maria has leave-PART has be-PART rude

'That Mary left was rude'

A second source of morphological evidence for factivity comes from Basque. In (64) and (65) we see the contrast between the non-factive and factive readings of *remember*, respectively.

- (64) Etxera joan zela gogoratzten duzu (Basque)
 home-to go-INF was-that remember have-PRES-2
 (, baina agian oker zaude)
 (, but maybe wrong be-PRES-2)
 ‘You remember that he went home (, but maybe you are mistaken)’
- (65) Hura etxera joan izana gogoratzten duzu (Basque)
 he home-to go-INF be-INF-DET remember have-PRES-2
 (*, baina agian oker zaude)
 (, but maybe wrong be-PRES-2)
 ‘You remember that he went home (, but maybe you are mistaken)’

Example (66) shows that the structure in (65) is factive and not implicative:

- (66) Ez duzu gogoratzten hura etxera joan izana (Basque)
 NEG have-PRES-2 remember he home-to go-INF be-INF-DET
 ‘You don’t remember that he went home’ ⇒ He went home

On the non-factive reading ((64)), the embedded CP appears with the standard indicative *that*-complementiser, *i.e.*–*ela*, such as with the verbs *esan* ‘say’ and *pentsatu* ‘think’. In (65) however, the *-a* appended to *izana* indicates that the going home is factive. This is the same morphology that necessarily surfaces when EAs take a CP in Basque, as shown by the contrast in (67) with *-ela* and (68) with *-a*. Example (69) confirms factivity.

- (67) *Berak alde egin zuela zakarra izan zen (Basque)
 He-ERG side do-INF has-that rude be-INF was
- (68) Berak alde egin izana zakarra izan zen (Basque)
 He-ERG side do-INF be-INF-DET rude be-INF was
 (*, baina gelditu zen)
 (, but stay-INF was)
 ‘That he left was rude (, but he stayed)’
- (69) Ez zen zakarra izan berak alde egin izana (Basque)
 NEG was rude be-INF he-ERG side do-INF be-INF-DET
 ‘That he left wasn’t rude’ ⇒ He left

The factivity of EAs is an important empirical detail on this causative alternation analysis of EAs. (i) First, it accounts for the extraction violations observed in previous studies on EAs (section 1.3.2), while removing evidence that supports a non-complement analysis of the CP: the standard assumption is that a factive predicate selects its complement (*cf.* K&K 1970; Szabolcsi and Zwarts 1993; de Cuba and Urogdi 2009; Abrusan 2011c)

(ii) Second, since EAs are factive, they presuppose the truth of their CP, and this leads them to have what Barker (2002) calls *existential commitment* with respect to the content of the CP. In order to see this, let's compare EAs with subject Experiencer predicates.

Subject Experiencer verbs, such as *fear*, *admire*, and *hate*, do not entail the existence of their object. Carlson (1977: 188) observes this using the following examples: one can fear ghosts or admire unicorns whether or not these entities exist, and one can hate dogs without hating any particular dogs or even being acquainted with one.

Similarly, we have seen that PAs, which have an Experiencer subject, do not entail the existence of the situation denoted by their complement CP. In (70), even if Emma was eager to leave, it is not entailed that she did.

(70) Emma was eager to leave \nRightarrow Emma left

However when comparing EAs with other adjectives, Barker (2002: 19) shows that EAs ((71b)) come with an existential commitment which is absent in PAs ((71a)).

- (71) a. Feynman was(n't) eager/ready to talk to a student about it
 b. Feynman was(n't) stupid/smart to talk to a student about it

(*cf.* Barker 2002: 19, ex. (20))

Only in (71b) is the existence of at least one student that Feynman actually talked to entailed, which follows from the existence of the talking situation denoted by the CP, which in turn follows from the factivity of EAs (*cf.* K&K 1970: 167).

These cross-lexical category entailment parallelisms (e.g. *eager/admire*; *stupid/break*) are expected on the approach pursued here, where verbs and adjectives have parallel syntactic/semantic representations. But more specifically, the factivity of

EAs is crucial in providing the existential entailment that this causative alternation analysis requires.

In the case of causative alternating verbs such as *break*, if it is the case that a window breaks, or that Peter breaks it, then there is the existential entailment that there is a window: the DP complement is existentially entailed.

In the case of EAs, they are stative, and there is no change-of-state, but their factivity provides the entailment that the content of the CP complement exists—a parallel entailment to causative alternating verbs like *break*. Further, we have seen that EAs are uniformly factive whenever they appear with a CP. So, their factivity provides a crucial entailment for this causative alternation analysis.

2.2.2.3 *Infinitival Structure, the Responsibility Relation, and Control*

Another difference between EAs and PAs is the thematic role of their animate arguments. This becomes apparent when the empty subject position in the infinitive, *i.e.* PRO, is filled. The examples in (72) and (73) show that PAs and subject Experiencer verbs alike license an overt infinitival subject by way of the complementiser *for*. The appearance of the complementiser in these examples indicates that subject Experiencer predicates take an infinitive with a full clausal structure.

- (72) a. Peter was eager to leave
 b. Peter wanted to leave
- (73) a. Peter was eager for Emma to leave
 b. Peter wanted for Emma to leave

Further, (74) shows that the overt embedded subject must receive a disjoint interpretation; a co-referential interpretation requires PRO ((72)).

- (74) a. *Peter_i was eager for him_i to leave
 b. *Peter_i wanted for him_i to leave

In these examples, with both the adjective and verb, the matrix predicate expresses the psychological state that the CP-external argument experiences with respect to the

potential situation denoted by the CP. In other words, here the thematic role of the external argument is an Experiencer.

When it comes to EAs, however, it is less clear what role their animate external argument has in (75a). With regards to an embedded subject, (75b) shows that EAs are like subject Experiencer predicates in requiring PRO for the co-referential reading ((72), (74)).

- (75) a. Peter was rude to leave
 b. *Peter_i was rude for him_i to leave
 c. *Peter was rude for Emma to leave

But unlike subject Experiencer predicates ((73)), (75c) shows that EAs block disjoint reference with an overt infinitival subject. On its own (75c) is unproblematic because EAs are not alone in this regard:

- (76) a. John decided (*for Bill) to shave himself (Manzini 1983: 431, ex. 65))
 b. John tried (*for Mary) to win the game (Landau 1999: 13, ex. (5a))

EAs are more interesting than this, however. We have already seen the Extraposition data in (41) (repeated as (77)), where EAs do allow co-reference with the infinitive:²¹

- (77) a. It was rude of him for him to hang up on me (Internet)
 b. It is her money. As makeup is not a necessity, it is quite nice of her for her to buy you any at all. (Internet)
 c. It would be stupid of them for them to just ignore it (Internet)

Furthermore, the examples in (78) show that disjoint reference is also possible in these structures where the infinitive is interpreted in subject position:

²¹ Wilkinson includes (i) as part of his basic EA paradigm, where the object of *of* and the object of *for* are co-referential with an infinitive. He also notes that a *that*-clause and an *of*-phrase are ungrammatical on any combination ((ii)). These data and judgements independently support the discussion above that the *of*-phrase is not licensed with a *that*-clause, but it is with the infinitive.

- (i) For John to have left early was wise (of him) (Wilkinson 1976: 164, ex. (19a))
 (ii) That John's blow flattened Tom was silly/stupid (*of John/Tom/it)
 (cf. Wilkinson 1976: 167, ex. (27))

- (78) a. It was thoughtless of Arthur for Agatha to be there when Desmond arrived
(*cf.* Kertz 2010: 287, ex. (102))
- b. For Agatha to be there when Desmond arrived was thoughtless of Arthur
- c. I'm so mad and I spoke to DH this morning but I don't want to offend him and run his parents down, but at the same time, I am NOT having this special time ruined because it's my last baby and the afterglow of my wedding was also ruined because they were all here then too so we all had to go away together after our wedding because we felt **it was rude of us for his family and extended family to come** all the way from England to New Zealand and have us disappear alone the day after our wedding for a honeymoon.
(Internet)
- d. For his family and extended family to come all the way from England to New Zealand and have us disappear the day after our wedding for a honeymoon was rude of us.
- e. **It would have been stupid of them for him to make** an appearance, on a taping before Raw. Well at least they mentioned his appearance on Raw, and showed some footage of it. We'll see him at TLC.
(Internet)
- f. For him to make an appearance would have been stupid of them.

First, note that these examples show that, like PAs, EAs also take an infinitive with a full clausal structure. Second, filling the infinitival subject position clarifies the thematic role of the EA external argument: it is clear that the *of*-PP argument is considered responsible for the realisation of the situation denoted by the CP. In (78a, b), Arthur is responsible for Agatha's presence; in (78c, d), the couple is responsible for the relatives having travelled all the way from New Zealand; and in (78e, f), the wrestler participated in a programme because someone scheduled it that way.

There is, then, a *responsibility* component to the meaning of EAs that is not present in PAs. RH&L (2000) identify responsibility as the notion that captures all causative predicates in natural language (chapter 3). Crucially, responsibility is a notion that is independent of change. On the present analysis of EAs as causatives, this responsibility inference is both comprehensible and expected: the external argument of a causative structure—the Causer—is responsible for the result, *i.e.* the CP. PAs, as subject

Experiencer predicates, do not encode causation or a result, and there is no corresponding responsibility inference.

Regarding why EAs allow an overt infinitival subject only when the infinitival is interpreted in subject position ((77), (78)), I offer a suggestion. Recall that in the EA paradigm the examples with the infinitive in subject position are passives (e.g. *To leave was rude (of Emma)*). Conversely, when the animate argument is in subject position (e.g. *Emma was rude to leave*), the sentence is in the active voice.

I suggest that an overt subject is blocked in the active voice (cf. **Peter was rude for Emma to leave*) because (i) EAs are causatives, (ii), as we will see immediately, EAs are Obligatory Control (OC) predicates, and (iii) when the animate argument is in subject position, it is the sentence topic. Since EAs are causative and OC, when the animate argument is the sentence topic, the topic-comment structure of the sentence is coherent when the topic OC Causer is the topic of the result, as well. For this to be the case the topic of the infinitive has to be the same, e.g. *Peter was rude to leave*. In other words, disjoint reference is incoherent because a conflicting topic is introduced.

On the other hand, in the passive examples, the sentence topic is the infinitive, and the Causer is backgrounded, or possibly omitted or unknown (e.g. *For John to have left early was wise*). When the infinitive is the sentence topic, there is no longer a discourse coherence clash with the Causer. And since the infinitive is the topic, its content can be elaborated upon, and so an overt referent can be realised coherently.^{22, 23}

These considerations on the EA infinitival pattern extend to causative OC predicates such as *decide*. Example (76a) (repeated as (79)) showed that *decide* rejects an overt disjoint infinitival subject in the active voice.

²² C-command plays an important role in the pattern, too. In the active structure the animate argument c-commands into the infinitive (e.g. *Emma was rude to leave*). But in the passive structure, the infinitive is interpreted in Spec, T, and outside of the scope of the animate external argument (e.g. *For John to have left early was wise (of Peter)*). This lack of c-command makes the co-referential interpretation possible (e.g. *For John_i to have left early was wise (of him_i)*). When c-command holds, the co-referential interpretation with an overt embedded subject is always blocked by the Control structure (i.e. **Peter_i was rude for him_i to leave*; cf. (74)).

However, the EA pattern cannot be reduced to c-command because there are Control predicates, such as subject Experiencer predicates, that allow an overt infinitival subject when c-command holds ((73)); we return to this immediately in the main text.

²³ A comparison between EA *that*-clause data and EA infinitival data is appropriate here. I concluded that the *that*-clause data are unaccusative because they showed no signs of transitivity with respect to disjoint and co-reference when compared with the pattern of other transitive *that*-clause selecting predicates.

The infinitival data, however, are transitive. They have an animate external argument (this will be shown in the next section) and an infinitival complement (this will be shown at length in section 2.3). Further, with respect to disjoint and co-reference, they pattern with other OC predicates. So, the data strongly support the aspect of the present hypothesis that the presence of a *that*-clause or an infinitive is tracking unaccusativity versus transitivity, namely, the causative alternation.

(79) John decided (*for Bill) to shave himself (Manzini 1983: 431, ex. 65))

However, passive voice examples with an overt infinitival subject that is interpreted either disjointly or co-referentially are easy to produce:

- (80) a. It was decided by the budgetary commission for a sub-committee to assess the accounts
 b. For the sub-committee to re-examine the whole range of possibilities was decided when it became clear that voter fraud may have influenced the result
 c. For John to sell his car was decided by him alone

The Extraposition example in (80a) is the most natural; the other two examples are more natural with a discourse context to counter-balance the weight of the subject infinitive. These examples with *decide* show that the EA infinitival pattern is not exceptional.

We are left with the case of subject Experiencer predicates. They do allow an overt disjoint infinitival subject with their external argument in subject position (e.g. *Peter was eager for Emma to leave*). Here I suggest that the crucial difference is that EAs (and *decide*) are causative. Namely, the causal relation between the animate external argument and the result CP places strong coherence restrictions on the topic-comment structure of an utterance. In contrast, the experiential relation established by, for example *eager*, does not impose these restrictions. Because of the conceptual nature of an experiential relation, disjoint reference with diverging matrix and embedded subjects is unproblematic.

The possibility of an overt embedded subject, however, is independent of the Control relation that a predicate establishes with its infinitive (cf. Manzini 1983: 431; Landau 1999: 13): although EAs and PAs differ in a number of ways, both are OC predicates.

OC is commonly taken to reflect a locality condition. Examples (81)-(83) illustrate that EAs and PAs display the following OC properties consistently: the (a) examples, show that when the controller c-commands PRO (at the appropriate level of representation), the embedded pronoun is bound; the (b) examples show that without c-command, the pronoun is not bound; the (c) examples that a split antecedent with an

embedded reciprocal is degraded; and the (d) examples that only a sloppy interpretation is available under ellipsis.

- (81) a. Arthur was silly to nominate himself
b. *Arthur's sister was silly to nominate himself
c. *Arthur thought Desmond was silly to vote for each other
d. Arthur was silly to get arrested, and Desmond was as well
(Kertz 2010: 276, ex. (39)-(42))

- (82) a. It was silly of Arthur to nominate himself
b. *It was silly of Arthur's sister to nominate himself
c. *Arthur thought it was silly of Desmond to vote for each other
d. It was silly of Celine to get arrested, and it was of Desmond (to) as well
(Kertz 2010: 277, ex. (43)-(46))

- (83) a. Arthur was eager to nominate himself
b. *Arthur's sister was eager to nominate himself
c. *Arthur thought Desmond was eager to vote for each other
d. Arthur was eager to get arrested, and Desmond was as well

The examples in (84) illustrate OC is distinguishable from non-OC. Example (84a) shows even with c-command, PRO and the pronoun are not necessarily bound by the external argument. Example (84b) shows that c-command is not necessary to bind PRO. In (84c) the reciprocal interpretation is fine. And lastly, in (84d) a strict interpretation under ellipsis is possible.

- (84) a. Clinton_i believes that PRO_{i/j} keeping his_{i/j} sex life under control is necessary for electoral success
b. Clinton's_i campaign believes that PRO_i keeping his sex life under control is necessary for electoral success
c. John_i told Mary_j [that [[PRO_{i+j} washing each other] would be fun]]
d. John thinks that PRO getting his resume in order is crucial and Bill does too
(cf. Hornstein 1999: 73, ex. (6))

We take up the OC nature of EAs again in section 2.3.3.4 in order to show that the infinitive is a complement. In this section we have seen (i) that the EA infinitival data

have a *responsibility* interpretation that correlates with the notion of causation, **(ii)** that their overt infinitival subjects pattern with other causative predicates, and **(iii)** that they are OC.

2.2.2.4 *Summary of EA/PA Comparison*

In this sub-section I have shown that EAs and PAs differ along a number of dimensions, providing a substantive list of properties that characterise EAs as a class:

- (i) EAs do not allow disjoint subjects with *that*-clauses.
- (ii) Only EAs allow a CP in subject position (whether a *that*-clause or an infinitive).
- (iii) Only EAs are factive.
- (iv) Only EAs existentially entail the content of their complement.
- (v) The semantic relation between the external argument and the infinitive is one of responsibility with EAs, but psychological with PAs.
- (vi) PAs allow the subject gap in the infinitive to be filled with a disjoint individual directly, but EAs must have their infinitive interpreted in subject position to do so.

The comparative differences ceased when we examined the Control relation itself. Here we found that the two groups patterned together as OC predicates, indicating that there is a very local structural relationship between the controller and the gap in the infinitive. The next section provides the evidence that EAs and PAs share another property: having a thematic external argument. In this they are distinguishable from other adjectives.

2.2.3 *EAs, PAs and Other Classes*

This section compares EAs and PAs with three other classes, namely raising adjectives, DP selecting relational/physical property adjectives (RA), such as *Canadian* and *tall*, and adjectives that select either a DP or CP, such as *important* (IA).

Thus far EAs and PAs have overlapped in some ways, while still being clearly distinguishable. The primary objective of this section is to show that—in contrast with the other groups—they pattern together in selecting a thematic external argument. I

interpret this as an important indicator of argument structure. Although the thematic role of this argument is not the same—EAs have a Causer and PAs an Experiencer—having a thematic external argument sets them apart.

2.2.3.1 *EAs and PAs are Not Raising Predicates*

As a start point, in the case of EAs, it has been recognized since Wilkinson (1976) retracted his own (1970) analysis that they cannot be given a raising analysis (*cf.* Barker 2002). Wilkinson (1976: 167) observes that a raising analysis would incorrectly predict synonymy between the examples in (85). But in (85a) *Sam* is only the Agent of *help*, and in (85b, c) *Sam* stands in a relation expressed by the adjective to the whole CP.

- (85) a. That Sam helped us was good/nice
 b. Helping us was good/nice of Sam
 c. Sam was good/nice to help us

(*cf.* Wilkinson 1976: 167, ex. (26a-c))

So in terms of thematic roles, only (85b, c) are synonymous. What we will see now is that both EAs and PAs fail standard tests for raising.

Raising verbs select a CP complement as their sole argument ((86a)), and they do not assign an external thematic role. However in one construal, like EAs and PAs, they can appear with an animate subject and an infinitive ((86b)).

- (86) a. It never happens that John is punctual (Cinque 1990a: 3, ex. (4b))
 b. John_i never happens *t*_i to be punctual (Cinque 1990a: 4, ex. (4a))

In addition, Cinque (1990a) shows that raising adjectives exist, *e.g.* *certain* and *likely*. Comparing them with EAs and PAs shows that the latter are not raising predicates. Like the verb *happen* in (86), *certain* and *likely* alternate between an Extraposition structure ((87a)) and one with a DP subject and infinitive ((87b)).

- (87) a. It is certain/likely that John will win (Cinque 1990a: 4, ex. (6b))
 b. John_i is certain/likely *t*_i to win (Cinque 1990a: 4, ex. (6a))

The DP subject in (86b) and (87b) is interpreted as an argument of the embedded predicate, and not the matrix one, and so the DP is not assigned a thematic role in the matrix clause.

The lack of thematic role assignment in the matrix clause of raising predicates is shown by the combination of weather predicates ((88)), *there*-subjects ((89)), inanimate subjects ((90)-(92)). While raising predicates are grammatical in these environments, both EAs and PAs are not ((88a,b) vs. (88c, d); (89a, b) vs. (89c, d); (90) vs. (91), (92)).

- (88) a. It happens/seems to be raining
 b. It is certain/likely to be raining
 c. *It is stupid to be raining (Barker 2002: 20, ex. (21a))
 d. *It is eager to be raining
- (89) a. There happens/seems to be a party tomorrow
 b. There is certain/likely to be a party tomorrow
 c. *There is stupid to be a party tomorrow (Barker 2002: 20, ex. (22a))
 d. *There is eager to be a party tomorrow
- (90) a. It was certain/likely for the carpet to be cleaned right before the big party
 b. The carpet was certain/likely to be cleaned right before the big party
- (91) a. It was stupid for the carpet to be cleaned right before the big party
 b. #The carpet was stupid to be clean right before the big party
 (Barker 2002: 20, ex. (22))
- (92) #The carpet was eager to be cleaned right before the big party

Although EAs, PAs and raising adjectives all share the superficial property of appearing with an animate subject and a CP, when compared directly it is clear that the animate argument of EAs and PAs does not raise from the embedded CP. And so their animate arguments must receive their respective Cause and Experiencer roles externally. This supports the EA studies outlined in section 1.3.2, which all conclude that EAs' animate argument is external.

In the next two sub-sections we turn to the last two sets of adjectives. First, relational and physical property adjectives (RA) in (93), which take a DP subject, but in contrast with EAs, PAs and raising predicates, do not take a CP.

- (93) a. Peter/the mural is Canadian/old/tall
b. Peter/the mural was Canadian/old/tall

Second, those in (94), that select for either a DP or a CP, but in the latter case do not allow for the subject to rise out of it. I will refer to these as “*important*” adjectives (IA).

- (94) a. Peter is crucial/important/necessary
b. For Peter to come is crucial/important/necessary
c. It is crucial/important/necessary for Peter to come

2.2.3.2 *RAs versus EAs and PAs*

Relational/physical property adjectives (RA) differ from EAs and PAs in three ways:

- (i) They do not provide any evidence for possessing additional argument structure beyond simple stativity and the DP. The unacceptability of all the variations in (95) contrasts sharply with EAs, PAs and raising predicates. So, RAs are predicates that select a lone DP.

- (95) a. *It was Canadian/old/tall of Peter to bring a hockey stick
b. *Peter was Canadian/old/tall to bring a hockey stick
c. *It was Canadian/old/tall for Peter to bring a hockey stick
d. *For Peter to bring a hockey stick was Canadian/old/tall

- (ii) While EA and PA external arguments can be described as Causers or Experiencers, respectively, these labels do not seem appropriate for the RA DP.

Section 4.4.3 discusses thematic roles. More specifically, it proposes that they can be derived from (i) the combination of the theory of the syntax of inner-aspect that emerges and (ii) the general cognitive function of establishing a *figure* and a *ground* (Talmy 2000). So, EAs, PAs, and RAs each having an external argument with a different thematic quality is not a problem for this theory.

With regard to the proposed external position of the RA DP, since RA argument structure is simple in comparison with predicates with more overt arguments, deducing the position of the RA DP requires an additional layer of abstraction (*cf.* Meltzer-Asscher 2012). In section 4.2.2.5.2 I will propose an interpretative motivation.

Setting aside for the time being specific motivation for the syntactic position of the RA DP, in addition to the thematic differences between EA, PA and RA DPs, a further difference between EAs and PAs on the one hand, and RAs on the other, is that RAs do not impose an animacy restriction. The examples in (93) show this (*i.e.* *Peter/the mural is Canadian/old/tall*).

Although it is true that EAs appear with inanimate DP subjects, (96a) shows that if the DP is eventive, an *of*-phrase can be readily appended. Example (96b) illustrates the same fact in Spanish. If the DP is non-eventive ((96c)) special interpretative provisions must be made: either (i) the DP is metonymically associated with some situation for which someone is potentially responsible, or (ii) in the more extreme case, the DP must be anthropomorphised.

- (96) a. The answer was rude (of Emma)
 b. La respuesta fue maleducada (por parte de Emma) (Spanish)
 the answer was rude (by part of Emma)
 ‘The answer was rude (on Emma’s part)’
 c. ^(??)The carpet was rude (of Emma)
 d. *La moqueta fue maleducada (por parte de Emma) (Spanish)
 the carpet was rude (by part of Emma)
 ‘The carpet was rude (on Emma’s part)’
 e. Lo de la moqueta fue maleducado (por parte de Emma) (Spanish)
 it of the carpet was rude (by part of Emma)
 ‘The carpet thing/what happened with the carpet was rude (on Emma’s part)’

It seems reasonable to view provision (ii) as an extra-grammatical strategy, but Spanish provides evidence that provision (i) is a grammatical one: (96d) shows that direct EA predication of the non-eventive DP is ungrammatical. But (96e) shows that it becomes grammatical when embedded in a relative clause headed by the referential pronoun *lo*.²⁴

²⁴ This observation is due to Javier Ormazabal (p.c.).

This pronoun is unambiguously interpreted as referring to some situation associated with the carpet.²⁵

PAs evidence an even more restricted pattern. All of the examples in (97) show that PAs are degraded with any non-animate DP in subject position, and that realising the animate in a prepositional phrase remains impossible. In English, if the eventive DP can be interpreted at all, it requires synecdoche ((97a)). Its Spanish counterpart is equally odd ((97b)).

- (97) a. ??The answer was anxious/eager/willing (*of Emma)
 b. ??La respuesta fue inquieta (*por parte de Emma) (Spanish)
 the answer was anxious (by part of Emma)
 ‘The answer was anxious/eager/willing (on Emma’s part)’
 c. ??The carpet was anxious/eager/willing (*of Emma)
 d. *La moqueta fue inquieta (*por parte de Emma) (Spanish)
 the carpet was anxious (by part of Emma)
 ‘The carpet was anxious (on Emma’s part)’
 e. ??Lo de la moqueta fue inquieto (*por parte de Emma) (Spanish)
 it of the carpet was anxious (by side of Emma)
 ‘The carpet thing/what happened with the carpet was anxious (on E’s part)’

In the case of predication of a non-eventive DP—in contrast to what was just observed with EAs in (96)—there is no provision that saves PAs ((97c-e)).

So, examples (96) and (97) show that EAs and PAs maintain their argument structure characteristics: EAs accept inanimate DP subjects to the extent that we can associate them with a situation that substitutes for the *that*-clause or infinitive, while PAs do not accept inanimate DP subjects because PAs do not license a *that*-clause or infinitive in subject position. On the other hand, RAs simply do not restrict for animacy.

- (iii) In the present simple RAs are interpreted generically ((98a)), and in the past simple they give rise to a so-called *lifetime effect* ((98b)).

²⁵ Importantly, these examples show that EAs license the situation-related nominal in Spec, T that is not licensed in complement position. This supports the proposal that EAs do not have a transitive causative form with a DP object that parallels *break* because adjectives do not assign case to their complement. Instead, EAs make use of a CP complement to license a transitive structure.

A lifetime effect is where, uttered out-of-the-blue, the sentence implies that the subject is dead or no longer exists (*cf.* Kratzer 1995; Musan 1997) ((98) repeated from (93)):

- (98) a. Peter/the mural is Canadian/old/tall
 b. Peter/the mural was Canadian/old/tall

The examples in (99) provide an illustration of a verb described as behaving in parallel fashion.

- (99) a. Gregory resembles Jörg Bieberstein
 b. Gregory resembled Jörg Bieberstein (Musan 1997: 271, ex. (1c))

While death is only an implicature, in the past simple the predicates in (98) and (99) do imply that the relation between the individual and the predicate was stable, but that that is no longer true.

This contrasts with EAs and PAs, which easily have an existential reading in the past (*i.e.* *Peter was rude/eager*), as opposed to producing a lifetime effect.

These three points show some ways in which RAs are distinguishable from EAs and PAs. In sections to come I continue to compare RAs with EAs and PAs because RAs represent relatively well-behaved Individual-Level predicates, which EAs are generally proposed to be (*cf.* Carlson 1977; Stowell 1991; Landau 2009; Kertz 2006; 2010, a.o.). In chapter 3 I show that, aside from a few points of superficial overlap, EAs and RAs are distinct aspectual classes. Also, more generally, I argue that the individual/stage distinction is not a primitive binary grammatically encoded distinction, and so not even RAs are properly analysed formally as Individual-Level. Section 4.2.2.5.3 addresses the representation of the individual/stage intuition in this theory.

2.2.3.3 *IAs versus EAs and PAs*

In this section we will see that “*important*” adjectives (IA) are different from the other classes because they select either a DP or a CP—but not both at the same time. Let’s begin by observing that the IA DP ((100a)) is thematically underspecified in a way that

seems to parallel the RA DP. Further, examples (100b-e) show that the CP can appear in subject position or extrapose.

- (100) a. Emma is crucial/important/necessary
 b. That Emma come/comes is crucial/important/necessary
 c. It is crucial/important/necessary that Emma come/comes
 d. For Peter to come is crucial/important/necessary
 e. It is crucial/important/necessary for Peter to come

One way of diagnosing the IA CP as a complement is that the CP can appear in the subjunctive. We will see in section 2.3.3.1 that the basic structural fact regarding the subjunctive mood is that complementhood is necessary: subjunctive clauses are complements (*cf.* Giorgi 2009). Examples (100b, c) show that the subjunctive is optional in English with these predicates. Example (101) shows the same in Italian:

- (101) È necessario che (Emma) venga/viene (Italian)
 is necessary COMP (Emma) come-PRES-SUBJ/come-PRES-IND
 ‘It is necessary that Emma come/comes’

What distinguishes IAs from the other classes we have considered is that they treat their DPs and CPs as interchangeable. First, example (102a) is grammatical with either an animate or inanimate subject, which shows that, like RAs, IAs do not impose an animacy restriction. Example (101b) adds an infinitive to (102a), and (102c) adds an overt subject to (102b). In contrast with EAs, PAs, and raising predicates, in these examples the particles *to* and *for* must be interpreted as adverbial purpose clauses meaning *in order to/for*, and not as a complement infinitive. So together examples (100) and (102) show that IAs are intransitive.

- (102) a. Cecile/the carpet is crucial/important/necessary
 b. Cecile/the carpet is crucial/important/necessary to win
 c. Cecile/the carpet is crucial/important/necessary for Peter to win

The examples in (103) confirm an intransitive analysis. The ungrammaticality of (103a) shows that the DP and a *that*-clause cannot co-occur. And (103b, c) show that IAs do not have a passive-like structure as EAs do.

- (103) a. *Cecile is crucial/important/necessary that Peter wins
 b. *It is crucial/important/necessary of Cecile for Peter to win
 c. *It is crucial/important/necessary of Cecile to win

Furthermore when IAs select a CP, they do not allow for the subject of the CP to move out of it ((104)), thus contrasting with one of the basic properties of raising predicates.

- (104) *Peter is crucial/important/necessary to come

Considering this evidence, the conclusion is that IAs select a complement that is either a DP or a CP. Their inability license both simultaneously is accounted for on the assumption of binary branching in the syntax. Their similarity to RAs in the thematic interpretation of their DP will support the proposal in chapter 4 that thematic roles are epiphenomenal. In conclusion, IAs round out this comparison of adjective argument structure because they illustrate the existence of an adjective class that selects a CP while, having a different syntactic signature from EAs, PAs and raising adjectives.

2.2.3.4 *Interim Conclusions of Comparison*

This survey has shown that **(i)** each adjective class has its own set of syntactic and semantic characteristics; **(ii)** EAs are distinguishable from PAs; **(iii)** EAs and PAs are the only predicative adjective classes to appear with a thematic DP, and a CP; and **(iv)** EAs do not pattern with RAs, which is a first argument against an Individual-Level analysis of EAs.

Furthermore, throughout this comparison we have seen that adjectives and verbs have many parallels. Just a few examples: both can be OC; both can be factive; both can be raising predicates; and both can have thematic external arguments. The conjunction of these facts strongly supports the conclusion that adjectives and verbs have parallel

syntactic/semantic representations (chapter 1). To hold the opposite entails designing a grammar where adjectives and verbs participate in the same phenomena, but those phenomena are defined over disjoint structural descriptions according to lexical category.

In terms of the proposal that EAs are causative alternating adjectives, we have uncovered the following supporting points:

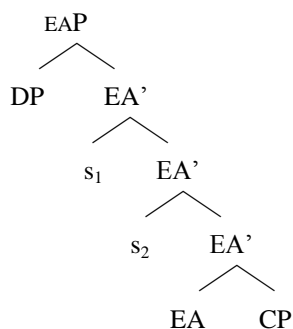
- (i) EA *that*-clause data are unaccusative.
- (ii) EA factivity provides the existential entailment of the complement.
- (iii) The *responsibility* relation holding between the EA external argument and the CP.
- (iv) The Causer interpretation of their animate argument.
- (v) EAs are OC predicates because their CP is a complement.
- (vi) EAs' non-raising character is predicted.
- (vii) Their passive-like structures are predicted.

Let's take another look at the argument structures that were presented in the introduction, repeated here as (105). In chapter 1 we saw that there is general agreement among the alternative approaches to EA syntax that EAs introduce their animate argument externally. Here we have seen that both EAs and PAs do so. I have also proposed that RAs introduce their subject externally, but specific motivation for this is delayed until chapter 4.

(105) *Argument Structures of the Three Main Adjective Classes*

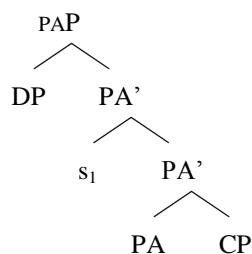
a. EAs:

Emma was rude to leave



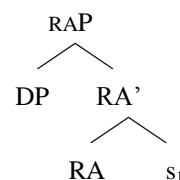
b. PAs:

Sam was eager to help



c. RAs:

Victoria was Canadian/tall



The structure in (105a) with two state arguments, *s*, is causative. The Causer is merged above the causing state, and the result CP in complement position. With regard

to the empirical parallelisms between verbs and adjectives, one observation accounts for the lack of an Agent role with adjectives: the category difference between verbs and adjectives tracks the conceptual distinction that verbs can convey change, but adjectives cannot. So, adjectives are transparently stative, their external argument is never an Agent, and if they are causative, EAs show that they undergo the causative alternation.

Turning to the structure in (105b), it contains only one state argument, and the Experiencer DP is introduced above it. This is in accordance with research on Experiencers, which associates the Experiencer role with the specifier of a projection lower than the projection that introduces a Causer (*cf.* Landau 2010b). We have found evidence that EAs and PAs have these syntactic and thematic properties. In the next section we turn to the location of their CPs.

2.3 PA and EA CPs are Complements

In the summary of the alternative views of EA argument structure in 1.3.2 we saw that there was unanimous agreement in treating the EA infinitive as a non-complement, Bennis's being the only account that took the CP to be a complement in one structure.

In this section I defend a uniform approach: EA CPs are always generated in complement position. We will see three types of evidence: (i) general considerations, (ii) evidence that undermines the claims to the contrary, and (iii) positive direct evidence.

2.3.1 Conceptual Support for a CP-Complement Analysis

There are two general points that support a CP complement analysis. The first, and obvious one in the present context, follows directly from the proposed causative alternation analysis. On this causative alternation analysis the pattern in (106) (repeated from (7)), is predicted, and it is natural for the CP to be a complement. This account also entails that the availability and distribution of the CP with EAs are not accidental, as they are on analyses where the CP is an adjunct or not a part of the EA lexical entry.

- | | |
|-----------------------------------|---|
| (106) a. That Emma left was rude | = Causative Unaccusative |
| b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| c. Emma was rude to leave | = Transitive Causative |
| d. Emma was rude | = Transitive Causative with Implicit CP |
| e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |

The second general observation is that, as mentioned above, as factives, EA extraction violations are expected. Therefore, contrasts observed by Stowell and Bennis between EAs ((107)) and PAs ((108)) (Stowell's judgements) are accounted for:

- | | |
|---|-----------------------------------|
| (107) a. %?When _i was it stupid of John [to eat dinner <i>t_i]</i> ? | |
| b. %?When _i was John stupid [to eat dinner <i>t_i]</i> ? | |
| | (Stowell 1991: 123, ex. (34e, f)) |
| (108) When was John eager [to eat dinner <i>t_i]</i> ? | (Stowell 1991: 123, ex. (33c)) |

Although weak islands have been analysed as syntactic adjuncts of a sort (*cf.* Cinque 1990b), the standard assumption is that factive predicates select their complements. Once EAs are recognised as factives, extraction violations are expected and the null position is that these CPs are complements. The factive nature of EAs thus becomes a strong argument in favour of locating the CP in complement position.

2.3.2 *Reconsidering Counter-Evidence to a Complement Analysis*

Let's turn now to some of the empirical evidence that has been offered to argue against a complement analysis. I will look at two types: **(i)** *as*-clauses, and **(ii)** nominalisation patterns. In the first case, my suggestion is that the proposed test does not generalise, and therefore it is not a helpful test; and in the second, that the facts actually favour a complement analysis.

Stowell (1991) uses *as*-clauses to argue against the complementhood of the EA CP. If an *as*-clause is grammatical, then the gap that it licences corresponds to a complement position. Example (109a) illustrates this with *as* licensing a gap in the position of the CP

complement of *claim*, in contrast to the ungrammaticality of the subject gap of *prove* in (109b).

- (109) a. John was a liar, as Bill had claimed _ (Stowell 1991: 123, ex. (35c))
 b. *John is a liar, as _ proves him untrustworthy (*cf.* Stowell 1991: 124, ex. (36b))

In light of (109), the ungrammaticality of (110) seems to support the conclusion that the EA CP is not a complement:

- (110) a. ??John went home, as () was _ smart of him
 b. *John went home, as it was smart of him _
 c. *John went home, as he was smart _
 (Stowell 1991: 124, ex. (37))

What has not been noticed, however, is that PAs also fail to license the gap ((111)), and PAs are generally accepted infinitival complement selectors. It seems, therefore, that the *as*-clause test is uninformative here.^{26, 27}

- (111) *John went home, as he was anxious/eager/willing _

²⁶ K&K (1970: 171) note that among the conditions that *as*-clause gaps seem to be sensitive to is that the predicate be non-emotive. K&K characterise an *emotive* predicate as one that implies the speaker's subjective evaluation (1970: 169). In K&K's terms, both EAs and PAs would be classified as emotive, and this would account the ungrammaticality of (110) and (111) versus (109a). So, the grammaticality of *as*-clauses cannot be predicted solely on the basis of the syntactic position of the gap.

²⁷ Another test that appears uninformative is complementiser omission in Dutch. In Dutch, the C° *om* is generally described as omissible when the CP is a complement, and obligatory otherwise. Bennis uses this to diagnose the status of EA and PA CPs. He claims that in (i) it is obligatory, but omissible in (ii) and (iii). On the one hand, this would support his adjunct analysis of the EA infinitive in not in subject position ((i)). On the other, it would also support a complement base-position analysis of the EA infinitive when the infinitive is interpreted in subject position ((ii)), and the PA infinitive ((iii)).

- (i) Jan is gemeen om zo over dat onderwerp te praten (Dutch)
 John is mean for like-that about that subject to talk
 (ii) Het is gemeen om over dat onderwerp te praten (Dutch)
 It is mean for about that subject to talk
 (iii) Jan is bang om over dat onderwerp te praten
 John is afraid for about that subject to talk (Dutch, *cf.* Bennis 2000: 42)

I have consulted speakers and they coincide in judging *om* to be obligatory in each of the three structures. Since the complement status of PA infinitives is accepted, at this stage, this seems to be another case of a test which cannot be applied categorically.

Another concern is that EAs are factive, and complementiser omission with factive predicates is restricted cross-linguistically (*cf.* K&K 1970 for English; Giorgi 2009 for Italian). In either case, it is not clear that the proposed *om* test provides direct support for any analysis.

Nominalisations have also been used to argue against EA CP complementhood. Kertz (2010) and Landau (2009) conclude from the contrast in (112) that the acceptability of the PA nominalisation with an infinitive shows that the infinitive is part of the adjective's lexical entry and a complement ((112a)), while the proposed ungrammaticality of (112b) indicates that the infinitive is not part of the EAs lexical entry, and thus that when it does appear, it must be an adjunct (*cf.* Grimshaw 1990).

- (112) a. John's eagerness to insult Mary (cf. Landau 2009: 324, ex. (26b))
b. Arthur's stupidity (*to press the matter) was not at issue
(cf. Kertz 2010: 288, ex. (104))

I would like to suggest instead that the contrast is only apparent and that this EA structure is available. The examples in (113) are taken from the Internet. Additionally, example (113b) shows that the extraposed nominalisation structures also appear with the infinitive.

- (113) a. I was appalled by her stupidity to scheme in such a dangerous way
b. It was sheer stupidity to refuse at the price they were offering
c. All this compounded by her stupidity to paint a RENTAL

In consonance with (113), further support for a CP complement analysis can be garnered from EA nominalisations. Nouns have the ability to license their complements via *of*-insertion, as in the well-worn case of *the city* in (114).

- (114) The Roman's destruction of the city

The contrast in (115) illustrates what happens when the clausal argument is not a complement: since the relative clause is an adjunct in (115a), *of*-insertion fails in (115b).

- (115) a. I don't believe the story that Edna left
b. *I don't believe the story of that
(cf. Moulton 2013: 275, ex. (106))

Example (116) shows that PAs accept *of*-insertion, and the examples in (117), taken from the Internet, show that EAs do, as well.

(116) the willingness/eagerness of the response

- (117) a. That they should afterwards, notwithstanding, request him to present their petitions, was to him a gratifying proof of their confidence in **his sincerity of the desire** he had expressed for peace
- b. It was through **his generosity of the donation** of the land the Union Senior Center became a reality
- c. Although Sharon was a great general he did not die as a hero because he botched his fame and name up at the end of his life with **his stupidity of the expulsion** to please the leftists

The NP structure in (117) is somewhat repetitive, but it shows that both the external argument (licensed as a genitive pronoun) and the internal argument can co-occur inside an EA nominalisation. If we loosen this restraint, it is even easier to find examples of nominalised EAs taking *of* complements (e.g. *Such is the astounding stupidity of optimism*, Oscar Wilde).

Considering the contrast in (115) more closely, it shows that nouns take adjunct clauses. On an adjunct analysis of the EA infinitive, it is unclear why the infinitive (or a *that*-clause) should not be able to adjoin to the nominalised EA in (112b), since adjunction is assumed to be free and the infinitive is otherwise ubiquitous in EA structures.

It is true however, that compared to PA nominalisations, EA nominalisations seem heavier. One suggestion might be that this is another indication of the semantic differences between the two classes. EAs, being factive, presuppose their complement, and within the nominal the presupposition of the CP may be even stronger, thus creating sense of redundancy. On the other hand, the lack any such presupposition in PAs allows for a first impression of greater grammaticality.

Although this is a matter that deserves more attention, when compared with other factive nominalisations ((118)), EAs seem to be of a similar order of complexity, but such examples are grammatical in context.

- (118) The narrative reveals **the regretfulness of the decision**, the consolation that through the knowledge and experience gained by their participating scientists, Britain would be better able after the war to produce atomic weapons and energy plants
(Herbert Feis, Review of *Britain and Atomic Energy*)

The conclusion that I offer from the combined nominal data is that both PAs and EAs are complement selecting predicates. We will return to the subject of EA nominalisations in chapter 5, maintaining this conclusion.

2.3.3 *Positive Direct Evidence for CP Complement Analysis*

Thus far, the arguments in support of a CP complement analysis have been a response to the counter-evidence. Now, I present four new arguments: **(i)** sequence of tense (SoT), **(ii)** the CP/PP co-occurrence restriction, **(iii)** VP ellipsis, and **(iv)** Control. The sum of all the arguments strongly supports the conclusion that the CP is a complement in all EA structures.

2.3.3.1 *EAs, Complementhood, and Sequence of Tense*

The first argument comes from the standard assumption for SoT phenomena. SoT is when the interpretation of the tense of the embedded clause is anchored to that of the matrix one. The essential characteristic of SoT is that it is established under complementhood (Hornstein 1990; Giorgi 2009; Higginbotham 2009).

In this respect, compare the complement examples in (119) with the adjunct ones in (120). In (119a) the embedded past tense is interpreted with respect to the matrix past tense. The ungrammaticality of (119b) shows this with the inclusion of adverbials: it is ungrammatical because the interpretation of tense in the embedded clause is dependent on the matrix clause, and the adverbials are contradictory.

(119) Italian

- a. Gianni ha detto che Maria era malata
‘John said that Mary was ill’
- b. *Due anni fa, Gianni ha detto che Maria era malata l’anno scorso
‘Two years ago, John said that Mary was ill last year’

(Higginbotham 2009: 83-84, ex. (1), (5))

The object relative clause examples in (120), however, are both grammatical because of the lack of complementhood: in contrast with (119b), the adverbials are not contradictory in (120b) because the past tense in the relative clause, as an adjunct, is interpreted independently of the main clause tense.

(120) Italian

- a. Gianni ha visto una donna che era malata
‘John saw a woman who was ill’
- b. Due anni fa, Gianni ha visto una donna era malata l’anno scorso
‘Two years ago, John saw a woman who was ill last year’

(Higginbotham 2009: 84, ex. (3), (4))

In this connection, subjunctive clauses are prototypical instances of SoT. The subjunctive examples in (121) show that the choice of present or past subjunctive tense morphology is determined by the matrix tense.

(121) Italian

- a. Gianni crede che Maria sia/*fosse incinta
‘Gianni believes that Maria IS-PRES-SUBJ/*WAS-PAST-SUBJ pregnant’
- b. Gianni credeva che Maria fosse/*sia incinta
‘Gianni believed that Maria WAS-PAST-SUBJ/*IS-PRES-SUBJ pregnant’

(Giorgi 2009: 1842, ex. (12), (13))

Now, consider that factives are the prototypical examples of obligatory subjunctive selecting SoT predicates:

- (122) Gianni rimpiange che sia/*è partita (Italian)
 John regrets that (she) be-PRES-SUBJ/*be-PRES-IND left
 ‘John regrets that she left’

In some languages, when EAs appear with a *that*-clause, the subjunctive is required. This is the case of Italian and Spanish:

- (123) Italian
- a. Che (Emma) abbia/*ha fatto quel commento è stato maleducato
 that (Emma) have-PRES-SUBJ/have-PRES-IND made that comment is be-PART impolite
 ‘That Emma made that comment was impolite’
- b. È stato maleducato che (Emma) abbia/*ha fatto quel commento
 is be-PART impolite that (Emma) have-SUBJ-PRES/have-PRES-IND made that comment
 ‘It was impolite that Emma made that comment’

- (124) Spanish
- a. Que (Ana) se haya/*ha marchado ha sido prudente
 that (Ana) SE have -PRES-SUBJ/have-PRES-IND left has be-PART prudent
 ‘That Ana left was prudent’
- b. Ha sido prudente que (Ana) se haya/*ha marchado
 has be-PART prudent that (Ana) SE have-PRES-SUBJ/have-PRES-IND left
 ‘It was prudent that Ana left’

These examples show that, on standard SoT assumptions, the appearance of the subjunctive in EA *that*-clauses is an unambiguous indication of (underlying) complementhood. Proposing the contrary requires modification of the basic assumption regarding the clause structure of SoT. So, the properties of EAs *that*-clauses support a complement analysis of the EA data argued to be unaccusative on the present proposal.

2.3.3.2 *The CP/PP Restriction*

The next argument comes from the CP/PP restriction introduced in section 1.3.2. Stowell (1991) observed that an EA that selects a *to*-PP can never co-occur with the CP in any structure. The examples in (125) illustrate the restriction and those in (126) show

that the restriction holds even in the absence of the animate argument. This shows that the source of the tension lies between the CP and PP.²⁸

- (125) a. *It was kind of John to me to fix my car
 b. *It was kind to me of John to fix my car
 c. *That was kind of John to me
 d. *Fixing my car was kind to me of John
 e. *John was kind to me to fix my car

(Stowell 1991: 129, ex. (59))

- (126) a. *It was kind to me to fix my car
 b. *That was kind to me
 c. *Fixing my car was kind to me

(Stowell 1991: 129, ex. (60))

Since Stowell first observed this restriction, it has been found to hold cross-linguistically. Bennis (2000) provides data showing that both an argumental PP ((127)) and the dative clitic ((128)) result in ungrammaticality in combination with a demonstrative that stands in for the CP. Landau (2009) shows the same for Hebrew ((129)).

²⁸ In addition to the data presented in the main text, I have found confirmation of the restriction in each language I have been able to test (*e.g.* German, Italian, Romanian, Spanish, and Swedish). I have, however, found three counter-examples to the CP/PP restriction in English. Example (i), from the *Coca Corpus*, is representative.

- (i) Janice put up a bird feeder in the hemlock a few falls ago, even though Doris Kaufmann or some other busybody told her it was cruel to birds to put up a feeder when you weren't there in the winter, a plastic sphere tilted like Saturn, and he fills it with sunflower seed when he thinks of it.
 (John Updike, *Rabbit at Rest*)

Each of the counter-examples involves Extraposition of an infinitive. This seems significant because the infinitive is plausibly not spelt-out in complement position, and this would leave a gap to insert the *to*-PP. Due to the strength of the restriction cross-linguistically, it does seem to be a real syntactic restriction, and counter-examples such as (i) are plausibly the product of discourse-level narrative construction, rather than narrow syntax.

Chapter 2

(127) Dutch

- a. *Dat is gemeen tegen kinderen
that is mean to children
- b. Jan is gemeen tegen kinderen
John is mean to children

(Bennis 2000: 37, ex. (27))

(128) Dutch

- a. *Dat is mij gehoorzaam
That is me obedient
- b. Jan is mij gehoorzaam
John is me obedient

(Bennis 2000: 37, ex. (28))

(129) Hebrew

- a. Gil haya nexmad el Rina
Gil was nice to Rina
'Gil was nice to Rina'
- b. *Ze haya nexmad el Rina (le'hacia la tremp)
it was nice to Rina (to.offer to.her ride)
'It was nice to Rina (to offer her a ride)'

(cf. Landau 2009: 321, ex. (16))

Landau also shows that the restriction appears in EA nominalisations:

- (130) a. The rudeness of the joke (*to Mary)
- b. The rudeness (*to Mary) of the joke
- c. The rudeness of your neighbour to Mary

(Landau 2009: 330, ex. (33))

The next examples show that switching from an argument PP to an adjunct PP obviates the CP/PP restriction. This is illustrated with Hebrew (cf. (129), (131)) and Central Flemish ((132)):

(131) Hebrew

a. Gil haya nexmad klapey Rina

Gil was nice towards Rina

‘Gil was nice towards Rina’

b. Ze haya nexmad klapey Rina (le’hacia la tremp)

it was nice towards Rina (to.offer to.her ride)

‘It was nice towards Rina (to offer her a ride)’

(cf. Landau 2009: 321, ex. (16))

(132) Central Flemish

a. Jan was grof tegen Marie

John was rude to Mary

‘John was rude to Mary’

b. Het was grof van Jan (tegenover/*tegen Marie) van te vertrekken

it was rude from John (with-regards-to/*to Mary) for to leave

‘It was rude of John (with regards to/*to Mary) to leave’

The strength of the restriction is reflected in how native speakers of languages that allow for this minor change instinctively produce the adjunct version, and immediately find the argument version ungrammatical when prompted.

Looking now at changes in the form of the CP, the apparently minor shift from an infinitive to an *in*-adverbial also obviates the restriction:

(133) Celine was rude to Mary in leaving

In the discussion of Control data to come below we will see data showing that *in*-adverbials adjoin higher than the base position of EA infinitives. This leads us to expect that *in*-adverbials should be able to adjoin in (133), and this expectation is met. The sum of these facts indicates that the CP/PP restriction is a very narrow restriction.

While alternative approaches accept that the *to*-PP is an argument and generated as a complement to the adjective (with the exception of Bennis 2004), they cannot analyse this co-occurrence restriction as competition for a structural position. This is because they either propose different argument structures depending on the sentence type or because the CP is never a complement.

Having established the strength of the restriction, the central point here is that, as Stowell shows with (125) and (126), it runs through the whole paradigm.

The solution offered here is that, on the assumption of binary branching, the CP and the PP do compete for the same syntactic position: the complement of the adjective. Since the evidence presented here also supports the conclusion that the EA CP is always generated in complement position, we expect the restriction to run through the whole paradigm.

In support of a base position competition account, the data in (134) show that the same restriction appears with other complement selecting adjectives. The adjective *proud* is standardly taken to select a complement *of*-PP ((134a)). However, *proud* can also select a *that*-clause complement ((134b, c)).

(134) a. I am proud of them

b. I am proud that my parents rose from homelessness, oppression, and poverty to achieve their American dream. (Internet)

c. I am proud of that

d. *I am proud of my parents that they rose from homelessness [...]

But (134d) shows that combining the *of*-PP and the *that*-clause is unacceptable in a way that seems parallel to the EA CP/PP data. So, new evidence from the case of *proud* provides direct evidence for a competition account of the CP/PP restriction, and the complement position of the EA CP.

We will take up this restriction again in chapter 3 when discussing EA entailments. For the moment I would like to underscore that **(i)** from the perspective of this thesis, changes in form are expected to correlate with a change in structure and affect the restriction ((131)-(133)); and **(ii)** this restriction is straightforwardly predicted by the combination of the argument structure proposed here and conservative assumptions about where *to*-PPs of this sort are generated (*cf.* Ramchand 2008; Landau 2009, a.o.).

On the other hand, an analysis assuming adjunction of the CP neither predicts restrictions nor explains why uncontroversial adjuncts do not give rise to them (*i.e.* *in*-adverbials). A complement analysis of the CP picks out just this pattern.

2.3.3.3 *EAs, Complementhood, and Ellipsis*

The next argument comes from the fact that EAs undergo VP-ellipsis. In (135) we see that the infinitive can elide as long as it is not interpreted in subject position ((135d)). This is exactly the pattern one would predict if the infinitive were a complement.

- (135) a. She thought how she should take more care of her appearance, like Lola. It
 was childish not to. (Ian McEwan, *Atonement*)
 b. It was childish to
 c. She was childish to
 d. *To was childish

A fundamental observation with regard to VP-ellipsis is that the particle *to* needs to be in a certain proximal structural relation with a c-commanding lexical item. Exactly how this relation is ultimately to be stated is beyond our concerns here (*cf.* Johnson 2001). What is relevant is that the lack of complementhood blocks the establishment of any such relationship. Example (136) shows that, as the infinitive is the complement of *want*, ellipsis proceeds.²⁹

- (136) Mag Wildwood wants to read Fred's story, and I also want to ▲
(Johnson 2001: 440, ex. (5d))

In contrast, (137) shows that ellipsis fails when the infinitive is within a purpose adjunct.

- (137) *Mag Wildwood came to read Fred's story, and I also came to ▲
(Johnson 2001: 440, ex. (8))

With respect to (135a-c), this shows that the EA infinitive cannot be an adjunct. Furthermore, the contrast in (138) shows that ellipsis of an infinitive that is realised in Spec, T ((138b)) is always bad. This general observation means that the ungrammaticality of (135d) is an independent fact that does not say anything about the argument structure of EAs.

²⁹ The symbol “▲” marks the ellipsis site.

(138) a. You shouldn't play with rifles because it's dangerous to ▲

b. *You shouldn't play with rifles because to ▲ is dangerous

(Johnson 2001: 442, ex. (11))

Crucially, the EA infinitive cannot *originate* as an external argument because VP-ellipsis in these cases is not licensed either. In (139a), we have an object Experiencer verb that can take an infinitive that is generated thematically as the Causer argument. Example (139b) shows that the infinitive can extrapose. Yet, example (139c) indicates that VP-ellipsis is not possible even with Extraposition (*cf.* (137a)), although TP-ellipsis and *do so* anaphora are fine ((139d, e)).

(139) a. To perjure himself/that would damage John

b. It would damage John to perjure himself

c. *Mary didn't want to perjure herself because it damaged John to ▲

d. Mary didn't want to perjure herself because it damaged John ▲

e. Mary didn't want to perjure herself because it damaged John to do so

The conclusion that this set of facts unequivocally implicates is that the EA infinitive is never generated as an external argument because otherwise, we would incorrectly predict (135b) (*It was childish to*) to be ungrammatical. In short, if the EA infinitive were generated anywhere but complement position, VP-ellipsis should fail, contrary to fact.

2.3.3.4 EAs, Complementhood, and Obligatory Control

The final argument comes from Control. We saw above that EAs are OC predicates (examples repeated here as (140) and (141)). I suggest that this is a property of Control predicates that take infinitival complements, and not infinitival external arguments.

(140) a. Arthur was silly to nominate himself

b. *Arthur's sister was silly to nominate himself

c. *Arthur thought Desmond was silly to vote for each other

d. Arthur was silly to get arrested, and Desmond was as well

- (141) a. It was silly of Arthur to nominate himself
 b. *It was silly of Arthur's sister to nominate himself
 c. *Arthur thought it was silly of Desmond to vote for each other
 d. It was silly of Celine to get arrested, and it was of Desmond (to) as well

Before turning to the Control data that show that the EA infinitive patterns with complements and not external arguments, I present data that rule out possible adjunction analyses of the infinitive.

Since EAs only appear with an external argument and a CP but no intervening direct object, it does not seem possible to test directly the variability that adjunct Control gives rise to. A standard illustration of this variability is given in (142).

(142) Italian

- a. La mamma mi ha sgridato con tanta furia [da pentirsi/*mi subito]
 'Mother scolded me so furiously that she/*I immediately felt remorseful'
 b. Io sono stato sgridato dalla mamma con tanta furia [da pentirmi/*si subito]
 'I was scolded by mother so furiously that I/*she immediately felt remorseful'
 (cf. Landau 2010b: 92, ex. (170a, b))

Example (142a) is in the active voice and only the subject, *i.e.* *la mamma*, can control the infinitive in the adjunct clause headed by *da*. Example (142b) shows that, upon passivisation, the Control relation flips: only the logical object, now in subject position, *i.e.* *io*, is a possible controller. This pair of examples illustrates the variability of adjunct Control.

In order to test for adjunct Control, however, another potential controller must be available in the structure, such as a direct object, which is what EAs do not have. So, in order for the argument for complementhood from Control to have force, I will first show that the EA infinitive does not pattern with other types of adjuncts, and then show that it patterns exactly like OC infinitival complements. This combination of facts strongly supports a complement analysis of the EA infinitive.

Two types of adjunct Control that could be at issue are those of rationale clauses ((143a)) and purpose clauses ((143b)). One of the properties that distinguishes them from each other is that the inclusion of the full *in order to* connector is only grammatical in rational clauses.

- (143) a. Sam brought the camera to the party [(in order) PRO to take pictures]
b. Sam brought Kim to the party [PRO to take pictures]
(Overfelt 2011: 2, ex. (1), (2))

Example (144a) shows that inclusion of the connector is not possible with EAs, so a rationale adjunct analysis is ruled out. On the other hand, example (144b) (repeated from (137)) shows that VP-ellipsis from a purpose adjunct is generally bad.

- (144) a. *Emma was rude in order to leave the party
b. *Mag Wildwood came to read Fred's story, and I also came to ▲

We have already seen that VP-ellipsis is possible with EAs ((135)), so the empirical facts also argue against a purpose adjunct analysis. Therefore, the EA infinitive cannot be analysed as adjunction of these kinds.

Above, when discussing the CP/PP restriction, it was mentioned that there is evidence showing that the EA infinitive and *in*-adverbials occupy different positions in the syntax. Landau (2009), in contrast, proposes that the EA infinitive is an underlying *in*+gerund adjunct:

- (145) a. John was stupid [AdvP Ø[PRO to leave town]] (Landau 2009: 324, ex. (23))
b. John was stupid [**in** leaving town] (Landau 2009: 324, ex. (24))

Kertz (2006, 2010) shows independently that this is not the correct analysis because, among other effects, the two types of phrases can co-occur and their relative order effects interpretation:

- (146) a. Spencer was rude to offend Agatha in recounting the story at dinner
(Kertz 2010: 282, ex. (78))
b. Spencer was rude in recounting the story at dinner to offend Agatha
(Kertz 2010: 282, ex. (79))

When adjacent to the adjective ((146a)), the infinitive has the canonical complement interpretation we have been focussing on. In (146b), with the gerund adjacent to the adjective and the infinitive last, the infinitive can only have a purpose interpretation.

In addition to undermining an adjunction account, the interpretive difference between (146a) and (146b) makes another crucial point: it shows that the infinitive is closer to the adjective than other adjuncts. This is because, when the infinitive is adjacent to the adjective, it has a neutral “complement” interpretation, but as soon as there is an intervening adjunct (such as the *in*-adverbial), the infinitive is unambiguously interpreted as a purpose clause. Therefore, when the EA infinitive is truly an infinitive (and not a larger connector such as *in order to*), it seems to be as close to the adjective as it can get.

If the absence of any direct evidence for an adjunct analysis is combined with the evidence pointing toward a complement analysis, then the contrast in (146) also supports a complement analysis. Given that we have been unable to identify what sort of adjunct the EA infinitive could be, I take the following Control data, which show the EA infinitive to pattern with infinitival complements, and not external arguments, to be another strong argument for a complement analysis.

Returning now to the properties of OC, the binding facts in (147) show that in all structures, the EA infinitive is obligatorily controlled by its local controller (*i.e.* *John*). This is true whether the infinitive is in subject position ((147a)), extraposed ((147b)), or immediately following the adjective ((147c)).

- (147) a. Mary knew that [PRO to perjure himself/*herself] was foolish of John
 b. Mary knew that it was foolish of John [PRO to perjure himself/*herself]
 c. Mary knew that John was foolish [PRO to perjure himself/*herself]

As mentioned above in the discussion of the ellipsis facts, object Experiencer verbs such as *damage* can take infinitives as their Causer external argument. These verbs display different Control properties. The binding facts in (148) show that these infinitives allow either the matrix subject or the embedded object to control, independently of the position of the infinitive.³⁰

³⁰ Not all Causer-infinitive selecting verbs display exactly this binding pattern: psychological object-experiencer verbs selecting a Causer infinitive, such as *disturb*, evidence only a sub-set of the *damage* pattern (*cf.* Landau 1999), but both sub-classes nevertheless have a signature which is completely different from OC complement selecting predicates. Since EAs are neither psychological nor experiencer predicates, and do not otherwise pattern with object Experiencer predicates in any way, I use *damage* for comparison because the empirical ground requires less qualification.

- (148) a. Mary knew that [PRO to perjure himself/herself] would damage John
b. Mary knew that it would damage John [PRO perjure himself/herself]
(cf. Landau 1999: 20, ex. (20))

These object Experiencer verbs also allow an impersonal *oneself* anaphor in either position ((149)), again in contrast to EAs ((150)).

- (149) a. Mary knew that [PRO to perjure oneself] would damage John
b. Mary knew that it would damage John [PRO perjure oneself]
(150) a. *Mary knew that [PRO to perjure oneself] was foolish of John
b. *Mary knew that it was foolish of John [PRO to perjure oneself]
c. *Mary knew that John was foolish [PRO to perjure oneself]

If the EA infinitive were introduced as an external argument, the null hypothesis would be that it behave like other predicates selecting infinitival external arguments, contrary to fact.

If we instead compare EAs with Control verbs that select an external argument controller and a CP complement, and alternate (as EAs do) such as *decide*, *demand*, *accept*, or *refuse*, we find that the EA profile is not exceptional, but parallel. In (151) the paradigm is illustrated with *decide*. The blocks of examples in (152) and (153) show that—just like EAs—Control is local and cannot be impersonal.

- (151) a. The committee decided [PRO to investigate itself]
b. It was decided by the committee [PRO to investigate itself]
c. [PRO to investigate itself] was decided by the committee
(152) a. Mary knew that the committee decided [PRO to investigate itself/*herself]
b. Mary knew that it was decided by the committee [PRO to investigate itself/*herself]
c. Mary knew that [PRO to investigate itself/*herself] was decided by the committee
(153) a. *Mary knew that the committee decided [PRO to investigate oneself]
b. *Mary knew that it was decided by the committee [PRO to investigate oneself]
c. *Mary knew that [PRO to investigate oneself] was decided by the committee

In fact, since Stowell (1991: 112) it has been acknowledged that the EA external argument is always present in the infinitival structures—even if implicit—just like the external arguments of passives.

In conclusion, this last argument compared EA Control with the properties of infinitives that are merged as external arguments and we have found that EAs behave like other complement selecting OC predicates with external arguments that control locally even when implicit.

2.3.4 Summary of EA CP Complement Arguments

In this section three different kinds of argument (*i.e.* general conceptual considerations, reanalysed counter-evidence, and new direct evidence) showed that the EA CP is always generated as in complement position. Overall, the evidence is strong and mutually consistent. This consistency with respect to all the phenomena we have seen so far weights heavily against an analysis which posits multiple lexical entries and various forms of EA argument realisation. On the other hand, it supports this causative alternation analysis because the CP is exactly where it needs to be for the causative alternation to proceed.

2.4 Alternative Theories of Verbal and Adjectival Predication

Two points that have been belaboured throughout this chapter are that (i) adjective syntax is complex and, (ii) adjectives assign external Causer and Experiencer roles.

Once one makes allowance for the stativity of adjectives—thus barring the Agent role with adjectives—it becomes clear that adjectives are assigning thematic roles that are associated with the standard external positions.

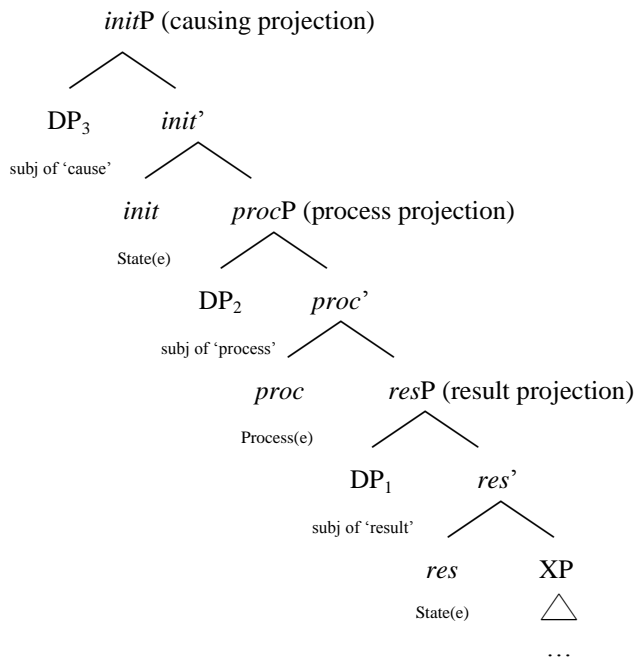
When we take a closer look at the adjective classes that assign the Causer and Experiencer roles, namely EAs and PAs, we find numerous further syntactic differences; for example, EAs passivise, PAs do not; EAs bear many signs of causation, PAs none. The present approach to capturing this posits the same structural relations in adjective syntax as in verb syntax. Indeed, chapter 1 presented a semantic argument for parallelism of verb and adjective inner-aspect.

We will look now at two alternative accounts of argument structure in order to illustrate that this is not the standard view: it is more common to analyse verbal predications as rich and adjectival predications as poor.

Ramchand (2008) provides inner-aspectual structure with a syntactic representation that splits the traditional verb phrase up into three projections: *initP*, *procP* and *resP* ((159a)) (cf. Borer 1994). The head of the *init* phrase is parallel to *little v*. It introduces an argument which is underspecified as either Agent or Causer: essentially any individual that can be conceptualised as the initiator of a cause. The *proc* phrase is the locus of change through time. The argument in its specifier is the Undergoer of change. Lastly, the *res* phrase represents the result-state of lexically telic verbs such as *break*.³¹ The argument in *resP*'s specifier is the holder of that state. Additionally, each head introduces its own aspectual variable. This variable is the argument of one of the two basic predicates of events that Ramchand assumes: *state* and *process*. *Init* and *res* denote states, and *proc* a process.

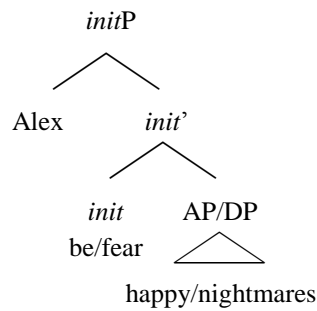
(159) *Ramchand's Syntactisation of Aspectual Structure*

a. Maximal Extension of Traditional VP: *break*



(cf. Ramchand 2008: 39, 44)

³¹ As opposed to verb phrases that are compositionally bounded, e.g. *Victoria pushed the cart (to the end of the aisle)*. We return to telicity in chapter 4. In this section it is mentioned simply in order to emphasise the representational divergence between verbs and adjectives.

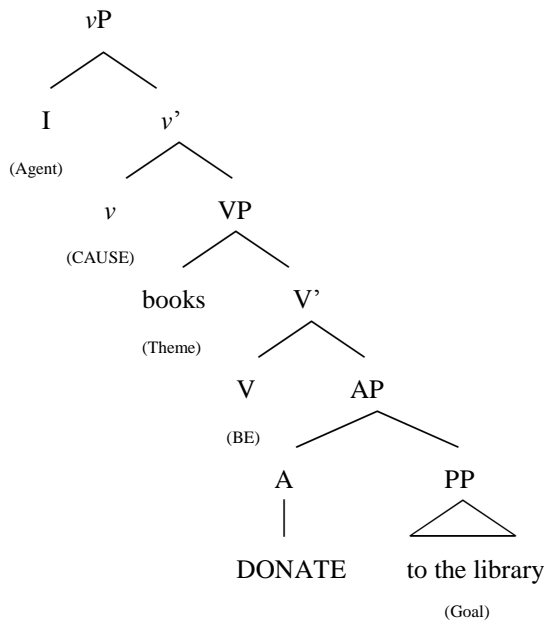
b. Stative Predications: *Alex is happy/fears nightmares*

(cf. Ramchand 2008: 106)

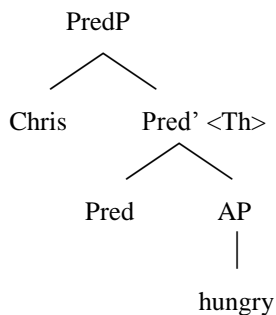
Two consequences of the structure in (159a) are that **(i)** only dynamic verbal predications are given complex internal structure, and **(ii)** only dynamic verbal predications associate their thematic roles with mutually exclusive positions.

Both of these points can be brought into focus by a comparison with the structure posited for stative predications in (159b). First, statives—in contrast to dynamic verbs—are uniformly analysed as internally simple: there is only one aspectual head in (159b). Second, the subject arguments of stative predicates are introduced in the specifier of that head. So when it comes to states, no thematic distinctions are made in the syntax. The generalisations regarding the organisation of the thematic roles of dynamic predicates, and the differences between adjective classes that have been illustrated in this chapter argue against these positions that statives are both uniform and uniformly simple.

While Ramchand (2008) separates dynamic predicates from stative predicates (stative verbs and adjectives), Baker (2003) draws the distinction between verbs and adjectives. In his theory of lexical categories, Baker reduces verbs to underlying adjectives, as in (160a). A verb is proposed to be an adjective that is originally a complement to the standard VP structure. It then conflates with the verbal heads. The morphological output of conflation is a verb.

(160) *Baker's Representations of Verbs and Adjectives*a. Verbs: *I donated books to the library*

(cf. Baker 2003: 81, ex. (122))

b. Adjectives: *Chris is hungry*

(cf. Baker 2003: 35, ex. (31b))

Once again, in (160a) verbs are associated with an extended structure that assigns thematic roles in particular structural positions: Agent in Spec, v , Theme in Spec, V , and Goal in Comp, V .

This is not the case with adjectives ((160b)). Adjectives are proposed to combine with their argument via $Pred$, which following Chierchia (1985) and Bowers (1993), is a function from entities to propositions.

Unlike verbs, the thematic role assigned to the argument of the adjective is not a function of syntactic structure, but of the lexical meaning of the adjective. Thus, the angled brackets at the level of $Pred'$, *i.e.* $<Th(eme)>$, indicate that the lexical semantics of the adjective *hungry* transmit the Theme role to the argument in Spec, $Pred$. Baker

speculates that the Agent role is also assigned in this same structural configuration if the adjective produces agentive inferences (2003: 36). In other words, the role assigned to Spec, Pred is determined directly by lexical semantics—not syntactic structure. So, once again, we see the assumptions that the argument structure of verbs is potentially complex and thematic roles are associated with specific configurations, while adjectives are simple and their thematic roles are syntax independent.

This divergence, however, is at odds with the motivations that led Baker (2003:77-88) to reduce verbs to underlying adjectives in the first place. It is well-known that many natural languages realise adjectives as stative verbs, *e.g.* Japanese, Korean, Mohawk (*cf.* Dixon 2004, 2010). The division between the two lexical categories in predicative structures seems to be one of morphology rather than syntax, and our results thus far support for this conclusion.

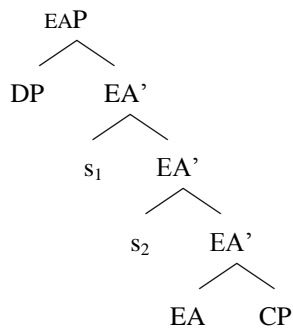
In this connection, the structures proposed by Ramchand in (159a) and Baker in (160a) share two characteristics that merit further reflection: **(i)** they are supposed be verbal (Ramchand 2008: 39) and **(ii)** the meaning of these verbal heads is associated with aspectual structure. With respect to this last point, Ramchand associates each head with an aspectual predicate and argument, and Baker includes the annotations of CAUSE and BE under the syntactic labels.

Since I am arguing that adjectives have the same range of complexity as verbs, a consequence is that the building blocks of argument structure or inner-aspect cannot be, strictly speaking, *verbal*—they have to be general enough that they can apply to both verbs and adjectives. Or said differently, in consonance with Ramchand and Baker, in (161) I associate these heads directly with the aspectual arguments in (161). But under my analysis, these aspectual arguments are unambiguously independent of lexical category.

(161) *Argument Structures of the Three Main Adjective Classes*

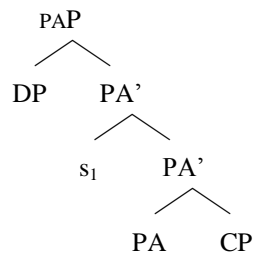
a. EAs:

Emma was rude to leave



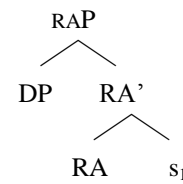
b. PAs:

Sam was eager to help



c. RAs:

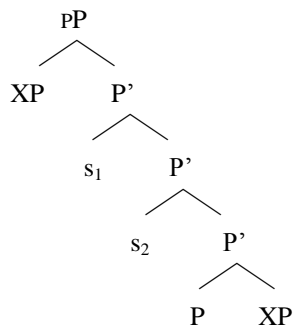
Victoria was Canadian/tall



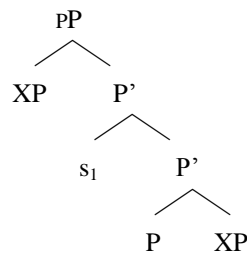
Thus, building on chapter 1, I am going a step farther than standard assumptions in explicitly dissociating lexical category information from inner-aspectual structure. The structures in (162) are repeated from chapter 1, where it was independently argued that verbs and adjectives have the same range of inner-aspectual complexity. This line of argumentation will be confirmed once more in chapters 3 and 4 where the content of these structures is argued to be stative, and not eventive.

(162) *Generalised Argument Structures (Adjectives and Verbs)*

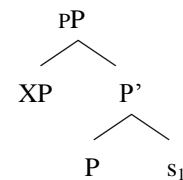
a. Lexical Causatives



b. Type 1 Simple States



c. Type 2 Simple States



This final section presented two proposals that, in different ways, analyse the syntax of predicative adjectives as aspectually simpler than that of verbs. In contrast, the present proposal is that the complexity illustrated by adjectives parallels that of verbal predications. A consequence of this proposed parallelism is that the building blocks of argument structure as aspectual structure can no longer be seen as verb specific, but category neutral. The syntactic results thus support the semantic argument for the parallelism of verbs and adjectives in chapter 1.

2.5 Conclusions

In this chapter I presented data from different predicative adjective classes in order to make the case that adjectival structures are of comparable richness to those of verbs, and to highlight that in many cases these adjectival structures have verbal correlates.

Along the way, I have been substantiating my proposal that EAs are stative causatives that undergo the causative alternation. We have seen that this hypothesis automatically captures a number of syntactic and interpretative facts. Strong evidence comes from the cross-linguistic unaccusative nature of EA *that*-clause data, their passive-like structures, their Causer external argument, and the *responsibility* relation holding between the external argument and the CP.

The principle conclusion that this line of argumentation leads to is that the syntactic representation of aspectual structure is category neutral. In the next chapter we turn specifically to the diagnosis of adjective inner-aspect.

Chapter 3:

EA Inner-Aspect

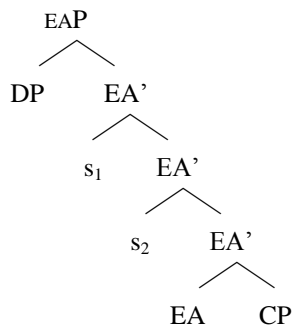
3 Introduction

This chapter continues with the comparison began in chapter 2, now with an eye to the aspectual properties of the three adjective classes that take animate subjects, *i.e.* evaluative adjectives (EA), psychological experience adjectives (PA), and relational/physical property adjectives (RA). The comparison provides evidence from inner-aspect (*i.e.* lexical aspect) for the three-way split represented by the three respective argument structures in (1).

(1) *Argument Structures of the Three Main Adjective Classes*

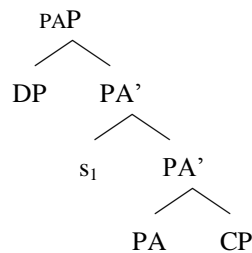
a. EAs:

Emma was rude to leave



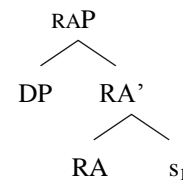
b. PAs:

Sam was eager to help



c. RAs:

Victoria was Canadian/tall



Most importantly, this chapter amasses a range of arguments that supports three conclusions: EAs are (i) uniformly causative, (ii) uniformly stative, and (iii) they uniformly entail the content of a CP—whether it is overt or not. These are crucial components to the broader proposal that EAs have the single denotation in (2) and that they undergo the causative alternation. The denotation in (2) says that an EA is aspectually stative causative. The causal relation partitions the predicate and its arguments into a causing-state description and a result-state description. Beaver's (1992) presupposition operator ∂ is included in this version in order to emphasise that EAs are factive and therefore entail their CP complement.

(2) *Template EA Denotation*

(Version 1 of 2)

$$\|EA\| = \lambda s_2 \lambda s_1 \lambda x. \partial \exists q [\text{CAUSE}(EA(x, s_1), EA(s_2, q))]$$

With respect to the uniformity of the denotation and the causative alternation, this chapter focuses on this propositional entailment. The status of the external argument in unaccusatives is left for chapter 5.

In chapter 1 we saw that some alternative approaches to EAs invoke the Individual-Level (IL)/Stage-Level (SL) distinction when analysing (3a) and (3b), respectively.

- (3) a. Emma is rude
 b. Emma was rude to leave

The IL/SL distinction is meant to capture a division between transient properties and stable ones. And intuitively, it seems to apply to the pair in (3). This chapter will show, however, that the IL/SL distinction fundamentally mischaracterises the EA data pattern.

Section 3.1 introduces some standard diagnostics that classify EAs as IL predicates, and provides initial conceptual and empirical arguments that undermine the existence of the IL/SL distinction as a formal distinction in the grammar.

Section 3.2 discusses the notion of temporal dependence as the dividing line between IL and SL predicates. Temporal dependency is traditionally represented as the existential reading that SL predicates have and IL predicates lack. This section shows that EAs are temporally dependent in every tense but the present simple.

Section 3.3 presents the Davidsonian conception of a spatio-temporal argument, and we see that EAs are the only adjective class that qualifies. This is an obstacle both for approaches that associate *stage-levelhood* with an event argument, and for approaches that uniformly assign an event argument to all predicates. This is the first indication that a deeper investigation of the content of aspectual arguments is needed to account for the empirical patterns.

Section 3.4 shows that—even though EAs pass eventivity tests—they also classify unambiguously as states on all their usages. This argues against the position that EAs are *activities* on their temporally dependent, existential reading.¹

Two reasons why an activity analysis seems justified are the acceptability of EAs in the continuous aspect ((4a)) and their compatibility with intention adverbials ((4b)).

¹ In aspectual terms, states are characterised as atelic and durative eventualities, while activities, in addition to being atelic and durative, are also dynamic, *i.e.* they convey a notion of change (*e.g. draw, eat, push, walk*; cf. Kearns 2011: 157-158). Section 3.4 compares states and activities at length.

- (4) a. Emma was being arrogant/brave/nice/obnoxious/rude
b. Sam was arrogant/brave/nice/obnoxious/rude on purpose

Both of these environments are commonly assumed to entail non-stativity because they give rise to an agentive inference with regard to the animate subject. Intuitions aside, we will see that non-stativity is not an entailment in either of these cases, and that the agentive inference is an implicature. Further, it is shown that agentive inferences cannot be used to diagnose inner-aspect.

Throughout this chapter data will show that agentive inferences can appear with all predicate classes that take an animate subject, so EAs are not special in this regard. Specifically in the case of EAs however, I suggest that the ubiquity of their agentive inference is due to the interaction of two independent factors: a causative structure and an animate external argument.

Section 3.5 begins to make sense of the tension between the results that EAs pass both eventivity and stativity tests. I will show that, aspectually, EAs pattern with verbs independently classified as *stative causative*, e.g. *gleam, glow, shine, sleep, wait* (cf. Rappaport Hovav and Levin 2000; Maienborn 2005b).

Section 3.6 offers alternative explanations for why EAs pattern with IL predicates in some environments. These alternatives make use of properties that EAs have independently, such as factive presuppositions and a causative structure. With these explanations in hand, the argument against EAs as IL predicates, as well as the very existence of the IL/SL distinction as a formal distinction, is strong.

Section 3.7 provides arguments for a single EA denotation that contains a CP internal argument ((2)). It also provides arguments against the two other ways of approaching the exceptional behaviour of EAs: coercion and “active” *be*. Once these arguments are given, we will have seen far reaching arguments against all available alternative EA inner-aspect analyses: (i) against IL/SL/activity ambiguity, (ii) against an approach that posits an IL denotation plus a defined coercion operation, and (iii) against placing the ambiguity in the copula rather than the adjective, i.e. “active” *be*. The section closes with the positive arguments for a single EA denotation.

With a stative causative classification of EAs the evidence for ambiguity dissolves. A unified analysis of EAs' syntactic and aspectual properties is simpler, more explanatory, and has greater empirical coverage.²

3.1 The Individual/Stage Distinction: Initial Concerns

The IL/SL distinction is commonly conceived of as marking the divide between permanent, inherent or otherwise non-accidental properties, on the one hand, and temporary ones on the other. EAs are often offered as standard examples of IL predicates, and in chapter 1 we saw that it is common to maintain this position, while recognising that EAs' more global behaviour necessitates a SL instantiation, as well.

In the following sub-sections I first introduce the traditional conception of the IL/SL distinction and discuss some of the motivations for giving EAs multiple denotations (section 3.1.1). Second, I introduce some traditional diagnostics that substantiate the existence of the IL/SL distinction and indicate how they apply to EAs, PAs and RAs (section 3.1.2). Third, I discuss a range of general empirical and conceptual concerns that belie the distinction itself and constitute a strong argument against its existence (section 3.1.3). Section 3.1.4 summarises these preliminary conclusions.

Taken together, these sections make up the first part of an extended sub-argument, to be developed throughout this chapter, against the adequacy of the IL/SL distinction as a grammatical primitive. Alternative analyses of the data that support an IL analysis of EAs in 3.1.2 are given in section 3.6.

3.1.1 *The Individual/Stage Distinction and Multiple EA Denotations*

Carlson (1977) represents the IL/SL distinction as the difference between predicates that contain a *stage* argument in their lexical entry and those that do not. Examples (5a) and (6a) illustrate the contrast between IL and SL predicates with an EA and a PA, respectively. The IL denotation in (5b) denotes a set of individuals. The lack of any

² Chapter 2 often presented full paradigms in order to show just how uniform EAs are with respect to certain phenomena, *e.g.* factivity, Obligatory Control. In this chapter, in order to build counter-arguments against alternative approaches and arguments for the present one, I will focus on the relevant data and set aside the presentation of full paradigms. In particular, I set aside EA *that*-clause data until section 3.3.3, where I do return to discussing full paradigms.

spatial, temporal or aspectual variable reflects the intuition that IL predicates say something about a stable property that an individual generally possesses.

(5) *IL Predicate*

a. Mark is stupid

b. $\| \textit{stupid} \| = \lambda x. \textit{stupid}(x)$ (cf. Carlson 1977: 130, ex. (38a))

The interpretation of (6a) is different because its most salient reading is not generic, but existential, *i.e.* a relation between the property and an individual at some time. The SL entry in (6b) captures this intuition with the addition of the existentially quantified stage variable, *y*.

(6) *SL Predicate*

a. Mark is eager

b. $\| \textit{eager} \| = \lambda x. \exists y [R(y, x) \wedge \textit{eager}(y)]$ (cf. Carlson 1977: 130, ex. (38b))

A stage is conceived of as a spatially and temporally bound manifestation of something (Carlson 1977: 115). The formula in (6b) states that there is a stage *y* that realises an individual *x*, and that that stage *y* is a member of set denoted by the predicate. SL predicates, then, denote sets of stages.³

In the case of the analysis of EAs, in section 1.3.2 we saw that Stowell (1991) and Landau (2009) provide explicit analyses of IL and SL variants, with the SL one framed in Davidsonian terms. Their IL representations are repeated in (7a, b) and (8a, b), respectively. These representations maintain the idea that the IL variant is a predicate denoting a set of individuals.

³ The more general conception of a stage as a spatially and temporally bound manifestation has been assimilated to the Davidsonian statio-temporal event argument (cf. Davidson 1967; Chierchia 1995). This is the case even though a Carlsonian *stage* is not necessarily equivalent to a Davidsonian event argument (cf. Kratzer 1995; Higginbotham and Ramchand 1997). For the purpose of direct comparison, I follow the standard assumption that the former can be translated into the latter, and discuss it in Davidsonian terms.

- (7) *Stowell's (1991) EA Argument Structures*
- a. John is stupid
 - b. IL: $[_{AP} \text{John} [_{A'} [_{A} \text{stupid}]]]$
 - c. John was stupid to wash the car
 - d. SL: $[_{AP} [_{A'} [_{EA} \text{stupid}]] [_{AP} \text{John} [_{A'} t_{EA}]]] [_{EVENT} \text{to wash the car}]$
- (8) *Landau's (2009) EA Denotations*
- a. John is rude
 - b. IL: $\|\sqrt{\text{rude}_I}\| = \lambda x.x \text{ is rude}$
 - c. John was rude to Mary
 - d. SL: $\|\sqrt{\text{rude}_S}\| = \lambda y \lambda x \lambda e.x \text{ is rude to } y \text{ in } e$

The (c) examples, however, illustrate that EAs also have natural existential interpretations. In order to capture this, the SL variants in (7d) and (8d) include an event argument e (which replaces Carlson's stage variable y). Neither author diagnoses what sort of eventuality this event argument introduces.

Although primarily syntactic, these analyses resonate with the long tradition of treating EAs as aspectually polyvalent. The primary motivation for aspectual polyvalence is not just that EAs apparently alternate between a generic reading and an existential one, but that EAs give rise to agentive inferences. This has led to the postulation that, in certain contexts, EAs shift from an IL state to a SL/event usage, specifically from an IL state to an activity (*cf.* Dowty 1979; Fernald 1999; Maienborn 2005b; Arche 2006, a.o.). So, when it comes to EAs, conclusions reached from syntactic and aspectual perspectives point in a similar direction.

3.1.2 *EAs as Individual-Level Predicates*

While EAs are recognised to have special properties, such as switching from an IL to SL reading, or having a subject that seems to be an Agent, there are specific tests that motivate an IL analysis. The interpretation of the present simple in English generally underwrites our intuitions about how a given adjective should behave with respect to the IL/SL distinction. For instance, the predicates in (9) only lend themselves to a generic

interpretation in the present simple, and this creates the expectation that they will be IL predicates.⁴

(9) Emma is brave/Canadian/tall (* \exists /Gen)

In comparison those in (10) have both an existential reading on which Emma is available, eager or sick now, as well as a generic reading whereby Emma is generally available or eager, or chronically ill, and they are expected to test like SL ones.

(10) Emma is available/eager to help/sick (\exists /Gen)

Example (9) shows that EAs pattern with relational adjectives and physical properties of the RA class, and that they are intuitively read as reflecting IL properties, while (10) shows that PAs are naturally classified as SL.

Three tests that are commonly evoked to support the existence of the IL/SL distinction are bare plural subjects, *there*-insertion, and depictives. These tests make the same cut as the present simple.

The examples of bare plural subjects in (11) show the same interpretative pattern as in (9) and (10): SLs have both readings and ILs are restricted to a generic one.

(11) a. UN Peacekeepers are brave/Canadian/tall (* \exists /Gen)
 b. UN Peacekeepers are available/eager to help/sick (\exists /Gen)

In connection with bare plural subjects, Milsark (1974, 1977) observed that the operation of *there*-insertion seems to be dependent on the type of predicate ((12)). *There*-sentences are interpreted existentially and so the expectation is that IL predicates will be unacceptable in this environment because they lack a temporally dependent reading. SL predicates, in contrast, should be acceptable precisely because they are compatible. Taking (11) as the baseline, (12) shows that these expectations are borne out: only SL predicates remain grammatical once *there* occupies the subject position ((12b)).

⁴ The notations to the right of the examples follow common practice in distinguishing SL and IL readings. The existential quantifier \exists is used for the SL reading that follows from existential quantification over the stage variable y in a SL denotation ((6b)). The generic quantifier Gen is used as a notational convenience to indicate the IL reading that the property is stable or generally true of the holder.

- (12) a. *There are UN Peacekeepers brave/Canadian/tall
 b. There are UN Peacekeepers available/eager to help/sick

Since IL predicates lack an existential reading, they are correctly predicted to be banned from this context, and the resulting sentence is ungrammatical ((12a)). Once again, EAs and RAs look like good IL predicates.

Depictives are another environment that imposes a temporal requirement on the interpretation.

- (13) a. *Emma arrived brave/Canadian/tall
 b. Emma arrived available/eager to help/sick

The immediate intuition with these structures is that the property denoted by the adjoined adjective is interpreted as holding specifically at the time when the main event described by the verb occurs. In other words, it must support an existential interpretation. Hence, ILs are expected to be ungrammatical and SLs acceptable, as is indeed the case in (13).

Data such as these support the intuition that the conceptual distinction between a stable state-of-affairs and a transitory one is grammaticalised. They are also representative of the traditional grounds for classifying EAs as IL. In the following sections however, we will see conceptual and empirical concerns with this broad binary distinction, as well as with the adequacy of an IL classification of EAs.

3.1.3 *General Concerns with the Distinction*

A first conceptual difficulty with IL predicates is exactly how to define the notion of “stable” with respect to intuitions and linguistic diagnostics. For instance, Carlson (1977: 122-123) discusses the fact that a door can be open for as long as a balloon is big, but *open* tests like a SL predicate and *big* like an IL one ((14)).⁵

⁵ It should be emphasised that the problem with the notion of stability is a conceptual rather than a technical problem for Carlson because IL predicates are defined not with respect to the concepts of stability, inherency, or permanency, but simple set membership, as Carlson himself points out (1977: 127; 131). I am discussing the problems with the conceptual notions of stability versus statio-temporality because the IL/SL distinction is consistently framed in these terms and guided by these intuitions. For this reason, it is worth indicating these conceptual obstacles now, as even greater empirical problems are

- (14) a. Ellen saw the door open
b. *Ellen saw the balloon big

A stronger version of this problem arises when pre-theoretic intuitions about the classification of a predicate as IL or SL and the results of the linguistic diagnostics point in different directions. In (15) we have an example with predicates denoting relatively stable and/or permanent states such as *alive* and *dead* that pass the SL test of *there*-insertion.

- (15) There were five people alive/dead (cf. Carlson 1977: 122, ex. (80))

Jager (2001) uses the pair in (16) to make the same point with depictives. Although a lifespan tends to last longer than youth, the IL/SL diagnostic has *alive* and *young* patterning the opposite way round with respect to pre-theoretic expectations.

- (16) a. We saw John alive
b. *We saw John young

(Jager 2001: 94, ex. (31))

Data like these show that IL/SL concepts and diagnostics can be both indeterminate and at odds.

McNally (1998) presents another problem in the behaviour of SL predicates. When introducing the bare plural data above ((11)), I set aside one detail crucial to the original empirical motivation for the IL/SL distinction and what the bare plural subject diagnostic is meant to show. In particular, with a SL predicate, rather than just allowing an existential interpretation of the sentence as a whole (as I described it above, *e.g. UN Peacekeepers are available*), the bare plural subject is predicted to have a weak existential interpretation along the lines of its *there*-inserted counterpart (*i.e. There were (some) UN peacekeepers available*). As McNally shows with the examples in (17), it turns out that SL predicates are not generally so well-behaved with respect to the interpretation of their subject.

introduced throughout this chapter, problems that undermine the idea that a binary lexical distinction is sufficient or straightforwardly relevant to the data offered to support it.

- (17) a. Committee members were bored until the Dean suddenly showed up
 b. Today, people in the office were in a good mood

(McNally 1998: 298, ex. (8c, d))

While both of the predicates in (17) intuitively denote transitory states and the sentences both have existential readings, the bare plural subjects in these examples are not interpreted as weakly existential, but rather as referring to all the committee members and all the people in the office, respectively. Examples such as these undermine the generalisation that originally motivated the IL/SL distinction.

Furthermore, I add the data in (18) to show that both sentences in (17), while seemingly lacking a weak existential subject interpretation, nevertheless undergo *there*-insertion.

- (18) a. There were committee members bored until the Dean suddenly showed up
 b. Today, there were people in the office in a good mood

These data, together with (15) (*e.g. There were five people alive/dead*), show that *there*-insertion is not directly dependent on either a weak existential interpretation of a bare plural subject, or a stable versus transitory intuition about the predicate.

Facts like those reviewed thus far indicate that something more than a binary aspectual classification of predicates is needed to account for the data. A further consequence is that the behaviour of EAs and RAs with bare plurals, *there*-insertion and depictives is independent of the distinction, as well.⁶

Kertz (2006) provided evidence of this for EAs. Stowell (1991) and Landau (2009) proposed that EAs come with IL and SL variants. One contrast the variants are designed to cover is that of IL intransitive property predication (*e.g. Peter is rude*) versus the cases including a CP, where a SL reading becomes available (*e.g. Peter was rude to leave*).

Kertz (2006) noticed that this set-up makes clear predictions with respect to standard IL/SL diagnostics that are not met. The examples in (19) and (20) show that

⁶ In addition to what follows immediately in the main text, section 3.6 partially reproduces Jager's (2001) argument that IL/SL effects cannot be derived solely from the position of the subject (Diesing 1992; Kratzer 1995). With this in mind, the focus of this section is the predictions made by the original definition of the IL/SL distinction.

even when EAs are relativised to the event denoted by the infinitive, they continue to pattern with their IL usage ((19a, b) vs. (19c), and (20a, b) vs. (20c)).

- (19) a. American consumers are smart ($*\exists/\text{Gen}$)
 b. American consumers are smart to buy foreign goods ($*\exists/\text{Gen}$)
 c. American consumers are eager to buy foreign goods (\exists/Gen)
 (Kertz 2006: 230, ex. (3)-(5))
- (20) a. *There were lawmakers smart
 b. *There were lawmakers smart to endorse the proposal
 c. There were lawmakers eager to endorse the proposal
 (Kertz 2006: 230, ex. (6)-(8))

This is a first illustration of multiple denotations not generalising as might be expected: whatever is behind EAs alternating between generic and existential interpretations is not captured by the standard IL/SL distinction.

Invoking the distinction is undermined further by the evidence that, more generally, the diagnostics appealed to in its support do not pick out unified phenomena. Jager (2001) takes three criteria that are supposed to distinguish IL predicates from SL predicates, namely (i) allowing a weak existential subject ($[\pm\text{weak subject}]$), (ii) grammaticality in perception reports ($[\pm\text{perception report}]$) (this diagnostic is discussed in more detail in 3.3 below), and (iii) classifying the predicate as stable or transitory ($[\pm\text{transitory}]$). This creates eight logical combinations to characterise aspectual differences. However, if the IL/SL distinction were a real primitive, predicates should pattern uniformly as either IL or SL, meaning that only two of the eight combinations should be realised.

Instead, Jager finds predicates to exemplify each of the eight. Examples (21) and (22) illustrate two of them. These two examples show how predicates that should pattern together as SL fail to do so.

- (21) a. People shouted (weak existential reading possible)
 b. We heard people shout
 c. After the victory, the fans shouted
 (cf. Jager 2001: 97, ex. (36))

- (22) a. Firemen are present (weak existential reading possible)
 b. *We saw Peter (be) present
 c. Peter was present yesterday
- (cf. Jager 2001: 97, ex. (40))

Examples (21a) and (22a) have the predicted [+weak subject] reading and they both satisfy intuitions that they be [+transitory] ((21c), (22c)). Yet, they are also expected to both be [+perception report], but only (21b) is grammatical.

The fact that predicates can be found for each of the eight combinations shows that the diagnostics are logically independent of each other. So, they do not provide support for the existence of the IL/SL distinction.

3.1.4 *Interim Conclusions*

This section first presented the original conception of the IL/SL distinction and examples of analyses that give EAs multiple denotations. Then we saw data that supported the traditional classification of EAs as IL. In those contexts, EAs patterned with RAs, which denote rather stable properties and are clearly distinguishable from SL predicates. I then illustrated the interrelation of general conceptual obstacles and data that undermine the explanatory power of the IL/SL distinction.

What we found was that **(i)** the diagnostics that motivated the original distinction are independent of each other and that **(ii)** positing IL and SL lexical entries for EAs makes the wrong empirical predictions. This combination makes both the general case against the IL/SL distinction as a formal distinction, and the specific case against IL/SL EA denotations strong.

Throughout this chapter we will see more detailed evidence against the adequacy of the distinction. Even though I am arguing against the formal existence of the distinction, the next sections will show that EAs generally do meet the basic criterion for stage-levelhood: having temporally dependent readings. This is the first step in undermining an IL analysis of them.

3.2 Predicative Adjectives and Temporal Dependence

The classic characterisation of the IL/SL distinction is in terms of sets of individuals versus sets of spatio-temporal units. The fundamental characteristic that distinguishes the two categories is that SL predicates, as manifestations of spatio-temporal units, consume time in a way that properties of individuals (*i.e.* IL predicates) do not (*cf.* Carlson 1977: 115, 427; Kertz 2010: 281).

Interpreting the examples in (23) on an existential reading brings the intuition into focus. Example (23a), with a traditional SL predicate such as *sick*, has an immediate existential reading.

- (23) a. Peter was sick
 b. Peter has been sick

In (23b), when the tense is changed to the present perfect, *sick* straightforwardly supports a reading on which the property is interpreted as holding for a restricted length of time, and in this sense occupies it or consumes it. A predicate's ability to do so is the hallmark of the SL intuition.

The examples in (24) illustrate how IL predicates fail in this regard.⁷ Example (24a) is most naturally interpreted generically (*i.e.* not with respect to a single spatio-temporal occurrence). In contrast to (23a), the simple past is frequently described as giving rise to a *lifetime effect*. The lifetime effect is an implicature that arises in a past tense: since a past tense is used, the IL property no longer holds of the subject and therefore, the subject must be dead (*cf.* Krazter 1995; Musan 1997). While this is indeed only an implicature in (24a), its prominence marks a difference with (23a), which does not give rise to a lifetime effect in a neutral context.

- (24) a. Emma was tall
 b. #Emma has been tall

⁷ Throughout *tall* is used for illustrative purposes in this aspectual comparison because it behaves as an IL predicate should, which keeps the comparison as clear as possible. It is true that other IL predicates denoting physical attributes give rise to intuitions that may not be exactly like *tall* (*cf. fat, skinny*). This will ultimately be unimportant because the IL/SL distinction is epiphenomenal in the theory that this thesis builds up. Chapter 4 returns to the intuition behind the distinction.

In consonance with the *lifetime effect* intuition, example (24b) shows that the present perfect is pragmatically marked. What is lacking here is precisely a restricted existential reading.

Note that example (24b) is possible in a setting that supports a quantitative reading such as “there have been contexts in which Peter has qualified as tall”, e.g. *Peter has been tall on many occasions*. But when compared with (23b), we see that what is missing is the intuition of temporal duration with respect to a stage.

Of course, *sick* can also give rise to a *lifetime effect* in the proper context, and it can also have a quantitative reading (e.g. *Emma has been sick on many occasions*); the point illustrated by the contrast between (23) and (24) is rather that IL predicates do not lend themselves to temporal dependency.

Turning to EAs, although the classic tests introduced in section 3.1.2 support their classification as IL predicates, it is nevertheless the case that EAs are easily interpreted as temporally restricted in many contexts, parallel to *sick* above.

Martin (2008) illustrates for French that EAs are naturally understood to hold only for a restricted period of time in tenses other than the present simple. In (25a), the property of being selfish is understood to hold with respect to the music playing, just as the SL predicate *drunk* is in (25b), while IL predicates ((25c)) are infelicitous when interpreted temporally with respect to an event.⁸

⁸ Martin (2008: 114) makes the point that in French *intelligent* has no difficulty in getting temporal interpretations ((i), (ii)). This could be viewed as controversial because *intelligent* is often used as the paradigmatic example of an IL predicate. The line of argumentation I am pursuing supports Martin’s observation. In section 3.7.4.2 I discuss *intelligent* and its place in the EA class.

(i) Jenny a joué de la musique klezmer hier. Elle a été intelligente (cf. Martin 2008: 113, ex. (4))
(ii) Quand Jenny est intelligente, elle est vraiment intelligente (cf. Martin 2008: 113, ex. (9))

(25) French

- a. Jenny n’a joué que du Fauré hier. Elle a été égoïste
 ‘Jenny didn’t play anything but Fauré yesterday. She was selfish’
 (cf. Martin 2008: 113, ex. (5))
- b. Jenny a joué de la musique klezmer hier. Elle était saoule.
 ‘Jenny played Klezmer music yesterday. She was drunk’
 (cf. Martin 2008: 113, ex. (4))
- c. #Jenny a joué de la musique klezmer hier. Elle était/a été talentueuse
 ‘Jenny played Klezmer music yesterday. She was talented’
 (cf. Martin 2008: 113, ex. (6))

English shows the same pattern. In (26a, b), superficially intransitive predications of EAs and PAs behave like the SL predicate *sick* in allowing a temporally restricted existential reading in a variety of tenses.

- (26) a. Peter was/has been/will be brave/rude/selfish (∃)
 b. Peter was/has been/will be eager/sick/willing (∃)
 c. Peter was/has been/will be Canadian/old/tall ((#)∃)

In the case of the RAs ((26c)), this interpretation is not so evident, as discussed above. This simple test of temporal duration speaks directly against an IL analysis of these monadic EA predications.

The EA existential reading is brought out again in the examples in (27), drawn from a variety of on-line sources. They demonstrate, in a way similar to Martin’s in (25), that this reading is apparent when a situation is provided by way of an overt infinitive. In these examples the property denoted by the adjective is understood as holding in time in relation to the embedded infinitive.⁹

⁹ I have found direct independent spontaneous judgements that support this temporal duration intuition in comments from an on-line language forum. The thread begins with a question from a foreign speaker about the possibility of using the present perfect continuous with an adjective; specifically *I have been being rude*. The thread devolves into a discussion about the relative frequency of the tense itself. This causes the user Kalamazoo, a self-identified native English speaker, to make the comments below. These comments explicitly state that the tense is grammatical with EAs and that it has the meaning of temporal duration. Since the discussion uses examples with EAs, there can be little doubt that EAs do have temporally dependent readings.

- (27) a. Danielle has been stupid to trust him after everything he has done to her
 b. I agree Afellay has been silly to stay there though
 c. She has been foolish to believe the tittle-tattle that has reached her—very foolish to oblige me to give you this annoyance
 d. If Peking has known that outside support was crucial to fomenting insurgency, then it has been foolish to voice so much endorsement while supplying so little support
 e. Part of the strategy is to try to enable amplified usage of the capacity, so it has been intelligent to bring prices down by at least 80% since the market combined
 f. she has seen enough in her lifetime and has been brave to just hang on as long as she has.....

The parallelism between the intransitive example in (26a) and the transitive examples in (27) shows that the presence of the infinitive is irrelevant to a temporally dependent interpretation of EAs (*cf.* Stowell 1991; Landau 2009).

Now, this EA existential reading and its implications for classifying EAs as IL predicates has been noticed when considering sentences such as (28a) (*cf.* Dowty 1979). This example does not produce the logical contradiction that a property analysis of IL predicates predicts. Cross-linguistically ((29), (30)), EAs pattern with SL predicates

-
- (i) **Kalamazoo:** I don't see any problem with "I have been being rude" - sitting here and just talking about myself and not helping you/by not paying any attention to your other guests/by ignoring your requests/blah blah - "and I apologize."
 (ii) **K:** Again, I think "I have been being rude" is perfectly fine and something I would definitely say if I felt I had been being rude to someone all afternoon (not of course, that I am ever that rude :-)). But I think it is perfectly okay to say in normal conversation.
 (iii) **K:** Not to beat a dead horse, but I would say "I have been sitting here all afternoon and just realized that I have been being rude, because I have just been talking about myself and ignoring you" All three "have been ...ing" are the same to me.
 (iv) **K:** These are perfectly normal English tenses and I don't see why [another user] rejects them, as they are not infrequently used. "I realized that I had been being too stubborn" is different from "I had been too stubborn" in that it suggests that I was repeatedly too stubborn or too stubborn over a longer period of time, as opposed to one occasion.
 Here's something from Google that shows this is a perfectly normal idiomatic usage: *My ex bf and I 19 & 20 had been together 7 years, 2 of which we were engaged. ... But we talked about it and he changed his mind, or so he told me. Now up until he had decided to stay, I had been being overly clingy.*
 (v) **K:** The use of "have been being X" specifically implies that you were not X at just one time but that you were X over a longer period of time or repeatedly. That's the point of the construction! How do I indicate that I was being rude repeatedly for several hours, days, weeks or months, as opposed to one rude action or statement? This is the construction. It's perfectly idiomatic and not that infrequent.

((28b)) in allowing a restricted temporal reading that obviates the straightforward contraction of the form $(P(j) \ \& \ \neg P(j))$.

- (28) a. Peter isn't brave, but he was brave last night
b. Peter isn't available (to work)/eager to help/sick (now), but he was last night
c. #Peter isn't Canadian/old/tall, but he was Canadian/old/tall last night

(29) Basque

Jon ez da barregarria, baina barregarri dago

'John is not funny, but he is being funny'

(30) Spanish

Pablo no es nada gracioso, pero está muy gracioso

Pablo not *ser*-PRES at-all funny, but *estar*-PRES very funny

'Paul is not funny, but he is being funny'

(cf. Arche 2006: 20, ex. (52))

RAs, in (28c), are noticeably different from EAs, PAs, and SL predicates more generally, because they do behave as an individual-property analysis of IL predicates predicts in giving rise to the expected contradiction. For instance, if one's nationality is a matter of where one was born or one's heritage/identity, then it does not change from one moment to the next (or ever), hence the contradiction.¹⁰

As for physical attribute predicates such as *tall*, if it is felicitous in (28c), it is on a reading where what is being adjusted is the relevant comparison class and contextual threshold for height. Example (28c) does not mean that a state of tallness/degree of height suddenly held of Peter for a delimited period of time—it is the standard that has changed, not his height.

This is different from the interpretation in (28a, b), where a state of bravery, eagerness, and availability are read temporally: the standards for bravery, eagerness, and availability are held constant, but the relevant situation with respect to which the property holds comes and goes. Thus with *tall* as well, either we have our contradiction, or we play with a parameter of the meaning of the predicate, but that parameter is not related to the consumption of time.

¹⁰ There is another possible reading of the nationality predicate in (28c) on which citizenship is addressed as a legal matter, and one's status can change in time. In this case, though, holding a citizenship is still not spatio-temporal because it is a property defined over a stretch of time, and not a location.

Two additional environments that have been proposed to pick up on the distinction between SL predicates as temporally dependent versus IL predicates as properties of individuals are *when*-clauses and episodic adverbs. EAs again group with PAs and other SLs ((31a, b)), to the exclusion of RAs ((31c)). This pattern has been presented independently by Arche (2006) for Spanish ((32)) and Martin (2008) for French ((33)).

- (31) a. When Peter is cruel, he is really cruel
 b. When Peter is eager/sick, he is really eager/sick
 c. #When Peter is Canadian/old/tall, he is really Canadian/old/tall
- (32) Spanish
- a. Siempre que Juan es cruel, se arrepiente después
 whenever Juan *ser*-PRES cruel, he regrets right-after
 ‘Whenever John is cruel, he regrets it right after’
(cf. Arche 2006: 30, ex. (78))
- b. Siempre que Juan está descontento con su trabajo, se enfada
 whenever Juan *estar*-PRES dissatisfied with his work, gets angry
 ‘Whenever John is dissatisfied with his work, he gets angry’
(cf. Arche 2006: 30, ex. (79))
- c. #Siempre que Juan es esquimal...¹¹
 whenever Juan *ser*-PRES Eskimo...
 ‘Whenever John is Eskimo...’
(cf. Arche 2006: 30, ex. (88))

¹¹ Arche notes that, when the appropriate context is supplied, RAs/ILs can appear in *when*-clauses ((i)). The kind of scenario that is required, however, only highlights the differences between the classes of adjective and emphasises the *lifetime effect* intuition. EAs and PAs/SLs have straightforward temporally dependent readings ((32a, b)). But (i) shows that this is not the case for RAs/ILs: they require contextual information to accommodate exceptional or longer stretches of time.

(i) (En todas sus reencarnaciones,) siempre que Juan es esquimal, lleva una vida llena de dificultades y penurias
 ‘(In all of his reincarnations,) whenever John is Eskimo, he bears a life full of difficulties and shortages’
(Spanish, cf. Arche 2006: 30, ex. (89))

(33) French

- a. Quand Jenny est égoïste, je ne l'aime pas
'When Jenny is selfish, I don't like her' (cf. Martin 2008: 113, ex. (8))
- b. Quand Jenny est saoule, je ne l'aime pas
'When Jenny is drunk, I don't like her' (cf. Martin 2008: 113, ex. (8))
- c. #Quand Jenny est talentueuse, elle est énervante
'When Jenny is talented, she is annoying' (cf. Martin 2008: 113, ex. (10))

The infelicity of IL predicates in *when*-clauses is proposed to follow from the combination of a spatio-temporal versus a property analysis of SL and IL predicates, respectively, together with a ban on vacuous quantification (cf. Kratzer 1995).

The examples in (34) and (35) mirror the adjectival ones above ((31)-(33)). On Kratzer's analysis, *speak*, as a SL predicate, introduces a spatio-temporal variable *l* for the quantificational force of *when* (represented by *always* in (34b)) to bind.

- (34) a. When Mary speaks French, she speaks it well
b. Always_l[speaks(Mary, French, l)] [speaks-well(Mary, French, l)]
(Kratzer 1995: 129-130, ex. (15d), (15'd))

IL predicates ((35)), as properties of individuals, do not introduce a spatio-temporal variable, and if there is no other variable available in the scope of *when*, ungrammaticality results because *when* has been applied vacuously.

- (35) a. *When Mary knows French, she knows it well
b. *Always_l[knows(Mary, French)] [knows-well(Mary, French)]
(Kratzer 1995: 129-130, ex. (15a), (15'a))

By this measure, the data in (31)-(33) are consistent with all the data presented in this section in making EAs perfectly good SL predicates.

This analysis of *when*-clauses creates the expectation that the overt use of episodic adverbs such as *always*, *often* and *sometimes* should produce the same SL effects. The examples in (36) show that these adverbs do seem to separate predicates with existential realisations from properties. But once more, EAs fall with SL predicates ((36a, b)), to the detriment of an IL classification ((36c)).

- (36) a. Peter is always/often/sometimes brave/cruel/nice
 b. Peter is always/often/sometimes available/eager to help/sick
 c. #Peter is always/often/sometimes Canadian/old/tall

Temporal dependency is the proposed dividing line between IL and SL predicates. In this section we have seen that cross-linguistically, contrary to expectations, EAs consistently pattern with PAs in having temporally restricted existential readings and in not producing *lifetime effects*. RAs, on the other hand, are representative of how IL predicates are expected to behave. The regularity of the EA temporal reading casts serious doubt on the usefulness and the generality of an IL classification.

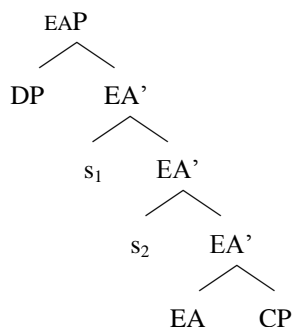
One further reason for this is that, as argued above in section 3.1.3, it is far from clear that, as diagnostics, the traditional IL/SL tests (*i.e.* bare plurals, *there*-insertion, depictives) form a natural class that is sensitive to precisely this distinction. In contrast, diagnosing temporal dependency can be done without introducing confounding factors related to the semantic properties of subjects (*i.e.* bare plurals, *there*-insertion) or secondary predication (*i.e.* depictives).

The conclusions offered from this section are **(i)** RAs are aspectually distinguishable from EAs and PAs, and **(ii)** EAs and PAs meet the criteria for temporal dependency. By the original characterisation of the IL/SL distinction this means that both EAs and PAs are SL predicates. In the next section I scrutinise the definition of SL as “spatio-temporal”. It will be shown that only EAs meet this two pronged standard, while PAs are only temporal.

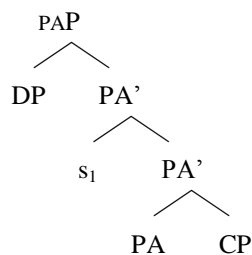
Once this aspectual distinction between EAs and PAs is made, we are in a position to see a three-way classification that I will propose is reflected in the three argument structures defended in chapter 2, repeated here in (37): (seemingly) spatio-temporal (*i.e.* eventive) adjectives ((37a)), temporally restricted adjectives ((37b)), and temporally unrestricted adjectives ((37c)).

(37) *Argument Structures of the Three Main Adjective Classes*

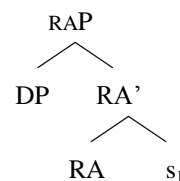
a. EAs:

Emma was rude to leave

b. PAs:

Sam was eager to help

c. RAs:

Victoria was Canadian/tall**3.3 EAs and Eventivity**

Since Davidson (1967) proposed that action denoting sentences such as *Jones buttered the toast* come with an extra argument position for a spatio-temporal event variable, the assumption of sub-atomic predicate structure is a common one. This assumption is often extended beyond Davidson's original conception to include stative predicates. Maienborn (2005b, 2007, a. o.) argues that, in the case of statives, this extension is not always justified by the facts: while some statives do satisfy the criteria for eventivity, others only provide evidence for being defined temporally, but not spatially. So, not every predicate can be innocuously given a Davidsonian analysis.

The Davidsonian event argument, as a spatio-temporal entity, is associated with diagnostics that support its existence. A Davidsonian analysis supposes that the eventuality described by the predicate is perceptible, located in both space and time, and that it can vary in the way it is manifested (Maienborn 2005b, 2007). The standard diagnostics are the following:

(38) *Linguistic Diagnostics for Eventualities*

- a. Eventuality expressions can serve as infinitival complements of perception verbs.
- b. Eventuality expressions combine with locative and temporal modifiers.
- c. Eventuality expressions combine with manner adverbials, instrumentals, comitatives, etc.

(Maienborn 2005b: 280, ex. (3))

These diagnostics provide fundamental support for the presence of an event argument in dynamic predicates. But as Maienborn shows for verbs, statives do not behave uniformly: there are stative verbs that test positive for eventivity and statives that do not. Maienborn calls this latter group Kimian-States:

(39) *K(imian)-States*

K-States are abstract objects for the exemplification of a property at a holder *x* and at a time *t*. (Maienborn 2007: 113, ex. (7))

In my view, Maienborn correctly argues that generalising a Davidsonian analysis to predicates that fail to be located in space nullifies the definition of an event argument and the relevance of the supporting diagnostics. We will see below that some of the received paradigmatic SL predicates such as *sick* and *available* only satisfy the requirements of a Kimian-State. Furthermore, PAs are immediately identifiable as Kimian-States, while EAs are the only class that meet the spatio-temporal threshold.

Overall, this shows two things:

- (i) EAs do not behave as either RAs/IL predicates or PAs.
- (ii) The Carlsonian definition of a SL predicate needs refining.

The second point addresses the fact that diagnostics for the Carlsonian *stage* do not target spatio-temporality specifically—in contrast with the tests developed to support a Davidsonian analysis, which arguably do.

3.3.1 *Stative Verbs and Eventivity*

First, let's see how different stative verbs fare with respect to event diagnostics. The examples in (40) illustrate a three-way split in the perception report test. In (40a), the eventuality described by the verb *gleam* passes the test in German and English,¹² but a psychological verb, such as *hate* ((40b)), and an IL one, such as *resemble* ((40c)), do not.

¹² Other verbs classified with *gleam* are *lie*, *sit*, *sleep*, *stand*, and *wait*. Stative eventivity is derived from *stative causation* in chapter 1 and in section 3.5.

(40) German

a. Ich sah die Schuhe glänzen

‘I saw the shoes gleam’ (Maienborn 2007: 110, ex. (4c))

b. ??Ich sah Peter die Schuhe hassen

I saw Peter the shoes hate-INF

‘I saw Peter hate the shoes’

c. *Ich sah meine Tante Romy Schneider ähneln

‘I saw my aunt resemble Romy Schneider’ (cf. Maienborn 2007: 110, ex. (4g))

Some comments on the data are in order. First, in this section I follow Maienborn in concluding verbs such as *gleam* to be *stative eventive*. In section 3.5 arguments are presented supporting this position. For the moment it is assumed that the three-way comparison in (40) is between stative predicates. So, example (40a) shows that there is a class of stative verbs that passes the perception report test because it is defined both spatially and temporally.

Second, in (40b) I am only interested in the experiencer reading of *hate*, not one that attributes actions to Peter that are indicative of hatred. On an experiencer reading, (40b) is odd in both German and English. This clarification is relevant because this psychological verb is meant to be comparable with stative PA/SL adjectives, such as *eager*, *hungry*, *nervous* or *sick*, which primarily describe experiences or feelings, but can also imply demeanors or actions that betray those states. I take it that predicates such as these denote experiencer-states and any associated agentive-events are implicatures.

Third, in (40c) the IL predicate *resemble* is ungrammatical because the resemblance relation holding between Romy and the aunt is not something that holds *only* at the time of the seeing event. Therefore, stative SL verbs such as *hate* fail the test because they refer to internal psychological properties that are not directly accessible to perception; and IL verbs such as *resemble* fail it because, although clearly perceptible in many cases, they last longer than the temporal contour of an occasion of perceiving something, and thus are not event denoting.

The second test using locative modifiers confirms the three-way classification. The verb *gleam* is once again fine ((41a)), but *hate* ((41b)) and *weigh* ((41c)), in the sense incumbent upon a Davidsonian event, are not. The gleaming event is understood to occur in a time and place which individuate a particular instance of such an occurrence.

(41) German

a. Die Perlen glänzen in ihrem Haar

‘The pearls gleam in her hair’ (Maienborn 2007: 110, ex. (5a))

b. ??Peter hasst die Perlen in seinem Büro

Peter hates the pearls in his office

‘Peter hates the pearls in his office’

c. *Die Tomaten wiegen neben den Paprikas 1 Kg.

‘The tomatoes weigh 1 kg. beside the paprikas’

(cf. Maienborn 2007: 111, ex. (5f))

In (41b), we are only interested in the reading on which *hate* is modified by the locative PP, and not in the locative modification of *the pearls* (which is, of course, grammatical). The predicate *hate* fails the test because the predicate is not defined spatially, and so the locative cannot restrict it in this way. If anything, what (41b) says is that there is some overlap between a slice of time in which Peter hated the pearls and one in which he is in his office, but these space/time dimensions are not meaningfully linked.

This point is made clearer by a direct comparison of (41a) with (41b). Only the former meets the requirements of a Davidsonian event. The occurrence of a gleam is identified by the interconnection of its space-time coordinates. This is exactly what it means to possess a Davidsonian event variable. Experiencing a state of hatred, however, does not make any spatial demands, although the time that the state holds overlaps with wherever the subject happens to be located. In this sense, the locative modifier in (41b) is not properly individuating the state of hatred, and thus the verb fails the test for Davidsonian eventivity.¹³ In turn, (41c) is odd because the weight of the tomatoes is not generally defined or determined by their location.

¹³ Concerning examples such as *Leonard (always) worries at the hospital*, where it seems that the worrying is localised by the PP, it is not doing so in a Davidsonian fashion. Its interpretation is something like ‘the hospital provokes a state of worry in Leonard’ or ‘whenever Leonard is at the hospital, he worries’. A Davidsonian locative, e.g. *Julia ate an apple in the kitchen*, clearly is not (necessarily) interpreted as ‘the kitchen provoked an event of eating an apple in Julia’ or ‘whenever Julia is in the kitchen, she eats an apple’. The failure of the locative to individuate the occurrence of the state (but instead imply other interpretations) supports the conclusion that predicates of psychological experience are not Davidsonian.

More generally, when testing inner-aspect it is important test on an existential interpretation because generic/universal quantification introduces a broader restrictor over times that allows for the expression of generalisations that may involve locations, e.g. *Leonard always worries at the hospital*, but this does not make inner-aspect of the predicate itself spatio-temporal (section 4.2.2.5.2).

The examples in (42) show that the same three-way classification reveals itself in the results of adding event modifiers such as manner adverbs. Since only (42a) passes the test, it is the only one that supports a Davidsonian analysis.

(42) German

a. Die Perlen glänzen matt/rötlich/feucht

‘The pearls gleam dully/reddishly/moistly’ (Maienborn 2007: 112, ex. (6c))

b. ^{??}Peter hasst die Perlen wütend/intelligent

Peter hates the pearls furious/intelligent

‘Peter hates the pearls angrily/intelligently’

c. *Bardo besitzt sparsam/spendable viel Geld

‘Bardo owns thriftily/generously much money’

(Maienborn 2007: 112, ex. (6g))

In conclusion, these three tests show that among verbs, there is evidence for three different types of statives, and only one of them is properly analysed as Davidsonian.

3.3.2 *Adjectives and Eventivity*

I replicate last section’s three-way classification in adjectives in the way we might expect by now: only EAs pass the eventivity tests.

3.3.2.1 *EAs and Perception Reports*

In (43), only EAs appear naturally with a bare infinitive.

(43) a. Mary saw/heard Jane be polite (cf. Rothstein 1999: 351, ex. (13b))

b. *I saw Emma be eager/nervous/available/sick

c. *I saw Emma be Canadian/tall

It is important to recall that the proper test for an event argument here has traditionally been a bare infinitive ((44a) vs. (44b)) (cf. Higginbotham 1983).

- (44) a. Emma saw Peter cry
 b. *Emma saw Peter to cry

When it comes to adjectives, I follow Katz (2000) and Maienborn (2005b) in viewing the bare adjective structures in (45a) and (46a) as correctly analysed as depictives. Therefore, the ungrammaticality of (45a) is *not* an argument against the eventivity of EAs, and the grammaticality of (46a) is *not* an argument in favour of the spatio-temporality of SL predicates such as *naked*.

- (45) a. *Mary saw/heard Jane polite
 b. *Mary saw/heard Jane to be polite (cf. Rothstein 1999: 351, ex. (13))
- (46) a. Emma saw Peter naked
 b. *Emma saw Peter be naked

Rather, the ungrammaticality of (45a) follows from the general ungrammaticality of EAs in depictives (section 3.1.2), and the grammaticality of (46a) follows from the general grammaticality of the adjective *naked* as a depictive. Following the reasoning here, the true test for eventivity is (46b)—where the bare infinitive is overt—and its ungrammaticality confirms that *naked* is not spatio-temporal.¹⁴

¹⁴ To mention just one empirical point that supports a depictive analysis of *naked* in (46a), notice that in (i) *sad* can be interpreted as modifying either the subject or the object.

- (i) a. John_j left Mary sad_j
 b. John left Mary_m sad_m
- (Geuder 2004: 131, ex. (1))

This is not true of genuine complement structures, but it is the case with depictives when either interpretation is plausible.

Furthermore, the ungrammaticality of (45b) (*i.e.* **Mary saw/heard Jane to be polite*) parallels (44b) (*i.e.* **Emma saw Peter to cry*), where the inclusion of the particle *to* signals a structure larger than a bare infinitive, and plausibly violates the selection requirements of the perception predicate.

On the other hand, the appearance of *be* in (43a) (*i.e.* *Mary saw/heard Jane be polite*) can be analysed as the spell-out of the aspectual structure above the adjective when the extended projection of the adjective is in complement position, as it is in a perception report.

The difference between complement position and adjunct position generally affects the materialisation of *be*. *Be* cannot appear in depictives, and depictives are adjuncts; but bare *be*, or the full infinitive *to be* appear only when the adjective is in complement position. Perception reports are an example of the matrix predicate selecting bare *be*; the verbs *allow* and *cause* are examples of verbs that select a full infinitive, *e.g.* *Mary caused/allowed Jane to be polite* (cf. Rothstein 1999). We return to the spell-out of *be* in section 4.2.2.5.1.

This shows that EAs are the only adjective class to appear grammatically with just a bare infinitive, parallel to (44a) (*i.e. Emma saw Peter cry*), and against the other combinations in (45)-(46). Therefore, EAs are the only adjective class to pass the perception report test for eventivity.

3.3.2.2 *EAs and Locative Modifiers*

The locative test follows the same pattern as (43). In (47a), the EAs are meaningfully individuated by the locative, but this is not the case with PAs/SLs ((47b)) or RAs/ILs ((47c)).

- (47) a. Peter was arrogant/brave/nice/obnoxious/rude (to his father) in the kitchen
b. #Peter was eager/nervous/available/sick in the bathroom
c. #Peter was Canadian/old/tall in the garden

3.3.2.3 *EAs and Manner Adverbs*

Lastly, EAs are the only adjectives that can be modified by manner adverbs on a spatio-temporal interpretation without a shift in meaning:

- (48) a. Peter was elegantly modest at the reception last night, but Felix was abrasively arrogant
b. [A]nd afterward she had only pretended to be eagerly obedient to her mother's command by running up to her room [...] (Ian McEwan, *Atonement*)
c. The captain did as he was asked, and Carr thanked him politely—Carr had been annoyingly polite throughout the entire discussion—then hung up
(Jeff Rovin, *Tempest Down*)

With other adjectives this is not the case. In (49a), if a felicitous reading can be given to the various PAs/SL predicates, they are no longer interpreted as psychological or as an experiential state. Rather, they are supplemented with an agentive inference regarding the subject's behavior. This is however, an inference induced by the manner

adverb, and not an inherent interpretative property of the adjectives themselves (*cf.* discussion of *hate* in section 3.3.1).

- (49) a. #Emma was elegantly eager/nervous/available/sick
 b. #Peter was elegantly Canadian/old/tall

On the other hand in (49b), as discussed above, if a reading can be given to the modified RAs, it is not one that identifies a spatio-temporal occurrence of the property. For example, someone might be described as elegantly tall, but what is being referred to is the individual's proportions, stature, or posture—not an elegant event of height. So once again, EAs alone pass the test for spatio-temporality.

3.3.2.4 *Interim Conclusions*

In the preceding sub-sections I have taken the strict conception of a Davidsonian event and applied it to the three classes of adjective that we have been comparing and found evidence for the same three-way split that is present in verbs. The important result is that EAs—and only EAs—meet the criteria for eventivity.

Consequences of these findings are that the Carlsonian *stage* is too broad because it does not distinguish between the spatio-temporal and the temporal. Likewise, a straightforward Davidsonian interpretation of the IL/SL distinction fails to properly characterise the facts. Positing that standard SL adjectives such as *sick* and *available* possess their existential properties because of a spatio-temporal argument is too strong: these predicates are only defined temporally, and consistently underspecified for location. In this regard, *sick*, *available*, and PAs pattern like Kimian-States.

EAs, however, do qualify for Davidsonian eventivity. Adding this result to the evidence for their having temporal duration and the list of causative properties brought forth in chapter 2, EAs are distinguishable from other adjectives.

And we now have a clear three-way aspectual classification between EAs (spatio-temporal adjectives), PAs (temporally restricted adjectives), and RAs (temporally unrestricted adjectives).

Having established that EAs are unique in passing tests for eventivity, section 3.4 shows EAs are always stative, and that they never alternate between stative and activity

readings. Then in section 3.5, we will move to the topic of stative causation and resolve this conceptual tension by deriving eventivity. But first, some comments on noise in the data pattern are in order.

3.3.3 *EAs: the Need for an Indirect Proof of a Single Denotation*

In chapter 2 I frequently presented full paradigms of EA data to show that EA behaviour is best accounted for with a single denotation. Since the behaviour of EAs was uniform across whole syntactic paradigms, an extensional presentation of the data was effective. Examples of EA cross-paradigm uniformity are factivity, Obligatory Control, and the complement status of the CP.

In this chapter, I have broken with the model of presenting full paradigms. There are two reasons for this. The first is that it is possible to present counter-evidence against alternative analyses that posit multiple denotations without full paradigms.

The second reason is that an extensional presentation of paradigms no longer gives transparent results. A closer look at EA manner adverb data provides an example. The manner adverb data in (47) are intransitive with an animate subject (repeated as the (a) examples in (50)-(52)). These data support a spatio-temporal analysis.

The additional examples in (50)-(52) complete the EA manner adverb paradigm. The (b) and (c) examples have overt infinitives, and they parallel the intransitive (a) examples in passing the manner adverb test. The (d) examples however, have *that*-clauses and they are deviant to different degrees. This judgement cline seems to argue against a unified EA denotation because sometimes EAs behave like they are eventive, other times it seems they do not.

- (50) a. Why should I have consulted you, when you were being obnoxiously stubborn about the issue? (Barbara Pierce, *Sinful between the Sheets*)
b. He was obnoxiously stubborn to refuse
c. It was obnoxiously stubborn (of him) to refuse
d. ??It was obnoxiously stubborn that he refused

- (51) a. She is viciously arrogant in her treatment to her inferiors [...] (Internet)
 b. If it had an impact, surely A[ir] F[rance] would be silly and viciously arrogant to think they can do nothing and expect it to go away. (cf. Internet)
 c. It would be viciously arrogant of AF to think they can do nothing and expect it to go away.
 d. [?]It was viciously arrogant that AF thought that they could do nothing and expect it to go away.
- (52) a. They will be deviously careful and will use EVERY advantage (Internet)
 b. [...] business consortiums are deviously careful not to mention E-Verify [...] (cf. Internet)
 c. It is deviously careful of business consortiums not to mention E-Verify.
 d. *It is deviously careful that business consortiums do not mention E-Verify.

In section 3.7.3.3, I address judgment variability (including these data) in detail. For now, we can note that, rather than providing evidence against a unified analysis, variability shows that **(i)** each lexical item introduces different conceptual knowledge, and **(ii)** each syntactic structure introduces different constraints (*e.g.* infinitives vs. *that*-clauses); it is inefficient (if not impossible) to try to control for them all.

The argument against EA polysemy is outlined in below. We have already seen points (i) and (ii).

- (i) Giving EAs IL and SL denotations makes the wrong empirical predictions.
- (ii) More generally, the argument against the existence of the IL/SL distinction is strong.
- (iii) Alternative analyses for the diagnostics that have EAs behaving like IL predicates are available.
- (iv) EAs fail to pattern with activities.
- (v) Both a coercion analysis and an “active” *be* analysis are untenable.
- (vi) So, there is no alternative analysis for the content of any additional denotation or coercion operation.

We have already seen two examples of the wrong predictions made by positing IL and SL lexical entries in examples (20) and (21), repeated here as (53) and (54).

- (53) a. American consumers are smart (* \exists /Gen)
b. American consumers are smart to buy foreign goods (* \exists /Gen)
c. American consumers are eager to buy foreign goods (\exists /Gen)
- (54) a. *There were lawmakers smart
b. *There were lawmakers smart to endorse the proposal
c. There were lawmakers eager to endorse the proposal

In these two blocks, the theories that give EAs IL and SL entries expect the (a) and the (b) examples to pattern differently. On a unified approach, their patterning together follows automatically.

Even though arguing for a unified denotation directly is too tortuous to be effective, the idea is that the global behaviour of EAs is coherent: they are stative causative predicates that undergo the causative alternation. What can be shown directly is that splitting this behaviour up into different denotations makes the wrong predictions and fails to shed light on the whole, while a single denotation does the opposite.

3.4 EAs are Stative

We have seen that it is often concluded that EAs require multiple denotations. Syntactic approaches limit themselves with providing IL and SL variants without examining the aspectual properties of the SL entry (*cf.* Stowell 1991; Landau 2009; Kertz 2006, 2010). When examined, the SL usages of EAs are frequently classified as activities (*cf.* Dowty 1979; Arche 2006, a.o.). The activity denotation addresses Lakoff's (1966) observations that, for instance, EAs are the adjective class that takes the continuous aspect ((55)) and accepts intention adverbials ((56)).

- (55) a. Philip was being arrogant/brave/nice/obnoxious/rude
b. #Sam was being eager/nervous/available/sick
c. #Sam was being Canadian/old/tall
- (56) a. Sam was arrogant/brave/nice/obnoxious/rude on purpose
b. #Sam was eager/nervous/available/sick on purpose
c. #Sam was Canadian/old/tall on purpose

In these environments EAs are intuitively agentive, implying some kind of dynamicity. This is the foundation of the EA activity denotation.

Continuing the presentation began in section 3.1, here I argue that polysemy is not a necessary consequence of data such as (55a) and (56a), and that tests targeting inner-aspect show EAs to be consistently stative. In order to argue that EAs are stative, it will be important to use diagnostics that target inner-aspect alone, and factor out secondary inferences. For the moment, I set these data aside (returning to the intentional adverb data in section 3.4.2, and the continuous at various points in this chapter and the next). We begin by looking at data that undermine one's confidence in an activity analysis.

3.4.1 *EAs Do Not Pattern with Activities*

The *for*-PP/*in*-PP test separates states and activities ((57a, b)) from accomplishments and achievements ((57c, b)).¹⁵ This test picks up on the (a)telicity of the predicate. Since states and activities are atelic they accept a *for*-PP, which indicates that the eventuality lasts for some time without a definite end-point. On the other hand, accomplishments and achievements are telic and they accept an *in*-PP indicating the amount of time before the eventuality reaches its end.

- (57) a. Emma owned a typewriter for years/#in years
 b. Emma walked in the park for years/#in years
 c. Emma made her key in a few minutes/#for a few minutes
 d. Emma found her key in a few minutes/#for a few minutes

Since EAs are only natural with *for*-phrases, they are states or activities:

¹⁵ Accomplishments (*e.g. build, break, make*) are characterised as dynamic, durative, and telic, while achievements (*e.g. find, realise, win*) are dynamic and telic, but not durative. Kearns (2011: 158, ex. (5)) provides the chart below to distinguish the Vendlerian aspectual classes.

	Dynamism	Duration	Telos
State	—	+	—
Achievement	+	—	+
Activity/Process	+	+	—
Accomplishment	+	+	+

- (58) a. Emma was rude for a few minutes
b. #Emma was rude in a few minutes

Arche (2006) submits Spanish EAs to a thorough aspectual examination and concludes that they can be classified as activities when agentive. A comparison of activity verbs with EAs, however, shows that they do not pattern together. All the diagnostics in (59)-(62) show that EAs do not evoke the same grammaticality judgements as either uncontroversial states or uncontroversial activities: states are ungrammatical ((a) examples), activities are grammatical ((b) examples), but EAs are odd ((c) examples).¹⁶

(59) Complement of *parar* ‘stop’ (Spanish)

- a. *Pablo paró de amar a María
‘Pablo stopped loving Maria’ (Arche 2006: 48, ex. (17a))
- b. Pablo paró de pasear
‘Pablo stopped walking’ (Arche 2006: 48, ex. (17c))
- c. ?Juan paró de ser cruel con su adversario
‘Juan stopped being cruel to his opponent’ (Arche 2006: 65, ex. (49c))

(60) Modification with *casi* ‘almost’ (Spanish)

- a. *Juan casi fue eskimal
‘Juan almost was an Eskimo’ (Arche 2006: 66, ex. (53c))
- b. Pablo casi caminaba con ocho meses
‘Pablo almost walked when he was eight months’ (Arche 2006: 50, ex. (21a))
- c. ?Juan casi fue cruel con su adversario
‘Juan almost was cruel to his opponent’ (Arche 2006: 66, ex. (53a))

¹⁶ As mentioned in chapter 1, I have not systematically dealt with the fact that a sub-set of EAs can select a *to*-PP. In section 3.7 I argue that the EA *to*-PP is a peripheral phenomenon, and not part of the EA denotation. For now I use *to*-PP examples because they give rise to some of the clearest intuitions for agentivity/dynamism. It will be shown that, even with a *to*-PP, EAs are stative.

- (61) Pseudocleft with *hacer* ‘do’ (Spanish)
- a. *Lo que hizo fue estar enfermo
‘What he did was be sick’ (Arche 2006: 51, ex. (23a))
 - b. Lo que hizo fue pasear
‘What he did was walk’ (Arche 2006: 51, ex. (23c))
 - c. [?]Lo que hizo Juan fue ser cruel con su adversario
‘What Juan did was be cruel to his opponent’ (Arche 2006: 68, ex. (61c))
- (62) Pseudoclefts with *suced* ‘happen’ (Spanish)
- a. *Lo que sucedió fue que Juan era alto
‘What happened was that Juan was tall’ (Arche 2006: 44, ex. (10a))
 - b. Lo que sucedió fue que Juan paseó
‘What happened was that John walked’ (Arche 2006: 44, ex. (10c))
 - c. [?]Lo que sucedió fue que Juan fue muy cruel con su adversario
‘What happened was that Juan was very cruel to his opponent’
(Arche 2006: 62, ex. (44c))

With respect to the *What X did was...* test, Martin (2008) (who also proposes that EAs are always stative) reports a similar level of unacceptability with EAs in French:

- (63) ^{??}Ce qu’il a fait, c’est être bruyant/bavard/adroit
‘What he did was be noisy/talkative/clever’
(French, Martin 2008: 117, ex. (36))

Parallel English examples such as (64) are the type of data that traditionally support the activity analysis. Yet, these examples are also less than fully acceptable.

- (64) a. [?]What Peter did was be modest
b. ^{??}What happened was Julia was kind

Tellingly, Dowty twice implied that not all English speakers accept these structures when he wrote “[f]or speakers who accept the various kinds of *do*-sentences with agentive adjectives (for example, *What I did then was be as polite to Mary as possible*) [...]” (1975: 581; 1979: 164 ff.).

Building on Dowty's suggestion, notice that when an overt infinitive or *to*-PP is added to the examples in (64), as in shown in (65), they worsen significantly—the opposite of what an activity analysis predicts.

- (65) a. *What Peter did was be modest to accept the award
b. */^{??}What happened was Julia was kind to her mother

I draw two conclusions from the reported judgements. **(i)** First, an activity analysis does not fit the facts. If EAs were activities, the judgements should be parallel. I take the lack of parallelism to be an important indicator. **(ii)** Second, the three-way judgement pattern in (59)-(62) shows that in the aspectual classification of predicates, there is a class that lies between simple states and activities. I argue that it is the *stative causative* class.

Before turning to diagnostics that show EAs to be stative, I return to the intention adverbial data (*e.g. Sam was arrogant on purpose*) in order to give an example of a pseudo-agentivity diagnostic.

3.4.2 *Agentivity, Intentionality, and EAs*

Traditionally, in the discussion of thematic Agents, it is not uncommon for the philosophical conception of agency to be transferred in an overly strict sense to grammatical arguments interpreted as Agents. By “overly strict” I mean that thematic Agents are assumed to entail that the action they perform is performed on purpose (*cf. Rothmayr 2009: 48-49, a.o.*). There certainly are agentive verbs that entail intentionality, such as *assassinate, listen, manage, try, and watch*. But in cases where intentionality is entailed by the verb itself, qualifying it with an intention adverbial is either contradictory or redundant:

- (66) a. #The terrorist assassinated the politician on accident/on purpose
b. #Peter managed/tried to break the window on accident/on purpose
c. #Peter listened to/watched the conversation on accident/on purpose

This pattern supports the conclusion the intentionality of the Agent is entailed, but not all predicates show it: more often than not, intentionality is only an implicature.

The implicature status of intentionality with uncontroversial agentive lexical verbs is shown by the examples in (67). The adverbials in (67a) indicate that intentionality with respect to thematic Agents is both reinforceable and defeasible.

- (67) a. Paul broke the chair on accident/on purpose when he sat down
- b. I would ask if he [S. Schnyder] is OK. I mean I feel for him. I don't believe that his intention was to hurt him. I don't believe it ever is, but it's becoming such a statement that is heard way too often. You know, it's not my intention to hurt someone, it wasn't my intention to cut his leg, it wasn't my intention to knock his teeth out. But, this is a statement that's being heard much too often in our sport.

Scott Beattie, Olten Team Coach on CBC Radio *As It Happens*, 8 Mar. 2013

- c. I don't know if he intentionally set out to victimise me. I don't think that he did.

Leslie Mogan Steiner, CBC Radio *Ideas*, "The Violence within Us",

4 Feb. 2014

Example (67b) confirms that the implicature is common. The example is taken from a radio interview after defender Ronny Keller of the 2nd division Swiss hockey team Olten was left paralysed from a body-check by opposing player Stefan Schnyder. In this quote, the coach is commenting on how the player who inflicted the injury must feel. Verbs related to or appearing in this passage are *paralyse*, *hurt* (physically), transitive *cut* and *knock out*. These are all verbs that take animate subjects that are uncontroversial thematic Agents. But, there is explicit denial of intention and explicit acceptance of the potential non-intentionality of the perpetrator. The next example ((67c)) is an even clearer illustration of the implicature.

Intentionality can more often be shown not to be an entailed property of thematic Agents. Thus the concepts of philosophical agency and thematic Agents cannot be combined and interpreted to mean that every thematic Agent necessarily initiates an event *e* on purpose. When intentionality is not entailed, the question becomes one of understanding under what conditions intention adverbials are felicitous.

This has a consequence. Although intention adverbials are invoked as indicators of non-stativity—however seemingly intuitive the distribution of intention adverbials may

be—it does not follow that they are a reliable indicator of inner-aspect. This is a simple result of the lack of logical entailment and the implicature status of these modifiers when felicitous. Without entailment, there is no argument for inner-aspect, and therefore, these adverbials do not force a non-stative analysis of the verb.

Returning to EAs, we see that the verb facts carry over. Dowty (1975, 1979) first discussed that interpreting the unmodified EA animate subject (*e.g. Sam was arrogant*) as an agent acting on purpose (*i.e.* the “overly strict” interpretation of thematic agency described above) is incorrect because there is no such entailment. This is demonstrated by the non-redundancy of (68a) (repeated from (56a)) and the non-contradictoriness of (68b).

- (68) a. Sam was arrogant/brave/nice/obnoxious/rude on purpose
 b. Sam was unintentionally arrogant/brave/nice/obnoxious/rude

Just as with the verbal examples above, at the level of the predicate itself, intentionality is an implicature.¹⁷

Although data such as these first led Lakoff and Dowty to give EAs an additional non-state analysis, following the reasoning above, this is not a necessary conclusion. Since intentionality is not a semantic property of the predicate, exactly what the felicity of intention adverbials indicates is an open question.

The explanation here has to meet the requirements of making EAs compatible with intention adverbials, while maintaining that EAs are aspectually stative. The ingredients of this explanation have already been partially introduced above and recur below, so the discussion of intention adverbials is a good opportunity to illustrate another way in which the different properties that this analysis attributes to EAs interact.

The proposal is that intention adverbials are felicitous with EAs and other predicates that do not entail intentionality because of the combination of **(i)** a causative argument structure and **(ii)** having an animate subject capable of having intentions. The combination of these two independent criteria is necessary to make an intention adverbial felicitous.

¹⁷ Example (i) illustrates a case of real spontaneous speech where exactly these notions are expressed.

(i) He’s cruel by default... default isn’t the right word. He’s not intentionally cruel, it’s just that it’s a consequence of his poor decision making. I realised that people don’t do things to be intentionally mean or cruel, they just have that consequence.

Gourmet Pizza Restaurant, 133 Roncesvalles, Toronto ON, 9 Mar. 2013

No reference to the details of inner-aspect or thematic agentivity is necessary for an intention adverbial to be felicitous; therefore the stativity of EAs is irrelevant. This makes the licensing conditions of intention adverbials more general than explicit reference to an aspectual classification. But, this explanation simultaneously captures three properties:

- (i) It captures the redundancy of intention adverbials when intentionality is in fact entailed by the predicate.
- (ii) It captures the implicature nature of the inference when intentionality is not entailed by the predicate: the argument modified by the adverbial merely has to be capable of holding intentions. The adverbial then contributes non-redundant content.
- (iii) It captures examples (56b, c) with the predicates *eager*, *nervous*, *Canadian*, *old* and *tall*, where intention adverbials are infelicitous. Here the infelicity is due to the fact that there is no causative structure.

The intuitive notion that intention adverbials are licensed based directly on inner-aspect and agentivity cannot capture the difference between when these adverbials are felicitous and when they are redundant.

On the other hand, this explanation is based on the interaction of a causative structure and an animate subject: at times they interact and give the impression that EAs require a non-stative counterpart. But each time they do, non-stativity is not in fact an entailment of the diagnostic but an implicature, and thematic agentivity is nothing more than a rough first impression.

To sum up, the licensing of intention adverbs is a good example of what could be called a “pseudo-agentivity effect”, rather than an aspectual diagnostic. In determining EAs’ aspectual status, tests that do not interact with implicatures relating to the properties of the subject must be used.¹⁸

¹⁸ Section 4.4.3 addresses the defining properties of external argument thematic roles, what distinguishes a Causer from an Agent, and the place of intentionality in Agents.

3.4.3 *EAs Pattern with States*

We saw in (58) (repeated as (69)) that on their existential usages, EAs are either states or activities because they only take *for*-phrases.

- (69) a. Emma was rude for a few minutes
b. *Emma was rude in a few minutes

However the data in section 3.4.1 showed that cross-linguistically, EAs do not pattern with activities. This section introduces three diagnostics that target inner-aspect and unambiguously categorise EAs as states: the *take*-time test, velocity adverbs, and the *This happened while...* test.

With atelic eventualities, the *take*-time test is only felicitous with states and it measures the amount of time before the on-set of a state ((70a)). Activity predicates are odd in this environment, as illustrated by (70b): it is strange on the reading that the participants did not begin walking for half an hour.

- (70) a. It took five years for Jones to know him well (Kearns 2011: 162, ex. (19c))
b. #It took half an hour for them to walk in the park
(Kearns 2011: 162, ex. (20a))

In (71), we see that EAs fall neatly with states:

- (71) It took 2 minutes for James to be rude

This example deserves further attention because it picks up on the discussion of pseudo-agentivity from the last section. Example (71) is an EA predication with an overt subject within the CP infinitive. It produces a clear agentive inference. This is exactly the kind of inference that motivates non-stative EA denotations. And yet, the test targets inner-aspect and returns the unambiguous result: the predicate patterns with states. Like the illusion created by intention adverbs, this is another illustration of why diagnostics that filter out subject effects and speak to inner-aspect are needed.

Velocity adverbs are a second test. If EAs did have an activity reading, we would expect them to be compatible with adverbs measuring the activity's progression, such as

quickly, slowly, little by little. Activity verbs do so naturally ((72)), but stative predicates do not ((73a)). Example (73b) shows that EAs again fall squarely with states.

(72) Julia ate her breakfast slowly/quickly/little by little

(73) a. #Peter was eager/available/sick/Canadian/old/tall slowly/quickly/little by little

b. #Peter was rude slowly/quickly/little by little

(cf. Fabregas *et al.* 2013: 250, ex. (60))

Section 3.4.1 showed that in Spanish, French, and English, it has been independently reported that EAs in the traditional *What happened was...* test are less than perfect. Maienborn (2005b) proposes a variation on this test that does a better job distinguishing between activities and states: the *This happened while...* test (cf. Asher 1993). The combination of the words *happened while* seems to target the presence/absence of a process, which is the defining property of activities. The uncontroversial activity verb in (74a) takes the continuation naturally and the state verb in (74b) does not.

(74) German

a. Eva spielte Klavier. Das geschah während ...

‘Eva played the piano. This happened while...’

(Maienborn 2005b: 285, ex. (11a))

b. *Eva ähnelte ihrer Mutter. Das geschah während ...

‘Eva resembled her mother. This happened while ...’

(Maienborn 2005b: 286, ex. (13c))

Once again, EAs pattern with states:

(75) *Peter was brave/nice/rude (to leave). This happened while...

All of these tests indicate that EAs never entail a process.

In her presentation of aspectual classes, Kearns (2011: 158) describes the difference between activities and states noting that the former have internal texture and that they tend to involve movements or changes in position (*e.g.* walking around the park in

(70b)), while states do not. EAs quite clearly—even when they produce an agentive inference—do not involve movement or changes in position.

Similarly, it is often noted that activities are composed of sub-parts that, individually, do not constitute the whole. In comparison, states do not have distinguishable sub-parts. For example, there are motions involved in the activity of walking that, alone, do not qualify as walking (*e.g.* bending a knee or moving a foot), and if the whole process does not come together, then it does not qualify: if I begin to take a step by lifting my foot, but then change my mind and put my foot down again on the same spot without moving my other leg, I have not walked.

But with states, each sub-part is equal. When we say that someone is sick, there is no meaningful way to identify sub-parts of the state such that they do not individually entail sickness. Equally, when it comes to the existential usages of EAs, when we say that someone was nice or obnoxious or rude, there are no distinguishable sub-parts.

This is intimately related to the Sub-Interval Property ((76)). The Sub-Interval Property says that the description of a verb phrase is true if and only if it is true at each moment of time. It was originally meant to distinguish states and activities from accomplishments and achievements (*cf.* Filip 1999; Kearns 2011).

(76) SUBINTERVAL verb phrases have the property that if they are the main verb phrase of a sentence which is true at some interval I, then the sentence is true at every subinterval of I including every moment of time in I. Examples of subinterval verb phrases are: *walk, breathe, walk in the park, push the cart*

(Bennett and Partee 2004: 72)

Although Bennett and Partee give activities as examples in their description in (76), it has long been noted that the Sub-Interval Property is too strong in the case of activities because, as stated in (76), it does not allow for any temporal gaps, and evaluation at a single moment is insufficient to determine their truth (*cf.* Dowty 1979; Filip 1999).

There are at least two ways that this is intuitively clear (both examples are inspired by Dowty 1979). First, if someone says that she read from noon to three o'clock, we do not generally judge the statement false if she stared out the window for two minutes, took a coffee break, or went to the bathroom in that time. So activities allow for interval gaps (*i.e.* stops and starts) where the Sub-Interval Property does not. Second, if a ball is

said to be rolling, according to Newtonian physics, more than one moment is needed to infer movement. Since activities generally involve movement, more than a single moment is needed to evaluate them.

The ban on interval gaps is probably too strict for states, as well. If we say that someone has been sick for a year, it seems severe to judge the sentence false if that person was not literally sick for each moment of that twelve-month span. So, interval gaps may be generally irrelevant to an aspectual calculus.

Nevertheless, identification at individual moments does distinguish activities from states. We need more than one moment to infer that a process is ongoing or that a change occurred, but there is indeed the strong intuition that, when we say that someone or something is sick, nice, obnoxious or rude, the statement can be true at single moments. For example, any moment of sickness qualifies as sickness, and any moment of rudeness qualifies as rudeness. And this seems to be true of every EA usage. This means that EAs are never activities, and always states.

3.4.4 *Interim Conclusions*

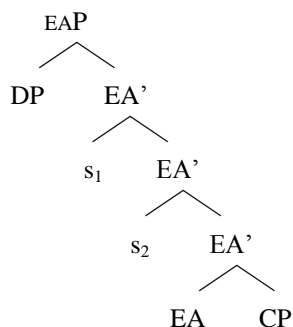
This section began with the presentation of cross-linguistic data showing that EAs do not pattern with activities or simple states. We then saw that EA compatibility with intention adverbs is not proof of an activity usage, and I proposed an alternative explanation for why these adverbials are felicitous with EAs. This explanation made use of properties that are basic to this analysis of EAs: a causative structure and an animate external argument. Intention adverbials are a good example of a pseudo-aspect diagnostic and highlight the importance of using diagnostics that target inner-aspect alone. Up to this point we had no direct evidence supporting an activity analysis.

Then we saw three tests that showed EAs patterning exactly like states, *i.e.* the *take-time* test, velocity adverbs, and the *This happened while ...* test. Even though the first test gives rise to agentive intuitions, each test unambiguously classifies EAs as stative. We then embarked on a detailed discussion of the relevance of the Sub-Interval Property and its application to states. The conclusion was that EAs always qualify as states.

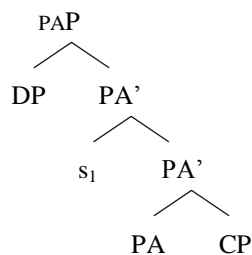
So, we now have aspectual evidence for the three different sorts of stative predication in the argument structures proposed in this thesis:

(77) *Argument Structures of the Three Main Adjective Classes*

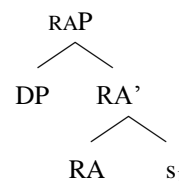
a. EAs:

Emma was rude to leave

b. PAs:

Sam was eager to help

c. RAs:

Victoria was Canadian/tall

Having seen that EAs are not activities or simple states, the next section introduces the stative causative class.

3.5 Stative Causatives

We saw in section 3.3.1 that Maienborn (2005b; 2007) draws a distinction between stative verbs that pass the tests for spatio-temporality versus stative verbs that are only defined temporally. She calls the former Davidsonian-States and the latter Kimian-States. Some of the verbs classified as Davidsonian-States are *gleam*, *sleep*, and *wait*. Maienborn has three reasons that justify this classification of these verbs:

- (i) They pass the standard event diagnostics discussed above. Therefore, they are spatio-temporal.
- (ii) They satisfy the Sub-Interval Property in that each moment of a gleam, or sleeping, or waiting, classifies as gleaming, sleeping or waiting. Therefore they are states.
- (iii) The *This happened while...* test clearly has them patterning with Kimian-States ((78a, b)), and not with activities ((78c)). Therefore there is empirical evidence that they are a kind of state.

(78) German

a. *Eva besaß ein Haus. Das geschah während...

‘Eva owned a house. This happened while...’

(Maienborn 2005b: 286, ex. (13a))

b. *Eva wartete auf den Bus. Das geschah während...

‘Eva waited for the bus. This happened while...’

(Maienborn 2005b: 285, ex. (12d))

c. Eva spielte Klavier. Das geschah während...

‘Eva played the piano. This happened while...’

(Maienborn 2005b: 285, ex. (11a))

Positing that different types of stative verbs exist is not new. For example, Bach (1986) divides states into *dynamic states* and *static states*. In the domain of verbs, Maienborn shows that the use of the word “dynamic” is misleading: these so-called “dynamic” states are spatio-temporal, but there is no process. Static states, on the other hand, are only temporal.

The new conclusions I have drawn are that **(i)** these findings carry over to adjectives—the word “dynamic” being just as misleading—and that **(ii)** they are directly relevant to understanding EAs.

Interestingly, Rappaport Hovav and Levin (RH&L) (2000) discuss a sub-set of Maienborn’s verbs. They discuss emission verbs such as *gleam*, *glow*, *shine*, and *stink* and, rather than diagnosing them for eventivity, they conclude that they are *stative causatives*.

Following up on the argument against the event argument from chapter 1, I would like to propose that the common denominator in these two discussions is causation: Maienborn’s Davidsonian-States test positive for spatio-temporality because they are causative. In support of this proposal, in the remainder of this chapter we will see evidence that the source of eventivity effects is not a primitive spatio-temporal argument. Rather, intuitions of eventivity are parasitic on causation. Chapter 4 develops the argument explicitly that only state arguments are primitive.

In their discussion of stative causation, RH&L (2000) stress that when diagnosing inner-aspect it is important to use tests that do not interact with the animacy of the subject. Since emission verbs take inanimate arguments (*e.g. The pearls gleamed*), misleading agentive inferences are controlled for. RH&L identify the *What X did ...* and

the *What happened was ...* tests as tests that avoid agentive confounds because, as (79) shows, activity verbs with inanimate subjects are acceptable in these contexts.

(79) What the boulder did was roll down the mountain

(RH&L 2000: 284, ex. (47b))

But when they submit emission verbs to these tests, the results are marginal:

(80) a. ??What the spotlight did was shine on the parking lot

b. ??What Mary's face did was glow with excitement

c. ??What the garbage did was stink

(RH&L 2000: 284, ex. (48a))

(81) a. ??What happened was the spotlight shone on the parking lot

b. ??What happened was Mary's face glowed with excitement

c. ??What happened was the garbage stank

(RH&L 2000: 284, ex. (49b))

These are the same judgements we found independently with EAs in these environments (section 3.4.1). Here, the inanimacy of the subject makes the judgements even clearer. RH&L take these judgements to show that these verbs are stative, rather than activities.

One characterisation of what separates non-states from states is that the former involve some kind of a change (RH&L 2000: 284; Dowty 1979; Kearns 2011). For example, with an activity verb like *walk*, certain movements are involved. With a causative verb like *break*, an object goes from being unbroken to being broken. But emission verbs like *shine* and *gleam* are atelic and potentially internally homogeneous, so they satisfy the Sub-Interval Property in the way discussed above: since there is no change involved, these verbs denote states, just like EAs.

Now, a comparison of the subject arguments of action verbs and emission verbs points to an underlying similarity. The external argument of an activity, accomplishment, or achievement verb can be an Agent or a Causer ((82a)). The sole argument of the stative emission verb in (83b) could be called a Source.

- (82) a. Peter/The storm broke the window
 b. The sun shone

The common denominator in all these cases is causation. All of these eventuality types are caused in some way. In (82a) the cause is an external force of one sort or another. In (82b), it is an integral property of the thing deemed responsible for the occurrence of the eventuality.¹⁹

Moreover, RH&L (2000) propose that the notion of *responsibility* captures all of these external arguments: in each case, the external argument is attributed responsibility for the eventuality.

Since RH&L (2000), it is often accepted that (i) activities, accomplishments, achievements, and emission verbs are all causatives, (ii) the general notion of a Causer adequately describes the range external arguments with causative verbs, and (iii) regardless of the name given to the syntactic head that introduces the Causer, all Causer arguments have the same syntactic base position (Alexiadou and Schafer 2006; Folli and Harley 2008; Ramchand 2008).

With respect to stativity and causation, RH&L (2000: 288) use (83) to show that a change-of-state and causation are independent of each other. In this example, Tony is the cause of the absence of physical change.

- (83) Tony kept the books on the table

More generally, RH&L (2000) argue that stativity is irrelevant to the representation of causation.

In chapter 1 we saw that Dowty (1979) also recognised that a change-of-state is irrelevant to causation, and that causatives could be stative. This is why his CAUSE operator is defined as taking two propositions (*i.e.* CAUSE(α , β)), while the BECOME operator contributes the change-of-state entailment (*i.e.* BECOME(α)). This allows causation to involve a change (*e.g.* CAUSE(α , BECOME(β))) or be stative (*e.g.* CAUSE(α , β)), and capture the difference between *Peter broke the book* and *Peter kept the book on the table*, respectively.

¹⁹ Levin and Rappaport Hovav (1995) and RH&L (2000) treat these as two separate sorts of causation: external and internal. In more recent work, the distinction has been rejected as a grammatical distinction, and irrelevant to the causative alternation (RH&L 2012; Rappaport Hovav 2014, 2016).

In support of this conclusion, in chapter 2 we saw the example of *narrow*, repeated in (84). This is a case where the causative alternation occurs only when the verb is interpreted as stative.

(84) a. I like how the band narrows the skirt a bit

(Rappaport Hovav 2014: 14, ex. (28a))

b. The skirt narrows at the bottom

(Rappaport Hovav 2014: 14, ex. (26b))

So important barriers to the present analysis are removed:

- (i) There is empirical evidence for stative causation that is independent of EAs and emission verbs.
- (ii) There is no formal obstacle to stative causation.
- (iii) A change-of-state is not necessary for the causative alternation.

What seems to be crucial to the linguistic representation of causation is a responsibility relation between a Causer and a result. In chapter 2, we saw that EAs are factive, and so even though they are stative, the factive presupposition entails the existence of a result.²⁰ We also saw that their external argument produces a clear responsibility inference when the PRO position in the CP is filled:

²⁰ Factivity and causation are, however, independent phenomena. There are factive predicates that are not causative, *e.g. matter, significant, tragic*. The factivity of EAs is important for this analysis because it provides EAs with existential entailment of their complement, strengthening the parallel with causative alternating verbs.

- (85) a. It was thoughtless of Arthur for Agatha to be there when Desmond arrived
 (cf. Kertz 2010: 287, ex. (102))
- b. I'm so mad and I spoke to DH this morning but I don't want to offend him and run his parents down, but at the same time, I am NOT having this special time ruined because it's my last baby and the afterglow of my wedding was also ruined because they were all here then too so we all had to go away together after our wedding because we felt it was rude of us for his family and extended family to come all the way from England to New Zealand and have us disappear alone the day after our wedding for a honeymoon.
 (Internet)
- c. It would have been stupid of them for him to make an appearance, on a taping before Raw. Well at least they mentioned his appearance on Raw, and showed some footage of it. We'll see him at TLC.
 (Internet)

This discussion and these examples show that the linguistic representation of causation is not about a change-of-state, but the expression of responsibility, as RH&L (2000) independently concluded.

This brings the conceptual meaning of EAs into focus. Why do we consider somebody intelligent, nice, or rude? Viewing EAs as causatives provides a plausible characterisation: an individual is responsible for a situation. So, the causative relation expresses responsibility for a result, and an EA qualifies this relation as intelligent, nice, or rude, etc.

Now, if we say *Emma was rude to leave*, and it turns out that Emma didn't leave, then in this instance, she wasn't rude. More generally, if an individual cannot be associated with intelligent, nice, or rude results, then it is very difficult to justify saying that the individual is intelligent, nice or rude. The statement would be vacuous.

We attribute these properties to people because we think we have evidence for them having demonstrated them in things they are responsible for. The relation that the EA denotes, is nevertheless abstract and immaterial, and thus stative; but in order to attribute it, we make connections between sources and results. This is represented linguistically as a causative.

In this section I have proposed that Maienborn's Davidsonian-States coincide with RH&L's stative causatives. I laid out RH&L's independent motivations for the existence of stative causation in a sub-set of the same verbs as Maienborn. We saw that Maienborn and RH&L independently invoke related data.

The overarching argument is that EAs fit into this broad category: they pass eventivity tests, they are stative, their animate argument is a Causer, and it bears a responsibility relation to the result. Since the notion of change-of-state is irrelevant to the linguistic representation of causation, all the EA evidence we have accumulated is coherent, and a causative alternation analysis is explanatory.

3.6 Alternative Perspectives on IL/SL Diagnostics

Now that we have seen arguments for an EA stative causative analysis, we return to the three tests introduced in section 3.1.2 that are traditionally used in support of the IL/SL distinction, namely bare plural subjects, *there*-insertion and depictives. In this section I sketch alternative explanations that do not depend upon the existence of the IL/SL distinction. These explanations imply that the IL/SL distinction does not reflect the correct generalisation for EAs. They complement the variety of empirical and conceptual counter-evidence discussed throughout this chapter, and together make a strong case against the reality of the distinction.²¹

Here, I am largely concerned with suggesting alternative explanations for the EA data. Even though we have seen that RAs pattern with EAs in these environments, RAs will require separate explanations with their own qualifications. This is consistent with the view espoused here because EAs and RAs are separate aspectual classes, but it is not explored in detail because it is tangential to present purposes.²²

Jager (2001) proposes a solution to the existential interpretations of bare plural subjects that does not rely a binary lexical classification. His generalisation is that the subjects of predicates that do not allow a weak existential interpretation are interpreted as topics. More specifically, they are presupposed.

²¹ In this section, I continue to make use of Jager (2001), which also argues extensively against the existence of the IL/SL distinction. See Higginbotham and Ramchand (1997) for further arguments against the distinction in conjunction with reanalyses of various diagnostics. See also Roy (2013) for an extended argument against the utility of the distinction in nominal predications.

²² Section 4.2.2.5.2 discusses the status of the core IL/SL intuition within the present theory.

Before summarising Jager's observations, a clarification on the EA bare plural data is in order. In (86) (repeated from (9), (11a) and (19b), respectively) the EA examples are characterised as being limited to a generic interpretation, and lacking both an existential interpretation of the whole sentence and a weak existential interpretation of the subject.

- (86) a. Emma is brave/Canadian/tall (* \exists /Gen)
 b. UN Peacekeepers are brave/Canadian/tall (* \exists /Gen)
 c. American consumers are smart to buy foreign goods (* \exists /Gen)

Notice that each of these examples is in the present simple. I would like to point out that there are two variables in play here: **(i)** tense and **(ii)** whatever it is that explains the interpretation of the subject. In section 3.2 we saw that outside of the present simple EAs do generally have an existential interpretation. In this they contrast with RAs (*cf.* (86a, b)), which do not have one. The EA example (87) shows that in the simple past, the sentence as a whole has a natural existential interpretation, even though the subject is not weakly existential.

- (87) American consumers were smart to buy foreign goods yesterday

Therefore, we can conclude that the lack of a sentence-level existential interpretation of EAs in (86) is due to the present simple, because varying the tense of an EA sentence from present ((86)) to past ((87)) produces a change in the availability of a sentence-level existential interpretation, and the lack of a weak existential subject remains constant. Of course, many verbs in English also illustrate this present/past generic/existential correlation: eventive verbs ((88a) vs. (88b)).

- (88) a. Victoria eats/plays/sleeps/waits (* \exists /Gen)
 b. Victoria ate/played/slept/waited (\exists /Gen)

I have shown that EAs pass eventivity tests. This parallelism in the interpretation of tense between EAs and eventive verbs is another clear indication that EAs are always classify as eventive: with respect to the interpretation of tense, EAs pattern with eventive predicates.

The purpose of this digression has been to qualify the original application of the bare plural test in the case of EAs. Once tense is controlled for, EAs do have a natural existential interpretation. What they do not have is a weak existential subject. Jäger's (2001) proposal speaks only to this latter point and we turn to it now.

German word order has been employed to provide overt syntactic evidence for the IL/SL distinction (*cf.* Diesing 1992; Krazter 1995). The examples in (89) illustrate how adverbials can be used to disambiguate the existential ((89a)) and generic ((89b)) readings of a bare plural subject with a SL predicate.

(89) German

- a. (weil) angeblich Feuerwehrmänner verfügbar sind (∃, *Gen)
 (because) allegedly firemen available are
 '(Because) allegedly, firemen are available'
- b. (weil) Feuerwehrmänner angeblich verfügbar sind (*∃, Gen)
 (because) firemen allegedly available are
 '(Because) firemen are allegedly available'

(Jäger 2001: 86, ex. (7))

As in English, SL predicates can have both readings, but when focus and scope inducing items are controlled for, the availability of each reading can be narrowed down to a particular area of the clause: the existential reading is generally restricted to the region below sentence-level adverbs and particles ((89a)), and the generic one above them ((89b)).

In the case of IL predicates, this word order correspondence makes the correct prediction: only the word order that supports the generic reading is grammatical ((90b) vs. (90a)).

(90) German

- a. *(weil) angeblich Feuerwehrmänner selbstlos sind
 (because) allegedly firemen altruistic are
- b. (weil) Feuerwehrmänner angeblich selbstlos sind
 (because) firemen allegedly altruistic are
 '(Because) firemen are allegedly altruistic'

(Jäger 2001: 86, ex. (8))

While the word orders seem to provide neat evidence for the distinction, a first, wider, problem that Jager points out is that the standard IL/SL distinction is meant to distinguish bare plurals ((91)) from other types of indefinites. Nevertheless, the same facts repeat themselves with indefinite singular subjects ((92)) and weak quantifiers ((93)).²³

- | | | |
|---|----------------------------------|-----------------------------|
| (91) a. Firemen are available | (\exists , Gen) | |
| b. Firemen are altruistic | (* \exists , Gen) | |
| | | (Jager 2001: 103, ex. (55)) |
| (92) a. John claims that a fireman is available | (\exists , $\exists!$, Gen) | |
| b. John claims that a fireman is altruistic | (* \exists , $\exists!$, Gen) | |
| | | (Jager 2001: 103, ex. (56)) |
| (93) a. Many firemen are available | (\exists , Partitive) | |
| b. Many firemen are altruistic | (* \exists , Partitive) | |
| | | (Jager 2001: 103, ex. (57)) |

Examples (91)-(93) show more generally that IL predicates have a variety of strong readings (*i.e.* generic ((91b)), definite existential ((92b)), and partitive ((93b))) with any sort of indefinite subject, but systematically lack a weak existential reading. On the other hand, SL predicates have all of these strong readings in addition to a weak existential one ((91a), (92a), (93a)). This shows that the bare plural test is missing a generalisation that the original IL/SL distinction cannot capture because it was meant precisely to distinguish bare plurals from other indefinites.

²³ See Jager (2001) for arguments that the IL/SL distinction cannot be directly tied to differences in the syntactic base position of the subject (*cf.* Diesing 1992; Kratzer 1995). Jager also shows that the German word order facts are quite independent of the IL/SL distinction because focus and scope can subvert them. The pair in (i) shows that with both IL and SL predicates, strong quantifiers appear (and in fact are preferred in both cases) in the low position. The pair in (ii) shows that focus blocks scrambling even with an IL predicate.

- | | | |
|------|---|------------------------------|
| (i) | German | |
| | a. weil ja alle Studenten Englisch können | |
| | because PRT all students English know | (Jager 2001: 105, ex. (61a)) |
| | b. weil ja alle Studenten Englisch sprechen | |
| | because PRT all students English speak | (Jager 2001: 105, ex. (62a)) |
| (ii) | German | |
| | a. weil ja sogar FEUERWEHRMÄNNER selbstlos sind | |
| | because PRT even FIREMEN altruistic are | |
| | b. ^{??} weil FEUERWEHRMÄNNER ja sogar selbstlos sind | |
| | because firemen PRT even altruistic are | (Jager 2001: 111, ex. (78)) |

Returning to German, it turns out that the word order facts repeat themselves regardless of whether or not the subject is indefinite or definite. Just as in (91) above, the examples in (94) show that, with an IL predicate, the word order that correlates with the existential reading remains ungrammatical ((94b)). And, the order that correlated with a generic reading is still grammatical ((94a)). This suggests that the German word order facts are independent of the interpretation of indefinites, which effectively uncouples them from any direct relevance to the IL/SL distinction.

(94) German

- a. (weil) der Präsident ja intelligent ist
(because) the president PRT intelligent is
'(Because) the president is intelligent'
- b. *(weil) ja der Präsident intelligent ist
(because) PRT the president intelligent is

(Jager 2001: 104, ex. (59))

Thus far we have seen that, more generally, there is something about indefinite subjects that goes beyond bare plurals that affects the availability of a weak existential interpretation. We have also seen that the German word order phenomena are independent of the IL/SL distinction because they are unrelated to bare plurals and indefinites.

At this point, Jager makes the following observation. Setting indefinites aside, the word order patterns correspond to an interpretative difference: only in (95a)—the order that corresponds to strong readings—is the subject presupposed.

(95) German

- a. (weil) die Berge ja sichtbar sind
(because) the mountains PRT visible are
- b. (weil) ja die Berge sichtbar sind
(because) PRT the mountains visible are
'(Because) the mountains are visible'

(Jager 2001: 104, ex. (60))

My proposal is that combining these empirical facts and extending Jager's core observation captures the behaviour of indefinite subjects of both EAs and PAs.

If it is granted that the referent of the external argument of an OC predicate is included inside the CP via the PRO position, it follows that the behaviour of the argument external to the CP is predictable based on that CP's presuppositional status. In the case of PAs this means that, since they do not presuppose their CP, they would be expected to allow a weak existential interpretation of their subject, as is the case ((99c) repeated from (19c)). This follows from the PA being an OC predicate and the CP itself not being presupposed by the adjective.

- | | |
|--|--------------------|
| (99) a. American consumers are smart | (* \exists /Gen) |
| b. American consumers are smart to buy foreign goods | (* \exists /Gen) |
| c. American consumers are eager to buy foreign goods | (\exists /Gen) |
- (Kertz 2006: 230, ex. (3)-(5))

EAs on the other hand, are also OC predicates, but as factives, they presuppose their CP. Correspondingly, a weak existential interpretation is absent whether or not the CP is overt ((99a, b) repeated from (19a, b)).

This captures the contrast between PAs and EAs in (99), and illustrates one way that it is possible to address the bare plural subject data, as well as weak existential interpretations more generally, without the IL/SL distinction. It also supports the approach being developed here because on the present approach the CP is always part of the EA denotation, and therefore it is predicted that the interpretation of the subject will be the same regardless of whether the CP is spelled-out. Therefore, on the present approach the parallelism in (99a, b) is expected.

In contrast, any approach that posits EA IL/SL denotations predicts a pattern in these data that we do not find: it predicts (99a) to be potentially ambiguous (depending on whether or not the CP is implicit), and it predicts (99b) to be unambiguously SL. The actual pattern is correctly predicted only on the present approach.

Turning to *there*-insertion data, the examples in (100) (repeated from (20)) show that *there*-insertion is unacceptable with EAs ((100a, b)), but unobjectionable with PAs ((100c)).

- (100) a. *There were lawmakers smart
 b. *There were lawmakers smart to endorse the proposal
 c. There were lawmakers eager to endorse the proposal

An explanation based on the IL/SL distinction hinges on the existentiality of *there*-sentences: EAs are out because they are properties of individuals, while PAs are in because they predicate of stages.

While the pattern in (100) mirrors the bare plural subject pattern in (99), the presupposition explanation does not carry over. This is because in other contexts, such as the continuous aspect in (101), *there*-insertion with EAs is fine:

- (101) There were people being nice/polite/rude/stupid

Since the factive presupposition remains constant, and EAs allow *there*-insertion in the continuous, the ungrammaticality of (100a, b) must come from somewhere else.

I suggest instead to focus on the sort of assertion that *there* involves. A closer look at *there*-sentences shows that *there* picks out a temporally restricted state. The examples in (102) illustrate *there* relating to a simple state (*i.e. being at the park; being on the shelf*).

- (102) a. There were kids at the park
 b. There were books on the shelf

The examples in (103) illustrate the contrast between an eventive predicate in the continuous aspect ((103a)) versus other tenses and aspects ((103b)).

- (103) a. There were people singing
 b. *There sing/sang/have sung/will sing people

In this connection, Vlach (1981) first observed that the continuous aspect induces the temporal properties of simple states on eventive predicates. Suppose that taken together, the examples in (102) and (103) show that what the continuous aspect does is take an eventive predicate (*e.g. sing*) and give it the interpretation of a temporally

restricted simple state predicate.²⁴ This allows existential *there* to pick out the temporally restricted state that it requires.

This view of *there*-sentences and the continuous aspect accounts for the grammaticality of (100c), (102), and (103a)—to the exclusion of (103b)—because in the grammatical examples, *there* associates with a temporally restricted simple state. It also extends to explain why EAs pattern with eventive verbs (*e.g. sing*) with respect to *there*-insertion and the continuous versus other tenses and outer-aspects:

- (104) a. There were people being nice/polite/rude/stupid
 b. *There are/were/have been/will be people nice/polite/rude/stupid

Example (104a) foreshadows the fact that EAs are the adjective class that generally takes the continuous aspect. The parallel between (103) and (104) is also another argument that EAs pattern with spatio-temporal predicates.

We have seen that EAs classify as spatio-temporal and as stative causatives. Therefore, even though EAs are stative—as causatives—they are internally complex and thus they are not simple states. Since *there* only associates with temporally restricted simple states, the ungrammaticality of EAs in cases like (104b) is expected, just as it is in (100a, b), whether or not the CP is overt (*i.e. *There were lawmakers smart (to endorse the proposal)*). So the ungrammaticality of EA *there*-insertion data receives a principled explanation without the IL/SL distinction—data that an ambiguity account does not capture.

Lastly, building on this explanation of the *there*-insertion data, an account for the depictive data presents itself. The interpretation of depictive structures ((105)) can be described as expressing a relation of incidental temporal overlap between two temporally restricted eventualities, where the time that the state denoted by the adjective holds merely coincides with that of the main predication (*cf. Geuder 2004*).

- (105) Philip arrived sick

The depictive data in (106) (repeated from (13)) receives an explanation similar to that offered for *there*-insertion. The predicates that work naturally as depictives are

²⁴ This characterisation is a simplification for the present context. Both the continuous aspect and existential *there* are given a formal analysis in chapter 4.

temporally restricted simple states. So, PAs and predicates like *available* and *sick* ((106b)) are the only types of predicate that work naturally. Since they are temporally restricted, they can be meaningfully interpreted as overlapping with the main predicate.

- (106) a. *Emma arrived brave/Canadian/tall
 b. Emma arrived available/eager to help/sick

In contrast, RAs like *Canadian* and *tall* in (106a) are simple states that certainly do overlap with many events, but because they are not restricted, using them as a depictive is uninformative.

As for EAs, such as *brave* in (106a), they do not work because they are causatives, and not simple states. Just as with *there*, predicates interpreted as restricted simple states work most naturally as depictives. Only with such predicates ((106b)) is it the case that (i) the overlap condition is met and (ii) the overlap is informative.²⁵

In this section I have sketched alternative characterisations of the behaviour of EAs with respect to bare plural subjects, *there*-insertion and depictives that do not reduce to the IL/SL distinction. These alternatives make use of properties of EAs that the present proposal has referred to many times: EAs are factive and therefore trigger presuppositions; they are causative, and therefore the interpretation of their internal structure is complex. In this regard, the analysis sketches provided do not require any *ad hoc* assumptions to cover these three environments.

We also saw that positing a single EA denotation that always includes the CP correctly predicts intransitive and transitive EA structures to behave unambiguously in parallel with respect to the diagnostics, where accounts that posit an IL/SL ambiguity predict an unrealised pattern. In addition, we account for the behaviour of EAs in the present simple with the finding that they are causative. At this point, an IL EA denotation is superfluous. Also, if the arguments against the IL/SL distinction are

²⁵ Geuder (2004) describes in more detail that an interpretative property of depictive structures is that there is no meaningful connection between the main event and the state denoted by the adjective. In other words: there is only coincidental overlap. So in *Victoria arrived hungry*, the arrival and the hunger only overlap coincidentally—any inference of causal interconnection between the two eventualities is not entailed. This reinforces the generalisation that the adjectives that are naturally accepted in depictives denote temporally restricted simple states: a causative adjective, like an EA, might force an implication of a meaningful connection between the two predicates, and this would also violate the basic interpretative properties of depictives.

conjoined with the alternatives offered, the conclusion that the distinction does not exist is strongly supported.²⁶ Section 4.2.2 returns to the continuous aspect technical detail.

3.7 EAs: a Unified Pattern

In this section the data presented throughout this chapter and chapter 2 are gathered to make the case that EAs have a single denotation that is stative causative. But before concluding the chapter on that note (section 3.7.4), the two other methods that are invoked to account for EAs are addressed: coercion (section 3.7.1) and “active” *be* (section 3.7.3). Arguments against these approaches are presented.

When this has been done, I will have completed my attempt to refute **(i)** accounts that attribute EAs’ special properties to an ambiguity in the adjective (*i.e.* invoking the IL/SL distinction, or an IL denotation and an activity one), **(ii)** accounts that posit one denotation and a coercion operation, and **(iii)** accounts that place the ambiguity not in the adjective but in the copula (*i.e.* “active” *be*). In section 3.7.2 the evidence that EAs are the only adjective class to take the continuous aspect is given.

3.7.1 Evidential Coercion

Rather than positing multiple denotations for EAs, some approaches take them to have a single IL denotation and account for their existential and agentive properties with a coercion operation. Fernald (1999) is the only study that I am aware of that formulates such an operation explicitly.

Fernald proposes that EAs and RAs are IL predicates, but that, in some contexts, such as the continuous ((107)), they are coerced into a non-state that implies behavioural evidence, or a manner of acting that implies that an individual has a property for a limited time. He calls this operation Evidential Coercion.

²⁶ The most important result here is the argument against an EA IL denotation. But it is worth emphasising that the more general argument against the very existence of the IL/SL distinction is relevant in two ways. First, the notion of SL is too general to make meaningful distinctions between predicate classes that have temporally dependent readings. Second, it means that not even RAs are correctly analysed as IL in a strict sense (chapter 4 returns to this). Although I will continue in this chapter to make reference to the distinction in order to reinforce some remaining points, it is no longer harmless to describe data in terms of it because the distinction is not formally relevant.

- (107) a. Katherine is being brave/nice/obnoxious
 b. Katherine is being French

Setting aside all the argumentation in this chapter that EAs are not IL predicates, that they are always stative, and that the agentive inference they produce is an implicature, Fernald (1999) provides the opportunity to show that, once a specific coercion operation on IL predicates is proposed, it is inconsistent. We will consider three difficulties with this approach.

First, the most general problem is that coercion is not predictive. Why the continuous aspect in (107) should be context for coercing IL predicates, but not the present simple (*e.g. Katherine is nice/French*) or any other random environment has no principled response.

The second problem is more specific. Evidential Coercion is a defined operation that takes IL predicates as input and returns a non-state that implies that an individual behaved as if having the property denoted by the adjective. In other words, we have a proposed operation that takes a uniform input, the operation applies, and we should expect a uniform output, but this is not the case.

In (108), applying the continuous aspect to an EA entails that the property held of the subject.

- (108) Katherine was being brave/nice/obnoxious
 ⇒ Katherine was brave/nice/obnoxious

In contrast in (109), applying to the continuous to a RA nationality predicate does not entail that Katherine was of French nationality, but merely that she was behaving as if she were French.²⁷ This shows that the output of the proposed operation is semantically inconsistent in its entailments.

- (109) Katherine was being French
 ≠ Katherine was French

²⁷ This observation is owed to Agustin Vicente (p.c.).

The third argument follows up on the second, but again it shows that defining a coercion process over IL predicates produces inconsistent results. Notice that the felicity of (107b) (*i.e. Katherine is being French*) requires a contextually shared stereotype of how the French behave; otherwise the utterance is infelicitous (*cf.* Fernald 1999: 55). Switching the nationality to one that fails to conjure a stereotype makes the utterance essentially meaningless, *e.g.* ^{??}*Katherine is being Tuvaluan*.

A similar thing happens with other non-nationality RAs: ^{??}*Katherine is being fat/old/short/skinny/tall*. If such an utterance means anything, some stereotype is needed, but it is far from clear what it would be outside of a specific context with discourse participants with the necessary shared background.

However, none of this is required for the felicitous use of an EA in the continuous: each person can be brave, nice or obnoxious in different ways in different contexts and cultures, and the use of the continuous is meaningful. So, once again, the output of the proposed coercion operation is not producing uniformity, which is unexplained if its application is restricted by uniformity of the input.

On the proposal of this thesis, EAs take the continuous aspect because they are causative, and causative predicates generally take the continuous. Furthermore, EAs in the continuous are behaving just like a natural, causative continuous does. In general, the use of the continuous entails that the property is truly ascribed to the subject, and no discourse salient stereotype is needed to make it felicitous.

(110) a. Katherine was walking

⇒ Katherine walked

b. Katherine was being brave

⇒ Katherine was brave

Of course, then there is the Imperfective Paradox ((111)), on which it is not entailed that the eventuality reached completion. We return to this in section 4.2.2.4.

(111) Katherine was crossing the street

≠ Katherine crossed the street

For the moment, notice that, even with accomplishments such as *cross*, it is entailed that some of the process took place and that it held of the subject:

- (112) a. #Katherine was crossing the street but she didn't start
 b. Katherine was crossing the street
 ⇒ Katherine crossed some part of the street

What is semantically different about (109) (*i.e. Katherine was being French*) is that there is no entailment that the property is true of the subject. Thus (113) is not a contradiction.

- (113) Katherine was being French but she wasn't French

A coercion analysis of EAs misses the fact that EAs take the continuous aspect with standard entailment properties. The disparity between the semantics of EAs in the continuous versus RAs in the continuous is another argument that they are not of the same aspectual class. We have seen that there are many syntactic, aspectual, and semantic differences between the two classes. Since EAs take a normal continuous—just like other causative predicates—the conclusion is that the continuous aspect applies to EAs as a syntactic/semantic operation.

However, it is clear that RAs in the continuous are something different. They are grammatically marked, they are not always felicitous, and context plays an important role. I conclude that RAs do indeed undergo a kind of coercion; but because we are talking about felicity and a lack of entailment, I propose that this operation on RAs is discourse-based.

So, the continuous is a context for coercion. But when coercion takes place in the continuous, it is a discourse-level process that relies on stereotypes. In section 4.2.2, where the continuous as a syntactic/semantic operation is analysed, I discuss why the continuous is a context for coercion. However, proposing a coercion analysis for EAs does not shed any light on the facts or differences that have emerged in this section.

3.7.2 *EAs and the Continuous Aspect*

It is time to show that EAs are the only class to take the continuous naturally.²⁸ In (114) there are examples from English, Basque, and Spanish that speak to the cross-linguistic generality of EAs in the continuous. Example (114a) highlights the conspicuity of EAs in the continuous, as it is from an advanced English grammar for foreigners where EAs are the only adjective class that is mentioned as taking the continuous.

- (114) a. She's being rather obstinate at the moment (Side and Wellman 2002: 26)
 b. Jon ausarta izaten ari da (Basque)
 Jon brave be-LOC ari is
 'John is being brave'
 c. Juan estaba siendo muy cruel con el entrevistador
 Juan was *ser*-CONT very cruel to the interviewer
 'John was being very cruel to the interviewer'
 (Spanish, *cf.* Arche 2006: 27, ex. (80))

In the examples in (115) and (116), however, we see that neither SLs nor ILs are grammatical (modulo the comments made above in the discussion of Evidential Coercion).

- (115) a. *Peter is being anxious/nervous/sick/ready/willing
 b. *Jon gogotsu/gaixo/prest izaten ari da (Basque)
 'John is being eager/sick/ready'
 c. *Pedro está siendo ansioso/enfermo/listo (Spanish)
 'Peter is being sick/ready'
- (116) a. *Peter is being Canadian/tall
 b. *Jon altua izaten ari da (Basque)
 'John is being tall'
 c. *Pedro está siendo alto (Spanish)
 'Peter is being tall'

²⁸ Section 3.7.3.2 qualifies this statement: it discusses sound emission adjectives such as *noisy*, which are another class that takes the continuous aspect. Crucially, like EAs, they are stative causatives, so they pattern together. On another note, "tough" predicates are the last class that takes the continuous, but they fall outside the scope of this study.

The Spanish data help to reinforce the point that only EAs take the continuous because this language has two copulas. *Ser* is the general purpose, default copula ((117a)), and *estar* adds a meaning of temporal restriction ((117b)). So in (117b) *estar* is marking that *enfermo* ‘sick’ is interpreted as temporally restricted.

(117) Spanish

- a. Juan es alto
 Juan *ser*-PRES tall
 ‘John is tall’
- b. Juan está enfermo
 Juan *estar*-PRES sick
 ‘John is sick’

The distribution of the two copulas is heavily researched and it has been noted that with the corresponding changes in meaning, almost any adjective can appear with either copula (Maienborn 2005a). In (118) we have examples with an EA appearing with both copulas. The (a) example is interpreted generically and the (b) example with respect to a specific time.

(118) Spanish

- a. Juan es cauteloso
 Juan *ser*-PRES careful
 ‘John is careful’
- b. Juan está cauteloso
 Juan *estar*-PRES careful
 ‘John is careful’

Likewise, in (119) we have the RA *gordo* ‘fat’ taking both copulas, the (a) example interpreted generically and the (b) example implying that John’s current state of fatness is relevant to the discourse. These examples illustrate the interchangeability of the two copulas.

(119) Spanish

a. Juan es gordo

Juan *ser*-PRES fat

‘John is fat’

b. Juan está gordo

Juan *estar*-PRES fat

‘John is fat’

Now let’s take a closer look at the morphology of the Spanish continuous. It is built with *estar* bearing tense, and *ser* bearing the gerund morphology. Example (120a) shows an EA taking the continuous with *está* (the present tense form of *estar*), and *siendo* (the gerund form of *ser*). This EA example is grammatical, but PAs/SL predicates and RAs are not ((120b, c) respectively).

(120) Spanish

a. Juan está siendo cauteloso

John *estar*-PRES *ser*-CONT careful

‘John is being careful’

b. *Juan está siendo ansioso/enfermo

‘John is being anxious/sick’

c. *Juan está siendo gordo

‘John is being fat’

These data show that flexible copula selection should not be confused with the continuous aspect. EAs are still the only adjective class that take the continuous. Whenever an EA appears with *estar* bearing tense, the gerund *siendo* can be added freely to complete the continuous form (*cf. Juan está cauteloso* (118b)). But this is not the case with the other adjective classes. PAs/SL predicates and RAs can appear with both copulas ((118), (119)), but they do not accept full continuous aspect morphology ((120b, c)). So even if a language has different copulas and their distribution is flexible, it is still the case that EAs are only adjective class that takes the continuous.

One last data point highlights that an IL analysis does not capture EAs. The data presented so far in this chapter have shown that, in English, EAs have an existential interpretation in every tense but the present simple. Interestingly, in languages that lack

a morphological continuous aspect, like Romanian and Swedish, the present simple behaves differently.

In these languages, in the present simple, EAs are ambiguous between the existential and the generic readings ((121a), (122a)). Yet, PAs/SL predicates ((121b), (122b)) and RAs ((121c), (122c)) continue to behave as they are typically described in English.

(121) Romanian

- | | |
|-------------------|--------------------|
| a. Ion e obraznic | (\exists /Gen) |
| ‘John is rude’ | |
| b. Ion e bolnav | (\exists /Gen) |
| ‘John is sick’ | |
| c. Ion e înalt | (* \exists /Gen) |
| ‘John is tall’ | |

(122) Swedish

- | | |
|--------------------|--------------------|
| a. John är ohövlig | (\exists /Gen) |
| ‘John is rude’ | |
| b. John är sjuk | (\exists /Gen) |
| ‘John is sick’ | |
| c. John är lång | (* \exists /Gen) |
| ‘John is tall’ | |

This supports the conclusion that EAs lack an existential reading in the present simple in English (among other languages) because of the properties of the interpretation of this tense in English—not because it indicates that they are IL predicates.

Now we have seen that cross-linguistically in languages with a productive continuous, EAs are the class that takes it, just like causative predicates generally do. Lastly, evidence from languages lacking a morphological continuous confirms that EAs generally have an existential interpretation.

3.7.3 *Against “Active” be*

“Active” *be* is the final way that the agentive inferences that EAs produce have been analysed. In contrast to a coercion operation, “active” *be* is an independent lexical item in the grammar: a non-stative copula.

3.7.3.1 “Active” *be*: *General Concerns*

“Active” *be* is motivated by the agentive inferences produced by adjectives in the continuous aspect. In (123) we have an EA example.

(123) John is being foolish

“Active” *be* is based on two assumptions that are not sustainable: (i) that agentive inferences entail non-stativity, and (ii) that the continuous is an indication of non-stativity. This chapter has shown that (i) is false. Chapter 4 will show that (ii) is, as well. To foreshadow, chapter 4 will show that the continuous entails that the predicate is causative, but not that it is not stative. So from the perspective of the present proposal, (123) does not motivate a non-stative copula in the first place.

Another general problem is that cross-linguistically, different languages do have different copulas for different kinds of predictions. For example, Spanish has *ser* and *estar*, and Basque *izan* and *egon*. Each of these copulas is aspectually stative. If “active” *be* were a real grammatical formative, we should expect some language to realise it in a way that it is unambiguously distinct from stative copulas. To my knowledge, no such copula exists.

At the theoretical level, however, something similar has been proposed. The immediate intuition in (123) is that John is *doing* something (Partee 1977: 307). For Partee, “active” *be* is a copula in addition to the stative one. Dowty (1979), in turn, formalises “active” *be* as the morphological spell-out of the abstract predicate DO.

In Dowty’s aspectual calculus, the predicate modifier DO produces the activity aspectual class: with verbs, DO spells out as *do*, and with adjectives, as *be*. Once “active” *be* is the equivalent of *do* that surfaces as *be* with adjectives for morphological reasons, it raises a question: why does *do* still appear with adjectives sometimes? The contrast in (124) shows that in pseudo-clefts, *do* is still mandatory with an adjective.

- (124) a. [?]What John did was be rude
 b. *What John was was be rude

If *do* and *be* are semantically equivalent here, with an adjective downstairs, one might expect a sort of morphological concord between the two tensed verbs, but it is categorically impossible ((124b)).

In this connection, the pair in (125) shows that in a minimally different structure, *be* and *do* can alternate, but the sentences mean very different things; if *be* and *do* were related on some level, why these sentences mean such different things is hard to explain.

- (125) a. What John was was rude
 b. What John did was rude

Furthermore, example (126) shows that the inclusion of an overt infinitive—something that John actually did do—makes the structure ungrammatical. This is also difficult to explain on any theory of “active” *be*.

- (126) *What John did was be rude to leave

In contrast, the present proposal can capture difference between (126) and (124a) ([?]*What John did was be rude*) with a pragmatic analysis. Example (124a) is felicitous because the adjective contains a causative structure and an animate external argument. When the CP is left implicit, the abstract, stative relation that the adjective establishes between the external argument and the CP is underspecified. I propose that this underspecification leaves enough discourse space for the pseudo-cleft structure to generate an agentive implicature.

Even though *do* implies an action, it takes advantage of the underspecification in (124a): it picks up on the causative structure and the animate argument in order to imply intentionality on the Causer’s part, thus the agentive implicature.

This use of *do* in (124a) meets two out of the three criteria for a pseudo-cleft structure to be completely felicitous; namely, that the predicate be causative with an external argument. The missing criterion is that the predicate truly imply an action. Recall that in section 3.4.1, cross-linguistically, we saw that (124a) is less than perfect.

Now, what (126) shows is that, as soon as the abstract relation denoted by the EA is specified with an overt CP, the lack of action can no longer be modulated, the implicature is blocked, and the combination with *do* produces a contradiction that cannot be avoided at either the semantic or the pragmatic level.

This discussion has an important consequence for the existence of the Dowtyan predicate modifier DO. Dowty qualified it by stating that it depended on the correct analysis of EAs as agentive/non-stative. Otherwise, there is no compelling evidence that it is needed in the aspectual calculus (1979: 119; 166). We have seen that EAs are stative, and that their agentivity is an implicature. We can therefore conclude that DO does not exist because it is not empirically motivated.

Returning to “active” *be*, the last general problem is raised by Rothstein (1999). The distribution of “active” *be* is restricted by a [+Active] feature on the adjective. Without some such a mechanism, it over-generates massively: every copular sentence would be predicted to be ambiguous. Furthermore, “active” *be* is supposed to account for agentive inferences. So, EAs are acceptable in a structure like (127), which gives rise to an agentive inference, because “active” *be* appears with an adjective marked [+Active].

(127) I made Jane be polite (Rothstein 1999: 350, ex. (8a))

Note that the agentive inference cannot be said to be due to *make* alone, because not all predicates are equally acceptable in this structure. In (128) we see that simple state predicates do not work very well.

(128) a. #I made Jane own the typewriter
 b. #I made Jane know the answer
 c. #I made Jane be tall

Therefore, once “active” *be* is admitted in the grammar, the prediction is that wherever there is an agentive inference in an adjectival predication, “active” *be* is responsible. Rothstein shows that this is not borne out. In (129), examples (a) and (c) are fine and there is an agentive inference, but examples (b) and (d) show that these adjectives are deviant in the continuous aspect.

- (129) a. I made the children be ready at three
 b. #The children are being ready at three
 c. I made Jane be awake for the visit
 d. #Jane is being awake for the visit

(Rothstein 1999: 361, ex. (46a-d))

“Active” *be* predicts grammaticality across predicate classes and contexts that produce agentive inferences, and so all the examples in (129) should be equally acceptable. Instead, they show that “active” *be* is based on the wrong generalisation.²⁹

3.7.3.2 “Active” *be*: *Specific Properties and an Alternative Perspective*

The sum of these general problems is enough to cast serious doubt on the existence of “active” *be*. Partee (1977) proposes it only out of apparent necessity. However, untangling the data that appear to motivate it is worth the effort because it reveals an important connection to the properties of EAs.

There are two specific motivations for “active” *be*. Both are related to the observation that the continuous with adjectives seems to impose restrictions that the continuous with verbs does not: that the subject be (i) volitional and (ii) animate. We’ll discuss each in turn.

First, (130) provides an example with sound emission adjectives. As mentioned above in footnote 28, these adjectives also take the continuous aspect. Although they generally fall outside scope of this thesis, they are the adjectives that originally motivated the specific properties of “active” *be* in Partee’s analysis.

- (130) John is being loud/noisy/quiet

Partee observed the contrast in (131) and suggested that the deviance of the latter example is accounted for if the continuous with adjectives requires volition.

²⁹ This argument is valid for coercion accounts in general. It shows that the appearance of an agentive inference in one context is not predictive of grammaticality in another—even if the second context also produces an agentive inference.

However, Rothstein’s examples are not a problem for Fernald (1999) in particular because the input to Evidential Coercion is restricted to IL predicates and Rothstein’s examples use SL predicates. The important point, though, is simply that agentive inferences are not trustworthy guides.

(131) a. The children are being quiet right now because they want a story

(Partee 1977: 306, ex. (59))

b. ^(?)The children are being quiet right now because they're asleep

(Partee 1977: 306, ex. (58))

In section 3.4.2 we saw that volition is only an implicature with EAs, and (132) shows that the same is true of sound emission adjectives:

(132) The children are being quiet on purpose/unintentionally

So volition is not an entailed property and does not support the existence of “active” *be*.

In the case of this particular contrast, I would like to offer a simple explanation. The continuous aspect is the natural choice when highlighting the relevance of the simultaneous instantiation and incompleteness of the eventuality at a specific moment; hence the use of *right now* in (131). In this respect, the continuous contrasts with other tense/aspect combinations that induce a temporal sequence that in turn implies a temporal span. The present perfect in English is an example (*e.g. The children have been quiet for the last hour*). So, if the continuous aspect is used there is the expectation that it convey something informative about the instantiation of the predicate at a specific moment.

In (131a), the content of the two clauses is non-trivial: the children wanting a story explains the children's sound production at a moment referred to by the continuous. On the other hand, all else being equal, the content of the two clauses in (131b) is not particularly illuminating: if the children are asleep, they probably are quiet. And yet, the continuous creates the expectation of something more informative, something more worthy of mention. Therefore, all else being equal, the mild contrast in (131) does not reflect volition, but informativeness with respect to the use of the continuous.

In support of this explanation note that as soon as all is *not* equal, any deviance disappears. For instance, focussing *asleep* in (133) makes the sentence perfect. This would be appropriate in a context where the addressee is unaware that the children are asleep, so being told this constitutes new information and it is an explanation for the children's soundlessness.

(133) The children are being quiet right now because they're ASLEEP

The last property “active” *be* is said to have is an animacy restriction. Sound emission adjectives are intransitive, and in the present simple, they take animate and inanimate arguments ((134a, c)) equally well. So in general, sound emission adjectives do not have an animacy restriction. When it comes to the continuous, however, there is a contrast: only animate arguments seem acceptable ((134b) vs. (134d)).

- (134) a. John is noisy
 b. John is being noisy
 c. The river is noisy
 d. *The river is being noisy

(Partee 1977: 306, ex. (50)-(53))

Comparing (134) with (135) shows that the continuous aspect itself does not have an animacy restriction:

- (135) a. John makes a lot of noise
 b. John is making a lot of noise
 c. The river makes a lot of noise
 d. The river is making a lot of noise

(Partee 1977: 306, ex. (54)-(57))

Thus the conclusion that “active” *be* imposes an animacy restriction.

I would like to suggest that the conclusion drawn from the contrast in (134) (*i.e.* that the continuous with adjectives has an animacy restriction) is the incorrect empirical generalisation. The data in (136) show that inanimates are, in fact, natural with sound emission adjectives in the continuous.

- (136) a. If you add anti-vibration mounts and you still find **your computer is being noisy**, you may want to take a closer look at the fan and fan filter (Internet)
 b. If the packet loss or jitter seems to be coming from inside your own network, check your connections yet again and try switching out equipment on your network to see if something on **your LAN is being noisy** (Internet)

- c. Being regular may also be one of the reasons why gas can occur more frequently in the mornings, although for most, that is hardly a bad thing. WebMD mentions that contractions from the small intestine can actually cause gassiness and a noisy tummy, which most people refer to as a growling stomach. **The stomach however is being quiet** and the noises heard and excessive stomach gas that can result are simply a product of contracting muscles as they move air about through the digestive tract during regular morning bowel movements (Internet)
- d. I added in two Corsair Air Series 120mm Fans in case **the radiator is being loud** (Internet)

Therefore, there is no paradigm contrast between (134) and (135). Rather, something has to be said about (134d) (*i.e.* **The river is being noisy*) in particular, and I address it presently.

But let's pause for a moment to collect the conclusions from what has been said so far. At this point, "active" *be* is left without distinguishing formal features. All the theoretical and empirical points given in these two sections on "active" *be* illustrate that it does not offer a promising general solution to agentive inferences or the behaviour of EAs. For these reasons, it seems reasonable to conclude that there is no non-stative copula in the grammar.

With regard to the contrast in (134), we have now seen that there is another adjective class, in addition to EAs, that takes the continuous. The examples in (134) are interesting for two reasons: (i) they are emission predicates, and (ii) there seems to be variability in their acceptability in the continuous ((134d)). We turn to the first point immediately. The second is addressed in section 3.7.3.3.

I have argued that EAs are stative causatives. In order to make the case, I drew a parallel with the verbs that RH&L (2000) identified as such (section 3.5). These verbs were, specifically, verbs of emission: sound emission (*e.g. hum*); light emission (*e.g. gleam*); smell emission (*e.g. stink*); substance emission (*e.g. bubble*). These verbs are stative causatives that pass eventivity tests. The fact that sound emission adjectives turnout to take the continuous aspect and give rise to agentive inferences is not a problem, but an indication that we are making the right cross-category connections.

Sound emission adjectives such as *loud*, *noisy* and *quiet* clearly satisfy the Sub-Interval Property in that they are true at atomic moments. This makes them states, not

activities. This makes the comparison between the paradigms in (134) and (135) misleading because it was intended as a parallel comparison between two non-stative verbs: “active” *be* and *make*. The parallel breaks down once (134) is reclassified as stative causative.

As a stative causative predicate, we expect a different pattern. We now expect *noisy* to produce agentive inferences in pseudo-clefts when the subject is animate ((137a)), just like EAs ((137b)):

- (137) a. [?]What John did was be loud
 b. [?]What John did was be rude

But since *noisy* is an emission predicate, we expect deviance in pseudo-clefts when the subject is inanimate ((138a)), just as was the case with emission verbs ((138b)):

- (138) a. ^{??}What the computer did was be noisy
 b. ^{??}What the garbage did was stink (RH&L 2000: 284, ex. (48c))

In all these cases, the subject is interpreted as the Causer of the noisiness, the rudeness, or the stench. And in all these cases the predicates are stative causative. The difference in the acceptability between (137) and (138) is due to one variable: the animacy of the subject. In (137) animacy and the causative structure combine to produce an agentive inference that masks the stativity of the adjective. But once animacy is subtracted, the stativity of the predicate makes its degradedness in this context even more apparent ((138)).

The first general conclusion about sound emission adjectives is that we are finding cross-category regularity with emission verbs. The second is that the connection drawn between EAs and emission verbs as members of the same overarching aspectual class receives independent support from the emergence of the parallel behaviour of emission adjectives. These are predicates of the same class, even though there are individual differences among the members.

Traditionally, the continuous aspect is taken to be a diagnostic for non-stativity. On the present proposal, the continuous has a different value: the ability of a predicate to appear naturally in the continuous is an indication that the input to the continuous is a causative predicate. In other words, here the continuous is an eventivity diagnostic.

Noisy is a stative causative. Therefore, it should be able to take the continuous aspect, and it does. But, there is variation in its acceptability depending on the properties of its subject, as seen in (134).

The first step in addressing this variability is understanding where emission adjectives fall on the scale in (139): if they are very stative, they are expected to have difficulty with eventivity diagnostics such as the continuous. I will show that this is part of the explanation.

If we compare sound emission adjectives with sound emission verbs in the continuous aspect, there is an immediate difference in acceptability. The former are marked in some sense ((140a)), but the latter are run-of-the-mill ((140b)).

(140) a. ??The river is being noisy

b. The wind/engine is humming

But, sound emission verbs are on the high end of the stativity scale: if it weren't for the fact that they satisfy the Sub-Interval Property, they would seem like processes. So (140b) is an illustration of a stative causative on the high end of the scale correspondingly passing an eventivity test with flying colours.

Sound emission verbs also have a particular characteristic: they are onomatopoeic. They immediately call to mind a very specific type of sound: *buzz*, *hum*, *rumble*, *screech*. This gives them a clear texture.

Now, compare them with sound emission adjectives: *loud*, *noisy*, *quiet*. Sound emission adjectives convey the vaguest possible notions of sound. They have no identifiable texture—only a context dependent standard.³⁰ If the concepts of sound emission verbs are almost processes in that they convey a sound that has an identifiable

³⁰ See chapter 4 footnote 13 for psycholinguistic evidence that the phonological form of nonce verbs affects eventivity judgements.

internal pattern, the concepts of sound emission adjectives are the opposite. So, sound emission adjectives are different from sound emission verbs.³¹

In fact, they seem most comparable with smell emission verbs, such as *stink*. Smell emission verbs don't convey any particular smell, and smells do not have an identifiable internal pattern. Smell emission verbs are the most stative and least process-like on the scale in (139).

Following this reasoning, sound emission adjectives could be expected to pattern like smell emission verbs. And as the least process-like, we expect them to have trouble with eventivity diagnostics. The judgements for the smell emission verb pair in (141) show that this is borne out. Furthermore, if compared with the sound emission predicates in (140), we see that the properties of the subject affect the judgements.

- (141) a. ^{??}The couch is stinking
b. [?]The garbage is stinking

Example (141b) illustrates that the verb *stink* certainly can take the continuous with an inanimate subject, especially when that subject is obvious in some sense. With a less obvious subject, however, the sentence requires something more to support it. I propose that this is part of what is happening with emission adjectives in the contrast in (142):

- (142) a. ^{??}The river is being noisy
b. The computer is being noisy

Summarising the important points from the discussion of variability so far:

- (i) Stative causatives lie on a continuum of stativity.
- (ii) Even though all members are test positive for eventivity, the higher a member is on the continuum, the better it will fare with event diagnostics, and the lower a member is, the more difficulty it can have.

³¹ In chapter 1 it was argued that the category distinction between verbs and adjectives tracks a conceptual aspectual difference: verbs can convey change, but adjectives cannot. This makes adjectives transparently stative. Taking this to be the case, adjectives can be expected to be shifted down the stative continuum with respect to verbs. Specifically, sound emission predicates appear as both verbs and adjectives, but we have seen that sound emission verbs are higher on the continuum. Since the verbal category can denote change, the category itself is conceptually more eventive than the adjective category. Correspondingly, verbs rank higher on the conceptual continuum in a direct comparison with adjectives.

- (iii) The continuous aspect is an eventivity diagnostic.
- (iv) Sound emission verbs are high on the scale and they take the continuous naturally regardless of animacy.
- (v) Sound emission adjectives and smell emission verbs are lowest on the scale.
- (vi) Depending on the type of subject, their apparent behaviour in the continuous varies.

Yet the stative continuum is only part of the answer. The other part concerns the properties of the subject directly.

In discussing RH&L (2000) in section 3.5, *responsibility* became central to causation and being a Causer argument. For an emission verb, its external argument is conceived of as a Causer because it produces the effect it does due to its own internal composition. So, when a lamp shines, the light produced is due to the integral properties of the lamp: the conjunction of the properties of the lamp cause the shining.

In this connection—specifically in the case of stative causatives—we might expect the abstractness of the composition of the Causer to have an effect on the interpretation of the sentence with respect to eventivity tests. Namely, the more abstract its composition, the more difficult it is to conceive of its internal structure. The weaker our conception of the Causer's internal structure, the weaker the conception of the cause. Since these predicates are already stative, if the conception of the cause is too weak, the result of an eventivity diagnostic will be degraded.

This seems to be what we find in the contrast with *noisy* and inanimates in the continuous aspect:

- (143) a. ??The river is being noisy
 b. The computer/fan/radiator is being noisy

When the subject is a device with internal parts that do something, we find real examples of sound emission adjectives in the continuous with inanimates ((136), (143b)). Just like with the lamp above, it is easier to have a conception of a mechanism producing a result.

But when we move to a natural force like a river, how it is that a river produces sound is a very abstract thing with no tangible parts. Example (143a) certainly is a

possible utterance—the continuous with *noisy* is produced by the grammar—but as an utterance, it needs contextual support of some kind.

The stative continuum and the properties of the subject complement each other. The higher a predicate is on the continuum (*i.e.* the more process-like it is), the less the properties of the subject interfere with eventivity tests. Sound emission verbs are highest on the continuum and the properties of the subject do not seem to affect it:

- (144) a. The engine is humming
 b. The wind is humming

But if a predicate is low on the continuum, and in consequence, it independently has trouble with eventive contexts, an abstract Causer does not help solidify the cause. So, sound emission adjectives with abstract subjects can produce marked judgements. We will come back to this in section 4.2.3. In the next section, I will appeal to the continuum again in order to address variability among EAs with respect to eventivity diagnostics.

In closing this section it is worth underlining an important implication of the variation discussed here. This section has identified parameters of variability with respect to eventivity diagnostics. The implication is that there is no primitive event argument: if the event argument were a semantic primitive, independent factors such as a conceptual scale and the properties of the subject should not influence it. On the other hand, if eventivity is an inference dependent on the description of a causal relation, variation is expected. This is what we find. So in this section we have seen the further empirical indications that eventivity is not primitive. In chapter 4 this argued at length.

3.7.4 *EAs: the Elements of Unification*

At this point, the arguments against the possible alternative approaches to EAs have been given. Approaches that account for their behaviour by positing an ambiguity in the adjective (*i.e.* IL/SL/activity denotations), or by positing a single denotation and a coercion operation, or by positing an ambiguity in the copula itself, raise serious doubts both at general and specific levels.

In this section, the positive evidence for a unified account is pulled together. First, the data pattern characterising EAs is presented (section 3.7.4.1). Second, variability in EA data is discussed in light of the stative continuum (section 3.7.4.2). Lastly, arguments are given to show that there is no EA predication without an entailed CP.

3.7.4.1 *The EA Data Pattern*

In chapter 2 extensive arguments were presented to substantiate the causative alternation paradigm in (145). Syntactically, it was shown that (i) the EA CP always originates in complement position, (ii) there is no external argument in the *that*-clause data and (iii) the animate argument in the other forms always behaves like an external argument. Syntactically, EA argument structure is consistent.

(145) a. That Emma left was rude	= Causative Unaccusative
b. It was rude that Emma left	= Causative Unaccusative + Extraposition
c. Emma was rude to leave	= Transitive Causative
d. Emma was rude	= Transitive Causative with Implicit CP
e. To leave was rude (of Emma)	= Transitive Causative + Passive
f. It was rude (of Emma) to leave	= Transitive Causative + Extraposition + Passive

We also saw that they are uniformly factive wherever testable:

(146) #Emma was brave to resist but she didn't resist

This chapter has shown that EAs have the temporal properties of eventive predicates. Just like eventive predicates in English in general, in the present simple EAs are interpreted generically ((147a)). But, in other tenses, an existential reading appears ((147b)). EAs also take the continuous aspect naturally ((147c)) and they can be interpreted as having temporal duration ((147d)).

- (147) a. Emma is brave (* \exists /Gen)
 b. Emma was brave (\exists /Gen)
 c. Emma is being brave
 d. Emma has been brave

EAs pass the eventivity diagnostics of perception reports ((148a)), locative modification ((148b)), and manner modification ((148c)). Example (148c) is a dictionary entry taken from a vocabulary building guide written by a former editor of *The New York Times*.³²

- (148) a. I saw Emma be brave
 b. Emma was brave in the kitchen
 c. *Intrepid*: this adjective is a synonym for resolute. Someone who is intrepid is fearlessly brave (Fiske *et al.* 2006: 59)

Despite the evidence for eventivity and producing agentive inferences, diagnostics that target inner-aspect alone show that EAs are always stative. In (149a) EAs pass the *take-time* test, which in general, only statives do. Example (149b) shows that EAs do not have a process to measure. And the unacceptability of (149c) confirms this. Lastly, as only statives do, EAs always have the Sub-Interval Property: they are true of atomic moments on all their usages.

- (149) a. It took Emma five minutes to be brave
 b. ??Emma was slowly/quickly/little by little brave
 c. *Emma was brave. This happened while the police confronted the students

Aspectually, this seems like an odd set of properties. But we found that the existence of stative causatives has been independently identified (RH&L 2000; *cf.* Maienborn 2005b)) and EAs fit the same pattern. If a class of stative causatives that

³² In case it is suspected that modifying adjectives with adverbs is a recent development, here is an example published in *Appendix to the Congressional Globe*, edited by United States Congress (June 1838: 492).

(i) Capt.—was **fearlessly brave**, and although severely wounded, continued to head his company in the most gallant manner, until he received another severe wound, when he was taken from the field.

The same continuum can be adapted and applied to EAs. EAs are a big class, and within it, some reflect concepts that are more abstract, others more palpable. The adjectives *intelligent*—that prototypical IL predicate—and *rude* seem to mark the two respective ends of scale. Indeed *intelligent*, in most contexts, does feel very stative, and in the continuous aspect (*e.g. Peter is being intelligent*) without contextual support, it may seem less than perfect.

On the other hand, substituting *rude* for *brave* in the eventivity diagnostics in (148) produces even firmer judgements than *brave* does. In this connection, Kertz (2010) concludes that *intelligent* is only IL, but *rude* is genuinely ambiguous. She proposes that only EAs that select a *to*-PP are ambiguous: *rude* does so, *intelligent* does not.

Yet, I maintain that any member of the EA class can be substituted into the blocks of characterising environments in (145)-(149). In fact, when it comes to pure syntactic facts such as the causative alternation paradigm ((145)), pure semantic facts such as factivity ((146)), the interpretation of tense ((147) (with qualification for the continuous), or pure stativity diagnostics ((149)), *intelligent* and *rude* behave exactly the same. Multiple denotations would be missing significant commonalities. We only find judgement variability when it comes to eventivity diagnostics.

But then, it is relatively easy to find examples of *intelligent* being used in these eventive environments ((151b)), and explicit claims that it is fine in the continuous ((151a)). The acceptability of *intelligent* in these environments is part of what makes IL coercion analyses necessary if one assumes the IL/SL distinction.

- (151) a. Max is being intelligent (Fernald 1999: 54, ex. (37d))
 b. Our grandfather, Calvin Whitt, was a practical, kind man, in addition to being shrewdly intelligent (James Sizemore, *Dearest Cousin*)
 c. ??I saw John be intelligent

When *intelligent* is less acceptable, such as in perception reports ((151c)), we now have tools to understand why. On the one hand, the verb *see* entails perception, but intelligence is a very abstract property; on the other, we have the stativity continuum that places *intelligent* on the lowest end. Thus, the high stativity of this abstract property sheds light on its deviance in perception reports. Nevertheless, *intelligent* does work in eventivity environments—just as it should on this stative causative analysis.

Comparing *intelligent* and *rude* with respect to RH&L's stative continuum captures the intuitions that these adjectives are still different in some way. Smell emission verbs and sound emission adjectives are the most stative. These are the stative causatives that have the least identifiable internal texture. As a cognitive property, this seems to be true of *intelligent*.

On the other end of the scale, sound emission verbs are the most process-like. Verbs like *hum* can be associated with a particular, rhythmic sound. *Rude* is similar in that it is vivid. Compared with *intelligent*, it is easy to imagine how rudeness can have a target. In fact, this seems to condition the availability of a *to*-PP: if an EA is high on the continuum in terms of seeming process-like and the property it denotes can be directed at people, then the EA expresses this as a *to*-PP (e.g. *generous, nice, rude*). Since *intelligent* is low on the continuum and the characteristic it denotes is not easily conceived of as targeting an individual, it does not license a *to*-PP: *Peter was intelligent to Philip* can only mean "in Philip's opinion, Peter was intelligent".

But even in the case of an EA as vivid as *rude*, it is clear that it is stative: example (152a) has the state on-set reading (recall that activities are unacceptable in this context, e.g. *#It took them 30 minutes to walk in the park*); (152b) does not measure the speed of the process like an activity (e.g. *I ate my lunch slowly*); and (152c) is deviant.

- (152) a. It took Peter two minutes to be rude to Philip
 b. #Peter was slowly/quickly/little by little rude to Philip
 c. *Peter was rude to Philip. This happened while I was talking to Emma

So, both *intelligent* and *rude* are members of the stative causative class—they just fall on different ends of the spectrum.³⁴

³⁴ In her appraisal of EA *to*-PP data, Arche (2006: 96-98) concludes that the argument is a Goal rather than an affected argument because an affected argument is the undergoer of change, and there is no change in this case. I would like to add that this is also an indication that these data are stative. In connection to Arche's observation, note that with *to*-PPs there is no entailment that the object is truly affected by the EA property. For example in *Peter was rude to Emma*, there is no way of knowing if Emma perceived the rudeness.

Since affectedness mischaracterises the data, in the main text I used the words "target" and "directed at" to describe the object of the EA *to*-PP. I would like to stress, however, that there is no entailment of *motion* here, and the stativity of the data is beyond doubt. To see this, let's compare EAs with PAs. In (i) the PA denotes a simple state. Example (ii) shows that even PAs can select a complement PP. This PP is interpreted as the target of Victoria's anger. Yet, the inner-aspect of the predicate remains constant in (i) and (ii): it is the same predicate and it is stative. So, mental states can have target. With EAs in (iii), the same thing happens. The tests in (152) show that these EAs *to*-PP data are just as stative. Furthermore, examples (iv) and (v) show that Spanish uses the same preposition in these cases.

Before moving on to the last kind of EA variability that we will consider, it is worth pointing out that combining the different kinds of stative causative predicates with the *What X did ...* test illustrates the scale. We have seen that this test is not reliable because it is fuzzy: it is skewed both by the animacy of the subject and the presence of causation, while not necessarily distinguishing clearly between states and non-states.

Thus, we have the partial scale in (153). An activity verb is fine irrespective of animacy ((153a, b)). A stative causative denoting a physical state is mildly deviant ((153c)). An EA high on the scale is similarly deviant ((153d)), and an EA lower on the scale is slightly more so ((153e)).

- (153) a. What John did was roll down the hill
 b. What the boulder did was roll down the hill
 c. ^(?)What Peter did was sleep
 d. ^(?)What Peter did was be rude
 e. [?]What Peter did was be intelligent
 f. What Emma did was hum
 g. ^{??}What the computer did was hum
 h. [?]What Philip did was be noisy
 i. ^{??}What the computer did was be noisy
 j. *What Hugo did was be sick/tall
 k. *What the pole did was be tall

A sound emission verb (*i.e.* high on the scale) with an animate subject is fine ((153f)), but switched with an inanimate, it worsens ((153g)). A sound emission adjective (*i.e.*

-
- (i) Victoria was angry
 (ii) Victoria was angry at Peter
 (iii) Peter was rude (to Emma)
 (iv) Pedro estuvo enfadado con María (Spanish)
 Peter *estar*-PAST angry with Mary
 ‘Peter was angry with Mary’
 (v) María fue cruel con Pedro (Spanish)
 Mary *ser*-PAST cruel with Peter
 ‘Mary was cruel to Peter’

These data show that the presence of an argument PP and the intuitive meaning of the preposition do not affect the inner-aspect of the predication. All of these examples are stative. I have chosen the words “target” and “directed at”—instead of Arche’s Goal—in order to avoid terminology that implies that motion is involved here. These data show that states can have targets, and since no change is involved, stativity is constant. Lastly, the difficulty in finding unambiguous, innocuous labels for thematic roles is an indication that thematic roles are not primitives. Section 4.4.3 proposes to derive them.

low on the scale) with an animate subject is slightly deviant ((153h)), and again it gets worse with an inanimate (((153i))). Lastly, (153j) drops off the stative causative scale into the realm of static states, which get progressively worse with respect to the animacy of the subject ((153k)). This shows that this test does not distinguish any one thing.

As for stative causatives, they are relatively acceptable in this test, and they are consistently better if the external argument is animate. This is important because it shows that animacy and agentive inferences improve things across the board. Specifically for our purposes, it means that EA agentive inferences do not require an explicit explanation. Agentive inferences arise across categories, in many different contexts, and they even appear in order to make non-causative predicates seem better: the only way of making sense of (153j) is to interpret Hugo as intentionally making himself sick or tall. But there is no coherent supporting syntactic or semantic evidence that motivates a causative analysis of *sick* or *tall*. Correspondingly, (153k) is impossible. We have found other invariable syntactic and semantic reasons to analyse EAs as stative causative alternating predicates (section 3.7.4.1), but agentivity inferences are a red herring.

Let's turn now to a final specific case where there is variability in EA acceptability: EA CP manner adverb data. Combining a causative alternation analysis with the understanding that EAs vary in the degree of their stativity sheds light on the pattern. The grammatical examples are repeated in (154)-(156).

- (154) a. Why should I have consulted you, when you were being obnoxiously stubborn about the issue?
 b. He was obnoxiously stubborn to refuse
 c. It was obnoxiously stubborn (of him) to refuse
- (155) a. She is viciously arrogant in her treatment to her inferiors [...]
 b. If it had an impact, surely A[ir] F[rance] would be silly and viciously arrogant to think they can do nothing and expect it to go away
 c. It would be viciously arrogant of AF to think they can do nothing and expect it to go away
- (156) a. They will be deviously careful and will use EVERY advantage
 b. [...] business consortiums are deviously careful not to mention E-Verify [...]
 c. It is deviously careful of business consortiums not to mention E-Verify

On the present theory, this is exactly as it should be if these are causative transitive active and passive structures. The examples in (157) show that causative alternating verbs behave the same way with comparable manner adverbs.

- (157) a. Hugo broke the chair carefully
b. The chair was carefully broken (by Hugo)

However, when it comes to the EA *that*-clause structures, there is relative acceptability. On the present theory, these structures are unaccusatives:

- (158) a. ??It was obnoxiously stubborn that he refused
b. ?It was viciously arrogant that AF thought that they could do nothing and expect it to go away.
c. *It is deviously careful that business consortiums do not mention E-Verify.

Example (158c) is ungrammatical, (158b) is somewhat deviant, and (158a) is noticeably more deviant.

Now, note that manner adverbs are ungrammatical in unaccusatives:

- (159) *The chair broke carefully

We can understand the deviance of (158a, b) and the ungrammaticality of (158c), as well as the grammatical examples in (154)-(156), on a causative alternation analysis, once they are qualified by the stative continuum.

First, the grammatical examples in (154)-(156) follow automatically from the parallelism with (157).

But, the parallelism breaks down with the unaccusative data. There is, however, one obvious difference between (159) and (158): the former only has a DP Theme argument, but the latter has a full CP that contains the argument that would become the Causer upon insertion of an external argument. In (154)-(156), we see that as soon as that happens, the sentences become completely grammatical.

Putting all these elements together, the explanation for the whole EA manner adverb paradigm is straightforward: the reason why we find deviance just with a *that*-clause is because it is unaccusative and manner adverbs are not licensed here, just as in

(159). The additional complication is that within the *that*-clause lies a potentially understood Causer. Yet, if the adjective is low on the stative continuum, the sentence remains totally ungrammatical: *careful* denotes a very abstract property that is not directed at others, and (158c) is highly marked.

In contrast, as the adjective moves up the scale, it is able to pick up on the referent of the embedded subject with the corresponding degree of success: *arrogance* is a vivid concept and it does quite well, but *stubbornness* is more obscure and it does worse.

The explanation is intuitive and it makes sense once a continuum is admitted. In sum, the overall paradigm, the fact that the deviance only appears where it does, and that it is gradient are all understood by combining the causative alternation analysis and the continuum.

I have discussed the existence of judgment variability at a few points throughout this chapter. I have done so because the qualifications flesh out the proposal and indicate how the deviance of some data points can be handled. We have seen how pragmatics and conceptual knowledge interact with the syntax and semantics in reasonable ways.

3.7.4.3 *The EA CP is Always Entailed*

The overarching reason for concluding that EAs always entail a CP, even when the CP is implicit, is that EAs uniformly fit the pattern of a causative alternating predicate.

The conceptual reasons to suspect that the CP is always there are:

- (i) Chapter 2 showed that when overt, the CP always patterned with a complement base-position; if it had been the case that there was variability in the base-position of the CP, it would be a strong argument against the omnipresence of the CP—instead we found uniformity.
- (ii) Important points of EA uniformity were the animate argument is external, the CP in complement position, it is always aspectually stative, and it is always factive.
- (iii) Once EAs are diagnosed as causative, not even the generic interpretation in the present simple (*e.g. Peter is intelligent*) supports the intuitive need for an IL denotation, because all causative predicates are interpreted generically in this tense in English.

Empirical evidence comes from the diagnostics that have EAs with and without the CP patterning together. This was the case with bare plurals and *there*-insertion repeated here as (160)-(161).

- (160) a. American consumers are smart (* \exists /Gen)
b. American consumers are smart to buy foreign goods (* \exists /Gen)
c. American consumers are eager to buy foreign goods (\exists /Gen)
(Kertz 2006: 230, ex. (3)-(5))

- (161) a. *There were lawmakers smart
b. *There were lawmakers smart to endorse the proposal
c. There were lawmakers eager to endorse the proposal
(Kertz 2006: 230, ex. (6)-(8))

On an ambiguity account this is not expected because the presence of the CP signals a shift from an IL predicate to a SL level one. On a uniform account of EAs, they are correctly expected pattern together, whether or not the CP is overt.

Likewise, EAs behave the same with respect to the interpretation of tense ((162)) and the acceptability of manner adverbs ((163)):

(162) Emma is/was/has been/will be brave (to resist)

- (163) a. They will be deviously careful and will use EVERY advantage
b. [...] business consortiums are deviously careful not to mention E-Verify [...]

Turning now specifically to entailment patterns, in chapter 2 we saw that when the EA CP is overt, it is always entailed:

- (164) a. #It was rude that Peter left, but in the end he didn't
b. #Peter was rude to leave, but in the end he didn't
c. #It was rude of Peter to leave, but in the end he didn't

Example (165) attempts to show the same thing with a ball-park paraphrase of what EAs express on this stative causative analysis. It is an attempt to circumvent the fact that we are testing for a null element. In the first clause the EA predicates of an

individual, and in the second, the EA explicitly modifies a negative polarity item substituting for a CP.

(165) #Peter is rude, but he has never been responsible for anything rude

If there were two EA denotations, one with and one without a CP, there should be a reading of (165) on which the two clauses are not contradictory. Instead, to utter (165) is to deny any evidence of Peter's rudeness, and therefore stating that Peter is rude is a vacuous claim. Since we are testing for a null element, (165) is indirect evidence for the presence of the CP in examples that are apparently monadic, such as *Peter is rude*. The contradiction follows from including the CP in the EA denotation, in parallel to (164).³⁵

The fixity of the CP entailment is reinforced by a comparison with EA *to*-PP data. Stowell (1991: 129) observed that an EA with a *to*-PP implies a situation in which the property is instantiated ((166b)), while an EA with a CP does not necessarily imply a *to*-PP ((166a)). In confirmation of Stowell's judgements, it has been noted that EAs have a deontic component to their meaning (*cf.* Jackendoff 1972; Rawlins 2008). This means that what qualifies as, *e.g.* *rude*, can be established by a set of rules, or convention. One such setting is a royal court. The rules of the court establish when it is appropriate to speak, and when it is not. In such a setting (166a) can be true via a rule book, even though no one in particular was the target of the rudeness.

(166) a. Katherine was rude to speak

⇒ Katherine was rude to the court/to the queen

b. Katherine was rude to Emma

⇒ Katherine was rude to Emma in some situation

However in (166b), when someone is the target of rudeness, some situation necessarily accompanies it. So it seems that EAs always entail a CP denoting some situation, but they don't always entail a *to*-PP.

³⁵ In support of this, let's compare EAs with RAs. Example (165) is vacuous, but the paraphrase used is comprehensible ((i)). In contrast, using the same paraphrase with RAs is simply inappropriate ((ii)). This contrast in propriety shows that the paraphrase in (165) is helpful in targeting the properties of EAs because it supports the meaning difference between the two classes (*i.e.* EAs are transitive causatives and RAs are intransitive simple states).

- (i) Peter is rude, and he has been responsible for many rude situations
- (ii) ###Peter is tall but he has never been responsible for anything tall

In their recent discussion of optionality in argument realisation, RH&L “suggest that the components of meaning that a verb lexicalises are precisely those elements of meaning that are entailed in all its uses” (2012: 175). I propose extending this suggestion from verbs to predicates in general in order to hold for adjectives, as well. In the terms of the present proposal RH&L’s proposal can be rephrased as follow: the only arguments included a predicate’s denotation are those that are entailed in all its usages.

We have seen that whenever the EA CP is overt EAs are factive, so the CP is entailed in these cases ((164)). When the CP is absent, (165)-(166) argue that the CP is also entailed. Therefore conceptual motivation and empirical fact support the conclusion that the CP is always part of the EA denotation that I propose in (167). This denotation is the only EA denotation, and the CP entailment is captured by the inclusion of the propositional variable, q . This argument is additionally codified as existentially presupposed with Beaver’s (1992) presupposition operator ∂ because EAs are factive.

(167) *Template EA Denotation* (Version 1 of 2)

$$\|EA\| = \lambda s_2 \lambda s_1 \lambda x. \partial \exists q [\text{CAUSE}(EA(x, s_1), EA(s_2, q))]$$

In contrast, the EA *to*-PP is not mentioned in the denotation because the *to*-PP is not always entailed.

Thus far, I have not addressed these *to*-PPs systematically. Not all EAs select these PPs. In section 3.7.4.2, I proposed that there is a correlation between an EA’s place on the stative continuum and the appearance of the PP: the more process-like the adjective, the more likely it is to have a *to*-PP.

Importantly, data in that same section showed that EAs’ inner-aspect remains stative with a *to*-PP, so a separate a denotation for the PP data is not motivated on aspectual grounds. For these reasons, I conclude the *to*-PP is not part of any EA denotation, but a peripheral phenomenon. I leave the interesting question of how to best account for this argument selection variability to future research.

The central conclusion from this section is that the overall EA pattern supports the conclusion that they always entail a CP, even if that CP is implicit.

3.8 Conclusions

This chapter continued to argue for the viability of a stative causative, causative alternation analysis of EAs. It did so by showing that

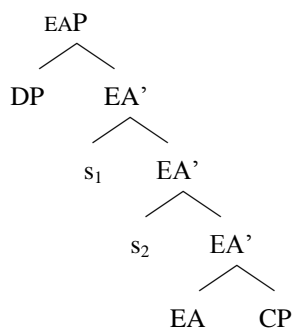
- (i) EAs are aspectually distinguishable from other adjective classes in that they pass eventivity tests.
- (ii) EAs are consistently stative.
- (iii) EA argument structure is uniform with the CP in complement position (and the *to*-PP is not part of the denotation).
- (iv) Alternative approaches that appeal to the IL/SL distinction, IL/activity denotation, coercion, or “active” *be* face many difficulties.

At this point, the inner-aspect of the three adjective classes that we are comparing has been examined in some detail. The principle aspectual contrast is between causatives and simple states:

(168) *Argument Structures of the Three Main Adjective Classes*

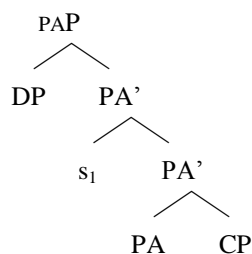
a. EAs:

Emma was rude to leave



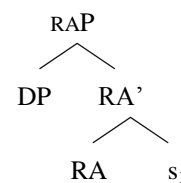
b. PAs:

Sam was eager to help



c. RAs:

Victoria was Canadian/tall



The next step is to substantiate conclusion that the causative versus simple state distinction makes the right aspectual cut. Chapter 4 focuses on the epiphenomenal nature of eventivity, the primitive nature of the state argument, and the nature of the representation of causation. These findings lead to the aspectual calculus outlined in chapter 1, and set the stage for the derivations of the EA paradigm in chapter 5.

Chapter 4:

The Theory of Inner-Aspect and Mapping to the IP Domain

4 Introduction

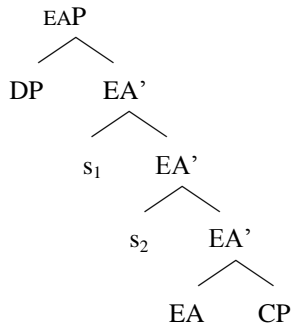
This chapter argues three main points:

- (i) The only primitive aspectual argument in natural language denotes a state. Building on the discussion thus far, it will be argued that there is no primitive event argument, and that eventivity effects are derivative of the causative nature of the predicate. So, eventivity is epiphenomenal.
- (ii) The only inner-aspectual distinction represented in the aspectual decomposition of a predicate is between stative causatives and simple states. This distinction can be seen in the adjective argument structures in (1a) versus (1b, c).

(1) *Argument Structures of the Three Main Adjective Classes*

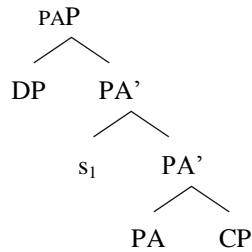
a. EAs:

Emma was rude to leave



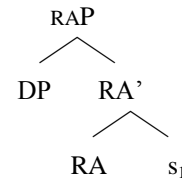
b. PAs:

Sam was eager to help



c. RAs:

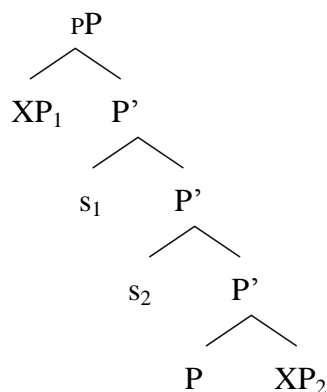
Victoria was Canadian/tall



- (iii) Lastly, (2) is the correct analysis of causation in lexical predicates. The generalised denotation in (2a) introduces the causal relation as a lexical property. The CAUSE relation partitions the predicate and its arguments into a causing-state description and a result-state description. So, (2a) says the predicate and its arguments stand in a stative causative relation.

(2) *Generalised Representation of Lexical Causation*a. $\|P\| = \lambda P \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(P(x, s_1), P(s_2, y))$

b.



The arguments in a causative predicate's denotation map onto the binary branching syntactic structure in (2b). This chapter will argue that causation is a lexical property and that a causal relation is built on state arguments in adjectives and verbs.

The chapter is structured as follows. Section 4.1 presents the connections between the representation of the event argument and the decomposition of inner-aspect. Section 4.2 makes four arguments for the state argument, and against a primitive event argument. In doing so, analyses of the active and passive voices, the continuous aspect, and existential *there* are presented. This will involve mapping the inner-aspect of the predicate to the inflectional domain of the clause (*i.e.* the IP domain). Section 4.3 collects the evidence for the syntactic representation of state arguments and the decomposition of inner-aspect. Section 4.4 argues from Japanese morphology that causation is not represented by a functional head, and that causation is a lexical property, as shown in (2a). Section 4.5 presents the analysis of spatio-temporal modification within this proposal. Lastly, section 4.6 provides an overview of aspectual system that emerges.

4.1 Basic Event Structure Notions

This section introduces the original motivation for the event argument and subsequent implementations. Section 4.1.1 presents the event argument's basic semantic properties. Section 4.1.2 presents the connection between eventivity and the decomposition of

inner-aspect. Section 4.1.3 outlines the novel prediction of this thesis that eventivity is the derivative effect of state arguments in a causative relation.

4.1.1 *The Primitive Event Argument*

Davidson (1967) argued for the existence of a spatio-temporal event argument using action¹ sentences such as *Jones buttered the toast*. Action verbs like *butter* offer evidence for an event argument with these properties because an action can be modified spatially and temporally. In addition, a pronoun can refer to the event argument directly. Thus, one can continue by saying *it happened in the bathroom at midnight*: *it* refers to the event of the buttering, and that event is located in space and time by adverbials. Davidsonian representations for these respective expressions are given in (3).

- (3) a. $(\exists e)$ (Butter(Jones, the toast, e))
 b. $(\exists e)$ (Butter(Jones, the toast, e) & In(the bathroom, e) & At(midnight, e))
 (cf. Davidson 1967: 93, ex. (19), (20))

The representation in (3a) shows that on Davidson's analysis the verb *butter* has an event argument as a third argument. The representation in (3b) shows that it is this argument that is modified by the adverbials (rather than the verb or the other arguments). In both representations the argument is existentially quantified, making it an extensional entity that can be referred to by the pronoun *it*. These basic facts motivate the existence of the event argument and its properties.

At the same time, Davidson noted that this analysis was not for all predicates (1967: 93). Not all predicates satisfy these criteria. In particular, in chapter 3 we saw that simple state predicates do not accept eventive locative modification ((4a)) or resumptive eventive pronominal reference ((4b)).

- (4) a. #Emma owned the typewriter in the office
 b. Emma owned the typewriter. #It happened in the office at midday

¹ In this chapter I use Davidson's (1967) terms *action sentences/verbs* in order to avoid confusion with stative causative predicates—which also satisfy eventivity diagnostics. The term *action* makes it clearer that stative causatives are not part of the standard discussion of eventivity.

Even though this distinction between action and simple state expressions is clear, in linguistic appropriations of the event argument it is common to assume that every predicate nevertheless has one. Once it is assumed that every predicate has an event argument, two strategies are available: either (i) the distinction between action and stative predications is left unanalysed (Higginbotham and Ramchand 1997: 54; *cf.* Katz 2000; Maienborn 2007), or (ii) it is assumed that the argument comes in two sorts, *i.e.* eventive and stative (*cf.* Parsons 1990; Ramchand 2008).

However, both of these strategies obfuscate Davidson's original point about the evidence for the event argument and its theoretical value. Maienborn (2005b, 2007) highlights exactly this when showing that the stative predicates that do not satisfy Davidsonian event criteria systematically lack a spatial dimension: they are interpreted only temporally ((5) vs. ((4a)). She calls statives of this latter type Kimian-States.

(5) Emma owned the typewriter for years

Maienborn makes this state-of-affairs even more pressing because she shows that the division does *not* lie between actions and states: there are also stative verbs that satisfy Davidsonian criteria (chapter 3). This leads Maienborn to posit two primitive types of aspectual argument: one that is mapped to space and time (*i.e.* a Davidsonian event argument), and another that is mapped only to time (*i.e.* a Kimian-State).

Yet, Maienborn's results raise foundational questions. First, there is a sub-set relation between the two aspectual arguments' properties (*i.e.* spatio-temporal, temporal): is the sub-set relation between two primitive entities, or can one be derived from the other? Second, what makes a *stative* event predicate different from an *action* event predicate? Building on chapter 1, these are questions that this thesis proposes to answer by deriving eventivity from state arguments in a causative relation.

4.1.2 Event Decomposition

The representations in (3) above show that the event argument addresses spatio-temporality, but not the details of inner-aspect. Theories of inner-aspect often decompose lexical predicates and associate them with more than a single aspectual argument. For example, the syntax and semantics of action verbs are given a bipartite

aspectual structure that corresponds to the cause and the result in a causal relation. In (6) we see Parson's (simplified) event decomposition representation of an atelic causative verb such as *push* ((6a)). In (6b) CAUSE relates the two Davidsonian sub-events e and e' , the respective cause and the result of the pushing.

(6) *Parson's (1990) Analysis of Atelic Causation*

a. Victoria pushed the cart

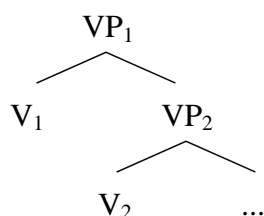
b. $(\exists e)[\text{Agent}(e, \text{Victoria}) \ \& \ (\exists e')[\text{Pushing}(e') \ \& \ \text{Theme}(e', \text{the cart}) \ \& \ \text{CAUSE}(e, e')]]$

(cf. Parson 1990: 109)

Example (7a) shows a syntactic representation that aligns with Parson's Neo-Davidsonian analysis in (6b). Hale and Keyser (1993) posit that the two verbal heads in (7a) correspond to the interpretative rule in (7b), where one sub-event causally implicates the second.

(7) *Syntactic Representations of Causation with Associated Event Decompositions*

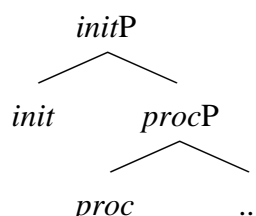
a. Traditional Representation



b. $e_1 \rightarrow e_2$

(cf. Hale and Keyser 1993: 69)

c. Contemporary Representation



d. $s \rightarrow e$

(cf. Ramchand 2008: 61)

Ramchand's more detailed syntax in (7c) has the same geometric relations, but in this case, the c-commanding causing head, *init(iation)*, is posited to denote a state (cf. Dowty 1979: 118), while the c-commanded head, *proc(ess)*, denotes an event ((7d)). Ramchand adopts Hale and Keyser's proposal that a causal implication relation between the aspectual arguments is read off the syntactic structure by interpretative rule.²

² The representation in (7d) is a simplification of Ramchand's interpretation of (7c). Ramchand assumes that the event variable is an argument of the two primitive aspectual predicates in (i) that determine the variable's interpretation.

Now, Parsons's and Ramchand's decompositions with two aspectual arguments in (6) and (7c), respectively, are only meant to capture atelic causatives. In contrast telic causatives, such as *break*, are often analysed as containing three aspectual arguments; the third one adds the specification of a result-state. So for an expression such as (8a), Parsons (1990) gives the (simplified) representation in (8b). In addition to having two event arguments in a causal relation, a telic verb has a third aspectual component, *s*, that stands in a change-of-state relation to the result-event of the causal relation:

(8) *Parsons's (1990) Analysis of Telic Causation*

a. Peter broke the chair

b. $(\exists e)[\text{Agent}(e, \text{Peter}) \ \& \ (\exists e')[\text{Theme}(e', \text{the chair}) \ \& \ \text{CAUSE}(e, e') \ \& \ (\exists s)[\text{being-broken}(s) \ \& \ \text{Theme}(s, \text{the chair}) \ \& \ \text{BECOME}(e', s)]]]$

(cf. Parsons 1990: 120)

Similarly, Ramchand (2008) represents the telic result-state with the syntactic projection *resP*. The sequence of aspectual heads in (9) is interpreted by the causal implication rule as an initiating state leading to an eventive process leading to a resultant state: $s \rightarrow e \rightarrow s$.

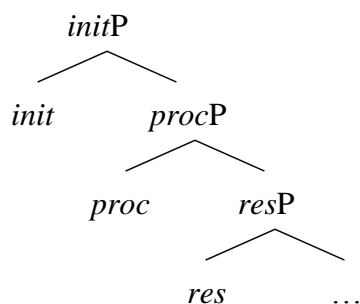
-
- (i) a. State(*e*): *e* is a state
b. Process(*e*): *e* is an eventuality that contains internal change

(Ramchand 2008: 44, ex. (6))

In Ramchand's notation the interpretation of (7c) as the aspectual structure of *Victoria pushed the cart* is (ii). (Ramchand proposes that the Process predicate introduces a Path relation with a variable *y* that is determined contextually (*i.e.* Y_c .) The causal implication rule that relates the aspectual arguments is $e = e_1 \rightarrow e_2$. I have conflated this with Ramchand's aspectual predicates in (7d) for simplicity.

- (ii) $\| \textit{Victoria push the cart} \| = \lambda e \exists e_1, e_2 [[\text{Path}(Y_c, e_2) \ \& \ \textit{push}(e_2) \ \& \ \text{Process}(e_2) \ \& \ \text{Subject}(\textit{the cart}, e_2)] \ \& \ \textit{push}(e_1) \ \& \ \text{State}(e_1) \ \& \ e = e_1 \rightarrow e_2 \ \& \ \text{Subject}(\textit{Victoria}, e_1)]$

(cf. Ramchand 2008: 61, ex. (38))

(9) *Ramchand's (2008) Syntax of Telic Verbs*

(cf. Ramchand 2008: 39, ex. (1))

Event decomposition highlights two important points. First, the assumption of an ontological distinction between events and states surfaces again. Second, semantic and syntactic approaches represent the aspectual decomposition of causatives two different ways: atelic causatives with a two aspectual arguments and telic causatives with three. This chapter will defend a different approach in arguing (i) that only state arguments exist, (ii) that aspectual decomposition contains maximally two aspectual arguments—two state arguments in a CAUSE relation—and not three, and (iii) that causation is a lexical property—not an interpretation rule or a syntactic head.

4.1.3 *The Event Argument and Eventivity*

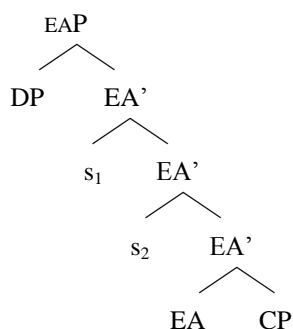
Before turning to the evidence for state arguments, I would like to highlight the curious empirical scene that this thesis presents.

Davidson posited an atomic event argument with specific semantic properties. Once aspectual decomposition is posited, establishing the eventive or stative content of the parts is an incumbent task.

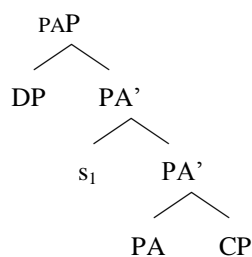
Considering the argument structures proposed here, the adjective classes in (10) (repeated from (1)) represent different sorts of stative predications. EAs in (10a) are more complex in that they contain two state arguments.

(10) *Argument Structures of the Three Main Adjective Classes*

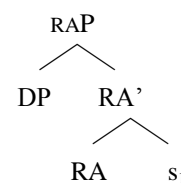
a. EAs:

Emma was rude to leave

b. PAs:

Sam was eager to help

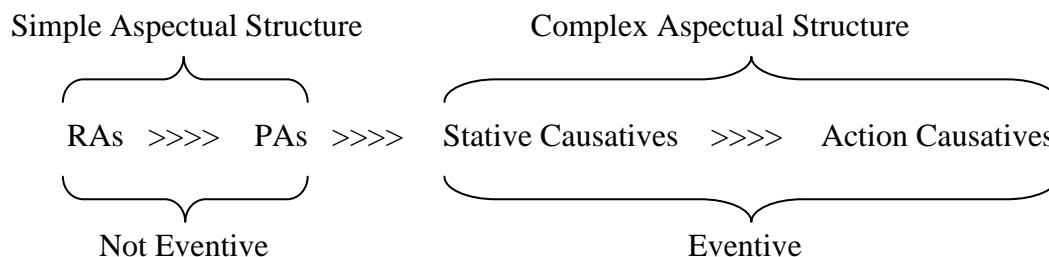
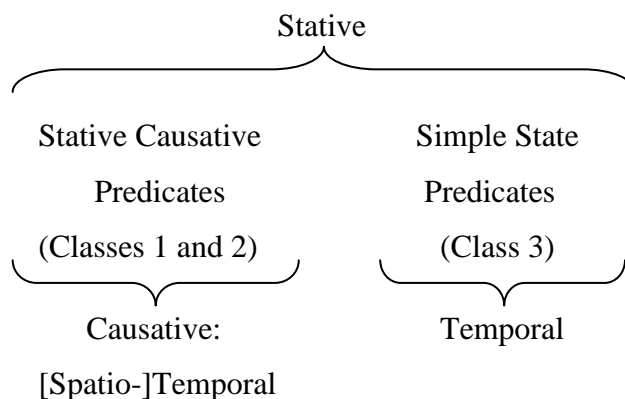
c. RAs:

Victoria was Canadian/tall

In chapter 3 we saw that EAs are always stative, and they are the only adjectives to pass eventivity diagnostics. In this connection, we saw that a corresponding class of verbs exists (Maienborn 2005b, 2007). Maienborn then allowed us to see that when spatio-temporality fails, predicates test like simple states. Chapter 3 also showed that EAs, PAs and RAs fit this pattern, PAs and RAs testing like simple states. Correspondingly, the PA and RA structures in (10) contain only one state argument. The question is: what is the eventivity of EAs—and stative causatives more generally—telling us about eventivity?

The argument presented in chapter 1 proposed that it indicates that there is no primitive linguistic distinction between events and states. Rather, there is a distinction between stative causatives and simple states, with eventivity effects reducing to a signal of causation.

I diagram the eventuality continuum in (11a). Here causation marks the divide with respect to eventivity effects, a divide that corresponds with aspectual structure complexity in the argument structures in (10). Note that the continuum (11a) is just another way of illustrating (11b) from chapter 1, which was arrived at through an analysis of the semantic properties of primitive aspectual entities.

(11) a. *Only Causative Predicates Test Positive for Eventivity*b. *Eventivity versus Stativity versus Spatio-Temporality* (Version 5 of 5)

An important consequence is that—because of the derivative nature of eventivity—the notion of change is not represented in the aspectual decomposition of predicates. Building on the arguments from previous chapters, we will collect more evidence that *change* is represented conceptually.

To this effect, this chapter will provide specific arguments that only the state argument exists, and that stative causation produces eventivity effects. Once this is established, the clear implication is that the eventuality continuum in (11a) from RAs to Action Causatives is sensitive to **(i)** where DP/CP arguments are generated in a predicate's argument structure (*e.g.* externally or internally), **(ii)** the specific properties of those arguments (*e.g.* animate or inanimate, concrete or abstract), and **(iii)** enriching the interpretation of these structures with conceptual knowledge of a given predicate and discourse-based inferences. In consequence, Davidsonian eventivity, the notion of change, rich aspectual classifications (*cf.* Vendler 1967), and the Individual/Stage distinction are epiphenomenal with respect to the aspectual decomposition of predicates.

4.2 Evidence for State Arguments

This section argues for state arguments, and against a primitive event argument. Section 4.2.1 discusses and analyses of the derivation of the passive voice. Section 4.2.2 does the same with the continuous aspect. Section 4.2.3 provides theory-neutral evidence against the event argument with unexpected variability across event diagnostics. Section 4.2.4 summarises the results.

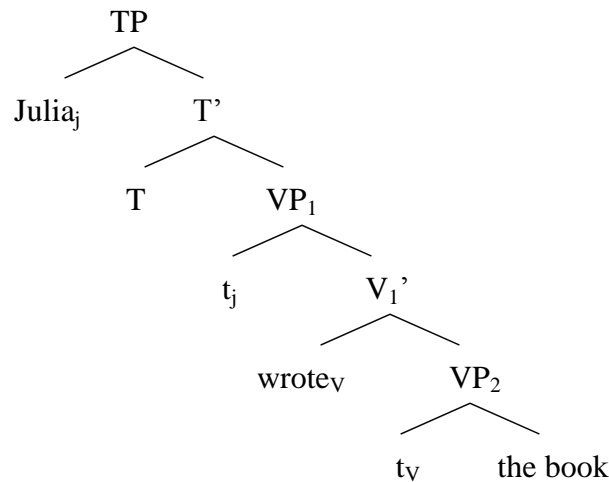
4.2.1 *The Passive*

This section presents the passive voice from the perspective of this thesis. Section 4.2.1.1 introduces Collins' (2005) syntax of the passive. Section 4.2.1.2 establishes the semantic import of the passive. Section 4.2.1.3 introduces the basic concepts of the IP domain. Section 4.2.1.4 introduces Gerhke and Grillo's (2009) proposal that Collins' syntax be reinterpreted as an operation on inner-aspectual structure. Section 4.2.1.5 provides the analysis of the syntax and semantics of the passive. Finally, section 4.2.1.6 pulls the details together to provide arguments from the passive for a state argument, and against a primitive Davidsonian event argument and the three-part aspectual decomposition of telic verbs.

4.2.1.1 *The Syntax of the Passive*

Collins' (2005) analysis of the syntax of the passive generates the predicate's arguments in the same positions as in the active. Example (12) illustrates a VP-shell representation of the argument structure of an active transitive sentence. The Agent is generated in the Spec, V₁ and moves to Spec, T, and the Theme is generated in Comp, V₂.

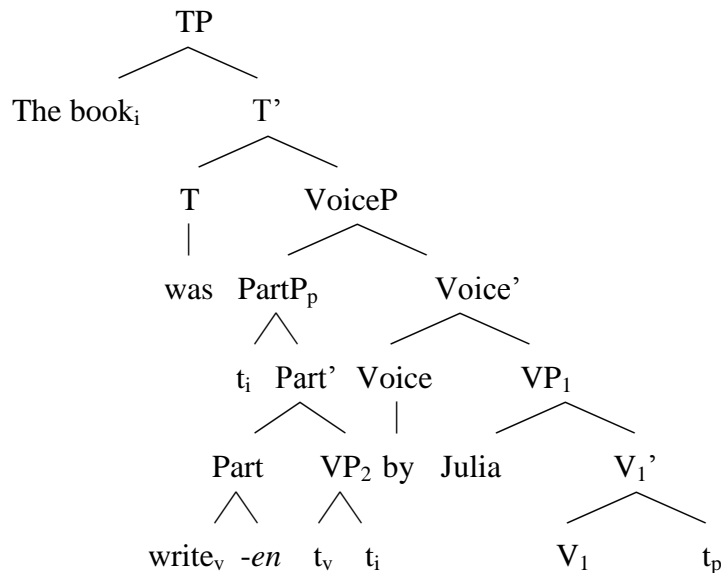
(12) Julia wrote the book



(cf. Collins 2005: 90, ex. (23a))

Collins proposes the structure in (13) for a passive voice expression. This syntax differs from the active in two ways: (i) the presence of PartP (to form the participle), and (ii) the presence of VoiceP (to attract PartP) (Collins 2005: 91). Once PartP moves to Spec, Voice, the direct object *the book* is closest to T⁰, and it is now attracted to Spec, T.³

(13) The book was written by Julia



(cf. Collins 2005: 95, ex. (30))

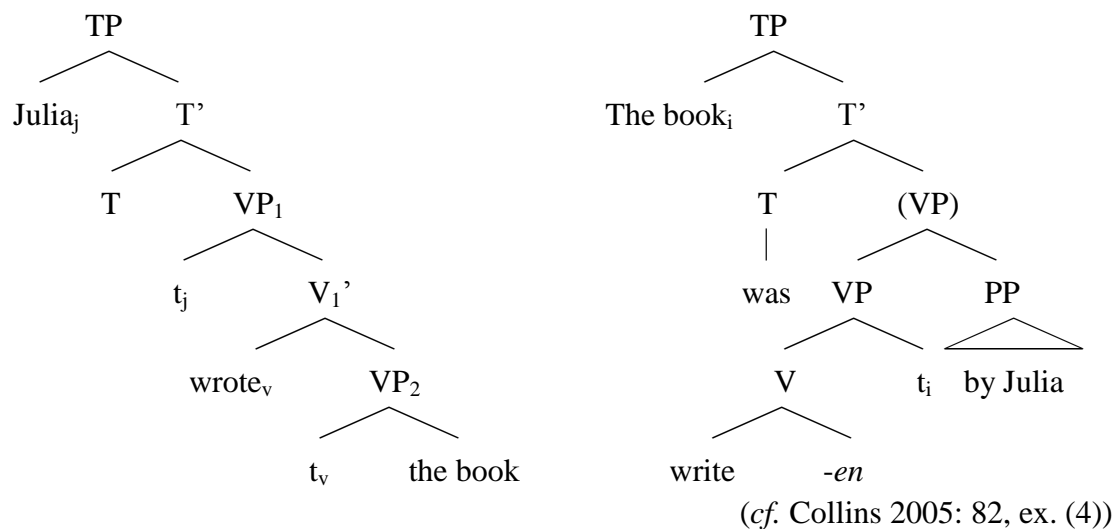
³ I delay the technical details until section 4.2.1.5, where I reinterpret Collins' syntax.

The alternative to Collins' analysis is one where the argument structures of the active and passive voice are different. The structures in (14) illustrate an analysis of an active/passive pair that disassociates argument structure in the two voices. The active structure in (14a) is the same as (12), with the Agent argument generated in Spec, V₁. The passive in (14b), however, does not generate the VP-shell associated with the external argument. Instead, the optionality of the *by*-phrase is captured by generating it as a VP adjunct (*cf.* Chomsky 1981, 2001; Jaeggli 1986; Baker *et al.* 1989). In this sense, the argument structures of actives and passives are disassociated.

(14) *A Disassociation Analysis of Active/Passive Pairs*

a. Julia wrote the book

b. The book was written (by Julia)



Generating the arguments in the passive in the same positions as in the active has four benefits when compared with an analysis of the passive that generates the *by*-phrase as an adjunct. The first advantage to Collins's approach is that generating the arguments in the same way in the active and the passive foreshadows the fact that the external argument can be realised in the passive. Middles and unaccusatives differ from passives in that the external argument cannot be realised at all. Examples (15) and (16) illustrate. The (a) examples provide the baseline transitive sentences. The (b) examples show that passives allow an optional *by*-phrase. The (c) examples show that middles and unaccusatives do not allow the *by*-phrase.

- (15) a. Super PACs bribed politicians easily
b. Politicians are bribed easily (by Super PACs)
c. Politicians bribed easily (*by Super PACs)
- (16) a. The enemy sank the ship
b. The ship was sunk (by the enemy)
c. The ship sank (*by the enemy)

While analysing the passive *by*-phrase as an adjunct captures its optionality, it does not explain why the external argument from the active voice expression should be able to reappear in a *by*-phrase, or why passives are different from other structures lacking their canonical external argument, such as middles and unaccusatives. In contrast, generating the arguments in the same positions leads us to expect the parallelism in (15a, b) and (16a, b).

The second, related, advantage is that it predicts that the external argument will be syntactically active even when the *by*-phrase is not overt. Agent-oriented adverbs are one illustration of illustrate this. The adverb *willingly* in (17) requires an Agent to modify. In active voice expressions the Agent is overt ((17a)). In parallel, passive voice expressions are grammatical even when the Agent is implicit ((17b)). In contrast, unaccusatives are ungrammatical ((17c)).

- (17) a. They decreased the price willingly
b. The price was decreased willingly
c. *The price decreased willingly

(Jaeggli 1986: 611, ex. (53))

So, the second advantage to generating the external argument in the same position in the passive is that it predicts that passives will pattern with actives in environments that require an Agent. An adjunct analysis, on the other hand, has to explain why the implicit *by*-phrase is different from adjuncts that are truly optional.⁴

The third advantage concerns the thematic interpretation of the *by*-phrase. Collins emphasises that, if active and passive voice expressions generate their arguments in

⁴ On Jaeggli's (1986) analysis, this is done through the operation of *Theta Transmission*, which makes reference to the predicate's lexical entry. For approaches on which the external argument is not an argument of the predicate (Kratzer 1996), reference to the external argument cannot be picked up through predicate/lexical entry, so something else is needed to explain the character of the passive *by*-phrase.

different ways, then multiple thematic role interpretation mechanisms are required. On a disassociation analysis, in the active voice an external role is assigned to an argument position, and in the passive it is assigned to an adjunct. There is no other grammatical phenomenon with this property; the passive is unique in this way. So, generating arguments in different positions and maintaining their interpretation requires introducing an *ad hoc* mechanism into the grammar. But generating the external argument in the same position in the active and the passive requires no interpretive complications.

In this connection, the last advantage is the parallel Collins draws between the passive *by*-phrase and the complementiser *for*. On Collins' analysis in (13) *by* assigns accusative case to the stranded external argument. He suggests that it does so with the same case assigning mechanism that allows the complementiser *for* in C^0 to assign accusative case to the overt subject of an infinitive in Spec, T, as in (18a):

- (18) a. Laura wanted for him to win
 b. Laura wanted to win

So, rather than introducing *by* as an adjunct, it spells out Voice⁰, and just like *for*, *by* licenses a c-commanded argument that is syntactically active, but otherwise be null (*cf.* PRO ((18b)).⁵

In sum, Collins' passive syntax captures many of the external argument's properties without the complications that follow from analysing the *by*-phrase as an adjunct, or generating the external argument in different positions. Yet, motivation for the passive, or an understanding of what the passive is, is still lacking. The next section attempts to provide it.

4.2.1.2 *The Meaning of the Passive*

Analyses of the passive usually focus on rearranging the verb's arguments: finding a way to allow the logical object to appear in subject position, and the logical subject within a *by*-phrase. But, answering the question of why the grammar should be

⁵ See Collins (2005: 107-110) for evidence from coordination, ellipsis and adverb modification that there is always a full VP structure whenever there is a passive *by*-phrase. See also Mahajan (1995) and Goodall (1997) for cross-linguistic evidence that the *by*-phrase behaves like a syntactic argument, rather than an adjunct.

interested in this generally lies beyond their intent. In this section I will introduce Gehrke and Grillo's (G&G) (2009) proposal regarding the meaning of the passive. They propose that the passive is an operation on the inner-aspectual structure of the predicate, and that the active and passive voices are, in fact, not synonymous (*cf.* Beedham 1987). Let's begin by elaborating on their motivations.

First, existential passives such as (19) show that the purpose of the passive cannot be to make the logical object the subject, because the logical object does not necessarily end up in subject position.

(19) There was a Swabian killed (by police) (*cf.* G&G 2009: 243, ex. (20a))

Further, viewing the passive as an operation on subjects and objects creates the impression that every transitive verb will have active and passive forms. Chomsky's (1957) passive phrase structure rule illustrates this. The rule in (20) states that if the active voice expression is grammatical, then the passive is, too:

(20) If S_1 is a grammatical sentence of the form

$$NP_1 - Aux - V - NP_2,$$

then the corresponding string of the form

$$NP_2 - Aux + be + en - V - by - NP_1$$

is also a grammatical sentence.

(Chomsky 1957: 43, ex. (34))

The grammaticality condition on the active expression captures the contrast in (21) and (22): the (un)grammaticality of the active is predictive of the (un)grammaticality of the passive. But, there are no additional requirements.

(21) a. Sincerity frightens John

b. John is frightened by sincerity

(Chomsky 1957: 42-43)

(22) a. *John frightens sincerity

b. *Sincerity is frightened by John

(Chomsky 1957: 42-43)

Yet, the ungrammatical examples in (23)-(25) show that there is a further restriction on the passive that (20) does not capture. Aspectually, all these predicates are simple states. This implies that the passive is restricted by the interpretation of the inner-aspect of the predicate, and this is the core of G&G's proposal.

- (23) a. The new suit fit John
 b. *John was fit by the new suit
 c. The hedgehog resembles Mary
 d. * Mary is resembled by that hedgehog
 (Maratsos *et al.* 1985: 168)
- (24) a. Ed wanted a new CD player (Aarts 2001: 250, ex. (49))
 b. ?*A new CD player was wanted by Ed (Aarts 2001: 250, ex. (50))
 c. Tony likes films with lots of gratuitous violence
 d. ?*Films with lots of gratuitous violence are liked (by Tony)
 (Aarts 2011: 93, ex. (57))
 e. That beret does not suit you, you know
 f. *You are not suited by that beret, you know
 (Aarts 2011: 93, ex. (58))
- (25) a. John has three bicycles
 b. *Three bicycles are had by John
 c. Tiny weighs 210 pounds
 d. *210 pounds are weighed by Tiny
 e. The coming decade will see many changes
 f. *Many changes will be seen by the coming decade
 g. This bottle contains a deadly poison
 h. *A deadly poison is contained by this bottle
 (Pinker *et al.* 1987: 197, ex. (2))

In this connection, a closer look at the passive reveals that a essential difference between the active voice and the passive voice is that they take two different perspectives on an eventuality (*cf.* Beedham 1987; Pinker *et al.* 1987: 249-258; Rappaport Hovav and Levin 2012: 153; Pinker 2014: 55-56), and the positions of the arguments in the two voices are not sufficient to explain it.

In order to see this, consider the examples in (26). Example (26a) is a transitive active voice expression. Example (26b) is unaccusative, meaning that only the logical object is realised in the syntax, and it is promoted to Spec, T. Foreshadowing the analysis of unaccusatives such as (26b) to be presented in chapter 5, I propose that (26a) and (26b) are both in the same active voice, and differ only in the content of their external arguments, *i.e.* it is referential in (26a) and a variable in (26b). For the moment, I will assume this analysis. Lastly, (26c, d) are in the passive voice.

- | | |
|---|-----------------------------|
| (26) a. Peter broke a window | = Transitive Active Voice |
| b. A window broke | = Unaccusative Active Voice |
| c. A window was broken (by Peter) | = Transitive Passive Voice |
| d. There was a window broken (by Peter) | = Existential Passive |

Regarding the observation that the active and passive voices take different perspectives on an eventuality, take first (26a) and (26c). There is the intuition that the active voice is about the cause of the breaking and the passive is about the result. This does not follow merely from the thematic properties of the argument that ends up in subject position, *i.e.* a Causer or a Theme, respectively. For example, the existential passive in (26d) keeps the logical object out of subject position and it sharpens the intuition that the passive voice says something about the result-state.⁶ Most interestingly, in the unaccusative in (26b) the logical object is in subject position, yet it also says something about the cause of the breaking, just like (26a).⁷ These examples show that the active and passive voices provide a perspective on the eventuality, and that this is not dependent on the position of the DPs.⁸

⁶ The fact that a telic verb is used in these examples does not affect the intuition. Atelic verbs behave the same way ((i)-(iii)). The verb *break* is used in (26) because it has an unaccusative form that provides a relevant contrast.

- (i) Julia wrote a book
 (ii) A book was written (by Julia)
 (iii) There was a book written (by Julia)

⁷ As discussed in chapter 2, and as will be discussed further in chapter 5, unaccusatives are understood here to be weak scalar expressions to the effect that the speaker does not specify the cause, either due to ignorance of it, or deliberate obfuscation, or discourse irrelevance (*cf.* Schafer and Vivanco 2016; Rappaport Hovav 2014). Notice that even this characterisation of the unaccusative emphasises the cause, rather than the result.

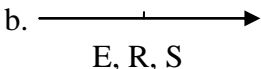
⁸ In this connection, if the passive were about promoting the logical object, we might expect it to be like topicalisation. See Keenan and Dryer (2007: 325-328) on why the passive is *not* like topicalisation.

G&G's (2009) insight is to re-interpret Collins' syntax to capture these properties of the passive. They propose that what drives the passive is the interpretation of the predicate's inner-aspectual structure by the IP domain of the clause—the domain of tense, outer-aspect (*i.e.* viewpoint aspect), and voice. Now that tense and outer-aspect have been mentioned, the next section introduces the basic concepts.

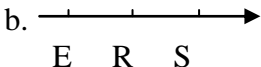
4.2.1.3 *Basic Concepts of the IP Domain*

Reichenbach (1947: §51) proposes that the range of natural language temporal meanings requires the ordering of three time points: an event time (E), a reference time (R), and a speech time (S). The first picks out the time that the eventuality described by the predicate holds; the second, a reference time determined by the context of speech; and the third, the time the speaker speaks.

The motivation for three times becomes clear when simple and complex tenses are compared. In a present simple example such as (27a), the times coincide, the speech time providing the value for all three. In (27b), the arrow represents the direction of time, and simultaneity is represented with the comma.

- (27) a. I see John
 b. 

The interpretation of the past perfect in (28a) shows that the three points can be teased apart. Here the time of seeing (*i.e.* the event time) is before an implicit reference time, R, that is also before the time of speech.

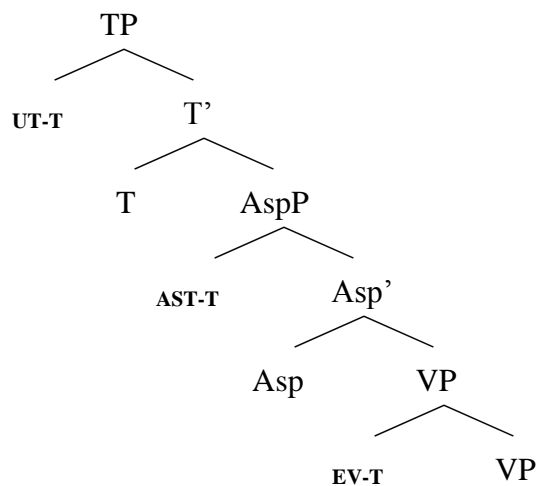
- (28) a. I had seen John
 b. 

In a sentence such as *I had seen John before he went to the store*, R is made explicit by the temporal adjunct: R is the time John went to the store, which is after the seeing, but before the time of speech. This order is represented in (28b). So, complex tenses show that natural language orders three times. Following Reichenbach (1947), Hornstein

(1990), Giorgi and Pianesi (1997), and Demirdache and Uribe-Etxebarria (D&U-E) (2000), among others, I will assume that the three times are present in all tenses (*cf.* Stowell 1996).

The syntactic implementations of this approach to temporal interpretation just cited associate these three times with specific projections. In D&U-E's (2000) model the event time is an argument of VP (D&U-E's EV-T), the reference time is an argument of AspP (their Assertion-Time (AST-T)), and the speech time an argument of TP (their Utterance-Time (UT-T)). The structure in (29) illustrates this. I adopt D&U-E's phrase structure of time arguments in the derivations below with a crucial modification of the representation of EV-T that will be discussed presently.

(29) *D&U-E's (2000) Syntax of Time Arguments*



(D&U-E 2000: 163, ex. (8))

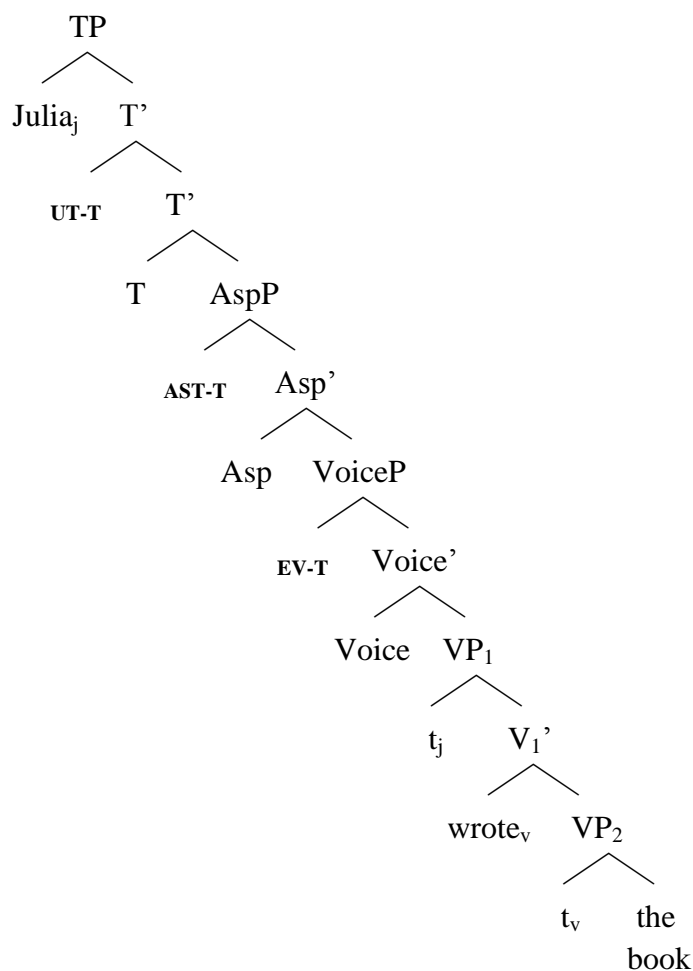
In (29) the event time, EV-T, is associated directly with VP. There are two reasons to refine this. (i) Ramchand (2004) highlights the importance of the ontological distinction between aspectual arguments and temporal arguments. Once it is assumed that the VP is the domain of the representation of stativity and eventivity, the VP can no longer be assumed to represent time directly. Thus, Ramchand proposes that a higher head is responsible for mapping an aspectual argument to time, and the out-put of this head provides EV-T. (ii) G&G observe that once inner-aspect decomposition is assumed, it becomes possible to ask *which* aspectual argument within VP provides the in-put to the head that returns EV-T. This, G&G propose, is the key to capturing the distinction between the active and passive voices.

4.2.1.4 *Passive as an Operation on Inner-Aspectual Structure*

In contrast with Collins, and motivated by the interpretation of inner-aspect, G&G propose that Voice⁰ is present in both active and passive voice expressions because it establishes EV-T. The difference between active and passive expressions becomes the difference between *which* aspectual argument in the VP gets mapped to EV-T by Voice⁰ in the IP domain of the clause. Thus on G&G's approach, the syntax of active and passive expressions is along the lines of (30) (*cf.* (12), (13)):⁹

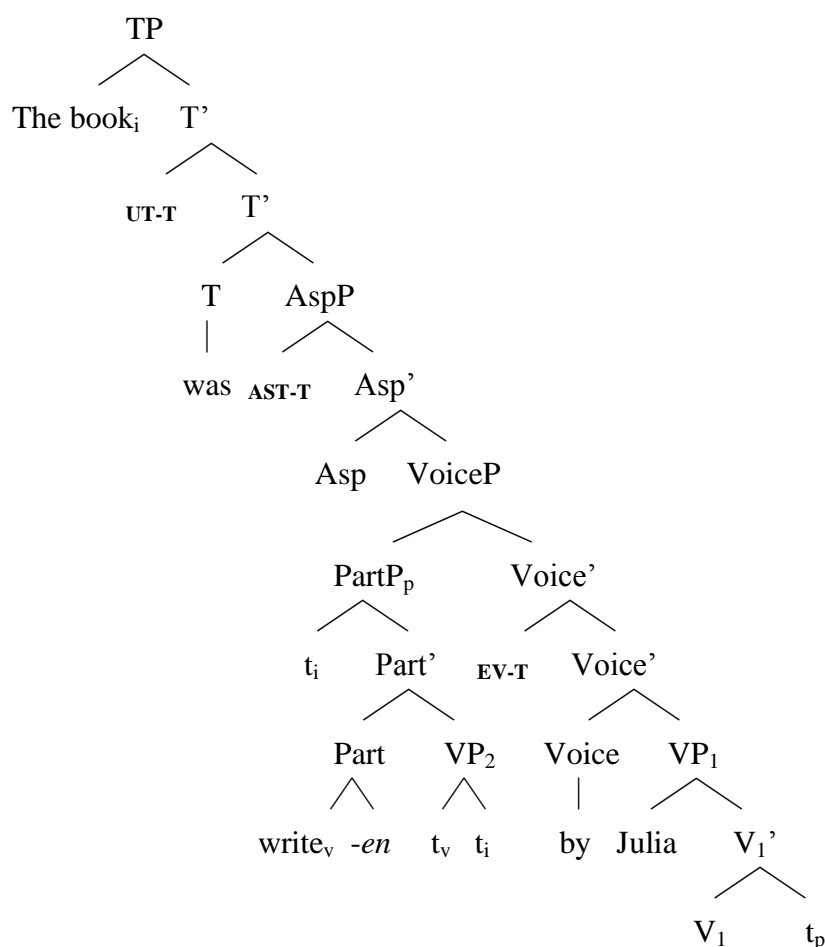
(30) *Uniform IP Field in Active and Passive Sentences*

a. Julia wrote the book



⁹ In (30) and the syntactic structures that follow, moved constituents are placed above the time arguments for the sake of consistency across the representations; in the present context nothing hangs on their relative order.

b. The book was written by Julia



The intuitive idea is that in the active voice ((30a)) the aspectual argument in V_1 is mapped to EV-T, and so the eventuality is viewed from that perspective. Notice that both structures in (30) contain two VP-shells—the structure that has been represented as causative throughout this thesis (*cf.* Hale and Keyser 1993; Ramchand 2004; G&G 2009; Travis 2010, a.o.). Thus in an active voice expression with a causative predicate, Voice^0 maps the causing sub-event to EV-T. This accounts for the intuition that an active voice causative expression is about the causing sub-part of an eventuality.

In the passive voice in (30b), the aspectual argument in V_2 —the result part of the causative relation—is mapped to EV-T, and now the eventuality is viewed from the perspective of the result. This accounts for the intuition that a passive expression is about the result sub-part of an eventuality. So on this proposal, the perspective contrast between the active and passive voices of a causative predicate follows from using either

the causing sub-part or the result sub-part of the predicate description as the basis of the Event-Time.¹⁰

Since the passive is about mapping the result sub-part to time, the lack of object movement to Spec, T in existential passives (*A Swabian was killed* vs. *There was a Swabian killed*) is just a sub-case of satisfaction of the EPP. The EPP can be satisfied either by movement of a DP to Spec, T, or by merging another element that meets T⁰'s category requirements. The remaining issue is the transitive verbs that do *not* passivise.

The implication of G&G's proposal regarding the meaning of the passive is that predicates without a complex aspectual structure should not passivise. In the argument structures proposed in this thesis, the only aspectual distinction that is represented in the syntax is between causatives (with two state arguments) and simple states (with only one argument) ((1)). Recall that the examples of transitive verbs with ungrammatical passives in (23)-(25) are simple states. The ungrammaticality of simple states in the passive is also noted in traditional grammars. *Longman English Grammar* uses (31) to illustrate this restriction (*cf.* Quirk *et al.* 1985: 162-163).

(31) a. I love beans on toast

b. *Beans on toast is/are loved by me

(Alexander 1988: 242)

At this point a comment on aspectual decomposition is in order. G&G frame their proposal in two different ways. Syntactically, they follow Collins' bipartite representation, *i.e.* the syntactic representation of lexical causation on the present proposal. Semantically, they assume that a result-state is produced by the BECOME operator (Dowty 1979), and that predicates without it will not passivise.

The semantic characterisation based on the presence of BECOME makes the wrong empirical predictions. The examples in (32) show that activities, accomplishments, achievements, and stative causatives, respectively, all passivise. So, the distribution of the passive is not sensitive to a change-of-state produced by BECOME.

¹⁰ At this point, G&G's approach to the passive is still being discussed intuitively. Based on this discussion, it may seem that PartP movement in (30b) is motivated by the interpretive contrast. But in formal terms, there is no predictive, restrained way to motivate movement (*cf.* Chomsky 1993). So, in the analysis I develop below, the movement is done brute-force with an EPP feature (Chomsky 2000), and the meaning contrast is captured in the denotations of the active and passive voice heads.

- (32) a. The cart was pushed by Victoria
 b. Willistead Manor was built by Hiram Walker
 c. The race was won by Katherine
 d. The books were kept on the table by Tony

On the other hand, on the present proposal all of these verbs are causatives. The empirical generalisation is that causative predicates passivise, and simple states do not—as G&G predict on their syntactic characterisation. This means that two aspectual arguments in a causal relation are sufficient to account for the distribution of the passive. On the other hand, an aspectual structure with one state argument is a simple state, and simple states do not passivise because they do not contain a result sub-part for the passive to target.

In this connection, an additional empirical fact corroborates the proposal that the passive voice operates on causatives. Some verbs, such as *touch*, are ambiguous in the active voice between an action interpretation and a static interpretation. For example (33a) is ambiguous between a reading on which John moves and touches the wall, and one on which John and the wall are in constant contact. When passivised, however, the action reading is salient ((33b)) (Jackendoff 1972: 44; Pinker *et al.* 1987: 224; Alexander 1988: 242).

- (33) a. John is touching the wall (Action ✓; Static ✓)
 b. The wall is being touched by John (Action ✓; Static #)
 (cf. Pinker *et al.* 1987: 224, ex. (5))

The fact that the passive marginalises the static reading and highlights the action one is understandable if the passive is targeting a result-state: the action interpretation is preferred in the passive because there is a discernible result, whereas on the static reading, nothing happens, and so the action reading is more informative.¹¹

The combination of the ungrammatical examples and this interpretative preference motivates the conclusion that passivisation is an operation on causative predicates.

¹¹ Pinker *et al.* (1987: 244) observe that the strength of the contrast in (33) is dependent on the (in)animacy of the external argument. Sections 4.2.3 and 4.5 show that animacy generally affects the perception of eventivity, so this variation is predicted on the present theory.

Inversely, these same two facts imply that simple states are an invalid input to the passive because they do not have a result sub-part.^{12, 13}

Importantly for the interests of this thesis, this extends automatically to account for the fact the EAs, as stative causatives, alternate in a passive-like fashion ((34)), while PAs, as simple states, do not ((35)):

- (34) a. Emma was rude to leave
 b. To leave was rude (of Emma)
 c. It was rude (of Emma) to leave

¹² There remains the issue of passives of simple state predicates that seem acceptable, e.g. *The risk was known by the Government*. The existence of such data does not disconfirm the conclusion that only causative predicates produce a passive composed by the narrow syntax/LF. There are two compelling reasons why this is so. **(a)** It is a surprising, yet repeatedly confirmed finding in psycholinguistics that agrammatics, children, and adults do not comprehend, produce, or judge apparently grammatical simple state verb passives as they do causative verb passives—to the significant detriment of the former (cf. Maratsos *et al.* 1985; Pinker *et al.* 1987; Pinker 1989; Grodzinsky 1995; Fox and Grodzinsky 1998; Ambridge *et al.* 2016, a.o.). **(b)** Putting such examples in context confirms that causation is at the core of the passive. For instance, the example in (i) transparently embeds the passive of *know* in a discourse that expresses a causal relation: the Government knew about the risk *because* they had been briefed.

- (i) The risk that drinking water in Sussex could be contaminated by fracking chemicals was known by the Government more than a year ago, previously secret documents reveal.
 Ministers were privately briefed by the Environment Agency (EA) that fracking near aquifers—underground rocks which contain water—should not be permitted. (Internet)

More examples showing simple state passives occur in discourses that imply causal relations can be easily produced (cf. Pinker *et al.* 1987: 255 on the meaning shift of *own* in the passive; Ambridge *et al.* 2016: 1455 on discourse repairing mildly infelicitous simple state passives).

So, the prediction is not that simple state passives are impossible at every level of analysis, but that a causal relation is always involved at the relevant level of analysis. The difference found in the psycholinguistics literature between causative and simple state verbs implies that causative verbs passivise via grammatical rule, while simple state passives *can be* felicitous at the discourse-level when the context conveys a causal relation that goes beyond the narrow meaning of the predicate.

¹³ Coincidentally, Maratsos *et al.* (1985) contains suggestive evidence that bears on proposals made in section 3.7.3.3. There, I argued that the phonological shape of stative causative predicates plays a role in their behaviour with respect to the Stative Causative Continuum (Rappaport Hovav and Levin 2000) and their behaviour with respect to eventivity diagnostics. In this connection, Maratsos *et al.* (1985: 173-174) included four nonce verbs in their first study on children's comprehension action and simple state passives: *zick*, *catter*, *bemode*, *mell*. They found that children treated the first two more like action verbs (*i.e.* causatives in our terms), and the latter two like experiencer-subject verbs (*i.e.* simple states in our terms). The authors urge that the phonological shape is determining this. In fact, because the first two items were treated like action verbs, overall, the children understood the passives of the set of nonce verbs *better than* the passives of experiencer-subject verbs (47% vs. 40%). This supports the position taken in Chapter 3 that phonology interacts with eventivity intuitions.

Lastly, in the same study, they included the verb *smell* as an intermediate between action verbs and experiencer verbs. In Chapter 3 we saw that *smell* is a stative causative. Maratsos *et al.* (1985: 173) report that children understand its active and passive forms like an action verb, and not an experiencer-subject verb. This is exactly what a stative causative analysis predicts.

- (35) a. Emma was eager/willing to help
b. *To help was eager/willing (of Emma)
c. *It was eager/willing (of Emma) to help

Summing up, G&G's proposal shifts the focus from an operation on arguments to the operation of mapping inner-aspect to time. Doing so anticipates the passive's semantic restriction and accounts for its meaning. In turn, we are now in a position to extend the passive to adjectives: there is nothing in the meaning of the passive that refers to lexical category. Thus, the intuition that EAs passivise (*cf.* Bennis 2000, 2004; Landau 2009) is well-founded—but by analysing EAs as causatives we now have an explanation for why they passivise, and other adjectives do not. The next section develops an explicit implementation of the G&G approach to the passive.

4.2.1.5 Derivations of the Active and Passive

This section is divided into three parts. (i) First, I outline my assumptions about syntax and interpretation. (ii) Then we run through the derivation and interpretation of an active voice expression in the past simple. (iii) Finally, we compare it with the passive.

4.2.1.5.1 Basic Assumptions and Outlook

A. Assumptions about Syntax:

I adopt a version of the Minimalist Program of the type broadly outlined in Chomsky (1995, 2000, 2001). In the derivations below the *Agree* operation values formal features, and an EPP feature triggers overt displacement.

- (i) The *Agree* operation is characterised in (36).

(36) *Agree*

(I) An unvalued feature *F* (a *probe*) on a head *H* scans its c-command domain for another instance of *F* (a *goal*) with which to agree.

(II) If the goal has a value, its value is assigned as the value of the probe.

(*cf.* Pesetsky and Torrego 2007: 265, ex. (2))

- (ii) Following Pesetsky and Torrego (2007) formal features come in four types: uninterpretable and valued ((37a)), uninterpretable and unvalued ((37b)), interpretable and valued ((37c)), and interpretable and unvalued ((37d)).

- (37) a. uF [val]
 b. uF []
 c. iF [val]
 d. iF []

(*cf.* Pesetsky and Torrego 2007: 269, ex. (9))

It is unvalued features that drive Agree and act as probes. On the standard view, options (37a, d) do not exist (*cf.* Chomsky 2000, 2001).

- (iii) Following Chomsky (2001: 6, 16), Case is not a formal feature, but a reflex of an Agree relation.
- (iv) The Copy theory of movement (Chomsky 1995). For ease of representation in the syntactic structures below copies are represented as a trace, t .
- (v) Bare phrase structure (Chomsky 1994, 1995).
- (vi) Head-movement is a morpho-phonological operation, rather than a syntactic one (Chomsky 1995, 2001; Schoorlemmer and Temmerman 2012; Platzack 2013). For this reason, head-movement is not represented in the trees below.
- (vi) D&U-E's (2000) phrase structure of tense and outer-aspect, with its concomitant assumption that there are time arguments in the syntax. However, since I am arguing that the event argument does not exist, I will refer to the Event-Time as the State-Time (ST-T).

Further, in the trees below the time arguments that are mapped to the State-Time, Assertion-Time and the Utterance-Time, *i.e.* t_{ST-T} , t_{AST-T} , t_{UT-T} , are represented as $st-T$, $ast-T$, and $ut-T$ in order to avoid notational confusion with copies left by movement (*cf.* (iv)).

B. Assumptions about Interpretation:

- (vii) Lexical entries contain argument selection information.
- (viii) The only type of primitive aspectual argument denotes a state—a proposal that, building on chapter 1, will be substantiated in this chapter.
- (ix) As discussed above, if a predicate is causative, it is recorded in its denotation ((2)). Support for this analysis will emerge below.

- (x) Thematic roles are epiphenomenal. We return to this in section 4.4.3.
- (xi) The tense head T^0 and the outer-aspect head Asp^0 are binary temporal ordering relations (*cf.* Reichenbach 1947, §51; Hornstein 1990; Stowell 1996; Giorgi and Pianesi 1997; D&U-E 2000, 2004, 2005 a.o.): Asp^0 orders the State-Time and the Assertion-Time with respect to each other, and T^0 orders the Assertion-Time and the Utterance-Time.
I will assume that the available ordering relations for times and states include *after* ($>$), *before* ($<$), *simultaneous* ($,$), and *in* (\subseteq).
- (xii) ST-T, AST-T, and UT-T are each unique: there is only one of each in the syntax and LF interpretation.
- (xiii) Lastly, Existential Closure applies over the interpretation of the predicate at the discourse level (*cf.* Heim 1982).

Before moving on to the derivations below, some delimiting remarks are in order. With regard to the ordering of times, I assume the standard Reichenbachian analyses. For an overview of the analyses of all tenses and aspects, I refer the reader to Reichenbach (1947: §51), Hornstein (1990: 109), Giorgi and Pianesi (1997: 29), and D&U-E (2000; 2004; 2005). In the derivations, I will analyse examples using simple tenses/aspects because the properties of complex ones go beyond the scope of this thesis, and beyond the present purpose.

The central innovation to a standard implementation of the Reichenbachian approach that is explored here is the proposal that the function of a Voice head is to map an aspectual argument to the State-Time and provide a perspective on the eventuality. In this connection, it is the Voice head that introduces the temporal trace function τ (Krifka 1992) and marks the compositional separation between the aspectual and the temporal domains of the clause. This will have consequences for syntax/LF mapping that are explored only to the extent that is directly relevant; many issues are inevitably left to future research.

The principle objective here is to motivate the theory of inner-aspect composition—specifically one in which the event argument is not a primitive. This has the effect of ruling out the representation *change* in the aspectual decomposition of the predicate. In this connection, the one complex aspect that is analysed here is the continuous. It is of interest for two reasons: (i) EAs take the continuous, and (ii) the properties of the continuous will be argued to support this theory of inner-aspect. So, the purpose of this

excursion into the IP domain is to bring arguments to bear on the content of inner-aspect. With the exception of the continuous, I will stick to simple tenses/aspects in order to control the number of variables involved in the argumentation.

It is worth noting now that the analysis of the continuous offered here differs from standard views of it. On the one hand, it is argued that the continuous is not eventive and it does not involve a process. Rather, following Vlach (1981), a continuous expression is argued to be aspectually stative, and its atelic properties follow from there.

On the other, the continuous is often characterised as an outer-aspect. However, since a compositional distinction between aspectual arguments and temporal ones is being pursued here, the status of the continuous has to be reconsidered.

In particular, like Voice, the continuous will be proposed to be a head involved in the mapping of a state argument to the State-Time, rather than a temporal ordering head (*cf.* D&U-E 2000) or a modal operator (*cf.* Dowty 1979; Higginbotham 2009). So in essence, the active and passive voices, and the continuous are argued to be operations on inner-aspect, rather than varieties of outer-aspect (*cf.* Laca 2004; Garcia del Real Marco 2009). With these considerations in mind, let's turn to the derivations.

4.2.1.5.2 *Derivation of the Active Voice*

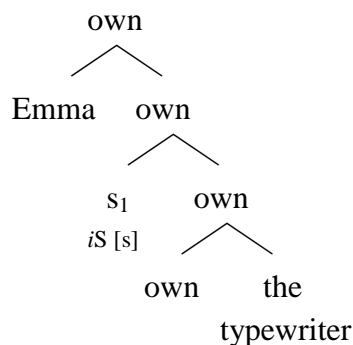
This section compares the active voice derivations of the simple state verb *own* and the causative verb *push* in the past simple in order to illustrate how the discussion so far comes together.

Example (38) provides the relevant elements of the lexical entry for *own*. The function in (38a) represents the denotation included in the predicate's lexical entry that records the arguments the predicate entails. It says that *own* is a simple state that takes two DP arguments. As for formal features, in (38b) I propose that each state argument, *s*, has a *valued interpretable* morphological state feature. It is *interpretable* because it contributes to the aspectual interpretation of the predicate, and *valued* because it is inherent to the state argument itself. Below I will propose that it is this state feature that is realised as auxiliaries and the copula *be* when required by IP domain morphology.

- (38) a. $\|own\| = \lambda y \lambda s_1 \lambda x. own(x, s_1, y)$
 b. Formal feature on a state argument: *iS* [s]

The structure in (39) is constructed through successive applications of Merge. Since the structure satisfies (38a), this segment of the derivation is well-formed when interpreted at LF.

(39) *Argument Structure of Emma owned the typewriter*



This structure illustrates my implementation of Baker's conjecture that verbs and adjectives are the same predicative category: the predicate *own* will remain low in its base-position in the syntax just as adjectives do. It is realised morphologically as a verb because it head-raises in PF (cf. Baker 2003: 77-88).

Example (40) provides the denotation of the active Voice head and its formal features.

(40) a. $\| \text{Voice}_{\text{active}} \| = \lambda p \lambda t_{\text{ST-T}} \exists s_1 [p \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$

(cf. Ramchand 2004: 333-334)

b. Formal feature on $\text{Voice}_{\text{active}}$: $iS [\]$

Building on G&G's refinement of Ramchand (2004), the denotation of $\text{Voice}_{\text{active}}$ in (40a) does two things:

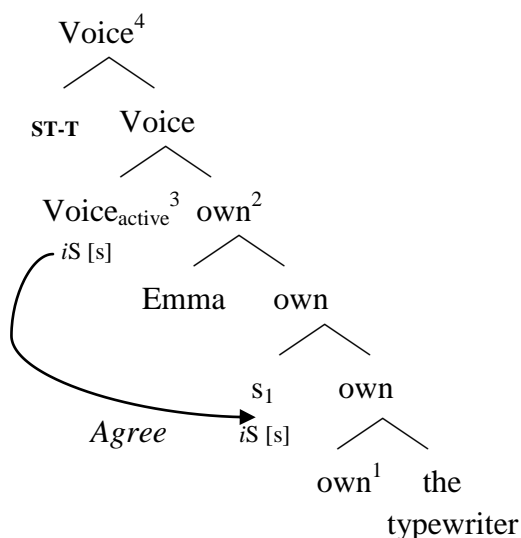
- (i) $\text{Voice}_{\text{active}}$ combines with a predicate with a saturated argument structure, p , and a time, t , and returns the State-Time ST-T, which is the time that the state s holds provided by the temporal trace function τ (Krifka 1992).¹⁴
- (ii) The existential quantifier selectively binds the highest state argument of the predicate, s_1 . I will assume that this selective binding property of Voice is related

¹⁴ I will use p , q , r (of type $\langle t \rangle$) as place-holders for the semantic values of complements in the denotations. In (40a), p stands for the interpretation of the argument structure of *own*.

to the focalisation of the state argument it targets (*cf.* Wold 1996). The asterisk is meant to track this property of Voice. In (40a), it can be read as: “the State-Time focalises s_I ”. The intuitive connection is that this focalisation of a specific state argument by Voice accounts for voice contrasts. This will become clearer when we turn to passive voice, which will selectively bind the result-state, s_2 .

Turning to (40b), I propose that $\text{Voice}_{\text{active}}$ has an *unvalued interpretable* state feature. It is interpretable because the voice head maps a state argument to time, so it interprets it. Since this feature is *unvalued*, upon entering the derivation it probes its c-command domain to value it. The structure in (41) continues the derivation.¹⁵

(41) $\text{Voice}_{\text{active}}$ + Emma own the typewriter



Upon merging $\text{Voice}_{\text{active}}$, its *unvalued interpretable* feature $iS []$ probes for a value. It finds s_I —the only state argument in the structure—and copies its value through the Agree relation. This copies the stative morphological properties of the state argument into the IP domain.

The translation in (42) provides the interpretation of the structure. Line (42d) says: Emma’s ownership of the typewriter is a state that is focalised by the State-Time.

¹⁵ The superscripts in the syntactic structures correspond to the semantic derivations that follow.

(42) *Interpretation of (41)*

- a. $\|1\| = \lambda y \lambda s_1 \lambda x. \text{own}(x, s_1, y)$
 b. $\|2\| = \text{own}(\text{Emma}, s_1, \text{the typewriter})$
 c. $\|3\| = \lambda p \lambda t_{\text{ST-T}}. \exists s_1 [p \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
 d. $\|4\| = \exists s_1 [\text{own}(\text{Emma}, s_1, \text{the typewriter}) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$

In the case of a simple state like *own*, the selective binding of $\text{Voice}_{\text{active}}$ is interpretatively trivial because there is only one state argument to map. The effect of $\text{Voice}_{\text{active}}$ becomes non-trivial with the aspectual complexity of causatives, which we will turn to after completing this derivation of *own*.

The derivation continues with the merger of Asp^0 , T^0 , and their time arguments. The denotations in (43a) and (44a) combine to produce the past simple. The outer-aspect head in (43a) binds the ST-T that is free in (42d), and says that the Assertion-Time is simultaneous to the State-Time, making it a temporal ordering head.¹⁶ Its semantic function is thus distinct from the function of the voice head, which focalises an inner-aspect argument as it maps it to the State-Time.

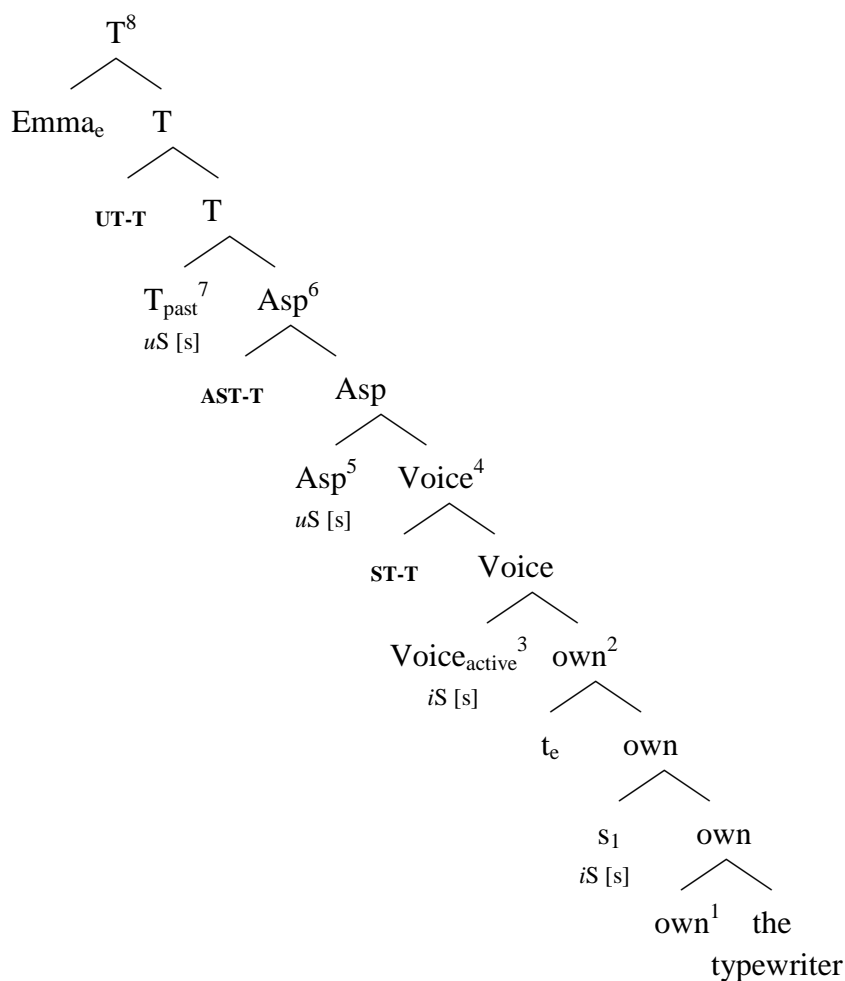
- (43) a. $\|Asp\| = \lambda p \lambda t_{\text{AST-T}}. \exists t_{\text{ST-T}} [p \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}}]$
 b. Formal feature on $\text{Asp}_{\text{neutral}}$: $uS [\]$
 (44) a. $\|T_{\text{past}}\| = \lambda p \lambda t_{\text{UT-T}}. \exists t_{\text{AST-T}} [p \ \& \ t_{\text{UT-T}} > t_{\text{AST-T}}]$
 b. Formal feature on T_{past} : $uS [\]$

The past tense head in (44a) similarly binds the Assertion-Time argument, and says that the Utterance-Time is after the Assertion-Time. So like the outer-aspect head, this head is also a temporal ordering function: it operates on times, not inner-aspect arguments. Both of these heads come with an uninterpretable morphological state feature ((43b), (44b)). They are uninterpretable because these are temporal heads and the state arguments are not interpreted by them.

The tree in (45) completes the relevant aspects of the syntactic derivation.

¹⁶ Simultaneity between the Reference-Time and Event-Time is the standard analysis of outer-aspect in the past simple in a Reichenbachian model. I have formalised it as a temporal ordering function in (43a) for consistency with the model's basic approach to temporal interpretation, even though there is debate over how to analyse simultaneity in this morphologically null aspect (*cf.* Hornstein 1990; Giorgi and Pianesi 1997; D&U-E 2005). I have chosen to represent it as a temporal ordering function in order to emphasise the proposed functional contrast between outer-aspect and tense heads, on the one hand, and voice heads and the continuous, on the other.

(45) Emma owned the typewriter



The interpretation of (45) is in (46). All the elements in this derivation compose straightforwardly. The remaining unbound argument in (46h) is the Utterance-Time argument. I will assume that this is one of the functions of the complementiser (not shown in (45)). Line in (46h) reads that Emma's ownership of the typewriter is a state that is focalised by the State-Time, and the Utterance-Time is after the simultaneous to the Assertion- and State-Times.

(46) *Interpretation of (45)*

- a. $\| 1 \| = \lambda y \lambda s_1 \lambda x. \text{own}(x, s_1, y)$
- b. $\| 2 \| = \text{own}(\text{Emma}, s_1, \text{the typewriter})$
- c. $\| 3 \| = \lambda p \lambda t_{\text{ST-T}}. \exists s_1 [p \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- d. $\| 4 \| = \exists s_1 [\text{own}(\text{Emma}, s_1, \text{the typewriter}) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- e. $\| 5 \| = \lambda q \lambda t_{\text{AST-T}}. \exists t_{\text{ST-T}} [q \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}}]$
- f. $\| 6 \| = \exists t_{\text{ST-T}} \exists s_1 [\text{own}(\text{Emma}, s_1, \text{the typewriter}) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^* \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}}]$

$$g. \llbracket 7 \rrbracket = \lambda r \lambda t_{UT-T}. \exists t_{AST-T} [r \ \& \ t_{UT-T} > t_{AST-T}]$$

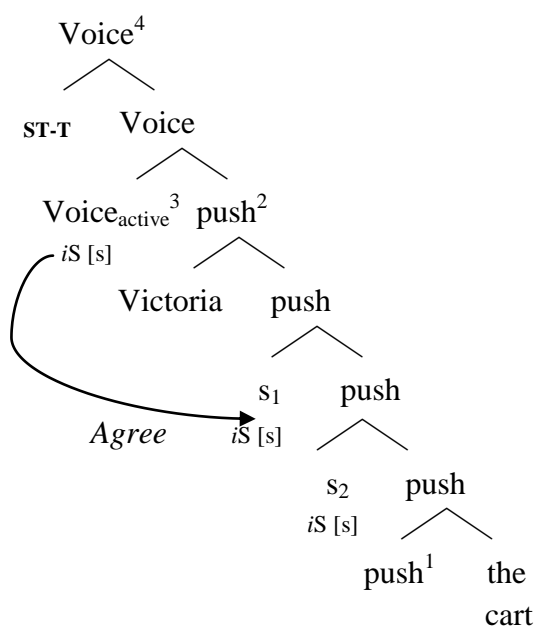
$$h. \llbracket 8 \rrbracket = \exists t_{AST-T} \exists t_{ST-T} \exists s_1 [\text{own}(\text{Emma}, s_1, \text{the typewriter}) \ \& \ t_{ST-T} \in \tau(s_1)^* \\ \& \ t_{AST-T}, t_{ST-T} \ \& \ t_{UT-T} > t_{AST-T}]$$

Now that we have seen the general function of $\text{Voice}_{\text{active}}$, let's consider the derivation of a causative predication. The relevant elements of the lexical entry for *push* are in (47). The function in (47a) says that *push* is a stative causative predicate, where the causal relation partitions the predicate and its arguments into a causing-state description and a result-state description. Each of the state arguments in *push* comes with its own state *valued interpretable* morphological state feature ((47b)).

- (47) a. $\llbracket \text{push} \rrbracket = \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(\text{push}(x, s_1), \text{push}(s_2, y))$
 b. Formal feature on a state argument: $iS [s]$

The tree in (48) picks up the derivation of *Victoria pushed the cart* at the merger of $\text{Voice}_{\text{active}}$. It again probes for a value for its *unvalued interpretable* feature $iS []$. It finds the closest s , which is on s_1 . As for the selective binding, in contrast with the derivation of a simple state predicate, such as *own*, because the aspectual structure of *push* is complex the state argument that gets mapped to the State-Time is a causing-state in *push*.

- (48) $\text{Voice}_{\text{active}}$ + Victoria push the cart



The interpretation in (49) of the structure brings the contrast out. Line (49d) reads: Victoria's pushing of the cart is a stative causative relation whose causing-state is focalised by the State-Time. Since the State-Time focalises a causing-state, the intuition that active voice causative expressions are about the causing part of the eventuality is captured.

(49) *Interpretation of (48)*

- a. $\|1\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(\text{push}(x, s_1), \text{push}(s_2, y))$
- b. $\|2\| = \text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart}))$
- c. $\|3\| = \lambda p \lambda t_{\text{ST-T}}. \exists s_1 [p \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- d. $\|4\| = \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart})) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$

Another point of interest in this derivation is the consequence of having a unique State-Time. Line (49d) shows that Voice maps only s_1 to the State-Time, while the result-state argument, s_2 , remains free.

On this proposal, it will be bound under Existential Closure at the discourse level. Existential closure will provide the existential quantification over the result-state, but this result-state will not be mapped to time in the narrow syntax/LF in the past simple.

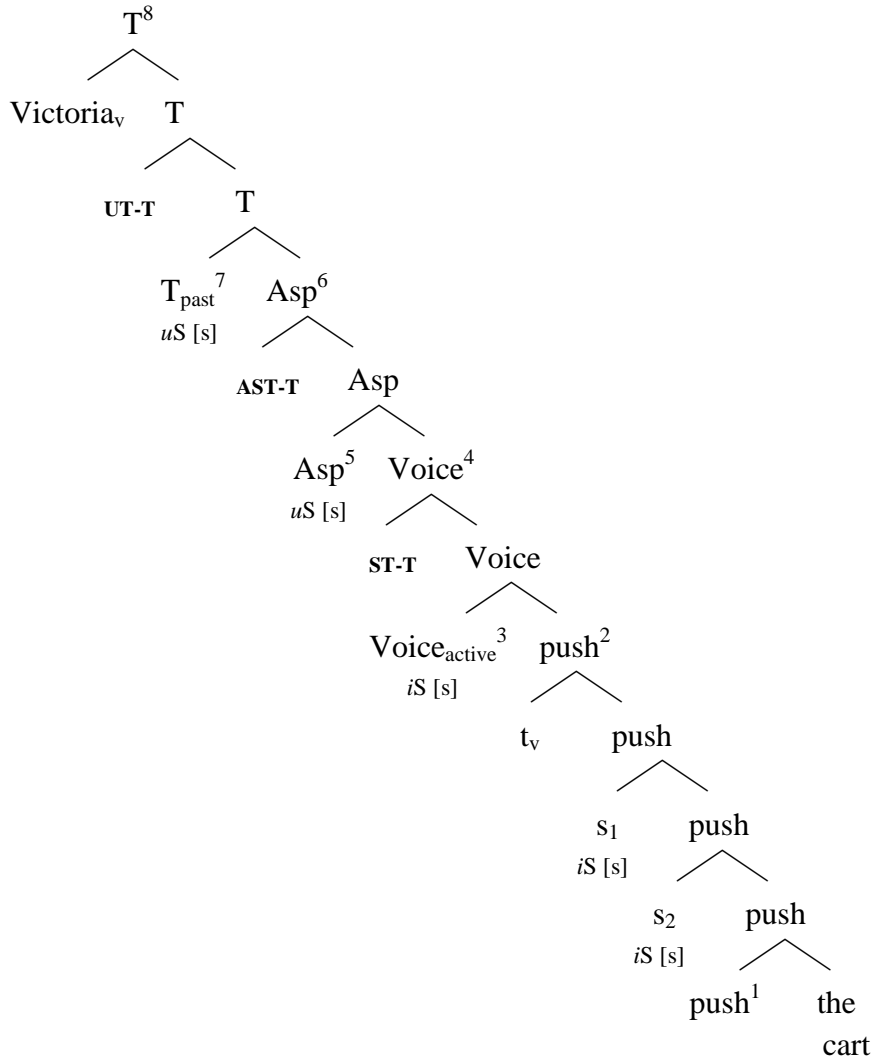
In the case of the past simple, I propose that the temporal trace of the result-state is interpreted inferentially with respect to the LF interpretation of the completed derivation, conceptual knowledge of the predicate, and discourse context.

Since a causative predicate contains causing-state and result-state sub-parts that are not necessarily interpreted as co-extensive, the default inference regarding the temporal trace of the result-state is that it lasts longer in time than the temporal trace of the causing-state. This will become relevant in section 4.2.2.5.2, where the interpretative properties of the present simple with respect to different predicate classes is analysed.¹⁷

¹⁷ I leave to future research the consequences of not mapping the result-state to time explicitly in examples such as this. This may require revision, but there are reasons to think that it is correct. **(i)** First, it is reasonable to assume that the State-Time in the derivation is unique, just like the Assertion-Time and Utterance-Time are unique. **(ii)** Second, in the analysis of the continuous in section 4.2.2.2, the uniqueness of the State-Time plays a crucial role in capturing the continuous' temporal properties. **(iii)** Third, as observed by Myriam Uribe-Etxebarria (p.c.), the different parts of an eventuality cannot be modified temporally. For example, if two temporal modifiers are added to *Peter broke the window*, they cannot be interpreted as modifying the causing and result sub-parts: the ungrammaticality of **Peter broke the window at 8:00 at 8:01* shows that the two temporal modifiers cannot mean that the breaking began at 8:00 and the result obtained at 8:01. When two temporal modifiers are interpretable, one specifies the other: *Peter broke the window at 8:00 on Tuesday*. As a counter-point, there is the case of inner-aspectual modification. The different readings of adverbs are often argued to follow from the modification of the

Picking up the derivation again, from this point on it is the same as the derivation of *own* above. The tree in (50) completes the syntactic derivation and (51) its interpretation.

(50) Victoria pushed the cart



The final interpretation on line (51i) reads: Victoria's pushing of the cart is a stative causative relation whose causing-state is focalised by the State-Time, and the Utterance-Time is after the simultaneous Assertion- and State-Times.

different parts of the inner-aspectual decomposition of the predicate. One example is the repetitive and restitutive readings of *again* (e.g. *Rachel closed the door again*; cf. von Stechow 1996; Martin and Schafer 2014). If the aspectual sub-parts of the predicate were all mapped to time in the syntax, the expectation would be to be able to target them with temporal modification, which does not seem to be possible. So, the State-Time may well be unique.

(51) *Interpretation of (50)*

- a. $\|1\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(\text{push}(x, s_1), \text{push}(s_2, y))$
- b. $\|2\| = \text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart}))$
- c. $\|3\| = \lambda p \lambda t_{\text{ST-T}}. \exists s_1 [p \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- d. $\|4\| = \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart})) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- e. $\|5\| = \lambda q \lambda t_{\text{AST-T}}. \exists t_{\text{ST-T}} [q \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}}]$
- f. $\|6\| = \exists t_{\text{ST-T}} \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart})) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^* \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}}]$
- g. $\|7\| = \lambda r \lambda t_{\text{UT-T}}. \exists t_{\text{AST-T}} [r \ \& \ t_{\text{UT-T}} > t_{\text{AST-T}}]$
- h. $\|8\| = \exists t_{\text{AST-T}} \exists t_{\text{ST-T}} \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart})) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^* \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}} \ \& \ t_{\text{UT-T}} > t_{\text{AST-T}}]$

i. *Interpretation with Existential Closure*

$$\exists t_{\text{UT-T}} \exists t_{\text{AST-T}} \exists t_{\text{ST-T}} \exists s_1 \exists_2 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart})) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^* \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}} \ \& \ t_{\text{UT-T}} > t_{\text{AST-T}}]$$

Comparing these two derivations, in both $\text{Voice}_{\text{active}}$ selectively binds the closest state argument. But only in the case of causative predicates is the interpretative result non-trivial: in mapping the causing-state to the State-Time, the result-state is backgrounded. But with simple states (*e.g. own*), there is only one state argument, so when voice maps it there is no contrastive effect.

Now that we have seen the role of Voice in mapping an inner-aspect argument to time in the active voice, the next section extends the analysis to the passive.

4.2.1.5.3 *Derivation of the Passive Voice*

Let's consider the derivation of the passive expression *The cart was pushed by Victoria*. The passive is more complicated because it has to accomplish three things at once: it has to account from its meaning, its syntax, and the properties of the external argument. The first new step in the derivation is the formation of the passive participle. In (52a) I propose that the passive participle morpheme is a modifier of the result-state description

of a causative relation that places a containment relation on its state arguments, namely that the causing-state is contained in the result-state.¹⁸

- (52) a. $\| -en_{passive} \| = \lambda P \lambda y \lambda s_2 \lambda s_1 \lambda x. [CAUSE(P(x, s_1), en(P(s_2, y))) \& s_1 \subseteq s_2]$
 b. Formal features on *-en*: {*iS* [], *iPart* [Pass]}

In (52b), the participle carries two formal features. First, it has an *unvalued interpretable iS* [] feature that will agree with the state feature on s_2 . Then, it has a *valued interpretable* participle feature. It specifies that the sort of participle is passive and it will make the participle visible to the agreement features on the passive Voice head. So, the passive participle puts a containment relation on a causative predicate's state arguments and morphologically marks its result-state description.

¹⁸ Regarding the form of the English participle, *-en*, it is tempting to analyse it as an allomorph of the preposition *in*. This would account for the containment relation I have given it in the denotation.

It is of obvious interest to see how this analysis of the passive participle relates to that of the outer-aspect perfect participle. I will not pursue this here because it would broaden the scope too much, and distract from the main purpose. However, since I am pursuing the idea that there is a compositional distinction between the domain inner-aspect and the domain of time, the position I intend to explore is that the passive participle is a containment relation for state arguments, and the perfect participle is a containment relation for time arguments.

In this connection, and before setting the perfect participle aside, it is worth showing that the passive participle is distinct from the perfect participle, so the two participles cannot be assumed to be the same items. Examples (i)-(iii) show this. Starting with (i), in the simple past active voice, there is no participle ((i.a)), and in the passive voice, a passive participle appears ((i.b)).

- (i) a. Hugo pushed a button
 b. A button was pushed (by Hugo)

Next, in the present perfect active voice, the perfect participle appears ((ii.a)); and in its passive there are now two participles, one for the perfect (*been*) and one for the passive (*pushed*) ((ii.b)).

- (ii) a. Hugo has pushed a button
 b. A button has been pushed (by Hugo)

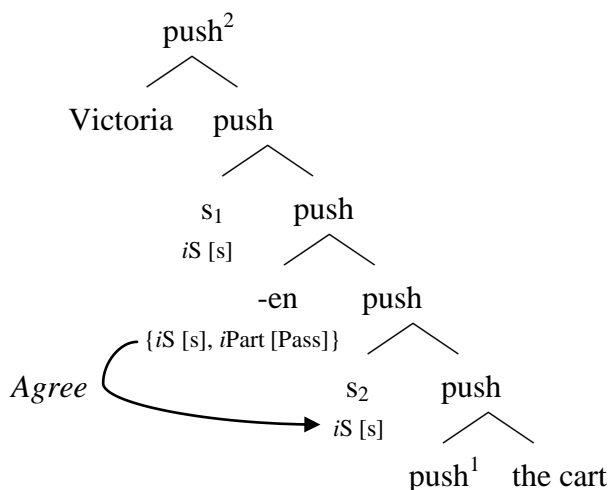
Lastly, the present perfect continuous shows that in the active voice, the perfect participle and the gerund co-occur ((iii.a)); and its passive shows that the perfect participle, the gerund, and the passive participle co-occur ((iii.b)) in that order.

- (iii) a. Hugo has been pushing a button
 b. A button has been being pushed (by Hugo)

These ordering facts are consistent with the present perspective on the passive as an interpretative operation on inner-aspectual structure, because the passive participle is structurally closest to the inner-aspectual domain of the clause. It is also independent of perfect outer-aspect, which appears above the morphology of the continuous. So it seems viable to pursue an analysis of the passive and the passive participle as operations on the interpretation of inner-aspect, and perfect outer-aspects as orderings of times (*cf.* Hornstein 1990; Giorgi and Pianesi 1997; D&U-E 2000). I set aside more detailed analysis of perfect outer-aspects because it would take the discussion in the direction outer-aspect, and the objective here is to stay narrowly focussed on diagnosing the content of inner-aspect.

The structure in (53) continues the derivation combining the participle morpheme with *push*, and (54) provides its LF translation. Line (54b) reads: Victoria’s pushing of the cart is a causative stative relation such that its causing-state is in its result-state.

(53) Victoria pushed_{passive} the cart



(54) Interpretation of (53)

- a. $\|1\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(\text{push}(x, s_1), \text{push}(s_2, y))$
- b. $\|2\| = \text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{en}(\text{push}(s_2, \text{the cart}))) \ \& \ s_1 \subseteq s_2$

The next step is the merger of the passive Voice head, $\text{Voice}_{\text{passive}}$. Its denotation in (55a) is the same as the active Voice head, but it selectively binds a result-state, s_2 , and maps it to the State-Time.

- (55) a. $\| \text{Voice}_{\text{passive}} \| = \lambda p \lambda t_{\text{ST-T}}. \exists s_2 [p \ \& \ t_{\text{ST-T}} \in \tau(s_2)^*]$
- b. Formal features on $\text{Voice}_{\text{passive}}$: $\{ \{ iS [\], uPart [\], EPP \}; \{ \varphi\text{-set}[\] \} \}$

Its formal features in (55b) come in two bundles, the first for its aspectual properties and the second for the stranded external argument. The first bundle contains an unvalued morphological state feature, an unvalued Part feature that targets the participle, and an EPP feature that provokes movement of the participle structure.

The second bundle addresses the co-occurrence of the passive Voice and the syntactically active external argument that can be realised under the preposition *by*. I follow Chomsky (2001) in the proposal that Case is a reflex of an agreement relation. Since the preposition case-marks the external argument, there must be an agreement

relation between them. The nominal features in the set are unvalued, so the external argument will value them.

Furthermore, I follow Landau (2010a) in his proposal that implicit arguments that are syntactically active are made so by formal feature agreement. So the nominal feature set on Voice_{passive} requires there to be a corresponding nominal in the structure to value it, even if it is null. This accounts for data such as (56) and (57) (repeated from (16) and (17)) where the external argument is syntactically active in the passive.

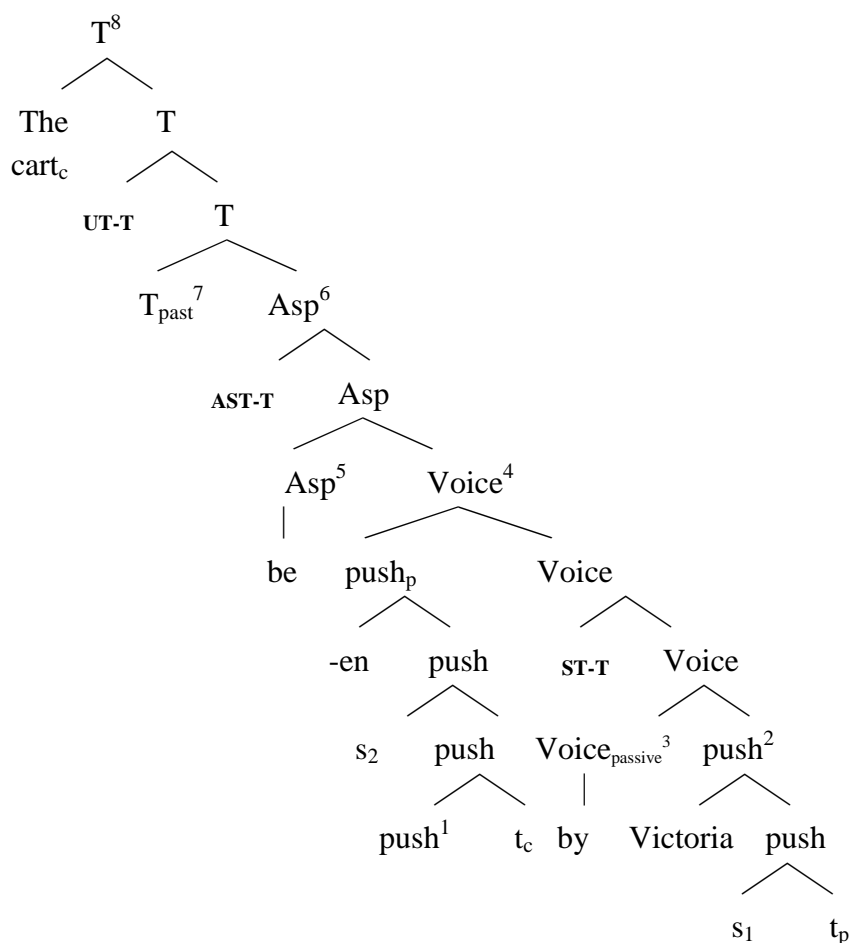
- (56) a. The enemy sank the ship
b. The ship was sunk (by the enemy)
c. The ship sank (*by the enemy)
- (57) a. They decreased the price willingly
b. The price was decreased willingly
c. *The price decreased willingly

(Jaeggli 1986: 611, ex. (53))

This implies that English has a null pronominal of some kind. I will not explore this issue in detail, but we will return to it in chapter 5 when discussing the differences between passives and unaccusatives. The tree in (58) completes the derivation.¹⁹

¹⁹ The representation in (58) will be modified in one respect when *there*-insertion is analysed in section 4.2.2.5.3. Although the object in (58) is shown as moving straight from its base position to Spec, T, it is more accurate to have it move through an intermediate position. I will assume that the closest DP adjoins to VoiceP in a low focus movement (*cf.* Belletti 2004). This movement seems to parallel the interpretation of the state argument that is selectively bound by Voice. I set this aside for simplicity in (58), and leave open the question of how general this movement is. Lastly, this movement replaces Collins' (2005) proposal that the object moves to specifier of the participle in the passive ((13)).

(58) The cart was pushed by Victoria



$\text{Voice}_{\text{passive}}$ values its unvalued features upon merging. The nominal phi-set is valued by the external argument. Since the external argument is overt, $\text{Voice}_{\text{passive}}$ is realised as *by* (Collins 2005).

As for the aspectual bundle $\{iS [], uPart [], EPP\}$, it is valued by the features on the passive participle morpheme *-en*. The probe economy principle in (59) allows the passive Voice head to target the features on *-en* and values its features with a single probe. After valuation, the bundle looks like this: $\{iS [s], uPart [Pass], EPP\}$.

(59) Maximise matching effects

(Chomsky 2001: 15, ex. (14))

Without this economy principle, the unvalued aspectual features could be valued by two separate probes: $iS []$ could be valued by the structurally closer s_1 , and $uPart []$ by the participle. A consequence of having both its unvalued features valued by *-en* is that *-en* is the unambiguous target for satisfaction of the EPP feature, triggering movement of the participle to Spec, $\text{Voice}_{\text{passive}}$.

One final point to observe is that, because of the uniqueness of ST-T, in the passive voice it is now s_I that is bound under Existential Closure, and not mapped to time at LF. Once again, I propose that the temporal trace of the unmapped state argument is interpreted inferentially. In the passive, this is done with respect to the participle's containment relation.²¹

So, the syntax and the meaning restriction on the passive are captured by the combination of the passive participle morpheme that modifies a result-state, and the meaning of the passive Voice head, which focalises that result-state in the IP domain. While the active voice maps the closest state argument to time, and passive voice maps a result-state. This captures the empirical fact that simple states are ungrammatical in the passive because they have no result-state:²²

- (61) a. *John was fit by the new suit
 b. *To help was willing of Emma/*It was willing of Emma to help

It also follows that verbs traditionally classified as activities ((62a)), accomplishments ((62b)), achievements ((62c)), as well as stative causative verbs ((62d)) and stative causative adjectives ((62e)) passivise because they are all causative.

- (62) a. The cart was pushed by Victoria
 b. Willistead Manor was built by Hiram Walker
 c. The race was won by Katherine
 d. The books were kept on the table by the Tony
 e. To leave was rude of Emma/It was rude of Emma to leave

In conclusion, the passive's distribution restriction supports this theory of aspectual composition because passivisation is sensitive to precisely the causative/simple state distinction. It is also consistent with the conclusion that activities, accomplishments and achievements do not have distinct syntactic aspectual representations because the passive is not sensitive to them. In other words, it is consistent with the conclusion that

²¹ This becomes relevant in section 4.2.2.5.3 when analysing the data pattern of existential *there*.

²² See footnote 12 for qualification of the acceptability of simple states in the passive voice. There I suggest that placing a passivised simple state in a discourse context that implies clausal relations is one way to make it felicitous—but this is done at the discourse-level, not at syntax/LF.

they all have the same causative structure. Lastly, this analysis of the passive is not sensitive to lexical category, so verbs, adjectives, and nouns are all free to passivise.

4.2.1.6 *First Argument for the State Argument and against the Event Argument*

On the analyses of *push* above, one of two aspectual arguments gets mapped to the State-Time: the causing-state in the active voice and the result-state in the passive voice. In the passive voice the auxiliary *be* appears ((63a)). I would like to propose that this mundane fact about the passive—that a stative auxiliary surfaces—is not a coincidence. Rather, it reflects the stative content of the aspectual argument interpreted in the IP domain and spelt-out via the state feature.²³

- (63) a. The cart was pushed by Victoria
 b. Victoria pushed the cart

The auxiliary verb is needed in the passive because the lexical verb carries the participle morphology and cannot bear IP domain morphology, as it does in (63b). On the present analysis of the passive, the interpretative process goes like this: the result-state is mapped to the State-Time by $\text{Voice}_{\text{passive}}$, carrying its state feature with it, and Asp^0 then relates the State-Time and its state feature to the Assertion-Time. So, the State-Time carries the content of the result-state argument all the way to the outer-aspect head. In the passive derivation in (58) I analysed the outer-aspect head as auxiliary *be*'s base-position. In section 4.2.2.5.1 it will be argued that *be* is always base-generated in the IP domain.

The first argument for the state argument goes like this: an auxiliary surfaces in the passive because a stem is needed to bear IP domain morphology. *Be* surfaces in the passive because it reflects the stative content of the aspectual argument that is interpreted in the IP domain. So, the argument from the passive for the state argument comes from a proposal for the content of auxiliary *be*. In the case of the passive, the content is the result-state argument of the predicate interpreted in the IP domain.

²³ See section 3.7.3 for an extended argument against the existence of “active” *be*; thus *be* can only be stative.

Now, auxiliary *be* appears regardless of whether the lexical predicate is an achievement, an accomplishment, or an activity. I have used the activity verb *push* throughout this section because activities are assumed to have a primitive event argument in the result part of their causative relation. This event argument is proposed to capture the “process” nature of atelic events.

In (64) (repeated from (6)) we see that Parsons’ (1990) representation of atelic causation specifies a relation between two primitive event arguments.

(64) *Parsons’s (1990) Analysis of Atelic Causation*

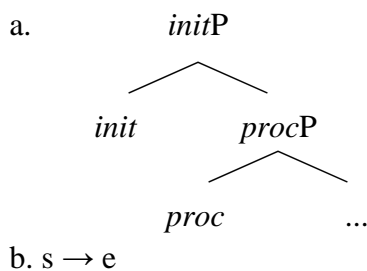
a. Victoria pushed the cart

b. $(\exists e)[\text{Agent}(e, \text{Victoria}) \ \& \ (\exists e')[\text{Pushing}(e') \ \& \ \text{Theme}(e', \text{the cart}) \ \& \ \text{CAUSE}(e, e')]]$

(cf. Parsons 1990: 109)

Ramchand (2008), in partial contrast, analyses the causing sub-part in all causatives as stative ((65) repeated from (7c, d)). This difference between Parson’s and Ramchand’s analyses illustrates that nothing crucial in the account of activities hinges on the causing argument’s content. However, Ramchand’s decomposition of activities makes it clear that the second aspectual argument is an eventive process:

(65) *Syntactic Representation of Atelic Causation*



(cf. Ramchand 2008: 61)

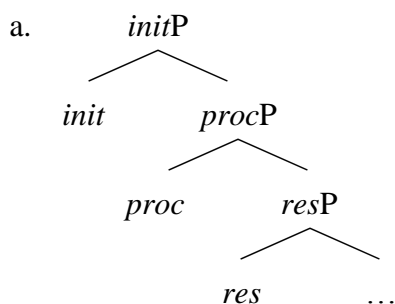
Another function of the primitive event argument in the caused sub-part of activities is to distinguish the decomposition of atelic predicates from that of telic ones. Telic predicates, such as *break*, are sometimes analysed as containing three aspectual arguments; the third one, on standard assumptions, is uncontroversially stative. In (66) and (67) (repeated from (8), (9)) the decompositions of telic predicates are the same as the atelic ones above with the addition of a result-state:

(66) *Parsons's (1990) Analysis of Telic Causation*

a. Peter broke the chair

b. $(\exists e)[\text{Agent}(e, \text{Peter}) \ \& \ (\exists e')[\text{Theme}(e', \text{the chair}) \ \& \ \text{CAUSE}(e, e') \ \& \ (\exists s)[\text{being-broken}(s) \ \& \ \text{Theme}(s, \text{the chair}) \ \& \ \text{BECOME}(e', s)]]]$

(cf. Parsons 1990: 120)

(67) *Ramchand's (2008) Syntax and Semantics of Telic Verbs*

(cf. Ramchand 2008: 39, ex. (1))

b. $s \rightarrow e \rightarrow s$

(Ramchand 2008: 42-45)

So when it comes to predicate decomposition, an event argument is central in distinguishing atelic predicates from telic ones. State arguments suffice for the rest.

However on the present analysis of the passive, the appearance of a stative auxiliary with activity verbs indicates that their caused sub-part is also stative. If this is the case, then we can conclude further that the more complex decomposition of telic predicates collapses into an aspectual decomposition with only two aspectual arguments.

Let's consider Ramchand's system first. Here the aspectual arguments are composed with a single interpretation rule of causal implication. In (67b) the second state argument is interpreted as a result-state because it is embedded under the eventive process. Without this eventive denotation of the process head in (65) and (67a), there is no representation of change or Davidsonian eventivity in this system.

The present argument is that the appearance of a stative auxiliary in the passive of activities shows that their embedded aspectual argument is stative. This argues against a primitive event argument in the only place it was needed, and the only place where *change* was represented in the aspectual decomposition. And so, the more complex aspectual decomposition of telic predicates reduces to a decomposition with two state arguments.

A system that makes use of BECOME to produce a result-state such as Parsons' is susceptible to the same argument. The representation of activities in (64) has an event argument in the second part of the CAUSE relation to reflect the intuition that there is a process involved, *i.e.* CAUSE(*e*, *e'*). In representation of telic predicates in (66b), BECOME marks the transition from the process event in the causative relation to a state, *i.e.* BECOME(*e'*, *s*). However, if the content of *e'* is stative as the present argument suggests, then BECOME no longer provides the desired juxtaposition with atelic predicates because the result sub-part of CAUSE already denotes a result-state; BECOME is vacuous.²⁴

In sum, if there is no primitive event argument, adding a stative sub-part to the decomposition of telic predicates no longer distinguishes atelic predicates from telic predicates because both have result-states. In this case, a causative relation with state arguments is sufficient to account for eventivity effects. The implication would then be that *change* is represented conceptually, but not in the aspectual decomposition.

Let's consider just one observation supporting this argument that auxiliary *be* in the passive reflects the stative content of the promoted aspectual argument. One could suggest that a stative auxiliary appears because passive expressions are stative, while active voice expressions can be either eventive or stative.

However, examples (68)-(72) weigh against this possibility. They show that eventive verbs behave the same with respect to inner-aspect diagnostics in the active and passive voice. Examples (68) and (69) show that achievements and accomplishments remain telic. The examples in (70) show that activities remain atelic. Lastly, (71) and (72) show that the results of the eventivity diagnostics of locative modification and manner adverbs are unchanged in the passive. So, the passive voice does not modify a predicate's aspectual status.

²⁴ I have discussed telicity in this section using the accomplishment verb *break*, and set aside discussion of achievements. This is partially to simplify the discussion, but also because accomplishments and achievements pattern together in many respects. In addition, achievements are often analysed as complex events with a process and/or as causatives (*cf.* Levin 2007; Ramchand 2008), and so I am assuming that their aspectual decomposition falls under the arguments given above. Lastly, the differences that do appear to exist between accomplishments and achievements can be analysed as pragmatic (*cf.* Verkuyl 1993). I am taking a combination of these positions: accomplishments and achievements are causatives with the same aspectual decomposition, and the differences between them are pragmatic/conceptual. The status of telicity and boundedness in this system is discussed below in section 4.2.2.4.

- (68) a. Katherine won the race in twenty-five minutes
b. The race was won by Katherine in twenty-five minutes
- (69) a. Hiram Walker built Willistead Manor in three years
b. Willistead Manor was built by Hiram Walker in three years
- (70) a. Victoria pushed the cart for hours
b. The cart was pushed by Victoria for hours
- (71) a. Jones buttered the toast in the bathroom
b. The toast was buttered by Jones in the bathroom
- (72) a. They decreased the price willingly
b. The price was decreased willingly

Since passive expressions still test positive for eventivity, the question of why they come with stative morphology is an interesting one. The present analysis provides a principled reason that implies that eventivity effects are epiphenomenal. It has the additional strength of explaining why auxiliaries are stative.²⁵

4.2.2 *The Continuous Aspect*

In this section we turn to the analysis of the continuous. Section 4.2.2.1 outlines the empirical ground. Section 4.2.2.2 provides the derivations of the continuous in the active voice and passive voice. Section 4.2.2.3 presents the argument for state arguments from the continuous. Lastly, section 4.2.2.4 discusses the representation of telicity in this system, the status of the Imperfective Paradox, and why the continuous aspect is an environment for agentive coercion.

²⁵ In addition to *be*, auxiliary *have* is stative, and the *do* that appears in *do*-support is a bleached stative form, and not the action lexical verb. Examples (i) and (ii) illustrate this last point. On the one hand, *do*-support occurs with all predicates, even simple states, such as *own* ((i)). On the other, (ii) shows that simple states are infelicitous with lexical *do*, which implies an action.

- (i) Emma did not own a typewriter
(ii) #What Emma did then was own a typewriter

This shows that the *do* in *do*-support and lexical *do* are different items, the former being bleached of the action connotation of the latter. On this theory it is not a coincidence that auxiliaries are stative, but an account of why different auxiliaries appear where they do is a project for future research.

4.2.2.1 *The Distribution of the Continuous*

The distribution of the continuous aspect has the same semantic restriction as the passive: only simple states are ungrammatical. The examples in (73) show that activities, accomplishments, achievements, and stative causative verbs and adjectives take the continuous naturally, but simple state verbs and adjectives do not.

- (73) a. Victoria is pushing the cart
 b. Hiram Walker is building Willistead Manor
 c. Katherine is winning the race
 d. He is keeping the books on the table
 e. Emma is being rude
 f. *Emma is owning a typewriter
 g. *Emma is being anxious/nervous/eager/willing
 h. *Peter is being tall/Canadian

From the perspective of this thesis, what (73a-e) share is a causative aspectual structure, so the obvious suggestion is that the continuous aspect is another function that operates on a causative in-put.

Interestingly, the out-put of the continuous has the temporal properties of a simple state. Vlach (1981) (who argues that the continuous is a stativiser) observes with respect to Vendler's (1967) classification that predicates that take the continuous allow a temporal succession reading with a *when*-clause ((74a-c)). In contrast, simple state predicates only have a temporal overlap reading ((74d)).

- (74) a. Victoria pushed the cart when I arrived
 ⇒ I arrived, then Victoria pushed the cart
 b. Hiram Walker built the house when I arrived
 ⇒ I arrived, then Hiram Walker built the house
 c. Katherine won the race when I arrived
 ⇒ I arrived, then Katherine won the race
 d. Emma owned a typewriter when I arrived
 ⇒ I arrived and Emma already owned a typewriter

In the continuous aspect, however, continuous-taking predicates now have the same temporal overlap interpretation as simple states (*cf.* (75d)):

- (75) a. Victoria was pushing the cart when I arrived
 \Rightarrow I arrived and Victoria was already pushing the cart
 b. Hiram Walker was building the house when I arrived
 \Rightarrow I arrived and Hiram Walker was already building the house
 c. Katherine was winning the race when I arrived
 \Rightarrow I arrived and Katherine was already winning the race

A related property in English is that simple states in the present simple have an existential reading, and continuous-taking predicates (*i.e.* causatives) do not ((76a-c) vs. (76d)):

- | | |
|----------------------------------|----------------------|
| (76) a. Victoria pushes the cart | ($\# \exists$ /Gen) |
| b. Hiram Walker builds the house | ($\# \exists$ /Gen) |
| c. Katherine wins the race | ($\# \exists$ /Gen) |
| d. Emma owns a typewriter | (\exists /Gen) |

But, the examples in (77) show that the continuous aspect makes this possible for causatives:

- | | |
|---------------------------------------|---------------|
| (77) a. Victoria is pushing the cart | (\exists) |
| b. Hiram Walker is building the house | (\exists) |
| c. Katherine is winning the race | (\exists) |

The meaning of the continuous is intuitively described as an unfinished process, especially of someone doing something. One analysis of the continuous is to assume Vendler's aspectual classification of activities, accomplishments, achievements, and states, and treat the continuous as an intentional operator that maintains the predicate's aspectual properties (*cf.* Dowty 1979; Higginbotham 2009).

On that approach, the continuous invokes inertia worlds (*i.e.* possible worlds representing potential outcomes of the eventuality) to capture the atelicity of the

continuous in the actual world: if a predicate is an accomplishment or achievement, the eventuality they describe becomes atelic in the actual world because the continuous operator shifts the culmination into inertia worlds, and so in the actual world the eventuality is not yet finished.

Inertia world analyses have three significant linguistic drawbacks: (i) since the continuous maintains the predicate's original aspectual classification, the grammatical distribution of the continuous—the ungrammaticality of simple states in the continuous—has to be stipulated (Higginbotham 2009: 133); (ii) it does not explain why Vendlerian non-states take on the temporal properties of simple states in the continuous, and not activities; and (iii) it is unclear why activities, which are already atelic, should be meaningful in the continuous.

In contrast, the fact that the continuous aspect is sensitive to just this causative/simple state distinction takes on certain significance here. In addition, it extends to account for the fact that EAs take the continuous, and other adjectives do not.

Now, the data presented above illustrating the distribution of the continuous and its interpretive parallels with simple states show that the intuitive meaning of the continuous aspect is not sharp enough to characterise its grammatical function. The data imply that the continuous is defined over causatives, and this underwrites the general intuition that the continuous involves something happening. But, we have seen that causation does not entail change, so the intuition is misleading.

Instead, I propose that the continuous aspect gives causatives the temporal properties of simple states by mapping both aspectual parts of a stative causative relation to the State-Time. Since both the causing-state and the result-state in the stative causative hold together at this one time, it is interpreted as atelic.

The interpretative properties of the continuous and the present and past simple with respect to aspectual structure are discussed in section 4.2.2.5.2. First, the next section presents the analysis of the continuous.

4.2.2.2 *Derivation of the Continuous*

I propose (78) as the lexical entry of the continuous. Beginning with the denotation in (78a), it is designed to work in combination with the out-put of the voice head. First, it

presupposes there is a State-Time argument for it to bind, *i.e.* t_{ST-T} . For this to be the case, a voice head must have already merged and selectively bound a state argument.

- (78) a. $\| -ing \| = \lambda p. \exists_{ST-T} \exists s [p \ \& \ t_{ST-T} \in \tau(s)]$
 b. Formal features on *-ing*: $iS [\]$

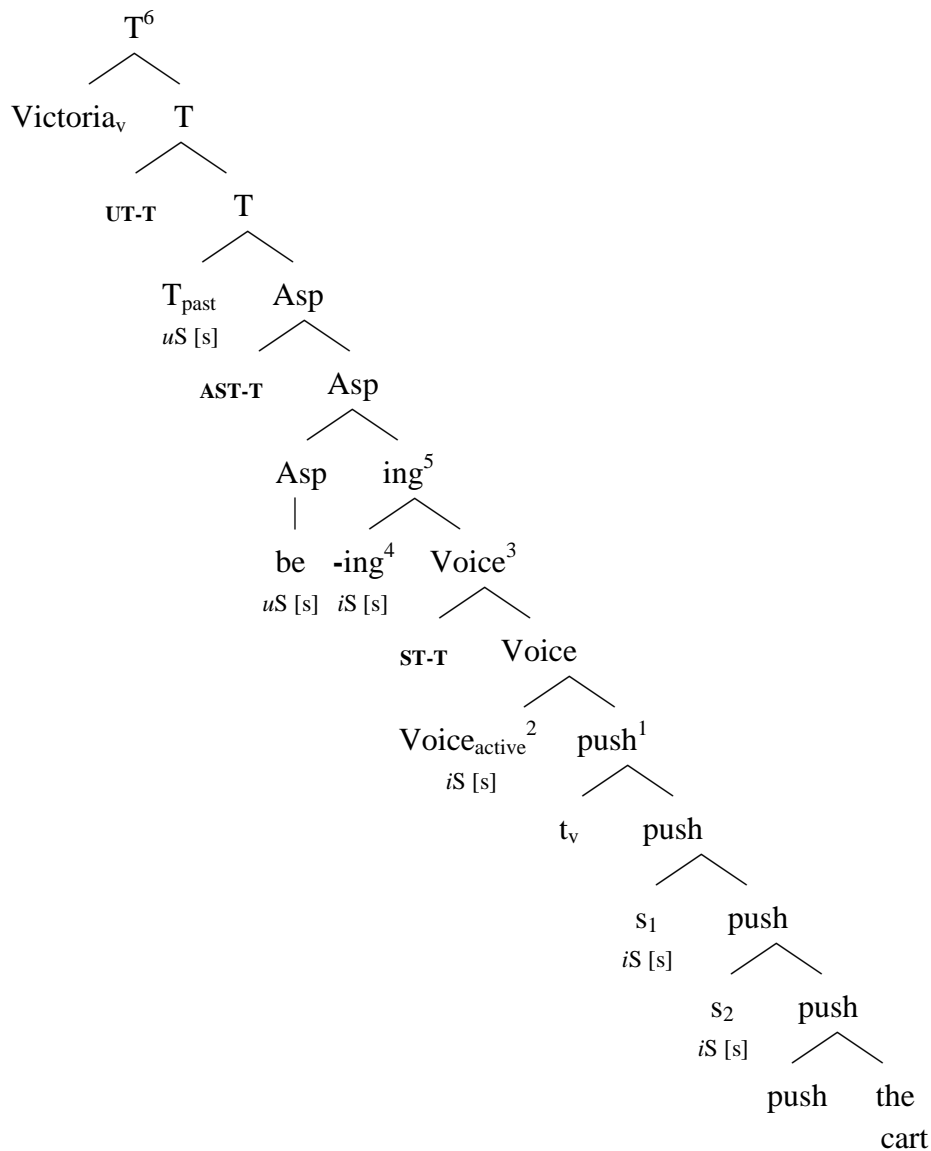
Second, the existential quantifier over states will unselectively bind any free state argument in the predicate, and map it to the State-Time. This means that it will bind the state argument that Voice⁰ leaves behind, and map it to the same State-Time. A well-formed out-put will say that the State-Time is one at which both the causing-state and result-state hold simultaneously. Lastly in (78b), the continuous morpheme comes with a morphological state feature.

Regarding the intuition that the continuous involves a “process”, I suggest it is derivative of the continuous operating on causatives, and mapping the causing-state and the result-state to the State-Time. Since most predicates that appear in the continuous do imply change, the continuous induces the inference that it is about an altelic “process”. However, the proposal here is that the continuous is truly about the temporal interpretation of a stative causative aspectual structure. Importantly, since the overarching argument is the there is no primitive event argument, but only state arguments, it is impossible for the continuous to be about a “process” in this system.

Note that on this proposal, the continuous aspect is not an outer-aspect in the sense of being a temporal ordering relation (*cf.* D&U-E 2000). Instead, it is like Voice in this theory in that it maps an aspectual argument to the State-Time. But unlike Voice, it unselectively binds and it does not focalise.

The structure in (79) illustrates the active voice derivation of *Victoria was pushing the cart*. Once again, *be* is generated under Asp⁰ in order to bear the temporal and aspectual morphology that the lexical predicate cannot. The lexical predicate cannot carry this morphology because the gerund morphology intervenes, and so it carries *-ing*. *Be* will raise to T⁰ and spell-out as *was* in PF. The gerund will also form in PF.

(79) Victoria was pushing the cart



The interpretation of this structure is in (80). Everything is the same here as in the active voice derivation of *Victoria pushed the cart* in (50), with the addition of the continuous. In (80e), the continuous explicitly binds the state argument that Voice⁰ leaves behind, and maps it to the State-Time, but without focalising it. Line (80f) reads: Victoria’s pushing of the cart is a stative causative relation whose causing- and result-states hold at the State-Time, which focalises the causing-state, and the Utterance-Time is after the simultaneous Assertion- and State-Times. Since only the temporal trace function in Voice focalises, there is still the intuition that an active voice continuous expression is about the causing-state.

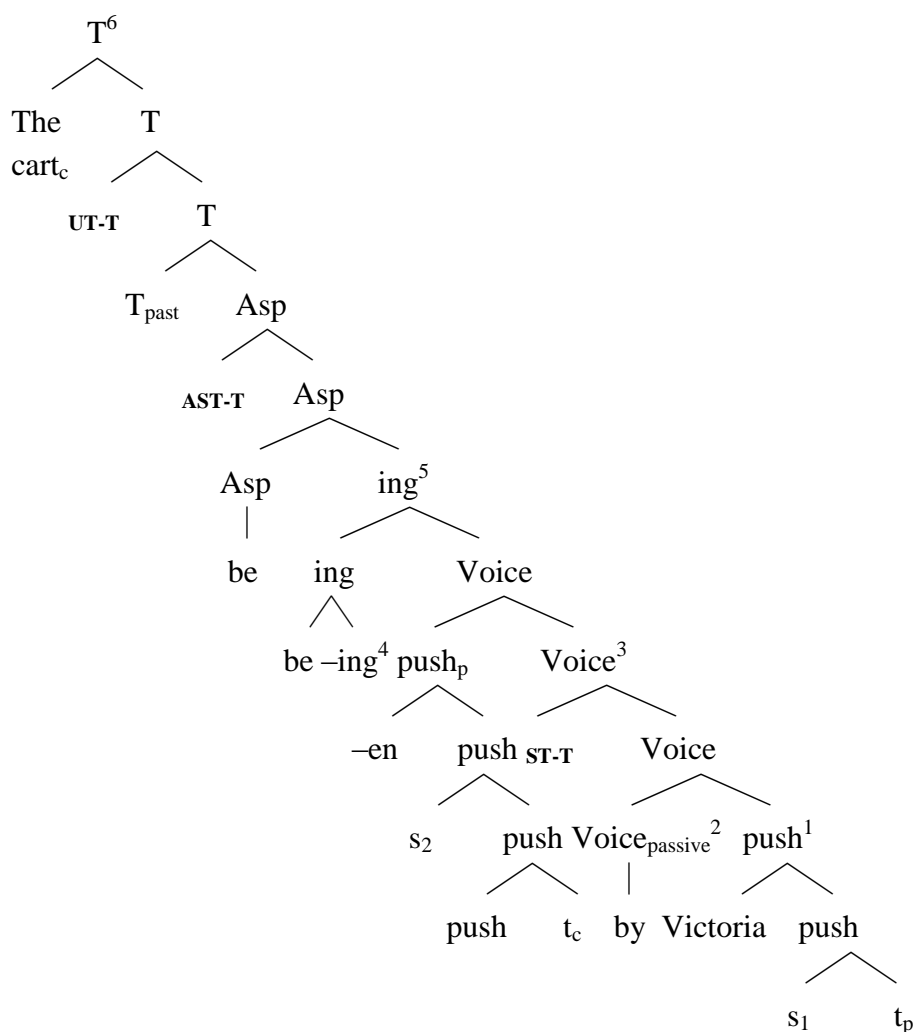
(80) *Interpretation of (79)*

- a. $\|1\| = \text{CAUSE}(\text{push}(\text{Victoria}, s_1), (\text{push}(s_2, \text{the cart}))$
- b. $\|2\| = \lambda p \lambda t_{\text{ST-T}}. \exists s_1 [p \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- c. $\|3\| = \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), (\text{push}(s_2, \text{the cart})) \ \& \ t_{\text{ST-T}} \in \tau(s_1)^*]$
- d. $\|4\| = \lambda q. \exists t_{\text{ST-T}} \exists s [q \ \& \ t_{\text{ST-T}} \in \tau(s)]$
- e. $\|5\| = \exists t_{\text{ST-T}} \exists s_2 \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), (\text{push}(s_2, \text{the cart}))$
 $\ \& \ t_{\text{ST-T}} \in \tau(s_1)^* \ \& \ t_{\text{ST-T}} \in \tau(s_2)]$
- f. $\|6\| = \exists t_{\text{AST-T}} \exists t_{\text{ST-T}} \exists s_2 \exists s_1 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), (\text{push}(s_2, \text{the cart}))$
 $\ \& \ t_{\text{ST-T}} \in \tau(s_1)^* \ \& \ t_{\text{ST-T}} \in \tau(s_2) \ \& \ t_{\text{AST-T}}, t_{\text{ST-T}} \ \& \ t_{\text{UT-T}} > t_{\text{AST-T}}]$

So, the proposal is that the continuous aspect establishes that the State-Time is one when both the causing-state and caused-state hold simultaneously. Without the continuous to specify that the State-Time has this property, if a predicate is causative, then Voice maps one state argument to the State-Time but nothing in the semantics says the State-Time holds of both aspectual sub-parts. Without the continuous to make this meaning contribution, if a predicate is causative, then the default inference is that the two aspectual parts do not hold at the same time. We will return to this in section 4.2.2.5.2 when discussing the interactions between temporal interpretation and inner-aspect.

Let's turn now to the derivation of the passive continuous expression *The cart was being pushed by Victoria* in (81). The copula is once again generated under Asp^0 under morphological necessity, and it moves to T^0 and it spelt-out as *was* in PF. Regarding the gerund, it is no longer able to attach to the verbal predicate because the passive morpheme *-en* intervenes. So, the morphological state feature on *-ing* spells out as *be* in order to provide the gerund morphology with a stem.

(81) The cart was being pushed by Victoria



There are two points that differentiate the interpretation of this derivation from that of the active voice continuous derivation: the passive participle and the passive voice head. Line (82f) says that Victoria's pushing of the cart is a stative causative relation such that its causing-state is in its result-state and its result-state is focalised by the State-Time, which holds simultaneously of the causing-state, and the Utterance-Time is after the simultaneous Assertion- and State-Times.

Aside from its length, the problematic point in this paraphrase seems to be the containment relation on the states. This is where the choice of the sub-set, instead of the proper sub-set relation comes into play. It allows for the two states to be interpreted co-extensively even though they stand in a formal containment relation. This allows for the correct interpretation of this sentence, while capturing the focalisation on the result-state that the passive induces on the continuous.

(82) *Interpretation of (81)*

- a. $\|1\| = \text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{en}(\text{push}(s_2, \text{the cart}))) \& s_1 \subseteq s_2$
- b. $\|2\| = \lambda p \lambda t_{\text{ST-T}}. \exists s_2 [p \& t_{\text{ST-T}} \in \tau(s_2)^*]$
- c. $\|3\| = \exists s_2 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{en}(\text{push}(s_2, \text{the cart}))) \& s_1 \subseteq s_2$
 $\& t_{\text{ST-T}} \in \tau(s_2)^*]$
- d. $\|4\| = \lambda q. \exists_{\text{ST-T}} \exists s [q \& t_{\text{ST-T}} \in \tau(s)]$
- e. $\|5\| = \exists_{\text{ST-T}} \exists s_1 \exists s_2 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{en}(\text{push}(s_2, \text{the cart}))) \& s_1 \subseteq s_2$
 $\& t_{\text{ST-T}} \in \tau(s_2)^* \& t_{\text{ST-T}} \in \tau(s_1)]$
- f. $\|6\| = \exists t_{\text{AST-T}} \exists_{\text{ST-T}} \exists s_1 \exists s_2 [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{en}(\text{push}(s_2, \text{the cart})))$
 $\& s_1 \subseteq s_2 \& t_{\text{ST-T}} \in \tau(s_2)^* \& t_{\text{ST-T}} \in \tau(s_1) \& t_{\text{AST-T}}, t_{\text{ST-T}} \& t_{\text{UT-T}} > t_{\text{AST-T}}]$

In this section I have proposed a novel analysis of the continuous that captures its temporal properties and its grammatical distribution, while fitting naturally into the inner-aspectual system under construction. While it may be strange to conceive of the continuous as a statement about simultaneous states, we will continue to see in this chapter that this characterisation accounts straightforwardly for an array of facts.²⁶

4.2.2.3 *Second Argument for the State Argument and against the Event Argument*

The argument from the continuous aspect for the sole existence of state arguments builds on the argument from the passive. In the argument from the passive we saw that decomposition approaches to inner-aspect agree that atelic causation has a primitive event argument in the caused sub-part, while differing on whether the causing sub-part

²⁶ Just as with the analysis of the passive above, this analysis does not imply that simple states cannot appear in the continuous. It implies that when they do so, it is at the pragmatic/discourse level. An example: the verb *live* in (i) is a simple state. Traditional grammars describe that, in the continuous ((ii)), *live* implies a temporary situation (Quirk *et al.* 1985: 198-199). But notice that, in the continuous, (iii) is a natural continuation of (ii).

- (i) Alex lives in Toronto
(ii) Alex is living in Toronto
(iii) Alex is living in Toronto because he is going to school there

Rather than simply describing a temporary situation, a causal relation is inferred. The present analysis predicts that causation will be involved, either at the lexical level or at the discourse level. So, simple states can and do appear in the continuous, but their felicity depends on the discourse context and our ability to conceptualise a simple state in causal relation: *live* works well, others (*e.g. own: Emma is owning a typewriter*) are more resistant.

is an event argument or a state argument (*cf.* Parsons 1990; Ramchand 2008). The proposal was that the appearance of a stative auxiliary in the passive with all causative predicates reflects the stative content of the aspectual argument in their caused sub-part. This specifically ruled out the existence of an event argument in the caused-part of atelic predicates—the only place it is necessary.

The argument from the continuous assumes the same logic, but the continuous provides overt evidence that the content of both the causing-part and the result-part is stative. The derivations of the active continuous in (79) and the passive continuous (81) interpret both aspectual sub-parts of the predicate, and the stative auxiliary *be* always appears. So, the second argument for the state argument and against the event argument is that the appearance of a stative auxiliary in both the active and passive continuous provides evidence that the content of the arguments is stative in all cases.

Elaborating further, note that just as with the passive, the base predicate retains its eventive character in the continuous aspect. The examples in (83) show causative predicates continue to accept manner and locative modification. So, it cannot be argued that the continuous *induces* stativity.

- (83) a. Victoria was pushing the cart angrily in the hardware store
 b. Hiram Walker was building a still secretly in the garage
 c. Katherine was winning the race quickly in the stadium
 d. He kept was keeping the books carefully in the library
 e. Emma was being elegantly modest in the foyer

Interestingly, what happens in the continuous is that all causative predicates become atelic—but more to the point—they all take on the temporal properties of simple states. Furthermore, these data show with respect to what we saw with the passive above that the continuous *only* affects the temporal interpretation of the predicate's aspectual structure—but it does not change its behaviour with respect to eventivity diagnostics. The analyses of Voice and the continuous proposed here capture exactly this empirical pattern: they explain why simple state properties emerge while event diagnostics continue to give positive results ((83)).

In conclusion, on this theory of inner-aspect the stative causative nature of the predicates that accept the continuous allows us to explain the emergence of stative properties in predicates that continue to appear eventive: the content of their aspectual

arguments is stative, and eventivity effects are derived from causation. Section 4.2.2.5.2 will return to address in more detail how it is that the continuous takes on the temporal properties of simple states.

4.2.2.4 *Telicity, the Imperfective Paradox, and Continuous Coercion*

The data in (84) (repeated from (73)) show that the continuous aspect is, like the passive, sensitive to the distinction between causatives (84a-e) versus simple states (84f-h).

- (84) a. Victoria is pushing the cart
b. Hiram Walker is building Willistead Manor
c. Katherine is winning the race
d. He is keeping the books on the table
e. Emma is being rude
f. *Emma is owning a typewriter
g. *Emma is being anxious/nervous/eager/willing
h. *Peter is being tall/Canadian

The continuous aspect has a complex cluster of properties: (i) it applies to causatives, (ii) it gives causatives the temporal interpretation of simple states, (iii) it has stative morphology, (iv) it is atelic, (v) it tests positive for eventivity, and (vi) it gives rise to agentive inferences. This section addresses how they interact and bear on the representation of telicity, boundedness, agentivity.

On the present analysis of the continuous, its atelicity follows from the mapping of states to a single State-Time. Since telicity is not represented in the predicate's aspectual structure, this analysis of the continuous does not have to posit an operation that removes the formal property of telicity from a predicate's aspectual decomposition.

Although I will leave a fuller account of telicity to future research, the logic of the present inner-aspectual system provides a clear picture of how telicity is represented. There are two types: (i) predicates that imply a natural culmination, such as *arrive*, *break* or *find* (e.g. *I found my keys on the table*), and (ii) predicates that vary between

telic and atelic usages (e.g. *build, draw, eat, run; I ran (to the store)*). We'll call the former “telic” and the latter “bounded”.

Telic verbs such as *arrive, break* and *find* motivate the more complex aspectual decompositions with an additional result-state. Since telicity is a property of the predicate itself, it is reasonable to encode it lexically in order to be able to capture its distribution. For this reason, Ramchand (2008) proposes that telic verbs list this information in their lexical entry as a [res] feature in order to associate with a result-state phrase, *resP* (Ramchand 2008: 32; 57-58; 77-78).²⁷

In the system being developed here, we can say that telicity—rather than being a lexical/syntactic feature—is simply a conceptual property of the predicate with no decompositional reflex. So all else being equal, a predicate that is telic is associated with a natural culmination conceptually.²⁸

However, the continuous aspect is a case where all is not equal. Since it semantically entails that the causing- and result-states hold at the State-Time, culmination is explicitly denied at the compositional level. This means that the semantics of the derivation imposes a restriction on the default conceptual knowledge associated with the predicate.

The examples of telic predicates in (85) show that each predicate handles the imposition of the continuous in its own way, depending on its own conceptual particularities.

- (85) a. Victoria is arriving
 b. Peter is breaking the window
 c. I am finding my keys
 d. Hugo is reaching the summit
 e. Katherine is winning the race

²⁷ The sort of lexical feature that Ramchand proposes projects into aspectual structure is not a formal feature that enters into Agree relations. Ramchand (2008: 25ff.) argues against the representation of telicity as a morpho-syntactic formal feature (cf. Borer 2005a, b, a.o.). The present theory takes the same position because, here, telicity is not represented as a syntactic property.

²⁸ Even though telicity is not represented in the aspectual decomposition, as a conceptual property, I do expect telicity to have morphological reflexes. In chapter 1 it was argued the category distinction between verbs and adjectives tracked the conceptual notion of change. Also, in chapter 5 it will be argued that the reflexive *se* that appears on some causative unaccusatives in Romance languages is conceptual/morphological. So, in this theory, conceptual knowledge can have a linguistic representation, *i.e.* in morphology, but it is not necessarily reflected in the syntax/LF mapping.

Nevertheless, the proposal here is that telic predicates have a causative aspectual decomposition, and for that reason the continuous aspect applies to them as a general compositional operation. In other words, the individual differences among the examples in (85) are conceptual and beyond the domain of the analysis of the continuous and inner-aspect decomposition.

Turning to bounded readings, there is agreement that they are the product of the composition of the whole predicate description (*i.e.* in traditional terms, the verb phrase), and that they are not directly encoded in the aspectual decomposition of the predicate.

Calculating a bounded reading is generally proposed to be a semantic operation that measures out the event-denoting verb against the content of its complement. The event argument is needed to measure this *process* (*cf.* Hay *et al.* 1999; Kennedy 2012; Krifka 1989, 1992, 1998; Ramchand 2008; Tenny 1987, 1994; Verkuyl 1993).

Such an approach to bounded readings bears a fundamental connection to the Imperfective Paradox (Dowty 1979). The challenge posed by the paradox is to explain the entailment patterns of the continuous aspect with respect to the aspectual class of verb (Dowty 1979: 133).

On the one hand, the activity verb in (86) has the same atelic interpretation in the past simple ((86a)) and the in the past continuous ((86b)). More specifically, they both entail that it is true that a cart was pushed.

- (86) a. Emma pushed a cart
 ⇒ A cart was pushed
 b. Emma was pushing a cart
 ⇒ A cart was pushed

In contrast, an accomplishment verb phrase, such as *draw a circle*, appears to have differing entailments in the simple past and in the past continuous. In (87a), the past simple expression seems to say that the event of drawing is bounded by the completion of the circle, while in (87b) in the continuous that entailment is lost.

- (87) a. Rachel drew a circle
 ⇒ Rachel completed a circle
 b. Rachel was drawing a circle
 ⇏ Rachel completed a circle

The original conception of the paradox hinged on the intuition that accomplishment verbs such as *draw* entail that their direct objects are complete entities. So *draw* in the past simple in (92a) behaves as expected because the circle is a complete entity. But the continuous example in (87b) is a semantic problem because the entailments of *draw* change.

Above we saw that Dowty proposed a modal analysis of the continuous that moves the entailed completion of the drawing of the circle into inertia worlds, and this explains the lack of the completion entailment in the actual world.

However, if this is a mischaracterisation of the semantics of (87a), *i.e.* if the completeness intuition is not an entailment in (87a), then there may be no paradox because the examples in (87) could have the same entailments as *push* in (86).

The examples in (88) suggest the latter possibility. They show that completeness is an implicature, and not an entailment. Example (88a) combines *draw* with a direct object with a more complex part-structure than a circle. Example (88b) combines it with the vaguest direct object possible.

- (88) a. Emma drew a face, but her sister told her it wasn't complete without a nose
 b. Emma drew something today, but she didn't finish it

I would like to add that even in (87a) the extent to which the circle has to be complete (or perfect) is unclear. So, what is behind the completion intuition in (87)? Let's consider the properties of a causative predicate in the past simple to explore it.

A causative predicate contains a cause and a result. All else being equal, in the past simple we infer that there is a result, and we infer that the result is as complete as the content and context of the utterance allow. So on its own, (89a) is compatible with any degree of completeness or sophistication. However, the examples in (88) above show that the extent of the completeness can be specified further. In other words, the effect is due to default reasoning with respect to the temporal interpretation of the aspectual

structure of the predicate in combination with pragmatic informativeness (*cf.* Grice 1989).

- (89) a. Emma drew a face
b. Emma owned a typewriter

In this connection, (89b) highlights the contrast between action causatives, such as *draw*, and simple states: simple states do not produce any inference to completion because they do not contain a cause-result structure.

However, both examples in (89) minimally entail the existence of some face drawing and some typewriter ownership, respectively. The same is true of the past simple circle drawing example in (87a) (*i.e.* *Rachel drew a circle*): there is the minimal existence entailment of some circle drawing.

Now, the denotation of the continuous aspect (repeated in ((90))) has the compositional effect of explicitly denying the completion of a stative causative predication at the State-Time.

$$(90) \quad \|\text{-ing}\| = \lambda p. \exists_{ST-T} \exists s [p \ \& \ t_{ST-T} \in \tau(s)]$$

Considering the circle drawing example again, this means that the continuous entails that the drawing is not completed at the State-Time. However, there is still a minimal existence entailment of some circle drawing at the State-Time.

The conclusion is that the past simple and the continuous aspect differ in their temporal implicatures, but share a minimal existence entailment, and so there is no entailment paradox in the contrast in (87). Furthermore, this means that all the examples (86) and (87) have the same, minimal existence entailments.

With this being the case, a semantic analysis of compositionally bounded readings that involves measuring-out a process over an event argument also dissolves because the continuous is about mapping states time, and past simple shares the same entailments. Therefore, measuring-out is an implicature, and there is no event argument.

With the existence entailment of the continuous in mind it becomes clear why examples of RAs in the continuous such as (91) are derived by discourse-level coercion, as discussed in section 3.7.

(91) Katherine is being French/tall

⇒ Katherine is French/tall

(i) First, they violate the existence entailment that the individual has the property. As shown in (91), it can be true that Katherine is not French or tall. (ii) Second, these predicates are simple states, so they do not satisfy the denotation of the continuous in the first place. (iii) Third, they are only interpretable on an agentive reading (and in the case of *French*, with a relevant stereotype), but the semantics of inner-aspectual composition and the continuous refer only to states, so agentivity is an enrichment of the semantics but not encoded in it.

In this connection, the agentive reading that RAs have specifically in the continuous seems to be based on the conscious impression that the continuous aspect means that an Agent is in the process of doing something (*cf.* Partee 1977; Dowty 1979).

In contrast, I have proposed here that semantically, the continuous aspect is defined by stative causation—not agentivity or a process. I have aimed to show that narrowing in on the grammatical distribution of the continuous, its simple state temporal properties, and its stative morphology reveals that the continuous is an operation on stative causatives, and that the event argument is epiphenomenal.

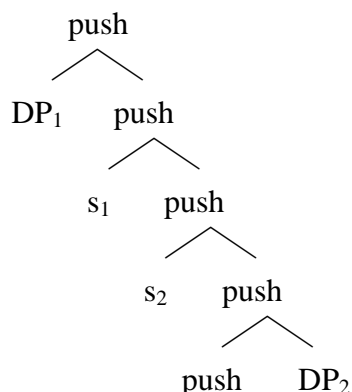
4.2.2.5 *Outstanding Aspectual Issues*

This section clarifies some of the aspectual topics that have surfaced. Section 4.2.2.5.1 argues that *be* and its inflected forms are not lexical verbs, but auxiliaries that appear in the IP domain to satisfy morphological requirements. Section 4.2.2.5.2 analyses the present simple and accounts for its interpretational pattern with respect to the type of predicate. Lastly, 4.2.2.5.3 extends the previous section's discussion to account for the distribution of *there*-insertion and provide a further argument for the sole existence of state arguments.

4.2.2.5.1 *The Copula: an Auxiliary*

Chapter 1 and section 2.4 argued that a lexical predicate's inner-aspectual structure is dissociated from lexical category information because verbs and adjectives have the same range of aspectual complexity. So, the aspectual structure in the syntax of the causative verb *push* in (92), and that of the causative adjective *rude* in (93a) are the same. On this proposal, the category distinction between verbs and adjectives is not determined by syntax, but by morphology.

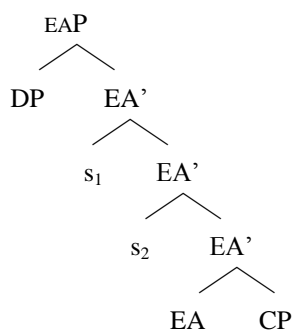
(92) *Syntax of push*



(93) *Argument Structures of the Three Main Adjective Classes*

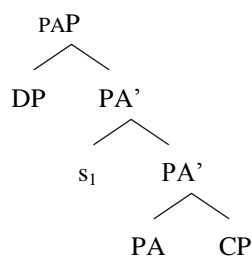
a. EAs:

Emma was rude to leave



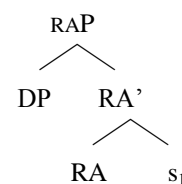
b. PAs:

Sam was eager to help



c. RAs:

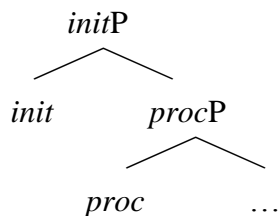
Victoria was Canadian/tall



This differs from analyses where the maximal projection of *push* in (92) is verbal, and adjective predications are embedded under a lexical copula *be*. The structures in (94) illustrate analyses of these types. The structure in (94a) is a partial representation of Ramchand's aspectual decomposition of verbs. Although the category "verb" does not appear, the aspectual heads are meant to decompose it (2008: 57).

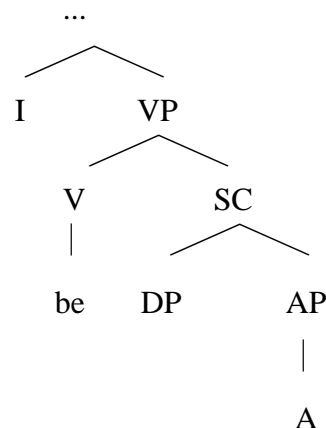
(94) *Representations of the Assumptions that Verbs and Adjectives Have Different Aspectual Structures, and that the Copula is a Lexical Verb*

a. Lexical Verbs



(cf. Ramchand 2008: 61)

b. Adjective Predications



(cf. Becker 2004: 416, ex. (39))

On the other hand, (94b) is an alternative way of representing adjective predications (e.g. *Emma is tall*). The copula *be* is assumed to be a lexical verb that is layered on top of the adjectival predication structure, followed by the IP domain. This type of analysis often implies that the internal structures of verbs and adjectives are fundamentally different.

In this section, I will argue in favour of the proposal that *be* is an auxiliary in all cases, and so there are not two forms of *be* (cf. Huddleston and Pullum 2002; Payne 2011). In particular, *be* helps to spell-out IP domain morphology that cannot be borne by the lexical predicate. This supports the parallel in (92) and (93), as well as the direction of this theory of inner-aspect: verbs and adjectives have parallel inner-aspectual structures, and aspectual structure is divorced from lexical category.

A long-observed empirical point is that auxiliaries are the only verbs that appear in T^0 in English. The examples in (95) and (96) show that a lexical verb stays below negation, which requires *do* and auxiliary *have* to bear tense, respectively.

- (95) a. Victoria pushed the cart
 b. Victoria did not push the cart
 c. *Victoria not pushed the cart
 d. *Victoria not did push the cart

- (96) a. Victoria has pushed the cart
b. Victoria has not pushed the cart
c. *Victoria not pushed the cart
d. *Victoria not has pushed the cart

Bringing *be* into the picture, the present perfect examples in (97) show that it appears to carry the perfect participle morphology in the passive ((97a) vs. (97b)). Example (97c) shows that *be* is generated below T^0 and negation.

- (97) a. Victoria has pushed the cart
b. The cart has been pushed by Victoria
c. The cart has not been pushed by Victoria

Further, the past simple examples in (98) show that when no other auxiliary occupies T^0 , *be* raises past negation to carry tense:

- (98) a. Victoria pushed the cart
b. The cart was pushed by Victoria
c. The cart was not pushed by Victoria

Together, examples (95)-(98) show:

- (i) Auxiliaries appear to carry IP-domain morphology.
- (ii) Only auxiliaries move to T^0 in English.
- (iii) *Be* materialises to carry IP-domain morphology and it is generated below T^0 .

Now a defining property of adjectives is that they do not carry tense and aspect morphology. Bearing this in mind, adjective examples (99) and (100) show that *be* follows the same pattern as verbs in (95)-(98). Namely, *be* appears to carry IP-domain morphology, it is generated below negation, and it raises to T^0 if no other auxiliary is present.

- (99) a. Emma is rude
 b. Emma is not rude
 c. *Emma not is rude
- (100) a. Emma has been rude
 b. Emma has not been rude

Throughout the derivations above, *be* was analysed as the spell-out of IP heads when the lexical predicate was not available. The data presented in this section show that the materialisation of forms of *be* correlates with IP domain considerations: it appears to license IP morphology. So, *be* raises to T⁰ in English because it is an auxiliary and not a lexical verb, and it does not originate in the inner-aspectual domain of the clause.

The evidence that *be* and its forms originate in the IP domain is additional evidence that the syntactic structure below the IP domain—the domain of inner-aspect—is not distinguished as verbal or adjectival. It supports the conclusion that inner-aspectual structure is category neutral, and therefore that verbs and adjectives can project isomorphic inner-aspectual structure.²⁹

4.2.2.5.2 Present Simple, Continuous Aspect, and the Individual/Stage Distinction

This section addresses the behaviour of the present and past simple and the continuous aspect with respect to the inner-aspect of the predicate. The examples in (101) (repeated from (76)) showed that in the present simple in English, causative verbs lack the existential reading ((101a-c)) that simple state verbs have ((101d)).

²⁹ With regard to the category distinction between verbs and adjectives, an interesting prospect is that an “adjective” stays in its base position, and a “verb” raises in PF to at least Voice⁰ (e.g. English) and as far as T⁰ (e.g. Romance languages). Voice⁰, Asp⁰, and T⁰ introduce the State-Time, Assertion-Time, and Utterance-Time, respectively. If the predicate raises to a time-denoting head (e.g. Voice⁰), and therefore stands in a temporal relation to T⁰, tense could be passed down to the predicate through the temporal relational heads and manifest on the predicate without the predicate having to raise to T⁰. On the other hand, if there is intervening morphology (i.e. *-en*, *-ing*), tense is blocked from attaching to the lexical predicate and the latter will have adjectival properties. In sum, the difference between verbs and adjectives may reduce to the predicate reaching the morphological domain of time.

- (101) a. Victoria pushes the cart (# \exists /Gen)
 b. Hiram Walker builds the house (# \exists /Gen)
 c. Katherine wins the race (# \exists /Gen)
 d. Emma owns a typewriter (\exists /Gen)

In contrast, the examples in (102) (repeated from (77)) showed that the continuous aspect provides causatives with this existential reading.

- (102) a. Victoria is pushing the cart (\exists)
 b. Hiram Walker is building the house (\exists)
 c. Katherine is winning the race (\exists)

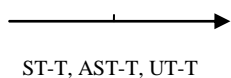
The examples in (103) and (104) confirm that stative causative verbs and EAs follow this pattern, showing that the dividing line is stative causatives versus simple states, and not lexical category.

- (103) a. Hugo sleeps (# \exists /Gen)
 b. Hugo is sleeping (\exists)
 (104) a. Emma is rude (# \exists /Gen)
 b. Emma is being rude (\exists)

In this section I will first propose that these facts, and parallel ones in the past simple, follow from the mapping of inner-aspect to time. Then, I will discuss the representation of the individual/stage intuition.

Beginning with the present tense data in (101)-(104), the particularity of the interpretation of the present simple is that that all three times are anchored to the Utterance-Time, *i.e.* the time of speech:

(105) *Time Orderings of the Present Simple*



On this theory, simple state predicates contain only one state argument, and it is mapped to the State-Time by the voice head. This is shown in (106). The interpretation

of the simple state present simple expression in (106a) is given in (106b). It shows that the aspectual argument is mapped to time, and so the aspectual structure of the predicate is completely mapped to time and anchored to the Utterance-Time. This makes it consistent with (105), as shown in (106c). I propose that this complete mapping and anchoring accounts for the existential reading of these simple states in the present simple.

(106) a. Emma owns a typewriter (\exists)

b. $\exists_{UT-T} \exists_{AST-T} \exists_{ST-T} \exists_{s_1} [\text{own}(\text{Emma}, s_1, \text{the typewriter}) \& t_{ST-T} \in \tau(s_1)^*$
 $\& t_{UT-T}, t_{AST-T}, t_{ST-T}]$

c. $\xrightarrow{\hspace{10em}}$
 $ST-T, AST-T, UT-T$

Now let's compare simple states with causatives, which lack this existential reading ((107a)). On this theory, causatives have two state arguments and Voice⁰ maps only one to the State-Time. So in (107b), s_1 is mapped to time, but s_2 is not. It was proposed above that in the cases where a state argument is not mapped to time in the semantics, it is done inferentially. The inferential nature of the temporal interpretation of s_2 is marked with the square brackets in (107c).

(107) a. Victoria pushes the cart $(\# \exists)$

b. $\exists_{UT-T} \exists_{AST-T} \exists_{ST-T} \exists_{s_1} \exists_{s_2} [\text{CAUSE}(\text{push}(\text{Victoria}, s_1), \text{push}(s_2, \text{the cart}))$
 $\& t_{ST-T} \in \tau(s_1)^* \& t_{UT-T}, t_{AST-T}, t_{ST-T}]$

c. $\xrightarrow{\hspace{10em}}$
 $ST-T(s_1), AST-T, UT-T \quad [ST-T(s_2)]$

On the time-line in (107c) it falls after the Utterance-Time because, all else being equal, there is no reason to infer that the result-state of a causative predicate, s_2 , holds at the same evaluation-time as s_1 .

We will return to this below in more detail, but I would like to suggest that causative predicates lack an existential reading in the present simple because of this ordering particularity: in the present simple the Utterance-Time is the only time of semantic evaluation, and the time when the result-state is inferred to hold falls outside

of it. This has the effect that the instantiation of the predicate is not properly contained by the Utterance-Time, and so the existential reading is undefined.

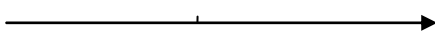
Comparing the present simple with the present continuous shows that there is no pragmatic pressure to infer that the s_1 and s_2 are evaluated at the same time in the present simple because the continuous aspect does this explicitly. This makes the present continuous more informative than the present simple.

In (108b), the contribution of the continuous is to map both state arguments to the State-Time. So just as with simple states in (106), the predicate's aspectual description is completely mapped to time, and the existential reading becomes available because everything is properly anchored to the Utterance-Time. The timeline in (108c) shows this parallel with (106c). So, if speakers intend the existential interpretation of a causative predicate in the present tense, they should choose the continuous aspect.

(108) a. Victoria is pushing the cart (\exists)

b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_2 \exists s_1$ [CAUSE(push(Victoria, s_1), push(s_2 , the cart))

& $t_{ST-T} \in \tau(s_1)^*$ & $t_{ST-T} \in \tau(s_2)$ & $t_{UT-T}, t_{AST-T}, t_{ST-T}$]

c. 

ST-T(s_1, s_2), AST-T, UT-T

Otherwise, the generic, or habitual, interpretation remains. This interpretation is available to all predicates, irrespective of aspectual classification ((109), (110)). If we are willing to posit a generic quantifier (G) to account for this reading, it can be analysed as generic quantification over the Assertion-Time. The generic reading is, thus, not a formal property of any predicate's denotation.³⁰

(109) a. Emma owns a typewriter (Gen)

b. $\exists_{UT-T} G t_{AST-T} \exists t_{ST-T} \exists s_1$ [own(Emma, s_1 , the typewriter) & $t_{ST-T} \in \tau(s_1)^*$

& $t_{UT-T}, t_{AST-T}, t_{ST-T}$]

³⁰ Exactly how the Generic/Habitual reading should be formalised is a complicated issue that will not be resolved here (*cf.* Cohen 1997, 2004). The representations in (110) and (111) is inspired by Heim (1982), and are simply intended to convey the conclusion favoured here that genericity/habitualness is not a lexical property of any predicate that applies to individual. We will come to the issue of the representation of Individual-Level predicates presently.

(110) a. Victoria pushes the cart (Gen)

b. $\exists_{UT-T} Gt_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2 [CAUSE(push(Victoria, s_1), push(s_2, the\ cart))$
 $\& t_{ST-T} \in \tau(s_1)^* \& t_{UT-T}, t_{AST-T}, t_{ST-T}]$

So far we have seen how the continuous aspect provides causatives with the temporal properties of simple states, and accounted for their readings in the present tense.³¹ Now we will move on to the related past tense facts.

The examples in (111) (repeated from (74)) showed that causatives modified by a *when*-clause in the simple past have a temporal succession interpretation, while simple states have a temporal overlap one (*cf.* Vlach 1981; Kamp and Rohrer 1983; Smith 1999; Arche 2006).

(111) a. Victoria pushed the cart when I arrived

⇒ I arrived, then Victoria pushed the cart

b. Hiram Walker built the house when I arrived

⇒ I arrived, then Hiram Walker built the house

c. Katherine won the race when I arrived

⇒ I arrived, then Katherine won the race

d. Emma owned a typewriter when I arrived

⇒ I arrived and Emma already owned the typewriter

But in the continuous aspect examples in (112) (repeated from (75)), causatives now have the same temporal overlap interpretation as simple states (*cf.* (111d)):

³¹ Languages that do have an existential reading of causative predicates in the present simple tend to correlate with verb movement to T⁰ (*e.g.* Romance languages; *cf.* Zagana 1988, a.o.). This could be analysed as the verb being able to incorporate the continuous aspect as it passes through. On such an analysis, adjectives are not expected to be ambiguous because they do not raise, so overt continuous morphology distinguishes the present simple and the continuous; unless a language does not have productive continuous aspect morphology to make the distinction (*e.g.* Romanian, Swedish; *cf.* section 3.7.2). In this case, the auxiliary could incorporate the continuous by originating lower down the clause.

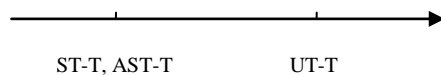
- (112) a. Victoria was pushing the cart when I arrived
⇒ I arrived and Victoria was already pushing the cart
- b. Hiram Walker was building the house when I arrived
⇒ I arrived and Hiram Walker was already building the house
- c. Katherine was winning the race when I arrived
⇒ I arrived and Katherine was already winning the race

The examples in (113) and (114) show that stative causative verbs and EAs conform to this pattern:

- (113) a. Hugo slept when I arrived
⇒ I arrived, then Hugo slept
- b. Hugo was sleeping when I arrived
⇒ I arrived and Hugo was already sleeping
- (114) a. Emma was rude when I arrived
⇒ I arrived, then Emma was rude
- b. Emma was being rude when I arrived
⇒ I arrived and Emma was already being rude

These readings can be accounted for by relativising the explanation for the present simple facts given just above to the past simple. The timeline for the past simple is in (115): the Utterance-Time is after the simultaneous State- and Assertion-Times.

(115) *Time Orderings of the Past Simple*

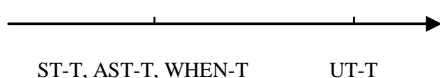


Beginning with the overlap reading of simple states, (116) shows that there is only one State-Time, which aligns with the Assertion-Time, and the time introduced by the *when*-clause identifies with that time. So, the time of the owning and the time of the arriving are the same, accounting for their overlap in the past.

(116) a. Emma owned a typewriter (when I arrived)

b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1$ [own(Emma, s_1 , the typewriter) & $t_{ST-T} \in \tau(s_1)^*$

& $t_{AST-T}, t_{ST-T}, \& t_{UT-T} > t_{AST-T}$]

c. 

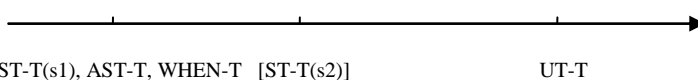
However, with causatives there are two state arguments, and in the simple past only one is mapped to time, while the second is interpreted inferentially. Just as with the present simple, the causing-state time and the result-state time are inferred to be disjoint.

The timeline in (117c) shows the disjoint interpretation that is given to the causing-state time and the result-state time, accounting for the temporal succession interpretation of causatives in the past simple:

(117) a. Victoria pushed the cart (when I arrived)

b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists s_2$ [CAUSE(push(Emma, s_1), push(s_2 , the cart))

& $t_{ST-T} \in \tau(s_1)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}$]

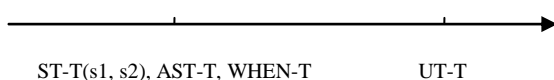
c. 

On the other hand, since the continuous is more specific, if speakers intend the temporal overlap interpretation, the continuous aspect provides it explicitly. The timeline in (118c) shows that the time introduced by the *when*-clause identifies with the unique main-clause State-Time. Now that s_2 is interpreted at the same time, the overlap reading is the only reading available, and causatives again take on the interpretative properties of simple states.

(118) a. Victoria was pushing the cart (when I arrived)

b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_2 \exists s_1$ [CAUSE(push(Victoria, s_1), push(s_2 , the cart))

& $t_{ST-T} \in \tau(s_1)^* \& t_{ST-T} \in \tau(s_2) \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}$]

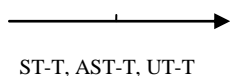
c. 

The one difference that emerges in the past simple is that, in contrast with the present simple ((119a)), causatives now have an existential reading ((119b)):

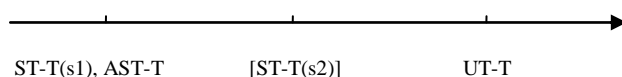
- (119) a. Victoria pushes the cart (# \exists /Gen)
 b. Victoria pushed the cart (\exists /Gen)

I suggested above that the existential reading is unavailable in the present simple ((119a)) because of the interpretive property of its time-line: the only evaluation time is the time of speech ((120a)), and since the result-state is inferred to hold outside of it, the existential reading is undefined ((120b)).

(120) a. *Time Orderings of the Present Simple*

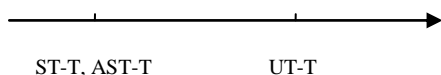


b. *Interpretation of the Time Orderings of Causatives in the Present Simple*

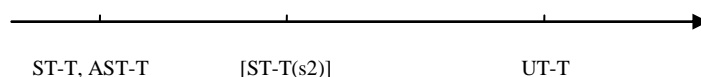


However, comparing the orderings of the present simple and the past simple, in the latter there is now a minimal sequence of two evaluation times ((121a)). The suggestion in the case of causatives in the simple past is that the existential reading becomes available because the inferred temporal interpretation of the unmapped state argument can be coherently ordered with respect to this temporal sequence: it can be mapped to a time that is before the time of speech ((121b)). This gives causatives in the past simple a defined existential reading that they cannot have in the present simple because the present simple is only evaluated with respect to the time of speech.

(121) a. *Time Orderings of the Past Simple*



b. *Interpretation of the Time Orderings of Causatives in the Past Simple*



The issue that remains is the simple state predicates that never have an existential reading in present or past tenses. These are the predicates labelled RA here, such as *Canadian* and *tall* ((122a)), the classic Individual-Level predicates.

- (122) a. Victoria is/was Canadian/tall (# \exists /Gen)
 b. Emma is/was available/sick (\exists /Gen)

On the other hand, traditional intransitive Stage-Level predicates, such as *available* and *sick*, behave as simple states have been described in this section: they have an existential interpretation in simple tenses ((122b)).

I would like to suggest that this residual distinction among simple state predicates reduces to the Figure/Ground distinction. Talmy (2000) describes this as a general cognitive distinction: the Ground anchors the concept conveyed by the predicate and the Figure is orientated with respect to it:

(123) *The General Conceptualisation of Figure and Ground in Language*

The Figure is a moving or conceptually moveable entity whose path, site, or orientation is conceived as a variable, the particular value of which is the relevant issue.

The Ground is a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's path, site, or orientation is characterised.

(Talmy 2000: 312, ex. (2))

Talmy distinguishes the two notions further with associated characteristics (2000: 315-316):

- (124) a. Figure: more movable, more recently in awareness, less immediately
 perceivable, more dependent
 b. Ground: more permanently located, more familiar/expected, more immediately
 perceivable, more independent

In section 4.4.3 it will be proposed that these domain general notions of Figure/Ground and this restricted theory of inner-aspect have the potential to derive thematic roles. Here, I would like to suggest that they account the basic Individual/Stage intuition of permanent versus contingent.

Example (125) illustrates these Figure/Ground notions in language. The pen is the Figure, and the table is the Ground anchoring the predicate with a location:

(125) The pen lay on the table

(Talmy 2000: 311, ex. (1a))

In terms of structural terms, the complement position is associated with the Ground, and external positions are associated with the Figure: the external position places the Figure in an asymmetric relationship to the Ground.

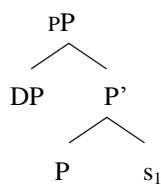
Returning to the contrast in (122) (repeated as (126)), it represents the basic Figure/Ground contrast: properties like those in (126a) are more permanent, more independent, while this in (126b) are less permanent, more dependent.

(126) a. Victoria is/was Canadian/tall (# \exists /Gen)b. Emma is/was available/sick (\exists /Gen)

The conceptual contrast can be mapped to language as in (127). Simple state predicates that are interpreted as more permanent generate their state argument as the Ground and their nominal as the Figure ((127a, b)). In turn, simple state predicates that are interpreted as more transitory do the opposite, generating their more permanent nominal as the Ground and their less permanent state and the Figure ((127c, d)) (*cf.* Carlson 1977).

(127) *Syntax and Denotations of (126)*

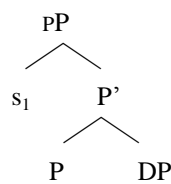
a. Syntax of (126a)



b. Denotation of (126a)

$$\|P\| = \lambda s_1 \lambda x. [P(x, s_1)]$$

c. Syntax of (126b)



d. Denotation of (126b)

$$\|P\| = \lambda x \lambda s_1. [P(s_1, x)]$$

With respect to the missing existential reading in (126a), the proposal here is that in a normal discourse context the existential reading is incompatible with the concepts underlying these predicates. These are concepts that are simply generally true at more than a single evaluation time, and so they are not meaningfully restricted by it. In other words, an existential interpretation generates inferences that are generally unsupported

by conceptual knowledge, *e.g.* that an individual's height changes from one moment to the next.

In this connection, predicates will vary in terms of the conceptual knowledge they invoke. For example, adults' height is generally more fixed than their weight needs to be (*cf. short, tall vs. fat, skinny*). But it is still true that these are states that do not change from one moment to the next. So, the existential reading is filtered out with these predicates as a general proposition.

This section has dealt with a complex range of temporal interpretation facts based on the interaction with the inner-aspectual structure. With respect to the main objective of this thesis, it provides more support for the analysis of EAs as causatives.

4.2.2.5.3 Third Argument for the State Argument and against the Event Argument: There-Insertion

The previous section leads to a final discussion of existential *there*. The blocks in (128) and (129) illustrate the description of the pattern in terms of the individual/stage distinction. As discussed in chapter 3, on that description Stage-Level (SL) predicates accept *there*-insertion because they have bounded existential readings that come from existential quantification over a stage argument in their lexical entry ((128b), (129b)). On the other hand, Individual-Level (IL) predicates are ungrammatical because they lack this stage argument, which accounts for their lack of an existential reading ((128a, c)) while making them unacceptable in existential contexts ((129a, c)).

- | | |
|---------------------------------|--------------------|
| (128) a. People are rude | (* \exists /Gen) |
| b. People are sick | (\exists /Gen) |
| c. People are tall | (* \exists /Gen) |
| (129) a. *There are people rude | |
| b. There are people sick | |
| c. *There are people tall | |

Yet, the data pattern of existential *there* is more complex than this description implies. First, if EAs are analysed as IL predicates on the basis of (128a) and (129a),

then the null hypothesis is that they will never accept *there*-insertion. Yet, we saw in chapter 3 that *there*-insertion becomes possible for EAs in the continuous aspect:

(130) There are people being rude

In this connection, it is a curious fact that this is generally true of causative predicates. The examples in (131) show that these predicates lack an existential reading in the present simple ((131a)), but have one in the past simple ((131b)). Even so, *there*-insertion is ungrammatical in both tenses with any ordering of the DPs ((131c, d)). This shows that the existential reading alone is not predicting the distribution of existential *there*. In support of this, (131e, f) show that *there*-insertion is possible in both tenses in the continuous aspect.³²

- | | |
|---|--------------------|
| (131) a. People sing songs | (# \exists /Gen) |
| b. People sang songs | (\exists /Gen) |
| c. *There (people) sing (people) songs (people) | |
| d. *There (people) sang (people) songs (people) | |
| e. There are people singing songs | |
| f. There were people singing songs | |

The examples in (132) show the same pattern in the active and passive voices. Taking (132a) as the baseline, there is no acceptable word-order for *there*-insertion in the active voice in (132b), but the passive is fine in (132c).

- (132) a. Police killed a Swabian
- b. *There (Police) killed (Police) a Swabian (Police)
- c. There was a Swabian killed (by police)

³² Note that the ungrammaticality of the causative predicate in (131) is independent of the use of simple tenses: the present perfect example in (i) is ungrammatical in the active voice on any combination in (ii), but grammatical in the passive in (iii). In this connection, see the explanation below of (132).

- (i) People have eaten cake
(ii) *There (people) have (people) eaten (people)
(iii) There has been cake eaten

Lastly, to return to some basic facts, existential *there* works perfectly with temporally restricted simple state predications:

- (133) a. There were kids at the park
 b. There were books on the shelf

These last examples support the original SL intuition regarding *there*-insertion, but the overall pattern goes beyond it because the ability of a predicate to have an existential reading does not account for the distribution of existential *there*. They also show that eventivity is not central to *there*-insertion, either.

I would like propose that this thesis' theory of inner-aspect allows for the proper characterisation of this pattern. Namely, it shows that existential *there* is felicitous when it picks out a temporally restricted State-Time that encapsulates the instantiation of the predicate.

First, I propose the lexical entry in (134) for *there*. The denotation in (134a) is meant to convey that *there* has the existential content of the State-Time and the state argument(s) mapped to it. In (134a), I use s_x to represent that *there* associates with the state arguments that are mapped to the State-Time, and not unselective binding. The state feature in (134b) is *interpretable* and *unvalued* because existential *there* is a demonstrative that takes its content and value from its referents.

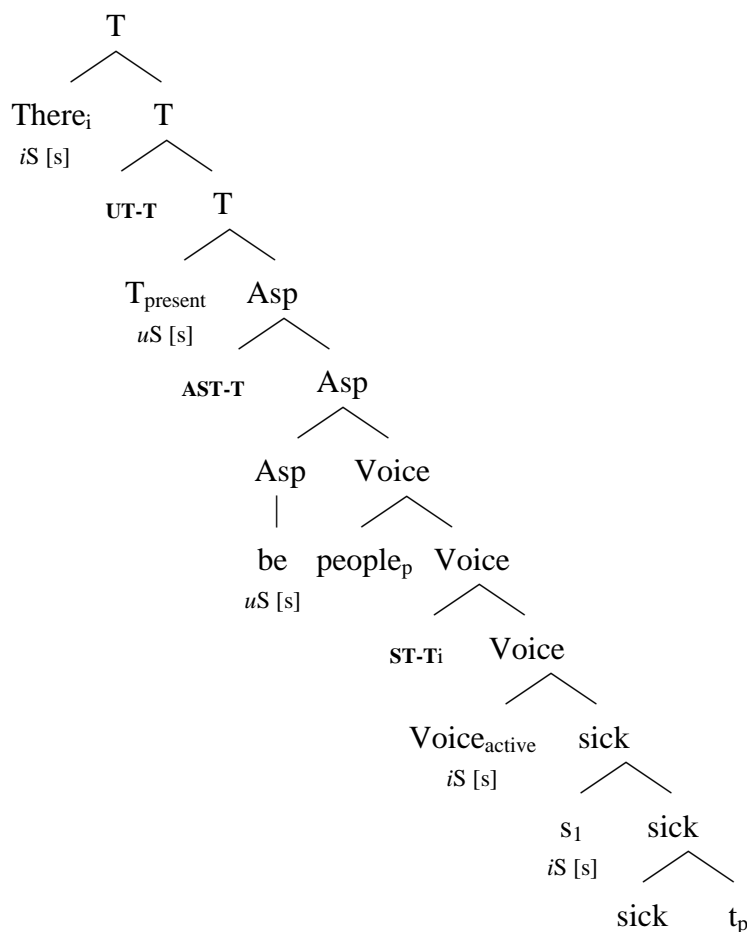
- (134) a. $\| \textit{there} \| = \exists t_{ST-T} \exists s_x [t_{ST-T} \in \{\tau(s_x)\}]$
 b. Formal features on *there*: *iS* []

In this connection, existential *there* is intuitively an extension of the locative demonstrative *there*, which is singular in origin and picks out an identified space as its referent. In consonance, the felicitous use of existential *there* requires a single, identified referent; in this case, the restricted time when the state(s) that realise the predicate hold.

Let's begin with the derivation of (129b) in (135) to see how this handles a simple case. First in the general case, in a derivation, T^0 attracts the closest DP or CP argument to its specifier to satisfy the EPP (*cf.* chapter 5). In contrast, *there* does not appear to move. Rather, the evidence suggests that it is base generated directly in subject position (*cf.* Boskovic 2002).

The proposal here is that *there* binds the State-Time, and thus picks up its relation to the predicate and the state arguments already mapped to the State-Time in the derivation. Since *sick* is a predicate with only one state argument, which is interpreted as temporally restricted, *there* is felicitously interpreted as picking out the time that instantiates the state of sickness. The simple state examples in (133) are understood in the same way. In contrast, simple state predicates such as *tall* are not felicitous because they are conceptually temporally unrestricted (section 4.2.2.5.2).³³

(135) There are people sick



³³ Before moving on to discussion of the other *there*-insertion data, in order to achieve the word-order in (135) I posit movement of the DP argument to Spec, Voice as a type of low focus movement (Belletti 2004). I leave open how general this movement is, but it is also necessary to achieve the word-order in existential passives (e.g. *There were Swabians killed*).

Speculating further, the pattern seems to be that the DP associated with the state that is selectively bound by Voice moves into the projection of Voice. For example, in (135) s_1 is bound by Voice, and *people* then moves to associate with the locus of new focus property acquired by s_1 .

Lastly, if existential *there* in Spec, T is interpreted as the predication topic, this activity around Voice may represent the establishing of a topic-focus structure between *there* and the other arguments of the predicate. I leave these considerations for future research and a better understanding of the topic/focus properties of Voice.

Turning now to the causative pattern in (136) (repeated from (131)), (136a-d) are infelicitous because, as discussed above, they all have a result-state argument that is inferred to fall outside of the State-Time, which frustrates *there*'s attempt to pick out a single referent that encapsulates the instantiation of the predicate. On the other hand, the continuous examples become acceptable because the continuous maps both the causing-state and the result-state to the State-Time, thus giving the instantiation of the predicate a temporally restricted reading and satisfying *there*.

- (136) a. People sing songs (# \exists /Gen)
 b. People sang songs (\exists /Gen)
 c. *There (people) sing (people) songs (people)
 d. *There (people) sang (people) songs (people)
 e. There are people singing songs
 f. There were people singing songs

Lastly, the causative data in (137) (repeated from (132)) receive a related explanation. Namely, *there*-insertion is out in the active voice in (137b) because the result-state is again inferred to fall outside of the State-Time.

- (137) a. Police killed a Swabian
 b. *There (Police) killed (Police) a Swabian (Police)
 c. There was a Swabian killed (by police)

But in the passive in (137c), the passive participle orders the causing-state inside the result-state, and the passive voice head maps the result-state to the State-Time. So, in this case the causing-state can be inferred to fall within the State-Time, and *there* can be understood to pick out a temporally restricted instantiation of the predicate. Note that the clear pattern in (137) is independent evidence for the present analysis of the passive participle and the passive voice head.

In conclusion, we can now characterise *there* in more detail. In general terms, the argument that appears in Spec, T can be described as the predication topic. On the present theory, predicates also have state arguments. It becomes possible to characterise inserting *there* directly in Spec, T as a way of overriding the attraction of a DP or CP, and making the instantiation of the predicate's aspectual description—the state

argument that gets mapped to the State-Time—the topic of the predication. In other words, *there*-insertion has an interpretative motivation: it is the way to realise the predicate's state argument in subject position.

So far this chapter has argued that auxiliaries in the passive voice and the continuous aspect show that there are state arguments in all parts of the aspectual composition of all predicates. Additional support comes from the possibility that *there*-insertion is their nominal manifestation.

Nevertheless, all these arguments for states and against events are theory internal. So, building on chapter 3, the next section attempts to provide a theory-independent argument against the existence of a primitive event argument from unexpected variability in eventivity diagnostics themselves.

4.2.3 The Fourth Argument for the State Argument and against the Event Argument

The most straightforward argument against a primitive event argument is variability across diagnostics that are supposed to return uniform results. In section 4.1.1 we saw that an example such as (138) sets out the properties of event argument: it is spatial, it is temporal, and it can be referred to by a pronoun. The acceptability of the continuation in (138) is meant to be indicative of the presence of the event argument.

(138) Jones buttered the toast. It happened in the bathroom at midnight

The examples in (139)-(140) use two causatives verbs, the action causative *break* and the stative causative *sleep* to show how the diagnostics break down. First, the examples in (139) set the baseline. Examples (139a, b) show that both causatives accept eventive spatio-temporal modification. Example (139c) provides the contrast with simple states. In this last example, the locative modifies the direct object, but not the verb. It is precisely the event argument that is supposed to justify the acceptability of spatio-temporal modification in the first two examples.

- (139) a. Peter broke the stick in the garage in 2 seconds
 b. John slept in the car for three hours
 c. Emma owned the typewriter in her office for many years

Now, the expectation is that both causative verbs in (139) will behave in parallel with respect to other event argument diagnostics. The next pair dashes that expectation. The action causative accepts the *It happened...* continuation, but the stative causative is less felicitous:

- (140) a. Peter broke the stick. It happened in the garage in 2 seconds
 b. John slept. #It happened in the car for three hours

The problem here is that *sleep* does not imply a change, making the verb *happen* inappropriate. So, when an *It happened...* continuation is acceptable, it is not picking out an event argument, but an action. Both verbs nevertheless accept spatio-temporal modification.

Comitatives using a prepositional *with*-phrase are another test that is used to diagnose an event argument (*cf.* Maienborn 2005b). The examples in (141) establish the baseline. Both the action causative and the stative causative again yield the eventive interpretation of accompaniment ((141a, b)), but the simple state does not ((141c)).

- (141) a. Peter broke the kite with his brother
 b. Julia sleeps with her ducky
 c. #Emma owns the typewriter with her sister

Now, we have seen the EAs are the only adjectives that pass eventivity diagnostics. Example (142) shows that they accept spatio-temporal modification:

- (142) Peter was rude in the kitchen at six o'clock

Yet out-of-the-blue, EAs are odd on a comitative interpretation. The most natural interpretation of (143a) is an alternative way expressing the *to*-PP, as in (143b).³⁴

³⁴ In this connection, in some languages the English EA *to*-PP is expressed as a *with*-PP:

- (143) a. #Peter was rude with his friend
b. Peter was rude to his friend

With added context, however, a comitative interpretation becomes the acceptable one:

- (144) Peter was always rude with John. Whenever they were together I avoided them because I knew that Peter tried to impress John by talking down to his subordinates

This shows that quantification and discourse can shore up an eventivity diagnostic, implying that eventivity is an inference, but not a semantic entailment.

Notice that the results so far indicate inconsistency in individual predicates across eventivity tests. On the one hand, the contrast in (139) and (140) showed that the felicity of picking out a referent with the *it happened...* continuation is affected by whether or not the preceding predicate implies a change: action causative *break* does, stative causative *sleep* does not. On the other, the comitative contrast between (141) and (143) has *break* and *sleep* patterning together, while EAs are problematic. So, even *break* and *sleep* are patterning inconsistently.

Yet, both *sleep* and EAs are stative causatives. The difference between them, though, is that *sleep* is a physical state, while EAs, such as *rude*, are abstract states. It is straightforward to conceive of a physical state being accompanied by something, but not so with an abstract one—unless the discourse determines that interpretation, as in (144).

Another component that affects the results of event diagnostics is the qualities of the subject. The *What X did was...* is sometimes used as an event diagnostic, and predicates that pass it do accept spatio-temporal modification. The block in (134) is repeated from chapter 3. It starts at the top with an activity predicate with an animate subject and finishes with a simple state with an inanimate one. The examples in between illustrate the continuum that emerges by systematically varying (i) the animacy of the subject and (ii) the type of predicate. The predicates range from the activity verb *roll* ((145a)), to various types of stative causatives ((145b-i)), to simple states ((145j, k)). The stative causatives are ordered with respect to the expansion (justified in chapter 3)

(i) Juan fue muy cruel con Pedro
Juan was very cruel with Pedro
'John is very cruel to Peter'

(Spanish, *cf.* Arche 2006: 96, ex. (58))

- (147) a. John broke the kite
 b. The wind broke the kite

These examples seem simple enough, but when they are put through the event diagnostic of locative modification, the results differ:

- (148) a. John broke the kite on the driveway
 b. The wind broke the kite on the driveway

Example (148a) has three interpretations: **(i)** the eventive reading with the locative modifying the verb, **(ii)** a non-eventive reading where it modifies the DP object, and **(iii)** an eventive instrumental reading where John uses the driveway as a means of breaking the kite.

Example (148b), with inanimate subject, is different. The salient reading becomes the DP modification one ((ii)), and the instrumental reading is still available ((iii)). But the classic spatio-temporal locative modification reading is not apparent.

The instrumental reading is generally taken to be indicative of eventivity, so *break* is the same verb in both examples. However, the disappearance of the spatio-temporal locative reading with an abstract Cause indicates that abstract causes interfere with the results of eventivity tests. It shows that the conceptual strength of the cause matters: if the Causer becomes abstract, the causal relation becomes more abstract, and the spatio-temporal relation weakens, *i.e.* it is more difficult to locate an abstract cause in space. This loss of locatedness is an indication that location is not specified in the content of the inner-aspectual arguments themselves.

To bring this into focus, the Davidsonian analyses of (148) in (149) show that the locative is an event-modifier that is semantically independent of the subject: the locative does not modify the subject. They thus predict that the properties of the subject are independent of locative event modification, and that both of these examples should have the three readings enumerated just above in parallel irrespective of the subject's properties.

(149) a. John broke the kite on the driveway

($\exists e$) (break(John, the kite, e) & On_{LOC}(the driveway, e))

b. The wind broke the kite on the driveway

($\exists e$) (break(the wind, the kite, e) & On_{LOC}(the driveway, e))

In sum, a spatio-temporal event argument analysis entails that every predicate that accepts eventive locative modification will behave uniformly across other event diagnostics. In this section we have seen that a semantic analysis of spatio-temporal eventivity makes the wrong predications. On the other hand, specific of parameters variability have been identified:

(150) *Factors Affecting the Results of Eventivity Diagnostics*

a. Causative versus simple state

b. The notion of change versus no change

c. The physical versus the abstract quality of the predicate

d. The animacy versus the inanimacy of the external argument

We have also seen how the discourse can influence the results of an eventivity diagnostic. The variability shown in this section is a direct argument against a primitive event argument. But, it fits predictably with this proposal that only state arguments exist, and that eventivity effects centre around causation. Section 4.5 will present the analysis of spatio-temporal modification within this proposal.

4.2.4 *Interim Conclusion*

From a theory-internal perspective this section has argued that (i) stative auxiliaries provide evidence for the existence of state arguments, (ii) telicity and boundedness are pragmatic/conceptual, (iii) existential *there* is the manifestation of state arguments in subject position, (iv) predicate decomposition using three aspectual arguments to represent telicity collapses into stative causation, and (v) there was no evidence that predicates conveying a change or a process contain a primitive event argument. This is consistent with the argument for the state argument in chapter 1.

From a theory-neutral perspective, it was shown that positing a primitive event argument to account for spatio-temporality is not supported empirically because there is identifiable non-uniformity across the diagnostics.

All the evidence presented is consistent with the present theory that only state arguments exist, and that the distinction between simple states and stative causatives is the only aspectual decomposition distinction that is represented in the mapping from syntax to LF. In the next section, we pull together the evidence for state arguments.

4.3 Evidence for Aspectual Decomposition

The start point for positing that predicates take state arguments is establishing that they take at least one. The existence of predicates that denote simple states (*e.g. available, believe, Canadian, know, fat, fear, love, own, sick, tall, etc.*) motivates the position that a predicate takes an argument that gives it stative properties. In the derivations proposed in this chapter, the aspectual argument is mapped to time compositionally. This accounts for all predications' ability to accept temporal modification. It was also proposed that the essence of the IL/SL intuition is represented in the configuration of the state argument with respect to Figure/Ground relations. Lastly, existential *there* was argued to refer to the instantiation of a state. Positing the existence of a single state argument in simple state predicates offers explanations for this cluster of facts.

Evidence for two state arguments comes from the interpretative distinction between causatives and simple states. **(i)** First, we have seen that they have clearly distinguishable aspectual signatures; the most significant one is that causatives trend “spatio-temporal”, and while simple states are limited to temporality. **(ii)** Second, representing them accounts for their differing interpretive patterns in the present simple and past simple. **(iii)** Third, including the aspectual arguments as arguments of the predicate will be important in deriving thematic roles. We take this up in section 4.4.3. **(iv)** Fourth, the distribution of the passive voice and the continuous aspect shows that both operate over causative predicates. Representing a causative relation with two aspectual arguments captures these facts, while allowing for the proper statement of their meanings. In this connection, overt evidence for the syntactic presence of the aspectual arguments comes from the alternation that occurs in the passive: the result-state is targeted for modification and movement.

In conclusion, representing the two parts of the causative relation with aspectual arguments accounts for a series of patterns and points of interaction. The next sections will attempt to substantiate the proposal that causation is properly represented as a lexical property, and not a causative head or interpretation rule.

4.4 The Representation of Causation

This section tackles the representation of causation and the nature of thematic roles. Section 4.4.1 introduces three ways of representing causation formally: as a lexical property, syntactic head, or an interpretation rule. Section 4.4.2 provides evidence from Japanese and periphrastic causatives that there is no causative functional head in the syntax of causative predicates. Arguments against an interpretation are also given. The lexical representation of causation emerges as the only supported option, and the results of this chapter reinforce it. Lastly, section 4.4.3 proposes that this restricted aspectual system that only distinguishes between simple states and stative causatives, in combination with the Figure/Ground distinction (Talmy 2000), makes it possible to dispense with thematic roles and a thematic hierarchy as grammatical primitives.

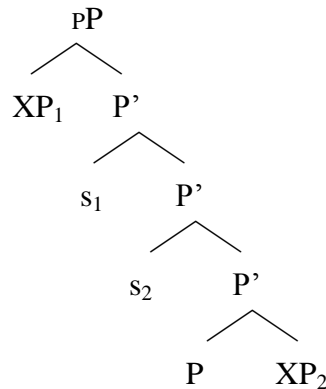
4.4.1 Lexical Causation versus Causative Configuration versus Causative Head

Throughout this thesis, causation has been represented as a lexical property. In (151) (repeated from (2)), the causal relation is part of the meaning of the predicate itself ((151a)), and there is no causative head in the syntax ((151b)).

(151) *Generalised Representation of Lexical Causation*

a. $\|P\| = \lambda P \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(P(x, s_1), P(s_2, y))$

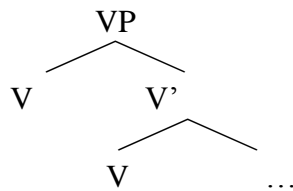
b.



Hale and Keyser (H&K) (1993) propose a causative syntax with the same syntactic configuration ((150a)). However on their analysis two verbal heads, one immediately c-commanding the other, are interpreted as one event implicating the other ((152b)). So, their proposal is that a causative interpretation is due to a rule stated over this syntactic configuration (*cf.* Ramchand 2008).

(152) *Lexical Causation in H&K 1993*

a. *Syntax:*



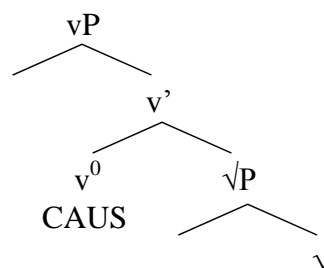
(*cf.* H&K 1993: 69, ex. (24))

b. *Interpretation:*

$e_1 \rightarrow e_2$

(H&K 1993: 69, ex. (23))

The other alternative to representing causation lexically is a syntax with a dedicated functional head. The structure in (153) is an example of this approach, where a little *v* head is responsible for causativising a root (*cf.* Chomsky 1995: 352).

(153) *Causative Verbs on a CAUSE⁰ Analysis*

(cf. Harley 2008: 39, ex. (29b))

The next section compares periphrastic causatives ((154a)) with lexical causatives ((154b)) in order to show that there is no causative head in the syntax.

(154) a. Emma made Peter break the kite

b. Peter broke the kite

In addition, arguments against an interpretative rule are given. The evidence against the alternatives leaves representing causation as a lexical property as the only option, but as we will see, it is also the option that fits this theory of inner-aspect composition.

4.4.2 *Periphrastic versus Lexical Causatives*

Cross-linguistically, periphrastic causatives are morphologically overt and regular. English uses a verb that stands on its own, such as *make* in (154a), while Japanese has a specific morpheme, *-sase-*, that attaches to the lexical verb:

(155) Taroo ga Ziro o tomar-ase-ta

Taro NOM Jiro ACC stop-*sase*-PAST

'Taro made Jiro stop'

(Japanese, Shibatani 1976: 18, ex. (26a))

In contrast with periphrastic causatives, cross-linguistically lexical causatives vary morphologically. English lacks causative morphology ((154b)), while Japanese has a range of morphemes that goes from null ((156a)) to the same morpheme that appears in periphrastic causatives ((156h)) (Harley 2008; Jacobsen 1992; Miyagawa 1989).

(156) *Japanese Lexical Causative Morphemes*

- a. $-\emptyset-$: *husag- \emptyset -u* ‘obstruct’
- b. $-e-$: *ak-e-ru* ‘open’
- c. $-s-$: *ama-s-u* ‘remain’
- d. $-as-$: *hekom-as-u* ‘dent’
- e. $-os-$: *horob-os-u* ‘(fall to) ruin’
- f. $-se-$: *abi-se-ru* ‘pour over’
- g. $-akas-$: *hagur-akas-u* ‘evade’
- h. $-sase-$: *toosans-ase-ru* ‘bankrupt’

The consensus is that Japanese lexical causative morphemes are unpredictable (Harley 2008: 23). Example (157) illustrates a lexical causative appearing with the morpheme $-e-$ (cf. (156b), (155))

(157) *Taroo ga Ziroo o tom-e-ta*

TARO NOM JIRO ACC stop-CAUS -PAST

‘Taro stopped Jiro’

(Japanese, Shibatani 1976: 18, ex. (26b))

Harley (2008) proposes that Japanese causative morphology realises a CAUSE head. On her analysis lexical causatives contain one occurrence of causative v^0 ((158)), and periphrastic causatives two ((159)), with $-sase-$ appearing consistently in periphrastic causatives because it is listed as the morphological elsewhere case.

(158) *Japanese Lexical Causatives*

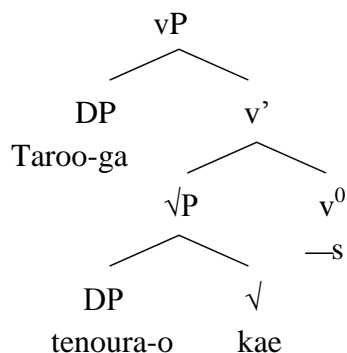
a. Taroo-ga tenoura-o kae-s ...

Taroo-NOM palm-ACC return-CAUS

'Taroo changed his attitude suddenly'

(Harley 2008: 42, ex. (35a'))

b.



(Harley 2008: 42, ex. (35a))

(159) *Japanese Periphrastic Causatives*

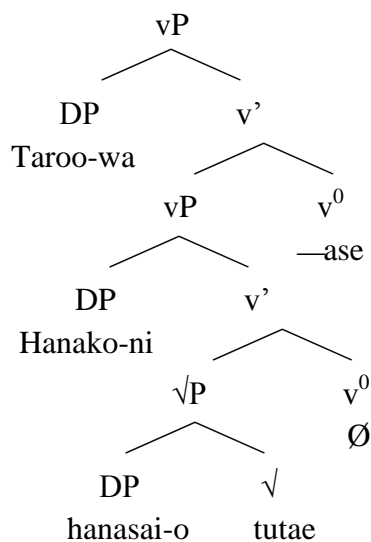
a. Taroo-wa Hanako-ni hanasi-o tutae-sase-ta

Taroo-TOP Hanako-DAT story-ACC convey-CAUS-PAST

'Taroo made Hanako convey a story'

(Harley 2008: 42, ex. (35b'))

b.



(Harley 2008: 42, ex. (35b))

So on Harley's analysis, causation is encoded in a syntactic head, and Japanese morphology is visible evidence of the head's existence.

Evidence against treating causation as a head in Japanese is provided by Ackema (2014). He shows that periphrastic *-sase-* behaves like a syntactically active element, and lexical causative morphemes do not.

First, periphrastic *–sase–* scopes. In (160) the single occurrence of *–sase–* scopes over the disjunction. The same is true of the English gloss.

- (160) Hanako-ga Masao-ni uti-o soozisuru ka heya-dai-o haraw-ase-ru koto
ni sita
Hanako-NOM Masao-DAT house-ACC clean or room-rent-ACC pay-*sase* that to did
‘Hanako decided to make Masao clean the house or pay room rent.’
(Japanese, Ackema 2014: 187, ex. (36))

Second, periphrastic *–sase–* can stand alone. In *ka... ka...* ‘either... or...’ structures, periphrastic *–sase–* appears separated from the lexical verb:

- (161) Hanako-ga Masao-ni uti-o soozisuru ka heya-dai-o harau ka sase
Hanako-NOM Masao-DAT house-ACC clean or room-rent-ACC pay or *sase*
‘Hanako decides to either make Masao clean the house or make him pay room
rent.’
(Japanese, Ackema 2014: 189, ex. (39))

Lexical causative morphemes can do neither of these things: a single lexical causative morpheme cannot be interpreted as applying to a verb in another conjunct, and it never stands alone. Example (162) illustrates the non-existence of the latter.

- (162) *Hanako-ga made-o ak ka tegami-o todok ka e(-ta)
Hanako-NOM window-ACC open or letter-ACC arrive or CAUSE(-PAST)
‘Hanako either opened the window or delivered the letter.’

Ackema (2014) concludes that periphrastic *–sase–* is a syntactic head because it behaves like an independent syntactic element, but lexical causative morphemes are not because they have no syntactic effects.

Combining their divergent syntactic behavior with the fact that periphrastic causatives are morphologically regular cross-linguistically, while lexical causative markers range from null to unpredictable makes a strong case that causation is associated with the predicate itself.

So, periphrastic causatives in English (*make*) and Japanese (*–sase–*) are morphologically regular because they are predicates. And as predicates, the well-known fact that they introduce a clause boundary follows automatically. The examples in (163) use manner adverbs illustrate one of the ways of showing that periphrastic causatives are biclausal, and lexical causatives are monoclausal (*cf.* Shibatani 1973, 1976; Harley 2008, a.o.).

(163) Japanese

a. *Lexical Causative*

Taroo ga Hananko o damatte heya ni ire-ta

= Taro put Hanako into the room silently (Shibatani 1973: 361, ex. (88))

b. *Periphrastic Causative*

Taroo ga Hanako o damatte heya ni hair-ase-ta

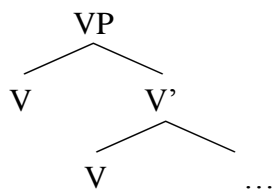
= Taro silently made Hanako enter the room

= Taro brought it about that Hanako entered the room silently

(Shibatani 1973: 360, ex. (86))

On the other hand, lexical causative markers are morphologically irregular and fail to introduce a clause boundary because there is no syntactic head. The conclusions are that (i) causation is a property of the predicate, and (ii) clause boundaries are marked by predicates. So, analysing causation as a lexical property that the morphology can reflect fits the facts.

Turning to causation as an interpretative rule, the syntactic configuration proposed by H&K is the same as proposed here, but it has one significant drawback: the rule cannot be stated compositionally. In particular, the rule in (164) (repeated from (152)) does not interpret immediate sisters: rather than interpreting V_1 and V' , it interprets V_1 and V_2 ; and it looks their semantic content (*i.e.* eventive), rather than their semantic type (*e.g.* $\langle e \rangle$, $\langle t \rangle$, etc.).

(164) *Lexical Causation in H&K 1993*a. *Syntax:*

(cf. H&K 1993: 69, ex. (24))

b. *Interpretation:* $e_1 \rightarrow e_2$

(H&K 1993: 69, ex. (23))

Interestingly, the analysis of the passive voice and the passive participle provided evidence that compositionality is at issue. The only way to map the syntax of the passive to LF compositionally is if the denotation of the passive participle morpheme can make reference to the representation of causation, and state that it modifies the result-state description, as in (165) (repeated from (52a)). And the only way to do this compositionally is if causation is represented lexically.

(165) $\| -en_{passive} \| = \lambda P \lambda y \lambda s_2 \lambda s_1 \lambda x. [CAUSE(P(x, s_1), en(P(s_2, y))) \& s_1 \subseteq s_2]$

That empirical and theoretical considerations point to the lexical analysis of causation provides interesting support for the present theory of inner-aspect. On the one hand, the passive voice, the continuous aspect, and eventivity effects are all phenomena that rely on the stative causative/simple state distinction: causation is the only aspectual decomposition distinction. On the other, we have seen evidence that predicates are not aspectually ambiguous: they are either causatives or simple states, and they maintain their formal properties even when conceptual knowledge and implicatures seem to indicate variation.³⁵

In connection to the representation of aspectual properties, the next section will attempt to derive thematic roles.

4.4.3 *Deriving Thematic Roles*

The status of thematic roles, such as Agent, Causer, Instrument, Experiencer, and Theme, is controversial because research on them has led to an impasse. On the one

³⁵ See chapter 3, footnote 34 for specific discussion of this point.

hand, there are the regularities in their distribution that make them seem derivative. Baker's *Uniformity of Theta Assignment Hypothesis (UTAH)* speaks of assignment to unique syntactic positions ((166)). And the *UTAH* has been re-interpreted as an indication that thematic roles are inferred from specific syntactic positions (Hale and Keyser 1993; Chomsky 1995).

(166) Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure.

(Baker 1988: 46, ex. (30))

On the other hand, there is no agreement on a hierarchy, the number of roles, or their content (*cf.* RH&L 2007). Experiencers represent one problematic case in establishing a hierarchy. In (167), the Experiencer role appears in both subject ((167a)) and object ((167b)) position.

(167) a. Hugo feared the call

b. The called scared Hugo

Another complication is that there is general agreement in the research on Causers Agents, and Instruments that arguments with these interpretations are located in the same structural position ((168)) (*cf.* Levin and Rappaport Hovav 1995; Alexiadou and Schafer 2006; Folli and Harley 2008; Alexiadou *et al.* 2015). This has sometimes led to the conclusion that the external position that introduces these roles has an underspecified causative interpretation (*cf.* Ramchand's 2008 *Initiator*).

(168) a. Peter broke the window

b. The explosion broke the window

c. The hammer broke the window

Lastly, complement position is associated with a wide range of interpretations. Example (169a) is unaccusative. Examples (169b, c) show that predicates bear different relationships to their complement CPs. Examples (169d, e) show that complement DPs can be inferred to undergo a change-of-state or not, respectively. And (169f) shows that complements can identify a path.

- (169) a. The problem existed
 b. It seemed that the problem would be addressed
 c. Victoria decided that the problem would be addressed
 d. Peter broke the window
 e. Victoria pushed the cart
 f. Emma ran into the house

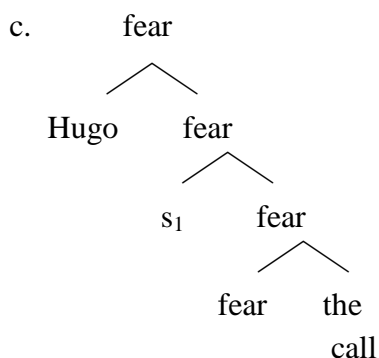
Together these examples show that there is a great deal of variation and overlap in content and syntactic position. When thematic roles are taken as primitive entities, delimiting their number, specifying their content, and pinpointing their relationship to syntax has proven problematic. It will be proposed here that combining this restricted theory of inner-aspect with the Figure/Ground distinction introduced above derives these patterns.

Beginning with (169), the complement position establishes the Ground, *i.e.* the anchor of the predication. The precise conceptual character of the Ground is determined by the predicate, formally no thematic role is assigned, and the variation is expected across predicates.

Regarding the problematic Experiencer data ((167)), research on subject Experiencer and object Experiencer predicates has found that they differ aspectually. Namely, the former are simple states and the latter causatives (Pesetsky 1995; Arad 1998; Landau 2010b, a.o.). Adopting this conclusion, we can say that subject Experiencers are Figures with respect to a simple state description:

- (170) a. Hugo feared the call

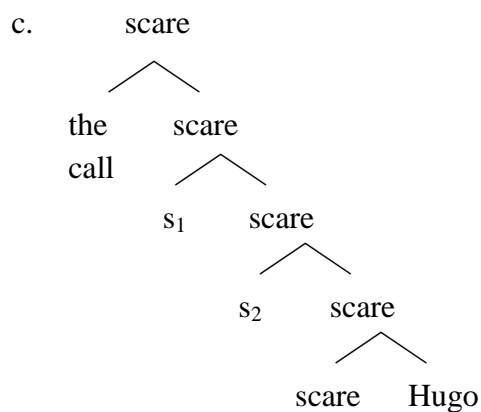
b. $\| \text{Hugo fear the call} \| = \text{fear}(\text{Hugo}, s_1, \text{the call})$



Object Experiencers, in contrast, are interpreted as the Ground with respect to the causing Figure ((171)). Since the Experiencer role is not actually assigned, it is a conceptual property of a causative predicate like *scare* that its Ground is inferred to be psychologically affected by the cause, and the Causer interpretation maps to position that is structurally higher because it is associated with the causing-state.

(171) a. The call scared Hugo

b. $\| \textit{The call scare Hugo} \| = \text{CAUSE}(\text{scare}(\text{the call}, s_1), \text{scare}(s_2, \text{Hugo}))$



In this connection, consider (172). Since the Experiencer role is not assigned, it is not a problem that simple state predicates such as *fear* and *own* generate their Figures in the same position and interpret them differently: the former denotes a psychological state and the latter does not.

(172) a. Hugo feared the call

b. Emma owned a typewriter

Lastly, let's consider the set of causing roles, *i.e.* Causer, Agent, and Instrument. As mentioned above, there is consensus that arguments interpreted in these ways are generated in the same syntactic position, and the notion of Causer is the common denominator. This last fact falls out of the present theory, where causation is stative. So in the template denotation of a causative predicate in (173), the semantics of causation makes the external Figure argument what can only be characterised, informally, as a Causer.

(173) $\| P \| = \lambda P \lambda y \lambda s_2 \lambda s_1 \lambda x. \text{CAUSE}(P(x, s_1), P(s_2, y))$

As for Agents, an argument can be considered such when it has these properties:

(174) *Properties of Arguments Inferred to be Agents*

- a. It is associated with the causing-state description of the CAUSE relation.
- b. It is animate.
- c. The predicate conveys the notion of change.

The last property distinguishes Agents from animate Causers. But it has been argued here that *change* is represented conceptually, and not in the aspectual decomposition. The present possibility of deriving thematic roles reinforces that conclusion.

An additional property associated with Agents is *intentionality*. Chapter 3 showed, however, that there are predicates that entail intentionality, and others for which it is an implicature. Once again, because agentivity is only conceptual, this kind of variation does not affect the decomposition of inner-aspect.

Lastly, in consonance with the research on causing arguments, an argument is considered an Instrument when it is inferred that it has to be used by an Agent in order to bring about the result.³⁶

In conclusion, this restricted aspectual system has the added benefit of making thematic roles epiphenomenal by supplementing it with the domain general Figure/Ground distinction.

4.5 Analysis of Spatio-Temporal Modification

Now that the arguments against the event argument have been offered, the challenge is to account for the classic Davidsonian spatio-temporal data, such (175a).

(175) a. Jones buttered the toast in the bathroom at midnight

b. $(\exists e)$ (Butter(Jones, the toast, e) & In(the bathroom, e) & At(midnight, e))

(cf. Davidson 1967: 93, ex. (20))

³⁶ Note that deriving thematic roles, and in particular deriving the set of causing thematic roles, requires that the external argument be an argument of the predicate. If the external argument were introduced by a separate head (e.g. Voice; cf. Kratzer 1996; Alexiadou *et al.* 2015), then the global set of properties of external arguments could not be derived (cf. (168), (174)).

On a Davidsonian analysis in (175b), both the locative and temporal modifiers are modifiers of the event argument itself.

However, the contrast in the examples in (176) (repeated from (149)) showed that the qualities of the external argument affect the locative reading: the concrete cause in (176a) allows the eventive locative reading, but this reading disappears with the abstract cause in (176b). The corresponding Davidsonian representations do not allow for this variation because the locative modifies the spatio-temporal event argument in both.

(176) a. John broke the kite on the driveway

$(\exists e) (\text{break}(\text{John, the kite, } e) \ \& \ \text{On}_{\text{LOC}}(\text{the driveway, } e))$

b. The wind broke the kite on the driveway

$(\exists e) (\text{break}(\text{the wind, the kite, } e) \ \& \ \text{On}_{\text{LOC}}(\text{the driveway, } e))$

The explanation offered here for the disappearance of this locative reading is that eventivity effects are signs of stative causation, but location is not represented as a primitive. Since the causative relation is stative and location is not represented in it, the variation in (176) is expected. In particular, we can say that the locative modifies the stative causative relation.

In this case, the details of the predicate description will play a role in the ability of the locative to restrict it: if the external argument is concrete as in (176a), the locative can orient the individual with respect to the place; but when the external abstract is abstract as in (176b), the locative accordingly fails to do so, and the locative reading disappears. Further, the general infelicity of Davidsonian locative modification with simple states can be explained by the lack of a causal relation for the locative to restrict:

(177) #Emma owned the typewriter in the office

This evidence suggests that the locative modifier modifies the predicate description, and if the predicate description is causative and concrete, the locative receives a sensible interpretation.

On the other hand, we have seen that both causatives and simple states accept temporal modification ((178)).

- (178) a. Jones buttered the toast for three minutes
b. Emma owned the typewriter for years

This generality follows from the presence of a voice head mapping a state to time in both cases. So, temporal modification can be seen as a modifier of voice, where the State-Time is introduced.

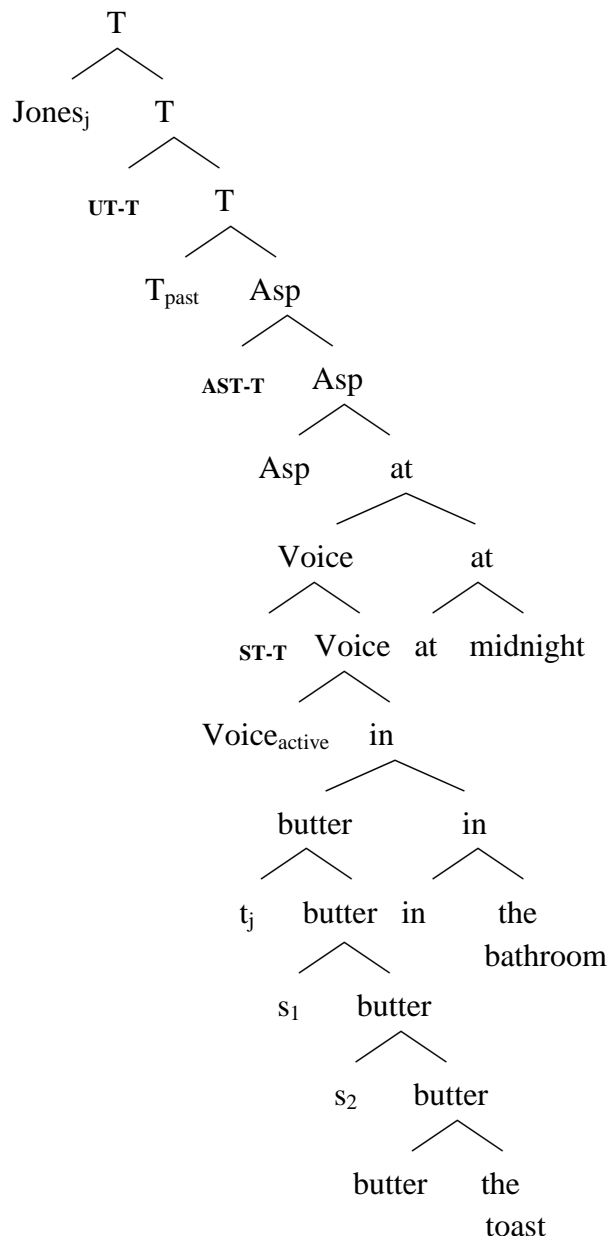
Implementing this, the Davidsonian spatio-temporal modification receives the analysis in (179).

(179) a. Jones buttered the toast in the bathroom at midnight

b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2$

[IN(CAUSE(butter(Jones, s_1), butter(s_2 , the toast)), the bathroom) &
AT($t_{ST-T} \in \tau(s_1)^*$, midnight) & t_{AST-T}, t_{ST-T} & $t_{UT-T} > t_{AST-T}$]

c.



In the representations in (179b) and (179c), the locative and temporal modifiers take the appropriate segments of the structures as arguments: the locative modifies the predicate description as a whole, and the temporal modifier appears higher up to modify the State-Time (*cf.* Cinque 2006: 152-153). In this case, the locative properly restricts the predicate description because of its details: it is a stative causative that implies change with a concrete external argument. This also applies equally to (180).

(180) a. John broke the kite on the driveway

- b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2$
 [ON_{LOC}(CAUSE(break(John, s_1), break(s_2 , the kite)), the driveway)
 & $t_{ST-T} \in \tau(s_1)^*$ & $t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}$]

However, we can now capture the variation in the acceptability of the locative reading when these criteria do not hold. In (181), the locative reading does not obtain because it cannot restrict the abstract cause, and in (182) because there is no causal relation for the locative to restrict, and the simple state itself is true at times that are independent of the locative.

(181) a. #The wind broke the kite on the driveway

- b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2$
 [ON_{LOC}(CAUSE(break(the wind, s_1), break(s_2 , the kite)), the driveway)
 & $t_{ST-T} \in \tau(s_1)^*$ & $t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}$]

(182) a. #Emma owned the typewriter in the office

- b. $\exists_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1$
 [IN(own(Emma, s_1 , the typewriter), the office) & $t_{ST-T} \in \tau(s_1)^*$ & t_{AST-T}, t_{ST-T}
 & $t_{UT-T} > t_{AST-T}$]

This section has offered an analysis of locative and temporal modification that is independent of the event argument. It has attempted to formalise the data pattern that strongly suggests that spatio-location is not a primitive property of predicates or aspectual arguments. We have seen instead that eventivity effects correlate with causation, in addition to other factors, such as the qualities of the external argument.

4.6 Overview of the Aspectual System

The logical arguments and the empirical evidence presented since chapter 1 leads to an internally consistent formal representation of inner-aspect that contains two primitives: a state argument and the CAUSE relation. The only formal distinction is between simple state predicates and stative causatives, and causation is represented lexically.

The notion of *change* has been placed in the conceptual domain for principled reasons. Chapter 1 showed that representing change formally entails a logical

inconsistency in definitions of aspectual arguments and eventivity. Instead, eventivity is proposed to derive from stative causation. A broad range of empirical evidence has supported the conclusion that eventivity is epiphenomenal, from the distribution of passive and the continuous, to inconsistency across eventivity diagnostics.

Along the way we have also seen reasons to conclude that thematic roles, “active” *be*, the Individual/Stage distinction, the Vendlerian classification of predicates, and DO and BECOME are not formal properties of predicate decompositions.

Instead, the single distinction is stative causative/simple state. And because this system carries over to adjectives, EAs fall into line as unambiguous stative causatives that undergo the causative alternation. The analyses of the passive voice and the continuous aspect developed in this chapter carry over to them, as well. In the final chapter we consider their particularities, such as the causative alternation, and compare their causative alternation paradigm cross-linguistically.

Chapter 5:

EA Derivations

5 Introduction

The preceding chapters diagnosed the argument structure of Evaluative Adjectives (EAs), their inner-aspect, and presented of a theory of inner-aspect that accounts for their unexpected behaviour. This chapter completes this investigation with the analysis of their causative alternation paradigm:

- (1)
- | | |
|-----------------------------------|---|
| a. That Emma left was rude | = Causative Unaccusative |
| b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| c. Emma was rude to leave | = Transitive Causative |
| d. Emma was rude | = Transitive Causative with Implicit CP |
| e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |

Adopting the aspectual system developed in chapter 4, causative predicates contain two state arguments and causation is a lexical property. As causatives, EAs carry this information in their denotation ((2a)). Expanding on Rappaport Hovav and Levin (RH&L) (2012: 175), I propose that the denotation is the part of the lexical entry that encodes the arguments that a predicate entails on all its usages. The denotation plays the role of restricting generative capacity.

We have seen that EAs are always causative and they are factive, so they also always entail the truth of their situational complement. In this chapter, it will be argued that they also always entail an external argument, even in unaccusative structures. The EA paradigm in (1) will be derived from the denotation below, where the factive presupposition is now removed. This denotation says that an EA is a stative causative with an individual causing argument and a propositional result.

- (2)
- | | |
|---|------------------|
| a. <i>Template EA Denotation</i> | (Version 2 of 2) |
| $\ EA\ = \lambda q \lambda s_2 \lambda s_1 \lambda x. [CAUSE(EA(x, s_1), EA(s_2, q))]$ | |
| b. Formal feature on a state argument: | $iS [s]$ |

In addition to the denotation, a lexical entry also contains phonological and morphological information, as well as conceptual knowledge associated with the predicate. In chapter 4 it was proposed that state arguments come with a morphological state feature, as shown in (2b), which is mapped to the IP domain and appears as auxiliaries.

We will proceed as follows: section 5.1 presents the derivations of the EA paradigm, and introduces the use of implicit arguments other than the state arguments that have been posited thus far. Section 5.2 builds on the previous one and analyses the verbal causative alternation, picking up on the use of implicit arguments to address the behaviour of external arguments in passives and unaccusatives. It goes on to argue that null pronouns and individual-denoting variables exist in the syntax just as state-denoting variables have been argued to (chapter 4). Section 5.3 compares the present analysis of the causative alternation with Alexiadou *et al.* (2015), who develop a proposal based on the Kratzer's (1996) severed external argument hypothesis. It also attempts to answer the question of why it is that EAs alternate. Section 5.4 compares the EA causative alternation paradigm cross-linguistically. And finally, section 5.5 presents the conclusions.

5.1 Deriving the EA Paradigm

This section presents the derivations of the EA causative alternation paradigm in (1). We will work backwards, beginning with the passive structures in section 5.1.1, and then the transitive active voice structures in section 5.1.2, and end with the unaccusative structures in section 5.1.3.

5.1.1 *Passive Structures*

Beginning with the derivations of the EA passive voice structures in (3) (repeated from (1e, f)), here the focus is on long passives, *i.e.* where the external argument is overt. Short passives, where the external argument is implicit, are compared with unaccusatives in section 5.2.¹

¹ In chapter 2 it was shown that the EA infinitive has a full CP structure. The inventory of natural language implicit arguments is a topic for future research, but I assume for present purposes that the null infinitival subject is PRO (Landau 1999; *cf.* Duguine 2013).

- (3) a. To leave was rude (of Emma) = Transitive Causative + Passive
 b. It was rude (of Emma) to leave = Transitive Causative + Extraposition
 + Passive

Chapter 4 argued that the passive is an operation that is restricted to causative predicates and insensitive to lexical category. The denotation of the passive participle morpheme in (4a) says that *-en* modifies the result-state description of a causative predicate and orders the causing-state in the result-state.

- (4) a. $\| -en_{passive} \| = \lambda P \lambda y \lambda s_2 \lambda s_1 \lambda x. [CAUSE(P(x, s_1), en(P(s_2, y))) \& s_1 \subseteq s_2]$
 b. Formal features on *-en*: $\{iS [], iPart [Pass]\}$

Its formal features in (4b) agree with the state feature on the predicate's result-state argument. Since adjectives do not carry aspectual morphology, in the examples in (3) *-en* receives a null spell-out, just as it does in the case of passivised nominalisations (e.g. *The city's destruction by the barbarians*).

Chapter 4 also proposed that the passive voice head selectively binds and focalises the result-state argument as it maps it to the State-Time ((7a)).

- (5) a. $\| Voice_{passive} \| = \lambda p \lambda t_{ST-T}. \exists s_2 [p \& t_{ST-T} \in \tau(s_2)^*]$
 b. Formal features on $Voice_{passive}$: $\{\{iS [], uPart [], EPP\}; \{\phi\text{-set}[]\}\}$

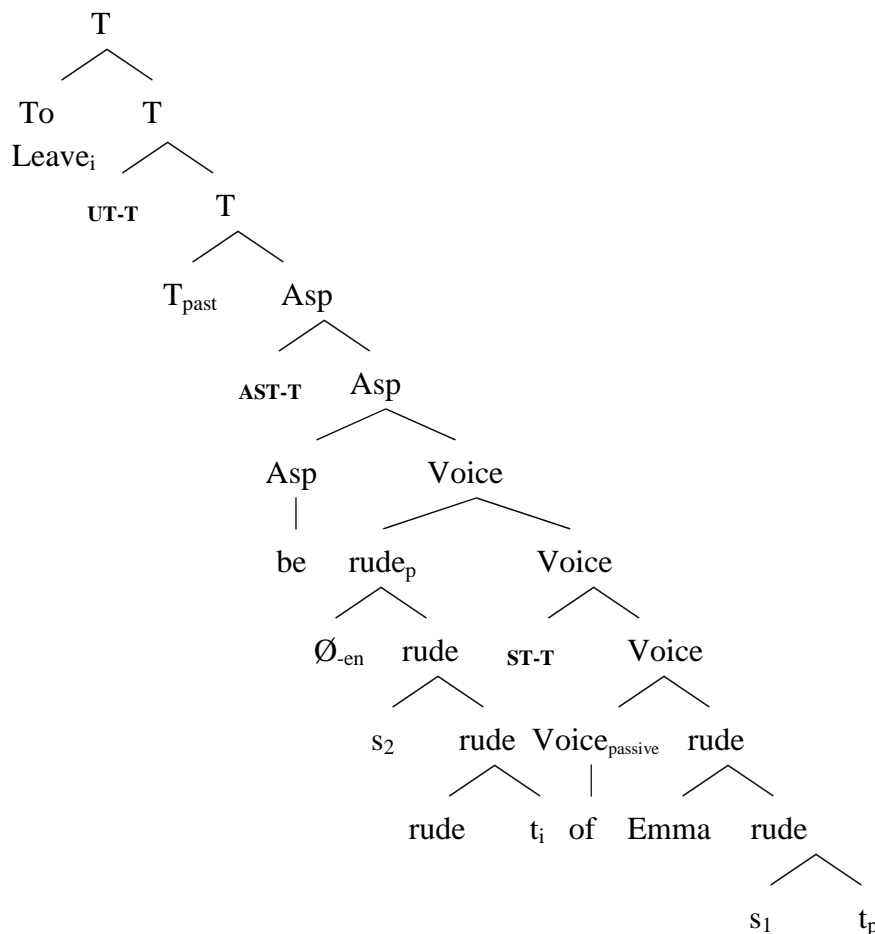
As for the formal features in (5b), the first set will cause the passive voice head to attract the participle to its specifier with the EPP feature, and the phi-feature set addresses this case-marking property of the passive voice head (cf. Chomsky 2001). Collins (2005) proposed for verbs that the passive *by* is the materialisation of the passive voice head when the external argument is overt. In the case of EAs, we can posit that this head is spelt-out as *of*, and that it is a morphological reflex of the category difference between verbs and adjectives. In support of this, section 5.5 compares the English EA paradigm cross-linguistically and shows that other languages use the same preposition for verbal and EA passives. So, the choice of preposition is a superficial one.

Turning now to the derivation of the EA passive structures, the analysis of the verbal passive from chapter 4 carries over. In (6) below as in chapter 4, the auxiliary *be*

realises Asp^0 to bear the IP morphology that the lexical predicate cannot. In this case, since adjectives do not carry aspectual morphology of any kind, the auxiliary will raise to T^0 in PF and spell-out as *was*, and the passive participle morphology is null. This null morphology is depicted as \emptyset_{-en} .

A further point of interest is that upon movement of the participle structure past the external argument to Spec, Voice, the propositional argument is the closest argument to T^0 , and so it is targeted for movement.

(6) To leave was rude of Emma



Because of the complexity of this topic I represent CP subjects and CP Extraposition as derived through movement. This is a simplification, however (*cf.* Alrenga 2005; Alves Castro 2015; Baltin 2006; Davies and Dubinsky 2001, 2010; Koster 1978, 2000; Moulton 2013; Takahashi 2010).

Although I will leave the exploration of the syntactic properties of CPs and the connection to EAs to future research, since the CP is able to appear in subject position when it is the argument closest to T^0 , it must have formal features that make it visible to

syntactic operations. In this respect, these CPs will be different from argument denoting variables, which will be proposed below to be invisible to syntactic operations because of their lack of formal features.

The final interpretation of the structure is in (7). It reads: Emma's rudeness to leave is a stative causative relation such that its causing-state is contained in its result-state and its result-state is focalised by the State-Time, and the Utterance-Time is after the simultaneous Assertion- and State-Times.

(7) *Interpretation of (6) with Existential Closure*

$$\begin{aligned} & \exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_2 \exists_1 [\text{CAUSE}(\text{rude}(\text{Emma}, s_1), \text{en}(\text{rude}(s_2, \text{to leave}))) \\ & \& s_1 \subseteq s_2 \& t_{ST-T} \in \tau(s_2)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}] \end{aligned}$$

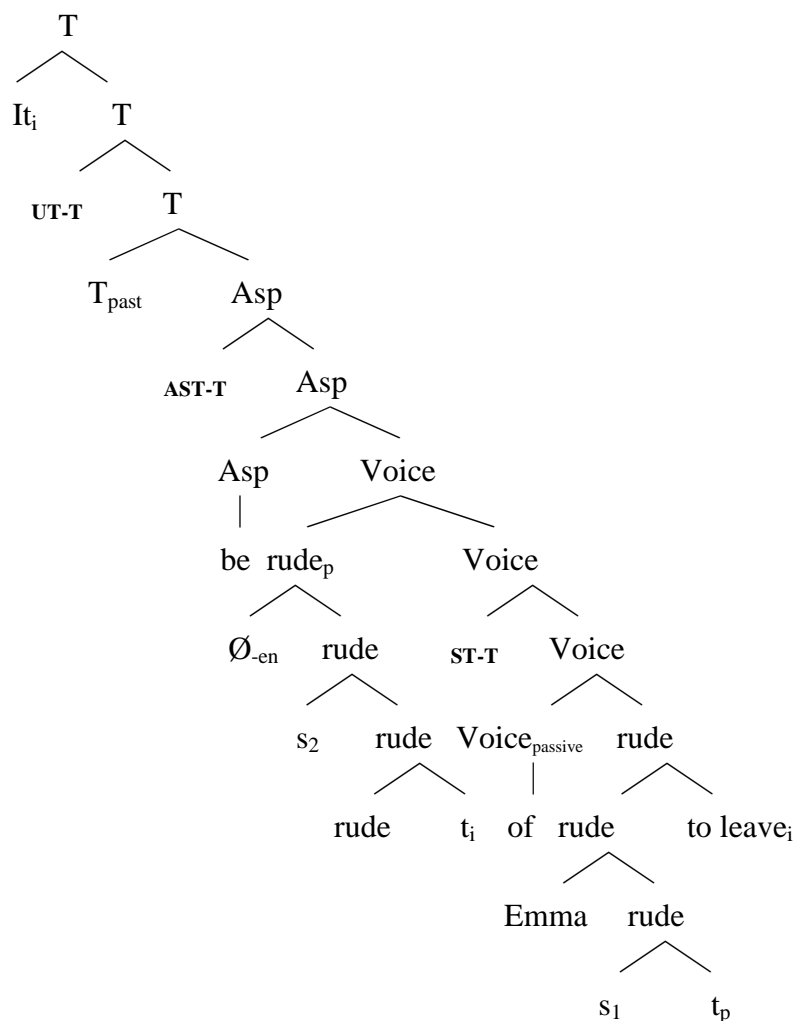
Regarding the EA nominalisation in this paraphrase, chapter 2 discussed the marked nature of the EA nominalisation when both the external argument and the infinitive co-occur, as they do here.

There it was suggested that this was conceivably related to factivity. As EAs are presuppositional, there is a certain awkwardness to spelling-out both arguments inside a nominalisation. Although marked, section 2.3.2 provided the paradigm of EA nominalisations with all variations of their argument structure, including authentic examples with this structure. The only structure that is marked is precisely this one, where both the external argument and CP are realised together. Nominalisations will play a role as we advance, so we will be considering the curiousness of this markedness again below.

Let's turn to the passive Extraposition structure in (8). Taking Extraposition to be a discourse-oriented operation, the semantic interpretation is the same as in (7). The particularity here is that Extraposition spells-out the CP at the right edge of the projection of the predicate (*cf.* Baltin 2006).

But passivisation, just as in (6), takes the CP past the external argument and makes it the closest argument to T^0 . So, there are conflicting conditions on the CP: Extraposition spells-out the CP on the right edge, while the EPP is pulling it to the left edge. I would like to suggest that the pronoun *it* appears in Spec, T in order to resolve this tension. And so the content of *it* in these cases is not vacuous, but that of the extraposed CP (*cf.* Bennis 1986).

(8) It was rude of Emma to leave



With this analysis of (8), examples such as (9) are accounted for as ellipsis of the CP under semantic identity with the content of *it* (cf. Hardt 1992; Merchant 2001; Potsdam 2003):

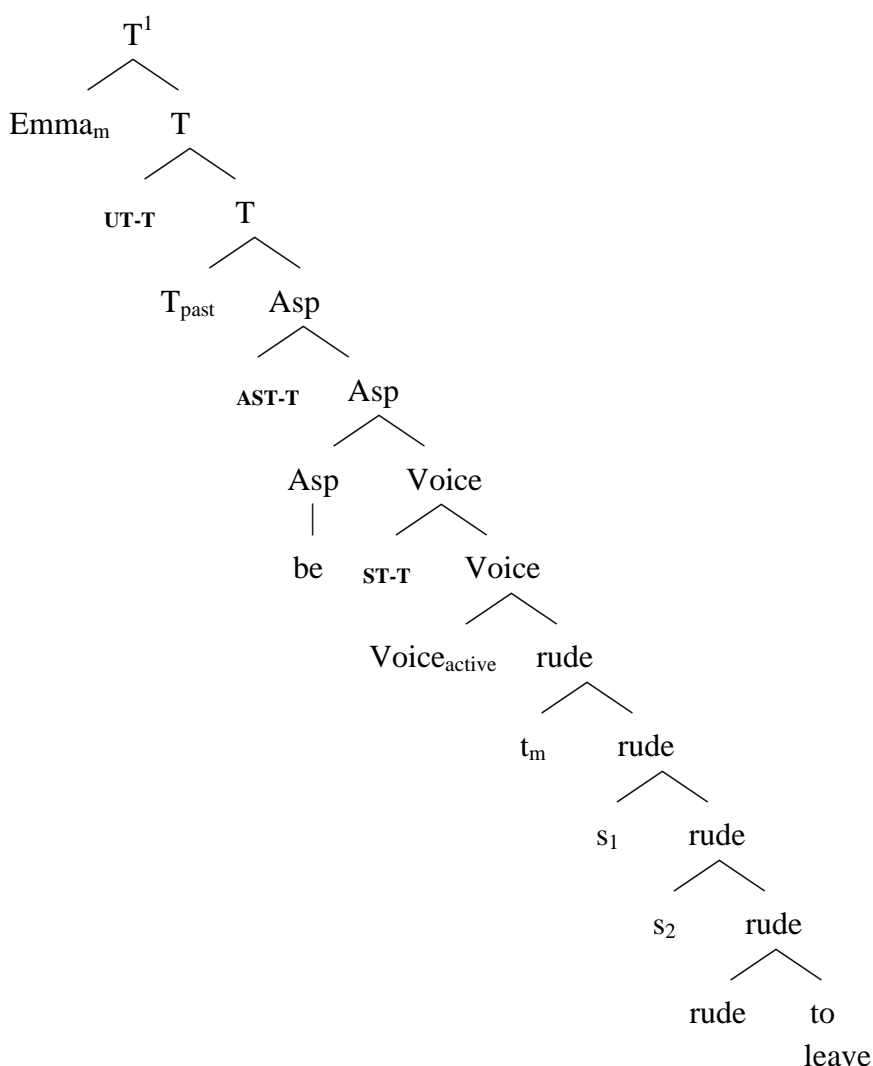
(9) It_i was rude of Emma (to leave_i)

These derivations account for the properties of the EA long-passive data. We have applied the analysis of the passive from chapter 4 to EAs, and extended it to include Extraposition. Although the details of CP syntax were set aside, combining this aspectual analysis of the passive with the structural configuration of Collins' (2005) passive syntax and Extraposition provides a principled account for the EA passive data. We will return to the analysis of short passives 5.2.

5.1.2 Transitive Active Voice Structures

We turn now to the active voice structures in (10) (repeated from (1c, d)). First, the derivation of (10a) is provided in (12). This is the simplest structure because both the external argument and complement CP are overt, and in their base order. Here, the external argument raises to Spec, T and the copula is generated under Asp⁰. The interpretation is in (12) below.

- (10) a. Emma was rude to leave = Transitive Causative
 b. Emma was rude = Transitive Causative with Implicit CP
- (11) Emma was rude to leave



- (12) *Interpretation of (11) with Existential Closure*

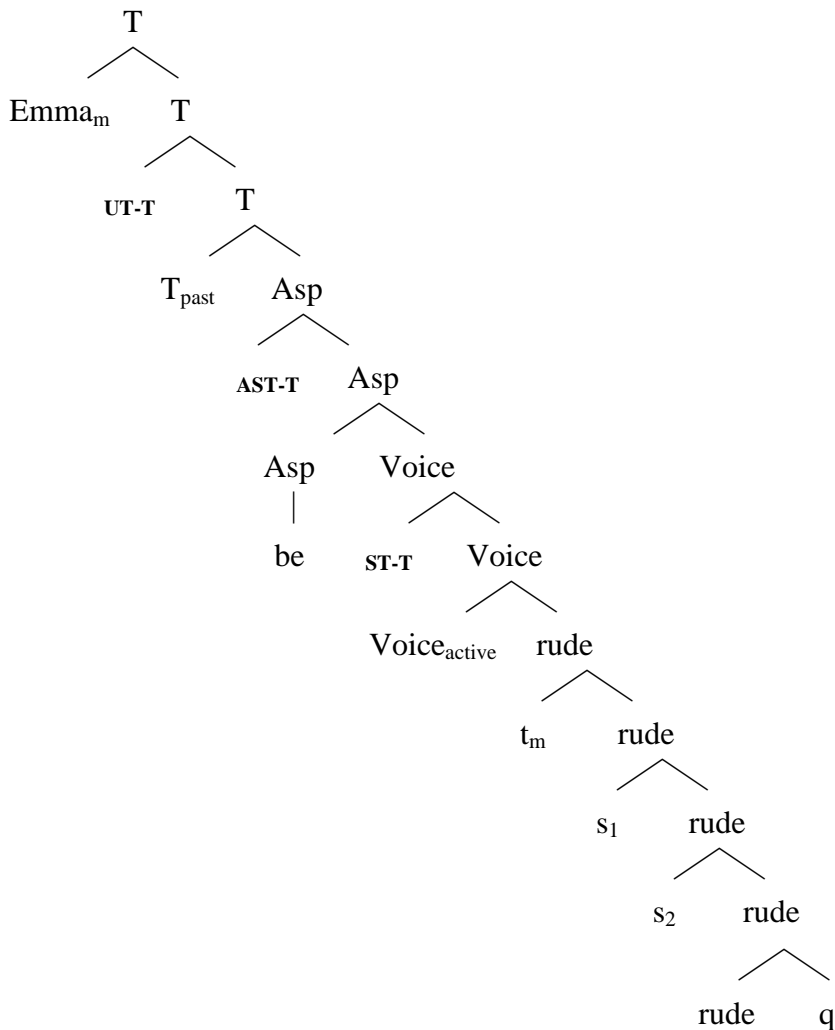
$$\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists s_2 [\text{CAUSE}(\text{rude}(\text{Emma}, s_1), \text{rude}(s_2, \text{to leave})) \\ \& t_{ST-T} \in \tau(s_1)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}]$$

As discussed in chapter 4, the relevant meaning difference between the active and passive voices is in the state argument that is mapped to the State-Time and focalised by the voice head. Since this is an active voice expression, Voice maps the causing-state to the State-Time; (14) reads: Emma's rudeness to leave is a stative causative relation, whose causing-state is focalised by the State-Time, and the Utterance-Time is after the simultaneous Assertion- and State-Times. With the qualifications introduced above regarding the markedness of the nominalisation, this derivation does a fair job of characterising the expression's meaning.

The challenge is to capture (10b), analysed in (13) below. In chapter 3 it was argued that EAs always entail a CP and so, on the present approach, it is recorded in the EA lexical entry. Throughout this thesis I have posited the existence of state arguments exist and their syntactic reality. Section 4.3 gathered evidence for the usefulness of doing so. In this chapter, I will argue that the same is true of implicit arguments that are individual- and proposition-denoting.

In particular, accounting for (13) will involve an implicit argument. Here I propose that the EA takes a proposition denoting variable with no formal features as its complement. This lack of formal features makes it syntactically inert. With this one difference, this syntactic derivation is the same as the overtly transitive one above in (11).

(13) Emma was rude



The interpretation is slightly different, though, because now the proposition is a free variable that is unselectively bound under Existential Closure:

(14) *Interpretation of (13) with Existential Closure*

$$\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2 [\text{CAUSE}(\text{rude}(\text{Emma}, s_1), \text{rude}(s_2, q_2)) \\ \& t_{ST-T} \in \tau(s_1)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}]$$

This formula can be read as: Emma’s rudeness is a stative causative relation with some situation that manifests that rudeness such that the causing-state in the relation is focalised by the State-Time, and the Utterance-Time is after the simultaneous Assertion-

and State-Times. With the inclusion of the propositional variable, the result is an appropriate existential interpretation.^{2, 3}

5.1.3 *Causative Unaccusative Structures*

Moving on now to the analyses of the EA unaccusative structures in (15) (repeated from (1a, b)), the analysis will extend the use of inert entailed arguments from the previous section. The next section will address implicit arguments in more detail comparing unaccusatives and short passives.

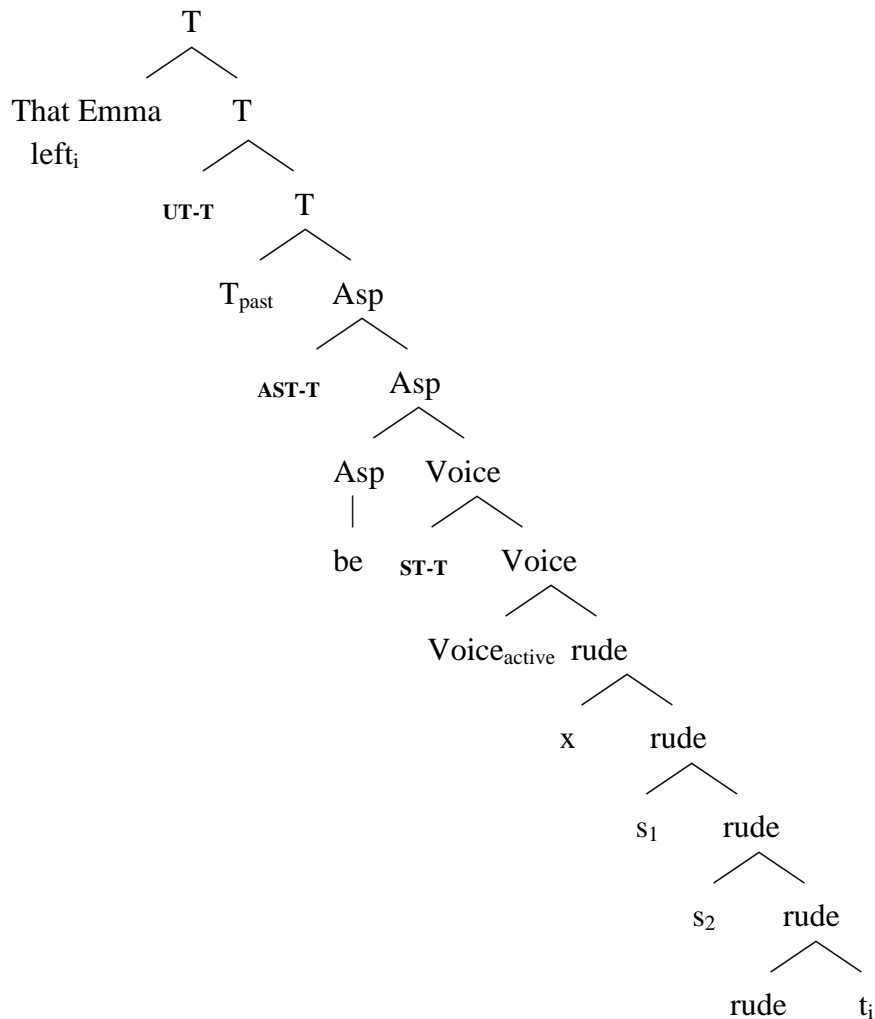
- (15) a. That Emma left was rude = Causative Unaccusative
 b. It was rude that Emma left = Causative Unaccusative + Extraposition

The structure in (16) provides the syntax of (15a). In contrast with the previous example, here the external argument that is realised in the syntax as a free individual-denoting variable, represented as x . Since it has no formal features, it is syntactically inert and the closest available argument to T^0 is the CP, which duly moves to it satisfy the EPP.

² It was argued throughout chapters 3 and 4 that EAs are not Individual-Level predicates. Section 4.2.2.5.2 analysed non-existential interpretations with respect to inner-aspect, tense, and generic/habitual quantification. There it was suggested that a true generic/habitual interpretation—and not one falsely induced by the present simple with causative predicates—is the product of such quantification over the Assertion-Time, and not an inherent lexical property.

³ Ideally, this analysis of implicit objects carries over to verbs, such as *eat*, that can drop their objects with a non-referential interpretation and maintain their existential entailment, e.g. *Victoria ate*.

(16) That Emma left was rude



The other notable aspect is that unaccusatives are active voice expressions: the only difference between transitive causatives and causative unaccusatives is the syntactic activity of the external argument.

The interpretation of (16) is in (17). In section 5.3 below, where unaccusatives are discussed in more detail, I will argue that they entail an external argument even though it is not overt. So, just as in the analysis of the implicit complement proposition above, the external argument in unaccusatives will receive its existential force under Existential Closure. Implementing this here, the interpretation in (16) can be paraphrased as follows: The rudeness of Emma's leaving is a stative causative relation whose causing-state is focalised by the State-Time, and the Utterance-Time is after the simultaneous Assertion- and State-Times.

(17) *Interpretation of (16) with Existential Closure*

$$\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2 [\text{CAUSE}(\text{rude}(x_2, s_1), (\text{rude}(s_2, \text{that Emma left})))$$

$$t_{ST-T} \in \tau(s_1)^* \ \& \ t_{AST-T}, t_{ST-T} \ \& \ t_{UT-T} > t_{AST-T}]$$

Since this is an active voice expression, the focus is still on the causing-state, but it is underspecified by the lack of a referential external argument. In this connection, the nominalisation used for the interpretation of this structure is interesting in two ways.

First, note that the nominalisation used here, repeated in (18a), has an overt propositional complement and it is grammatical. This is interesting because it shows that EA nominalisations do take CP complements, but that the markedness of (18b) is an effect of both arguments being overt at the same time. This is another reason to conclude the markedness of (18b) is pragmatic and not syntactic.

- (18) a. The rudeness of Emma's leaving = Unaccusative Nominalisation
 b. #Emma's rudeness to leave = Transitive Nominalisation

The second interesting point regarding the unaccusative nominalisation ((18a)) is the use of the definite article in the external position. I have used it purposively in order to include the Existential Closure over the external argument in the paraphrase. Namely, the pair in (19) shows that the definite article has existential quantification over an individual inside of it: in (19b) the individual is overt and referential, and in (19a) it is underspecified just as with non-referential existential quantification.

- (19) a. The rudeness
 b. The girl's rudeness

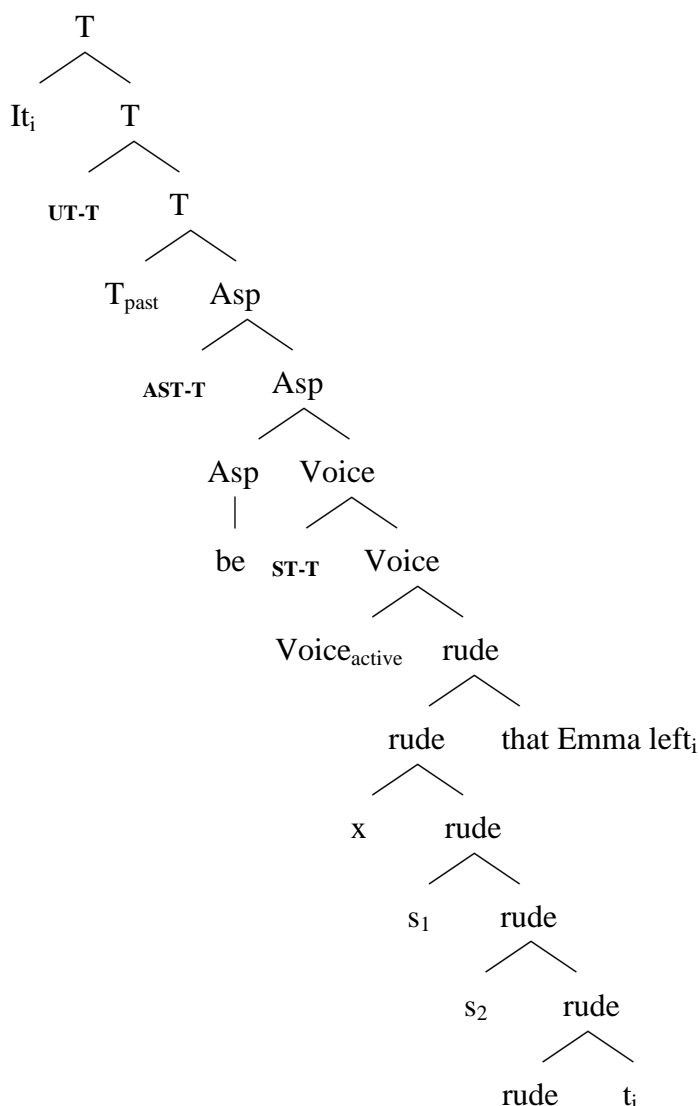
This will be elaborated on further below when we turn to the causative alternation in general, but I will argue that causative unaccusatives always entail an external argument, that Existential Closure over that argument captures its underspecification, and that the invocation of the definite article in the paraphrase of unaccusatives is a useful illustration of this.

It is worth bearing in mind, however, that including reference to the external argument in the predicate's lexical entry and placing it in the syntax as a variable bound

under Existential Closure in unaccusatives accounts for both the entailment of the external argument in unaccusatives, and its non-referential character.

Turning now to the syntax of (15b) in (20), the only important difference with the previous unaccusative example is that Extraposition has occurred. As proposed with the passive example above, the CP has been extraposed to the right edge, but it is also the closest referential argument to T^0 , so *it* appears to resolve the tension and provide an overt subject. At the semantic level, I propose that the interpretation of this structure is the same as for (16) in (17) above.

(20) It was rude that Emma left



This section has introduced the proposal to be explored more below that unaccusatives have a variable in the external argument position bound by Existential Closure. This will account for the character of the external argument in unaccusatives,

while maintaining the argument selection properties of the predicate's denotation. It is also an expansion of the proposal that state arguments are present in the syntax in that it provides evidence that other types of argument variables are, as well.

5.2 Two Types of Implicit Arguments and the Causative Alternation

I have proposed that implicit objects and unaccusatives are two cases where argument variables are present in the syntax and bound under Existential Closure. This captures the cases in which an argument is entailed, but implicit and non-referential.

Short passives are another case where an entailed argument is implicit. They differ, though, in showing signs of being referential.

The data in (21) illustrate the kind of contrast in argument behaviour that requires analysis. In (21), the active voice example with an overt external argument ((21a)) and the passive with an implicit one ((21b)) pattern together in accepting modification of the external argument, to the exclusion of the unaccusative ((21c)).

- (21) a. They decreased the price willingly
 b. The price was decreased willingly
 c. *The price decreased willingly

(Jaeggli 1986: 611, ex. (53))

The interesting point here is that there is general agreement that unaccusatives are aspectually causative (see discussion in section 2.1.2), so the pertinent difference between these three examples does seem to centre on the representation of the external arguments.

Control is another environment where the implicit external argument in the passive shows signs of being referential. In chapter 2 it was shown that EAs are Obligatory Control predicates in all their infinitival structures. Example (22), also from chapter 2, shows that cases where EAs appear to allow a long distance or an arbitrary Control interpretation receive a uniform Obligatory Control analysis with an intermediate implicit argument. These are structures that have been analysed as passives here, as well as in Bennis (2000, 2004) and Landau (2009).

- (22) a. Mary knew that it was foolish to perjure herself/oneself
 a'. Mary_i knew that it was foolish *of-i/j* [PRO_{i/j} to perjure herself_i/oneself_j]

In this connection, in his study of implicit arguments Landau independently concludes the following:

- (23) Implicit argument controllers are syntactically represented.

(Landau 2010a: 370, ex. (45))

Of interest in the present setting is Landau's proposal that in the passive voice the implicit external argument has formal agreement features (*i.e.* Number, Person, and Gender) that make its syntactic representation necessary, accounting for its syntactic behaviour as a controller of PRO.

Moving one level up in the passive from the external argument to the passive voice head, following Collins' (2005) we have identified the passive voice head with the preposition that case-marks the stranded external argument, namely *by* with verbs and *of* with adjectives. Correspondingly, in addition to its aspectual features, the passive voice head has nominal agreement features. In the denotation in (24) it was allocated a set of nominal agreement features. So, Landau's conclusion regarding implicit controllers in the passive interlocks with the properties of the passive voice head.

- (24) a. $\|Voice_{passive}\| = \lambda p \lambda t_{ST-T}. \exists s_2 [p \ \& \ t_{ST-T} \in \tau(s_2)^*]$
 b. Formal features on Voice_{passive}: $\{\{iS [\], uPart [\], EPP\}; \{\varphi\text{-set} [\]\}\}$

In contrast, the active voice head does not place any demands on the external argument, and so it does not have nominal formal features. Instead it has the one dimensional function of mapping the predicate's aspectual argument to the State-Time.

- (25) a. $\|Voice_{active}\| = \lambda p \lambda t_{ST-T}. \exists s_1 [p \ \& \ t_{ST-T} \in \tau(s_1)^*]$
 b. Formal feature on Voice_{active}: $iS [\]$

I would like to propose that, extending Landau and Collins with an eye to accounting for the behaviour of the implicit arguments in unaccusatives and passives, it is because of the formal features on the passive voice head that the external argument is

necessarily present in the syntax and participating in syntactic relations. Further, in short passives the implicit external argument has referential pronominal properties because of these features that agree with the nominal features on the passive head. For present purposes, I will call the pronominal in short passives *pro* (Landau 2010a; cf. Duguine 2013).

On the other hand, I propose that the lack of nominal formal features on the active voice head allows the external argument to be interpreted as a variable in the syntax in unaccusatives, thus accounting for its syntactic inertness in these structures.

So, I am making a two-pronged proposal. First, the contrasting referential properties of external arguments in short passives and unaccusatives provide evidence for two different kinds of implicit arguments: pronouns and variables, respectively. Second, the fact that both kinds are entailed even though implicit, is evidence for their syntactic reality.

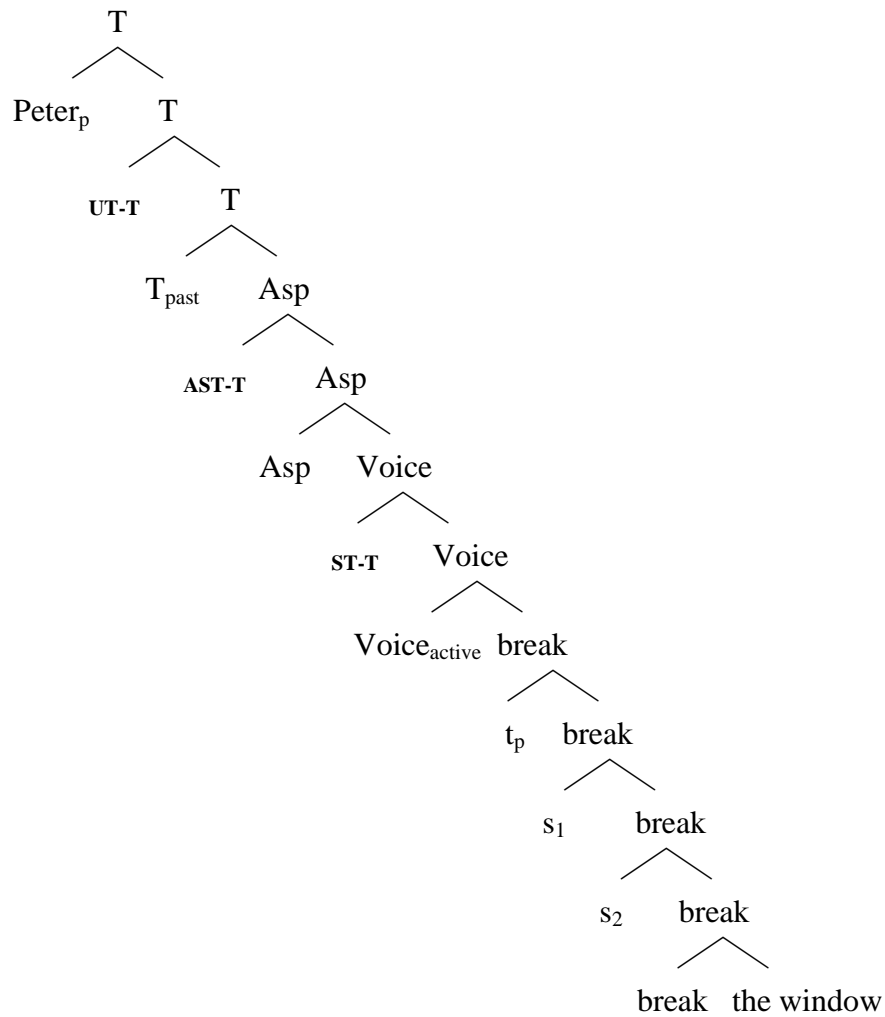
To see this in action let's run through the derivation of the paradigm of *break* in (26) using the denotation in (27).

- (26) a. Peter broke the window = Transitive Causative
 b. The window broke = Causative Unaccusative
 c. The window was broken = Short Passive

(27) $\|break\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. [CAUSE(break(x, s_1), break(s_2, y))]$

The derivation of (26a) in (28), and its interpretation in (29), is an active voice expression where both of the predicate's DP arguments are realised. It can be read: Peter's breaking of the window is a stative causative relation whose causing-state is focalised by the State-Time, and the Utterance-Time is after the simultaneous Assertion- and State-Times.

(28) Peter broke the window

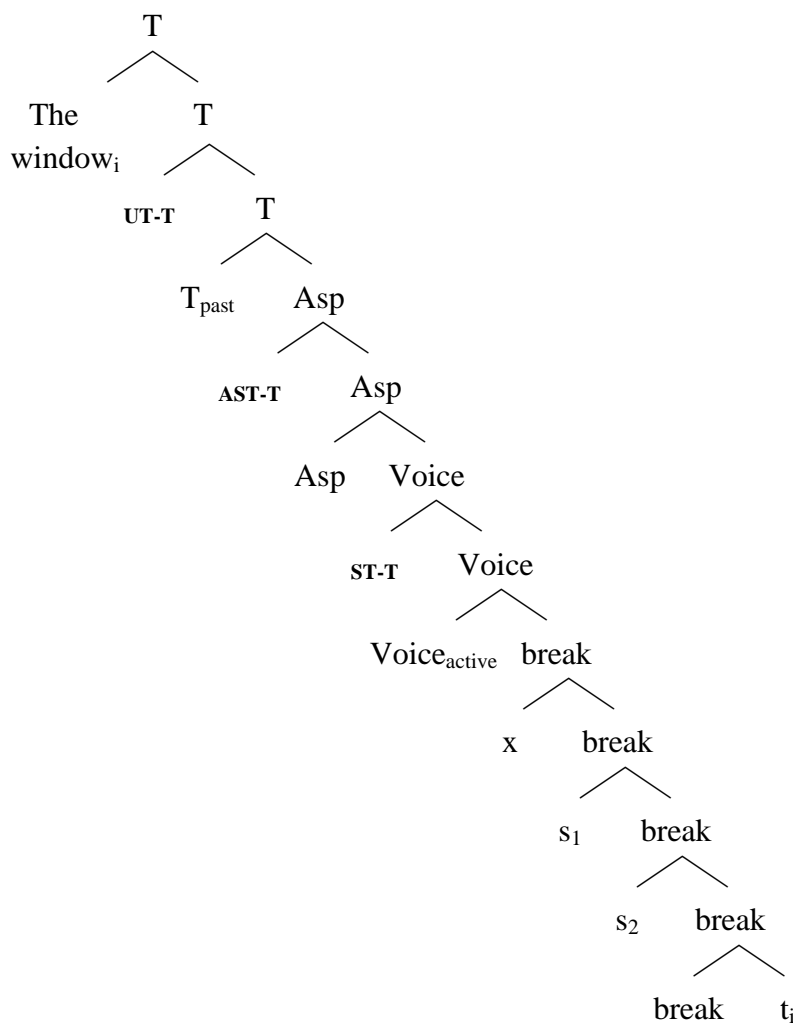


(29) *Interpretation of (28) with Existential Closure*

$$\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2 [\text{CAUSE}(\text{break}(\text{Peter}, s_1), (\text{break}(s_2, \text{the window}))) \\ \& t_{ST-T} \in \tau(s_1)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}]$$

The derivation of the unaccusative (26b) in (30) is the same, with the difference that the external argument is an individual variable in the syntax. So in the interpretation in (31) the non-referential existential entailment of the external argument comes from Existential Closure over the predicate.

(30) The window broke

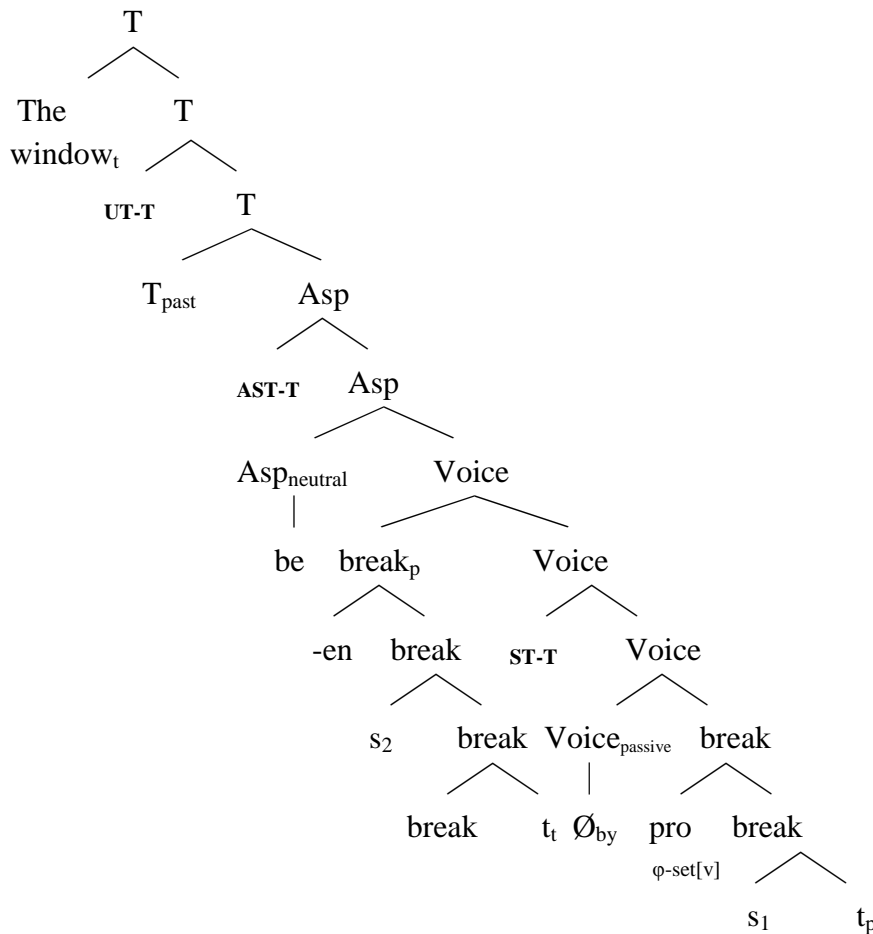
(31) *Interpretation of (30) with Existential Closure*

$$\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2 [\text{CAUSE}(\text{break}(x_2, s_1), (\text{break}(s_2, \text{the window}))) \\ \& t_{ST-T} \in \tau(s_1)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}]$$

The pertinent part of (31) can be read as: the breaking of the window is a causative stative relation whose causing-state is focalized by the State-Time. Once again, in this paraphrase the definite article conveys the Existential Closure over the external argument in the syntax. This addresses that argument's maximal under-specification in unaccusatives. This analysis also accounts for its syntactic inertness.

The final derivation is of the short passive (26c) in (32). This derivation is different because the unvalued formal features on the passive voice head require an element with which to agree. The valued formal features on *pro* are represented as $\varphi\text{-set}[v]$ in (32).

(32) The window was broken



In the interpretation of this structure in (33) the external argument is bound under Existential Closure, just as it was in the interpretation of the unaccusative structure in (31) above. The difference here is that the implicit element carries formal features make *pro* referential and allow it to participate in syntactic relations such as modification ((21)), and pronominal co-reference and Control ((22)) (*cf.* Heim and Kratzer 1998: 239-245).

(33) *Interpretation of (32) with Existential Closure*

$$\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_2 \exists_1 [\text{CAUSE}(\text{break}(x_1, s_1), \text{en}(\text{break}(s_2, \text{the window}))) \\ \& s_1 \subseteq s_2 \& t_{ST-T} \in \tau(s_2)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}]$$

The pertinent part of this formula can be read as: something's breaking of the window is a stative causative relation such that its causing-state is contained in its result-state and its result-state is focalised by the State-Time.

This paraphrase uses the indefinite pronoun both to reflect the pronominal element in the syntax, and to contrast short passives with unaccusatives. Intuitively, the implicit external argument in short passives is more salient than the implicit external argument in unaccusatives, and the paraphrases reflect that intuition by using the pronoun in the interpretation of the former (*i.e. Something/one's breaking of the window*), and the definite article in the latter (*i.e. The breaking of the window*). This seems to be a close approximation to the degree of implicitness of the respective external arguments in these two structures.

Summing up, on this analysis the presence of nominal formal features on the passive voice head conditions the syntactic presence of a nominal external argument in the syntax. Unaccusatives, on the other hand, are active voice expressions, and the active voice places no syntactic conditions on external argument of the predicate, and so the external argument can be realised a variable in the syntax that is interpreted non-referentially under Existential Closure.

5.3 Alternative Analysis and the Heart of the Causative Alternation

This section is divided in three parts. First section 5.3.1 contrasts the present analysis of the causative alternation with the recent analysis of Alexiadou *et al.* (2015). Their analysis differs in two ways: (i) the external argument is introduced by Voice, and not the predicate (Kratzer 1996), and (ii) it is absent from the syntax of unaccusatives. It will be argued that exclusion of the external argument leads to undesirable consequences that the present analysis avoids. Second section 5.3.2 expands on the results of 5.3.1 in order to show how the facts about Spanish and Italian reflexive unaccusatives fit naturally into this thesis' theory of inner-aspect.⁴ Third section 5.3.3 addresses the looming question of why it is that EAs undergo the causative alternation.

5.3.1 Alternative Unaccusative Analysis: Alexiadou et al. (2015)

Alexiadou *et al.* (2015) analyse the causative alternation adopting Kratzer's (1996) hypothesis that an external argument is an argument of Voice⁰, and not the predicate.

⁴ See section 2.1.2 for arguments against the reflexive analysis of unaccusatives.

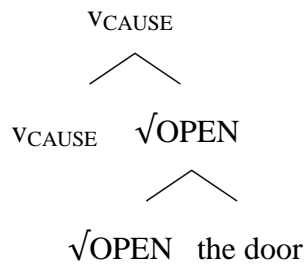
On this approach, the denotation of a causative alternating verb, such as *open*, is as shown in (34a). This denotation makes reference to an event argument and a Theme, but not the external argument. In (34b) the unaccusative structure is made causative via a causative functional head, but there is still no external argument associated with causation. In the transitive structures in (34c, d), the different sorts of external arguments are introduced by voice heads that determine the thematic role of the argument (Alexiadou *et al.* 2015: 8-9). On their proposal, the role of Voice⁰ is strictly to introduce external arguments (2015: 12; *cf.* Kratzer 1996: 124). In this sense, their development of the severed external argument hypothesis is a pure test study.

(34) *Alexiadou et al.'s (2015) Analysis of the Causative Alternation in English*

a. $\| \sqrt{OPEN} \| = \lambda x \lambda e. [\text{open}(e) \ \& \ \text{Theme}(e, x)]$

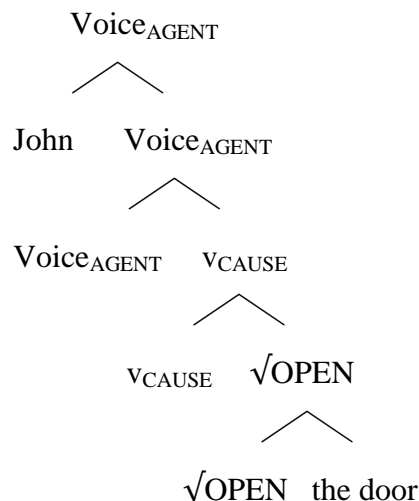
(*cf.* Alexiadou *et al.* 2015: 9)

b. The door opened



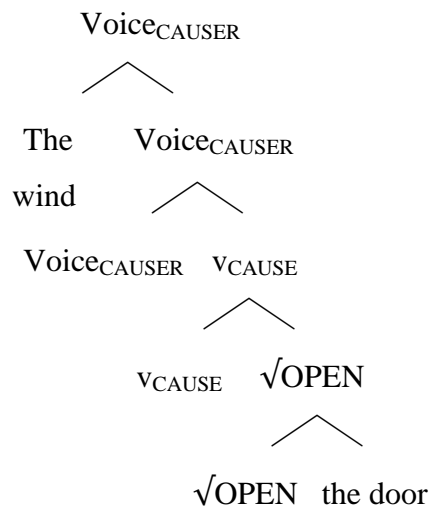
(*cf.* Alexiadou *et al.* 2015: 29, ex. (31); 97, ex. (1))

c. John opened the door



(*cf.* Alexiadou *et al.* 2015: 9, ex. (12))

d. The wind opened the door



(cf. Alexiadou *et al.* 2015: 9, ex. (13))

The central difference between Alexiadou *et al.*'s analysis and the present one is the character of the external argument. There are two drawbacks to the proposal that the external argument is not an argument of the predicate.

The first is that once arguments are separated out from the predicate, an array of dedicated functional heads is required to specify aspectual relations. This is why a causative little *v* head and voice heads that specify thematic roles are needed in (34). On the present proposal, the inventory of primitives is reduced to two: a state argument and a lexical causal relation.

The second is that the analysis of the unaccusative in (34b), where there is no causing argument, does not capture the contradiction in (35). Here, the continuation denies that there was a causing force of any kind.

(35) #The window broke, but nothing broke it

I submit that stated literally, this sentence is a contradiction in the fundamental sense that, in the final analysis there are no uncaused causes. Rather if an utterance along the lines of (35) is made, its meaning is rhetorical.

In this connection, in accordance with Schafer and Vivanco's (2016) weak scalar analysis of unaccusatives, I take unaccusatives convey that the speaker asserts the cause is unknown—but there is a causing force of some kind, abstract as it may be (cf.

Rappaport Hovav 2014). Thus an unaccusative expression can be followed up with a specification of the cause:

- (36) a. The glass broke. In fact, John broke it
 b. The glass broke. In fact, the earthquake broke it
 (cf. Schafer and Vivanco 2016: 25, ex. (70), (71))

On the present analysis the external argument is present in the unaccusative syntax as an existentially bound variable:

- (37) *Interpretation of The glass broke*
 $\exists t_{UT-T} \exists t_{AST-T} \exists t_{ST-T} \exists s_1 \exists_2 [CAUSE(break(x_2, s_1), (break(s_2, the\ glass)))$
 $\& t_{ST-T} \in \tau(s_1)^* \& t_{AST-T}, t_{ST-T} \& t_{UT-T} > t_{AST-T}]$

This captures the contradiction in (35), the continuations in (36), and the analysis of unaccusatives as producing weak scalar implicatures regarding specification of the causing force: existential quantification makes the weakest possible claim regarding the cause.⁵

An additional drawback to not including the external argument in the lexical entry is that the generalisation on the availability of the unaccusative form in (38) seems unavoidably missed.

- (38) *Underspecified External Argument Generalisation*
 Only transitive verbs that do not restrict the Θ -role of their external argument to Agents enter the causative alternation.
 (cf. Schafer and Vivanco 2016: 7, ex. (12))

In positive terms, the generalisation is that only causative predicates that allow a Causer external argument can have an unaccusative form. The examples in (39) and (40) illustrate this. Examples (39a, b) show that *break* allows a Causer external argument, and (39c) shows it has an unaccusative form. In contrast, (40a, b) show that

⁵ Incorporating the weak scalar analysis of causative unaccusatives, the different assertions that causative unaccusatives and short-passives make with respect to their implicit external arguments can be characterised as the former asserting *X happened, but why is unknown*, and the latter *X happened, but why is unimportant*.

assassinate is restricted to an Agent interpretation of its external argument, and (40c) shows it lacks an unaccusative form.

- (39) a. The terrorist broke the window = Transitive Causative
 b. The explosion broke the window = Transitive Causative
 c. The window broke = Causative Unaccusative
 (cf. Martin and Schafer 2014: 211, ex. (5))
- (40) a. The terrorist assassinated the senator = Transitive Causative
 b. *The explosion assassinated the senator = Transitive Causative
 c. *The senator assassinated = Causative Unaccusative
 (cf. Martin and Schafer 2014: 211, ex. (3))

On an analysis where predicates do not have external arguments in their lexical entries and the unaccusative structure makes no reference to the external argument, it does not seem possible to state a generalisation about the character of the external argument that is stronger than the null hypothesis that all verbs can appear without an external argument such that it is interpreted inferentially to have the same properties that it does when overt.

On the other hand, the present analysis can capture the Causer criterion. On this theory of inner-aspect the causative relation is stative. So semantically, the external argument can only be characterised as a Causer:

(41) *Template Causative Denotation*

$$\|P\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. [\text{CAUSE}(P(x, s_1), P(s_2, y))]$$

Now add to this the discourse function of the unaccusative that the speaker communicates the weakest possible claim about the causing force. This is the existential quantification over the external argument in (37), which establishes a connection to the generalisation in (38).

On the other hand, predicates that conceptually necessarily imply agentivity, such as *assassinate*, are infelicitous in the unaccusative because the implication of agentivity is unavoidable, and that is a stronger implication than the unaccusative form makes. However, capturing this series of properties requires reference to the relation between

external arguments and predicates, which a severed external argument analysis does not have access to.

In conclusion, including the external argument in the lexical entry captures the entailment of an external argument, and having the variable existentially bound in the syntax captures its non-referential properties.

5.3.2 *Reflexive Unaccusatives in Spanish and Italian*

This section compares Alexiadou *et al.*'s analysis of morphologically unmarked unaccusatives in English and marked unaccusatives in Romance. It will be proposed that the properties of data pattern have a natural place in the present theory.

The Spanish causative alternation pair in (42) shows that some languages realise their unaccusative structure with a third person reflexive clitic, *se* in (42b), which is absent in transitive structure ((42a)).

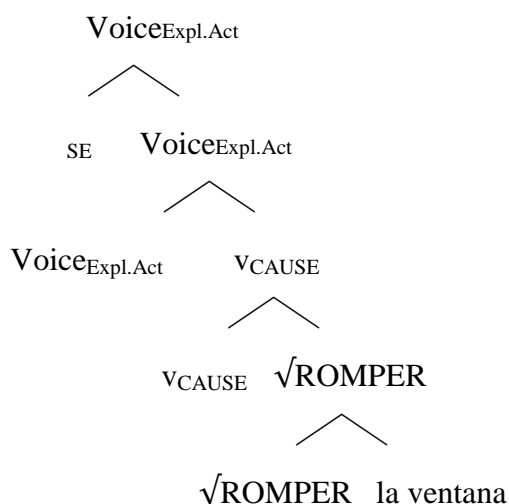
(42) Spanish

- | | | | |
|----|-----------------------------|------------|--------------------------|
| a. | Pedro rompió | la ventana | = Transitive Causative |
| | Peter break-PAST the window | | |
| | ‘Peter broke the window’ | | |
| b. | La ventana | se rompió | = Causative Unaccusative |
| | the window SE break-PAST | | |
| | ‘The window broke’ | | |

Alexiadou *et al.* (2015) and Schafer and Vivanco (2016), argue persuasively that this clitic is not semantically reflexive. Further, they conclude that the clitic is semantically vacuous in these unaccusative structures. In turn, Alexiadou *et al.* analyse these morphologically marked unaccusatives as in (43). They propose that there is an expletive active voice head, introducing no semantic content (2015: 108-109), that hosts the semantically null reflexive in its specifier.

(43) *Alexiadou et al.'s (2015) Analysis of Marked Unaccusatives*

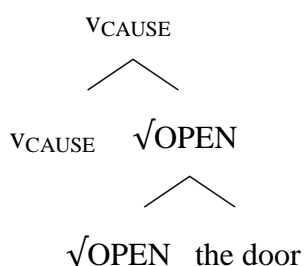
La ventana se rompió

(cf. Alexiadou *et al.* 2015: 109, ex. (12c); 111, ex. (14))

Comparing with their analysis of morphologically unmarked English unaccusatives in (44) (repeated from 34b)), the sole difference is in the null elements (43).

(44) *Alexiadou et al.'s (2015) Analysis of Unmarked Unaccusatives*

The door opened

(cf. Alexiadou *et al.* 2015: 29, ex. (31); 97, ex. (1))

Having concluded that the clitic is semantically null, Alexiadou *et al.* (2015) adopt Haspelmath's (1993) proposal regarding its import. Haspelmath proposes that the clitic appears in correspondence with a scale of spontaneous change. In particular, the clitic appears on unaccusatives that are conceptualised as unlikely to lack an identifiable cause of change. So, the morphology is marking a conceptual scale.

Now, Haspelmath (1993) also highlights that within and across languages that mark unaccusatives, it is impossible to predict how a predicate will be conceptualised with respect to the scale. For example, (45) and (46) provide minimal pairs in Spanish and

Italian. The (a) examples show that both languages require the clitic with *break*, but the (b) examples show that the clitic is not always necessary. In particular, with *sink* it is obligatory in Spanish, but optional in Italian. Haspelmath *et al.* (2014) propose that this fine-grained variation indicates language particular conceptual choices that are countenanced by frequency effects.

(45) Spanish

- a. La ventana se rompió
the window SE break-PAST
'The window broke'
- b. El barco se hundió
the boat SE sink-PAST
'The boat sank'

(46) Italian

- a. La finestra si è rotta
the window SE IS break-PART
'The window broke'
- b. La barca (si) è affondata
the boat SE IS sink-PART
'The boat sank'

(*cf.* Chierchia 2004)

The interesting point here is that in chapters 1 and 4 it was independently argued that the notion of itself change is conceptual, and not represented in a predicate's aspectual decomposition. In particular, the category distinction between verbs and adjectives was proposed to reflect that verbs can convey change, but adjectives cannot. However, this distinction is a conceptual one that is reflected in morphology, not in the syntax.

Now, we are in a position to conclude that marked unaccusatives in Romance are another morphological reflection of the conceptual notion of change. This allows for the principled elimination of a null voice head and a null clitic in the syntax ((43)), and the elimination of optionality in the analysis of unaccusatives within and across languages ((44), (46b)), at least in these cases.

Yet, the generalisation that verbs that *can* alternate accept a Causer external argument does hold. Let's assume that this is the core condition on the ability of a *predicate* to undergo the causative alternation.

I have proposed here that verbs and adjectives are the same underlying predicate category, and that they have the same range of aspectual decompositions: stative causative or simple state. Further, all causative predicates have the same aspectual content in their decompositions: a stative causative relation.

The lexical category distinction however, tracks that, conceptually, a verb can convey change and therefore also Agentivity, while the adjective category is a transparent marker of stativity across these levels of representation because it does not convey change.

Now, the generalisation on the causative alternation and the comparison between *break* and *clear* show that the causative alternation is sensitive to the interpretation of the external argument, and that Agentivity interferes with the alternation. On the pragmatic approach to the alternation that is assumed here, the conceptual representation of Agentivity can interfere with the pragmatic calculation, and so not all verbs will behave equally.

But, stative causative adjectives are transparently stative both in terms of their aspectual decomposition and at the conceptual level: the adjective category is an unambiguous marker of stativity. This means that their external argument meets the Causer criterion across both the syntax/LF and conceptual levels. So, they should be free to alternate, and in fact, the whole class does so freely.

In conclusion, the exploration of the proposal that EAs undergo the causative alternation has turned the question on its head. Given the Causer criterion on the causative alternation, within this system of inner-aspect, the question is no longer: How could adjectives possibly be causative or alternate? But rather: What are the pragmatic factors that restrict individual verbs?

5.4 The EA Paradigm Cross-Linguistically

Now that the English causative alternation paradigm has been analysed, this section compares Germanic, Romance, and Basque. The English paradigm is repeated in (50).

(50) English

- a. That Emma left was rude = Causative Unaccusative
 b. It was rude that Emma left = Causative Unaccusative + Extraposition
 c. Emma was rude to leave = Transitive Causative
 d. Emma was rude = Transitive Causative with Implicit CP
 e. To leave was rude (of Emma) = Transitive Causative + Passive
 f. It was rude (of Emma) to leave = Transitive Causative + Extraposition
 + Passive

Beginning with Germanic and Romance, there are only two points of relevant variation: **(i)** the form of the preposition fulfilling the role of *of* in the passive structures, and **(ii)** the grammaticality of the overt infinitive in complement position in the (d) examples. We'll comment each in turn, but first, here are the data:⁶

(51) Dutch

- a. Dat hij dat zal zeggen is gemeen
 that he that will say is mean
 'That he will say that is mean'
- b. Het is gemeen dat hij dat zal zeggen
 it is mean that he that will say
 'It is mean that he will say that' (cf. Bennis 2000: 35, ex. (22a))
- c. Jan is gemeen
 John is mean
 'John is mean' (cf. Bennis 2000: 36, ex. (26))
- d. (*)Jan is gemeen om dat tegen haar te zeggen
 John is mean COMP that PREP her to say-INF
 'John is mean to say that to her' (cf. Bennis 2000: 41, ex. (39a))

⁶ The data for Central Flemish and Italian have been omitted because they pattern with Dutch and German, and Spanish respectively.

- e. Om dat tegen har te zeggen is gemeen (van Jan)
COMP that PREP her to say-INF is mean (of John)
'To say that to her is mean (of John)' (cf. Bennis 2000: 39, ex. (35b))
- f. Het is gemeen (van Jan) om dat tegen har te zeggen
it is mean (of John) COMP that PREP her to say-INF
'It is mean (of John) to say that to her' (cf. Bennis 2000: 39, ex. (35a))

(52) German

- a. Dass Hans gegangen ist war unhöflich
that John go-PART is was impolite
'That John left was impolite'
- b. Es war unhöflich, dass Hans gegangen ist
it was impolite that John go-PART is
'It was impolite that John left'
- c. Hans war unhöflich
John was impolite
'John was impolite'
- d. (*)Hans war unhöflich zu gehen
John was impolite to go-INF
'John was impolite to leave'
- e. Zu gehen war unhöflich von Hans
to go-INF was impolite by John
'To leave was impolite of John'
- f. Es war unhöflich von Hans zu gehen
it was impolite by John to go-INF
'It was impolite of John to leave'

(53) Afrikaans

- a. Dat Jan die kamer verlaat het, was ongeskik
COMP John the room left-PART has, was rude
'That John left the room was rude'
- b. Dit was ongeskik dat Jan die kamer verlaat het
it was rude COMP John the room left-PART has
'It was rude that John left the room'

- c. Jan was ongeskik
 John was rude
 ‘John was rude’
- d. ^(?)Jan was ongeskik om die kamer te verlaat
 John was rude COMP the room to leave-INF
 ‘John was rude to leave the room’
- e. Om die kamer te verlaat, was ongeskik (van Jan)
 COMP the room to leave-INF, was rude (from John)
 ‘To leave the room was rude of John’
- f. Dit was ongeskik (van Jan) om die kamer te verlaat
 it was rude (from John) COMP the room to leave-INF
 ‘It was rude of John to leave the room’

(54) Swedish

- a. Att Johan gick var ohövligt
 COMP John leave-PAST was rude-NEUT
 ‘That John left was rude’
- b. Det var ohövligt att Johan gick
 it was rude-NEUT COMP John leave-PAST
 ‘It was rude that John left’
- c. Johan var ohövlig
 John was rude
 ‘John was rude’
- d. *Johan var ohövlig att gå
 John was rude to leave-INF
 ‘John was rude to leave’
- e. Att gå var ohövligt (av Johan)
 to leave-INF was rude-NEUT (by John)
 ‘To leave was rude (of John)’
- f. Det var ohövligt (av Johan) att gå
 it was rude-NEUT (by John) to leave-INF
 ‘It was rude (of John) to leave’

(55) Romanian

- a. Faptul că Maria a plecat a fost nepoliticos
 fact COMP Mary has leave-PART has be-PART impolite
 ‘The fact that Mary left was impolite’
- b. A fost nepoliticos că Maria a plecat
 has be-PART impolite COMP Mary has leave-PART
 ‘That Mary left was impolite’
- c. Maria a fost nepoliticoasă
 Mary was be-PART impolite-FEM
 ‘Mary was impolite’
- d. *Maria a fost nepoliticoasă să plece
 Mary has be-PART impolite-FEM COMP-SUBJ leave-SUBJ-3
 ‘Mary was impolite to leave’
- e. Să plece a fost nepoliticos (din partea Mariei)
 COMP-SUBJ leave-SUBJ-3 has be-PART impolite (from part Mary-GEN)
 ‘To leave was rude (on Mary’s part)’
- f. A fost nepoliticos (din partea Mariei) să plece
 AUX-PRES-3 be-PART impolite (from part Mary-GEN) COMP-SUBJ leave-SUBJ-3
 ‘It was impolite (on Mary’s part) to leave’

(56) Spanish

- a. Que María se marchara fue prudente
 COMP Mary SE leave-SUBJ was prudent
 ‘That Mary left was prudent’
- b. Fue prudente que María se marchara
 was prudent COMP Mary SE leave-SUBJ
 ‘It was prudent that Mary left’
- c. María fue prudente
 Mary was prudent
 ‘Mary was prudent’
- d. *María fue prudente marcharse
 Mary was prudent leave-INF-SE
 ‘Mary was prudent to leave’

- e. Marcharse fue prudente (por parte de Mary)
 leave-INF-SE was prudent (by part of Mary)
 ‘To leave was prudent on Mary’s part’
- f. Fue prudente (por parte de María) marcharse
 was prudent (by part of Mary) leave-INF-SE
 ‘It was prudent on Mary’s part to leave’

Regarding the cross-linguistic realisation of the light preposition *of*, it has been proposed throughout that it is the equivalent of the verbal passive preposition *by*, and that *of* surfaces in passive EA structures as a morphological reflex. In connection to the passive, German ((63e, f)) and Swedish ((65e, f)) use the same light prepositions (*von* and *av*, respectively) in their EA passive structures as in verbal passives.

The fact that languages as closely related as German and Dutch make different choices here indicates how superficial the difference is. In this connection, while Spanish ((67e, f)) and Italian lack a light preposition equivalent to *of*, they use complex prepositional phrases to license the EA external argument in the passive structures that are built from the same light prepositions that they use in verbal passives (*por* and *da*, respectively). So, there are languages that show the same morphology in EA and verbal passives.

Regarding grammaticality, there is only one point of variation in the whole paradigm: the overt realisation of the infinitive in complement position (the (d) examples). This structure is completely grammatical in English, completely ungrammatical in Romance and Swedish, and there is variation in Dutch, German, Central Flemish, and Afrikaans.

An important point is that the unaccusative and passive forms show that EAs in all of these languages take a CP. The question is why realising the CP in complement position is problematic in languages other than English.⁷

⁷ When testing for these structures, it is important to make sure that one has identified the (equivalent of the) infinitival structure. For example, Spanish has the structure in (i), which seems similar to (56d) (*i.e.* **María fue prudente marcharse*):

- (i) Spanish
 María fue prudente al marcharse = Causative + Null CP + High Adjunct
 Mary was prudent PREP-DET leave-INF-SE
 ‘Mary was prudent in leaving’ = Causal
 ‘Mary was prudent when she left’ = Temporal

I would like to suggest two possibilities for addressing the variability, one through formal feature agreement on adjectives, the other through factivity. Beginning with the first, all the languages but English have some form of non-neutral formal feature agreement when a non-proposition denoting DP is in Spec, T. Romance has Number and Gender agreement, as shown in Romanian (55c) with an animate feminine argument in Spec, T. On the other hand, when a CP is interpreted in Spec, T, neutral agreement appears ((55b)). Similarly in Swedish, when a CP is interpreted in Spec, T the neutral marker *-t* appears ((54a, b, e, f)) (*cf.* Josefsson 2014), but an animate argument triggers non-neutral agreement ((54c, d)).

The cases of Dutch, German, Central Flemish, and Afrikaans are interesting for two reasons. First, there is genuine variety in speakers' judgements. For example, Bennis accepts the overt infinitive in complement position as grammatical, but comments in a footnote that some speakers find them ungrammatical, and that he finds them marked (2000: 63, fn. 8). The Dutch speakers I have conferred with find them ungrammatical. This is why (51d) has the asterisks in brackets (*i.e.* ^(*)*Jan is gemeen om dat tegen haar te zeggen*).

Informants in German and Central Flemish report the same sort of variety, with some speakers accepting it as (highly) marked, but most judging it (highly) ungrammatical.

Afrikaans is from the same family, but geographically removed. Once again, the overt infinitive in complement position was the example that produced judgement variation. But in this case, the tendency was for speakers to accept it as grammatical, with some finding it slightly marked. This is indicated with the question mark in brackets in (53d).

The second interesting point is the formal feature agreement system on adjectives in these Germanic languages. It happens to be the case that in predicative structures in

The difference is that (56d) has a bare infinitive, while in (i) the infinitive is preceded by the complex preposition *al*. This prepositional form is not a complement, but a high adjunct that can be interpreted causally or temporally (*cf.* Rico Rama 2014).

An adjunct form can be distinguished from a complement with the CP/PP restriction. Example (ii.a) shows that the *to*-PP can appear in the adjunct structure. Example (ii.b) shows that it cannot be added to the otherwise grammatical infinitival structures ((56e, f)).

(ii) Spanish

- a. *María fue amable con Pedro al intentar ayudarle*
 Mary was kind with Peter PREP-DET try-INF help-INF-3-CL
 'Mary was kind to Peter in trying to help him'
- b. **Fue amable con Pedro (por parte de María) intentar ayudarle*
 was kind with Peter (by part of Mary) try-INF help-INF-3-CL

Dutch, German, Central Flemish, and Afrikaans there is no agreement ((57)), but in attributive structures, there is ((58)):

(57) German

a. Maria ist klug

‘Mary is intelligent’

b. Hans ist klug

‘John is intelligent’

(58) German

a. Eine kluge Frau kommt nach Hause

DET-FEM intelligent-FEM woman comes to house

‘An intelligent woman comes home’

b. Ein kluger Mann kommt nach Hause

DET-MASC intelligent-MASC man comes to house

‘An intelligent man comes home’

It’s interesting that this group of Germanic languages that has a more intricate agreement pattern is the group that shows speaker variation.

Considering Basque in this regard, it also has the unaccusative structure ((59a)), and it has the monadic active voice structure ((59b)).

(59) Basque

a. Aitorrek alde egin izana zakarra izan zen = Causative Unaccusative

Aitor-ERG side do-INF be-INF-DET rude be-INF was

‘That Aitor left was rude’

b. Aitor zakarra izan zen = Causative + Implicit CP

Aitor-ABS rude-SING be-INF was

‘Aitor was rude’

c. Aitor zakarra izan zen alde egitean = Causative + Null CP + High Adjunct

Aitor-ABS rude-SING be-INF was side do-LOC

‘Aitor was rude in leaving’

‘Aitor was rude when he left’

The structure in (59c), however, is an adjunct structure, and not the equivalent of an overt infinitive in complement position. Basque does not have that EA structure. But it also has Number agreement on adjectives, so it fits in the pattern of languages that have non-neutral agreement not allowing an overt infinitive in complement position.

In addition, Basque also lacks the EA passive structures. This is interesting because Basque also lacks a verbal passive in general. So, this gap in the paradigm is predicted on the present proposal.

Yet, it is unclear how non-neutral agreement affects the realisation of an overt infinitive in complement position of an adjective. It is, however, a consistent factor that separates English from the other languages under consideration.

Another possibility is that the factivity of EAs is the crux of the matter. There are two interesting points here. First, the only structure that is problematic is the one where the presupposed CP is interpreted in complement position, such that it is under Existential Closure.

Second, this adjective structure which is natural in English ((60a)), but marked or considered ungrammatical in these other languages, is the basis of the same nominalisation structure that is considered marked ((60b)) or ungrammatical ((60c)) in English:

- (60) a. Emma was rude to leave
 b. #Emma's rudeness to leave
 c. *Authur's silliness/stupidity to press the matter was not at issue

(Kertz 2010: 288, ex. (104))

Additional examples of these EA nominalisation structures were presented in chapter 2, and the conclusion I offered was that these structures are pragmatically marked, but not ungrammatical. It seems that the other languages considered here are judging the EA adjective structure in (60a) in a similar way that English speakers judge the nominalisations in (60b, c). Exactly how to express the restriction, in terms of presuppositions or otherwise, is a further topic for future research.

The salient conclusion from this section, however, is that the cross-linguistic data show how consistent the EA causative alternation paradigm is. It shows that EAs always have an unaccusative form with a CP complement. It shows that they take an external argument. And it shows that they passivise, if the language has a passive (*cf.*

Basque). The specific gap is in realising the infinitive in complement position. This seems to require an independent analysis because the overall pattern shows that the complexity in EA argument structure recurs cross-linguistically in way that is consistent with this causative alternation analysis.

5.5 Conclusion

This chapter has implemented the objective of accounting for the EA paradigm with a principled analysis. We then extended the logic of the theory of inner-aspect developed thus far to propose that, in addition to state arguments, other individual and propositional variables are also realised in the syntax.

This allowed for an analysis of the causative alternation and its Causer criterion that followed without stipulation. It was also proposed that the properties of Spanish and Italian marked unaccusatives fit the structure of this theory of inner-aspect.

Lastly, we saw that the EA causative alternation paradigm manifests itself cross-linguistically in a predictable way, thus supporting the underlying mechanisms of the proposed theory of inner-aspect.

Chapter 6: Results and Final Remarks

6 **EAs and the Theory of Inner-Aspect**

The aim of this thesis was to develop an analysis of Evaluative adjectives (EAs) that explains their puzzling aspectual properties. The principle theoretical challenge that EAs have posed at least since Lakoff (1966) is to explain their dual nature as adjectives that behave like prototypical states in some environments, such as the present simple ((1a)), and like agentive events in others, such as the continuous aspect and with intention adverbials ((1b, c)). The most puzzling feature of this dual stative/eventive behaviour is that it occurs in adjectives, a lexical category generally assumed to be uniquely state-denoting.

- (1) a. Emma is arrogant/brave/nice/obnoxious/rude
 b. Sam was being arrogant/brave/nice/obnoxious/rude
 c. Victoria was arrogant/brave/nice/obnoxious/rude on purpose

Analyses of EAs can be characterised in two ways: either that they are inherently ambiguous—aspectually and/or syntactically (*cf.* Partee 1977; Dowty 1979; Stowell 1991; Bennis 2000, 2004; Landau 2009), or that they are primarily stative but coerced into an eventive use (*cf.* Fernald 1999; Arche 2006; Kertz 2006, 2010). These are natural approaches to the EA paradox, but neither explains in a predictive way why EAs—and not other adjective classes—have this character, or how EAs relate to a general theory of inner-aspect composition.

This thesis has proposed a novel solution to the paradox. It combines the aspectual and syntactic lines of research on EAs with the aims of showing that they inform each other, and that EAs are, despite first impressions, unambiguous. The key to capturing EAs' apparently anomalous character was identifying them as aspectually causative, particularly:

Proposal: EAs are stative causatives with an animate external argument and a propositional complement that undergo the causative alternation just as many causative verbs do.

Once they are identified as causatives, the solution to EAs' apparent agentive properties is that they are implicatures generated by the combination of EAs' causative inner-aspect and their animate external argument.

With respect to the causative alternation part of the proposal, research on EA argument structure has shown that EAs are also unique among adjectives in the range of syntactic structures their animate and clausal arguments can appear in (*cf.* Wilkinson 1970, 1976; Stowell 1991; Bennis 2000, 2004; Arche 2006; Kertz 2006, 2010; Landau 2009). The innovation here has been to organise that data into the paradigm in (2), and to show that it is a special case of the paradigmatic verbal causative alternation in (3).

- | | | |
|-----|-------------------------------------|---|
| (2) | a. That Emma left was rude | = Causative Unaccusative |
| | b. It was rude that Emma left | = Causative Unaccusative + Extraposition |
| | c. Emma was rude to leave | = Transitive Causative |
| | d. Emma was rude | = Transitive Causative with Implicit CP |
| | e. To leave was rude (of Emma) | = Transitive Causative + Passive |
| | f. It was rude (of Emma) to leave | = Transitive Causative + Extraposition
+ Passive |
| (3) | a. The window broke | = Causative Unaccusative |
| | b. Peter broke the window | = Transitive Causative |
| | c. The window was broken (by Peter) | = Transitive Causative + Passive |

This causative alternation analysis of EAs raises an immediate question because the causative alternation has never before been posited outside of the verbal domain. In order to explain how the causative alternation can apply to both verbs and adjectives, a new theory of inner-aspect composition was developed and defended, one in which the event argument does not exist:

Auxiliary Proposals:

- (i) The only primitive aspectual argument denotes a state.
- (ii) CAUSE is the only aspectual relation.
- (iii) The only aspectual distinction stated over aspectual arguments is between simple states and stative causatives.

Over this base of two primitives, *i.e.* a state argument and a causal relation, the factors in (4) were isolated and shown to influence the results of eventivity diagnostics.

(4) *Factors Affecting the Results of Eventivity Diagnostics*

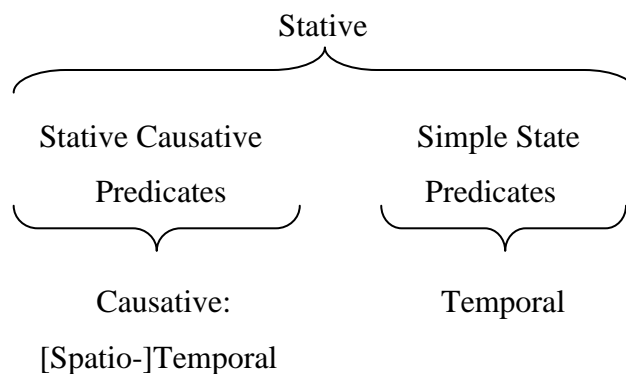
- a. Causative versus simple state
- b. The notion of change versus no change
- c. The physical versus the abstract quality of the predicate
- d. The animacy versus the inanimacy of the external argument

The consequence of this is that eventivity effects are in fact signs of causation, and sensitive to the properties of the predication description and the conceptual knowledge associated with the predicate. So, the event argument is epiphenomenal.

Interestingly, the event argument is needed to represent the notion of change and/or a process in aspectual decomposition (*cf.* Parsons 1990; Ramchand 2008). In this connection, the fundamental difference in meaning between verbs and adjectives is that verbs can be stative or convey actions, *i.e.* change, while adjectives are limited to being stative. But without the event argument, *change* is not represented in the predicate decomposition of inner-aspect. This means that (i) *change* is represented conceptually, (ii) both verbs and adjectives are represented as stative in their aspectual decompositions, and (iii) the category difference between verbs and adjectives is morphological.

The importance of EAs is that they show that adjectives can also be causative, and this is the source of their apparent “eventive” properties. This means that both verbs and adjectives can be simple states, *i.e.* states mapped only to time, and stative causatives, *i.e.* states in a causal relation mapped only to time.

These results are diagrammed in (5), which generalises over verbs and adjectives as predicates. The consequence here is that *spatial location* is no longer a primitive property of a predicate, but something that must be contributed specifically by a spatial modifier, or else inferred. This is marked by the square brackets in (5).

(5) *Eventivity versus Stativity versus Spatio-Temporality*

With the notion of change relegated to conceptual knowledge, and with verbs and adjectives having the same degree of inner-aspect complexity, the null hypothesis is that the causative alternation can apply to both categories. The properties of EAs now fit within a general picture of inner-aspect composition.

Further results that follow from this analysis of EAs are that, like the event argument, the posits below are also epiphenomenal:

- (i) The Individual/Stage distinction (Carlson 1977)
- (ii) The Vendlerian predicate classification (Vendler 1967)
- (iii) “Active” *be* (Partee 1977)
- (iv) The BECOME operator and the predicate-modifier DO (Dowty 1979)
- (v) Thematic roles

The remainder of this closing chapter briefly summarizes the results of the individual chapters and concludes with some remarks on the broader consequences of this minimal theory of inner-aspect.

6.1 The Properties of Aspectual Primitives

Chapter 1 introduced Maienborn’s (2005b, 2007) findings that the distinction between eventive verbs and stative verbs cannot be characterised by the notions of action or change, as implied in Davidson (1967), because there are verbs that simultaneously test positive for aspectual stativity and spatio-temporal eventivity.

Rather than concluding with Maienborn that aspectual stativity comes in two primitive sorts, *i.e.* temporal and spatio-temporal, I argued that eventivity is derivative of stative causation, and that there is no primitive event argument. The consequence is that *change* is not represented in inner-aspectual decomposition, and it predicts that verbs and adjectives should be aspectually parallel.

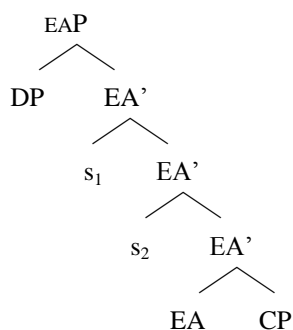
6.2 Argument Structure

Chapter 2 presented evidence for the adjectival argument structures in (6). The EA structure in (6a) differs from that of psychological experience adjectives (PA) in (6b) and relational/physical property adjectives (RA) in (6c) in being aspectually complex. This complexity corresponded with evidence for a causative analysis.

(6) Argument Structures of the Three Main Adjective Classes

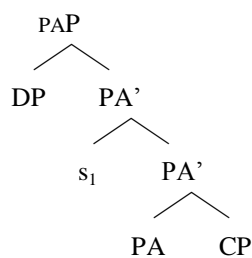
a. EAs:

Emma was rude to leave



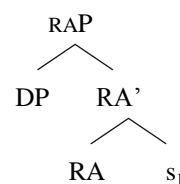
b. PAs:

Sam was eager to help



c. RAs:

Victoria was Canadian/tall

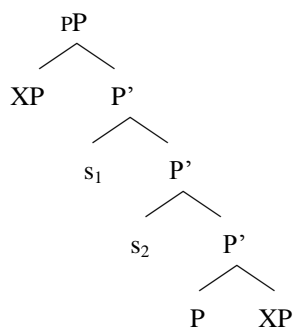


These argument structures were further justified through a comparison with verbs. Adjectives and verbs were found to behave in parallel fashion with respect to a significant number of phenomena, such as ellipsis, Control, thematic roles, raising, factivity, and unaccusativity.

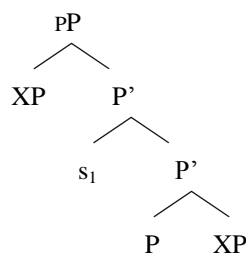
It was shown that adjectival argument structure is generally varied and on a parallel level of complexity with verbs. This provided a syntactic argument in support of the conclusion that the distinction between verbs and adjectives is morphological, rather than syntactic. And so, there were grounds for generalising the adjectival structures in (6) to the category neutral ones in (7).

(7) *Generalised Argument Structures (Adjectives and Verbs)*

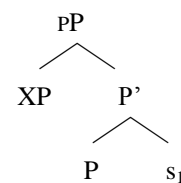
a. Lexical Causatives



b. Type 1 Simple States



c. Type 2 Simple States



The consequence was that the survey of adjectival argument structure independently confirmed the argument in chapter 1 from the properties of aspectual primitives that adjectives and verbs are of parallel complexity.

Crucially, verbal causative alternation data showed that the causative alternation is not defined by a change-of-state, because the verbal causative alternation can occur in cases where the interpretation must be static, *e.g. to narrow*. This provided a parallel between the causative alternation with verbs and the causative alternation with EAs. Following Schafer and Vivanco (2016) and Rappaport Hovav (2014), the causative alternation was argued to be subject to pragmatic conditions. These conditions, however, are independent of *change*, and so they apply to verbs and adjectives.

6.3 Inner-Aspect

Chapter 3 showed the verbs and adjectives can be simple states and stative causatives. It provided an extended argument against the Individual/Stage distinction as it began to present evidence that eventivity diagnostics are inconsistent. This substantiated the semantic argument from chapter 1, and was the beginning of the independent empirical argument against a primitive event argument developed in chapter 4.

In place of a spatio-temporal event argument, it was proposed that stative causation is the linguistically relevant dividing line for aspectual diagnostics. Then, in support of Rappaport Hovav and Levin (2000), it was concluded that the fundamental notion implied in natural language causation is not *change*, but *responsibility*. And *responsibility* is a notion independent of *change*. This further supported the general aspectual and syntactic results that verbs and adjectives are parallel.

6.4 The Theory of Inner-Aspect and Its IP-Interpretation

Chapter 4 collected more evidence for the theory of inner-aspect. Evidence from the proposed analyses of the passive voice, the continuous aspect, existential *there*, and fundamental inconsistency in event diagnostics was argued to support this theory of inner-aspect.

Developing Gehrke and Grillo's (2009) proposal regarding the meaning of the passive voice, the passive voice was analysed as an operation relating inner-aspect to its temporal interpretation. The general proposal was that the function of voice is to map a state argument to time, and thus establish the perspective from which the eventuality is viewed in time.

The active voice maps the highest state argument to time. With causative predicates, this has the effect of viewing the eventuality from the perspective of the causing-state. On the other hand, the passive voice maps the result-state to time, to the effect that the eventuality is viewed from the perspective of the result-state. This contrast in perspectives, however, can only arise in causatives because simple states only contain one state argument, and so they do not have a result-state for the passive voice to target.

As for the continuous aspect, it was argued to be a function that maps inner-aspect to the same time as the voice head, but without providing a perspective on that time. So, like the passive voice, the continuous has to apply to a causative predicate in order to make a meaningful contribution to the derivation.

On these analyses, voice heads and the continuous are operations on the interpretation of inner-aspect, and not temporal ordering functions, and they refer specifically to the causative nature of a predicate. This is an interesting result because the causal relation is the only formal aspectual relation that remains in this theory of inner-aspect.

In this connection, independent arguments in favour of a lexical analysis of causation, and against the existence of a CAUSE head and causative interpretation rule were given. The lexical entry of a causative predicate was proposed to contain a denotation that specifies its causative nature and its argument selection properties. The template causative denotation in (8a) is valid for both verbs and adjectives. It says that the predicate is a stative causative relation between two individual. The template EA

denotation is (8b) says the same, with the specification that EAs select a propositional complement, q .

(8) a. *Template Causative Denotation*

$$\|P\| = \lambda y \lambda s_2 \lambda s_1 \lambda x. [\text{CAUSE}(P(x, s_1), P(s_2, y))]$$

b. *Template EA Denotation* (Version 2 of 2)

$$\|EA\| = \lambda q \lambda s_2 \lambda s_1 \lambda x. [\text{CAUSE}(EA(x, s_1), EA(s_2, q))]$$

Positing denotations makes this thesis Lexicalist in that lexical entries contain argument-selection information. It was argued that the denotation plays a crucial role in restricting generative capacity, and producing the rigidity that exists in argument entailments and in inner-aspectual behaviour with respect to the stative causative/simple state divide.

6.5 The Causative Alternation

Chapter 5 applies the aspectual system developed in chapter 4 to EAs. As stative causatives, the EA aspectual signature is now predicted and regular with respect to the general theory of inner-aspect composition.

The causative alternation itself was analysed as an alternation between an active voice expression of a causative predicate that has a referential external argument (*i.e.* the transitive structure), or an existentially bound variable (*i.e.* the unaccusative structure). The maximally underspecified nature of the external argument in the unaccusative structure follows on this analysis from existential closure.

This last property of the analysis supports this Lexicalist theory of argument structure because it allows for the generalisation regarding the causative alternation to be captured. The generalisation is that only causative predicates that allow a Causer interpretation of their external argument (rather than an Agent or Instrument one), can participate in the causative alternation. EAs fit with this generalisation because they are adjectives; adjectives are the lexical category that is transparently stative, so their external argument can only be interpreted as a Causer.

In contrast, a theory on which external arguments are not arguments of the predicate (*cf.* Kratzer 1996; Alexiadou *et al.* 2015) cannot capture the generalisation

because it is unable to form a generalisation about an argument that is absent from the relevant levels of analysis.

A final important result of the analysis of the EA paradigm and the causative alternation, with its various implicit arguments, was that it provided evidence that individual and propositional variables are present in the syntax and bound under Existential Closure, just as state variables are. This generalised support for the conclusion that the implicit arguments are a syntactic reality.

6.6 Consequences for Linguistic Representation

The most significant result of this thesis is that the representation of inner-aspect decomposition is much simpler than it appears. This is clearly at odds with tradition.

But, it is not necessarily at odds with our intuitions. For example, the conclusion that the inner-aspectual decomposition of *break* does not encode the implication of a change-of-state does not mean that that knowledge is not represented at another level of analysis. And it does not mean that that knowledge is not encoded linguistically: the category distinction between verbs and adjectives seems to track the concept of change morphologically, in that verbs can convey change, but adjectives cannot.

What is interesting is that this minimal theory of inner-aspect has a set of two primitives: a state argument and a causal relation. This set is not only small, it is also not *ad hoc*. If this theory is right, it expresses something deep about the organisation of the linguistic computation system: at its lowest level, inner-aspect representation is real, but it is static. So, in order to get the range of intuitions that we have at the highest level of cognition, various levels of analysis have to be embedded in the broader cognitive system: it is an interesting result that a consistent argument can be made for the poor syntax/LF representation of something as rich as the perception and knowledge of eventualities.

Before closing this chapter and this thesis, I will recall some of the interesting topics that have been left for future endeavours. These include factivity, Control, case assignment, the structure of CPs, Extraposition, the relationship between morphology and conceptual knowledge, and the exploration of the consequences of this theory of inner-aspect/time mapping for a broader theory of tense. Puzzles await.

Appendix:

On-Line Data

Chapter 2

- (41)/ a. I called him back and said it was rude of him for him to hang up on me and
(77) he said leave me alone and hung up again so i called back nd said tell me if
you're serious and he said yes and hung up.
URL:<http://www.relationshiptalk.net/my-boyfriend-is-being-mixy-39541224.html>
- b. It is her money. As makeup is not a necessity, it is quite nice of her for her
to buy you any at all.
URL:<https://answers.yahoo.com/question/index?qid=20110305135124AAkpQTT>
- c. If you have Gmail and any other email that supports filtering into spam by
email address, just do that. Simple.
It might not work, but there is no harm in trying as @Mario1992 said, and
with over 30k people who signed that petition so many people want it, and
I think it would be stupid of them for them to just ignore it. If it's not
possible to unlock the console via a system update, they could make it so
that all future games are not region-locked and are region free.
URL:<http://forum.3dspedia.com/threads/wii-u-and-3ds-region-lock.4876/>
- (78) b. I'm so mad and I spoke to DH this morning but I don't want to offend him
and run his parents down, but at the same time, I am NOT having this
special time ruined because it's my last baby and the afterglow of my
wedding was also ruined because they were all here then too so we all had
to go away together after our wedding because we felt it was rude of us for
his family and extended family to come all the way from England to New
Zealand and have us disappear alone the day after our wedding for a
honeymoon.
URL:<http://babyandbump.momtastic.com/pregnancy-third-trimester/862059-big-whinge-laws-coming-next-week.html>
- c. Re: So why No Kane at Tribute to The Troops?
It would have been stupid of them for him to make an appearance, on a
taping before Raw. Well at least they mentioned his appearance on Raw,
and showed some footage of it. We'll see him at TLC.
URL:<http://www.wrestlingforum.com/raw/590626-so-why-no-kane-tribute-troops-2.html>
- (113) a. I was appalled by her stupidity to scheme in such a dangerous way.
URL: <https://twitter.com/wisuqihyzig/statuses/211801761831321600>
- b. It was sheer stupidity to refuse at the price they were offering.
URL: <http://dictionary.cambridge.org/dictionary/british/stupidity>
- c. All this compounded by her stupidity to paint a RENTAL
URL: <http://getoffmyinternets.net/forums/lifestyle-bloggers/that-wife-1/page-767/>

- (117) a. That they should afterwards, notwithstanding, request him to present their petitions, was to him a gratifying proof of their confidence in his sincerity of the desire he had expressed for peace.
The Parliamentary Register, Vol. 2, ed. Parliament of Great Britain.
- b. It was through his generosity of the donation of the land the Union Senior Center became a reality.
URL: <http://funeralplan2.com/OLTMANN/archive?id=38536>
- c. Although Sharon was a great general he did not die as a hero because he botched his fame and name up at the end of his life with his stupidity of the expulsion to please the leftists, bringing a curse on himself.
URL:<http://www.ynetnews.com/Ext/App/TalkBack/CdaViewOpenTalkBack/0,11382,L-4475698,00.html>
- (134) b. I am proud that my parents rose from homelessness, oppression, and poverty to achieve their American dream.
URL: http://www.huffingtonpost.com/julia-t/dear-donald-trump-im-proud-that-my-parents-are-immigrants_b_9408948.html

Chapter 3

- Fn. 9 URL: <http://forum.wordreference.com/showthread.php?t=2285271>
- (27) a. Let me say that I think Danielle has been stupid to trust him after everything he has done to her, but he seems to take great pleasure in laughing at her.
URL:https://twopeasinabucket.com/mb.asp?cmd=display&thread_id=3193056
- b. For me we need the best dutch players for NT, no matter what they do with their clubs. I agree Afellay has been silly to stay there though.
URL: <http://dutchsoccersite.org/some-good-some-bad-hup-holland-hup/>
- c. She has been foolish to believe the tittle-tattle that has reached her – very foolish to oblige me to give you this annoyance
 Trollope, Anthony. *The Small House at Allington*.
- d. If Peking has known that outside support was crucial to fomenting insurgency, then it has been foolish to voice so much endorsement while supplying so little support.
 Quester, George H. *Offense and Defence in the International System*, p.175.
- e. Part of the strategy is to try to enable amplified usage of the capacity, so it has been intelligent to bring prices down by at least 80% since combined the market.
URL: <http://news.cheapflightghana.co.uk/category/aviation/>

Appendix

- f. So out of all of us Nikki is probably the furthest away from the gospel. I don't blame her – she has seen enough in her lifetime and has been brave to just hang on as long as she has.....
URL: <http://www.exmormon.org/mormon/mormon642.htm>
- (51) a. She is viciously arrogant in her treatment to her inferiors, addressing everyone but Caesar and her brother in the third person – presumably in Greek.
Rome, Season One – Television makes History. Edited by Monica S. Cyrino. Blackwell, p. 150.
- b. This all said, I think it does very little to the reputation of AF (i.e. neither good or bad). If it had an impact (notwithstanding AFF or other flying forums), surely AF would be silly and viciously arrogant to think they can do nothing and expect it to go away. After all, they still keep advertising those dirt cheap Euro fares here (with first leg on CZ usually)...
URL: <http://www.australianfrequentflyer.com.au/community/travel-news/air-france-incidents-not-good-49153-3.html>
- (52) a. You all are fools if you think these bastards will stupid enough to to wear blue. They will be deviously careful and will use EVERY advantage.
URL:<https://www.facebook.com/GunControlKills/posts/370204629715835>
- b. The lobbyists for the open border, business consortium's are deviously careful not to mention E-Verify, that discrepancies can be resolved at the Social Security agencies? Nor do they inform of the success rate of E-Verify, the fed immigration tool identifying illegal labor.
URL:<http://www.washingtontimes.com/news/2009/nov/18/obama-encourages-illegals/>
- (85) b. I'm so mad and I spoke to DH this morning but I don't want to offend him and run his parents down, but at the same time, I am NOT having this special time ruined because it's my last baby and the afterglow of my wedding was also ruined because they were all here then too so we all had to go away together after our wedding because we felt it was rude of us for his family and extended family to come all the way from England to New Zealand and have us disappear alone the day after our wedding for a honeymoon.
URL:<http://babyandbump.momtastic.com/pregnancy-third-trimester/862059-big-whinge-laws-coming-next-week.html>
- c. Re: So why No Kane at Tribute to The Troops?
It would have been stupid of them for him to make an appearance, on a taping before Raw. Well at least they mentioned his appearance on Raw, and showed some footage of it. We'll see him at TLC.
URL: <http://www.wrestlingforum.com/raw/590626-so-why-no-kane-tribute-troops-2.html>

- (136) a. If you add anti vibration mounts and you still find your computer is being noisy, you may want to take a closer look at the fan and fan filter.

URL: <http://www.icomputer.ga/2015/02/is-your-pc-noisy.html>

- b. If the packet loss or jitter seems to be coming from inside your own network, check your connections yet again and try switching out equipment on your network to see if something on your LAN is being noisy.

URL:<http://www.zdnet.com/article/how-to-check-on-your-internet-connection/>

- c. Being regular may also be one of the reasons why gas can occur more frequently in the mornings, although for most, that is hardly a bad thing. WebMD mentions that contractions from the small intestine can actually cause gassiness and a noisy tummy, which most people refer to as a growling stomach. The stomach however is being quiet and the noises heard and excessive stomach gas that can result are simply a product of contracting muscles as they move air about through the digestive tract during regular morning bowel movements.

URL: <http://stomachbloating.net/excessive-stomach-gas-in-the-morning-only-why-does-it-happen/>

- d. I added in two Corsair Air Series 120mm Fans in case the radiator is being loud.

URL: <http://pcpartpicker.com/forums/topic/24650-my-hopefully-final-2200-gaming-and-slight-workstation-pc>

Chapter 4

- Fn. 12 The risk that drinking water in Sussex could be contaminated by fracking chemicals was known by the Government more than a year ago, previously secret documents reveal.

Ministers were privately briefed by the Environment Agency (EA) that fracking near aquifers – underground rocks which contain water – should not be permitted.

URL:http://www.theargus.co.uk/news/10610762.Secret_emails_reveal_the_risk_to_water_in_Sussex_from_fracking_was_known_by_officials/

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