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Le temps en contexte subordonné de la perspective de l'acquisition du français langue maternelle

Tense in Embedded Contexts: the View from (French) Child
Language

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**Le temps en contexte subordonné
de la perspective de l'acquisition du français langue
maternelle**

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1 Introduction

Cette étude examine l'interprétation, chez les enfants français, du *présent*, du *passé* et du *futur* dans les subordonnées *complétives* et *relatives* enchâssées sous un *passé* dans la principale. Le choix des deux premiers temps—le *présent* et le *passé*— est motivé par le fait que le présent et le passé représentent les deux formes temporelles utilisées à travers les langues pour exprimer la *simultanéité* sous un passé : la coïncidence temporelle entre l'éventualité¹ décrite par la subordonnée et l'éventualité décrite par la principale. Par exemple, dans les langues comme le japonais, la simultanéité temporelle sous un passé requiert un *présent* dans la proposition enchâssée, comme en (1a) ci-dessous :

- (1) a. Taroo-wa Hanako-ga byooki-da to it- ta.
 Taro-TOP Hanako-NOM être malade-PRES que dire-PASSÉ
 « Taro a dit que Hanako était malade. »
 (Ogihara 1996:153)
- b. Taroo-wa Hanako-ga byooki-dat-ta to it- ta.
 Taro-TOP Hanako-NOM être malade-PASSÉ que dire-PASSÉ
 « Taro a dit que Hanako avait été malade. »
 (Ogihara 1996: 7)

En japonais, un *passé* dans une complétive sous un passé dans la principale donne lieu à une lecture antérieure, où l'éventualité enchâssée précède l'éventualité de la principale, comme le montre la glose en français en (1b).

Contrairement au présent japonais, le présent français dans une complétive sous un passé dans la principale exprime une lecture dite « à double accès ». Sous cette lecture, le présent dénote un intervalle qui s'étend du moment passé de la principale jusqu'au moment d'énonciation (ME). Autrement dit, on peut utiliser (2a) seulement dans une situation *Marie est malade* pendant un intervalle qui inclut le moment où Jean a énoncé la phrase et le ME.

Pour exprimer la simultanéité temporelle sous un passé le français requiert un passé (*l'imparfait*) ((2b)) :

- (2) a. Jean a dit que Marie *est* fatiguée.
 b. Jean a dit que Marie *était* fatiguée.

L'*imparfait* est la forme temporelle qui, en français, suppose un point de vue *imperfectif*². Selon Smith (1991), le point de vue *imperfectif* donne une vue partielle sur une

¹ Tout au long de cette thèse, nous utiliserons le terme « éventualité » comme terme générique pour référer aux différents types de procès (événements, états, etc).

² Laca (2005, 2007) ne partage pas ce point de vue. L'auteur suggère que l'*imparfait* en français et l'*imperfecto* en espagnol n'expriment pas l'aspect imperfectif, mais plutôt l'aspect neutre : “aspectually neutral” forms are not totally unconstrained, but whatever preferences they exhibit result from polarisation effects due to the existence of an aspectually marked competing form- thus, an imperfect will strongly prefer imperfective interpretations in the contexts in which it contrasts with the preterite/present perfect” (Laca, 2007:1) (voir aussi Schaden, 2003 pour une idée similaire).

situation particulière— la situation en question est vue de l'intérieur et présentée comme étant en déroulement pendant un intervalle de référence. En revanche, un point de vue *perfectif* donne une perspective d'ensemble sur une situation— la situation en question est vue de l'extérieur et présentée comme *achevée* à un certain moment. La forme temporelle utilisée en français parlé pour exprimer des événements achevés est le *passé composé*, qui a remplacé le passé simple, peu utilisé de nos jours sauf dans certains dialectes et généralement réservé à l'écrit.

L'étude du temps dans les propositions subordonnées soulève les questions d'acquisition suivantes : (i) les enfants en train d'acquérir une langue comme le français savent-ils que, dans leur langue, un présent enchâssé sous un passé *ne peut pas* donner lieu à une lecture simultanée ? Et inversement, (ii) les enfants en train d'acquérir une langue comme le japonais savent-ils que, dans leur langue, un présent sous un passé *peut* donner lieu à une lecture simultanée ?

Cette thèse est une étude de l'acquisition du temps en contexte subordonné chez les enfants français. La question qui va jouer un rôle central dans notre étude est donc la première ((i)). Afin de répondre à cette question, nous avons conduit plusieurs études expérimentales où nous avons analysé, chez les enfants français, l'interprétation du présent et du passé dans les propositions enchâssées. Les résultats expérimentaux ont révélé que les enfants français ont des interprétations simultanées et non-simultanées adultes d'un *passé* sous un passé et également des interprétations simultanées non-adultes du *présent*.

En ce qui concerne la troisième forme temporelle, *le futur*, son choix a été déterminé par certaines données surprenantes concernant le *passé*, qui nous ont amenées à conclure que les enfants permettent des lectures dites « future » d'un passé enchâssé. A ce stade, deux autres questions ont émergé : (i) comment les enfants expriment-ils la subséquence temporelle ? et (ii) quelles sont les interprétations temporelles que les enfants assignent à un futur morphologique sous un passé ? Nous avons adressé ces questions dans une expérience qui investiguait l'interprétation d'un *futur* dans les propositions complétives sous un passé.

1.1 Les expériences

Dans cette thèse, nous discuterons plusieurs études expérimentales qui portent sur l'interprétation des temps dans les propositions subordonnées complétives et relatives chez les enfants français.

1.1.1 Participants

Les participants à nos expériences sont des enfants français monolingues, recrutés dans des écoles maternelles de Nantes (Loire Atlantique). La majorité des enfants testés avaient entre 4;05 et 5;05 ans. Il y a deux raisons de choisir cette tranche d'âge. Premièrement, à cet âge, les enfants ont déjà acquis le temps. Deuxièmement, l'âge de 4-5 ans est celui où les enfants commencent à utiliser les structures de subordination, dont la maîtrise est d'une importance majeure pour nous, étant donné que notre étude concerne l'acquisition du temps en contexte subordonné.

Certaines de nos études, ont également inclus des groupes d'adultes français, étudiants dans les départements de Lettres Modernes et Sciences du Langage de l'Université de Nantes.

1.1.2 Méthodologie

Dans toutes nos expériences, nous avons utilisé une tâche de jugement des conditions de vérité (Truth Value Judgment Task, Crain and Thornton 1998) qui consiste à jouer des histoires avec des playmobils devant les enfants. La tâche des enfants était de dire si la phrase énoncée par une marionnette à la fin de l'histoire représentait une description correcte de la scène jouée par l'expérimentateur devant eux. Les réponses des enfants ont été enregistrées avec le logiciel d'enregistrement *Audacity* et avec un enregistreur numérique.

Dans l'une de nos expériences— celle qui teste l'interprétation du futur sous un passé— nous avons également inclus une tâche de production induite, en plus de la tâche de compréhension. L'objectif de la tâche de production était de vérifier les formes temporelles que les enfants utilisent pour exprimer la postériorité temporelle sous un passé. Comme nous le verrons plus tard, les résultats de cette tâche sont très parlants.

1.2 Les objectifs

Dans cette étude, nous montrerons que les enfants français permettent des lectures simultanées adultes d'un passé (dans les relatives et dans les complétives) sous un passé dans la principale, mais, comme nous venons de le mentionner plus haut, ils permettent également des lectures simultanées non-adultes du *présent* (dans les complétives et les relatives) enchâssé sous un passé dans la principale. Ce résultat surprenant avec le présent est très important étant donné la pénurie des études consacrées aux interprétations du présent en contexte subordonné chez les enfants.

Il est également important de noter le fait qu'il n'y a aucune étude sur l'acquisition du futur/ de la postériorité temporelle en contexte subordonné. De plus, il y a très peu d'études consacrées à l'acquisition de la Concordance des Temps et, plus généralement, à l'acquisition du temps en contexte subordonné, sauf le travail pionnier de Hollebrandse (2000), auquel cette thèse est profondément redevable.

Le but de nos investigations est donc d'obtenir une meilleure compréhension de la grammaire du temps en contexte enchâssé chez les enfants et de contribuer à la recherche menée sur l'acquisition du temps à l'interface syntaxe/ sémantique en français.

1.3 Analyses dépendantes *versus* analyses indépendantes de la simultanéité

Considérons les exemples suivants avec un passé *imperfectif* enchâssé sous un passé dans la principale :

- (3) a. Jean a dit que Marie était fatiguée.
- b. Jean a parlé avec une fille qui était fatiguée.

L'énoncé en (3a) avec un imparfait dans une proposition subordonnée complétive permet soit une lecture simultanée, où l'état de Marie coïncide avec le moment passé où Jean énonce sa phrase soit une lecture antérieure, où l'état de Marie précède le moment passé où Jean énonce sa phrase. L'énoncé en (3b) avec un imparfait dans une proposition subordonnée relative permet trois lectures : une lecture simultanée, une lecture antérieure ou une lecture postérieure, où l'état « être fatigué » est postérieur au moment passé de *parler*, mais antérieur au ME.

Arrêtons-nous quelques instants sur la lecture simultanée du passé. Afin de rendre compte de cette lecture, deux analyses ont été proposées dans la littérature : une analyse dite « indépendante » (voir Boogaart 1999, Hollebrandse 2000 pour la grammaire enfantine) et une analyse dite « dépendante » (voir Ogihara 1996, Kratzer 1998, Kusumoto 1999).

L'analyse dépendante suppose que le temps enchâssé est un temps sémantiquement nul. Selon cette analyse, l'interprétation simultanée résulte d'une structure avec un temps *zéro* (pour utiliser la terminologie de Kratzer). L'analyse zéro du passé est schématiquement représentée en (4a) ci-dessous.

L'analyse *indépendante* suppose que le passé subordonné est un *vrai* temps du passé, exprimant l'antériorité par rapport au ME. Selon cette analyse, la lecture simultanée résulte d'une structure où l'éventualité de la principale et l'éventualité de la subordonnée sont toutes les deux localisées dans le passé par rapport au ME et coïncident temporellement. Cette analyse est schématiquement représentée en (4b).

- (4) a. Analyse *dépendante* (zéro) de la lecture simultanée d'un passé

[_{TP1} past ... [_{TP2} Ø...]]

- b. Analyse *indépendante* de la lecture simultanée d'un passé

[_{TP1} past ... [_{TP2}...past...]]

A la différence de la lecture simultanée du passé sous un passé, qui est compatible avec les deux analyses décrites ci-dessus, la lecture simultanée d'un présent sous un passé est compatible seulement avec une analyse *dépendante* du présent, car sous une analyse indépendante le présent est interprété comme exprimant la simultanéité avec ME. Par conséquent, sous cette analyse, le présent ne peut pas être utilisé pour exprimer la simultanéité temporelle avec le temps passé de la principale.

1.4 L'Hypothèse des Temps Zéro

L'analyse que nous proposons pour rendre compte des données enfantines s'inspire de l'analyse référentielle des temps proposée par Kratzer's (1998). Kratzer adopte une analyse pronominale des temps (Partee 1979, 1984), selon laquelle les temps sont les analogues temporels des pronoms. Selon Kratzer, l'inventaire des temps dans une langue comme l'anglais contient deux temps *indexicaux*— le passé et le présent— et un temps *zéro*.

(5) L'inventaire des temps zéro dans les langues à CDT (Kratzer 1998: 10-11)³

- a. $[[\text{pres}]]^{g,c} = \text{pres}(c)$ (défini seulement si $\text{pres}(c) \circ t_c$).
- b. $[[\text{passé}]]^{g,c} = \text{passé}(c)$ (défini seulement si $\text{passé}(c) < t_c$).
- c. $[[\text{Ø}_i]]^{g,c} = g(i)$

Les temps zéro sont les analogues temporels des pronoms zéro— les pronoms interprétés comme des variables liées⁴. Tout comme les pronoms zéro, qui sont des variables

³ Quelques remarques sur la notation : les symboles « $\circ$ » et « $<$ » représentent les relations temporelles de coïncidence et d'antériorité. « t_c » signifie la composante temporelle du contexte c .

⁴ Kratzer illustre l'existence des pronoms *zéro* avec des exemples tel (i), dû à Irene Heim.

(i) Only *I* got a question that *I* understood.

liées sans traits qui contraignent leur dénotation à des entités masculines ou féminines, le présent et le passé zéro sont des variables liées sans traits temporels, qui reçoivent leur prononciation via un phénomène d'accord avec le temps du verbe de la principale.

Selon cette analyse, l'interprétation simultanée d'un énoncé comme (3b) aurait la structure simplifiée en (6).

(6) Jean a parlé avec la fille qui était fatiguée.

[_{TP1} **passé** ... [_{TP2} Ø ...] ...]

Cependant, nous pouvons certainement imaginer des variantes de l'approche de Kratzer qui retiennent l'idée de Kratzer selon laquelle il existe des temps zéro qui sont des variables, mais qui traitent différemment les occurrences du passé et du présent qui ne sont pas de temps zéro.

Par exemple, on pourrait imaginer une variante selon laquelle le passé est une expression quantificationnelle comme dans les analyses proposées par Ogihara (1996) et Kusumoto (1999) (suivant la tradition, nous utilisons les lettres majuscules pour représenter ce passé— PASSÉ). Selon cette approche alternative, la lecture simultanée de (3b) aurait une structure en (7)— qui est similaire à celle en (6) sauf le PASSÉ de la principale. Comme dans l'approche originale, dans cette variante, la prononciation d'un temps zéro comme un passé résulterait du fait que ce temps est lié par le PASSÉ (ou plus précisément, il est sémantiquement lié par le lieu au-dessus du constituant que PASSÉ sélectionne). Cette structure serait comme en (7b) et aura les conditions de vérité en (7c) :

(7) a. Jean a parlé avec une fille qui était fatiguée.

b. [_{TP1} **PASSÉ 1** [_{TP2} Ø₁ ...] ...]

c. [[_{TP1}]]^{g.c} (t_c) = λw_s. il existe un moment t' tel que
t' < t_c et
il existe un individu y
tel que y est une fille à t' dans w
et y est fatiguée à t' dans w
et Jean parle avec y à t' dans w

Nous avons mentionné cela parce que plus tard dans notre discussion, nous allons adopter précisément cette variante de l'approche de Kratzer.

De nombreuses études d'acquisition (Chien and Wexler 1990, Grimshaw and Rosen 1990, McDaniel et al. 1990, Avrutin and Wexler 1992, Sigurjonsdottir and Coopman 1996) ont montré que les enfants acquièrent très tôt l'interprétation de variable liée des pronoms. Si

« Je suis la seule à avoir une question que j'ai comprise. »

L'énoncé en (i) est ambigu. Il peut être vrai dans une situation où personne d'autre sauf le locuteur n'a eu une question que le *locuteur* pourrait comprendre. Cette interprétation est connue comme l'interprétation *stricte/ indexicale* du pronom enchâssé *je*. Selon cette interprétation, le *je* enchâssé dénote le locuteur de la phrase. (i) peut être vraie également dans une situation où, mis à part le locuteur, personne d'autre n'a eu une question qu'il/elle a comprise. Cette interprétation est connue comme l'interprétation lâche/ *de variable liée* du pronom enchâssé *je*. Selon Kratzer, l'interprétation de variable liée du pronom est due au fait que le *je* enchâssé est la prononciation d'un pronom *zéro*.

on étend le parallèle entre les temps et les pronoms aux grammaires enfantines, on s'attendrait à ce que les enfants aient des temps zéro très tôt aussi. Par conséquent, l'hypothèse défendue ici est que les enfants commencent avec une grammaire qui contient des temps zéro dans les propositions (complétives et relatives). Notre hypothèse d'acquisition est formulée comme suit :

(8) **L'Hypothèse des Temps Zéro**

Les temps zéro sont présents dans la grammaire des enfants très tôt.

Les temps zéro sont des temps dépendants : le temps qu'ils dénotent dépend du temps de la proposition principale. Selon cette hypothèse, et contrairement à Hollebrandse, qui soutient que les interprétations dépendantes des temps sont plus difficiles pour les enfants que les interprétations indépendantes, on s'attendrait à ce que les interprétations dépendantes ne posent pas de problèmes aux enfants, car ces interprétations font partie de leur grammaire dès un âge très jeune.

Comme nous le verrons dans cette thèse, l'étude des grammaires adultes et enfantines nous conduira à deux conclusions : **(i)** il y a deux temps zéro à travers les langues adultes, — un *passé* et un *présent*; **(ii)** les enfants (français) passent par un stade d'acquisition où un temps *zéro* fait surface soit comme un présent soit comme un passé. Ce résultat nous amènera à rajouter une clause supplémentaire à l'Hypothèse des Temps Zéro :

(9) **L'Hypothèse des Temps Zéro**

- a. Les temps zéro sont présents dans la grammaire des enfants très tôt.
- b. Les temps zéro font surface soit comme un passé soit comme un présent.

Ce résultat pourrait constituer une preuve en faveur de *l'Hypothèse des Grammaires Multiples* (Roeper 1999, Yang 2000, 2011). Cependant, notons qu'il existe des langues adultes, tel l'autrichien, où aussi bien le présent que le passé peuvent exprimer la simultanéité temporelle sous un passé, comme le montre l'exemple suivant (cet exemple est dû à Martin Hackl, cité dans Schlenker 2000):

(10) a. **Contexte**

Il y a 10 ans il a dit : « Ich arbeite für BayBank » [« Je travaille pour BayBank »]
[BayBank n'existe plus, donc (10a) ne peut pas avoir une lecture à double accès]

- a. Vor zehn Jahren hat er mir gesagt, daß er für BayBank arbeitet.
avant dix ans a il à moi dit que il pour BayBank **travaille**
« Il y a dix ans il m'a dit qu'il travaillait pour BayBank ».
- b. Vor zehn Jahren hat er mir gesagt, daß er für Baybank gearbeitet hat.
avant dix ans a il à moi dit que il pour BayBank **travaillé a**
« Il y a dix ans il m'a dit qu'il travaillait pour BayBank ».

Le fait que les enfants passent par un stade où leur grammaire contient des options qui ne font pas partie de la grammaire cible, mais qui reflètent néanmoins un pattern qui existe dans d'autres langues, est également compatible avec l'Hypothèse de la Continuité, selon laquelle les déviations de la grammaire cible sont contraintes par la Grammaire Universelle (Crain and Thornton 1998).

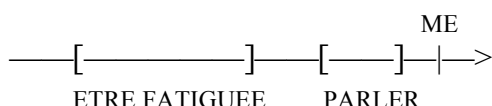
2 Lectures temporelles des propositions subordonnées

Dans cette section, nous passons brièvement en revue quelques données générales concernant la signification d'un *passé* et d'un *présent* enchâssé sous un passé dans les propositions subordonnées complétives et relatives.

- (11) a. Jean a parlé avec une fille qui *était* fatiguée.
b. Jean a parlé avec une fille qui *est* fatiguée.

Dans les langues comme le français, le **passé** enchâssé en (11a) permet trois lectures temporelles: (i) une lecture *antérieure* où l'état décrit par la relative est antérieur à l'évènement de la principale, comme l'illustre (12a), (ii) une lecture *postérieure* où l'état décrit par la relative est subséquent au procès (passé) de la principale, mais antérieur au ME, comme l'illustre (12b), ou (iii) une lecture *simultanée* où l'état dans la relative coïncide temporellement avec l'évènement de la principale, comme en (12c) :

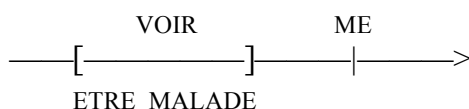
- (12) a. **Relative (à lecture) antérieure**



- b. **Relative (à lecture) postérieure**



- c. **Relative (à lecture) simultanée**



Dans tous ces cas, le passé dans la proposition relative indique que l'état décrit est temporellement ordonné dans le passé *par rapport au ME*.

Le **présent** dans une proposition relative enchâssé sous un passé dans la principale (11b) est également évalué *par rapport au ME*. Il doit alors coïncider avec ME ((13a)), et peut s'étendre dans le passé pour coïncider également avec le temps passé du procès de la principale (13b). Dans le deuxième cas, la relative a une lecture à *double accès*.

- (13) **Lectures indexicales des relatives**

- a. **Relative (à lecture) postérieure**



- b. **Relative (à lecture) à double accès**

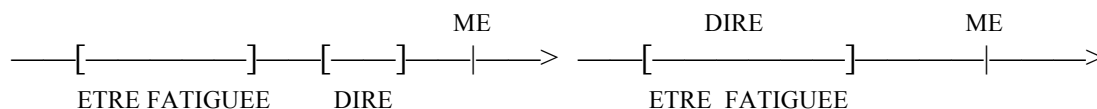


Selon cette analyse des propositions relatives, le temps de la proposition subordonnée est un temps **indexical** ou **indépendant**.

En revanche, il est généralement accepté que l'état décrit par une complétive est toujours situé temporellement *par rapport au temps de l'évènement de la proposition principale*. Par exemple, (14a), avec un *imparfait* dans la proposition complétive, permet seulement deux lectures temporelles: (i) une lecture *antérieure*, illustrée par le schéma en (15a) ou (ii) une lecture *simultanée*, illustrée par le schéma en (15b).

(14) Jean a dit que Marie *était* fatiguée.

(15) a. **Complétive (à lecture) antérieure** b. **Complétive (à lecture) simultanée**



Contrairement aux relatives, les complétives *ne* permettent *pas* une lecture postérieure ((16c)), où l'état de la subordonnée est postérieur au procès passé de la principale. Le passé enchâssé est alors un temps **dépendant**.

(16) **Complétive (à lecture) future**



La lecture simultanée d'un passé est attestée dans certaines langues comme le français, l'anglais, le néerlandais, langues dites à concordance des temps (CDT), mais non pas dans d'autres langues dites sans CDT, comme le japonais. Dans ces dernières, la lecture simultanée est obligatoirement exprimée par le *présent*, alors que le passé permet seulement une lecture antérieure⁵.

(17) a. Taroo-wa Hanako-ga byooki-da to it- ta.
Taro-TOP Hanako-NOM être malade-PRES que dire-PASSÉ
« Taro a dit que Hanako était malade. »

(Ogihara 1996:153)

b. Taroo-wa Hanako-ga byooki-dat-ta to it- ta.
Taro-TOP Hanako-NOM être malade-PASSÉ que dire-PASSÉ
« Taro a dit que Hanako avait été malade. »

(Ogihara 1996: 7)

Ainsi, (17a), ci-dessus, a une lecture simultanée où Hanako est malade au moment où Taro énonce la phrase, tandis que (17b) a une lecture antérieure, où Hanako est malade à un moment antérieur au moment de l'énonciation de Taro.

Le temps utilisé pour exprimer la simultanéité temporelle est alors un critère de variation à travers les langues. D'une part, on distingue celles à CDT, comme le français, dans lesquelles l'interprétation simultanée d'une complétive requiert un passé morphologique, quand le verbe de la proposition principale est au passé, et d'autre part, les langues sans CDT, comme le japonais, où la simultanéité temporelle est exprimée par un présent.

Dans les langues à CDT, contrairement aux langues sans CDT, le présent dans une proposition complétive enchâssé sous un passé requiert que l'état décrit soit évalué par rapport à deux intervalles temporels: le temps du procès de la principale et le ME. Ainsi, un énoncé comme celui en (18) avec un présent dans la proposition complétive force une lecture

⁵ Et cela est valable aussi bien pour une subordonnée complétive que pour une subordonnée relative.

à *double accès*. Sous cette lecture, le présent dénote un intervalle qui inclut le temps où Jean a énoncé la phrase et le ME, comme le montre le schéma en (19), ci-dessous:

(18) Jean a dit que Marie *est* fatiguée.

(19) **Complétive (à lecture) à *double accès***



Pour résumer, il y a deux différences majeures entre les langues à CDT et les langues sans CDT en ce qui concerne l'interprétation du présent et du passé dans les propositions subordonnées :

(20) **Langues à CDT *versus* langues sans CDT :**

- (i) **le présent** sous un passé a obligatoirement une interprétation purement simultanée dans une langue **sans CDT**, mais non pas dans une langue à **CDT**.
- (ii) **le passé** sous un passé peut avoir une interprétation purement simultanée dans une langue à **CDT**, mais non pas dans une langue **sans CDT**.

3 L'hypothèse des temps zéro dans la grammaire des enfants

Pour expliquer les interprétations temporelles chez les enfants français, nous avons adopté l'approche référentielle (Partee, 1973, Enç, 1986, Abusch, 1994, Heim 1994, Kratzer, 1998, entre autres) qui soutient que les temps sont des expressions référentielles comme les pronoms qui permettent des interprétations indexicales ou qui sont interprétés comme des variables liées dont la valeur dépend d'une fonction d'assignation. Selon cette approche, dans le cas des pronoms, les traits *phi* [MALE/FEMELLE] véhiculent des présuppositions qui contraignent le choix des référents pour les variables individuelles. Les traits temporels [PRES/PASSE] véhiculent des présuppositions qui contraignent le choix des référents pour les expressions temporelles. Ainsi, le trait [PRES] restreint la dénotation d'une expression temporelle à un intervalle qui désigne le moment *actuel* établi par le contexte (le moment d'énonciation dans une proposition indépendante), tandis que le trait [PASSE] restreint la dénotation d'une expression temporelle à un intervalle *passé* par rapport au moment actuel du contexte, tout comme les traits *phi* [MALE/FEMELLE] restreignent la valeurs de variables individuelles à des individus femmes ou hommes.

Afin de rendre compte de la lecture simultanée du passé dans la complétive sous un passé dans la principale, Kratzer (1998) pose que le passé est donc un temps zéro, sans traits temporels. L'inventaire des temps dans la grammaire adulte des langues à CDT contient ainsi trois catégories: un présent, un passé et un temps zéro, qui, par analogie avec un pronom zéro, est interprété comme une variable temporelle qui doit être liée par un antécédent. En (21), ci-dessous, nous illustrons l'analyse simplifiée du passé en tant que temps zéro:

(21) [**PASSÉ** Jean dire [que [Ø Marie être fatiguée]].

Le passé enchâssé en (21) ne contribue pas sémantiquement à la localisation temporelle de l'état décrit par la complétive. Néanmoins, ce temps sémantiquement vide est

morphologiquement réalisé comme un passé par un phénomène d'accord (avec le temps du verbe de la proposition principale)⁶.

Nous avons adopté cette hypothèse et nous avons postulé que la grammaire enfantine contient également un présent, un passé et un temps zéro. Sur la base des données recueillies, nous avons montré que, dans la grammaire des enfants français, un temps zéro est réalisé soit comme un passé (comme chez les adultes français/ anglais) soit comme un présent (comme chez les adultes japonais). La seconde option, absente dans la grammaire adulte, mais présente dans la grammaire enfantine, pourrait s'expliquer par le fait que le présent est une forme morphologiquement non marquée, et, à ce titre, la forme la plus susceptible d'être analysée comme un temps zéro, c'est-à-dire un temps sans traits temporels.

De plus, nous avons montré que les deux valeurs du paramètre de la CDT sont opérationnelles dans la grammaire des enfants (voir Demirdache et Lungu 2009, 2011). Cette hypothèse rend compte du fait que le passé *et* le présent sont interprétés en Forme Logique comme des temps zéro. Nos résultats valident l'hypothèse des Grammaires Multiples (Roeper 1999, Yang 2000, 2011) qui soutient la coexistence chez les enfants de plusieurs grammaires en compétition. Les déviations de la grammaire cible s'expliquent alors par le fait que les enfants possèdent au moins une autre grammaire différente de la grammaire adulte, qui n'a pas encore été éliminée pendant le processus d'acquisition.

Nous avons ainsi formulé l'Hypothèse des Temps Zéro, que nous donnons en (22), ci-dessous :

(22) L'Hypothèse des Temps Zéro

- a. Les temps zéro sont présents dans la grammaire des enfants à un âge jeune.
- b. Un temps zéro dans la grammaire des enfants fait surface soit comme un présent soit comme un passé.

Dans ce qui suit, nous allons présenter les preuves issues de nos expériences qui soutiennent l'Hypothèse des Temps Zéro.

3.1 La lecture simultanée d'un présent dans une complétive

Une première preuve en faveur de notre Hypothèse des Temps Zéro dans la grammaire enfantine est l'acceptabilité de la lecture simultanée d'un présent dans une proposition complétive sous un présent dans la principale. Comme nous le verrons sous peu, nos résultats expérimentaux ont montré que les enfants acceptent à un taux très élevé les lectures simultanées des énoncés contenant un présent dans une complétive enchâssé sous un passé dans la principale. Nous illustrons ci-dessous le type de phrases utilisées pour tester cette lecture :

(23) Pierre a dit que les pièces *sont* dans la malle.

Rappelons que dans une langue à CDT, comme le français, un présent dans une complétive sous un passé dans la principale force une lecture à double accès, où l'éventualité de la subordonnée complétive est vraie pendant un intervalle qui inclut le moment passé la

⁶ Tandis que pour Kratzer la prononciation du temps zéro est déterminée par un accord en forme phonologique (le temps zéro copie les traits temporels du temps de la proposition principale), pour d'autres auteurs comme Von Stechow (2003) un temps enchâssé est généré avec des traits temporels, qui sont ensuite effacés en Forme Logique. Selon l'approche de Von Stechow, un temps zéro est alors un temps dont on a effacé les traits [+passé] et qui est lié par le verbe de la proposition principale.

principale et le ME. En revanche, dans une langue sans CDT, comme le japonais, un présent sous un passé force une lecture simultanée où l'éventualité décrite par la complétive coïncide temporellement avec le temps passé de la principale.

La question d'acquisition qui émerge est la suivante : est-ce que les enfants français savent que, dans leur langue, un présent dans une complétive sous un passé dans la principale peut seulement exprimer une lecture à double accès ? Cette question a été adressée lors d'une première expérience (l'Expérience 1) où nous avons testé les interprétations temporelles des complétives et des relatives enchâssées sous un passé chez les enfants français.

3.1.1. Expérience 1⁷

3.1.1.1 Participants

Cette expérience a été conduite auprès de 14 enfants français (6 filles et 8 garçons) entre 5 et 7 ans (moyenne = 5; 07) recrutés dans deux écoles maternelles à Nantes.

3.1.1.2 Protocole expérimental

Nous avons utilisé une tâche de jugement de conditions de vérité (Truth Value Judgment Task, Crain and Thornton 1998) avec deux expérimentateurs, un qui joue des histoires jouées devant les enfants et un autre qui joue le rôle d'une marionnette (Chronos). La tâche des enfants était de dire si la phrase énoncée par la marionnette est une bonne description de la scène jouée.

Dans cette expérience, la phrase test contenait des prédicats statifs du type *être* plus *un syntagme prépositionnel* enchâssés sous le verbe « dire ». Nous avons utilisé des prédicats statifs parce que ces prédicats permettent des lectures simultanées. Les prédicats utilisés dans les propositions complétives sont donnés dans le tableau suivant :

Tableau 1. Expérience 1: prédicats utilisés dans les propositions subordonnées

être sur la voiture
être sous la table
être dans le lit
être dans le chariot
être dans la malle

Les items contrôle consistaient à des phrases simples au présent ou à l'imparfait, soit vraies soit fausses. Chaque item contrôle était précédé par une question posée par l'expérimentateur (*Où était X*), qui parfois contenait un adverbe temporel ("ce matin", "maintenant"). Le rôle des items contrôle était de vérifier si les enfants faisaient attention au temps. Dans le tableau 2 ci-dessous, nous donnons la liste des items contrôle utilisés dans cette expérience.

⁷ Dans le cadre de cette expérience, nous avons également testé les lectures temporelles des relatives enchâssées sous un passé (voir section 3.2.1).

Tableau 2. Expérience 1: items contrôle

Présent	
Mise en route 1 (avec adverbe): Où est X <i>maintenant</i> ?	Phrase test : 1. Le chat <i>est</i> sur la chaise. (Vrai)
Mise en route 2 (sans adverbe) : Où est X ?	Phrase test : 2. L'oiseau <i>est</i> dans l'arbre. (Faux) 3. La voiture <i>est</i> dans le garage. (Vrai)
Imparfait	
Mise en route 1 (avec adverbe) : Où <i>était</i> X <i>ce matin</i> ?	Phrase test : 1. Le lapin <i>était</i> dans la cage. (Faux)
Mise en route 2 (sans adverbe) : Où était X ?	Phrases test : 2. Lucie <i>était</i> dans la cuisine. (Vrai) 3. Le garçon <i>portait</i> un casque. (Vrai) 4. Le chien <i>était</i> dans la cuisine. (Faux) 5. L'épée <i>était</i> dans le coffre. (Faux)

Le temps de la principale était le passé composé, qui, rappelons, est la forme temporelle utilisée en français parlé pour exprimer des événements achevés et qui a remplacé le passé simple, peu utilisé de nos jours sauf dans certains dialectes et réservé à l'écrit. Le temps dans la subordonnée complétive était toujours un imparfait, la forme temporelle qui indique l'aspect *imperfectif* en français.

Nous avons considéré deux hypothèses :

- i. L'Hypothèse de l'Indépendance Temporelle (Hollebrandse 2000), selon laquelle les enfants évaluent l'éventualité de la proposition enchâssée par rapport au ME.
- ii. L'Hypothèse des Temps Zéro, selon laquelle les enfants ont un présent zéro dans leur grammaire, en plus d'un présent indexical.

Afin de tester ces deux hypothèses, nous avons élaboré deux contextes expérimentaux : un contexte purement simultané, où l'état décrit par la subordonnée complétive (*être dans la malle*) coïncide avec le moment de *dire* de la principale ((24)) et un contexte à double accès, où l'état décrit par la subordonnée complétive (*être dans la malle*) subsiste pendant un intervalle qui s'étend du moment de *dire* jusqu'au ME ((25)).

(24) Complétive: contexte purement simultané



Pierre joue avec ses pièces de monnaie dans le jardin. Maman arrive et dit : « Oh, là là, le bazar ! Range tes affaires ! » Pierre met ses pièces dans la malle. « Mes pièces sont dans la malle ! » Plus tard, Anne, sa grande sœur, arrive. Et, regarde ce qu'elle fait ! Elle vide la malle ! Oh, quelle fille méchante ! Maintenant, les pièces sont par terre.

b. Chronos: Pierre a dit que les pièces *sont* dans la malle.

(25) **Complétives : contexte à double accès**



Pierre joue avec ses pièces de monnaie dans le jardin. Maman arrive et dit: « Oh, là là, le bazar! Range tes affaires! » Pierre met ses pièces dans la malle. Pierre: « Regarde, maman, les pièces sont dans la malle! » Maman: « Très bien, Pierre ! »

b. Chronos : Pierre a dit que les pièces *sont* dans la malle.

3.1.1.3 Résultats

Le résultat surprenant était l'acceptation de la lecture purement simultanée du présent sous le passé (96% réponse *oui*). Nous avons suggéré que ce résultat n'est pas compatible avec l'Hypothèse de l'Indépendance Temporelle, selon laquelle les enfants interprètent le temps de la subordonnée complétive par rapport au ME, car dans le contexte purement simultané l'état décrit par la complétive ne subsiste pas au ME. Cette hypothèse prédit, contrairement aux faits, que les enfants devraient rejeter cette lecture. En revanche, l'acceptabilité de la lecture purement simultanée du présent est compatible avec l'Hypothèse des Temps Zéro, selon laquelle les enfants permettent à un présent d'être interprété comme un temps zéro. En (26a), nous donnons l'analyse zéro du présent dans la subordonnée complétive en (24b) et en (26b) nous donnons les conditions de vérité associées à cette structure :

- (26) a. $[_{TP1} \text{ PASSÉ } [_{VP} \text{ Pierre dire } [_{CP} \text{ que } \emptyset \text{ les pièces être dans la malle }]]]$
 b. $[(26a)]^{\text{g.c}}(t_c) = \lambda w. \text{ il existe un moment } t' \text{ tel que}$
 $t' < t_c$
 et pour tout monde w' tel que
 w' est compatible avec ce que Pierre dit à t' dans w ,
 les pièces sont dans la malle à t' dans w' .

Un présent zéro sous un passé ne peut donc donner lieu qu'à une lecture simultanée où les pièces sont dans la malle au moment où Pierre énonce sa phrase. Les résultats avec les lectures simultanées du présent dans les complétives valident donc l'Hypothèse des Temps Zéro : les enfants acceptent la lecture simultanée d'un présent dans une complétive parce qu'ils interprètent le présent dans une complétive comme un temps zéro. Le présent simultané/ zéro sous un passé n'est pas disponible en français, mais il est disponible en japonais (voir section 2, ci-dessus). Nous avons conclu par la suite que les enfants français ont un présent « japonais » dans les complétives.

3.2 La lecture simultanée d'un présent dans une relative

La deuxième preuve en faveur de l'Hypothèse des Temps Zéro est l'acceptabilité de la lecture simultanée du présent dans les relatives sous un passé dans la principale. Rappelons que, dans une langue à CDT comme le français, un énoncé avec une relative au présent enchâssée sous un passé comme celui en (27), permet seulement une lecture indexicale où *le chat est sur la chaise* au ME. La lecture indexicale du présent dans une relative est également vraie dans un contexte dit à *double accès*, où *le chat est sur la chaise* pendant un intervalle qui inclut le moment passé de la principale et le ME.

(27) Anne a caressé le chat qui *est* sur la chaise.

En revanche, dans une langue sans CDT comme le japonais, le présent dans une relative sous un passé dans la principale permet également une lecture simultanée en plus d'une lecture indexicale.

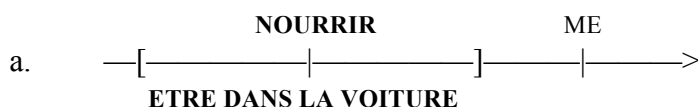
Nous avons discuté deux expériences qui testent l'interprétation d'un présent dans une relative sous un passé dans la principale. Nous avons montré que même si les résultats de la première expérience (l'Expérience 1) révèlent un taux très élevé d'acceptation de la lecture simultanée, ils ne peuvent pas constituer des preuves convaincantes en faveur de l'Hypothèse des Temps Zéro. En effet, nous avons précisé que, dans le contexte simultané, les adultes utilisent une stratégie alternative— la “stratégie des propositions réduites” (SPR)— qui leur permet d'éviter d'interpréter le temps dans la relative, et que les enfants pourraient faire la même chose. Pour résoudre ce problème, nous avons mis au point une deuxième expérience (l'Expérience 2) où il était impossible d'utiliser la SPR pour analyser les items test. L'Expérience 2 a montré que certains enfants acceptent la lecture simultanée d'un présent dans une relative sous un passé dans la principale.

Dans ce qui suit, nous présentons ces deux expériences.

3.2.1 Expérience 1

Afin de tester la compréhension du présent dans les propositions relatives, nous avons élaboré trois contextes : un contexte *purement simultané* où l'état décrit par la subordonnée relative (*être dans la voiture*) coïncide avec le moment passé de la principale ((28)), un contexte *indexical* où l'état décrit par la relative subsiste au ME ((29)), et un contexte à *double accès* où l'état décrit par la subordonnée relative (*être sur la chaise*) subsiste pendant un intervalle qui s'étend du moment passé de la principale jusqu'au ME ((30)).

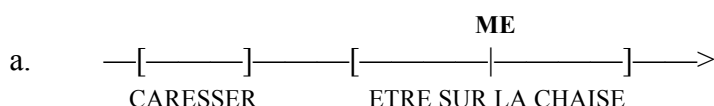
(28) Relatives : contexte purement simultané



Il y a deux oiseaux dans cette histoire. Il y en a un sur le tapis et l'autre sur la voiture. Anne donne à manger à cet oiseau [celui qui est sur la voiture]. Ensuite, l'oiseau [que Anne a nourri] s'envole.

b. Chronos: Anne a nourri l'oiseau qui *est* sur la voiture.

(29) Relatives : contexte indexical



C'est une histoire avec des chats. Il y en a un près des champignons, et un autre dans le panier. Anne arrive. Elle caresse ce chat [celui près des champignons], qui ensuite saute sur la chaise.

b. Chronos: Anne a caressé le chat qui *est* sur la chaise.

(30) **Relatives : contexte à double accès**



Il y a deux lapins dans cette histoire. Un lapin est près de l'arbre et l'autre près des champignons. Maman nourrit ce lapin [celui près des champignons].

b. Chronos: Maman a nourri le lapin qui *est* près des champignons.

Le Tableau 3 ci-dessous résume les résultats pour le présent dans les relatives enchâssé sous un passé dans la principale :

Tableau 3. Expérience 1: présent dans une relative sous un passé

Type de propositions enchâssées	Contexte		
	Purement simultané	A double accès	Indexical
Relatives	80% oui	100% oui	16% oui

Les résultats avec les relatives simultanées révèlent un taux d'acceptabilité de la lecture simultanée très élevé (80% réponses oui). Les résultats avec la lecture simultanée des relatives suggèrent que les enfants interprètent le *présent* dans la relative comme un temps dépendant, comme en japonais. Selon notre analyse, le présent dépendant dans une relative sous le passé comme celle en (28b) aurait la structure en (31b) et les conditions de vérité en (31c) :

- (31) a. Anne a nourri l'oiseau qui est sur la voiture.
b. $[_{TP1} \text{ PASSÉ } [_{VP} \text{ Anne nourrir } [_{DP} \text{ l'oiseau } [_{CP} \text{ qui } 2 \ \emptyset \ t_2 \text{ être dans la malle }]]]]$
c. $[[[_{TP1}]]^{g,c} (t_c) = \lambda w_s. \text{ il existe un moment } t' \text{ tel que}$
 $t' < t_c \text{ et Anne nourrit à } t' \text{ dans } w$
 $\text{l'oiseau qui est sur la voiture à } t' \text{ dans } w$

La proposition subordonnée en (31a) contient un temps zéro. Cela fait que l'éventualité subordonnée est évaluée au temps de l'éventualité de la principale.

Cependant, les résultats avec la lecture indexicale du présent dans la relative révèlent un taux d'acceptabilité très faible (seulement 16% réponses oui). Ce résultat est surprenant selon l'hypothèse que les enfants ont un présent « japonais » dans les relatives. Rappelons, qu'en japonais, le présent dans une relative enchâssé sous un passé permet une lecture indexicale.

Dans la section suivante, nous proposerons une explication pour ce pattern.

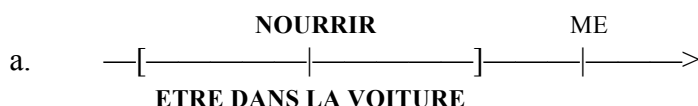
3.2.2 La stratégie « des propositions réduites »

Pour expliquer l'acceptabilité de la lecture simultanée d'un présent dans les complétives, nous avons noté que cela est dû au fait que les enfants interprètent le présent comme un temps zéro. Le taux fort d'acceptabilité de la lecture simultanée d'un présent dans

une relative montrerait que les enfants interprètent le présent dans une relative également comme un temps zéro.

Notons, cependant, que certains adultes français ont également accepté la lecture purement simultanée d'un présent dans une relative (52% réponses oui). Ce résultat surprenant des adultes français nous a amenées à reconsidérer le contexte utilisé pour tester la lecture simultanée d'un présent dans une relative. En réexaminant ce contexte, illustré en (28a) ci-dessus, et répété ici en (32a), nous avons conclu que ce contexte ne satisfait pas les conditions pragmatiques nécessaires à l'usage de la phrase test en ((32b)).

(32) **Relatives : contexte purement simultané**



Il y a deux oiseaux dans cette histoire. Il y en a un sur le tapis et l'autre sur la voiture. Anne donne à manger à cet oiseau [celui qui est sur la voiture]. Ensuite, l'oiseau [que Anne a nourri] s'envole.

b. Chronos: Anne a nourri l'oiseau qui *est* sur la voiture.

En effet, l'usage de la description définie *l'oiseau qui est sur la voiture* en (32b) présuppose qu'il y a un oiseau sur la voiture au moment de l'énonciation de la phrase. Remarquons que, dans le contexte proposé en (32a), il n'y a aucun oiseau sur la voiture quand Chronos énonce la phrase. La présupposition associée à l'usage de la description définie n'est donc pas satisfaite. Par conséquent, (32b) énoncée dans le contexte donné en (32a) n'est pas fausse, mais simplement *inappropriée*.

Il est connu que, lorsque les conditions pragmatiques pour énoncer les phrases ne sont pas respectées, les locuteurs font appel à des stratégies alternatives afin de "sauver" les phrases. Pour donner un exemple, Guasti et al. (2005) montrent que dans les contextes qui violent les conditions pragmatiques associées aux phrases avec des items scalaires, les adultes ne dérivent pas les implicatures. En effet, dans l'expérience de Guasti et al., les adultes *acceptent* des phrases sous-informatives telle "Some giraffes have long necks" *Quelques giraffes ont des cous longs* à un taux de 50%.

Revenons à présent à notre expérience. Nous avons fait l'hypothèse que les adultes qui acceptent la lecture simultanée du présent dans une relative font appel à une stratégie alternative que nous avons appelée la SPR. Cette stratégie, qui leur a permis de donner une réponse affirmative à (32b), consiste à réanalyser un énoncé inapproprié, comme (33b), répété en (33a) ci-dessous, comme une proposition réduite ((33b)) :

- (33) a. Anne a nourri l'oiseau qui *est* dans la voiture.
b. Anne a nourri l'oiseau dans la voiture.

Dans la grammaire adulte, (33b) donne lieu à une interprétation qui est *vraie* dans le contexte simultané. D'où les réponses *oui* des adultes.

Si l'usage de la SPR est due à une violation des conditions pragmatiques associées à l'usage des descriptions définies, la prédiction serait que dans un contexte purement simultané qui satisfait les conditions pragmatiques associées à l'usage des descriptions définies, les adultes ne devraient pas faire appel à la SPR. Ils devraient donc rejeter une phrase avec un présent dans une relative sous un passé dans la principale.

Pour vérifier cette prédiction, nous avons mis au point une nouvelle expérience avec le même groupe d'adultes. Nous avons proposé un nouveau contexte pour la lecture simultanée

des relatives qui respectait les conditions pragmatiques associées à l'usage des descriptions définies. Notre prédiction était que les adultes devraient rejeter la lecture simultanée du présent. Les résultats ont confirmé cette prédiction: cette fois-ci, les adultes ont rejeté la lecture simultanée du présent dans une relative à 96%.

Ces résultats avec les adultes nous ont amenées à modifier notre hypothèse initiale concernant les résultats des enfants. Rappelons que, par analogie avec les résultats pour la lecture simultanée des complétives, nous avons fait l'hypothèse que l'acceptabilité de la lecture purement simultanée du présent dans les relatives était également due au fait que les enfants interprètent le présent dans une relative comme un temps zéro. A présent, cette hypothèse nous semble peu convaincante. Si des facteurs pragmatiques étaient responsables pour l'acceptation de la lecture purement simultanée par les adultes, rien n'exclut que les mêmes facteurs pragmatiques soient responsables (au moins) pour certaines des réponses *oui* des enfants dans le contexte simultané. Nous avons affirmé par la suite que l'acceptation de la lecture simultanée du présent dans les relatives sous un passé dans la principale par les enfants peut être due soit au fait que les enfants interprètent le présent comme un temps zéro soit au fait qu'ils utilisent la SPR.

De plus, dans le chapitre 4, nous avons souligné le fait que, contrairement aux adultes, qui emploient la SPR seulement dans les cas où les conditions pragmatiques associées à l'énonciation d'une phrase avec une relative au présent ne sont pas satisfaites, les enfants emploient cette stratégie à chaque fois que le résultat est une phrase *grammaticale*. Notons que les prédicats que nous avons utilisés dans les propositions relatives de notre expérience (*être plus un syntagme prépositionnel*— “être sur la voiture” dans (32b)) permettent l'usage de la SPR, car le résultat est toujours une phrase grammaticale (voir (33b)). Cependant, en français, l'usage de la SPR ne donne pas toujours lieu à une phrase grammaticale. Par exemple, quand le prédicat de la proposition relative est un *verbe d'activité*, l'application de la SPR aurait comme effet l'obtention d'une phrase *agrammaticale* (34b) :

- (34) a. Jean a embrassé la fille qui danse.
b. *Jean a embrassé la fille danse.

Les locuteurs (adultes et enfants) n'utilisent pas la SPR si le résultat est une phrase agrammaticale. Donc, dans une situation où la SPR n'est pas accessible, les locuteurs projettent toute la structure de la phrase (y compris le CP et le TP enchâssés) et interprètent ainsi le temps dans la subordonnée.

3.2.3 Expérience 2

Afin de vérifier l'interprétation d'un présent dans une relative sous un passé dans la principale, nous avons mis au point une nouvelle expérience avec 30 enfants (14 filles et 16 garçons) entre 4;04 et 6;0 ans (moyenne = 5;03) et 20 adultes. Il est important de noter que dans cette expérience les items test contenaient des relatives avec des verbes d'activité (*pleurer, danser, jouer*, etc) qui rendent la SPR indisponible. Nous avons testé deux lectures : (i) une lecture purement simultanée, illustrée par le contexte en (35) et (ii) la lecture indexicale, illustrée par le contexte en (36).

- (35) a. **Relative : lecture purement simultanée**

Voici 2 singes. Un dort dans la chaise à balancer, l'autre est debout. Un lapin arrive. Il renverse ce singe [celui dans la chaise à balancer]. [Le singe ne va plus s'asseoir sur la chaise.] Ensuite, le lapin s'en va en courant. Ce singe [celui qui était debout au début

de l'histoire]: « Je suis fatigué, je vais me reposer ». Il s'assied dans la chaise à balancer. Il s'endort. Maintenant, il dort.

b. Chronos : Le lapin a renversé le singe qui *dort* dans la chaise à balancer.

(36) a. **Relative : lecture indexicale**

Voici une histoire avec 2 filles. Elles sont au zoo. Il y a beaucoup d'animaux: des pandas, des singes, des zèbres. Cette fille a très peur. Elle n'a jamais vu un singe avant! Elle pleure, elle pleure! Cette fille [l'autre fille] n'a pas peur. Elle dit: « Arrête de pleurer, nous allons bientôt rentrer! Regarde ces animaux! Ils sont très gentils! » Elle se rapproche du singe. Son chapeau tombe et le singe vole son chapeau et s'en va. Plus tard, les filles s'en vont elles aussi. Sur leur chemin de retour, cette fille [celle dont le singe a volé le chapeau] tombe et se fait mal. Maintenant, elle pleure, elle pleure!

[Pendant que la fille pleure...]

b. Chronos : Le singe a volé le chapeau de la fille qui *pleure*.

Remarquons que les deux contextes satisfont les conditions pragmatiques associées à l'énonciation d'une phrase avec une description définie (*le singe qui dort dans la chaise à balancer* ou *la fille qui pleure*). En (35a), il y a un singe qui dort dans la chaise à balancer au moment où la phrase est énoncée et en (36a) il y a une fille qui pleure au moment où la phrase est énoncée. La différence entre les deux contextes est que dans le premier (le contexte purement simultané), le singe qui dort au moment de l'énonciation de la phrase n'est pas celui qui a été renversé par le lapin, tandis que dans le deuxième (le contexte indexical), la fille qui pleure est bien celle dont le singe a volé le chapeau.

Nos prédictions étaient les suivantes :

- (i) les participants ayant une interprétation indexicale du présent devraient rejeter la phrase (35b) dans le contexte purement simultané (35a), car cette phrase est fausse dans ce contexte-ci, et accepter la phrase en (36b) dans le contexte indexical (36a), car cette phrase est vraie dans ce contexte-ci.
- (ii) les participants ayant une interprétation zéro du présent (en plus d'une interprétation indexicale du présent) devraient accepter (36b) car cette phrase est vraie sous une interprétation zéro du présent— le singe que le lapin a renversé est celui qui était dans la chaise à balancer *au moment où le lapin l'a renversé*.

Les résultats résumés dans le tableau 4 ci-dessous, montrent que certains enfants ont accepté la lecture simultanée d'une relative.

Tableau 4. Expérience 2 : pourcentage de réponses *oui* pour le présent sous le passé

	Enfants	Adultes
Lecture purement simultanée	50%	10%
Lecture indexicale	62%	65%

Nous avons effectué une analyse statistique des données en utilisant le test du χ^2 . Les résultats ont indiqué une différence significative entre le groupe-enfant et le groupe-adulte en ce qui concerne la lecture purement simultanée ($\chi^2(1) = 33.06$, $p < .001$), mais aucune différence entre les deux groupes concernant la lecture indexicale ($\chi^2(1) = .17$, $p = .680$).

Sur la base de ces résultats, nous avons conclu que les enfants, comme les adultes, ont une lecture indexicale du présent, mais que certains enfants, contrairement aux adultes, ont également un présent dépendant, en plus d'un présent indexical. Ces enfants ont un profil "japonais". Nous avons mis en avant que l'acceptabilité du présent dans le contexte purement simultané témoigne de l'existence d'un présent *zéro* dans une subordonnée relative, en plus d'un présent indexical. Ce résultat constitue donc une deuxième preuve en faveur de l'Hypothèse des Temps Zéro.

Par ailleurs, les résultats de cette expérience ont révélé un autre aspect intéressant. Le taux d'acceptabilité de la lecture indexicale du présent est beaucoup plus élevé dans cette expérience que dans l'expérience précédente, où, rappelons, la lecture indexicale du présent a été acceptée à 16% seulement (versus 62% dans l'expérience présentée ici). Rappelons également que la différence entre les deux expériences est liée au type de prédicat utilisé dans la proposition relative : dans l'Expérience 1, la relative contenait des prédicats du type *être* plus un *syntagme prépositionnel*, qui permettent d'utiliser la SPR, tandis que, dans l'Expérience 2, la relative contenait des *verbes d'activité*, qui ne permettent pas d'utiliser la SPR.

Nous avons suggéré que le contraste entre les deux expériences en ce qui concerne l'acceptabilité de la lecture indexicale du présent constitue une preuve en faveur de la SPR. Autrement dit, le faible pourcentage d'acceptabilité de la lecture indexicale dans l'Expérience 1 indique que, dans l'Expérience 1, les enfants ont effectivement utilisé la SPR⁸.

Pour résumer, l'Expérience 2 a révélé deux aspects importants. D'une part, cette expérience a montré que les problèmes des enfants avec la lecture indexicale dans l'Expérience 1 sont liés à la disponibilité de la SPR et non pas à l'indexicalité du temps *présent*. D'autre part, elle a révélé le fait que, lorsque la SPR n'est plus disponible, certains enfants interprètent le présent comme un temps zéro. Les résultats de l'Expérience 2 corroborent les résultats de l'Expérience 1 avec les complétives : les enfants ont un présent zéro dans les *complétives* aussi bien que dans les *relatives*.

Dans ce qui suit, nous présentons une troisième preuve en faveur de l'existence d'un présent zéro dans la grammaire des enfants.

3.3 Futur sous le passé chez les enfants français

Dans cette section, nous examinerons l'interprétation d'un futur sous un passé chez les enfants français. Mais d'abord, résumons brièvement la façon dont la langue adulte exprime la postériorité sous un passé.

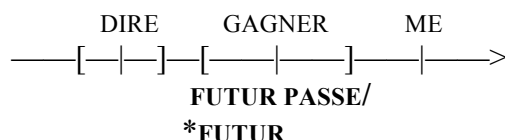
Dans une langue à CDT comme le français, il y a deux manières d'exprimer la subséquence temporelle sous un passé : soit avec un *futur dans le passé*, comme en (37a), soit avec un *futur morphologique*, comme en (37b) :

- (37) a. Jean a dit que Marie *gagnerait* la course.
b. Jean a dit que Marie *gagnera* la course.

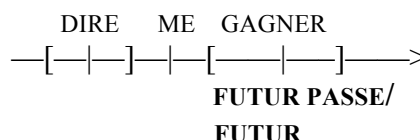
⁸ Par ailleurs, nous avons montré que l'interprétation des propositions réduites dans la grammaire des enfants est contrainte à une interprétation simultanée. Cette contrainte, selon nous, consiste dans le fait que les enfants préfèrent lier la variable temporelle dans la proposition réduite, cela étant dû au fait qu'ils ont des problèmes à intégrer l'information discursive.

Les deux énoncés en (37) n'ont pas la même distribution. (37a) avec un futur dans le passé peut être utilisé dans un contexte futur *avant* ME ((38a)) où l'éventualité décrite par la subordonnée (*la réussite de Marie*) est postérieure au ME, comme l'illustre le schéma en (38a) et également dans un contexte futur *après* ME ((38b)), où l'éventualité décrite par la subordonnée est postérieure au ME. En revanche, (37b) avec un futur simple dans la complétive peut être utilisé seulement dans un contexte futur *après* ME ((38b)).

(38) a. **Futur avant ME**



b. **Futur après ME**



Nous avons supposé que, morphologiquement, le futur simple est composé d'un présent plus un opérateur futur que nous avons nommé FUT⁹, tandis que le futur dans le passé est composé d'un passé *zero* plus FUT¹⁰. Selon cette analyse, les énoncés en (37a)-(37b) auraient les structures suivantes :

(39) a. [PASSÉ Jean dire [que [Marie [[Ø_{passé} + FUT] gagner] la course]]] [(37a)]

b. [PASSÉ Jean dire [que [Marie [[PRES + FUT] gagner] la course]]] [(37b)]

Il est important de noter que, selon cette analyse, l'emploi du futur dans le passé dans les deux contextes futurs implique la maîtrise de la subordination complétive (la relation de dépendance entre le temps de la proposition enchâssée et le temps de la proposition principale), aussi bien que l'existence d'un *passé* zéro dans la grammaire des locuteurs. Ainsi, l'acceptation et surtout la *production* d'un *futur dans le passé* dans les deux contextes indiqueraient non seulement que les enfants ont acquis la subordination complétive mais qu'ils ont également un *passé* zéro dans leur grammaire.

Nous avons conduit une expérience auprès de 14 enfants entre 3;8 – 5;5 (moyenne = 4;7). Notre objectif était de tester l'interprétation du futur en contexte subordonné chez les enfants. Nous avons inclus deux tâches expérimentales : une tâche de compréhension et une tâche de production.

La tâche de compréhension consistait à évaluer l'énoncé de la marionnette avec un futur simple ((40c)-(41c)) dans deux contextes expérimentaux : (i) un contexte futur avant ME, où l'éventualité de la subordonnée a lieu après l'éventualité de la principale mais avant ME ((40a)) et (ii) un contexte futur après ME, où l'éventualité de la subordonnée a lieu après ME ((41a)).

(40) a. **Complétive : futur avant ME**

Anne est dans la cuisine. Papa revient du marché. Il a acheté des légumes, des fruits et un Kinder. Papa: "Anne, tiens, un Kinder pour toi, je sais que tu aimes cela." Anne: "Merci, papa, je *mangerai* le Kinder plus tard." Plus tard, Anne mange tout le Kinder. Ensuite, elle va se coucher dans sa chambre.

⁹ Cet opérateur est l'opérateur modal *woll* d'Abusch (1988).

¹⁰ Cette analyse du futur a une longue tradition dans la littérature (voir Ogihara 1996, Abusch 1997, entre autres).

- b. Expérimentateur: Chronos, qu'est-ce que Anne a dit à propos du Kinder?
 c. Chronos: Anne a dit qu'elle **mangera** le Kinder.

(41) a. **Complétive : futur après ME**

Anne et Marie sont avec leur Maman dans la cuisine. Maman: "Les filles, c'est bientôt l'heure du dîner et, si je me rappelle bien, vous avez promis de cuisiner pour nous ce soir, n'est-ce pas? Mais je ne vois rien pour le moment!" Anne et Marie: "Ne t'inquiète pas, Maman, nous allons faire une tarte!" Plus tard, Maman dit: "Les filles, c'est l'heure du dîner, nous avons très faim!"

- b. Expérimentateur: Chronos, qu'est-ce qu'Anne et Marie ont dit à propos de la tarte?
 c. Chronos: Anne et Marie ont dit qu'elles **feront** une tarte.

La tâche de production induite demandait aux enfants de finir une phrase que la marionnette Chronos avait commencée sous prétexte que la marionnette ne se rappelle plus ce qui s'est passé dans l'histoire. Les deux mêmes contextes ont été utilisés : le contexte futur avant ME et le contexte futur après ME. Nous donnons ci-dessous deux extraits du protocole utilisé dans la tâche de production :

(42) a. **Complétive : futur avant ME**

Pierre est dans le jardin avec son chien. Dans le jardin, il y a un coffre. Le coffre est plein de pièces de monnaie, tu vois! [*l'expérimentateur montre à l'enfant les pièces dans le coffre*]. Le chien court autour du coffre. Et, regarde ce qu'il fait, il renverse le coffre! Maintenant, toutes les pièces sont par terre. Pierre: « Ne t'inquiète pas, je *ramasserai* les pièces plus tard ! » Plus tard, Pierre ramasse les pièces. Il met toutes les pièces dans le coffre.

- b. Expérimentateur: Chronos, qu'est-ce qu'il a dit, Pierre, à propos des pièces?
 c. Chronos: Pierre a dit que...euh, j'ai oublié, tu peux m'aider?

(43) a. **Complétive : futur après ME**

C'est une histoire avec deux filles. Elles jouent dans le jardin. Regarde, il y a un âne. Je suis sûre que les filles ont envie de faire un tour avec l'âne. Les filles: « Oui, nous *ferons* un tour avec l'âne! »

- b. Expérimentateur: Chronos, qu'est-ce que les filles ont dit à propos de l'âne?
 c. Chronos: Les filles ont dit que...euh, j'ai oublié, tu peux m'aider?

3.3.1 Résultats et discussion

Les deux tableaux ci-dessous résument les résultats de la tâche de compréhension et de la tâche de production, respectivement :

Tableau 5. Le futur sous le passé : résultats de la tâche de compréhension

Temps	Contexte			
	Futur avant ME		Futur après ME	
futur	Enfants	Adultes français	Enfants	Adultes français
	88% oui	non	96% oui	oui

Tableau 6. Le futur sous le passé : résultats de la tâche de production

Temps	Futur avant ME	Futur après ME
Futur simple	15%	38%
Futur dans le passé	24%	35%

En compréhension, le résultat le plus probant a été l'acceptabilité de la lecture future avant ME d'un futur simple (voir (40a)). Sur la base de ce résultat, nous avons conclu que les enfants français ont un futur dépendant dans leur grammaire, en plus d'un futur indexical. Nous avons suggéré que le futur dépendant dans la grammaire des enfants français est analysé comme un présent zéro plus un opérateur FUT. Nous illustrons cette analyse en (44b) :

(44) a. Anne a dit qu'elle *mangera* le kinder.

b. [PASSÉ [Anne dire que [Ø_{pres} FUT [elle manger le kinder]]]]

La présence d'un présent zéro en (44b) a comme conséquence le fait que l'éventualité de la subordonnée complétive (*le fait de manger le kinder*) est située dans le *futur* par rapport au moment où Anne énonce la phrase. Cette structure rend (44a) vrai dans le contexte futur avant ME, car, dans ce contexte, l'éventualité subordonnée est effectivement postérieure à l'éventualité de la principale.

La tâche de production a révélé deux autres résultats intéressants. Le premier est le fait que certains enfants ont produit un *futur*¹¹ dans le contexte *futur avant ME*. Ce résultat corrobore les résultats issus de la tâche de compréhension qui montrent que les enfants acceptent un futur sous un passé dans le contexte futur avant ME. Nous donnons ci-dessous un extrait du protocole de production ainsi que la réponse de l'un des enfants qui ont produit un futur dans le contexte futur avant ME :

(45) **Complétive : futur avant ME**

Pierre : « Je suis très content ! Ce soir *j'aurai* un déguisement de fantôme. » Plus tard dans la soirée, regarde, son papa lui offre un déguisement de fantôme.

a. Chronos: Je n'ai pas bien compris. Pierre a dit qu'il ...

b. Enfant (P. 4 ;10): Il a dit que... en fait il disait que...il **va** se déguiser en fantôme.

Le deuxième résultat qui montre bel et bien que les enfants ont des temps dépendants est le fait qu'ils ont produit un *futur dans le passé* dans les deux contextes futurs (24% dans le contexte futur avant ME et 35% dans le contexte futur après ME). En (46a), nous répétons le contexte futur avant ME ((42a)) et en (46d), nous illustrons la réponse de l'un des enfants qui ont produit un futur dans le passé dans ce contexte.

¹¹ Le français a deux formes pour exprimer la postériorité temporelle : le futur morphologique (*par exemple, je partirai*) ou le futur périphrastique (*par exemple, je vais partir*), qui consiste dans le verbe "aller" plus un infinitif. Les deux formes ont été produites par les enfants. Dans l'analyse des données, nous avons considéré les deux formes comme des "futurs". Notre analyse du futur périphrastique s'inscrit dans la même lignée que l'analyse proposée pour le futur simple. Plus spécifiquement, nous supposons que le futur périphrastique devrait être analysé comme un présent plus un opérateur futur, qui, dans ce cas, est le verbe à orientation future *aller*.

(46) a. **Complétive : futur avant ME**

Pierre est dans le jardin avec son chien. Dans le jardin, il y a un coffre. Le coffre est plein de pièces de monnaie, tu vois! [*l'expérimentateur montre à l'enfant les pièces dans le coffre*]. Le chien court autour du coffre. Et, regarde ce qu'il fait, il renverse le coffre! Maintenant, toutes les pièces sont par terre. Pierre: « Ne t'inquiète pas, je *ramasserai* les pièces plus tard ! » Plus tard, Pierre ramasse les pièces. Il met toutes les pièces dans le coffre.

b. Expérimentateur: Chronos, qu'est-ce qu'il a dit, Pierre, à propos des pièces?

c. Chronos: Pierre a dit que...euh, j'ai oublié, tu peux m'aider?

d. Enfant (L. 4;10) : Pierre a dit qu'il **rangerait** ses pièces plus tard.

L'énoncé de L montre donc qu'il interprète la composante *passé (imparfait)* du futur dans le passé comme un temps *zéro*. Suivant notre analyse, (46d) a la structure en (47), ci-dessous :

(47) [... PASSÉ [Pierre dire que [Ø_{passé} FUT [il ranger]]]]

Pour conclure, les résultats de cette expérience montrent que (i) les enfants ont un futur dépendant non-adulte, en plus d'un futur indexical adulte et que (ii) les enfants savent qu'en français la subséquence temporelle sous un passé requiert un futur dans le passé. Nous avons observé que le futur dépendant est analysé comme un présent zéro plus un opérateur FUT et que le futur dans le passé est analysé comme un passé zéro plus un opérateur FUT. Ces résultats représentent des preuves en faveur de l'Hypothèse des Temps Zéro.

3.4 Sommaire

Dans cette section nous avons discuté les arguments en faveur de l'Hypothèse des Temps Zéro dans la grammaire des enfants français. Ces arguments sont les suivants : (i) les enfants acceptent la lecture simultanée d'un présent dans une complétive enchâssée sous un passé dans la principale, indisponible en français adulte, mais disponible en japonais (ii) certains enfants, contrairement aux adultes, acceptent la lecture simultanée d'un présent dans une relative sous un passé dans la principale quand la SPR n'est pas disponible, (iii) certains enfants acceptent la lecture dépendante d'un futur simple dans une complétive sous un passé dans la principale et (iv) ils *produisent* un futur sous un passé et également un futur dans le passé sous un passé dans le contexte futur avant ME (où, dans la grammaire adulte, seulement un futur dans le passé est possible).

Ces résultats représentent des preuves que les enfants ont des interprétations *zéro* d'un présent et d'un passé. Dans le tableau 7, ci-dessous, nous récapitulons l'inventaire des temps zéro chez les enfants français et chez les adultes français :

Tableau 7. L'inventaire des temps zéro : français enfantin *versus* français adulte

Configuration temporelle	Grammaire des enfants français	Grammaire des adultes français
Présent (simultané) sous un passé	Ø _{PRES}	✗
Futur sous un passé	Ø _{PRES} + FUT	✗
Futur dans le passé sous un passé	Ø _{PASSE} + FUT	Ø _{PASSE} + FUT

Le fait que la grammaire des enfants français inclut un *présent* et également un *passé* zéro valide notre Hypothèse des Temps Zéro répétée en (48) ci-dessous :

(48) L'Hypothèse des Temps Zéro

- a. Les temps zéro sont présents dans la grammaire des enfants à un âge jeune.
- b. Un temps zéro dans la grammaire des enfants fait surface soit comme un présent soit comme un passé.

Les trois derniers chapitres ont été consacrés à l'interprétation d'un passé non-simultané sous un passé dans la principale. Dans le chapitre 5, nous avons discuté les résultats des deux parties des Expérience 1 et Expérience 2 avec les enfants français dédiées aux interprétations non-simultanées d'un passé dans une relative sous un passé dans la principale. Nous avons montré que les résultats pour la lecture postérieure d'un passé, comme ceux pour la lecture indexicale d'un présent, sont significativement plus mauvais dans Expérience 1 (seulement 26% *oui*) que dans Expérience 2 (96% *oui*). Nous avons suggéré que ce contraste avec le passé non-simultané fournit des preuves supplémentaires en faveur de l'existence de la SPR dans la grammaire des enfants français.

Nous avons également considéré les implications des résultats du passé dans les relatives sous un passé dans la principale pour l'Hypothèse de l'Indépendance Temporelle. Nous avons montré que même certains résultats issus de l'expérience de Hollebrandse semblent valider l'Hypothèse des Temps Zéro.

Dans le chapitre 6, nous avons évalué l'Hypothèse de l'Indépendance Temporelle. Nous avons présenté un nombre d'arguments qui remettent en cause cette hypothèse. Nous avons conclu ce chapitre avec une discussion de l'acquisition des temps dépendants et plus précisément, du statut des temps zéro dans les grammaires des enfants. Finalement, dans le chapitre 7, nous avons proposé une hypothèse alternative pour rendre compte de l'acceptation de la lecture future avant ME d'un passé sous un passé (le diagnostic de l'absence de la subordination complétive, selon l'Hypothèse de l'Indépendance Temporelle). Cette nouvelle hypothèse— l'Hypothèse Modale— soutient que les enfants acceptent la lecture future d'un passé dans le contexte futur avant ME (et également dans le contexte futur après ME) parce qu'ils interprètent le passé enchâssé comme un « future » . Nous avons clos ce chapitre avec des preuves en faveur de l'Hypothèse Modale.

Dans ce qui suit, nous allons présenter l'Hypothèse Modale et nous allons discuter les données d'acquisition à la lumière de cette hypothèse.

4 Les lectures « future » du passé chez les enfants

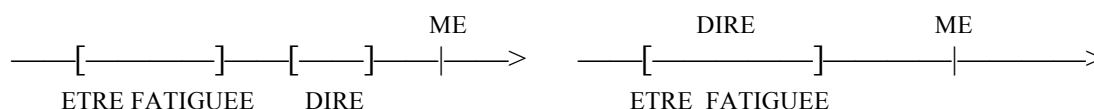
4.1 L'Hypothèse de l'Indépendance Temporelle (Hollebrandse 2000)

Dans une langue à CDT comme le français, un énoncé comme (49a) avec un passé (imperfectif) dans une complétive sous un passé dans la principale permet soit une *lecture antérieure* où l'éventualité décrite par la subordonnée est antérieure à celle de la principale ((50a)) soit une *lecture simultanée* où l'éventualité de la subordonnée coïncide temporellement avec l'éventualité de la principale ((50b)):

(49) a. Jean a dit que Marie *était* fatiguée.

- b. Taro-wa Hanako-ga byooki-dat- ta to it- ta.
Taro-TOP Hanako-NOM être fatiguée-PASSÉ que dire-PASSÉ
“Taro a dit que Hanako avait été fatiguée.”

(50) **a. Complétive (à lecture) antérieure** **b. Complétive (à lecture) simultanée**



En revanche, dans une langue sans CDT comme le japonais, un énoncé avec un passé imperfectif sous un passé ((49b)) a seulement une lecture antérieure ((50a)).

Les énoncés en (49) ne permettent pas une lecture future où l'éventualité de la subordonnée complétive est postérieure à celle de la principale et antérieure au ME, comme l'illustre le schéma en (51) :

(51) **Complétive (à lecture) future**



Hollebrandse (2000) a testé l'acquisition de la CDT dans trois langues : le néerlandais, l'anglais— langues à CDT— et le japonais— langue sans CDT. L'auteur a montré que tous les enfants ont tendance à accepter la lecture future d'un passé imperfectif dans une complétive sous un passé dans la principale. Pour expliquer ce résultat, Hollebrandse a avancé l'Hypothèse de l'Indépendance Temporelle, que nous avons formulée comme en (52) :

(52) **L'Hypothèse de l'Indépendance Temporelle**

Pour les enfants qui n'ont pas acquis la subordination complétive, le temps d'évaluation de l'éventualité enchâssée est le ME.

Deux prémisses sous-tendent l'Hypothèse de l'Indépendance Temporelle :

- (i) les enfants ont acquis le temps
- (ii) dans la grammaire adulte, le temps d'évaluation de la subordonnée complétive est le temps de l'évènement de la principale

Selon cette hypothèse, l'acceptabilité de la lecture postérieure d'un passé sous un passé est due à l'absence de la subordination complétive (la relation de dépendance structurale entre le temps de l'éventualité de la subordonnée et le temps de l'éventualité de la principale). L'Hypothèse de l'Indépendance Temporelle prédit qu'on devrait trouver deux profils d'enfants :

- (i) les enfants qui n'auraient pas acquis la subordination complétive : ces enfants auraient une interprétation indépendante du temps dans une complétive. Cela signifie que ces enfants évalueraient le temps passé dans la complétive en rapport avec **ME** et non pas en rapport avec le temps de la principale.
- (ii) les enfants qui auraient acquis la subordination complétive : ces enfants auraient une interprétation *dépendante* du temps dans une complétive. Cela signifie que ces enfants évalueraient le temps passé dans la complétive en rapport avec **le temps passé de la principale**.

Pour vérifier la validité de l'Hypothèse de l'Indépendance Temporelle, nous avons suggéré qu'on devrait examiner le pattern des réponses que les enfants donnent dans les deux contextes futurs: (i) le contexte futur avant ME et (i) le contexte futur après ME.

Cette hypothèse fait les prédictions suivantes :

- (i) un enfant qui n'aurait pas acquis la subordination complétive, accepterait l'énoncé test avec un passé sous un passé dans le contexte futur *avant* ME, car, dans ce contexte, l'éventualité décrite par la subordonnée est antérieure au ME, qui, pour cet enfant, représente l'intervalle d'évaluation de l'éventualité subordonnée.
- (ii) un enfant qui aurait acquis la subordination complétive, aurait une grammaire adulte. Cet enfant rejeterait l'énoncé avec un passé sous un passé dans le contexte futur avant ME.
- (iii) tous les enfants (qu'ils aient acquis la subordination complétive ou non) devraient rejeter l'énoncé test dans le contexte futur après ME, car, dans ce contexte, l'éventualité enchâssée est *postérieure* au ME. L'emploi du *passé* ne serait donc pas légitime.

Nous résumons ces prédictions dans le tableau ci-dessous :

Tableau 8. Prédictions pour un passé sous un passé selon l'Hypothèse de l'Indépendance Temporelle

Profils d'enfants	Futur avant ME	Futur après ME
Enfants avec subordination complétive	non	non
Enfants sans subordination complétive	oui	non

Il est important de noter que, selon l'Hypothèse de l'Indépendance Temporelle, les enfants qui n'auraient pas acquis la subordination complétive devraient *accepter* la lecture future avant ME d'un passé et *rejeter* la lecture après ME d'un passé. Malheureusement, l'étude de Hollebrandse n'offre pas une description des profils individuels des enfants. Cependant, une examination plus minutieuse des données des enfants néerlandais, anglais et japonais, que nous résumons dans le Tableau 9, nous permet de constater que la lecture future après ME a été acceptée à des taux assez significatifs.

Tableau 9. Hollebrandse (2000) : résultats des lectures futures du passé dans les complétives

Néerlandais			Anglais			Japonais		
% de <i>oui</i> par groupe d'âge	Lecture future avant ME	Lecture future après ME	% de <i>oui</i> par groupe d'âge	Lecture future avant ME	Lecture future après ME	% de <i>oui</i> par groupe d'âge	Lecture future avant ME	Lecture future après ME
3 (n = 14)	95	71	3 (n = 8)	71	62	3 (n = 2)	100	100
4 (n = 16)	87	56	4 (n = 14)	81	55	4 (n = 20)	85	85
5 (n = 20)	78	50	5 (n = 11)	82	64	5 (n = 9)	70	41
6 (n = 11)	42	12	6 (n = 20)	87	51	6 (n = 1)	100	100
7 (n = 1)	67	0	7 (n = 9)	48	7	—	—	—

Comme on peut le remarquer dans le tableau 9, à l'âge de 4 à 5 ans, le taux d'acceptation de la lecture future après ME se situe entre 50% et 85%. L'Hypothèse de l'Indépendance Temporelle ne peut pas expliquer ce taux d'acceptabilité de la lecture future après ME. Cette hypothèse ne peut pas expliquer non plus pourquoi les enfants néerlandais, anglais et japonais de 6 ans acceptent la lecture future avant ME à 42%, 87% et 100% respectivement. Est-ce qu'on pourrait soutenir qu'à 6 ans ces enfants n'ont pas acquis la

subordination complétive ? Nous pensons que cela est peu plausible. Il est connu dans la littérature que les structures de subordination se mettent en place à partir de l'âge de 4 ans (voir Bowerman 1979, Antinucci et Parisi 1975, entre autres). Nous avons donc conclu que l'acceptation de la lecture future après ME et l'acceptation de la lecture avant ME par les enfants de 4, 5, 6 ans constituent des arguments contre l'Hypothèse de l'Indépendance Temporelle.

A ces arguments, s'ajoutent deux autres arguments qui émergent de notre expérience qui teste l'interprétation d'un futur sous un passé chez les enfants français (voir section 3.3.1). Le premier argument est l'acceptation et la production des énoncés avec un futur sous un passé dans un contexte futur avant ME. Ce résultat montre que les enfants français ont un futur *dépendant* dans leur grammaire. Autrement dit, les enfants français interprètent le futur dans une subordonnée complétive *en rapport avec le temps de l'évènement de la principale*.

Le deuxième argument qui va à l'encontre de l'Hypothèse de l'Indépendance Temporelle est le fait que, en plus d'un futur simple, les enfants français ont également produit un *futur dans le passé* dans un contexte futur après ME, où l'éventualité enchâssée *n'a pas* encore eu lieu au moment de l'énonciation de la phrase. Nous donnons ci-dessous un extrait du protocole qui illustre le contexte futur après ME ainsi que la réponse de l'un des enfants qui ont produit des complétives avec un *futur dans le passé* :

(53) **Complétive : futur après ME**

C'est une histoire avec deux filles. Elles jouent dans le jardin. Oh, regarde, il y a un âne dans le jardin. Je suis sûre que les filles ont envie de monter sur l'âne. Les filles : « oh, un âne ! Nous monterons sur l'âne ! »

- a. Expérimentateur: Chronos, qu'est-ce que les filles ont dit à propos de l'âne?
- b. Chronos: Les filles ont dit que...euh, j'ai oublié, tu peux m'aider?
- c. Enfant (T. 4; 02): ... qu'elles **monteraient** sur l'âne.
- d. Expérimentateur: Et est-ce qu'elles sont montées sur l'âne ?
- e. Enfant (T. 4; 02): Non.

Rappelons que, dans la grammaire adulte, ce contexte permet d'utiliser soit un futur simple soit un futur dans le passé. Cependant, le futur simple est utilisé pour exprimer la postériorité par rapport au ME, tandis que le futur dans le passé est utilisé pour exprimer la postériorité par rapport au temps passé de la principale (voir notre discussion en 3.3, ci-haut). Le fait que les enfants ont produit un futur dans le passé dans le contexte futur après ME montre qu'ils interprètent le temps de la subordonnée par rapport au *temps de la principale*. Cela implique que ces enfants ont une interprétation *dépendante* du temps enchâssé.

En conclusion, nos données suggèrent que les enfants français entre 4 et 5 ans ont une interprétation dépendante d'un futur enchâssé comme un temps *dépendant*. Ces enfants auraient donc acquis la subordination complétive. Si ce raisonnement est correct, et qu'à 4-5 ans, les enfants aient acquis la subordination complétive, alors, l'acceptation de la lecture future (avant ou après ME) d'un passé observée chez les enfants néerlandais, anglais, japonais (et français, comme on le verra plus tard) devraient recevoir une autre explication. Dans ce qui suit, nous proposerons une explication alternative pour l'acceptation de la lecture future d'un passé.

4.2 L'Hypothèse Modale

Il est connu dans la littérature qu'un présent ou un passé imparfaitif, peuvent parfois donner lieu à une interprétation future.

- (54) a. Marie *chante* demain.
b. Marie *chantait* demain.

Selon certains auteurs (Dowty, 1979, Copley 2002, Kaufmann 2005, De Saussure 2011, 2012, entre autres), les exemples en (51) représentent des usages « future » du présent et du passé. Dans ces exemples, il existerait un *plan* pour une éventualité future (« le concert de Marie »), le présent et le passé ne contribuant pas à la localisation temporelle de l'éventualité *chanter*, mais plutôt à la localisation temporelle du plan pour l'éventualité en question.

Dans le chapitre 7, nous avons discuté en détail ces lectures « future » d'un présent et d'un passé dans les contextes simples et enchâssés. Nous avons souligné la pertinence de l'aspect à l'usage des énoncés qui donnent lieu à des lectures « future » à travers les langues. Par exemple, nous avons montré qu'en anglais, l'aspect progressif permet des lectures « future », tandis que, dans les langues romanes comme l'italien, l'espagnol ou le français, l'aspect progressif ne permet pas ces lectures. Le contraste entre l'anglais et l'italien ou l'espagnol est illustré par les exemples suivants :

- (55) a. Mary *is/ was singing* tomorrow. anglais
« Marie être-PRES/ PASSÉ sing-PROG demain »
b. *Maria *sta/ stava* cantando domani. italian
« Marie être-PRES/ PASSÉ sing-PROG demain »
c. *Maria *está/ estaba* cantando mañana. espagnol
« Marie être-PRES/ PASSÉ sing-PROG demain »
d. *Marie *était en train de* chanter demain. français

Un autre fait intéressant que notre étude a révélé est le contraste entre l'usage « future » de l'imparfait et l'usage « future » du passé composé dans une complétive sous un passé dans la principale. Nous avons montré qu'en français, un imparfait sous un passé permet une lecture « future » soit dans un contexte futur avant ME soit dans un contexte futur après ME. En revanche, un passé composé sous un passé permet une lecture « future » seulement dans un contexte futur après ME.

- (56) i. **Lecture « future » d'un imparfait sous un passé**
a. Il y a deux semaines, Jean a dit qu'une semaine plus tard, il soutenait sa thèse.
b. Il y a deux semaines, Jean a dit que, la semaine prochaine, il soutenait sa thèse.
ii. **Lecture « future » d'un passé composé sous un passé**
a. #Il y a deux semaines Jean a dit qu'une semaine plus tard, il a soutenu sa thèse.
b. La semaine dernière, Jean a dit que, la semaine prochaine, il a soutenu sa thèse.

Nous avons suggéré que ce contraste entre l'imparfait et le passé composé est lié à l'indexicalité de la composante *présent* du passé composé. Cette composante contraint l'éventualité décrite par l'énoncé d'avoir lieu dans le futur par rapport au ME, et, en plus,

requiert que le plan qui mène à la réalisation de l'éventualité en question subsiste pendant un intervalle qui s'étend du moment passé de la principale jusqu'au ME.

4.3. Les lectures « futurate » et leur acquisition

Rappelons que les enfants néerlandais, anglais et japonais ont accepté les énoncés avec un passé imperfectif sous un passé dans un contexte futur avant ME aussi bien que dans un contexte futur après ME. Dans la section 4.1, nous avons argumenté contre l'Hypothèse de l'Indépendance Temporelle, qui soutient que ces résultats seraient dûs à l'absence de la subordination complétive dans la grammaire des enfants. Nous avons avancé une hypothèse alternative qui affirme que la source de l'acceptabilité de ces lectures futures d'un passé réside dans le fait que les enfants interprètent le temps passé comme un « futurate ». Nous avons nommé cette hypothèse l'Hypothèse Modale formulée comme suit :

(57) L'Hypothèse Modale

Les enfants interprètent le passé dans les contextes futurs comme un « futurate ».

Cette hypothèse suppose qu'un passé pourrait avoir un usage « futurate » dans un contexte où il existe un plan pour une éventualité future. Soulignons que le contexte proposé par Hollebrandse pour tester la lecture future avant ME d'un passé sous un passé remplit les conditions nécessaires à l'usage « futurate » du passé subordonné.

Nous donnons ci-dessous un extrait du protocole proposé par Hollebrandse pour tester la lecture future avant ME en néerlandais :

(58) Complétive : lecture future avant ME (Hollebrandse 2000 : 123)

Excerpt of the Dutch experiment of a question testing a forward shifted reading before utterance time (E3)	
B:	<i>Zal ik eens kijken of ik een banaan voor je kan vinden, Cookie Monster?</i> (shall I look if I a banana for you can find, C.M.)
KM:	<i>Ja Bert, ik wil een banaan op mijn bordje hebben.</i> (yes, B. I will a banana on my plate have)
<Bert puts the banana on C.M.'s plate>	
Exp:	<i>Zei Cookie Monster dat hij een banaan op zijn bordje had?</i> (said C.M. that he a banana on his plate had) "Did Cookie Monster say that he had a banana on his plate?"

Bert : Tu veux que j'aille chercher une banane pour toi ?

Cookie Monster : Oui, Bert. J'aurai une banane sur mon assiette !

[Bert met une banane sur l'assiette de Cookie Monster.]

Expérimentateur : Est-ce que Cookie Monster a dit qu'il avait une banane sur son assiette ?

Le contexte donné en (58) montre clairement qu'il existe un plan qui consiste à trouver une banane pour Cookie Monster et que, Bert, l'initiateur du plan, s'assure que l'éventualité planifiée est réalisée, car à la fin de l'histoire Cookie Monster a effectivement

une banane sur son assiette. Ce contexte est donc un contexte qui légitime l'usage « future » du passé enchâssé dans la phrase test énoncée par l'expérimentateur. En conclusion, l'acceptation du passé dans les contextes futurs avant ME devrait être attribuée aux lectures « future » du passé et non pas à l'absence de la subordination complétive.

Rappelons que certains des enfants testés par Hollebrandse ont accepté un passé imparfait sous un passé également dans un contexte futur après ME. Nous avons montré que l'Hypothèse de l'Indépendance Temporelle ne peut pas expliquer ce résultat. Selon cette hypothèse, ces enfants devraient rejeter la phrase test dans un contexte futur après ME, car, dans ce contexte, l'éventualité décrite par la subordonnée n'a pas encore eu lieu au moment d'énonciation de la phrase. L'usage du passé serait donc inapproprié. En revanche, l'Hypothèse Modale peut expliquer l'acceptation des phrases avec un passé imparfait sous un passé dans le contexte futur après ME. Selon cette hypothèse, le passé imparfait aurait un usage « future », qui est légitime dans un contexte futur après ME (et, comme nous l'avons vu plus haut, également dans un contexte futur avant ME).

4.4 Lectures « future » chez les enfants français

Dans cette section, nous discutons deux expériences conduites auprès des enfants français qui testent les lectures « future » de l'imparfait et du passé composé sous un passé. La première expérience montre que les enfants français acceptent et (dans une certaine mesure) produisent un imparfait dans un contexte futur avant ME et également dans un contexte futur après ME. Nous suggérons que ces données confirment l'Hypothèse Modale, selon laquelle les enfants interprètent l'imparfait comme un « future ».

De plus, comme nous le verrons plus tard, l'Hypothèse Modale conjointement avec l'Hypothèse des Temps Zéro prédit que les enfants ayant un présent zéro dans leur grammaire devraient permettre la lecture « future » d'un passé composé dans un contexte futur avant ME. Nous montrerons que les données avec le passé composé confirment cette prédiction.

4.4.1 L'expérience avec les enfants français

Nous avons mis au point une expérience ayant pour objectif de tester la validité de l'Hypothèse Modale. Rappelons que cette hypothèse soutient que dans les contextes qui impliquent l'existence d'un plan, les enfants acceptent la lecture future d'un passé parce qu'ils interprètent le passé enchâssé comme un « future ».

L'Hypothèse Modale fait les prédictions suivantes. Pour un **imparfait** :

- (i) dans les contextes qui **légitiment** une lecture « future » (par exemple, quand les prédicats enchâssés sont des verbes agentifs), les enfants devraient **accepter** un énoncé avec un **imparfait** sous un passé dans un contexte **futur avant ME**.
- (ii) dans les contextes qui **ne légitiment pas** une lecture « future » (par exemple, quand les prédicats enchâssés sont des verbes d'état qu'on ne peut pas utiliser dans des contextes dits « planifiables »), les enfants devraient **rejeter** un énoncé avec un **imparfait** sous un passé dans un contexte **futur avant ME**.

En ce qui concerne les prédictions pour un **passé composé**, nous avons vu que, dans la grammaire adulte, l'usage « future » d'un passé composé sous un passé est restreint au contexte futur après ME (voir section 4.2). Selon notre analyse de la lecture « future » d'un

passé¹², cette restriction est liée à l'indexicalité de la composante *présent* du passé composé, qui force l'éventualité décrite par la subordonnée d'être dans le futur par rapport au ME et qui, en plus, requiert que le plan qui mène à la réalisation de l'éventualité enchâssée subsiste pendant un intervalle qui s'étend du moment passé de la principale jusqu'au ME.

Cependant, tout au long de cette thèse, nous avons soutenu que les enfants (français) ont un présent zéro dans leur grammaire (en plus d'un présent indexical). L'Hypothèse des Temps Zéro conjointement avec l'Hypothèse Modale fait les prédictions suivantes pour le **passé composé** :

- (i) les enfants qui ont seulement un présent indexical dans leur grammaire devraient **rejeter** un énoncé avec un **passé composé** sous un passé dans la principale dans un contexte futur avant ME.
- (ii) les enfants qui ont un présent zéro dans leur grammaire en plus d'un présent indexical devraient **accepter** un énoncé avec un **passé composé** sous un passé dans la principale dans un contexte futur avant ME.

4.4.1.1 Les participants

15 enfants entre 5;04 et 6;02 (moyenne = 5;07) ont participé à cette expérience¹³. 6 enfants ont été écartés de l'expérience car ils ne faisaient pas attention à la tâche.

4.4.1.2 Le protocole expérimental

Dans notre protocole expérimental nous avons inclus des propositions complétives avec (i) des **activités** ("jouer au ballon" "manger des carottes" "cuisiner du poulet rôti", "manger de la tarte", "compter les pièces" "cacher le trésor" "ramasser les oeufs",) et (ii) des **états**. Nous avons inclus deux types d'états: des états *planifiables* ("avoir un déguisement de fantôme") et des états *non-planifiables* ("être fatigué").

Nous avons utilisé 6 histoires, chacune contenant 2 scènes. Il y avait 22 items expérimentaux dont 12 phrases test, et 10 *fillers*. Les *fillers* étaient soit des questions *oui/non* soit des énoncés avec des complétives dont le contenu propositionnel était soit *vrai* soit *faux*. Le rôle des *fillers* étaient de vérifier si les enfants faisaient attention à la tâche et d'empêcher les enfants de deviner ce qu'on testait. Les enfants qui ont échoué à plus de 2 *fillers* ont été écartés de l'expérience.

4.4.1.3 Les contextes expérimentaux

Nous avons utilisé 3 contextes expérimentaux¹⁴ : (i) un contexte « imparfait (IMP) activité », illustré avec l'histoire en (59), un contexte « IMP état », illustré par l'histoire en (60) et (iii) un contexte « passé composé (PC) activité », illustré par l'histoire en (61):

¹² Pour des raisons d'espace, nous avons choisi de ne pas présenter cette analyse ici. Le lecteur intéressé est prié de se reporter à la section 7.1.3.2 de la thèse.

¹³ Cette expérience a été conduite en collaboration avec Laurence Voeltzel et Hahn Nguyen.

¹⁴ Nous n'avons pas inclus de contexte PC état, car, en français, la combinaison entre un passé composé et un état n'est pas très appropriée, comme le montre (i) ci-dessous :

(59) **IMP activité**

C'est dimanche après-midi. Jérémie et Louis sont dans le jardin. Jérémie voit arriver un lapin. Jérémie: « Regarde! Qu'est-ce qu'il est mignon, ce lapin. Je vais aller lui chercher une carotte. » Louis: « Oui, il mangera la carotte ». Jérémie va chercher une carotte dans la cuisine et la donne au lapin. Le lapin mange la carotte et Jérémie caresse le lapin.

a. Chronos : Est-ce que Louis a dit que le lapin *mangeait* la carotte ?

(60) **i. IMP état planifiable**

Après le travail, Pierre, l'ami de Papa: « Tu viens prendre un verre avec moi? »
Papa : « Non merci, je dois chercher un cadeau pour Lucas, car demain c'est son anniversaire ». Pierre: « T'as une idée de ce que tu vas lui acheter ? »
Papa : « Je veux lui acheter un déguisement de fantôme. »
Pierre : « Ah, ouais, Lucas aura un déguisement de fantôme ! »
Papa achète le déguisement de fantôme.
[Le lendemain, Lucas reçoit son cadeau: un beau déguisement de fantôme.]

a. Chronos: Est-ce que Pierre a dit que Lucas *avait* un déguisement de fantôme?

ii. IMP état non-planifiable

Dans la chambre de Lucas, il joue au fantôme avec son déguisement. Il est tard et Lucas ne veut pas aller au lit.
Sa maman va voir son papa : « Tu sais, Lucas ne veut pas aller se coucher. Il a école demain matin ! »
Papa : « Oui, et bah il sera fatigué ! »
[Lucas reste jouer un petit peu plus. Puis il se couche.
Le lendemain matin, il se lève.] Lucas dit: « Oh là là, j'ai sommeil ! J'ai sommeil! »

a. Chronos: Est-ce que le père a dit que Lucas *était* fatigué ?

(61) **PC activité**

Joe, le pirate, est sur son bateau avec son ami Crochet et un matelot.
Joe : « Regardez devant, une île déserte! Allons voir si on y trouve quelque chose. »
Le bateau s'approche de l'île. Joe : « Vous deux, surveillez le bateau ! Moi, j'y vais. »
Il arrive sur l'île... Joe : « Hé ho, j'ai trouvé un coffre à trésor, il est rempli de pièces! » Matelot: « Mais que va t-il faire du trésor? » Crochet : « Il *comptera* les pièces ». Le pirate compte: « un, deux, trois... Ouah, cinq pièces d'or ! »

a. Chronos: Est-ce que Crochet a dit que le pirate *a compté* les pièces ?

(i) #Hier Jean a été fatigué.

Les prédictions selon l'Hypothèse Modale sont les suivantes :

- (i) dans le contexte **IMP activité**, les enfants devraient **accepter** la phrase test ((59a)), car ce contexte est compatible avec une lecture « future » de l'imparfait.
- (ii) dans le contexte **IMP state**, les enfants devraient **accepter** la phrase test si l'état en question est planifiable ((60i)); ils devraient **rejeter** la phrase test si l'état en question n'est pas planifiable ((60ii)).
- (iii) l'Hypothèse Modale conjointement avec l'Hypothèse des Temps Zéro prédit que les enfants ayant un présent zéro en plus d'un présent indexical dans leur grammaire devraient **accepter** un énoncé avec un **PC** dans le contexte futur après ME ((61a)).

4.4.1.4 Résultats et discussion

Les résultats sont résumés dans le Tableau 10.

Tableau 10. Lectures « future » d'un passé sous un passé

Contexte	% de réponses <i>oui</i>
IMP activité	75%
IMP état	39%
PC activité	47%

Le taux élevé d'acceptabilité de l'imparfait dans le contexte IMP activité est attendu sous l'Hypothèse Modale, selon laquelle l'imparfait est interprété comme un « future » et non pas comme un vrai temps du passé. En ce qui concerne les résultats avec IMP état et PC activité, ceux-ci sont plus difficiles à interpréter car ils se rapprochent du hasard. Cependant, une examination plus attentive des réponses individuelles des enfants, a révélé que, dans le contexte IMP état, tous les enfants ont rejeté les énoncés contenant un état non-planifiable (« être fatigué »). Ce résultat est prédit par l'Hypothèse Modale (voir (ii), ci-dessus).

En ce qui concerne les énoncés contenant des états planifiables, les résultats révèlent une distribution intéressante : la moitié des enfants acceptent ces énoncés et l'autre moitié les rejettent. Sur la base de ce pattern, nous avons conclu que certains enfants ont des lectures « future » d'un imparfait avec les états planifiables. Cela constitue une preuve en faveur de l'Hypothèse Modale (voir (ii), ci-haut).

Enfin, en ce qui concerne l'acceptation du passé composé, nous avons suggéré que cela est dû au fait que les enfants interprètent la composante *présent* du passé composé comme un temps zéro, validant ainsi la prédiction (iii) de l'Hypothèse Modale.

Ce résultat avec le passé composé corrobore nos résultats précédents avec un présent sous un passé (voir section 4.1) et un futur sous un passé (voir section 4.2), et témoigne à nouveau de l'existence d'un présent zéro dans la grammaire des enfants français.

4.5 Sommaire

Dans cette section, nous avons discuté les lectures futures du passé sous un passé dans la grammaire des enfants. Tout d'abord, nous avons présenté l'Hypothèse de l'Indépendance Temporelle qui soutient que l'acceptation de la lecture future avant ME est due à l'absence de la subordination complétive. Plusieurs arguments qui remettent en cause cette hypothèse ont

été présentés. Nous avons proposé une hypothèse alternative— l’Hypothèse Modale— qui attribue l’acceptation des lectures futures avant et après ME à une interprétation « future » du passé. Après une discussion des lectures « future » dans la grammaire adulte, nous avons présenté un protocole expérimental que nous avons mis au point pour tester l’Hypothèse Modale et les prédictions qu’elle fait pour l’imparfait sous un passé et le passé composé sous un passé. Notre expérience a révélé au moins deux résultats intéressants : (i) les enfants français acceptent à un taux assez important (75% réponses *oui*) la lecture « future » de l’imparfait avec des verbes d’activité ; (ii) certains enfants français acceptent la lecture « future » d’un passé composé dans un contexte futur avant ME, indisponible dans la grammaire adulte. Nous avons conclu que l’acceptation de la lecture « future » de l’imparfait avec des verbes d’activité est attendue sous l’Hypothèse Modale, car l’usage des verbes d’activité légitime une lecture « future ». En plus, l’Hypothèse Modale conjointement avec l’Hypothèse des Temps Zéro (qui suppose que les enfants ont un présent zéro dans leur grammaire en plus d’un présent indexical) explique pourquoi certains enfants acceptent la lecture « future » d’un passé composé dans le contexte futur avant ME.

5 Conclusion

Dans cette étude, nous avons examiné les interprétations temporelles du présent, du passé et du futur enchâssés sous un passé dans la principale chez les enfants français.

Dans le premier chapitre nous avons introduit le sujet de la thèse— l’interprétation du temps en contexte subordonné chez les enfants français— nos objectifs et notre méthodologie. Ensuite, nous avons discuté le cadre théorique et nous avons situé notre étude par rapport aux recherches antérieures sur l’acquisition du temps en contexte subordonné.

Dans le deuxième chapitre nous nous sommes penchées sur l’interprétation du présent et du passé sous un pass- dans les propositions complétives et relatives dans deux types de langues : (i) les langues à CDT (le français/ l’anglais) et (ii) les langues sans CDT (japonais). Notre discussion nous a conduites à deux généralisations :

1. les langues à CDT diffèrent des langues sans CDT en ce qui concerne la lecture simultanée sous un passé. Cette différence a été formulée en terme de paramètre de la CDT :

Le paramètre de la CDT

- i. dans les langues à CDT (anglais/ français), la simultanéité sous un passé requiert un *passé*
 - ii. dans les langues sans CDT (japonais), la simultanéité sous un passé requiert un *présent*
2. aucune langue ne permet la lecture postérieure d’un passé dans la complétive (quand le prédicat de la subordonnée complétive est non-planifiable).

Les questions que nous avons adressées dans cette étude sont les suivantes :

- i. Est-ce que les enfants qui acquièrent une langue à CDT sait que la simultanéité temporelle sous un passé requiert un passé ?
- ii. Est-ce que les enfants savent que l’interprétation temporelle d’une proposition complétive est dépendante du temps de l’événement de la principale ?
- iii. Est-ce que les enfants savent (2) ?

Dans le reste de la thèse nous avons essayé de répondre à ces questions. Les Chapitres 3 et 4 ont étudié les interprétations adultes et non adultes du *présent sous le passé* et du *futur sous le passé*. Le résultat le plus important avec le présent a été l'acceptation de la lecture simultanée d'un présent sous un passé. Afin d'expliquer cette donnée, nous avons montré que les enfants, contrairement aux adultes, interprètent le présent subordonné comme un temps zéro. Les données les plus intéressantes avec le futur sous un passé ont été les suivantes : (i) les enfants ont dans leur grammaire un futur dépendant non adulte, en plus d'un futur indexical adulte et (ii) les enfants produisent un futur dans le passé dans un contexte futur avant ME aussi bien que dans un contexte futur après ME. Afin d'expliquer (i), nous avons suggéré que le futur dépendant dans la grammaire des enfants soit analysé comme un *présent* zéro plus un modal. Cette analyse découle de l'hypothèse que la grammaire des enfants inclut un présent zéro (en plus d'un présent indexical). Pour expliquer (ii), nous avons noté que les enfants, comme les adultes, interprètent le futur dans le passé comme un *passé* zéro plus un modal. En nous appuyant sur ces résultats, nous avons proposé l'Hypothèse des Temps Zéro donnée au chapitre 4 :

(62) L'Hypothèse des Temps Zéro

- a. Les temps zéro sont présents dans la grammaire des enfants très tôt.
- b. Un temps zéro dans la grammaire des enfants fait surface soit comme un présent soit comme un passé.

(62a) implique que les enfants n'ont pas de difficultés avec les lectures simultanées si on suppose que ces lectures résultent d'une structure avec un temps zéro. (62b) implique que, dans la grammaire des enfants, les deux options du paramètre de la CDT sont activées. Il est important de noter qu'il existe des grammaires adultes où qui ont les deux options du paramètre de la CDT. Un exemple est l'autrichien, où la simultanéité temporelle sous un passé peut s'exprimer soit par un présent soit par un passé. Le fait que les enfants passent par un stade où la configuration du paramètre de la CDT ne correspond pas à la configuration de leur langue cible, mais à une configuration possible dans une autre langue, semble confirmer l'Hypothèse de la Continuité. Selon cette hypothèse, la grammaire des enfants, même si elle est différente de la grammaire de la langue cible, obéit toujours aux contraintes de la Grammaire Universelle (Crain et Thornton 1998).

Dans les trois derniers chapitres, nous avons analysé l'interprétation du passé sous un passé. Le chapitre 5 a fourni des preuves en faveur de l'existence des lectures simultanées et non-simultanées adultes d'un passé dans une relative sous un passé dans la principale. Le chapitre 6 a évalué l'Hypothèse de l'Indépendance Temporelle et a présenté des arguments en faveur de l'Hypothèse des Temps Zéro. Enfin, le chapitre 7 a présenté deux expériences qui examinent l'interprétation d'un passé (*imparfait* et *passé composé*) dans les complétives sous un passé chez les enfants français. Les données avec l'*imparfait* ont montré que les enfants français permettent et produisent un *imparfait* dans un contexte futur avant ME ainsi que dans un contexte futur après ME. L'acceptation de l'*imparfait* dans le contexte futur après ME a été considérée comme une preuve contre l'Hypothèse de l'Indépendance Temporelle et en faveur de l'Hypothèse Modale selon laquelle les enfants interprètent le passé dans un contexte futur comme un « future ».

Les données avec le *passé composé* ont montré que certains enfants acceptent le *passé composé* dans un contexte futur avant ME, indisponible dans la grammaire adulte. Afin de rendre compte de ce résultat, nous avons proposé une explication basée sur l'Hypothèse Modale et sur l'Hypothèse des Temps Zéro : les enfants qui acceptent le *passé composé* dans le contexte futur avant ME assigneraient une lecture « future » au *passé composé* ; ils

acceptent la phrase test dans un contexte futur avant ME parce qu'ils interprètent la composante *présent* du *passé composé* comme un temps *zéro*.

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CHAPTER 1

Tense in subordinate contexts: evidence from child language

This thesis investigates the interpretation of the *present*, the *past* and the *future* in subordinate *complement* and *relative* clauses under a matrix *past* in French child language. The choice of the first two tenses— that is, the *present* and the *past*— is motivated by the fact that these are the two tense forms cross-linguistically used to express *simultaneity* in embedded contexts, i.e., temporal overlap between an embedded eventuality¹⁵ and a matrix past eventuality. For instance, in languages such as Japanese, temporal simultaneity between an embedded eventuality (*Hanako's sickness*) and a matrix *past* eventuality (*Taro's saying*) requires a *present* in the embedded clause, as shown in (1a):

- (1) a. Taroo-wa Hanako-ga byooki-da to it- ta.
Taro-TOP Hanako-NOM be-sick-PRES that say-PAST
“Taro said that Hanako was sick.”

(Ogihara 1996:153)

- b. Taroo-wa Hanako-ga byooki-dat-ta to it- ta.
Taro-TOP Hanako-NOM be-sick-PAST that say-PAST
“Taro said that Hanako had been sick.”

(Ogihara 1996: 7)

In Japanese, a *past* in a complement clause under a matrix past has a so-called past-shifted reading, where the embedded eventuality (*Hanako's sickness*) precedes the matrix eventuality (*Taro's saying*), as the English gloss in (1b) shows.

Unlike in Japanese, in French, a present in an embedded complement clause embedded under a matrix past expresses a so-called “double access” reading, where the embedded eventuality is understood as overlapping both the matrix eventuality and UT-T.

¹⁵ Throughout this dissertation, I will use the term “eventuality” as a cover term for both “events” and “states”.

Thus, the French sentence in (2a), is used felicitously in a situation where the state that corresponds to *Mary's tiredness* overlaps both *John's saying* time and *UT-T*. To express temporal simultaneity between the embedded eventuality and the matrix past eventuality French requires an embedded *imparfait*, as shown in (2b):

- (2) a. Jean a dit que Marie *est* fatiguée.
 “John said that Mary is tired.”
- b. Jean a dit que Marie *était* fatiguée.
 “John said that Mary was tired.”

The *imparfait* is the tense form which in French contributes an *imperfective* viewpoint¹⁶. Following Smith (1991), the *imperfective* viewpoint gives a partial view on a particular situation— the situation is viewed from the inside and presented as *ongoing* at a certain reference time. This contrasts with the *perfective* viewpoint, which gives an overall view of a situation— the situation is viewed from the outside and presented as *completed* at a certain reference time. The tense form used in (spoken) French to express past completed events is the *passé composé*, which has replaced the French simple past (*passé simple*), scarcely used nowadays except in certain dialects and usually associated with the written style.

The questions that arise with respect to language acquisition are the following: **(i)** do children speaking French-like languages know that in their language, an embedded present under past cannot express a simultaneous construal, while an embedded past under past can? And conversely, **(ii)** do children speaking Japanese-like languages know that in their language an embedded present can express simultaneous construals while an embedded past cannot? Since this thesis studies the acquisition of tense in embedded contexts in French child language, we will be concerned with the question in **(i)**. We sought to answer this question by

¹⁶ Laca (2005, 2007) takes exception to this. She argues that the French *imparfait* as well as the Spanish *imperfecto* do not yield an imperfective viewpoint but rather are aspectually neutral: “aspectually neutral” forms are not totally unconstrained, but whatever preferences they exhibit result from polarisation effects due to the existence of an aspectually marked competing form –thus, an imperfect will strongly prefer imperfective interpretations in the contexts in which it contrasts with the preterite/present perfect” (Laca, 2007:1) (see also Schaden, 2003 for a similar idea).

designing several experiments testing French children’s construal of the present and the past in embedded contexts. The experimental findings revealed that French children have both simultaneous and non-simultaneous construals of the *past* and surprisingly also of the *present*.

The choice of the third tense— that is, the *future*— was determined by some surprising findings with the past, which led us to conclude that children allowed so-called “futurate” (scheduled) readings of the past. At this point two more questions emerged: **(i)** how do children express *futurity* and **(ii)** what interpretations do children assign to a morphological *future* in subordinate contexts? We addressed these questions in an experiment investigating the construal of the *future* under past in embedded (complement) clauses. In so doing, we hoped to gain a better understanding of children’s knowledge of tense in embedded contexts and contribute to the research on the acquisition of tense in French at the syntax/ semantics interface.

1.1 Experimental protocols

This thesis discusses experimental studies testing the construal of tenses in subordinate complement and relative clauses in French child language.

1.1.1 Participants

These studies were conducted with monolingual French children ranging mostly between **4;05** and **5;05** years old, recruited from kindergartens in Nantes (Loire Atlantique). There are two major reasons why we chose children in this age range. First, at this age, children are assumed to have acquired *tense*. Second, this is the age at which children start using *subordinate structures*, whose mastery is of paramount importance for us since this study deals with the acquisition of tense in *subordinate* contexts. Moreover, the choice of this age was dictated by the fact that younger children— whom we tried to test on several occasions— did not successfully pass the selection sessions.

Apart from children, we also tested French adults, students in the Lettres Modernes and Sciences du Langage departments at the University of Nantes.

1.1.2 Methodology

In all of our experiments, we used a Truth Value Judgment Task (Crain and Thornton 1998) with stories played with toys and props. The children’s task was to tell whether the sentence

they heard at the end of each story was a correct description of what had happened in the story. Children's answers were recorded with the audio recording software *Audacity* or with a portable digital recorder.

In one experiment, testing the construal of the future in complement clauses under a matrix past, we also included a production task in addition to the comprehension task. The goal of the production task was to check the children's way of expressing futurity.

1.2 Goals

As we shall see in chapters 3-4-5, French children allow *adult* simultaneous construals of the past in complement clauses and relative clauses embedded under a matrix past, but, as I have mentioned above, surprisingly, they also allow *non-adult* simultaneous construals of the present in both complement clauses and relative clauses. This finding with the present is significant as very little is known about the construal of the *present* in embedded contexts in child language.

There is no work on the acquisition of the future/ futurity in embedded contexts and very little work on the acquisition of Sequence of Tense (SOT) and, more generally, on the acquisition of tense in embedded contexts, except for Hollebrandse (2000), to which this thesis is highly indebted. To my knowledge, the present study is the most extensive acquisition study *systematically* investigating the construal of the *present* under past in both *complement* and *relative* clauses as well as the acquisition of the *future* under past in complement clauses.

1.2.1 Dependent *versus* independent analyses of simultaneous construals

Consider the following sentences with an *imperfective past* embedded under a matrix *past*:

- (3) a. Jean a dit que Marie était fatiguée.
 "John said that Mary was tired."
 b. Jean a parlé avec une fille qui était fatiguée.
 "John spoke with a girl who was tired."

The sentence in (3a), with an embedded complement clause, allows two readings: a *simultaneous* reading where *Mary's tiredness overlaps John's saying* and a *past-shifted*

reading, where *Mary's tiredness* precedes *John's saying time*. The sentence in (3b), with an embedded relative clause, allows three readings: a *simultaneous* reading where *the girl's tiredness* overlaps *John's speaking time*, a *past-shifted* reading where *the girl's tiredness* precedes *John's speaking time* and a *future-shifted* reading where *the girl's tiredness* follows *John's speaking time* but precedes *the utterance-time* (UT-T).

The reading we are interested in here is the *simultaneous* reading, where the embedded eventuality (*Mary's tiredness/ the girl's tiredness*) overlaps the matrix eventuality (*John's saying time/ John's speaking time*). To account for the simultaneous reading of the *past* under *past*, two analyses have been proposed: a so-called “independent” analysis (see Boogaart 1999, Hollebrandse 2000 for child language) and a “dependent” analysis (Ogihara 1996, Kratzer 1998, Kusumoto 1999, a.o).

The *dependent* analysis assumes that the embedded past is a semantically null tense. In Kratzer's terms, the simultaneous construal arises on this analysis from a structure with an embedded *zero tense* (see section 1.2.2), as schematically represented in (4a) below. The *independent analysis* assumes that the embedded past is interpreted as a *true* past tense, expressing anteriority with respect to the utterance-time (UT-T). On this analysis, the simultaneous construal results from a structure where both the matrix and the embedded eventuality are located in the past with respect to UT-T and overlap, as schematically represented in (4b):

(4) a. *Dependent (zero tense) analysis*

[_{TP1} past ... [_{TP2} Ø...]]

b. *Independent analysis*

[_{TP1} past ... [_{TP2}...past...]]

In contrast, the simultaneous construal of a *present under past* is only compatible with a *dependent* analysis of present tense since, on an independent analysis, present is interpreted as expressing simultaneity with UT-T and therefore cannot be used to express what the embedded past tense in (3) expresses.

1.2.2 The Zero Tense Hypothesis

In our account of the facts of child language, we will adopt an approach inspired by Kratzer's (1998) referential theory of tenses. Following Partee (1979, 1984), Kratzer adopts a pronominal view of tenses, according to which tenses are the temporal analogues of pronouns. She suggests that the inventory of tenses in languages like English contain two *indexical* tenses— past and present— and a *zero* tense. *Zero tenses* are the temporal analogues of *zero* pronouns— that is, pronouns construed as bound variables. Just like zero pronouns, which are bound variables with no interpreted features restricting their denotation to male or female individuals, zero past/ present tenses are bound variables with no temporal features, which receive their pronunciation from a local antecedent via an agreement relation.

Previous studies in the acquisition literature (Chien and Wexler 1990, Grimshaw and Rosen 1990, McDaniel et al. 1990, Avrutin and Wexler 1992, Sigurjonsdottir and Coopman 1996) have shown that children acquire bound variable construals of pronouns early on. Extending the parallel between tenses and pronouns to child language, we expect that children have zero tenses from early on, as well. The proposal defended here is that children start off with “zero tenses” in embedded (complement and relative) clauses. We thus propose the following hypothesis:

(5) The Zero Tense Hypothesis

Zero tenses are present in child language early on.

Zero tenses are dependent tenses: what time they are used to refer to depends on what time a higher tense is used to refer to. Assuming the hypothesis in (5), we expect, contrary to Hollebrandse, who argues that dependent tense interpretations are more difficult than independent tense interpretations, that dependent tense interpretations pose no difficulties to children, since they are part of their grammar from very early on.

As we shall see in this dissertation, the study of adult and child languages, will lead to two conclusions: **(i) cross-linguistically**, there are two *zero* tenses: a *past* and a *present*; **(ii) (French) children** pass through a stage where *zero* tenses surface as both *past* and *present*, a fact one could take as evidence for the *Multiple Grammar Hypothesis* (Roeper 1999, Yang 2000, 2011). This will lead us to reformulate the Zero Tense Hypothesis as in (6):

(6) The Zero Tense Hypothesis

- a. Zero tenses are present in child language early on.
- b. Zero tenses in child language surface as both past and present.

Interestingly, there are adult languages like Upper Austrian where both a past and a present can express a simultaneous construal, as the following examples show (the examples are due to Martin Hackl, cited in Schlenker 2000):

(7) a. Context

10 years ago he said: ‘Ich arbeite für BayBank’ [‘I work for BayBank’]
[BayBank doesn’t exist any more, so a double-access reading doesn’t make sense in this situation]

- a. Vor zehn Jahren hat er mir gesagt, daß er für BayBank arbeitet.
before ten years has he to me said that he for BayBank **works**
“Ten years ago he told me that he worked for BayBank”.
- b. Vor zehn Jahren hat er mir gesagt, daß er für Baybank gearbeitet hat.
before ten years has he to me said, that he for BayBank **worked has**
“Ten years ago he told me that he worked for BayBank”.

That children go through a stage involving a parameter setting not part of the target grammar, but reflecting a setting for other languages, is expected under the Continuity Hypothesis, according to which child language variation from the target language is constrained by Universal Grammar (Crain and Thornton 1998).

1.2.3 Outline of the dissertation

The rest of this dissertation is organized as follows: **chapter 2** discusses the interpretation of *past* and *present* under past in languages like English or French *versus* languages like Japanese. In section 2.1, I review the construal of past under past. Following the literature, I show that in English/ French-like languages, an embedded past is ambiguous between a simultaneous and a past-shifted interpretation, whereas in Japanese-like languages it can only express a past-shifted interpretation. In section 2.2, I review the construal of the *present* under past. I show that in English/ French-like languages, an embedded present is always indexical,

whereas in Japanese-like languages it can be either simultaneous or indexical. In section 2.4, I review three tense theories— Ogiwara (1996), Kusumoto (1999) and Kratzer (1998) concentrating on the way these theories explain temporal simultaneity and the contrast between English and Japanese *present* in relative clauses. The ingredients of my own analysis of the child data are drawn from these three theories.

Chapter 3 investigates the acquisition of *present* in subordinate clauses under a matrix past. In section 3.1, I recapitulate the interpretation of present under past in English/French like languages *versus* Japanese-like languages. In section 3.2, I discuss Hollebrandse's (2000) experiment investigating the construal of present tensed relative clauses under a matrix past in Dutch, which shows that Dutch children have adult-like interpretations of the present in relative clauses under a matrix past. This provides a background to our experiments investigating the construal of the present under past in French which I present in section 3.3. In section, 3.3.1, I discuss our experiment from Demirdache and Lungu (2009, 2011) ("Experiment 1") testing the acquisition of the present in both *complement* and *relative* clauses embedded under a matrix past in French child language. In this experiment, French children *accepted* simultaneous construals of present tensed complement clauses, unavailable in adult French but available in adult Japanese. Moreover, French children *accepted* the simultaneous construal, but *rejected* the indexical construal of present tensed relative clauses. On the basis of the complement clause results, I argue that French children have a zero tense construal of the *present* in complement clauses. As for the relative clause results, these suggest that children not only permit a zero tense construal of the present in relative clauses, but in fact *enforce* it, and I consider an explanation due to Demirdache and Lungu (henceforth, D&L 2009, 2011) for why this would be the case. However, in the following sections, I bring up facts that put the relative clause findings in another light. In section 3.3.2, I discuss an experiment with French adults testing the construal of the present in relative clauses under a matrix past. I show that some French adults like French children accept the simultaneous construal of the present and I argue that this is due to the experimental design: I suggest that it leads adults to resort to a parsing strategy, which consists in reanalyzing the relative clause as a "reduced clause". Specifically, I hypothesize that adults resort to the "reduced clause" strategy only when the felicity conditions for the use of the present are not met, and, in section 3.3.3, I discuss a follow-up experiment with the same adults which validates this hypothesis. In section 3.3.4, I reconsider the child data with simultaneous construals of relative clauses in light of the explanation proposed to account for the adult data. I point out that, in principle, the simultaneous readings for relative clauses that we find in the

child data could be due to the same kind of parsing strategy that adults use, and this means that, without further argument, we cannot conclude (as D&L do) that they result from structures with zero tense. A new experiment testing children's construal of the present in relative clauses under a matrix past is thus needed.

The major goal of **chapter 4** is to propose an experiment which allows us to distinguish between the two hypotheses considered in chapter 3 to explain simultaneous construals of present tense in relative clauses – namely, the “Zero Tense Hypothesis” and the “Reduced clause Hypothesis”. The premise underlying the experimental design is that reduced clauses are not always available in French. For instance, a sentence with an embedded *copula plus PP*, such as *Anne a caressé le chat qui **est sur la chaise*** “Anne petted the cat who is on the chair” (representative of the kind of test sentence used in Experiment 1), makes the “reduced clause” strategy available. In contrast, a sentence with an embedded *activity verb* such as *Anne a embrassé la fille qui **pleure*** “Anne kissed the girl who is crying” does not make the “reduced clause” strategy available. Experiment 2 is precisely designed to test the latter kind of sentence, which does not allow the “reduced clause” strategy. The predictions, given in section 4.2 of this chapter, are as follows: given that the “reduced clause” strategy is no longer available, (i) if children have a “zero tense” in their grammar, they should *allow* the simultaneous construal of the present in relative clauses; (ii) if children do not have a zero tense in their grammar, they should *disallow* the simultaneous construal of the present in relative clauses. The results presented in section 4.2.1.6 show the existence of two populations: one non-adult-like, which allows a “zero” present and another adult-like, which does not allow it. I conclude that the acceptance of the simultaneous construal of the present brings compelling evidence for the Zero Tense Hypothesis: French children have a zero *present* tense alongside an indexical present. In section 4.3, I present another experiment which brings further evidence for the existence of a zero present in child language. This experiment tests the interpretation of the *future* in complement clauses under a matrix past in two contexts: (i) a context where the embedded eventuality takes place after the matrix eventuality but before UT-T, and (ii) a context where the embedded eventuality takes place after UT-T. The main finding is that children both *accept* and *produce* a simple future in context (i). I take this finding to suggest that children have a *dependent* future tense. I conclude that this result provides further evidence for the “zero tense” analysis of the present on the assumption that the future in child French is analyzed as a zero (present) tense plus a (future) modal.

In the last three chapters, I turn to the construal of past under past. **Chapter 5** investigates the construal of the past in *relative* clauses embedded under a matrix past. In section 5.1, I review the construals of the past in relative clauses under a matrix past. In section 5.2, as background to the discussion of the French child data, I present an experiment of Hollebrandse's which shows that Dutch children have adult-like interpretations of the past in relative clauses under a matrix past. In section 5.3, I present the results of our Experiment 1 with French children, which makes the reduced clause strategy available. I show that children allow simultaneous construals, but reject non-simultaneous construals of the past in relative clauses, a pattern reminiscent of the pattern obtained with the present in relative clauses under a matrix past. However, unlike the results with the present, which, as stated in chapter 3, are compatible with either the "Zero Tense" analysis or the "Reduced Clause" analysis. I go on to show that the results with the past are only compatible with the "reduced clause" analysis. In section 5.4, I discuss Experiment 2, which makes the "Reduced Clause" strategy unavailable. The results of this experiment are very telling. Children, like adults, accept both the simultaneous and the non-simultaneous construals of the past in relative clauses. On the basis of these findings, (and in particular on the basis of the acceptance of the non-simultaneous/future-shifted construal of relative clauses), I conclude that children have adult-like interpretations of the past tense in relative clauses.

Chapter 6 investigates the construal of the *past* in *complement* clauses under a matrix past. One of the main concerns of this section is to argue against a hypothesis about the acquisition of tense proposed by Hollebrandse (2000)— the Independency Hypothesis— and in favor of the Zero Tense Hypothesis. On the Independency Hypothesis, unlike on ours, dependent tenses are *not* present in child language early on. In section 6.1, I recapitulate the interpretations of past under past in English/ French-like languages *versus* Japanese-like languages. In section 6.2, I present an experiment that Hollebrandse (2000) uses to motivate the Independency Hypothesis and I critically examine the results. First, in section 6.2.1.1, I discuss Japanese children's acceptance of the simultaneous construals of past tensed relative clauses, which on Hollebrandse's proposal means that children have not acquired subordination. Our Zero Tense Hypothesis allows another interpretation of these facts: Japanese children, like French children, have acquired subordination but interpret the embedded (past) tense as a zero tense. On our Zero Tense Hypothesis, this finding thus shows that Japanese children, like French children, have both *past* and *present* zero tenses. In section 6.2.1.2, I discuss the acceptance of the future-shifted readings of the past, which provides the main argument in favor of the Independency Hypothesis. I observe that the argument only

holds if children accept the future-shifted reading before UT-T while rejecting the future-shifted reading after UT-T of a past in a complement clause under a matrix past. However, I point out using Hollebrandse's own results that children accept *both* the future-shifted reading before UT-T *and* the future-shifted reading after UT-T. I thus conclude that Hollebrandse's Independency Hypothesis is not well founded and that the acceptance of the future-shifted readings should receive a different explanation. In section 6.2.3, I briefly discuss evidence from our experiments with French children which argues against the Independency Hypothesis and in favor of a *dependent* tense hypothesis such as our Zero Tense Hypothesis. Finally, in section 6.2.5, I draw a parallel between the acquisition of zero tenses and the acquisition of zero pronouns.

I take the position that the future-shifted readings of the past in childrens' complement clauses are in fact *futurate* readings of the past, to be related to the futurate phenomena discussed notably by Copley (2002). **Chapter 7** elaborates this view. In section 7.1, I discuss the distribution of futurate readings of present and past in simple (section 7.1.1) and in embedded (section 7.1.2) contexts in adult language. In section 7.1.3, I turn to analyses of futurate readings. I first discuss Copley (2002)'s analysis of futurate readings in simple contexts in English (section 7.1.3.1). I show that this account manages to accommodate adult futurate readings of the imperfective past in *both* future-shifted before and after UT-T contexts, but it does not do justice to adult futurate readings of the French present perfect, which is restricted to future-shifted after UT-T contexts. I thus propose an alternative analysis (section 7.1.3.2) which succeeds in accommodating all futurate readings in simple and embedded contexts. On this proposal, the contrasting behavior of the imperfective past and the present perfect in French with respect to the distribution of futurate readings lies in the indexicality of the present component of the present perfect. In section 7.2, I turn to the acquisition data with French children and show that these data bring evidence in favor of a futurate treatment of the past in future-shifted contexts, one on which the past tense describes the temporal argument of an implicit modal. Finally, the proposal that (French) children have a zero present alongside an indexical present in their grammar, nicely explains why children, unlike adults, allow future readings in future-shifted before UT-T contexts.

CHAPTER 2

Tense in embedded clauses: SOT *versus* non-SOT languages

Languages differ in the way they express temporal simultaneity in embedded contexts: in so-called SOT languages such as English or French, when the embedding verb is in the past tense, temporal simultaneity requires a morphological *past*, whereas in so-called non-SOT languages such as Japanese, temporal simultaneity requires a *present*. In the following subsections, I review the interpretation of the past and the present in SOT *versus* non-SOT languages. On the one hand, I describe the facts that concern *complement clauses*. In *complement clause* environments, SOT languages differ from non-SOT languages with respect to the construal of the *past* under past: while in SOT languages, past can yield either (i) a *simultaneous* construal where the embedded eventuality overlaps the matrix eventuality, or (ii) a *past-shifted* construal, where the embedded eventuality precedes the matrix eventuality, in non-SOT languages, past under past always yields a past-shifted construal. On the one hand, I describe the facts that concern *relative clauses*. In *relative clause* environments, SOT languages differ from non-SOT languages with respect to the construal of the *present* under past: while in SOT languages, present always yields an *indexical* construal, where the embedded eventuality overlaps UT-T, in non-SOT languages, it can yield either an indexical or a simultaneous construal. I finally review three theories of tense—Ogihara (1996), Kusumoto (1999) and Kratzer (1998) concentrating on the way these theories capture the contrast between SOT and non-SOT languages.

2.1 Past under past

I start by presenting the interpretations of the past in relative clauses and complement clauses in SOT languages like English or French *versus* non-SOT languages like Japanese.

2.1.1 SOT languages

In SOT languages such as English or French, sentences such as (1a)-(1a') with an *imperfective past* in a *relative clause* embedded under a matrix past allow three readings: (i) a

simultaneous reading, where the embedded eventuality (*the girl's tiredness*) overlaps the matrix eventuality (*the talking*), **(ii)** a *past-shifted* interpretation, where the embedded eventuality precedes the matrix eventuality and **(iii)** a *future-shifted* interpretation, where the embedded eventuality follows the matrix eventuality but precedes UT-T.

- (1) a. John talked to a girl who *was* tired.
 a'. Jean a parlé avec une fille qui *était* fatiguée.
- b. John thought that Mary *was* tired.
 b'. Jean croyait que Marie était fatiguée.

In contrast, sentences such as (1b)-(1b'), with a past tensed *complement clause* embedded under a matrix past, allow only two interpretations: **(i)** a *simultaneous* interpretation where the embedded eventuality (*Mary's tiredness*) overlaps the matrix eventuality (*John's thinking*) and **(ii)** a *past-shifted* interpretation, where the embedded eventuality (*Mary's tiredness*) precedes the matrix eventuality (*John's thinking*). Crucially, (1b) does not allow a *future-shifted* interpretation, where the embedded eventuality (*Mary's tiredness*) follows the matrix eventuality (*John's thinking*).

2.1.2 Non-SOT languages

Just like in SOT languages, in non-SOT languages such as Japanese, sentences such as (2a) with an embedded past in a relative clause under a matrix past express **(i)** a *simultaneous*, **(ii)** a *future-shifted* or **(iii)** a *past-shifted* interpretation.

- (2) a. John-wa tabako-o sut-te i -ta otoko- ni at-ta
 John-TOP cigarette-ACC smoke-PROG-PAST man-DAT meet-PAST
 "John met a man who was smoking."

(Ogihara 1996: 69)

- b. Taro-wa Hanako-ga byooki-dat-ta to it- ta.
 Taro-TOP Hanako-NOM be-sick-PAST that say-PAST
 "Taro said that Hanako had been sick."

(Ogihara 1996: 7)

Unlike in SOT languages like English or French, in non-SOT languages like Japanese, sentences such as (2b) with a past tensed complement clause embedded under a matrix past yield a *past shifted* reading only.

To summarize, in a *past under past* configuration, the difference between SOT languages and non-SOT languages concerns *complement clause environments*: while in SOT languages, past in complement clauses has either a simultaneous or a past shifted interpretation, in non-SOT languages, it only has a past-shifted interpretation.

2.2 Present under past

I now turn to the interpretation of present in relative clauses and complement clauses embedded under past in SOT languages like English or French *versus* non-SOT languages; like Japanese.

2.2.1 SOT languages

In SOT languages like English or French, sentences such as (3a)-(3a') with a present in a complement clause embedded under a matrix past have a so-called *double access* interpretation (Enç 1986, 1987; Abusch 1994, Ogiwara 1996), where the embedded eventuality overlaps both the matrix eventuality and UT-T. Thus, (3a)-(3a') allude to a state of Mary's that occurs at an interval overlapping both *John's thinking* and *UT-T*.

- (3) a. John thought that Mary *is* tired.
 a'. Jean croyait que Marie *est* fatiguée.
- b. John talked to a girl who *is* tired.
 b'. Jean a parlé avec une fille qui *est* fatiguée.

Sentence such as (3b)-(3b'), with *present* tensed relative clauses embedded under a matrix past have a so-called *indexical* interpretation, where the embedded eventuality *overlaps* UT-T. Thus, (3b)-(3b') are true when *the girl whom John talked to is tired at UT-T*, irrespective of whether she is also tired at John's *talking* time.

2.2.2 Non-SOT languages

In a non-SOT language like Japanese, sentences with a *present* in a subordinate clause embedded under a matrix past — be it a relative clause ((4a)) or a complement clause ((4b))— have a *simultaneous* interpretation¹⁷:

- (4) a. Taroo-wa nai-te i -ru otoko-o mi-ta
 Taroo-TOP cry-PROG-PRES man-ACC see-PAST
 “Taro saw a/ the man who was crying (at the time of the meeting).”
 (Ogihara 1996: 69)
- b. Taroo-wa Hanako-ga byooki-da to it- ta.
 Taro-TOP Hanako-NOM be-sick-PRES that say-PAST
 “Taro said that Hanako was sick.”
 (Ogihara 1996:153)

However, as pointed out by Ogihara (1996: 154), the sentence in (4b), with a present tensed relative clause embedded under a matrix past can also have an *indexical* interpretation if the adverb “ima” *now* is added in the embedded clause:

¹⁷ Interestingly, in other so-called “non-SOT” languages like Russian, while present in a *complement* clause under a matrix past ((i)) yields a *simultaneous* interpretation, present in a *relative* clause under a matrix past ((ii)) only yields an *indexical* interpretation (see Lungu 2008, Percus and Lungu 2011 for a discussion of such cases and Schlenker 2003, Altshuler 2004; 2008, Khomitsevich 2008, Grønn and von Stechow 2010a,b for extensive discussion of temporal construals of complement clauses and relative clauses in Russian).

- (i) God nazad Ivan dumal, čto Maša boleet.
 Year ago Ivan think-PAST that Masha ail-PRES
 “A year ago Ivan thought that Masha was ill (*at the time of thinking*).”
 (Khomitsevich 2008: 2)
- (ii) Ivan uvidel devočku, kotoraja (sejčas) sidit na skamejke.
 Ivan saw girl who (now) sit-PRES on bench
 “Ivan saw a girl who is sitting on a bench (*now*).”
 (Khomitsevich 2008: 57)

- (5) Taroo-wa asoko-de *ima* nai-te i -ru otoko-o kinoo mi-ta
 Taroo-TOP there-at now cry-PROG-PRES man-ACC yesterday see-PAST
 “Yesterday, Taro saw the man who is now crying over there.”
 (Ogihara 1996: 154)

We can thus notice that there are two major differences between SOT and non-SOT languages. The first concerns the way they express the simultaneous construal. This difference can be formulated as the SOT parameter, stated as follows:

(6) **The SOT parameter**

- i. in SOT languages like English or French, simultaneous construals under a matrix past require a *past*
- ii. in non-SOT languages like Japanese, simultaneous construals under a matrix past require a *present*

The second difference concerns the present in relative clauses under a matrix past, which, as mentioned above, in SOT languages, always yields an *indexical* construal, whereas in non-SOT language like Japanese, it can yield either a *simultaneous* or an *indexical* construal.

The questions that arise with respect to language acquisition are the following: **(i)** do children speaking SOT languages like English or French know that in their language, an embedded present under past is indexical while an embedded past under past can yield a simultaneous reading? And conversely, **(ii)** do children speaking non-SOT languages like Japanese know that in their language an embedded present can yield a simultaneous reading while an embedded past under past yields a past-shifted reading?

Since this thesis investigates the acquisition of tense in embedded contexts in French child language, the specific questions that we will be asking are: **(i)** does a French child know that in his/her language simultaneous interpretations require an embedded past and **(ii)** does he/she know that present in a relative clause is always indexical? These questions will be explored throughout this dissertation. As stated in Chapter 1, section 1.2.2, our conclusion will be that French children pass through a stage where both options of the SOT parameter (*past* and *present*) are active and where *present* is ambiguous between an indexical and a vacuous tense.

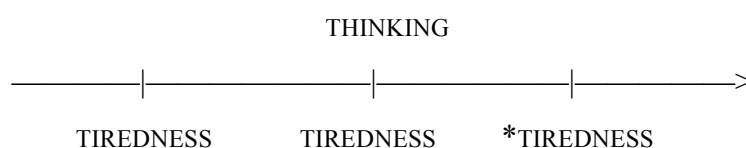
2.3 Complement *versus* relative clauses: the future-shifted construal

In the previous section, we have seen that, in both SOT and non-SOT languages, complement clauses, unlike relative clauses, cannot allow a future-shifted construal of either past or present. Let us consider again the relevant examples from English, given in (1b) and (3a) and repeated here in (7):

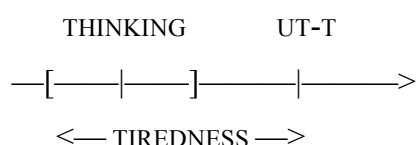
- (7) a. John thought that Mary was tired.
b. John thought that Mary is tired.

Recall that (7a) can have either a simultaneous or a past-shifted reading, whereas (7b) has a double access reading only. However, neither (7a) nor (7b) can have a future-shifted reading. The possible readings of the two sentences are illustrated with the diagrams in (8):

- (8) a. **Complement clauses: future shifted construal**



- b. **Complement clauses: double access construal**



Note that, in particular, (7a) cannot have a future-shifted reading where the tiredness occurs before UT-T and (7b) cannot have a future-shifted reading where the tiredness occurs at UT-T but not before. To the extent that past tense in other examples seems to be used to talk about times before UT-T and present tense seems to be used to talk about UT-T, this raises a question: what prohibits these future-shifted readings? To account for the lack of the future-shifted readings of complement clauses, Abusch (1994, 1997) proposes the Upper Limit Constraint (ULC):

(9) The Upper Limit Constraint (Abusch 1994: 110)

The local evaluation time is an upper limit for the reference of tenses.

Since the reference of the matrix tense is taken to be the local evaluation time for the embedded clause¹⁸, the ULC prohibits a past in a complement clause from referring to a time *after* the matrix event time.

Crucially, for Abusch, the ULC concerns tenses but not modals. This has two interesting consequences. First, it allows a future in both simple contexts and in embedded contexts to be used to refer to a time later than its local evaluation time (i.e. UT-T), since for Abusch future is a modal rather than a tense. And second, as we will see later on, it also allows so-called *futurate*¹⁹ construals of the present, on the assumption that, in these cases, the future meaning is contributed by a modal and not the present tense (see our discussion in chapter 7, section 7.1.2).

2.4 Theories of tense in embedded contexts

I now turn to theories of tense in embedded contexts. I will discuss three such theories—Ogihara (1996), Kusumoto (1999) and Kratzer (1998)—and show how these theories capture the contrast between SOT and non-SOT languages. I have chosen to discuss precisely these three theories because the assumptions that I will be making in order to explain the child data have sources in all three. The approach that I will take in later chapters can best be seen as a variant of Kratzer’s: I will be following Kratzer in assuming that there are “zero tenses” – tenses that just contribute bound variables. At the same time, I will treat some tenses as operators in the way Ogihara does, and certain aspects of my discussion (see Chapter 4) are inspired by Kusumoto. I hope that this discussion can also serve another purpose. As we will

¹⁸ This is a simplification of Abusch’s position. Abusch’s treatment of evaluation times is such that, in attitude contexts, the local evaluation time is the time at which the attitude holder situates himself.

¹⁹ Futurate construals of the present are instances where a morphological *present* occurs with a *future*-oriented eventuality as in (ia) and (ib) below:

- (ii) a. Mary *is* singing tomorrow.
- b. John said that Mary *is* singing tomorrow.

see, the important differences between the three theories are few, and so it is often easy to “translate” an analysis based on the assumptions of one theory into an analysis based on the assumptions of another. (For example, we will see that the structures assumed by Kusumoto and the structures assumed by Kratzer are generally very similar.) I hope that this discussion can help the reader to imagine without much effort how the different approaches could see the data we will be considering later.

Throughout this section, I will assume that syntactic structures are compositionally interpreted via rules along the lines of those in Heim and Kratzer (1998). Along the lines of much work in that tradition, I will assume that semantic values for constituents are determined with respect to an assignment parameter and a context parameter. Where necessary, I have adapted my discussion of the three theories to fit these assumptions. I have also taken a few liberties with the theories in question, minimizing superficial differences so that the principal differences emerge more clearly. At the end of the description of Kratzer’s approach, I will briefly mention variants of this approach that one might consider, such as the variant that I will be assuming in some of the later chapters.

2.4.1 Ogiwara (1996)

Primarily for historical reasons, I will begin with Ogiwara’s approach.

Ogiwara argues that the distinction between English and Japanese lies in the nature of the *present* tense²⁰: the English present is an overt *absolute* tense, one that is inherently indexical, whereas the Japanese present is a covert *relative* tense²¹. Being a relative tense, the Japanese present is able to express simultaneity with the matrix event-time. Since English does not have a relative present tense, it needs an additional mechanism that can delete tense

²⁰ In his 1999 paper “Double-Access Sentences Generalized”, Ogiwara makes the following observation with respect to present tense in Japanese *versus* English: “In Japanese, what is assumed to be a present tense sentence is in fact morphologically tenseless. By contrast, English has no such option. All sentences in the present tense bear an absolute present tense.” (p. 4). As we can see from this quotation, Ogiwara assumes that Japanese has no overt morphology to mark present tense whereas English does; yet, both Japanese and English have a meaningful item PRES that occupies the temporal argument position of the verb. The terminology *absolute/relative (present) tense* refers precisely to this item and not to its morphological realization.

²¹ For Ogiwara, the distinction *absolute vs. relative* tenses is in the sense of Comrie 1985, who posits that *absolute tenses* are tenses that encode as part of their meaning UT-T, while *relative tenses* are tenses which are interpreted relative to a reference time provided by the context.

morphemes, thus allowing English to express what Japanese can express with a structure with an inherently relative present tense. This mechanism is the so-called SOT rule, which deletes embedded tenses in certain temporal configurations (i.e., when they are c-commanded by a higher tense with the same temporal features). I will illustrate the SOT rule later on when I discuss the construal of tense in embedded contexts.

Let's now turn our attention to simple present tense sentences in Japanese and English and see how Ogihara's system derives their meanings. I will start with Japanese.

2.4.1.1 Japanese

Consider the following Japanese sentence:

- (10) Taroo-go koko-ni i-masu.
 Taroo-NOM here-at be-PRES
 "Taro is here."

(Ogihara 1996: 4)

In Japanese, a present tense sentence is true if the property denoted by the verb (i.e., *Taro's presence*) holds at $UT-T^{22}$. Ogihara assumes the following lexical entry for the Japanese *present*^{23,24}:

²² In Japanese, a present tense sentence such as (10) can also express a *future* meaning. As we shall see in chapter 7, section 7.1, the English present can also be used with a future meaning. This special use of the English present is nevertheless restricted to *planned* events, as illustrated in (i):

- (i) John leaves for Paris tomorrow.

As Ogihara observes, the Japanese present is different in that, unlike the English present, it can express a future meaning irrespective of whether the described event is planned or not.

²³ As we can see below ((12b)), this lexical entry allows us to account for the indexical reading of the present. To account for the future meaning of (10), Ogihara assumes a second lexical entry for PRES, also unrealized morphologically. Our version of Ogihara's lexical entry for PRES in future contexts is given in (ii) (where ">" stands for the subsequence relation):

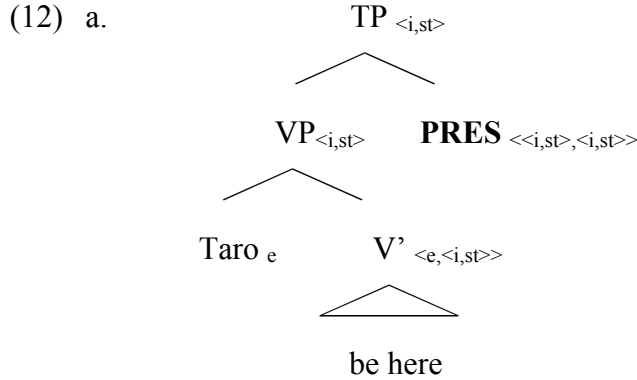
- (i) $[[PRES]]^{g,c} = \lambda P_{\langle i, st \rangle} \lambda t_i \lambda w_s$. there is a time t' such that $\underline{t'} > t$ and $P(t')(w) = 1$

Note that the semantic value of the present in (i) predicts that, in embedded contexts, a present under a matrix past should, in principle, be able to express a *relative* future meaning, where the embedded clause event follows

(11) **Japanese present**

$$[[\text{PRES}]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } \underline{t' \text{ o } t} \text{ and } P(t')(w) = 1$$

As we can see in (11), the Japanese *present* creates a predicate of times^{25,26} that holds of times overlapping *the evaluation time*. Assuming this lexical entry for PRES, the Japanese sentence in (10) has the structure in (12a) and the truth conditions in (12b)²⁷:



the matrix past event but precedes UT-T. This is not the case, at least in relative clauses, as Ogiwara himself shows with the following example, which is ungrammatical under a future-shifted reading:

- (ii) Taroo-wa eki-de kinoo nai-te i-ru otoko-o ototoi
 Taro-TOP station-at yesterday cry-PROG-PRES man-ACC the-day-before-yesterday
 mise-de mi-ta.
 store-at see-PAST
 “The day before yesterday, Taro saw at the store the man who was crying at the station yesterday”.

(Ogiwara 1996: 154)

²⁴ In specifying semantic values, I will often write “[X]^{g,c} = ...” to abbreviate “For all g,c for which [X]^{g,c} is defined, [X]^{g,c} = ...”.

²⁵ I adopt an intensional system where predicates also semantically select for a world argument. In this system, on the basis of a sentence we recover a proposition, i.e., a function from worlds to truth values.

²⁶ I will refer to functions from time intervals to propositions (type <i,st>) as “temporal properties” or “predicates of times”.

²⁷ Here, I use the symbol “o” for the overlap relation. By “t_c” I mean the temporal component of the context c.

b. $[[\text{Taro here-be PRES}]]^{g,c} = \lambda t_i. \lambda w_s. \text{there is a time } t'$

such that $t' \circ t$

and Taro is here(c) at t' in w

$[[\text{Taro here-be PRES}]]^{g,c}(t_c) = \lambda w_s. \text{there is a time } t'$

such that $t' \circ t_c$

and Taro is here(c) at t' in w

A few remarks on Ogihara's system. In this system, all simple sentences are evaluated with respect to UT-T, and UT-T dependency is part of *the truth definition of the sentence* (i.e., to say a sentence S is true is to say for an assignment g that $[[S]]^{g,c}(t_c)(w_c) = 1$, where c is the context of utterance— or in other words, that S is true evaluated at UT-T and the actual world). To incorporate Ogihara's idea in the framework presented here, where on the basis of a sentence we recover a proposition, I will assume that t_c is supplied as an argument at the matrix level (cf. (12b)). Thus, as we can see in the “last step of the derivation” given in (12b), overlap with the speech time is obtained by a mechanism which operates at the sentence level and supplies the time argument, t_c .

2.4.1.2 English

Turning now to English, consider the sentence in (13):

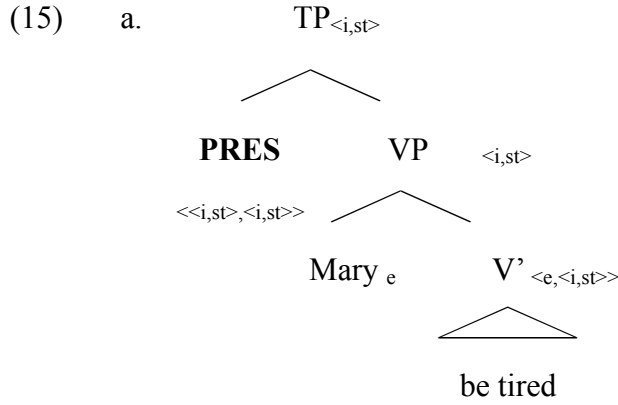
(13) Mary is tired.

In English, a present tense sentence is true if the property denoted by the verb (i.e., *Mary's tiredness*) holds at UT-T. According to Ogihara, this is due to the nature of the English present, which is born *indexical*. To capture the indexical meaning of the English present in the style of Ogihara, I will assume the lexical entry in (14), where *present* creates a predicate of times that holds of times overlapping the UT-T.

(14) **English present**²⁸

$$[[\text{PRES}]]^{g,c} = \lambda P_{\langle i,st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } \underline{t' o t_c} \text{ and } P(t')(w) = 1$$

Under this analysis, the LF representation of the sentence in (13) is as in (15a). To illustrate Ogihara's analysis, I give the derivation of the sentence's truth conditions in (15b-e)²⁹:



Calculation

b. $[[\text{be tired}]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is tired at } t \text{ in } w$

c. $[[\text{Mary be tired}]]^{g,c} = \lambda t_i. \lambda w_s. \text{Mary is tired at } t \text{ in } w$

d. $[[\text{PRES Mary be tired}]]^{g,c} = \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that}$

$$\underline{t' o t_c} \text{ and}$$

Mary is tired at t' in w

e. $[[\text{PRES Mary be tired}]]^{g,c} (t_c) = \lambda w_s. \text{there is a time } t' \text{ such that}$

$$t' o t_c \text{ and}$$

Mary is tired at t' in w

²⁸ As the attentive reader might notice, the temporal argument is idle here. The reason I assume this extra idle argument is to make the semantic value for the English PRES parallel to the semantic value of the Japanese PRES (see (11)) as far as types are concerned.

²⁹ I assume the VP internal subject hypothesis, where a subject is generated inside the VP and moves overtly for case reasons to SpecIP (at least in English). However, for ease of exposition, I will put it back in its original position in the LF structures.

As we can see from the calculation, the tenseless VP *Mary be tired* denotes a property that holds of a time *t* and a world *w* if Mary is tired at *t* in *w*. *Present* further says that the property in question is true of times *overlapping UT-T*.

Notice that for English the UT-T dependency “at the top” is redundant since the lexical entry for *present* already contains reference to UT-T.

2.4.1.3 Embedded contexts

We are now in a position to consider the differences between the English and the Japanese embedded clauses. We will concentrate on the differences between the English-like relative clauses and the Japanese-like relative clauses since they will become important for us later on (see chapter 3). Recall that the core difference between English and Japanese relative clauses concerns the simultaneous interpretation of a present under past, available in Japanese, but not in English. According to Ogihara, this contrast is precisely due to the nature of the present tense: the simultaneous reading is available in Japanese because the Japanese present is a *relative* tense, but not in English because the English *present* is an *absolute* (that is, inherently indexical) tense.

In the following subsections we will see how Ogihara’s system derives the interpretations of the *present in a relative* clause under a matrix past in English and Japanese. We will consider Japanese first.

2.4.1.3.1 Japanese

Recall that in Japanese, sentences such as (4a) with a present tensed relative clause under a matrix past, repeated here in (16), are ambiguous between a simultaneous and an indexical interpretation:

- (16) Taroo-wa nai-te i -ru otoko-o mi-ta
 Taroo-TOP cry-PROG-PRES man-ACC see-PAST
 “Taro saw a/ the man who was/ is crying.”

To account for the two interpretations, Ogihara makes the following assumptions: **(i)** Japanese relative clauses are full-fledged structures involving a CP projection³⁰; **(ii)** relative clauses are objects of type $\langle e, \langle i, st \rangle \rangle$ that combine conjunctively with the NPs they modify, also of type $\langle e, \langle i, st \rangle \rangle$. Thus, in (16a), the noun *otoko-o* ‘man’ combines conjunctively with the relative clause *nai-te i-ru* ‘who is crying’ forming the NP *nai-te i-ru otoko-o* ‘man who is crying’, which further combines with the indefinite determiner³¹ *a* to form a DP; **(iii)** all DPs with determiners are generalized quantifiers (elements of type $\langle \langle e, \langle i, st \rangle \rangle, \langle i, st \rangle \rangle$) that undergo Quantifier Raising (May, 1977) at LF; **(iv)** the Japanese present, unlike the English present, is as we have seen a *relative* tense, i.e., it makes reference to overlap with the evaluation time; **(v)** the Japanese past is a “back-shifting” tense with the semantic value below³²:

$$(17) \quad [[\text{PAST}]]^{\text{g,c}} = \lambda P_{\langle i, st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } \underline{t'} < t \text{ and } P(t')(w) = 1$$

Ogihara argues that the ambiguity of the Japanese sentence in (16) is determined by the relative height of the DP containing the relative clause with respect to the matrix tense. When the DP has narrow scope with respect to the matrix PAST, the sentence yields a simultaneous reading. When the DP has wide/ maximal scope with respect to the matrix PAST, the sentence yields an indexical reading.

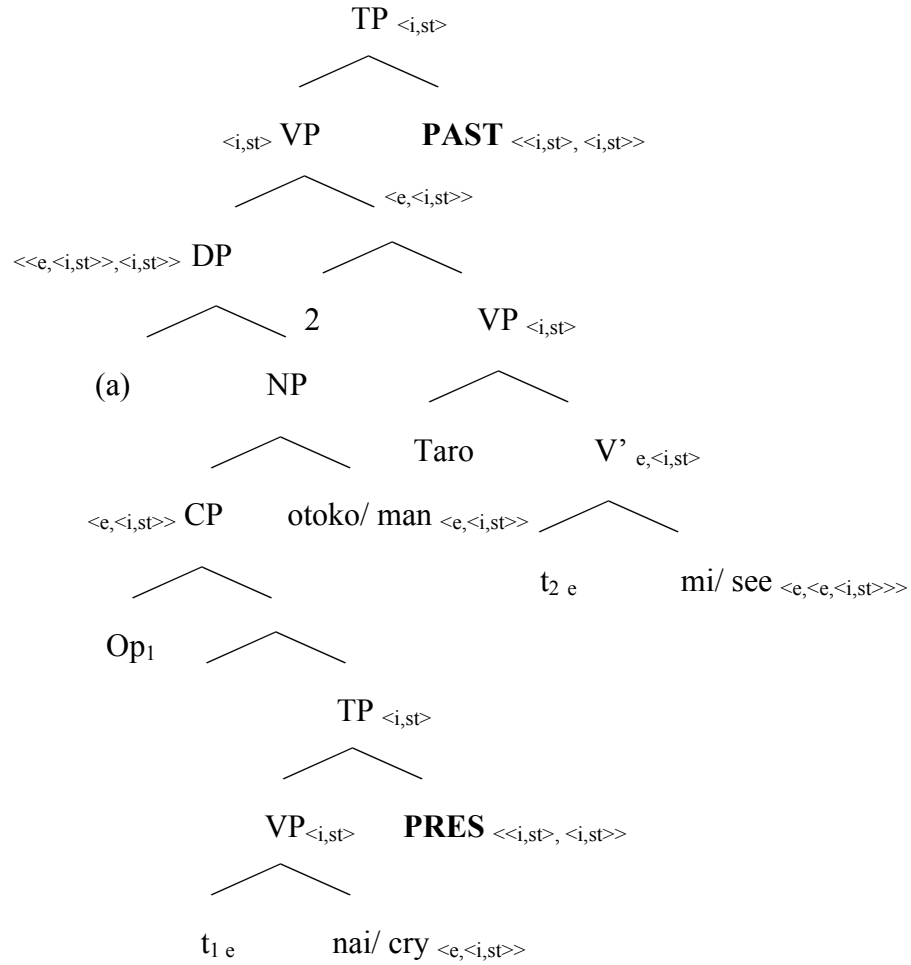
Under this analysis, the structure for the simultaneous construal of (16) is as in (18):

³⁰ Japanese does not have an overt *wh*- operator in relative clauses. However, Ogihara assumes that Japanese has a covert operator similar to its English counterpart. I assume the standard analysis of relative clauses according to which relative clauses involve movement of a *wh*-/ null operator to the specifier position of the embedded CP and represent the null operator as “Op”. Movement creates an operator-variable configuration: the *wh*- operator (or more precisely the index 1 on the operator, cf. Heim and Kratzer) binds the variable t_1 left by its movement to Spec CP.

³¹ Japanese does not have (in)definite determiners either. However, Ogihara assumes that the Japanese NPs are interpreted as if there was one. In the LF structures, I will represent the presence of covert determiners in parenthesis.

³²Here, the symbol “<” indicates the precedence relation.

(18)

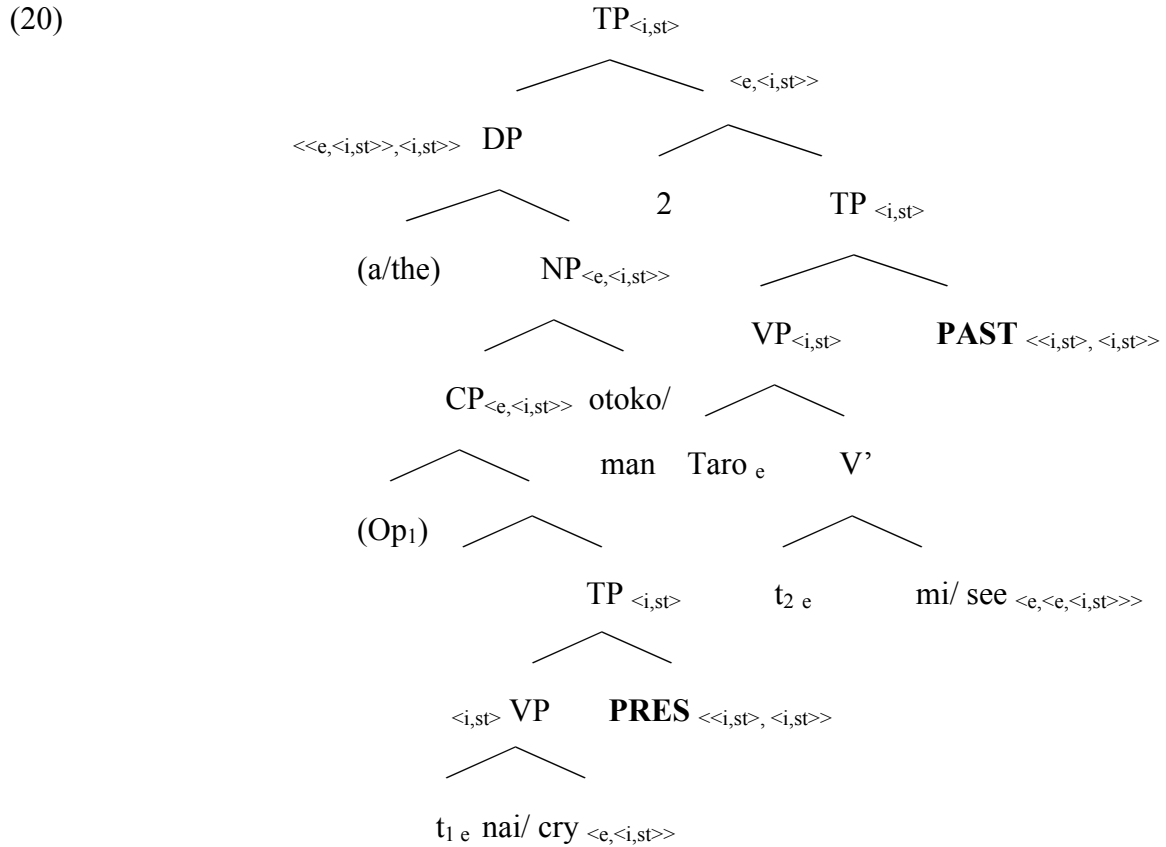


On Ogihara's analysis, the DP object is raised and adjoined to the matrix VP. This enables the embedded PRES to remain under the scope of the matrix PAST, which provides its evaluation time. This structure thus yields a *simultaneous* reading, where *Taro saw at some past time a man who was crying then*. The semantic value for the structure in (18) is given in (19)³³.

³³ In the **Appendix** to this chapter, I have included the calculation of the semantic value for one of the structures I consider later in this review of Ogihara (the structure in (22)). The calculations for all the structures in this section – including this one should be recoverable given the details there.

- (19) $[[[(18)]]]^{g,c}(t_c) = \lambda w_s. \text{there is a time } t''$
 such that $t'' < t_c$
 and there is an individual y
 such that y is a man at t'' in w
 and there is a time t'
 such that $t' < t''$
 and y is crying at t' in w
 and Taro sees y at t'' in w

The structure for the indexical reading is given in (20):



In (20), we notice that the relativized DP *nai-te i-ru otoko-o* ‘(a/the) man who is crying’ has raised out of the VP and, this time, adjoined to the matrix TP, thus having wide scope with respect to the matrix PAST. This enables the embedded tense to escape the scope of the matrix tense. The two tenses are thus independent of each other and both interpreted with respect to UT-T, as shown by the sentence’s truth conditions given in (21c):

- (21) a. $[[DP]]^{g,c} =$

$= \lambda Q_{\langle e, \langle i, st \rangle \rangle}. \lambda t_i. \lambda w_s. \text{there is an individual } y$
 such that y is a man at t in w
 and there is a time t' such that $t' o t$
 and y is crying at t' in w
 and such that $Q(y)(t)(w) = 1$

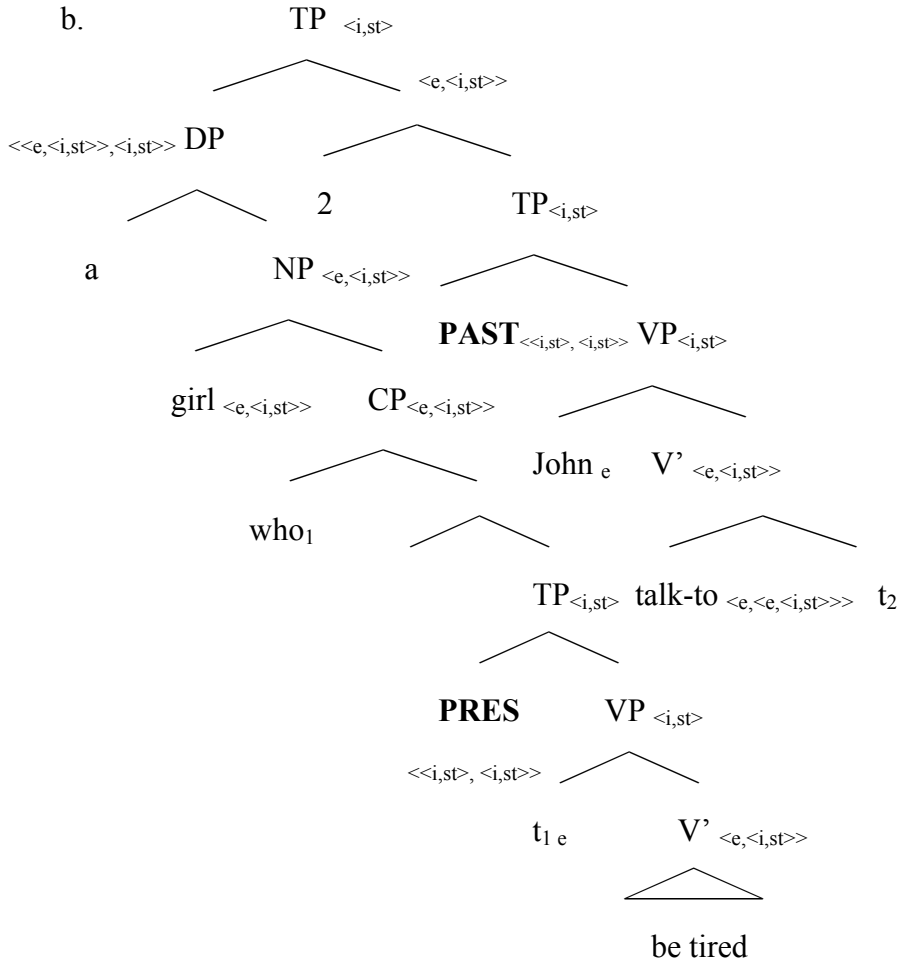
b. $[[2 \text{ Taro } t_2 \text{ mi-PAST}]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. \text{there is a time } t''$
 such that $t'' < t$ and Taro sees x at t''

c. $[[(20)]]^{g,c} (t_c) = \lambda w_s. \text{there is an individual } y$
 such that y is a man at t_c in w
 and there is a time t' such that $t' o t_c$
 and y is crying at t' in w
 and such that there is a time t'' such that $t'' < t_c$
 and Taro sees y at t'' in w

2.4.1.3.2 English

Recall that in English, unlike in Japanese, sentences like (3b), repeated here in (22a), with a present tensed relative clause under a matrix past, only allow an indexical interpretation. Under Ogiwara's analysis, the sentence has the structure in (22b) parallel to the one we saw in (20):

(22) a. John talked to a girl who is tired.



The structure in (22b) is one where the DP *a girl who is tired* has moved from its original position (complement of the verb *talk to*) and adjoined to the matrix TP. The DP has wide scope with respect to the matrix PAST. Assuming this analysis, the structure in (22b) has the following truth conditions:

- (23) $[[[(22b)]]]^{g,c}(t_c) = \lambda w_s.$ there is an individual x
 such that x is a girl at t_c in w
 and there is a time t' such that $t' o t_c$
 and x is tired at t' in w
 and such that there is a time t''
 such that $t'' < t_c$
 and John talks to x at t'' in w

Note that the indexicality of the *present* alone suffices to predict the correct reading of the sentence. As Ogihara himself acknowledges (1996:161), advocating two scope options for the relativized DP is possible but unnecessary since both options lead to the same result.

In sum, so far we have seen that, in Japanese, two scope options are necessary in order to derive the temporal interpretations of present tensed relative clauses embedded under past. In English, on the other hand, the assumption that present is *indexical* suffices to explain the interpretation of present tensed relative clauses under a matrix past. Does this mean that there is no motivation for the two scope options in English relative clauses? Ogihara's answer is *no*. He argues that there is empirical evidence for both scope options in English as well. His argument for the necessity of the “two option” scopal analysis in English is based on examples with a *past under past* configuration, which require a wide scope analysis and examples with a *past under future* configuration, which require a narrow scope analysis.

2.4.1.3.3 Evidence for the “wide scope” option in English

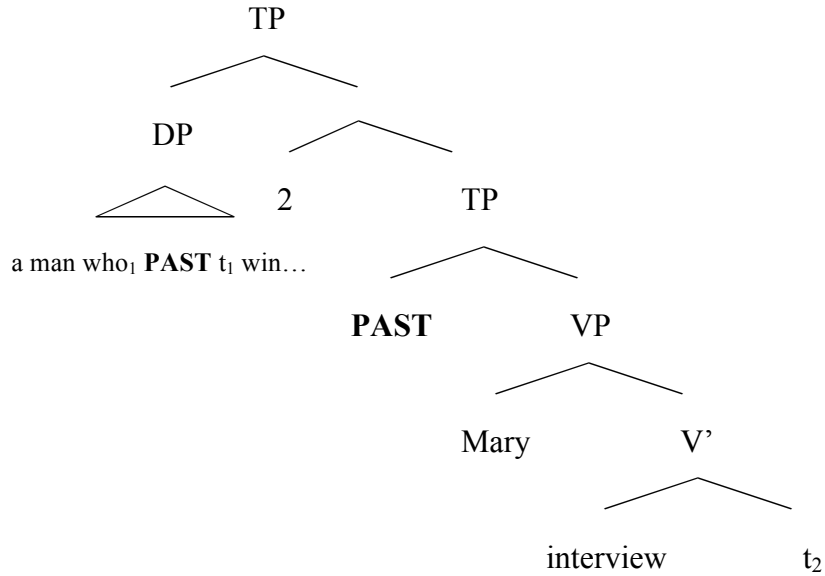
The evidence for the necessity of the wide scope option in English comes from sentences such as (24), involving a *past* in a relative clause embedded under a matrix *past*:

(24) Mary *interviewed* a man who *won* the Pulitzer Prize.

(24) has two readings: a *past shifted* reading— where the *winning* precedes the *interviewing*— and a *future shifted* reading— where the *winning* follows the *interviewing* but precedes utterance time.

Under Ogihara's analysis, these readings result from a structure where the DP *a man who won the Pulitzer Prize* has raised out of the VP and adjoined to the TP thus taking scope over the matrix PAST ((25a)):

(25) a.

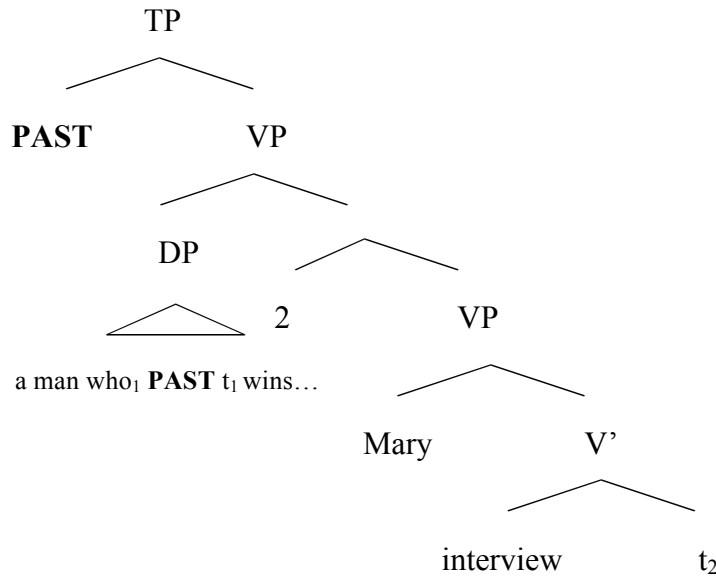


- b. $[[(25a)]]^{g,c}(t_c) = \lambda w_s. \text{there is an individual } y$
 such that y is a man at t_c in w
 and there is a time t'' such that $t'' < t_c$
 and y wins the P.P. at t'' in w
 and such that there is a time t' such that $t' < t_c$
 and Mary interviews y at t' in w

According to the truth conditions in (25b), the embedded predicate is located in the past with respect to UT-T. This means that it can either precede or follow the matrix event-time, which correctly predicts the two readings associated with the sentence.

On the other hand, a structure such as (26a), where the DP has narrow scope with respect to the matrix PAST, cannot predict the two readings of the sentence.

(26) a.



- b. $[[[(26a)]]]^{g,c}(t_c) = \lambda w_s. \text{there is a time } t'$
 such that $t' < t_c$
 and there is an individual y
 such that y is a man at t' in w
 and there is a time t''
 such that $t'' < t'$ and y wins the PP at t'' in w
 and such that Mary interviews y at t' in w

In (26a) the embedded PAST occurs in the scope of the matrix PAST and is thus interpreted in relation to it. This predicts the past-shifted interpretation, but not the future-shifted interpretation, as shown by the sentence's truth conditions given in (26b). Thus, the narrow scope option cannot derive the correct truth conditions of (24) since it fails to capture the future-shifted interpretation.

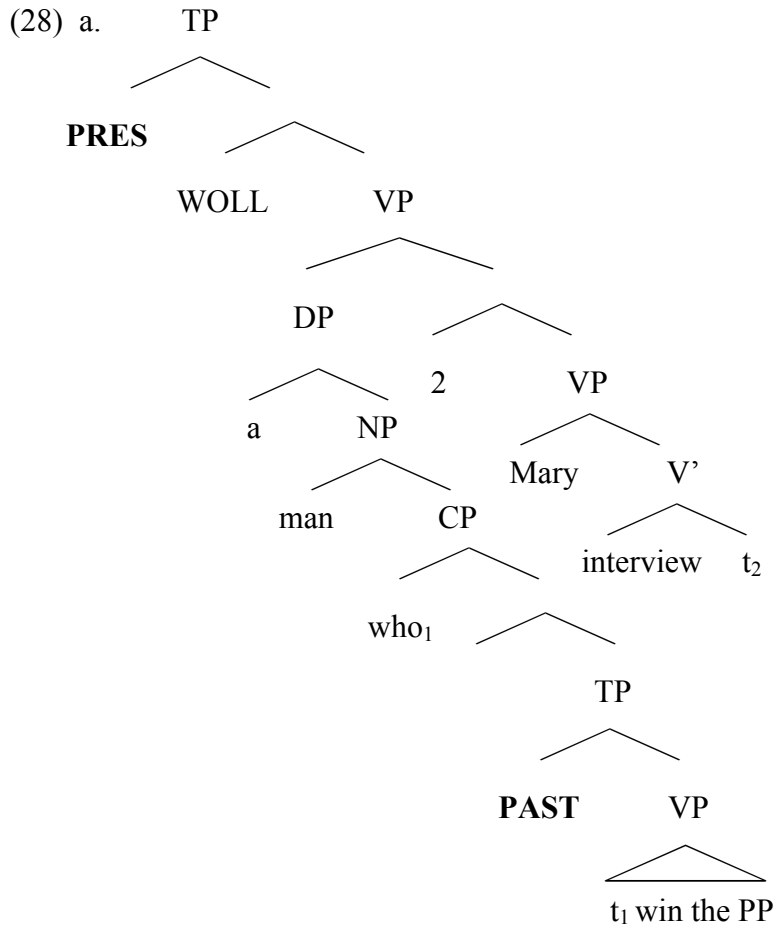
In conclusion, given Ogihara's other assumptions, sentences such as (24) show that the *wide scope option* is necessary because without it, we would not be able to account for the future shifted reading of past tense relative clauses under a matrix past.

2.4.1.3.4 Evidence for the “narrow scope” option in English

According to Ogihara, evidence for the necessity of the “narrow scope” option in English comes from sentences such as (27), involving a *past* in a relative clause embedded under a matrix *future*:

(27) Mary *will* interview a man who *won* the Pulitzer Prize.

(27) is judged true in a situation where the *winning* precedes the future time of the *interview*. This further implies that the *winning* can either precede or follow UT-T. This interpretation results from a structure such as (28a), where the embedded PAST is in the scope of *will*.



b. $[[\text{WOLL}]]^{\text{g,c}} = \lambda P_{\langle i, \text{st} \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } \underline{t'} > t \text{ and } P(t')(w) = 1$

c. $[[[(28a)]]]^{g,c}(t_c) = \lambda_{w_s}. \text{there is a time } t''$
 such that t'' overlaps t_c
 and there is a time t'
 such that $t' > t''$
 and such that there is an individual y
 such that y is a man at t' in w
 and there is a time t'''
 such that $t''' < t'$
 and y wins the P.P. at
 t''' in w
 and Mary interviews y at t' in w

Ogihara assumes that the English *will* is decomposed into PRES plus the auxiliary *woll*³⁴ whose lexical entry is given in (28b). Narrow scope for PAST with respect to WOLL gives rise to the truth conditions given in (28c). Examples such as (27) thus show that *the narrow scope* option is also necessary.

2.4.1.3.5 The “SOT” rule

Finally, let’s examine another example, involving a *present under a matrix future*:

(29) John will photograph a woman who is rehearsing on the stage.

(29) is true in two kinds of situations: a situation where the woman’s rehearsing takes place at *UT-T* and a situation where the woman’s rehearsing takes place at the *future photographing time*. The first reading is the indexical reading, which, as we have seen above, follows straightforwardly on the assumption that the English present is indexical. The second reading is the simultaneous reading. Since the English present is not a relative tense like the Japanese present, Ogihara argues that English needs an additional rule to derive the simultaneous meaning, and the relevance to scope is that the application of this rule requires PRES to be *in the scope of the matrix tense*. The rule at issue here is the SOT rule, which can be stated as follows:

³⁴ The hypothesis of the auxiliary *woll* is due to Abusch (1988).

(30) **The SOT Rule**

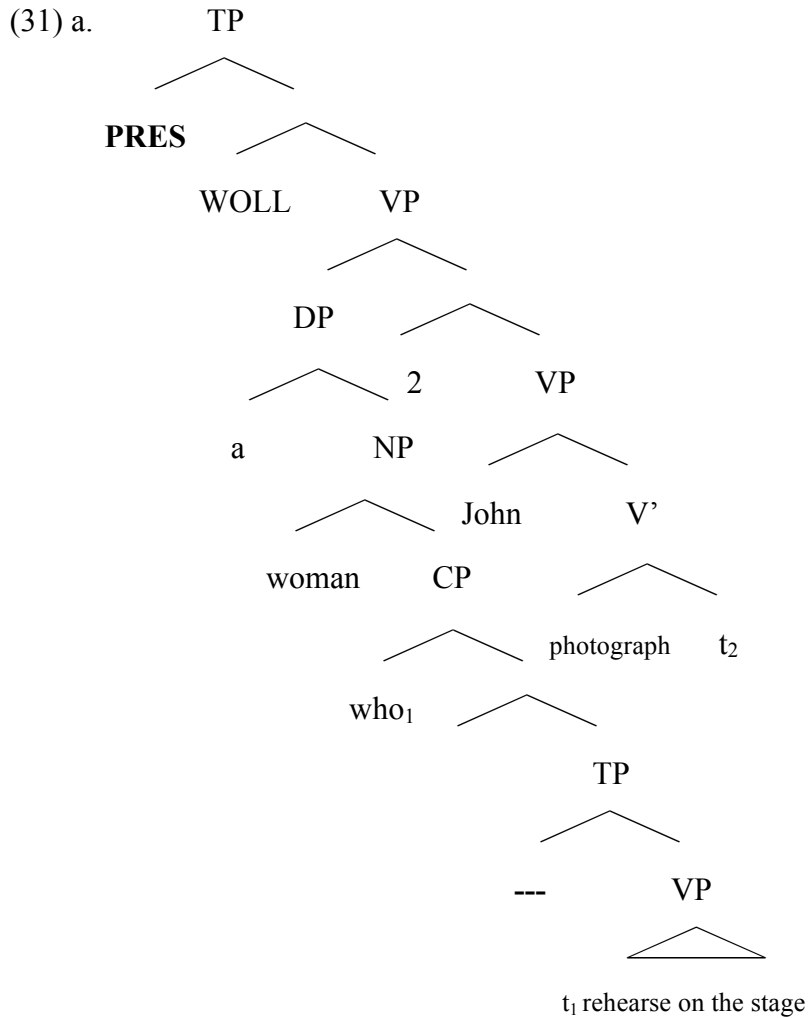
A past/ present tense locally c-commanded by a tense with the same feature can be deleted at LF³⁵.

The SOT rule operates on LF structures and triggers deletion of an embedded tense under identity with the matrix tense.

In (31), I give the structure for the simultaneous reading of (29), after SOT has applied:

³⁵ *SOT rule* (Ogihara 1996: 134)

If a tense feature B is the local tense feature of a tense feature A at LF and A and B are occurrences of the same tense (i.e., either [+present] or [+past]), A is optionally deleted. N.B.: (i) The tense features include [+past] and [+pres] and nothing else. (ii) A tense feature A is "in the scope" of a tense feature B iff B is associated with a common noun and asymmetrically c-commands A, or B is associated with a tense or a perfect and asymmetrically c-commands A. (iii) A tense feature B is the local tense feature of a tense feature A iff A is "in the scope" of B and there is no tense feature C "in the scope" of B such that A is "in the scope" of C.



- b. $[[[(31a)]]]^{g,c}(t_c) = \lambda_{w_s}. \text{there is a time } t'', \text{ such that } t'' \circ t_c$
 and such that $t'' > t_c$
 and such that there is an individual y
 such that y is a woman at t'' in w and
 y is rehearsing on the stage at t'' in w
 and such that John photographs y at t'' in w

The embedded PRES in (31a) has been deleted under identity with the matrix PRES. As a result of tense deletion, the embedded predicate becomes *tenseless*. Therefore, its temporal argument is identified with that of the NP *woman*, which in turn, is identified with that of the matrix predicate *photograph*. This results in a simultaneous reading where the *rehearsing* takes place at the *photographing* time.

Sentences like (29) thus show that, under Ogihara's analysis, the simultaneous construal of present tense relative clauses receives different analyses in Japanese and English:

in Japanese, it results from a structure with a *relative* tense, whereas in English, it is the result of deletion of the tense that occupies a T node.

In light of the above examples with the present, we can see that postulating different scope options for DPs with respect to tense is important motivation for Ogiwara's treatment of the English present as different from the Japanese present. An alternative analysis would be one where the English present is just like the Japanese present, but where in English the DP containing the present is forced to take wide scope with respect to the matrix tense in contexts other than the one we have just seen. This idea has been proposed by Stowell (1995, 2007) who enforces wide scope movement of the English present by assuming a "polarity" constraint which prevents a morphological present tense from occurring under the scope of a semantic past tense³⁶.

In the following section, we will see yet another proposal, that of Kusumoto (1999), who, building on Stowell (1993; 1995) and Ogiwara (1996), offers an ingenious way of capturing the contrast between English and Japanese within an approach that maintains that present tense morphemes are unambiguously indexical while arguing at the same time that indexical construals do not necessitate a wide scope analysis.

2.4.2 Kusumoto (1999)

Following Stowell (1993, 1995), Kusumoto assumes that tenses are decomposed into two parts: tense morphemes— *past* and *present*— and phonologically null operators— *PAST* and *PRESENT*— which stand in certain relations to the tense morphemes. The tense morphemes *past* and *present* occupy the time argument slot of predicates. They are variables that do not contribute any temporal meaning. The temporal information (anteriority, simultaneity) is contributed by the PAST/ PRESENT operators, which introduce the ordering between event times and evaluation times. The evaluation time of sentences is explicitly

³⁶ On Stowell's theory, tenses are decomposed into operators PRESENT and PAST introducing temporal relations (anteriority, simultaneity) and phonologically present but semantically null morphemes, *past* and *present*. According to Stowell, the morphemes *past*/ *present* are the temporal analogues of negative and positive polarity items, *any* and *some*, expressing scope relations with respect to PAST tense. Stowell thus formulates the following constraints on the occurrence of tense morphemes:

- (i) *Past* is a PAST Polarity Item (PPI). It must occur under the scope of PAST.
- (ii) *Present* is a PAST "anti-polarity" item (PAI). It must *not* occur under the scope of PAST.

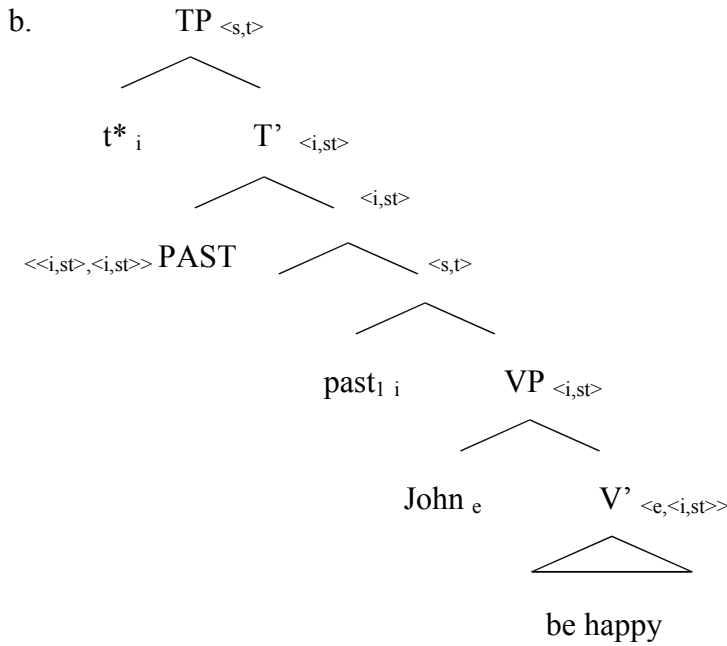
realized in the syntax. It is represented by the indexical item t^* , used to refer to UT-T; in some environments (intensional contexts), t^* can be bound.

In this system, the lexical entries of the temporal items are as follows:

- (32) a. $[[\text{PAST}]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } t' < t \text{ and } P(t')(w) = 1$
 b. $[[\text{PRES}]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda w_s. \text{there is a time } t' \text{ such that } t' o t_c \text{ and } P(t')(w) = 1$
 c. $[[\text{past}_1]]^{g,c} = g(1)$
 d. $[[\text{pres}_1]]^{g,c} = g(1)$
 e. $[[t^*]]^{g,c} = t_c$

To see how Kusumoto's system works, let's compute the semantic value of a simple past tense sentence such as (33a). Kusumoto would attribute to this sentence the structure in (33b):

- (33) a. John was happy.



Calculation

- c. $[[\text{be happy}]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is happy at } t \text{ in } w$
 d. $[[\text{John be happy}]]^{g,c} = \lambda t_i. \lambda w_s. \text{John is happy at } t \text{ in } w$
 e. $[[\text{past}_1 \text{ John be happy}]]^{g,c} = \lambda w_s. \text{John is happy at } g(1) \text{ in } w$

f. $[[[1 \text{ past}_1 \text{ John be happy}]]^{\text{g.c}} = \lambda t'. \lambda w_s. \text{John is happy at } t' \text{ in } w$

g. $[[[\text{PAST } 1 \text{ past}_1 \text{ John be happy}]]^{\text{g.c}} = \lambda t_i. \lambda w_s. \text{there is a time } t''$
 such that $t'' < t$
 and John is happy at t'' in w

h. $[[[t^* \text{ PAST } 1 \text{ past}_1 \text{ John be happy}]]^{\text{g.c}} = \lambda w_s. \text{there is a time } t''$
 such that $t'' < t_c$
 and John is happy at t'' in w

The meaning of the predicate *be happy* is a function from individuals to properties of times. The subject *John* occupies the subject position inside the VP. The VP denotes the property of times that holds of a time t and a world w if John is happy at t in w . The variable *past* occupies the temporal argument slot of the predicate and is bound by the PAST tense operator. The semantic value of the sentence is a proposition that yields true for a world w , iff John is happy in w at a time that precedes t_c (that is, UT-T).

2.4.2.1 Past in embedded contexts

As I did for Ogihara's system, I will show here how Kusumoto's system accounts for the distinction between the English and the Japanese present tensed relative clauses. But before I address this question let me sketch Kusumoto's analysis of the shifted readings of the past in embedded contexts. For consistency with the previous sections, I will continue to use examples involving *relative clauses*.

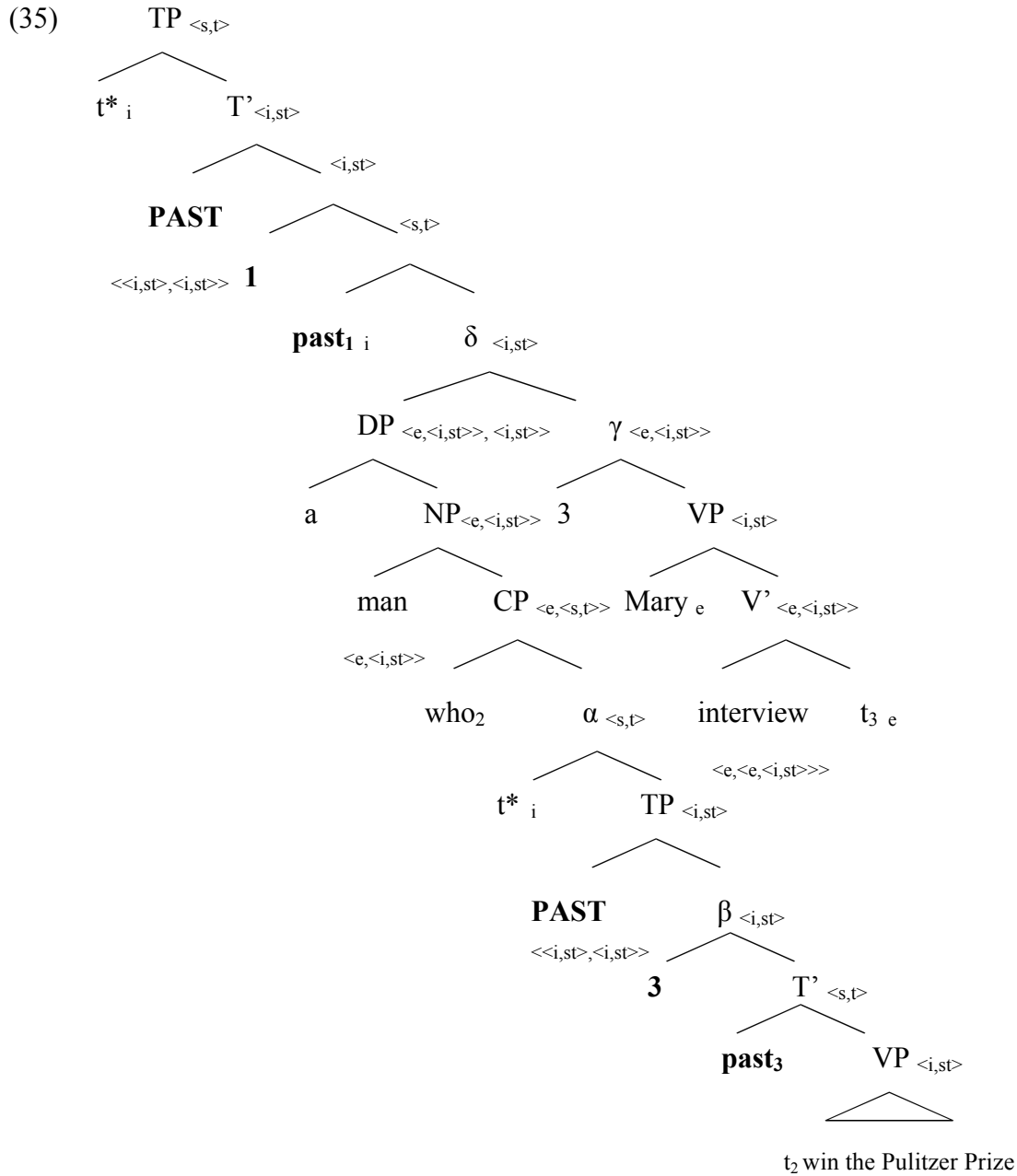
To illustrate how Kusumoto's system accounts for the interpretation of the past under past in embedded contexts, consider again example (24), repeated here in (34):

(34) Mary *interviewed* a man who *won* the Pulitzer Prize.

Recall that the sentence in (34) has two readings: a *past-shifted* reading, where the *winning* precedes the *interviewing* and a *future-shifted* reading, where the *winning* follows the *interviewing* and precedes UT-T. Recall also, that, on Ogihara's scopal analysis, the two readings result from different structures: while the future-shifted reading results from a structure where the embedded PAST is interpreted outside the scope of the matrix PAST and thus relates directly to UT-T, the past-shifted reading can result either from a structure where

the embedded PAST is interpreted under the scope of the matrix PAST or from a structure where the embedded PAST is interpreted outside the scope of the matrix PAST.

In Kusumoto's system, the two readings result from the same structure, one in which the embedded tense occurs in the scope of the matrix tense. On this analysis, the sentence in (35) has the following LF³⁷:



³⁷ I have labelled some of the nodes in the tree below as α , β , γ , δ — for example the nodes to which QR occurs and to which binder indices are attached. No theoretical importance should be given to this labeling. I simply do not want to take a position as to their categorial status.

Note that Kusumoto assumes that the evaluation time of the embedded PAST is explicitly represented in the LF structure. This allows her to account for the speech-time dependency of relative clauses. The semantic value that results from the structure in (35) is (36)³⁸:

- (36) $[[[(35)]]]^{g,c} = \lambda w_s. \text{there is a time } t''$
 such that $t'' < t_c$
 and there is an individual y
 such that y is a man at t'' in w ,
 and there is a time t'
 such that $t' < t_c$
 and y wins the Pulitzer Prize at t' in w ,
 and Mary interviews y at t'' in w .

The truth conditions of (35) given in (36) thus say that the matrix eventuality (*Mary's interviewing*) and the embedded eventuality (*the man's winning of the Pulitzer Prize*) both take place in the past with respect to UT-T. This means that they are not necessarily ordered

³⁸ The steps of the calculation are given in the **Appendix** to this chapter. The one detail that is not straightforward involves the way in which Kusumoto calculates the semantic value of the NP. In order to compute the semantic value of this constituent, Kusumoto assumes a special rule— *Individual Identification* (Kratzer 1994a,b) — defined as in (i):

- (i) Individual Identification (Kusumoto 1999: 149)

If α is a branching node and β and γ its daughters, and β denotes a function f of type $\langle e, it \rangle$ and γ a function g of type $\langle e, t \rangle$ then α denotes a function h of type $\langle e, it \rangle$ such that for all $t \in Di$ and $x \in De$, $h(x)(t) = 1$ iff $f(x)(t) = 1$ and $g(x) = 1$.

(ii) illustrates the derivation of the semantic value of *[man who₂ PAST 3 past₃ t₂ win the Pulitzer Prize]* using the rule of Individual Identification- but, for consistency with the system presented here, I will assume that constituents also take a world argument and that the rule is reformulated accordingly. What happens is as follows:

- (ii) $[[[\text{man who}_2 t^* \text{ PAST } 3 \text{ past}_3 t_2 \text{ win the Pulitzer Prize}]]]^{g,c} =$ (by Individual Identification)
 $= \lambda x_e. \lambda t_i. \lambda w_s. [[[\text{man}]]]^{g,c}(x)(t)(w) = 1$
 and $[[[\text{who}_2 t^* \text{ PAST } 3 \text{ past}_3 t_2 \text{ win the Pulitzer Prize}]]]^{g,c}(x)(w) = 1$
 $= \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a man at } t \text{ in } w$
 and there is a time t' such that $t' < t_c$
 and x wins the Pulitzer Prize at t' in w

with respect to each other. Hence, the embedded eventuality can either follow or precede the matrix eventuality, thus yielding the two interpretations that (34) has.

In sum, by assuming that the speech time variable t^* is overtly represented in the structure, Kusumoto manages to account for the independent readings of the past in relative clauses under a matrix past without resorting to a scopal analysis. In the following section, we will see how this theory explains SOT phenomena.

2.4.2.2 SOT phenomena

Recall that in Ogiwara's system, the availability of simultaneous construals of *past/present* in languages like English requires a special mechanism (i.e., the SOT rule), which deletes the embedded tense under identity with the matrix tense. The two-way decomposition of tenses (into a variable and an OPERATOR) advocated by Kusumoto and inspired by Stowell (1993, 1995, 2007) allows for an account of temporal simultaneity without postulating a tense deletion rule. Under this analysis, simultaneous construals are obtained when morphological tense is not bound by an operator in the same clause, as shown below:

- (37) a. $[_{TP1} \text{ PAST } 1 \text{ past}_1 [_{CP} [_{TP2} \dots \text{past}_1 \dots]]]$
 b. $[_{TP1} \text{ PRES } 1 \text{ pres}_1 [_{CP} [_{TP2} \dots \text{pres}_1 \dots]]]$

As we can see in (37), simultaneous construals arise when the embedded clauses only contain the temporal variables *past₁*/ *pres₁*. To explain the licensing of the embedded temporal variables, Kusumoto, inspired by Stowell (1993, 1995) and Ogiwara (1996), assumes the following licensing conditions on vacuous tense morphemes in English:

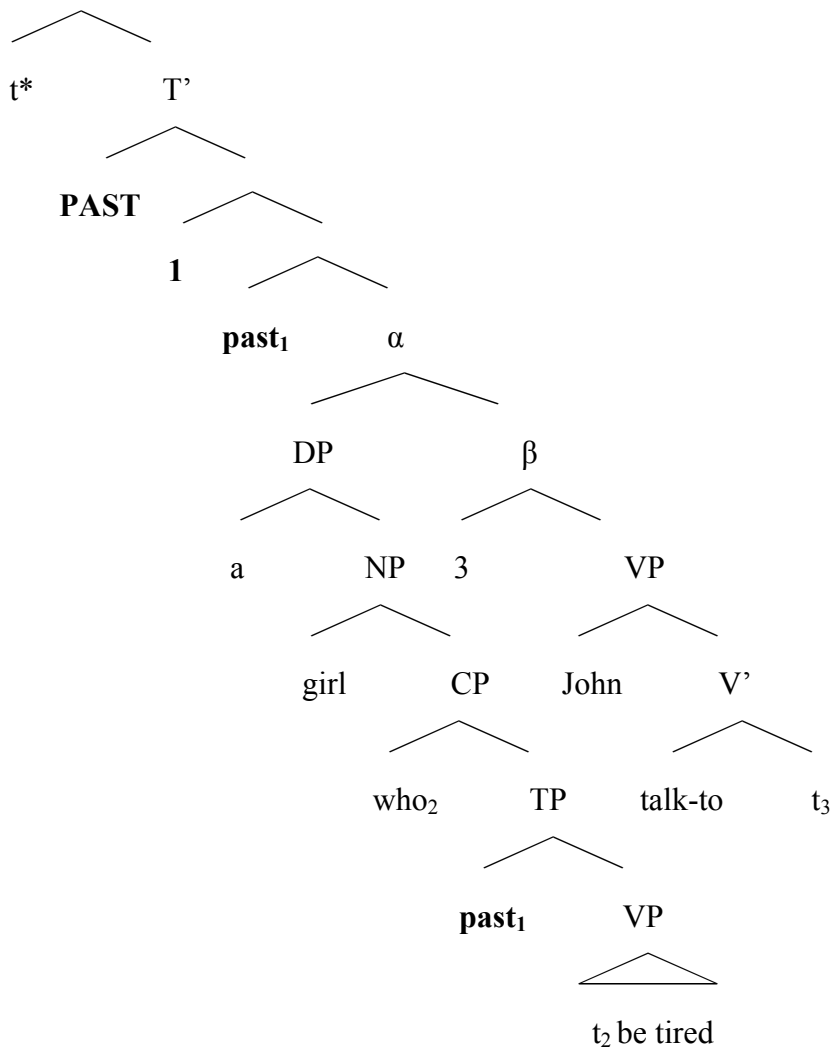
- (38) a. past has to be locally c-commanded by PAST
 b. present has to be locally c-commanded by PRESENT
 c. A tense morpheme α is locally c-commanded by a tense operator β iff there is no tense operator γ such that γ c-commands α and γ is c-commanded by β .

(Kusumoto 1999: 111-112)

Let us now take a concrete example, and see how Kusumoto's system derives the simultaneous construal in English. Consider again (1a), repeated in (39a) below:

(39) a. John talked to a girl who *was* tired.

b. TP



The embedded variable $past_1$ in the embedded clause is c-commanded by the matrix PAST, the closest c-commanding temporal operator. The licensing condition on the use of the embedded $past$ is thus met. Moreover, the embedded $past_1$ is bound by the matrix PAST. This temporal configuration thus yields a simultaneous interpretation, where *the girl's tiredness* overlaps *John's talking* time:

(40) $[[[(39b)]]]^{g,c} = \lambda w_s. \text{there is a time } t'$

such that $t' < t_c$,

and there is an individual y ,

such that y is a girl at t' in w

and y is tired at t' in w ,

and John talks to y at t' in w

2.4.2.3 Japanese “present tensed” relative clauses

Recall the difference between English and Japanese present tensed relative clauses: the Japanese present tensed relative clauses allow for a simultaneous construal while the English present tensed relative clauses do not. Remember that, according to Ogihara, this contrast is attributed to the nature of the present tense, which in SOT languages like English is indexical, but in non-SOT languages like Japanese can be a relative tense.

Unlike Ogihara, Kusumoto assumes that present in a relative clause under a matrix past, be it in SOT or non-SOT languages, is always indexical. She argues that the contrast between English and Japanese should be attributed to the structure of relative clauses which is crucially different in the two languages. Specifically, she claims that, in English, present tense relative clauses are full-fledged CPs, while in Japanese, so-called “present tensed” relative clauses are *tenseless* structures, i.e., they lack both the CP and the TP projections³⁹.

Following Murasugi (1991), Kusumoto motivates the lack of the CP projection with the following kind of example:

(41) a. the reason why Mary thinks that John left

b. Mary-ga John-ga kaet- ta to omot-te-iru riyuu

Mary-NOM John-NOM leave-PAST COMP think-PRES reason

“the reason Mary thinks that John left”

(Kusumoto 1999: 200-201)

³⁹ Kusumoto notes that Russian, another non-SOT language, brings further support for her thesis that Japanese present tensed relative clauses should be treated in a special way. While Russian present tensed complement clauses behave like Japanese complement clauses in that they allow a simultaneous construal of the present, Russian present tensed relative clauses behave like English and unlike Japanese in that they only allow an indexical construal.

The English example in (41a) is ambiguous: it can mean either *the reason for Mary's thinking that John left* or *the reason why John left according to Mary*. This ambiguity is attributed to the different positions where the *wh*- word is generated: **(i)** either as a modifier of the matrix verb *think* as in (42a) or **(ii)** as a modifier of the embedded verb *leave*, as in (42b):

- (42) a. [the reason [_{CP} why_i C_i [Mary thinks t_i [_{CP} that John left]]]]
 b. [the reason [_{CP} why_i C_i [Mary thinks [_{CP} t'_i C_i that John left t_i]]]]

In contrast, the Japanese counterpart of the English sentence in (41a), given in (41b), only allows the first interpretation, where the *wh*- word originates in the matrix clause ((43a)). According to Murasugi, the absence of the second interpretation of (41b) is due to the fact that the Japanese relative clause is an IP rather than a CP, as shown in (43b):

- (43) a. [the reason [_{IP} (why_i) [Mary thinks t_i [_{CP} that John left]]]]
 b. *[the reason [_{IP} (why_i) [Mary thinks [_{CP} t'_i C John left t_i]]]]

The lack of the CP projection for the relative clause in (43b) gives rise to violation of the Empty Category Principle (Chomsky 1981)⁴⁰: the intermediate trace *t'_i* ends up not being properly governed⁴¹. This explains the ungrammaticality of (43b) in Japanese.

Kusumoto does not content herself with arguing that Japanese relative clauses only lack the CP projection. She goes one step further and claims that the Japanese present tensed relative clauses lack the TP projection as well. According to Kusumoto, there is no need to assume a TP projection for the Japanese present tensed relative clauses because what look like

⁴⁰ (i) The Empty Category Principle (Chomsky 1981):

A non-pronominal empty category must be properly governed.

⁴¹ Crucially, Murasugi assumes Lasnik and Saito's (1992) definition of proper governors, according to which only **X° categories** can be proper governors:

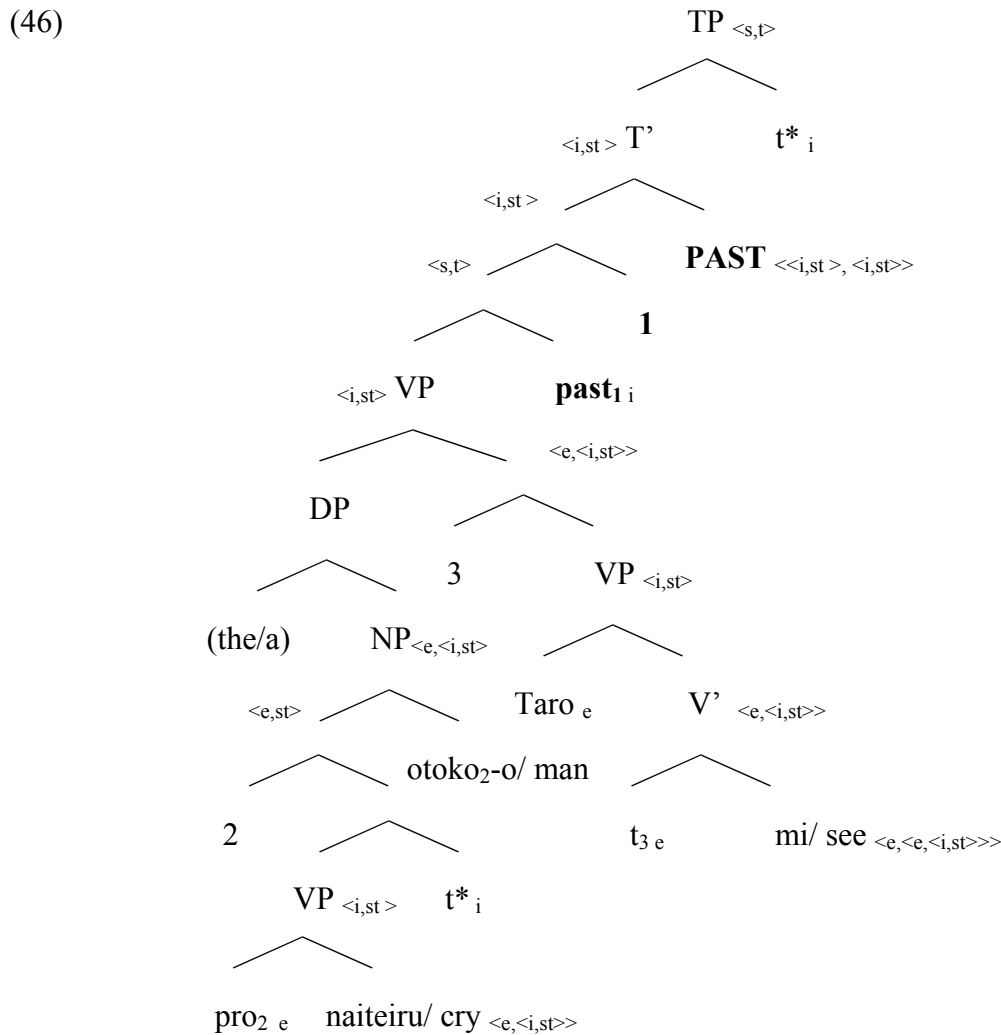
- (i) α governs β iff
 a. α c-commands β,
 b. α is X° and
 c. α theta-marks or case-marks β, or
 α is conindexed with β and β is subjacent to α.

present tense morphemes in Japanese are simply default affixes that support a stem but which do not carry any meaning. Under Kusumoto's analysis, the Japanese relative clause in (4a), repeated below in (44), receives one of the two structures in (45):

- (44) Taroo-wa nai-te i -ru otoko-o mi-ta
 Taroo-TOP cry-PROG-PRES man-ACC see-PAST
 "Taro saw a/ the man who was crying (at the time of the meeting)."

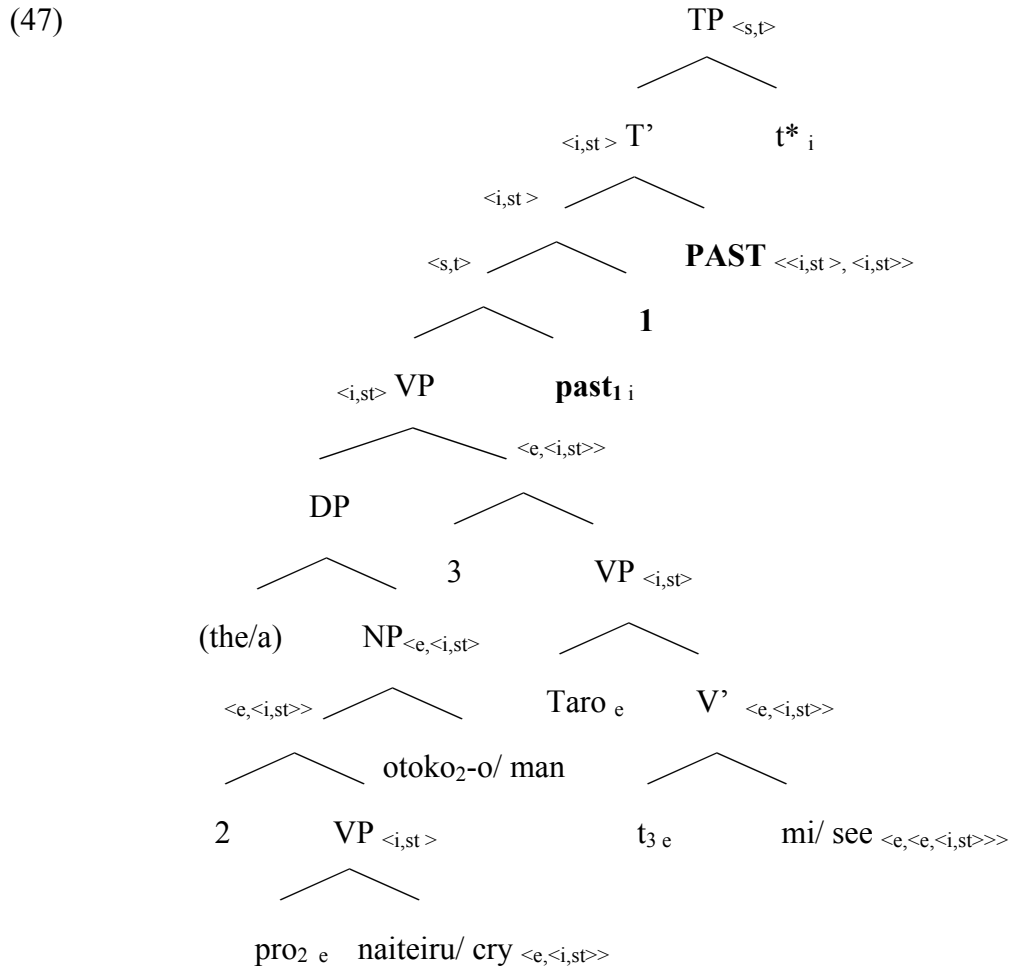
- (45) a. [[VP pro naiteiru] t*]
 b. [VP pro naiteiru]

If we analyze the Japanese relative clause in (44) as in (45a), the entire sentence in (44) has the structure in (46):



In (46), the distinguished time variable t^* occupies the time argument of the embedded predicate. This ensures that the embedded predicate is evaluated at UT-T. We thus obtain an *indexical* interpretation, where the boy that Taro saw is crying at UT-T.

On the other hand, if we analyze the relative clause in (44) as in (45b), the entire sentence in (44) has the structure in (47):



In (47), the embedded clause has no syntactically realized temporal argument. The temporal argument it selects for is thus identified with that of the NP *boy*, which, in turn, ends up identified with that of the matrix verb *hit*. This structure thus yields a *simultaneous* interpretation where the boy's *crying* takes place at Taro's past *seeing* time.

Summarizing, Kusumoto's analysis rests on two assumptions: **(i)** a present in a relative clause under a matrix past is always indexical and **(ii)** the simultaneous construal of so-called "present" tensed relative clauses in Japanese arises from a reduced structure, i.e., a structure lacking the TP node. The idea of treating Japanese relative clauses as reduced tenseless clauses is very appealing since it offers a straightforward account for the contrast between

Japanese and English present tensed relative clauses while maintaining an unambiguous analysis of the *present* tense. However, an argument against this analysis would be to find a language where a morphological present in a relative clause under a matrix past can yield a simultaneous interpretation. In this respect, consider the following example from Korean (Jiyoung Choi, p.c):

- (48) John-un u- **nun** yeojaai-wa iyagiha-ess-ta.
 John-TOP pleurer-**PRES** fille-avec parler-PAST
 “Jean talked to a girl who was crying.”

As the English translation shows, in Korean, the morphological present in a relative clause embedded under a matrix past can yield a simultaneous construal. Is Korean the language we are looking for? Maybe. Only future research can tell us whether this is indeed the case.

2.4.3 Kratzer (1998)

Following Partee (1979), Kratzer (1998) argues that tenses are referential expressions similar to pronouns, yielding both *indexical* and *bound variable* interpretations. According to her, the inventory of tenses in SOT languages includes three items: a *present*, a *past* and a *zero* tense. Present and past get their values from the context parameter, while the zero tense gets its value from the assignment parameter⁴²:

⁴² On the formulation here which is very close to Kratzer's in her paper, present tense and past tense make reference to functions that isolate specific components of the context parameter— I have called these functions the “prese” and the “past” function. However, this formulation clearly misses something: for one thing, since past always makes reference to the same function, this formulation could not account for cases like our (24) (*Mary interviewed a man who won the Pulitzer Prize*) where the two past tenses are used to talk about different times. There are two different positions that one could take to account for these on a referential approach to tenses like Kratzer's. For one thing, we could say that past tense is ambiguous between expressions that make reference to different functions (and maybe present tense is too). Or, one could say (following Kratzer's suggestion at the end of her paper) that even non-zero tenses are variables with semantic values like those in (i). I will not take a position this here, because, as I mention in 2.4.3.4, I will assume a variant of Kratzer's approach in which at least past tense is quantificational.

- (i) $[[\text{pres}_i]]^{\text{g,c}} = \text{g}(i)$ (defined only if $\text{g}(i) \circ t_c$)
 $[[\text{past}_i]]^{\text{g,c}} = \text{g}(i)$ (defined only if $\text{g}(i) < t_c$)

(49) **The inventory of tenses in SOT languages (adapting Kratzer 1998: 10-11)**

$[[\text{pres}]]^{g,c} = \text{the time pres}(c)$ (defined only if $\text{pres}(c) \circ t_c$)

$[[\text{past}]]^{g,c} = \text{the time past}(c)$ (defined only if $\text{past}(c) < t_c$)

$[[\emptyset_i]]^{g,c} = g(i)$

Zero tenses are the temporal analogues of *zero* pronouns. Kratzer illustrates the existence of *zero pronouns* with examples such as (50), taken from Irene Heim's lecture notes.

(50) Only *I* got a question that *I* understood.

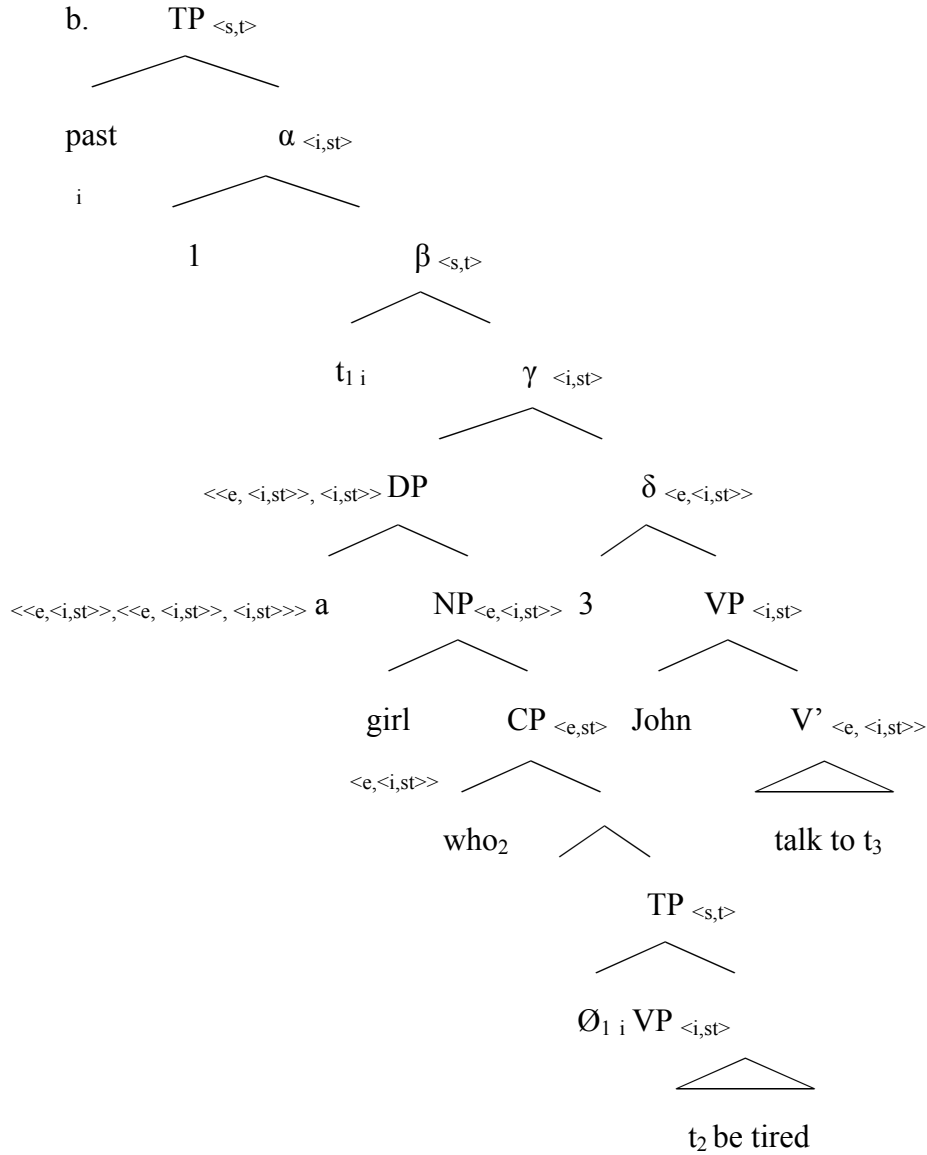
The sentence in (50) is ambiguous. It can be true in a situation where nobody else apart from the speaker got a question that the *speaker* could understand. This is known as the *strict/indexical* reading of the embedded pronoun *I*. On this reading, the embedded *I* denotes the speaker of the sentence. (50) can also be true in a situation where apart from the speaker nobody else got a question that s/he understood. This is known as the *sloppy/bound variable* reading of the embedded *I*. According to Kratzer, the sloppy interpretation is due to the fact that the embedded pronoun *I* is the pronunciation of a *zero pronoun*.

Just like zero pronouns, which are bound variables with no phi-features at LF restricting their denotation to male or female individuals, zero past/ present tenses are bound variables, with no temporal feature, receiving their pronunciation from a local antecedent via an agreement relation.

2.4.3.1 Simultaneous construals of relative clauses: English

On Kratzer's zero tense analysis, the structure for a sentence like (29) (*John will photograph a woman who is rehearsing on the stage*) where Ogihara would have invoked the SOT rule would instead be a structure with a zero present in the relative clause. And the simultaneous construal of (1a) repeated here as (51a) could result from a structure such as (51b). Note that up until the tense marked *past*, this structure is essentially identical to Kusumoto's – that is, its pieces are interpreted in exactly the same way. Its semantic value will be as in (51a) (the details of the calculation are in the **Appendix**):

(51) a. John talked to a girl who *was* tired.



$$c. [[TP]]^{g,c} = [[\alpha]]^{g,c} ([[past]]^{g,c})$$

= $\lambda t_i. \lambda w_s.$ there is an individual y

such that y is a girl at t in w

and y is tired at t in w,

and John talks to y at t in w ($[[past]]^{g,c}$)

= $\lambda w_s.$ there is an individual y

such that y is a girl at past(c) in w

and y is tired at past(c) in w,

and John talks to y at past(c) in w.

In (51b), the zero tense in the embedded clause is bound by the matrix past. To achieve this, I assumed following Kratzer that the matrix past has been raised leaving a trace t_I and a binder index, which binds all the variables in its scope. In Kratzer's system, binding by the matrix past has two important consequences: **(i)** it enables the embedded variable to be interpreted in relation to the matrix tense and **(ii)** it ensures the transmission of the feature *past* from the matrix tense to the embedded zero tense, thus determining its pronunciation as *past*.

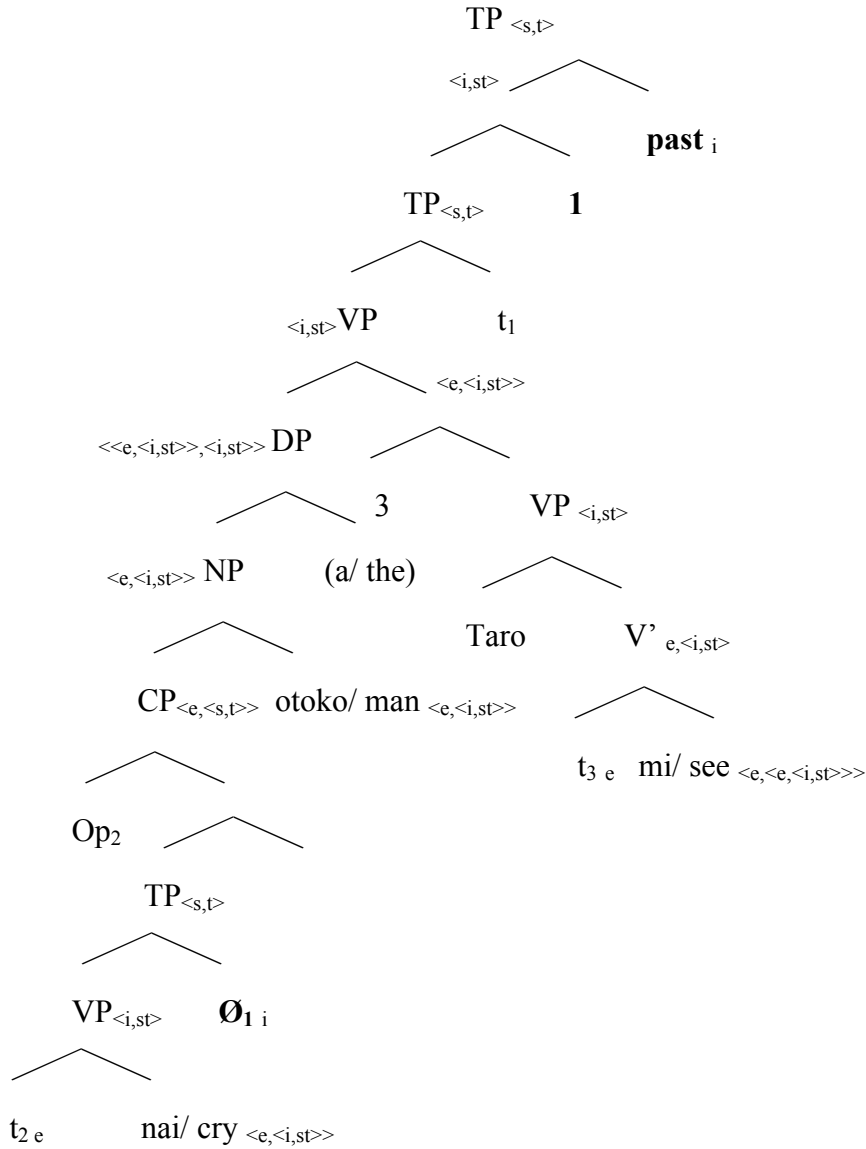
2.4.3.2 Simultaneous construals of relative clauses: Japanese

Extending Kratzer's zero tense analysis of English relative clauses to Japanese relative clauses, we could say that the Japanese present in simultaneous constructions is a *zero tense*.

On a zero tense analysis, the simultaneous construal of the Japanese sentence in (4a), repeated here in (52a), has the structure in (52b), to all intents and purposes identical to the structure in (51b):

- (52) a. Taroo-wa nai-te i -ru otoko-o mi-ta
 Taroo-TOP cry-PROG-PRES man-ACC see-PAST
 'Taro saw a/ the man who was crying (at the time of the meeting).'

b.



In (52b), the binding of the embedded variable by the matrix past tense gives rise to a simultaneous interpretation where the time of *the boy's crying* overlaps *Taro's seeing* time.

In sum, by positing a zero tense/ bound variable in the time argument position of embedded predicates, be it in English or in Japanese, Kratzer achieves the same effect as Ogiwara does with a system that posits the absence of tense. The question that arises once we assume the existence of zero tenses is what determines the surface realization of zero tenses? Kratzer's idea, sketched in the following section, is that SOT languages like English have a morphological mechanism which ensures the transmission of tense features from the matrix tense to the embedded zero tense. To accommodate Japanese in Kratzer's system, we will suggest that this mechanism of feature transmission is not operative in Japanese. Rather, in Japanese, the surface realization of a zero tense in Japanese is the default form— *present* (see D&L 2011).

2.4.3.3 The pronunciation of zero tenses

In order to explain the pronunciation of zero tenses in English, Kratzer posits a mechanism of feature transmission under *binding*⁴³. This mechanism, which operates at Phonological Form (PF), determines the pronunciation of a zero tense under *agreement* with the higher c-commanding tense:

(53) **PF feature transmission under binding**

- i. A zero tense is pronounced as *past* if the binding tense is *past*
- ii. A zero tense is pronounced as *present* if the binding tense is *present*

If it is correct to say that Japanese has a zero tense, however, then Japanese must work differently: in Japanese, there is clearly no feature transmission from the matrix past down to the embedded tense. This is the position taken by D&L (2011). There, in order to extend Kratzer's approach to non-SOT languages like Japanese, we assumed the following parametric choice for the pronunciation of zero-tenses across languages:

(54) **The realization of a zero-tense cross-linguistically (D&L 2011: 240):**

a. **Non-SOT languages**

The morphological features of a zero-tense are the default/ unmarked features.

b. **SOT languages**

The morphological features of a zero-tense are determined via PF-agreement (between the embedded tense and its antecedent).

(54a) allows for the simultaneous construal of a “present” under past in languages like Japanese, where the present tense is not overtly marked. Thus, in these languages, the

⁴³ The same mechanism is proposed in von Stechow (2003) who follows Heim (2001). However, while Kratzer defends the idea that tenses can be base generated as zero tenses and receive their features via morphological agreement at PF, von Stechow argues that tenses are generated with their temporal features which can be deleted at LF.

embedded “present” is simply the realization of a default/ unmarked form⁴⁴. (54b), on the other hand, allows for the simultaneous construal of an embedded past under a matrix past in SOT languages, since in these languages the embedded past can be the surface realization of morphological agreement between the matrix past and the embedded zero-tense.

2.4.3.4 Possible variants of the approach

As we have seen, for Kratzer *all* tenses are variables. The instances of past and present tense that are not zero tenses are variables just the way zero tenses are; the features [PAST] and [PRESENT] attached to these variables serve to restrict their values. However, one could certainly imagine variants of Kratzer’s approach which keep the assumption that there are zero tenses, which are variables, but which treat differently the instances of past and present tense that are not zero tenses.

For example, one could imagine a variant on which past tense is a quantificational expression like Ogihara’s and Kusumoto’s PAST. On this kind of variant, the simultaneous reading of (1a) would result from a structure like (55b)— a structure just like (52b) except with PAST at the top. Essentially as in the original account, the pronunciation of the zero tense here as past tense would result from the fact that it is bound by PAST (or more precisely, that it is semantically bound by the binder index at the top of PAST’s sister). This structure would be interpreted as in (55c):

(55) a. John talked to a girl who was tired.

b. [Just like (52b) except with PAST at the top]

c. [[TP]]^{g.c} (t_c) = λw_s. there is a time t’ such that

t’ < t_c and

there is an individual y

such that y is a girl at t’ in w

and y is tired at t’ in w

and John talks to y at t’ in w

⁴⁴ Notice that Japanese is also a *pro*-drop language where *pro* is licensed in the absence of agreement. This suggests an interesting parallel between the nominal and the temporal zero pronouns, which, at least in Japanese, are both licensed in the absence of agreement. The implication and the extent to which this correlation is accidental is an issue that we leave for future research.

I mention this precisely because, in later chapters, I will assume a variant of Kratzer's approach on which past tense behaves like this.

2.4.4 Summary

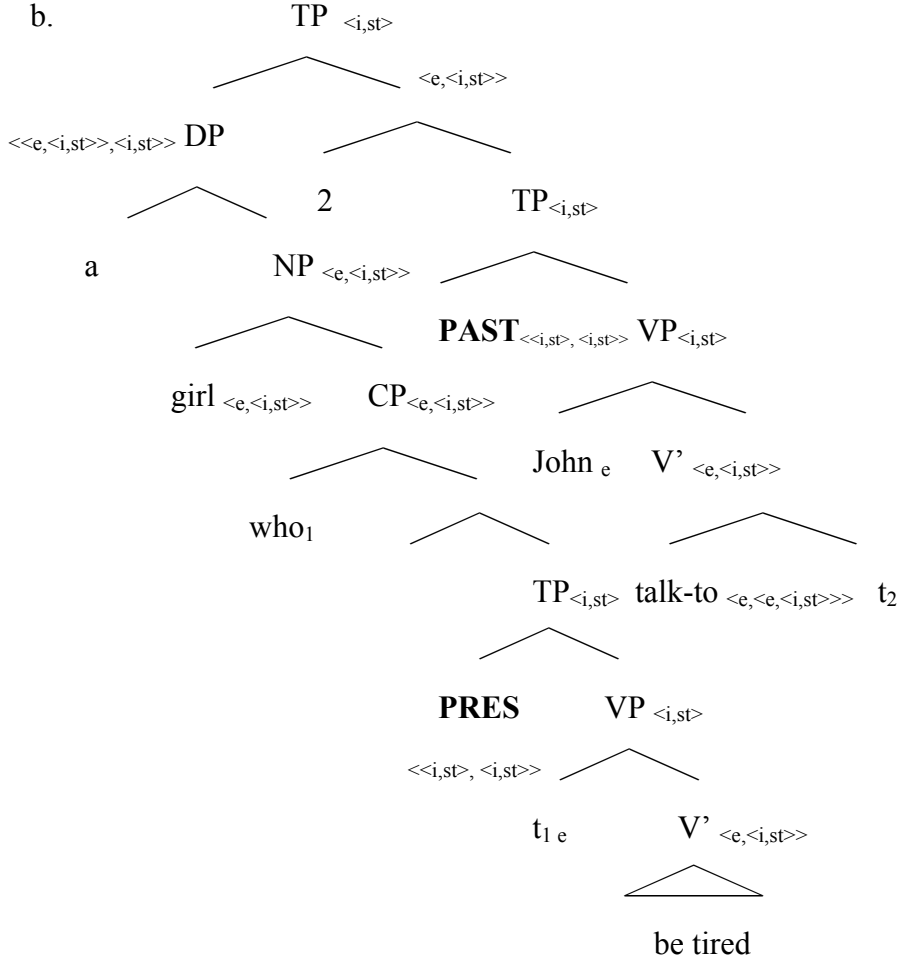
The previous section focused on the following differences between SOT languages like English or French and non-SOT languages like Japanese: (i) in SOT languages, unlike in non-SOT languages, the simultaneous construal under a matrix past requires an embedded past tense; (ii) in non-SOT languages, unlike in SOT languages, a present tensed relative clause embedded under a matrix past can yield a simultaneous reading. In this section, I reviewed three approaches that have sought to account for these facts.

The first account is Ogihara (1996), which assumes that the simultaneous construal in English requires a tense deletion mechanism, which deletes an embedded past tense in a certain temporal configuration (i.e., when c-commanded by a matrix past tense). The simultaneous construal of the present in Japanese relative clauses under a matrix past results from a structure with an empty embedded TP node. The second approach is Kusumoto (1999), which assumes that tenses are decomposed into semantically present but phonologically null (PAST/ PRES) operators and morphologically present but semantically null (past/ present) morphemes (cf. Stowell 1995). Under this approach, simultaneity under past in English occurs when the embedded past tense morpheme is bound by the matrix PAST operator. The simultaneous construal of the present in Japanese results from a reduced, tenseless structure which lacks the CP and the TP projections. Finally, on the third approach, Kratzer (1998), simultaneous construals in English (and, arguably, also in Japanese) result from structures with a zero (past/ present) tense. In English, there is feature agreement between the embedded zero tense and the matrix tense (cf. Heim 1994, von Stechow, 1995, 2003). Extending Kratzer's analysis of English to Japanese, we claimed that, in Japanese, there is no agreement between the embedded zero tense and the matrix tense; rather, in Japanese, a zero tense surfaces as the default morphological form—present.

2.5 Appendix

i. Calculation of the semantic value of (22b), the structure for (22a) on Ogihara's approach:

(22) a. John talked to a girl who is tired.



Lexical entries

a. $[[\text{PAST}]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } t' < t \text{ and } P(t')(w) = 1$

b. $[[a]]^{g,c} = \lambda P_{\langle e, \langle i, st \rangle \rangle}. \lambda Q_{\langle e, \langle i, st \rangle \rangle}. \lambda t_i. \lambda w_s.$

there is an individual x such that

$P(x)(t)(w) = 1$ and $Q(x)(t)(w) = 1$

c. $[[\text{girl}]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a girl at } t \text{ in } w$

d. $[[\text{PRES}]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } t' o t_c \text{ and } P(t')(w) = 1$

e. $[[t_1]]^{g,c} = g(1)$

f. $[[\text{be tired}]]^{g,c} = \lambda y_e. \lambda t_i. \lambda w_s. y \text{ is tired at } t \text{ in } w$

g. $[[\text{John}]]^{g,c} = \text{John}$

h. $[[\text{talk to}]]^{g,c} = \lambda x_e. \lambda y_e. \lambda t_i. \lambda w_s. y \text{ talk to } x \text{ at } t \text{ in } w$

i. $[[t_2]]^{g,c} = g(2)$

Calculation

j. $[[t_1 \text{ be tired}]]^{g,c} = \lambda t_i. \lambda w_s. g(1) \text{ is tired at } t \text{ in } w$

k. $[[\text{PRES } t_1 \text{ be tired}]]^{g,c} = \lambda t_i. \lambda w_s. \text{ there is a time } t' \text{ such that } t' o t_c \text{ and } g(1) \text{ is tired at } t' \text{ in } w$

l. $[[\text{who}_1 \text{ PRES } t_1 \text{ be tired}]]^{g,c} = \lambda y_e. \lambda t_i. \lambda w_s. \text{ there is a time } t'$

such that $t' o t_c$

and y is tired at t' in w

m. $[[\text{girl who}_1 \text{ PRES } t_1 \text{ be tired}]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a girl at } t \text{ in } w$

and there is a time t'

such that $t' o t_c$

and x is tired at t' in w

n. $[[\text{a girl who}_1 \text{ PRES } t_1 \text{ be tired}]]^{g,c} = \lambda Q_{\langle e, \langle i, st \rangle \rangle}. \lambda t_i. \lambda w_s. \text{ there is an individual } x$

such that x is a girl at t in w

and there is a time t'

such that $t' o t_c$

and x is tired at t' in w

and $Q(x)(t)(w) = 1$

o. $[[\text{PAST John talk to } t_2]]^{g,c} = \lambda t_i. \lambda w_s. \text{ there is a time } t''$

such that $t'' < t$,

and John talks to $g(2)$ at t'' in w

p. $[[2 \text{ PAST John talk to } t_2]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. \text{ there is a time } t''$

such that $t'' < t$,

and John talks to x at t'' in w

q. $[[\text{a girl who}_1 \text{ PRES } t_1 \text{ be tired } 2 \text{ PAST John talks to } t_2]]^{g,c} =$

$= \lambda t_i. \lambda w_s. \text{ there is an individual } x$

such that x is a girl at t in w

and there is a time t' such that $t' o t_c$

and x is tired at t' in w

and there is a time t''

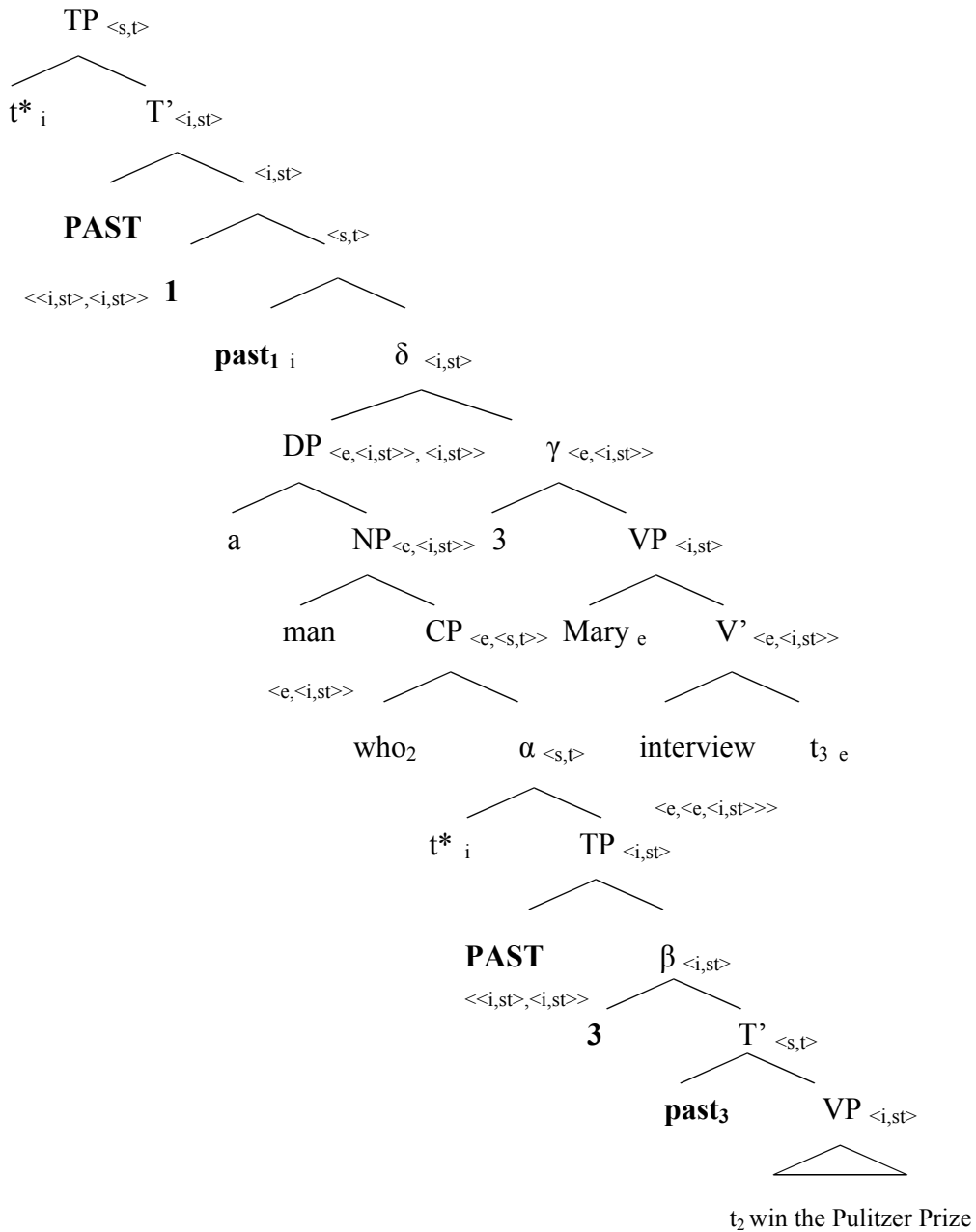
such that $t'' < t$

and John talks to x at t'' in w

- r. $[[[(22b)]]]^{g,c}(t_c) = \lambda w_s. \text{there is an individual } x$
 such that x is a girl at t_c in w
 and there is a time t' such that $t' o t_c$
 and x is tired at t' in w
 and such that there is a time t''
 such that $t'' < t_c$
 and John talks to x at t'' in w

ii. Calculation of the semantic value of (35), the structure for (34) on Kusumoto's approach:

(35) Mary photographed the man who won the Pulitzer Prize.



Lexical entries

- a. $[[t^*]]^{g,c} = t_c$
- b. $[[PAST]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } t' < t \text{ and } P(t')(w) = 1$
- c. $[[past_1]]^{g,c} = g(1)$
- d. $[[a]]^{g,c} = \lambda P_{\langle e, \langle i, st \rangle \rangle}. \lambda Q_{\langle e, \langle i, st \rangle \rangle}. \lambda t_i. \lambda w_s. \text{there is a } y$
such that $P(y)(t)(w) = 1$ and $Q(y)(t)(w) = 1$
- e. $[[man]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a man at } t \text{ in } w$
- f. $[[win]]^{g,c} = \lambda x_e. \lambda y_e. \lambda t_i. \lambda w_s. y \text{ wins } x \text{ at } t \text{ in } w$
- g. $[[the \text{ Pulitzer Prize}]]^{g,c} = \text{the Pulitzer Prize}$
- h. $[[Mary]]^{g,c} = \text{Mary}$
- i. $[[interview]]^{g,c} = \lambda y_e. \lambda x_e. \lambda t_i. \lambda w_s. x \text{ interviews } y \text{ at } t \text{ in } w$

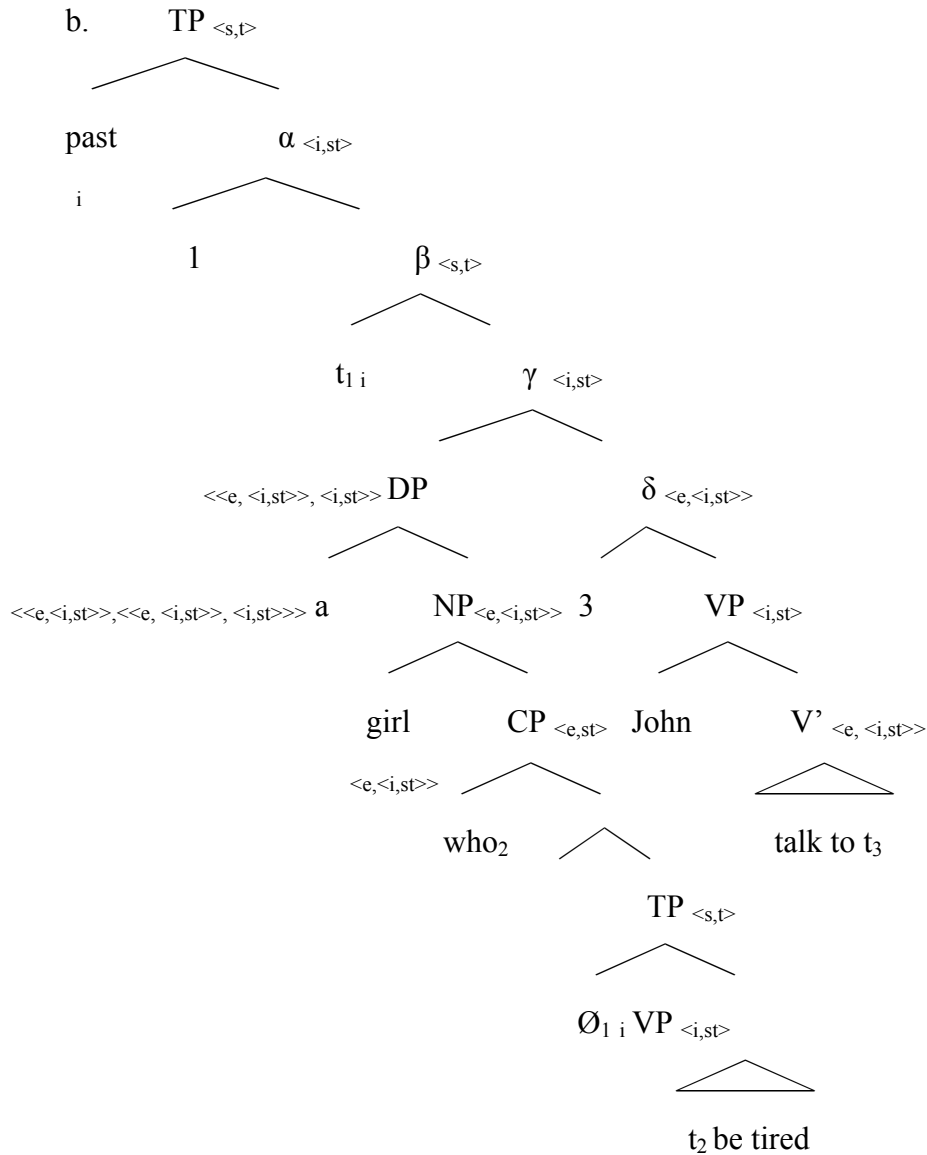
Calculation

- j. $[[VP]]^{g,c} = \lambda t_i. \lambda w_s. g(2) \text{ wins the Pulitzer Prize at } t \text{ in } w$
- k. $[[T']] = \lambda w_s. g(2) \text{ wins the Pulitzer Prize at } g(3) \text{ in } w$
- l. $[[\beta]]^{g,c} = \lambda t_i. \lambda w_s. g(2) \text{ wins the Pulitzer Prize at } t \text{ in } w$
- m. $[[TP]]^{g,c} = \lambda t_i. \lambda w_s. \text{there is a time } t' \text{ such that } t' < t$
and $g(2) \text{ wins the Pulitzer Prize at } t' \text{ in } w$
- n. $[[\alpha]]^{g,c} = \lambda w_s. \text{there is a time } t' \text{ such that } \underline{t'} < \underline{t_c}$
and $g(2) \text{ wins the Pulitzer Prize at } t' \text{ in } w$
- o. $[[CP]]^{g,c} = \lambda x_e. \lambda w_s. \text{there is a time } t' \text{ such that } \underline{t'} < \underline{t_c}$
and $x \text{ wins the Pulitzer Prize at } t' \text{ in } w$
- p. $[[NP]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a man at } t \text{ in } w$
and there is a time t' such that $t' < t_c$
and $x \text{ wins the Pulitzer Prize at } t' \text{ in } w$ (Individual Identification)

- q. $[[DP]]^{g,c} = \lambda Q_{\langle e, \langle i, st \rangle \rangle}. \lambda t_i. \lambda w_s. \text{there is an individual } y$
 such that y is a man at t in w
 and there is a time t' ,
 such that $t' < t_c$
 and y wins the Pulitzer Prize at t' in w ,
 and $Q(y)(t)(w) = 1$
- r. $[[\gamma]]^{g,c} = \lambda t_i. \lambda w_s. \text{Mary interviews } x \text{ at } t \text{ in } w$
- s. $[[\delta]]^{g,c} = \lambda t_i. \lambda w_s. \text{there is an individual } y$
 such that y is a man at t in w
 and there is a time t' ,
 such that $t' < t_c$
 and y wins the Pulitzer Prize at t' in w ,
 and Mary interviews y at t in w
- t. $[[(35)]]^{g,c} = \lambda w_s. \text{there is a time } t''$
 such that $t'' < t_c$
 and there is an individual y
 such that y is a man at t'' in w ,
 and there is a time t'
 such that $t' < t_c$
 and y wins the Pulitzer Prize at t' in w ,
 and Mary interviews y at t'' in w

iii. Calculation of the semantic value of (52b), the structure for (52a) on Kratzer's approach:

(52) a. John talked to a girl who *was* tired.



Lexical entries

c. $[[\text{past}]]^{\text{g}, \text{c}} = \text{past}(\text{c})$ (defined only if $\text{past}(\text{c}) < \text{t}_\text{c}$)

d. $[[a]]^{g,c} = \lambda P_{\langle e, \langle i, st \rangle \rangle}. \lambda Q_{\langle e, \langle i, st \rangle \rangle}. \lambda t_i. \lambda w_s.$ there is an individual y

such that $P(y)(t)(w) = 1$ and $Q(y)(t)(w) = 1$

e. $[[\text{girl}]]^{\text{g,c}} = \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a girl at } t \text{ in } w$

$$\text{f. } [[t_1]]^{g,c} = g(1)$$
$$\text{g. } [[\emptyset_1]]^{\text{g}, \text{c}} = \text{g}(1)$$

$$h. [[t_2]]^{g,c} = g(2)$$

$$i. [[be\ tired]]^{g,c} = \lambda y_e. \lambda t_i. \lambda w_s. y \text{ is tired at } t \text{ in } w$$

$$j. [[talk-to]]^{g,c} = \lambda x_e. \lambda y_e. \lambda t_i. \lambda w_s. y \text{ talks to } x \text{ at } t \text{ in } w$$

Calculation

$$k. [[\emptyset_1\ t_2\ be\ tired]]^{g,c} = \lambda w_s. g(2) \text{ is tired at } g(1)$$

$$l. [[who_2\ \emptyset_1\ t_2\ be\ tired]]^{g,c} = \lambda x_e. \lambda w_s. x \text{ is tired at } g(1)$$

$$m. [[NP]]^{g,c} = \lambda x_e. \lambda t_i. \lambda w_s. [[girl]]^{g,c}(x)(t)(w) = 1$$

$$\text{and } [[CP]]^{g,c}(x)(w) = 1 \quad (\text{by Individual Identification}^{45})$$

$$= \lambda x_e. \lambda t_i. \lambda w_s. x \text{ is a girl at } t \text{ in } w \text{ and } x \text{ is tired at } g(1) \text{ in } w$$

$$n. [[DP]]^{g,c} = [[a]]^{g,c} ([[NP]]^{g,c})$$

$$= \lambda P_{\langle\langle e, \langle i, st \rangle \rangle\rangle}. \lambda Q_{\langle\langle e, \langle i, st \rangle \rangle\rangle}. \lambda t_i. \lambda w_s. \text{there is an individual } y$$

$$\text{such that } P(y)(t)(w) = 1 \text{ and } Q(y)(t)(w) = 1 ([[NP]]^{g,c})$$

$$= \lambda Q_{\langle\langle e, \langle i, st \rangle \rangle\rangle}. \lambda t_i. \lambda w_s. \text{there is an individual } y$$

$$\text{such that } [[NP]]^{g,c}(y)(t)(w) = 1 \text{ and } Q(y)(t)(w) = 1$$

$$= \lambda Q_{\langle\langle e, \langle i, st \rangle \rangle\rangle}. \lambda t_i. \lambda w_s. \text{there is an individual } y$$

$$\text{such that } y \text{ is a girl at } t \text{ in } w,$$

$$\text{and } y \text{ is tired at } g(1) \text{ in } w,$$

$$\text{and } Q(y)(t)(w) = 1$$

$$o. [[\delta]]^{g,c} = \lambda y_e. \lambda t_i. \lambda w_s. \text{John talks to } y \text{ at } t \text{ in } w$$

$$p. [[\gamma]]^{g,c} = [[DP]]^{g,c} ([[\delta]]^{g,c})$$

$$= \lambda Q_{\langle\langle e, \langle i, st \rangle \rangle\rangle}. \lambda t_i. \lambda w_s. \text{there is an individual } y$$

$$\text{such that } y \text{ is a girl at } t \text{ in } w,$$

$$\text{and } y \text{ is tired at } g(1) \text{ in } w,$$

$$\text{and } Q(y)(t)(w) = 1 ([[\delta]]^{g,c})$$

$$= \lambda t_i. \lambda w_s. \text{there is an individual } y$$

$$\text{such that } y \text{ is a girl at } t \text{ in } w$$

⁴⁵ See footnote 24.

and y is tired at g(1) in w,

and $[[\delta]]^{g,c}(y)(t)(w) = 1$

$= \lambda t_i. \lambda w_s.$ there is an individual y

such that y is a girl at t in w

and y is tired at g(1) in w,

and John talks to y at t in w

q. $[[[\beta]]]^{g,c} = \lambda w_s.$ there is an individual y

such that y is a girl at g(1) in w

and y is tired at g(1) in w,

and John talks to y at g(1) in w

r. $[[[\alpha]]]^{g,c} = \lambda t_i. \lambda w_s.$ there is an individual y

such that y is a girl at t in w

and y is tired at t in w,

and John talks to y at t in w

s. $[[[TP]]]^{g,c} = [[[\alpha]]]^{g,c} ([[past]]^{g,c})$

$= \lambda t_i. \lambda w_s.$ there is an individual y

such that y is a girl at t in w

and y is tired at t in w,

and John talks to y at t in w ($[[past]]^{g,c}$)

$= \lambda w_s.$ there is an individual y

such that y is a girl at past(c) in w

and y is tired at past(c) in w,

and John talks to y at past(c) in w.

CHAPTER 3

Present under past in child language

This chapter investigates the construal of the *present* in subordinate clauses under a matrix past in French child language. The main experimental finding is that French children accept the simultaneous construal of the present in a relative clause embedded under a matrix past. To explain this finding, I consider two alternative hypotheses: (i) the Zero Tense Hypothesis and (ii) the “reduced clause” hypothesis. Chapters 4 and 5 argue that both hypotheses play a role in explaining the acquisition data.

In section 3.1, I recapitulate the interpretation of present under past in SOT and non-SOT languages. In section 3.2, I turn to the previous acquisition data. I thus discuss Hollebrandse’s (2000) experiment investigating the construal of present tensed relative clauses under a matrix past in Dutch, which shows that Dutch children have adult-like interpretations of the present in relative clauses under a matrix past. In section 3.3, I present our experiments investigating the construal of present under a matrix past in French. In section 3.3.1, I discuss Experiment 1 testing the acquisition of the present in both *complement* and *relative* clauses embedded under a matrix past in French child language. The French children in this experiment *accepted* simultaneous construals of present tensed complement clauses, unavailable in adult French but available in adult Japanese. As for present tensed relative clauses, the French children *accepted* the simultaneous construal but *rejected* the indexical construal. On the basis of the complement clause results, I argue following D&L that French children admit a “zero tense” analysis for the *present* in complement clauses. I then review D&L’s interpretation of the facts involving relative clauses, where it seems that children *enforce* simultaneous construals: on D&L’s view, indexical construals of relative clauses result from inverse scope structures, obtained by scoping out the relative clause all the way up to the matrix TP level (cf. Ogiwara 1996). On this approach, indexical construals are excluded because children— due to their problems with inverse scope structures (cf. Lidz and Musolino 2006)— interpret the relative clauses *in situ*.

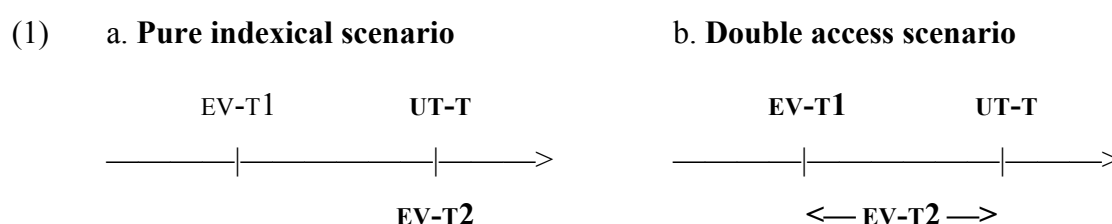
In section 3.3.2, I discuss an experiment with French adults testing the construal of the present in relative clauses under a matrix past. I show that some French adults, just like French children, accept the simultaneous construal of the present. I argue that this is due to

experimental design. To account for the adults' acceptance of the simultaneous construal of the present in relative clauses, I suggest that adults resort to a parsing strategy, which consists in reanalyzing present tensed relative clauses as "reduced clauses". I hypothesize that adults resort to the "reduced clause" strategy only when the felicity conditions for the use of the present are not met; then, in section 3.3.3, I discuss a follow-up experiment with the same adults, which validates this hypothesis. Finally, in section 3.3.4, I reconsider the child data with simultaneous construals of relative clauses in light of the explanation proposed to account for the adult data. I point out that, in principle, the simultaneous readings for relative clauses that we find in the child data could be due to the same kind of parsing strategy that adults use. A new experiment testing children's construal of the present in relative clauses under a matrix past is thus needed to convincingly establish that the relative clauses contain a zero tense.

3.1 The cross-linguistic data

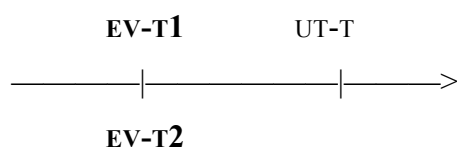
Let us recapitulate the truth conditions of sentences involving **complement clauses** and **relative clauses** in a present under past configuration. We'll start with relative clauses.

In SOT languages like English or French, a sentence with a present tensed **relative clause** under a matrix past is true in a situation where the embedded eventuality holds at *UT-T*. This is the *indexical* interpretation of the present, true in either of the scenarios which we distinguish for convenience in (1a) and (1b):



In non-SOT languages like Japanese, a sentence with a present tensed relative clause under a matrix past has a *simultaneous* interpretation, where the embedded eventuality overlaps the matrix event-time. The simultaneous interpretation of the present is true in the scenario in (2), but also in the double access scenario ((1b)):

(2) **Pure simultaneous scenario**



Japanese present tensed relative clauses embedded under a matrix past can also have an indexical interpretation, but recall that, according to Ogihara (1996), the indexical interpretation requires the presence of the adverb *now* in the embedded clause (see chapter 2, section 2.2.2).

Let us now turn to the truth conditions of sentences involving a present tensed **complement clause** embedded under a matrix past. Recall that in English or French, a present tensed complement clause under a matrix past is true only in a *double access* scenario, where the embedded eventuality overlaps with both the matrix eventuality and UT-T ((1b)). By contrast, in Japanese, a sentence with a present tensed complement clause embedded under a matrix past yields a *simultaneous* construal, being thus true in both a pure simultaneous scenario ((2)) and in a double access scenario ((1b)).

However, neither in SOT languages nor in non-SOT languages can present in complement clauses under a matrix past yield a strictly indexical construal, where the embedded eventuality follows the matrix eventuality and holds at UT-T. Recall from chapter 2, section 2.3, that for Abusch (1994, 1997), the indexical construal of the present is excluded by the ULC, which prohibits an embedded tense from denoting a time later than its evaluation time (the matrix event-time).

Summing up, the distinction between the English/ French-like present and the Japanese-like present is the ability to yield a *pure simultaneous* construal that the Japanese present has, but the English/ French present does not have.

3.2 Previous acquisition studies: Hollebrandse (2000)

There is very little work on the acquisition of tense in embedded contexts. To my knowledge, Hollebrandse (2000) is the only study investigating the acquisition of SOT. Hollebrandse considered three languages: Dutch, English and Japanese. For Dutch, Hollebrandse tested the acquisition of tense in both complement clauses and relative clauses, whereas for English and Japanese he tested the acquisition of tense only in complement clauses. In what follows, I discuss Hollebrandse's experiment testing the acquisition of the present in relative clauses

under a matrix past. Hollebrandse's results with the *past* in relative clauses under a matrix past are discussed in chapter 5, section 5.2, and the experiments and results with the past in *complement clauses* under a matrix past are discussed in chapter 6, section 6.2.

Hollebrandse tests the interpretation of present tensed relative clauses embedded under a matrix past with Dutch children. He shows that Dutch children, like Dutch adults, accept sentences like (3a) in two contexts: **(i)** the *simultaneous including UT-T* context, where the embedded eventuality (*horse in the cage*) holds at an interval overlapping both the matrix event-time and UT-T, as shown in the diagram in (3b), and **(ii)** the *future-shifted including UT-T* context, where the embedded eventuality follows the matrix eventuality and holds at UT-T^{46,47}, as shown in the diagram in (3c):

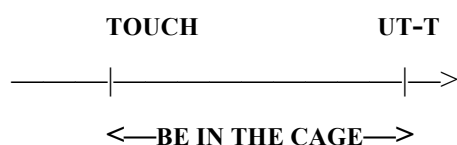
- (3) a. Raakte Koekiemonster een paard aan die in een kooi zit?

touch-PAST C.M. a horse PART that in a cage sit-PRES

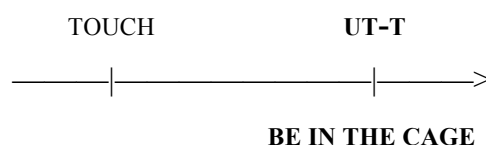
“Did Cookie Monster touch a horse that is in a cage?”

(Hollebrandse 2000: 166)

b. Simultaneous including UT-T



c. Future-shifted including UT-T



Hollebrandse starting tenet is the Independency Hypothesis, which I state as in (4):

⁴⁶ As we will see shortly (see section 3.3.1.6), Hollebrandse's “simultaneous including UT-T” case corresponds to our “double access” case and “future-shifted including UT-T” case corresponds to our “pure indexical” case.

⁴⁷ In addition to these two cases, Hollebrandse tested three more cases (the past-shifted reading, the future-shifted before UT-T reading and the future-shifted after UT-T reading), also included in the past under past experiment that I summarize in chapter 6, section 6.2. Since the results for these last three cases (which are adult-like) are not relevant to our discussion, I will not mention them here. For a full report of the results, the interested reader is referred to Hollebrandse (2000).

(4) **Independency Hypothesis**

For children who have not acquired complementation⁴⁸, the evaluation time for the embedded eventuality is UT-T.

As we can see in (4), the Independency Hypothesis states that for some children the embedded clause is evaluated with respect to UT-T. In adult grammar, this is the case for relative clauses but not for complement clauses, whose evaluation time is the matrix event-time. This is because complement clauses involve a dependency relation between the embedded eventuality and the matrix eventuality (i.e., the embedded eventuality is evaluated with respect to the matrix event-time). Hollebrandse puts forth the Independency Hypothesis to account for the non-adult readings of the past in complement clauses embedded under a matrix past. According to Hollebrandse, there are children who evaluate complement clauses with respect to UT-T, and these are children who lack complementation.

Relative clauses, on the other hand, are different from complement clauses in that they admit *independent* construals of tenses in the adult grammar— that is, they admit interpretations where the relative clause tense is interpreted with respect to UT-T, rather than with respect to the matrix event-time. Thus, a present tensed relative clause under a matrix past is true in a situation where the embedded eventuality overlaps UT-T. Now the two construals that Hollebrandse tested— the simultaneous including UT-T case, illustrated in (3b), and the future-shifted including UT-T case, illustrated in (3c)— correspond to this situation. The Independency Hypothesis thus predicts that children should accept these two construals since in both of them the embedded eventuality overlaps UT-T.

Let us now look at the results, summarized in Table 1 below:

⁴⁸ As will be extensively discussed in chapter 6, section 6.2, for Hollebrandse, the relevant diagnostic for the acquisition of complementation is the future-shifted reading before UT-T of a past in complement clauses embedded under a matrix past: children who accept this reading are children who lack complementation, whereas children who reject this reading are children who have complementation.

Table 1. Hollebrandse (2000): present in relative clauses under past

Age in years	Simultaneous including UT-T		Future-shifted including UT-T	
	Yes	no	yes	no
4 (n = 9)	85	0	59	11
5 (n = 3)	100	0	67	33
6 (n = 13)	92	5	46	46
7 (n = 21)	92	2	52	33
8 (n = 5)	93	7	27	73
adults (n = 12)	100	0	92	8

As we can see in Table 1, children show a tendency to accept the simultaneous including UT-T construal and the future-shifted including UT-T construal. According to Hollebrandse, these results confirm the Independency Hypothesis ((4)), since this hypothesis predicts that children should accept only indexical construals of the present, as is indeed the case in (3b) and (3c), since in both of them the embedded eventuality overlaps UT-T.

Now, Hollebrandse's Independency Hypothesis entails that children who have not acquired complementation will not have *dependent* construals of subordinate tenses, that is, they will not allow readings where the embedded tense is evaluated with respect to the *matrix event-time*. The prediction for relative clauses would thus be that these “non-complement” children should reject dependent readings of tenses in relative clauses.

A *past under past* configuration does not allow us to prove the existence of dependent readings of relative clauses since the cases that are true on a dependent reading (the past-shifted case and the simultaneous case) are also true on an independent reading⁴⁹. However, a *present under past* configuration *does* allow us to test whether children allow dependent readings by designing a context that would enforce a non-adult dependent construal of the present. The *rejection* of the dependent present construal would then be consistent with the Independency Hypothesis, whereas the *acceptance* of the dependent present construal would

⁴⁹ For instance, the past-shifted case can be accounted for both on a dependent analysis— on the basis of the fact that the embedded eventuality precedes the *matrix eventuality* – and on an independent analysis— on the basis of the fact that the embedded eventuality precedes *UT-T*.

be evidence for the presence of dependent construals of tenses in relative clauses. This is precisely the goal of our Experiment 1, discussed in section 3.3.1 below.

Going back to the Dutch children's results, notice that even if Hollebrandse's experiment did not include the relevant contexts that would test the availability of dependent readings of relative clauses, some findings show that some children behave in a way that suggests a dependent treatment of the present. Indeed, this is precisely the case of older children (that is, of 8 year olds). If we take a closer look at these children's pattern of responses, we notice that they have a tendency to **accept** the simultaneous including UT-T reading (93% of *yes* answers) while **rejecting** the future-shifted including UT-T reading (73% of *no* answers). The question then is why? Note that the only difference between the two readings is that, on the former, the relative clause eventuality *overlaps* the matrix eventuality ((3b)) whereas, on the latter, the relative clause eventuality *follows* the matrix eventuality and therefore involves a purely indexical construal of the present ((3c)). However, in both cases *the embedded eventuality overlaps UT-T*. Assuming children have an independent interpretation of the present—that is, they interpret the present as expressing temporal overlap with UT-T— why do they reject the future-shifted/ purely indexical case ((3c)) while accepting the simultaneous case ((3b))? The rejection of the future-shifted case seems to suggest that these children have a dependent interpretation of the present.

The acceptance of the simultaneous including UT-T case, on the other hand, is more difficult to interpret when taken on its own. A *yes* answer in this case is compatible with either a dependent or an independent interpretation of the present. On the dependent construal, the embedded present denotes an interval overlapping the matrix past, which in this case would extend into the future to include UT-T. On the independent construal, the embedded present denotes an interval overlapping UT-T, which in this case would extend into the past to include the matrix event-time. To see whether the source of the *yes* answer in the simultaneous context is a dependent or an independent interpretation of the present, it would be useful to have an experiment which tests, in addition to the future-shifted and the simultaneous cases, a case which yields *true* on a strictly dependent interpretation of the present and *false* on a strictly independent interpretation of the present. As we will see just below, this case corresponds to our *pure simultaneous* case.

In the following section, I report experimental results from Experiment 1, testing French children's interpretation of the present in both complement clauses and relative clauses. I show that children accept the pure simultaneous construal of the present (be it in a complement or in a relative clause), while rejecting the future-shifted/ purely indexical

construal of the present in relative clauses. Following D&L (2009, 2011), I argue that the complement clause findings bring evidence for the existence of a zero present tense alongside an indexical present in French child language. I further observe that the relative clause findings are compatible with two analyses: **(i)** a “scopal” analysis of the kind defended by D&L and **(ii)** a “reduced clauses” analysis. Both analyses predict that, in child French, the embedded clauses yield dependent simultaneous construals. In Chapter 4, I will report results from a further experiment that will allow us to better understand the relative clause findings.

3.3 Investigating present under past in French

Recall that in SOT languages like English or French, present under past is always indexical—that is, it expresses overlap with UT-T— whereas in non-SOT languages like Japanese, present can be relative—that is, it can express overlap with the matrix event-time (see section 3.1 above). The acquisition question that immediately arises is: do French children know that in their language an embedded present is always indexical? We consider this question against the background of two alternative hypotheses:

- (i) Hollebrandse’s **Independency Hypothesis**, according to which children who have not acquired complementation evaluate an embedded eventuality with respect to UT-T. These children treat complement clauses and relative clauses alike.
- (ii) the “**Dependent Tense**” hypothesis, according to which all children have acquired complementation.

According to this hypothesis, children do know that the embedded eventuality can and sometimes (i.e., in complement clause environments) should be interpreted with respect to the matrix event-time.

These two hypotheses make the following predictions:

In a present under past configuration,

- (i) the **Independency Hypothesis** predicts that at least some children should **accept** all the contexts where the embedded eventuality *overlaps* UT-T and **reject** the contexts where the embedded eventuality does not overlap UT-T.

- (ii) the **Dependent Tense Hypothesis** predicts that children could **accept** the present in contexts where the embedded eventuality overlaps the matrix event-time, provided that their grammar includes a *dependent* present in addition to an *indexical* present.

In what follows, I discuss an experiment designed to distinguish these two hypotheses.

3.3.1 The child Experiment 1: present in complement and relative clauses under past

3.3.1.1 Participants

The participants were 14 monolingual French children (6 girls and 8 boys) between 5;0 and 7;0 years old (mean 5; 07)⁵⁰.

3.3.1.2 Method

We used a Truth Value Judgment Task (Crain and Thornton 1998) with stories acted out with toys and props. The participants' task was to say whether the test sentence was a correct description of the story acted out or not.

3.3.1.3 Design

Since the aim of this experiment was to test the interpretation of tense in embedded clauses, we manipulated *tense*, *context* and *type of embedded clause* as within-subject factors. In the case of complement clauses, the test sentences involved stative predicates consisting of the copula *be* + a *Prepositional Phrase (PP)* embedded under the verb “dire” *say* (when the target sentence involved complement clauses) or under an object NP (when the target sentence involved relative clauses). The reason why we used stative predicates is that these predicates allow for simultaneous readings with both complement clauses and relative clauses. The predicates used in the main and embedded clauses are listed below:

⁵⁰ I am very grateful to the *Gaston Serpette* and *Longchamps* kindergartens in Nantes for granting me permission to conduct this experiment.

Table 2. French Experiment 1: main clause and embedded clause predicates

“Complement clause” experiment	
Main clause predicate	Embedded clause predicates
dire <i>say</i>	être sur la voiture <i>be on the car</i> être sous la table <i>be under the table</i> être dans le lit <i>be in bed</i> être dans le chariot <i>be in the trolley</i> être dans la malle <i>be in the trunk</i>
“Relative clause” experiment	
Main clause predicates	Embedded clause predicates
donner de l’eau <i>give water</i> donner du pain <i>give bread</i> embrasser <i>kiss</i> caresser <i>pet</i> donner une fleur <i>give a flower</i> toucher <i>touch</i> donner un kinder <i>give a kinder</i> brosser <i>brush</i> donner des croquettes <i>give kibbles</i>	être sur la table <i>be on the table</i> être sur la voiture <i>be on the car</i> être sur la boîte <i>be on the box</i> être dans le jardin <i>be in the garden</i> être sur la chaise <i>be on the chair</i> être dans le panier <i>be in the basket</i> être dans la chambre <i>be in the room</i> être près des champignons <i>be near the mushrooms</i>

The matrix tense was always a *passé composé*, which is the tense form commonly used in spoken French to express past completed events, and which has replaced the French simple past (*passé simple*), scarcely used nowadays and usually associated with the written style or with certain regional varieties of French. The embedded clause tense was always an *imparfait*, the tense form which in French contributes the *imperfective* viewpoint.

3.3.1.4 Procedure

The children were tested individually in a separate room by two experimenters: one acting out the stories and the other one playing the role of a puppet named Chronos. Before the experiment begins, the children are told that Chronos lives in a far away galaxy, and that he came to France because he wanted to improve his French. The experimenter explains that he wanted to help Chronos, but that Chronos is too shy to speak with him. However, he would be

very happy to speak with children. The experimenter then invites the child and the puppet to participate in a game where she acts out stories in front of them. At the end of each story, Chronos utters the test sentence, which the child then judges as *true* or *false*. Children were also told that the puppet sometimes says silly things and that they should tell him when that happens because in so doing they would help him improve his French.

The control items consisted of independent sentences with a present or an *imparfait*, four of which were *true*, and the other four *false*. Each test sentence uttered by the puppet was preceded by a control question asked by the experimenter (*Where is/ was X?*), which sometimes included an adverb (“ce matin” *this morning*, “maintenant” *now*). The role of the control items was to check whether children paid attention to tense. The test items used as controls are given in Table 3 below.

Table 3. French Experiment 1: control items

Present	
Lead-in 1 (adverb provided): Où est X <i>maintenant</i> ? “Where is X now?”	Test sentences: 1. Le chat <i>est</i> sur la chaise. “The cat is on the chair.” (True)
Lead-in 2: Où est X. “Where <i>is</i> X?”	Test sentences: 4. L’oiseau <i>est</i> dans l’arbre. “The bird is in the tree.” (False) 5. La voiture <i>est</i> dans le garage. “The car is in the garage.” (True)
Imparfait	
Lead-in 1 (adverb provided): Où <i>était</i> X <i>ce matin</i> ? “Where was X this morning?”	Test sentences: 1. Le lapin <i>était</i> dans la cage. “The rabbit was in the cage.” (False)
Lead-in 2: Où <i>était</i> X? “Where was X?”	Test sentences: 2. Lucie <i>était</i> dans la cuisine. “Lucie was in the kitchen.” (True) 3. Le garçon <i>portait</i> un casque. “The boy was wearing a helmet.” (True) 4. Le chien <i>était</i> dans la cuisine. “The dog was in the kitchen.” (False) 5. L’épée <i>était</i> dans le coffre. “The sword was in the trunk.” (False)

3.3.1.5 Present tensed complement clauses in French child language

Let's recapitulate the predictions for the present in a complement clause under a matrix past⁵¹ according to the Independency Hypothesis and the Dependent Tense Hypothesis:

(5) **Predictions:**

(i) Independency Hypothesis

- a. children should **accept** all the readings of the present where the embedded eventuality overlaps UT-T
- b. children should **reject** the readings of the present where the embedded eventuality does not overlap UT-T.

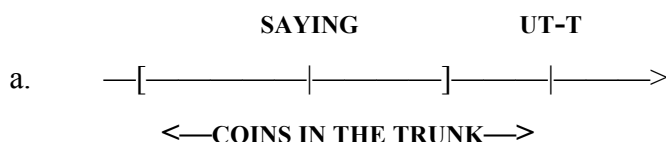
(ii) Dependent Tense Hypothesis

- a. children could **accept** the readings where the embedded eventuality overlaps the matrix event-time, provided that their grammar includes a dependent present.
- b. children should **accept** the cases where the embedded eventuality overlaps UT-T provided that their grammar includes an indexical present (the null assumption).

⁵¹ Although Hollebrandse does not test this temporal configuration with Dutch and English children, he reports findings from an experiment co-run with Ayumi Matsuo, where they tested this configuration with Japanese children. The results of the Japanese experiment revealed that Japanese children accept the simultaneous construal of present under past (90%-100% of *yes* responses)— available in adult Japanese— but that **they also accept the simultaneous construal of a past under past (90%-100% of *yes* responses)**— unavailable in adult Japanese. These very interesting results suggest that Japanese and French children behave alike in accepting non-target convergent zero tense construals, that is, French children accept non-adult zero tense construals of the present and Japanese children accept non-adult zero tense construals of the past (see chapter 5 and chapter 6 for the relevant French and Japanese data and extensive discussion). This has interesting implications for the acquisition path of tense, suggesting that children speaking languages with different settings for the SOT parameter go through a stage where both options of the SOT parameter are activated. We will come back to this issue in the conclusion of the thesis.

To test the predictions in (5), two contexts were proposed: a *double access* context, illustrated with the story in (6), and crucially a *pure simultaneous* context, illustrated with the story in (7):

(6) **Complement clause: double access context**



Pierre joue avec ses pièces de monnaie dans le jardin. Maman arrive et dit: “Oh, là là, le bazar! Range tes affaires!” Pierre met ses pièces dans la malle. Pierre: “Regarde, maman, les pièces sont dans la malle!” Maman: “Très bien, Pierre!”

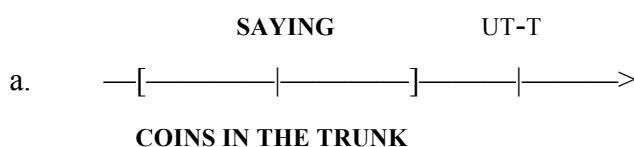
Pierre is playing with his coins. Mummy arrives and says: “Oh, la la! What a mess! Put all your things away!” Pierre puts his coins in the trunk.

Pierre: “Look, Mummy, the coins are in the trunk!” Mummy: “Well done!”

b. Chronos: Pierre a dit que les pièces *sont* dans la malle.

“Pierre said that the coins are in the trunk.”

(7) **Complement clauses: pure simultaneous context**



Pierre joue avec ses pièces de monnaie dans le jardin. Maman arrive et dit : “Oh, là là, le bazar ! Range tes affaires!” Pierre met ses pièces dans la malle. “Mes pièces sont dans la malle!”. Plus tard, Anne, sa grande sœur, arrive. Et, regarde ce qu’elle fait ! Elle vide la malle! Oh, quelle fille méchante! Maintenant, les pièces sont par terre.

Pierre is playing with his coins in the garden. Mummy arrives and says: “Oh, la la! What a mess! Put all your things in the trunk!” Pierre puts his coins in the trunk.

Pierre: “Look, Mummy, the coins are in the trunk!” Later, Anne, his elder sister

arrives, and look what she does! She empties the trunk! Oh, what a nasty girl! Now, the coins are on the grass!

b. Chronos: Pierre a dit que les pièces *sont* dans la malle.

“Pierre said that the coins are in the trunk.”

Notice that the *double access* context makes the simultaneous construal true on both a dependent analysis of the present and on an independent analysis of the present since the state described by the subordinate clause (*coins in the trunk*) holds both at the time of Pierre’s utterance and at UT-T. The *pure simultaneous* context, on the other hand, makes the simultaneous reading *true* on a dependent construal of the present but *false* on an independent construal of the present, since the state described by the subordinate clause *no longer holds* at UT-T. So, the crucial case is the pure simultaneous case. According to the Independency Hypothesis, children should reject this case, whereas according to the Dependent Tense Hypothesis, children could accept this case. Recall that a pure simultaneous present under past is unavailable in adult French but available in adult Japanese.

3.3.1.5.1 Results

Table 4 summarizes the results. The percentages indicate the mean of *yes* answers per condition across subjects. The column labeled “Expected” contains the expected answers assuming an adult grammar of French.

Table 4. French Experiment 1: present in complement clauses under past

Context	Children (n= 14)	Expected
<i>Pure simultaneous</i>	96% yes	No
<i>Double access</i>	67% yes	Yes

The French children’s treatment of present tensed complement clauses is surprising. Note that the simultaneous construal of the present is almost always *accepted* while the double access construal is sometimes *rejected*.

This pattern is the opposite of what is expected assuming an adult grammar of French. Remember that French is an SOT language where present in a complement clause embedded under a matrix past is always *indexical* and can be used felicitously on a double access

construal only, where the embedded eventuality overlaps both the matrix event-time and UT-T. Temporal simultaneity in French requires an embedded past (the *imparfait*).

The French children's pattern is also the opposite of what Hollebrandse's Independency Hypothesis would have predicted. First, the Independency Hypothesis cannot explain the *rejection* of the double access reading. Recall that according to this hypothesis children should accept all the cases where the embedded eventuality overlaps UT-T. In the double access case, the embedded eventuality does indeed overlap UT-T. Why then should children reject this case? Second, this hypothesis cannot explain the *acceptance* of the simultaneous reading either, where the embedded state *does not overlap* UT-T. How then can we explain the children's pattern? In D&L (2009, 2011), we argued that the rejection of the double access case brings evidence in favor of the existence of an *indexical* present in French child grammar while the acceptance of the pure simultaneous case brings evidence in favor of the existence of a Japanese-like/ *dependent* present in French child grammar. I will come back to these issues in section 3.3.1.8 I now turn to the relative clause experiment.

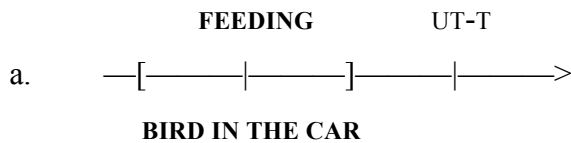
3.3.1.6 Present tensed relative clauses in French child language

Let's recapitulate the predictions for the present in a relative clause under a matrix past according to the Independency Hypothesis and the Dependent Tense Hypothesis.

- (i) According to the **Independent Tense Hypothesis**, children should
 - a. **accept** the cases where the embedded eventuality overlaps UT-T.
 - b. **reject** the case where the embedded eventuality overlaps the matrix eventuality but not UT-T.
- (ii) According to the **Dependent Tense Hypothesis**, children could
 - a. **accept** the case where the embedded eventuality overlaps the matrix eventuality, if they have a dependent present.
 - b. **accept** the case where the embedded eventuality overlaps UT-T, if they also have an indexical present.

To test these predictions, we used three contexts: a *pure simultaneous* context, illustrated in (8), a *pure indexical* context, illustrated in (9), as well as a *double access* context, illustrated in (10):

(8) **Relative clause: pure simultaneous context**



Il y a deux oiseaux dans cette histoire. Il y en a un sur le tapis et l'autre sur la voiture. Anne donne à manger à cet oiseau [celui qui est sur la voiture]. Ensuite, l'oiseau [que Anne a nourri] s'envole.

There are two birds in this story, one on the floor, the other in a roofless car. Anne feeds this bird [the bird in the car] a piece of bread. The bird [that Anne fed] then flies away.

b. Chronos: Je ne suis pas sûr d'avoir bien compris. Où est l'oiseau maintenant?

"I'm not sure I understood. Where is the bird, now?"

c. Chronos: Et où est-ce qu'il était tout à l'heure?

"And where was he before?"

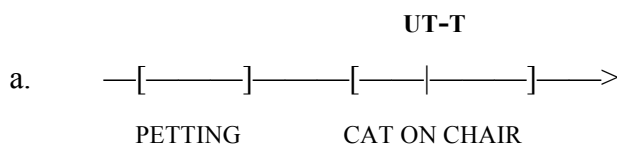
d. Experimenter: Ok Chronos, dis-moi maintenant ce qui s'est passé dans l'histoire.

"Ok Chronos, now tell me what happened in the story."

e. Chronos: Anne a nourri l'oiseau qui *est* sur la voiture.

"Anne fed the bird who is in the car."

(9) **Relative clause: pure indexical context**



C'est une histoire avec des chats. Il y en a un près des champignons, et un autre dans le panier. Anne arrive. Elle caresse ce chat [celui près des champignons], qui ensuite saute sur la chaise.

This is a story with two cats. One is near the mushrooms, the other cat is in the basket. Ann pets this cat [the cat near the mushrooms], who later on jumps on the chair.

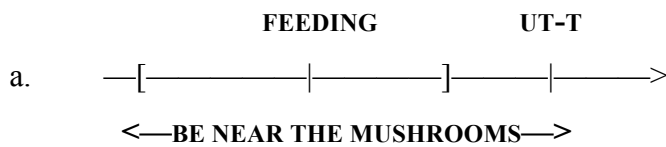
b. Experimenter: Chronos, dis-moi ce qui s'est passé dans l'histoire.

“Chronos, tell me what happened in the story.”

c. Chronos: Anne a caressé le chat qui *est* sur la chaise.

“Anne petted the cat who is on the chair.”

(10) **Relative clause: double access context**



Il y a deux lapins dans cette histoire. Un lapin est près de l'arbre et l'autre près des champignons. Maman nourrit ce lapin [celui près des champignons].

There are two rabbits in this story, one near the tree, and the other near the mushrooms. Mummy feeds this rabbit [the one near the mushrooms].

b. Experimenter: Chronos, dis-moi ce qui s'est passé dans l'histoire.

“Chronos, tell me what happened in the story.”

c. Chronos: Maman a nourri le lapin qui est près des champignons.

“Mummy fed the rabbit that is near the mushrooms.”

Note that the pure simultaneous and the pure indexical contexts each share a feature in common with the double access context. The pure simultaneous context shares with the double access case the property that they both make a *simultaneous* construal of the present true, since under both contexts the embedded eventuality (*bird in the car/ rabbit near the mushrooms*) overlaps the matrix eventuality (*feeding*). On the other hand, the pure indexical context shares with the double access context the property that they both make an *indexical* construal of the present true, since in both contexts the embedded eventuality holds at UT-T.

This amounts to saying that the acceptance of the sentence in the double-access context is compatible with both an independent and a dependent interpretation of the subordinate tense. A child with an independent interpretation could accept it because s/he

construes present as an indexical tense and the indexical construal is true in the double access scenario. Conversely, a child with a dependent interpretation of tense could accept it because s/he construes present as a pure simultaneous/ dependent tense, and the pure simultaneous construal is true in the double access context.

The crucial cases are thus the **pure simultaneous** case and the **pure indexical** case. **(i)** The **acceptance** of the pure indexical case together with the **rejection** of the pure simultaneous case would tell us that children have an independent construal of the present, **(ii)** the acceptance of the pure simultaneous case together with the rejection of the pure indexical case would tell us that children enforce a dependent present, and, finally, **(iii)** the acceptance of both the pure simultaneous and the pure indexical cases would tell us that children have both an independent and a dependent present in their grammar.

3.3.1.6.1 Results

Table 5 summarizes the results for present in relative clauses under a matrix past.

Table 5. French Experiment 1: Present in relative clauses under past

	Children (n= 14)	Expected
<i>Pure simultaneous</i>	80% yes	No
<i>Double access</i>	100% yes	Yes
<i>Indexical</i>	16 % yes	Yes

The 100% of acceptance of the double-access case is not surprising. Recall that in the double-access context the embedded eventuality overlaps both the matrix eventuality and UT-T. Children could have accepted this case either because they have an independent construal of the present (i.e., present expresses temporal overlap with UT-T) or because they have a dependent construal of the present (i.e., present expresses temporal overlap with the matrix eventuality).

However, the low percentage of acceptance of the indexical case⁵² together with the very high acceptance of the pure simultaneous case (80% of *yes* answers) clearly show that

⁵² Remember that a similar finding was observed with the 8 year old Dutch children, who accepted this reading only 27% of the time (cf. Table 1, section 3.2).

children enforce a *dependent* construal of the present in a relative clause embedded under a matrix past. Recall that the simultaneous construal of the present in a relative clause is unavailable in adult French but available in adult Japanese (see section 3.1). We thus conclude that French children have the Japanese option for the simultaneous construal of relative clauses. The relative clause results for the simultaneous present corroborate the complement clause results where, recall, the pure simultaneous present was accepted 96% of the time see section 3.3.1.5.1, Table 4). However, in Japanese, present tensed relative clauses can also yield an indexical construal⁵³. This raises the question of why French children reject indexical construals of relative clauses. In section 3.3.1.8.3, I discuss one possible solution to this puzzle, and later we will encounter another. At this point, I will ask the reader to be patient.

3.3.1.7 Intermediate summary

The results of the complement clause and the relative clause experiments suggest the following generalizations:

- (11) i. French children, unlike French adults, but like Japanese adults, **accept** the pure simultaneous construal of the present in complement and relative clauses.
- ii. Some children **reject** the double access construal of the present in complement clauses while **accepting** it in relative clauses.
- iii. French children, unlike both Japanese and French adults, **reject** the pure indexical construal of the present in relative clauses.

3.3.1.8 Discussion

3.3.1.8.1 The acceptance of the pure simultaneous cases

In the previous sections, I showed that French children accept pure simultaneous construals of the present in complement and relative clauses, unavailable in French but available in Japanese. D&L (2011) argue that the simultaneous construal of the present is due to the

⁵³ Recall however that, according to Ogihara, the indexical construal of the present under past in Japanese seems to be available only when the adverb *now* is added in the embedded clause (see chapter 2, section 2.2.2).

existence of a dependent present in French child grammar. More specifically, they argue that the dependent present is the morphological spell-out of a *zero tense* (cf. Kratzer 1998, see chapter 2, section 2.4.3).

To illustrate the zero-tense analysis of the present, consider again the test sentences used in the pure simultaneous scenarios of complement and relative clauses, repeated below:

- (12) a. Pierre said that the coins are in the trunk.
b. Anne fed the bird who is in the car.

On a zero-tense construal of the embedded present, the sentences in (12a) and (12b) receive the following simplified representations:

- (13) a. $[_{TP1} \text{ past}_1 [_{VP} \text{ Pierre say } [_{CP} \text{ that the coins } \emptyset_1 \text{ be in the trunk}]]]$
b. $[_{TP1} \text{ past}_1 [_{VP-} \text{ Anne fed the bird } [_{CP} \text{ who}_2 \emptyset_1 t_2 \text{ be in the car}]]]$

D&L extend Kratzer's zero-tense analysis of the past in SOT languages to the present in non-SOT languages and hypothesize the following parametric choice for the realization of zero-tenses:

(14) **The realization of a zero-tense cross-linguistically (D&L 2011: 240)**

a. **Non-SOT languages**

The morphological features of a zero-tense are the default/ unmarked features.

b. **SOT languages**

The morphological features of a zero-tense are determined via PF-agreement (between the embedded tense and the matrix tense).

(14a) states that the realization of a zero tense in non-SOT languages is *present*, the default, morphologically unmarked tense form. (14b), in turn, states that, under a matrix past, the realization of a zero-tense in SOT languages is *past* and that this is due to an agreement rule at the level of PF. On this account, both SOT and non-SOT languages have zero-tenses alongside indexical tenses. However, while in SOT languages, the surface realization of zero tenses needs a morphological agreement rule, in SOT languages, it does not. In these languages, zero tenses surface as the default unmarked form, *present*.

3.3.1.8.2 Complement clauses versus relative clause: the double access case

Recall that the double access construal of the present in complement clauses was accepted only 67% of the time, whereas in relative clauses the same construal was accepted 100% of the time. The question is why. Why did some children reject the double-access construal in complement clauses while accepting it in relative clauses? In D&L (2011), we claimed that the source of children's *no* answers to the double access construal of complement clauses is precisely their knowledge of the indexical nature of the present. Consider again the double access scenario for complement clauses, given in (6), and repeated in (15) below:

(15) Complement clause: double access context

Pierre is playing with his coins. Mummy arrives and says: "Oh, la la! What a mess! Put all your things away!" Pierre puts his coins in the trunk.

Pierre: "Look, Mummy, the coins *are* in the trunk!"

a. Chronos: Pierre a dit que les pièces *sont* dans la malle.

"Pierre said that the coins are in the trunk."

b. Child: *No*.

In the context in (15), Pierre, the character in the story, utters a sentence in the present tense: "...the coins *are* in the trunk". In the reported speech, Chronos, the puppet, reported Pierre's utterance using a *present* in the embedded complement clause. We believe that children reject the test sentence uttered by Chronos because they take it to be an inappropriate description of what *Pierre actually said*. Our intuition about children's *no* answers is reminiscent of Abusch's (1994:120) discussion of double access construals in the adult grammar:

When he made his assertion [(60) John said that Mary is pregnant], John was not making a prediction about the future time when (60) is uttered-he was just saying how he thought things were at his time. He may ask the speaker not to misrepresent his believed proposition and use **past** [bold ours] instead of present tense in the complement.

Just like some adults for whom the double access reading is highly marked, children rejected the sentence in (15a) because they consider it an inappropriate description of how things were

Now, recall that children *accepted* double-access construals of relative clauses. Consider again the double access scenario for relative clauses given in (9), repeated below in (16):

a.

b. Chronos: Maman a nourri le lapin qui *est* près des champignons.
“Mummy fed the rabbit who is near the mushrooms.”

To sum up, the finding that some French children reject the double access construal of complement clauses is indirect evidence that children have an indexical present in their grammar (the null assumption given the age of the children, see chapter 6, section 6.2.2 for further discussion).

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3.3.1.8.3 Why did children reject the pure indexical case?

The French children rejected the pure indexical construal of the present (84% of *no* responses) while accepting the double access construal of the present (100% of *yes* responses). Why? Why do children have problems with the pure indexical construal of the present? Could this be because they lack an indexical present? Our answer is *no*. As we have already argued in the preceding section, on the basis of the rejection of the double access construal of complement clauses, children do know that present involves overlap with UT-T⁵⁴. Could the rejection of the pure indexical construal of the present be because children simply do not have an adult-like structure for relative clauses, that is, they interpret relative clauses as clauses lacking the CP (and hence, the TP) projection? We do not think this is the case either. As argued in D&L (2009, 2011), children's production data provide convincing evidence that their grammar does include subordination structures (i.e., complement clauses, *because*-clauses, relative clauses, etc), as the examples in ((17b)-(18b)) show:

(17) a. Chronos: Maman a brossé le chat qui était dans le panier.

“Mother brushed the cat that was in the basket.”

b. Child (5;09): Non, **parce que** t'avais dit **qu'**elle l'avait brossé là [le panier] et elle l'a brossé là [le lit].

“No, because you had said that she had brushed it there [the basket] and she brushed it there [the bed].”

(18) a. Chronos: Papa a donné un smartie au pirate qui était dans le jardin.

“Papa gave a smartie to the pirate who was in the garden.”

b. Child (6;00): Non, qui était dans la cuisine!

“No, who was in the kitchen.”

We thus also discard the hypothesis that children have not acquired the full structure of relative clauses. How can we then explain the mysterious result with the indexical present?

⁵⁴ Later on (see section 4.2.1.6), I will present further evidence that children have indexical construals of the present.

In D&L (2009, 2011), we proposed one possible explanation for why children reject the indexical construal of the present, and more generally enforce simultaneous construals be it with a present or a past (see chapter 5, section 5.3.5.1). There were three ingredients to our story: **(i)** *the scopal analysis of relative clauses* (Stowell 1995, 2007; Oghihara 1996; Anand and Hacquard 2007), **(ii)** the *Observation of Isomorphism* (Musolino et al. 2000; Lidz and Musolino 2006) in child grammar and **(iii)** Abusch's (1994, 1997) *Upper Limit Constraint (ULC)*. In the remainder of this section, I will summarize the idea there (but we will see later that this is not the final word).

The approach we took to the indexical construal of present in D&L can in a certain sense be seen as a variant of the approach we attributed to Oghihara in Chapter 2. However, it also departs from an Oghihara-style approach in important ways that I briefly outline below.

Recall from our summary in Chapter 2 that, on Oghihara's approach to English, an indexical construal of present tense in a relative clause under a matrix *past* can result either from a structure where the DP containing the relative clause undergoes movement to a position *below* the matrix tense, or from a structure where the DP containing the relative clause undergoes movement to a position *beyond* the matrix tense. In D&L, we assumed an approach on which there is a lexical entry for present tense that makes present *inherently* indexical (cf. Oghihara 1996), but on which we find the indexical construal of the present *only* in structures where the DP containing the relative clause scopes out from the domain of the matrix VP and adjoins to the matrix TP. We assumed, following in particular Stowell (1995, 2007) and Anand and Hacquard (2007), that the reason why present tensed relative clauses must move outside the scope of a matrix past is that there is a *licensing condition* on the appearance of this inherently indexical present tense: it cannot occur under the scope of *past* (in Stowell's terminology, it is a "past anti-polarity item", see also chapter 2, section 2.4.1.3.5).

To illustrate the D&L proposal now, consider again the protocol for testing the purely indexical construal of the present:

(19) Relative clause: pure indexical context

There are two cats, one near the mushrooms, the other one in the basket. Ann pets the cat near the mushrooms, who later on jumps on the chair.

- a. Chronos: Ann petted the cat that *is* on the chair.
- b. Child: *No*.

The “scope analysis” of the test sentence in (19a) yields the LF in (20) below:

(20) [DP... [CP [TP2 pres [VP2 ... be on the chair]]]] 1 [TP1 past [VP1 Ann pet t₁]]

Notice that the LF in (20) for the sentence in (19a) involves inverse scope of the embedded tense (pres) with respect to the matrix tense (past). It has been argued in the literature, however, that children have difficulties with inverse scope interpretations. Specifically, Musolino et al. (2000), Lidz and Musolino (2006) showed that children assign non-adult interpretations to sentences involving quantifiers and negation when the relevant adult interpretations are associated with a relative scope for these operators that does not match their relative surface scope. The generalization put forth by these researchers is that children have a preference for interpreted representations that are isomorphic to surface interpretations. This observation— that, in child language, semantic scope is isomorphic with overt syntactic scope— is known as the *Observation of Isomorphism*. Now, if this generalization is correct, then the adult inverse scope structure in (20) is unavailable in child grammar. Rather, children must assign to (19a) the structure in (21), where the relativized DP remains *in-situ* at LF and the embedded present appears in the scope of the matrix past. And here, since the indexical construal is not licensed under matrix past, the present tense that we find must be the realization of a zero-tense ((22)).

(21) [TP1 past [VP1 ... pet ... [DP [CP ... [TP2 pres [VP2 ... be on the chair]]]]]]
*pres^{index}

(22) [TP1 past 1 [VP1 ... pet ... [DP [CP ... [TP2 Ø₁ [VP2 ... be on the chair]]]]]]

The zero-tense structure gives rise to a simultaneous construal. It yields *false* in the pure indexical scenario because the cat was not on the chair when Ann petted him; hence, children reject the sentence. At the same time, it yields *true* in the double access scenario—the *cat that Anne pets was on the chair when Anne petted him*. The children thus accept Chronos’s sentence in this context.

This presentation of D&L was simplified in one way. We suggested earlier that children recognize that present tense complement clauses under past admit a double access construal. In D&L, we take this to mean that present tense also admits another kind of indexical analysis, one that can give rise to “double access readings” and that *is* licensed under matrix past. There is thus an additional structure available for the sentence as in (23), where the

embedded present may be taken to denote an interval that overlaps both the matrix event-time and UT-T. The existence of this structure also predicts *true* responses in the double access scenario.

(23) [TP1 past [VP1 ... pet ... [DP [CP ... [TP2 pres^{double-access} [VP2 ... be on the chair]]]]]]

Note that, since the children give *false* responses in the pure indexical scenario, it must be that the embedded present in (23) *cannot* merely denote UT-T. In D&L, we argued that this follows from the ULC. Recall that the ULC is a constraint on the reference of embedded tenses forbidding an embedded tense to denote a time that starts later than the time denoted by the matrix tense.⁵⁵ (Note that the structure in (23) with a present interpreted as *double access* does not violate the ULC, since on the double access construal present denotes a time that overlaps both the matrix event-time and UT-T. The structure in (22) with a *zero*-present does not violate the ULC either, since present is an anaphoric tense expressing overlap with the matrix event- time.)

3.3.1.9 Intermediate summary

Remember the three generalizations that emerged from our experiment with French children: **(i)** children accept pure simultaneous construals of both complement clauses and relative clauses, **(ii)** they sometimes reject double-access construals of complement clauses while accepting double access construals of relative clauses and **(iii)** they reject pure indexical construals of relative clauses. To explain (i), I argued, following D&L (2011), that this is due to the existence of a *dependent/ zero* present in French children grammar. To explain (ii), I further argued, that French children also have an *indexical* present in their grammar. Finally, to explain (iii), I considered D&L's claim that this is due to children's difficulties with inverse scope/ non-isomorphic structures (but I will return to this issue later). In the following section, I discuss an experiment with French adults testing the construal of the present in relative clauses under a matrix past. I show that the adults' answers in the simultaneous context raise questions about how to interpret children's answers in the same case. This in turn leads to changes in the experimental design proposed to test the simultaneous construal of the present.

⁵⁵ The formulation of the ULC relevant for the analysis sketched here is from Anand and Hacquard (2007): "The tense in the embedded clause is an upper bound on the tenses in subordinate clauses."

3.3.2 The adult experiment: present in relative clauses under past

In this section, I report results of an experiment with French adults, designed to test the construal of the present in relative clauses under a matrix past.

3.3.2.1 Participants

A group of 10 adults, students at the University of Nantes, accepted to participate in this experiment. The data of one adult were discarded since they indicated that he did not pay attention to the task. The participants were given extra points at the final acquisition exam.

3.3.2.2 Method

The adults were tested all together during one 30-minute session. We used the same Truth Value Judgment Task as in the child experiment with one experimenter acting out stories in front of the participants. After each story, the experimenter uttered the test sentence, which the adults had to evaluate as a true or false description of the story acted out in front of them. The adults were asked to write down their *yes* (=true) or *no* (=false) answers on a sheet of paper. They were also asked to write justifications for their *no* responses.

3.3.2.3 Design

The experiment included two contexts: a *pure simultaneous* context and a *pure indexical* context. There were 3 items per context. As in the previous experiments, the matrix clause involved an *activity/ accomplishment* verb such as “donner” *to give*, “embrasser” *to kiss*, “brosser” *to brush*, “conduire la voiture” *drive the car*, and the embedded clauses involved a copula plus a locative PP construction such as “être sur la chaise” *be in front of the house*, “être dans la cuisine” *be in the kitchen*, “être dans le chariot” *be in the trolley*, etc. The matrix tense was a *passé composé* and the embedded tense was a *present*.

3.3.2.4 Results

The adult data are summarized in Table 6 below. The percentages represent the overall mean of *yes* answers.

Table 6. French adults: present in relative clause under a matrix past

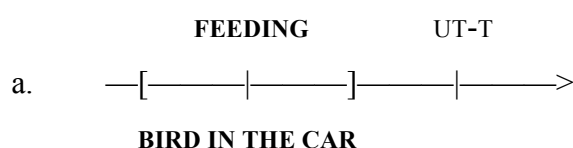
Context	Adults (n= 9)
<i>Simultaneous present</i>	52% yes
<i>Indexical present</i>	96% yes

As expected, the adults' behavior in the pure indexical case is at ceiling (96% *yes* answers). As far as the simultaneous case, notice that some adults accepted it 52% of the time. This is mysterious. Recall that the simultaneous construal of the present is unavailable in French, an otherwise SOT language where temporal simultaneity requires a past (the *imparfait*) in the embedded clause. The mysterious finding with the simultaneous construal will be taken up in the following section. The explanation that I will propose for the adults' behavior has consequences for some of the conclusions reached in the child experiment⁵⁶.

3.3.2.5 Puzzle: the adults' acceptance of the simultaneous present

Remember that, in languages like English or French, a present in a relative clause under a matrix past can only yield an indexical construal. The results with the French adults showed that some French adults accept the simultaneous construal of the present under a matrix past. To understand this surprising behavior, we need to take a closer look at the context used to test the simultaneous construal of the present, illustrated in (8a), and repeated below in (24):

(24) Pure simultaneous present: relative clauses



There are two birds in this story, one on the floor, the other in a roofless car. Anne *feeds the bird in the car* a piece of bread. The bird then flies away.

⁵⁶ Recall that children, like some adults, also accepted the simultaneous construal of the present (80% of *yes* responses), but that, unlike the adults, children rejected the indexical construal of the present (84% of *no* answers) (see Table 5, section 3.3.1.6.1).

- b. Chronos: Anne a nourri l’oiseau qui est dans la voiture.
“Anne fed the bird that is in the car.”
- c. Adult: *Yes*.

On the basis of the adults’ *yes* responses in the pure simultaneous scenario we can make two hypotheses: (i) adults have a dependent present or (ii) they have an unambiguously indexical present and something else is responsible for their unexpected *yes* answers. In what follows, I will opt for the second hypothesis, and argue that adults’ unexpected responses in the pure simultaneous scenario were triggered by pragmatic factors related to the experimental design. In section 3.3.3, I present a follow-up experiment which supports the “pragmatic” hypothesis.

Let us now turn to the pragmatic hypothesis and see how this hypothesis accounts for the adults’ *yes* answers. Notice that in the story in (24) the use of the definite description *the bird that is in the car* presupposes that there is a bird in the car when the sentence is uttered. But in the context proposed in (24), there is no bird in the car when Chronos utters the test sentence. Thus, the presupposition associated with the definite description is not satisfied. As a consequence, (24b) uttered in the context given in (24) is not *false*, but simply *infelicitous*.

It is a known fact that, when the felicity conditions for uttering sentences are not satisfied, adults (and possibly children too) resort to different repair strategies to “save” the sentences. To take one example, Guasti et al. (2005, a.o) shows that when the felicity conditions for sentences with scalar implicatures are not satisfied adults sometimes do not compute the implicatures: in Guasti et al.’s experiment, adults *accept* under-informative sentences such as *Some giraffes have long necks* 50% of the time.

Going back to our experiment, we can explain the 52% acceptance of the simultaneous construal in a parallel way. Since the context for the simultaneous construal of the present made the test sentence infelicitous, we can plausibly assume that the adults sought a strategy to rescue the sentence. I call this strategy “the reduced clause” strategy. My hypothesis is that the “reduced clause” strategy is a kind of reanalysis strategy that turns an infelicitous sentence into a felicitous *true* sentence. To understand how this strategy works, consider first the two sentences in (25) below:

- (25) a. Anne a nourri l’oiseau qui est dans la voiture.
“Anne fed the bird who is in the car”.
- b. Anne a nourri l’oiseau dans la voiture.
“Anne fed the bird in the car”.

(25a) is the test sentence used in the simultaneous scenario. We have already established that (25a) yields only an indexical construal, where the bird that Anne fed at some time in the past *is now in the car*. But, as we have argued above, the indexical construal is infelicitous in the simultaneous scenario. Adults thus parse (25a) as a reduced clause ((25b)), where some items from the initial sentence have been omitted. Unlike (25a), (25b) allows for a simultaneous reading, where *the bird that Anne fed is in the car at the feeding time*⁵⁷. Hence, the adults answer *yes*.

Now, if the “reduced clause” strategy is indeed responsible for the adults’ acceptance of the “simultaneous present”, we make the following predictions:

(26) Predictions

- i. When the felicity conditions for an indexical present are **not** met, the adults judge a sentence with a present in a relative clause under a matrix past to be infelicitous. Therefore, they resort to the “reduced clause” strategy (whenever available⁵⁸) to rescue the sentence. The use of this strategy leads to **acceptance** of the pure simultaneous construal of the present.
- ii. When the felicity conditions for the indexical present **are** met, the adults do not resort to the “reduced clause” strategy. They thus **reject** the pure simultaneous construal of the present.

Next, I will present a follow-up experiment designed to check the validity of (26).

3.3.3 Follow-up experiment: the “reduced clause” strategy in adult French

The aim of this experiment is to test the following hypothesis:

⁵⁷ (25b) also allows an indexical construal but the indexical construal of the reduced sentence is not an option for adults because it leads to infelicity in the context provided in (24), just like its unreduced counterpart in (25a).

⁵⁸ Notice that the relative clauses in our experiment always involved embedded predicates consisting of the copula “être” *be* plus a locative PP (i.e., “être sur la chaise”, *be on the chair*) which made the “reduced clause” strategy available. Crucially, this strategy is not *always* available in French, as we shall see soon. At this point, I will ask the reader to bear with me until chapter 5, where I discuss this issue and its relevance for us.

(27) **Hypothesis**

Given a choice between a full structure (including the CP projection) and a reduced structure (lacking the CP projection) for relative clauses, adults will choose the reduced structure only in contexts where the use of the full structure would lead to infelicity.

Put differently, if a context satisfies the felicity conditions for the use of the indexical present, the adults have no reason to resort to the “reduced clause” strategy. They thus analyze the relative clause with an embedded present as a CP and construe the embedded present as an indexical tense.

To test the hypothesis in (27), we designed a new context for the simultaneous present:

(28) **Pure simultaneous present: new context**

Dans cette histoire, il y deux oiseaux. Il y en a un dans l’herbe et l’autre sur le toit. Regarde, maintenant, il y a un papillon! Il vole par-dessus cet oiseau [celui sur le toit], et regarde, le papillon touche l’oiseau. Ensuite, le papillon s’envole. L’oiseau [celui que le papillon a touché] s’envole lui aussi. Cet oiseau [celui dans l’herbe] prend son vole. Il vole, il vole, et ensuite il se pose sur le toit. Tu vois, il est sur le toit!

In this story, there are two birds. One bird is in the grass, the other is on the roof. And, look, now, there is a butterfly, flying over this bird [the bird on the roof], and look, the butterfly is touching the bird. Then he flies away. The bird [the one that the butterfly touched] flies away. He lies in the grass. This bird [the one lying in the grass] flies away. He is flying, and flying, and then he sits on the roof. You see, he is on the roof!

a. Chronos: Le papillon a touché l’oiseau qui *est* sur le toit.

“The butterfly touched the bird who is on the roof.”

The context in (28) meets the felicity conditions for uttering the sentence in (28a), with an indexical present: there is a bird on the roof at UT-T, but the bird who is now on the roof is not the same bird that the butterfly touched. (28a) is thus *false* in this context. The prediction thus is that adults will reject the sentence in (28a).

3.3.3.1 Participants

The participants were the same group of 9 adults who participated in the previous experiment.

3.3.3.2 Method

We used the same Truth Value Judgment Task. The “simultaneous present” condition was tested with 3 items. The experiment also included 6 filler items interspersed among the target items. The fillers were items from old experiments. They were used as distractors aiming at preventing the participants from guessing what we were testing.

3.3.3.3 Results

The results of this experiment validate the hypothesis in (27). With the new context, adults correctly rejected the simultaneous construal of the present 96% of the time (vs. only 48% of the time with the old context). The follow-up experiment thus showed that the adults’ surprising *yes* answers in the previous experiment should be attributed to experimental set-up.

3.3.3.4 Intermediate summary

I argued that the adult’s acceptance of the “simultaneous present” receives a pragmatic explanation. The context used to test the simultaneous construal of the present did not satisfy the felicity conditions that legitimate the use of a sentence with a present tensed relative clause. The test sentence that the adults had to judge was thus neither *true* nor *false*. It was simply *infelicitous*. Under these circumstances, the adults resort to a strategy of rescuing the sentence— the “reduced clause” strategy—, which makes the simultaneous construal of the present *available* and *true*. Hence, adults accept the sentence.

I further showed that when the felicity conditions for the use of an indexical present are satisfied, the adults do not resort to the “rescue” strategy that would lead to a *yes* answer. They assign the test sentence a full structure that includes the CP projection. This structure only gives rise to an indexical construal of the present, which is false in the simultaneous scenario. Hence, adults reject the sentence.

3.3.4 Children's *simultaneous* present in relative clauses revisited

Let's take stock of our arguments for the existence of a dependent/ zero present in French child grammar. One argument is the acceptance of the non-adult pure simultaneous construal of the present in complement clauses (96% of *yes* answers). Another argument is the acceptance of the pure simultaneous present in relative clauses (80% of *yes* answers). So far so good, but as we have seen in section 3.3.2.4, some French adults also accept the pure simultaneous construal of the present in relative clauses (52% of *yes* answers). The adults' results cast doubt on the reliability of the children's relative clause results. After a closer examination of the context used to test the simultaneous construal of the present in relative clauses, I concluded that the adults' unexpected acceptance of the simultaneous case was determined by pragmatic factors related to the experimental design. I further showed that once these factors are removed, the adults correctly reject the simultaneous construal (96% of *no* answers).

If pragmatic factors were responsible for the adults' *yes* responses in the pure simultaneous scenario for relative clauses, nothing excludes that the same pragmatic factors were responsible for (at least) some of the children's *yes* responses in the same scenario. This weakens our initial conclusion that the acceptance of the simultaneous construal of the present in relative clauses constitutes evidence for the presence of dependent/ zero tenses in child grammar. We now need to check whether children allow a zero present tense in relative clauses *in contexts where the felicity conditions for present tensed relative clauses are satisfied*. This will be one of the aims of Experiment 2, discussed in chapter 4. As the patient reader will see, we will be led to conclude that both the "zero-tense" hypothesis and the "reduced clause" strategy are necessary to account for non-convergent simultaneous construals of the present under past.

CHAPTER 4

Zero present in child language

In the previous chapter, I addressed the question of whether children allowed dependent readings of the present. I argued that the crucial context that allowed us to check the Dependent Tense Hypothesis in a *present under past* configuration was the pure simultaneous context because in this context a true judgment could only arise if the embedded *present* were construed as dependent. Acceptance of this case would thus constitute evidence for a zero present. I showed that the findings with complement clauses support the Dependent Tense Hypothesis: children accept the pure simultaneous case 96% of the time. However, the findings with the simultaneous construal of relative clauses, although they also revealed a high rate of acceptance (80% of *yes* answers), could not be considered reliable evidence specifically for the presence of a zero tense. This is because the acceptance of the pure simultaneous case could also be accounted for on an alternative analysis— the “reduced clause” analysis, made available by the kind of predicates used in Experiment 1, as we shall see shortly. So, the question still remains whether children allow zero tense construals of the present in relative clauses.

This chapter re-addresses this question and shows that children do have a zero present in relative clauses. I will present two arguments that support the “zero present tense” thesis. The first argument is the acceptance of the simultaneous construal of the present in relative clauses in environments *which make the reduced clause strategy unavailable*. The second argument is the acceptance of a dependent future in complement clauses under a matrix past (i.e., a future-shifted before UT-T context).

This chapter is organized as follows: in section 4.1, I discuss reduced relative clauses in French and propose an analysis of simultaneous and non-simultaneous construals of reduced clauses in French. In particular, I argue that the simultaneous construal results from a structure where the time argument of the reduced clause is a *bound variable*, whereas the non-simultaneous construals arise from a structure where the time argument of the reduced clause is a *free variable*. I then suggest that French children prefer bound variable interpretations to free variable interpretations of reduced clauses. This is because free variable interpretations require discourse integration abilities, which children still need to acquire (cf. Krämer 2000).

In section 4.2, I present Experiment 2, testing the construal of *the present in relative clauses under a matrix past* in environments which make the “reduced clause” strategy unavailable. I show that some French children still systematically accept the simultaneous construal of the present, which, I argue, supports the existence of the Zero Tense Hypothesis. In section 4.3, I discuss another experiment, testing the construal of *the future in complement clauses under a matrix past*. I show that children allow for a *dependent* construal of the future (that is, they accept the future in a future-shifted *before* UT-T context), unavailable in adult French, where future under past can only be indexical (that is, it can only be used in a future-shifted *after* UT-T context). I argue that the acceptance of the dependent construal of the future is not surprising on the assumption that children construe the embedded future as a *zero* present plus a modal.

4.1 Reduced clauses in French

In chapter 3, section 3.3.2.5, I argued that adults— and therefore plausibly children as well (3.3.4)— resort to the “reduced clause” strategy in contexts where the felicity conditions are not satisfied and *which make this strategy available*. Let me now clarify what I mean by “contexts which make this strategy available”. The idea is that the “reduced clause” strategy is available only in environments where the use of this strategy leads to a grammatical sentence. This means that participants (children and adults) do not resort to this strategy if the result is an ungrammatical sentence.

Now, what are the environments that make this strategy available? In French, one of these environments is precisely the sentence type used in Experiment 1, that is, a sentence whose embedded clause involves the copula “être” *be* plus a locative PP such as *on the chair*, *on the grass*, *in the garden*, etc., as illustrated in (1):

- (1) a. Anne a caressé le chat qui est *sur la chaise*.
 “Anne petted the cat who is on the chair.”
- b. Anne a caressé le chat *sur la chaise*.
 “Anne petted the cat on the chair.”

On a “reduced clause” analysis of (1a), the relative pronoun “qui” *who* and the copula “être” *be* are omitted. The output of this operation is (1b), which is a grammatical sentence in French.

An environment where the “reduced clause” strategy is unavailable is an environment where the embedded relative clause involves, for instance, an *activity verb*, since, in French⁵⁹, the result of applying the “reduced clause” strategy in this environment would lead to ungrammaticality, as shown by the contrast in (2):

- (2) a. Anne a embrassé le garçon qui *pleure* sur le banc.
 “Anne kissed the boy who is crying on the bench.”
- b. *Anne a embrassé le garçon *pleure* sur le banc.
 “Anne kissed the boy cry-PRES on the bench”

Another environment which makes the “reduced clause” strategy unavailable is the “complement clause” environment. Here again, the use of the “reduced clause” strategy would lead to ungrammaticality as the following pair of examples shows:

- (3) a. John *a dit* que les pièces sont dans la malle.
 “John said that the coins are in the trunk.”
- b. *Jean *a dit* les pièces dans la malle.
 “John said the coins in the trunk”.

Next, I turn to the interpretations of reduced clauses/ locative PPs such as “on the table” in French. Consider again the example in (1b), repeated in (4) below:

- (4) Anne a caressé le chat *sur la chaise*.
 “Anne petted the cat *on the chair*.”

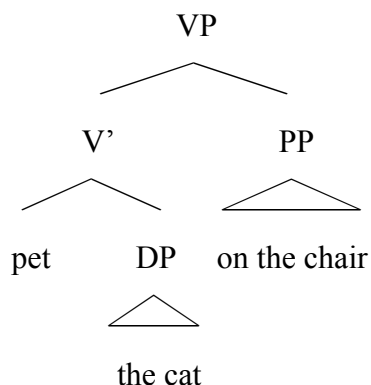
⁵⁹ Notice that in English, unlike in French, relative clauses with activity verbs make the “reduced clause” strategy available, as shown by the grammaticality of (i):

(i) Anne kissed the boy crying on the bench.

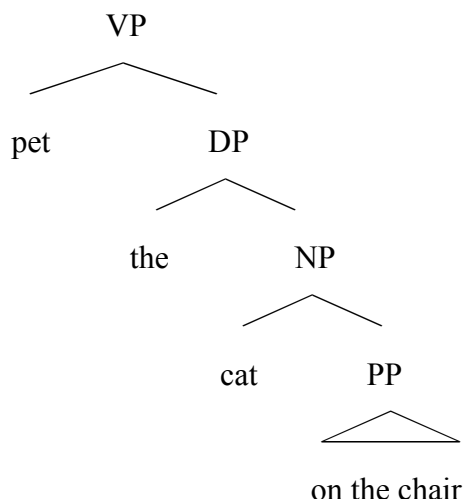
The prediction would thus be that English children would enforce simultaneous construals of (i).

The sentence in (4) is ambiguous: it can mean either that **(i)** the *petting* takes place on the chair, or that **(ii)** the cat *is on the chair when Anne pets him*⁶⁰. This ambiguity is due to the existence of two different positions where the locative PP can be generated: **(i)** results from a structure where the PP modifies the constituent *caresser le chat* ‘pet the cat’ as in (5a), whereas **(ii)** results from a structure where the PP modifies the noun *chat* ‘cat’, as in (5b):

(5) a. the “petting” is on the chair



b. the cat is on the chair



When (4) is uttered out of the blue, it seems that the PP is understood as modifying the verb *pet* ((5a)). When (4) is uttered in a context where, crucially, there is more than one cat, then the PP is understood as modifying the noun *cat*, as in (5b)⁶¹.

Now, when uttered in a context with more than one cat, (4) can have either a *simultaneous* interpretation where *the cat that Anne pets is on the chair at the feeding time* or a *non-simultaneous* interpretation where *the cat that Anne pets is on the chair at some salient*

⁶⁰ Interestingly, in Romanian, the sentence in (4) can only have the first interpretation, where the petting took place on the table. To obtain the second interpretation, one has to use the complex preposition “DE PE”.

(i) Ana a mângâiat pisica pe scaun.
 Ana has petted the cat on chair
 “Ana petted the cat on the chair” (*the petting took place on the chair*).

(iii) Ana a mângâiat pisica de pe scaun.
 Ana has petted the cat DE-on chair
 “Ana petted the cat on the chair” (*the cat is on the chair*).

⁶¹ Thanks to Laurence Voeltzel for judgments and interesting discussion of this example.

time in the context. It seems that, even for adults, the simultaneous interpretation is more easily accessible than non-simultaneous interpretations, which require more elaborate contexts. Here is, for instance, a context which yields a non-simultaneous, *past-shifted* interpretation⁶²:

(6) **Past-shifted context**

Mary and Lisa. Mary: “Lisa, I’ll show you my new paintings. Look, one is in the living room.” [Mary shows Lisa the painting in the living-room]. Mary: “The other one is in the bedroom.” [Mary shows Lisa the painting in the bedroom]. Lisa: “wow, this one [the one in the bedroom] is really nice”. Lisa leaves. The next day, Mary and Alex, her husband, decide to redecorate the bedroom. Mary carefully takes the painting down the wall and puts it on the kitchen table. Later on, when they finish redecorating the room, Alex: “We should put the painting back in its place. I’ll bring it!” He goes into the kitchen, takes the painting and drops it! Two days later, Mary sees Lisa. Mary: “Do you remember my two paintings?” Lisa: “Yes.” Mary: “Alex *dropped the one in the bedroom!*”

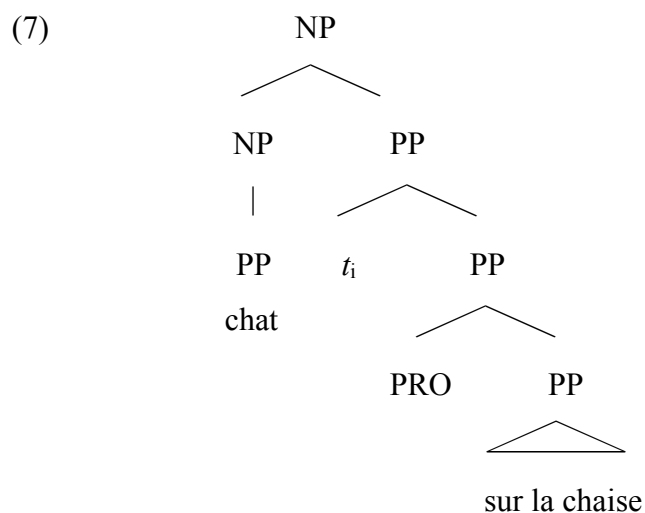
The context in (6) illustrated the past-shifted context, where the painting that Alex dropped is in the bedroom at some time before the dropping took place.

4.1.1 The temporal construal of PP/ reduced relative clause modifiers

To explain the simultaneous and non-simultaneous readings of reduced clauses in French, I will adapt Kusumoto’s (1999) analysis of Japanese present tensed relative clauses⁶³. I analyze reduced relative clauses as bare PPs, modifying the NP to which they adjoin. Unlike Kusumoto, however, who assumes that Japanese reduced relative clauses do not have their time argument represented in the syntax, I assume that PP modifiers have a time argument projected in the syntax in their highest specifier position:

⁶² PP modifiers such as “on the chair” can also allow a future-shifted reading where *being on the chair* follows the *petting*. However, the future-shifted reading requires even more elaborate contexts to be made salient.

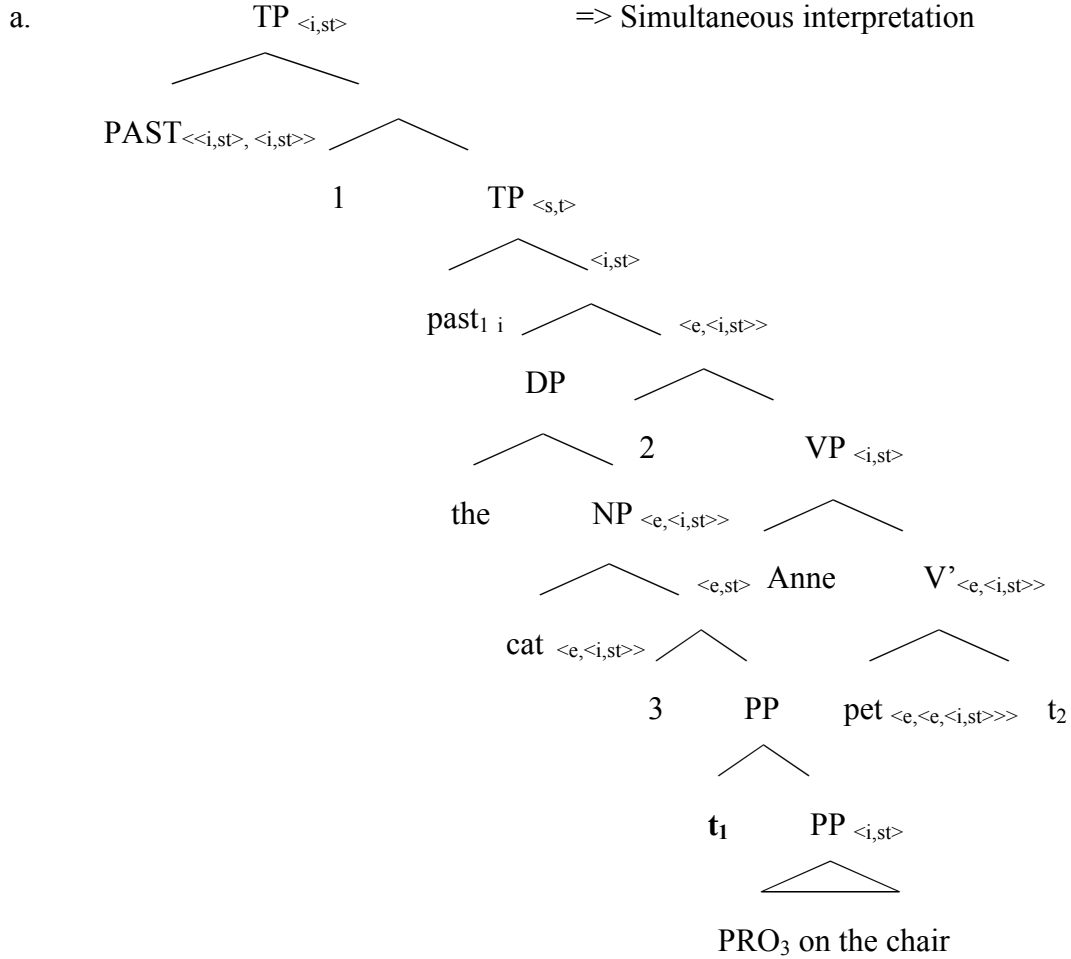
⁶³ Since I build on Kusumoto, I will be adopting her assumptions about tense in this section, and assuming the existence of her ‘past_i’ variables in the T position. However, it should be clear how to ‘translate’ into more Kratzer-like terms: the position occupied by ‘past_i’ would instead be occupied by the trace of a moved tense.



The temporal variable in (7) can be either bound by the matrix tense or free. When it is bound by the main verb's tense, it yields a *simultaneous* reading. When it is free, it yields the *speech time* or some other time salient in the context.

In (8a), I give the structure for the simultaneous interpretation, where the cat is on the chair at the *petting* time, assuming the lexical entry for *the* in (8b):

(8) Anne petted the cat on the chair.

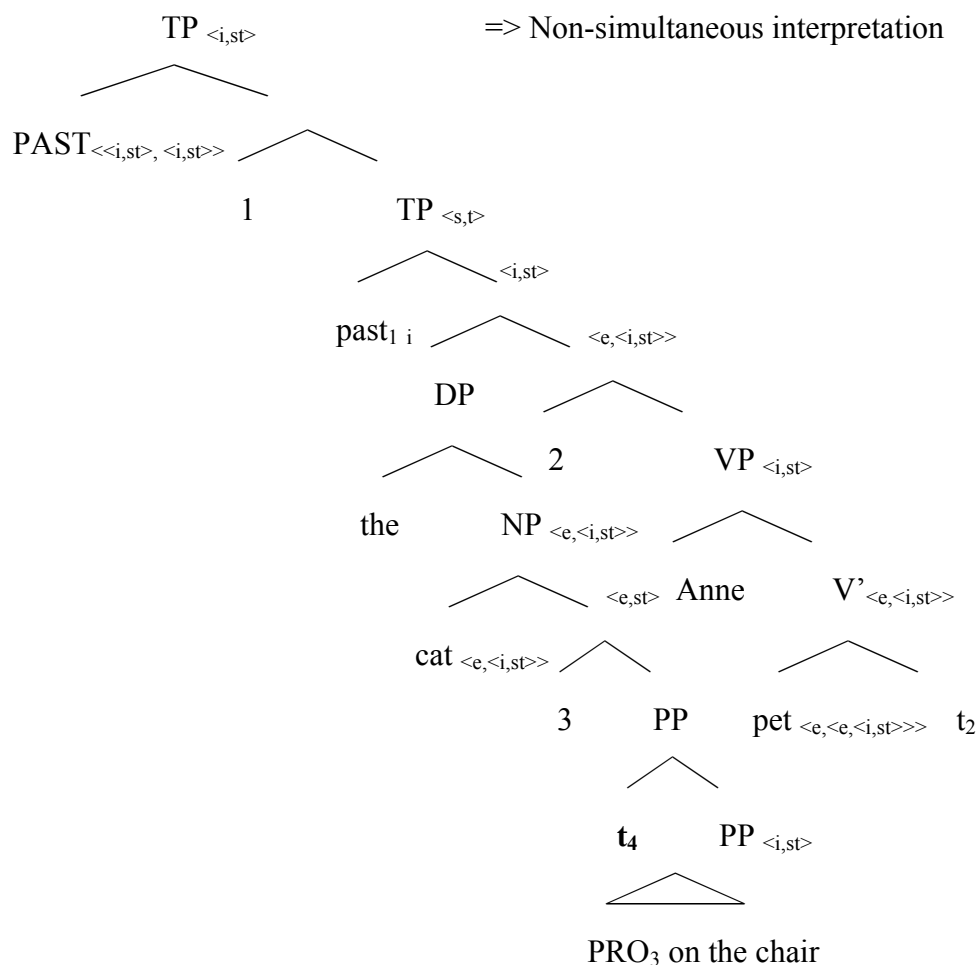


b. $[[the]]_{g,c} = \lambda P_{\langle e, ist \rangle}. \lambda Q_{\langle e, ist \rangle}. \lambda t_i. \lambda w_s$: There is a unique individual x such that $P(x)(t)(w) = 1$. $Q(\text{the unique individual } x \text{ such that } P(x)(t)(w) = 1)(t)(w) = 1$.

In (8a), the time argument of the PP *on the chair* is bound by the matrix past. This ensures the overlap between *the cat's being on the chair* and *Ann's petting him*.

In (9), I give the structure for the non-simultaneous interpretation, where the cat is on the chair *at some salient time in the context*:

(9) Anne petted the cat on the chair.



This time, the time argument of the PP on the chair t_4 is not bound by the higher tense. Its reference is thus fixed by the context. In a context where the cat is on the chair at UT-T, the index 4 could pick up *UT-T*.

Summing up, we have seen that reduced clauses in French have both a simultaneous interpretation and non-simultaneous interpretations. I argued that the simultaneous interpretation results from a structure where the temporal argument of the reduced clause is a bound variable, whereas the non-simultaneous interpretations result from a structure where the temporal argument of the reduced clause is a free variable. In the following section, I turn to the interpretations of reduced clauses in child French. I argue that reduced clauses in French child language only have a bound variable interpretation. This is because free variable interpretations are more difficult to access since they require discourse integration abilities, which children still need to acquire (cf. Krämer 2000).

4.1.2 “Reduced clauses” in child language

To account for the acceptance of the pure simultaneous construal of the present in relative clauses, I suggested that, just like adults, children might resort to a rescue strategy—the “reduced clause” strategy—which produces a new sentence, one that is *true* in the pure simultaneous scenario (see chapter 3, sections 3.3.2.5 and 3.3.4). Under this proposal, children have adult-like structures of relative clauses. That is, just like the adults, children assign the embedded clause a full structure, involving a CP projection. In what follows, I will continue to assume that children have full structures for relative clauses, but I will argue that, unlike the adults—who use the “reduced clause” strategy only when the felicity conditions are not met—children use it whenever they can, that is, whenever this strategy is available.

Let us now reexamine children’s findings in the relative clause experiment in light of the “reduced clause” strategy. Recall from our discussion in chapter 3, section 3.3.1.6.1 that children accepted the simultaneous interpretation and rejected the non-simultaneous/indexical interpretation of sentences such as (1a), repeated in (10) below:

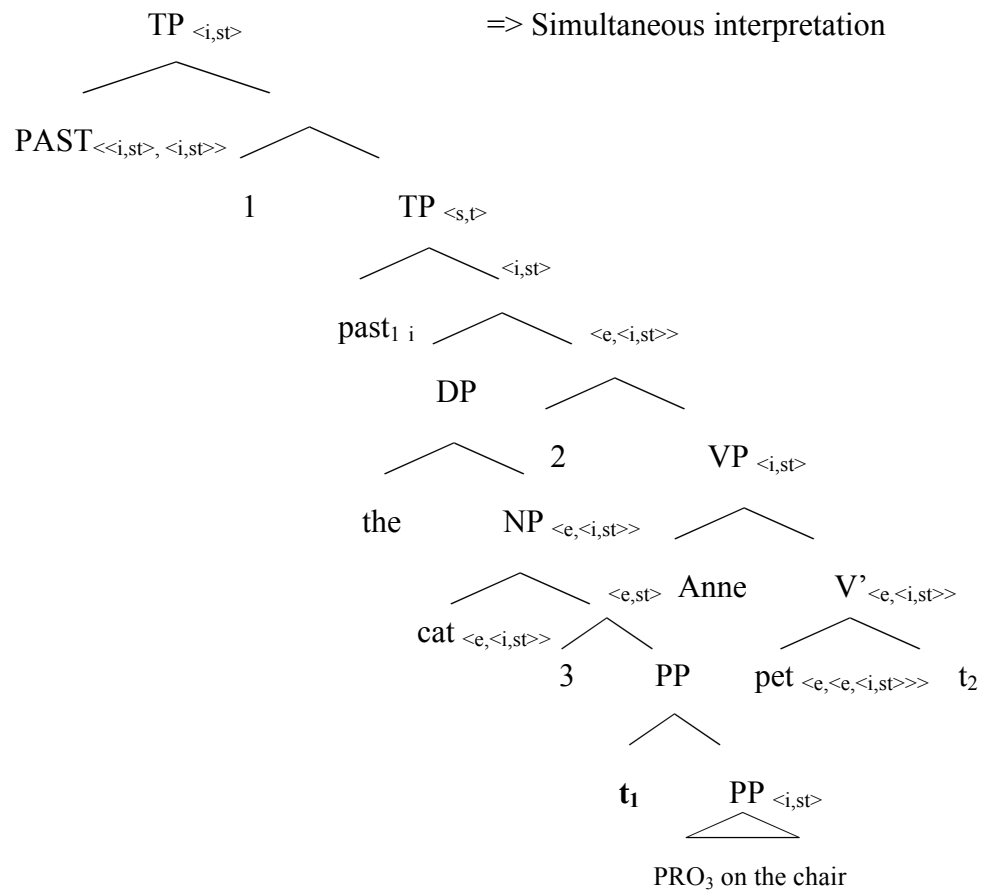
- (10) Anne a caressé le chat qui *est* sur la chaise.
“Anne petted the cat who is on the chair.”

Assuming the “reduced clause” analysis, children re-analyze (10) as in (11):

- (11) Anne a caressé le chat sur la chaise.
“Anne petted the cat on the chair.”

Now, as we have just seen in section 4.1.1 above, sentences such as (11) allow both simultaneous and non-simultaneous interpretations. However, as stated above, French children only allow simultaneous interpretations of (11). The question that arises if indeed children make use of the “reduced clause” strategy is: why do children reject non-simultaneous interpretations? My hypothesis is that this is because children prefer *bound variable* interpretations. On this hypothesis, children analyze (11) as in (8a) (repeated as (12)):

(12) Anne petted the cat on the chair.



Notice that, in (12), the time argument of the PP *on the chair* is bound by the matrix past. As described above (see section 4.1.1), this yields a simultaneous interpretation, where the cat is on the chair when the petting takes place.

Why would children have problems with free interpretations of nominal modifiers? I argue that children's problems with the indexical interpretation are due to their difficulties in integrating the discourse information required in order to determine the time at which the *cat's being on the chair* must be evaluated.

Children's problems integrating discourse information is not new. Other studies testing children's comprehension of definite and indefinite NPs (Avrutin and Coopmans 2000; Krämer 2000). Krämer formulates the non-integration hypothesis, which attributes children's errors to failure using the information that the discourse provides:

(13) **The non-integration hypothesis (Krämer 2000: 82)**

The predicative interpretation of indefinites is acquired early.

The free variable interpretation is acquired later, because it requires discourse integration.

The non-integration hypothesis implies that children sometimes ignore the relevance of discourse and opt for interpretations which do not require integrating the discourse information. Pursuing this line, children's problems with the non-simultaneous/ indexical interpretation in our experiment do not arise because children do not pay attention to the context. Rather, these problems arise because children have not yet learned that in some cases, namely, those involving free variable interpretations of a time argument within an NP, the context plays a crucial role⁶⁴. For example, in our experiment, in order to allow an indexical interpretation of the NP *cat on the chair*, children have to pay attention to the context, which makes it clear that the cat was on the chair *at UT-T* and not at the *petting* time. The simultaneous interpretation, on the other hand, does not require discourse integration, since on this interpretation, the information needed to establish the reference time of the NP *cat on the chair* is determined in the syntax via binding and is thus readily available without recourse to contextual information.

Assuming children have problems evaluating the relevance of the context and integrating discourse information, we can thus explain why they would prefer simultaneous construals of NPs. They would prefer a bound variable interpretation of (11) and this follows from the fact that their limited discourse integration as far as the reference of noun phrases is concerned extends to the **temporal** reference of noun phrases.

Summarizing, we have claimed that children have difficulties with the indexical temporal construals of NPs and suggested an explanation based on Krämer's (2000) "non-integration" hypothesis. Obviously, future research on the temporal construals of NPs is

⁶⁴ The non-integration hypothesis was proposed to account for certain types of errors that children are making. Notice that I am not making any parallel between the pattern of mistakes that children are making. The parallel here is the source of non-adult responses, which, Krämer imputes to children's difficulties integrating discourse information.

needed in order to validate the claim and the analysis put forth⁶⁵. But if it is correct, then it means that the childrens' responses to the relative clause items in Experiment 1 can be accounted for as following from their use of the "reduced clause" strategy.

Now, the reduced clause analysis is very appealing since it allows us to account for both children and the adults' responses with a present under past in Experiment 1. However, recall that the goal of our investigation is to determine children's interpretations of embedded *tenses*. Once we assume "the reduced clause" analysis, according to which children omit certain elements in the structure, one of which is precisely the embedded tense, we can no longer tell whether children allow zero tense construals of the *present* in relative clauses. To remedy this problem, we designed another experiment (Experiment 2), aiming at investigating the construal of the present in relative clauses under a matrix past. This time, we made sure to eliminate the possibility of using a "reduced clause" strategy so that we would be able to see whether children allow zero tense interpretations of the present or not. Moreover, this new experiment will also allow us to check whether the results with non-simultaneous construals of relative clauses in Experiment 1 can be attributed to children's difficulties with inverse scope as claimed by D&L.

4.2 Experiment 2: *Zero* present in relative clauses⁶⁶

As stated at the end of section 4.1, the goal of this experiment was twofold: **(i)** test the availability of the zero tense interpretation of the present in relative clauses and **(ii)** check whether the results with non-simultaneous construals in Experiment 1 can in fact be attributed to children's problems with inverse scope.

Recall that in Experiment 1 children accepted the simultaneous construal of the present in relative clauses. We proposed two analyses for this result. On one analysis, children project the whole structure for relative clauses and construe present as a zero tense. On the alternative analysis, we assumed that children do not project the whole structure for relative clauses; rather, they analyze relative clauses as "reduced clauses".

⁶⁵ It should be emphasized that the claim here is merely that children have difficulties with the indexical temporal construals of *NPs*, not that children have difficulties with all indexical temporal construals and in particular with indexical construal of (present/past) *tenses*.

⁶⁶ This section is an extension of Lungu (2012).

The “reduced clause” analysis of relative clauses gives rise to a simultaneous construal, *true* in the simultaneous scenario; hence the acceptance of this case. Recall also that in Experiment 1, children rejected the indexical construal of the present in relative clauses. Again, our discussion showed that this finding is compatible with two analyses. On one analysis, the rejection of the indexical construal is due to children’s difficulties with inverse scope interpretations (assuming a scopal analysis of independent construals together with the Observation of Isomorphism in child language). On the alternative analysis, children construe relative clauses as reduced clauses; the “reduced clause” analysis automatically gives rise to simultaneous construals (assuming that Krämer’s non-integration hypothesis for NPs extends to their temporal reference, that is, that indexical construals of NPs require discourse integration).

As we can see, the “reduced clause” analysis can uniformly account for the surprising results with both the simultaneous and the indexical construals of relative clauses. Recall that Experiment 1 has established that children allow zero tense construals of present tense in complement clauses (see chapter 3, section 3.3.1.8.1). To test whether children also allow zero tense construals of present tense in relative clauses, we designed a second experiment (Experiment 2) which ensured that the “reduced clause strategy” explanation for the simultaneous construals in Experiment 1 was not available. As a consequence, children would have to project the whole structure (including the CP and the TP projections) for the relative clauses.

Let’s look at the predictions that we make for these cases:

(14) **Predictions:**

- i. If children have zero tenses alongside indexical tenses, they should
 - a. **accept** the simultaneous construal of the present
 - b. **accept** the indexical construal of the present
- ii. If the scopal analysis together with the Observation of Isomorphism in child language is responsible for the non-adult results with the non-simultaneous construals in Experiment 1, children should
 - a. **accept** the simultaneous construal of the present
 - b. **reject** the indexical construal of the present

These predictions were tested with both children and adults. In what follows, I will present in detail the child as well as the adult experiments. I will start with the child experiment.

4.2.1 The child experiment

In this section, I discuss our second experiment designed to test the construal of the present in a relative clause under a matrix past in child French.

4.2.1.1 Participants

The experiment was carried out with 30 children (14 girls and 16 boys) ranging between 4;04 and 6; 0 (mean = 5;03)⁶⁷ from two kindergartens in Nantes, whose parents gave us a written permission for them to participate in the experiment.

4.2.1.2 Method

The experimental task was a Truth Value Judgment Task with stories played with toys and props. The stories were videotaped and played on computer. The participants' task was to tell whether the sentence they heard toward the end of each story was a correct description of what had happened in the story. Children's answers were recorded with the computer.

4.2.1.3 Design

We used a 2 x 2 design, with *tense* (present *versus imparfait*) and *temporal relation* (simultaneity *versus* non-simultaneity) as within-subject factors. This gave rise to four experimental conditions: two simultaneous conditions— the “simultaneous present” and the “simultaneous *imparfait*”— and two non-simultaneous conditions— the “indexical present” and the “future-shifted *imparfait*”. In section 4.2.1.5, I give sample stories used in the simultaneous present and the indexical present conditions. Sample stories used in the simultaneous *imparfait* and the indexical *imparfait* conditions will be given in chapter 5, section 5.4.

⁶⁷ Children participating in the experiment are children enrolled in the third year of nursery school (“grande section” de maternelle). Younger children, enrolled in the second year of nursery school (“moyenne section” de maternelle), did not successfully pass the pre-test session.

As in the previous relative clause experiment, the matrix clause of the test sentence involved activity or accomplishment verbs (“donner une fleur” *give a flower*, “caresser” *pet*, “mordre” *bite*, “frapper” *hit*, etc) in the *passé composé*. Unlike in the previous relative clause experiment, in this experiment, the embedded clause always involved *activity verbs* (“dormir” *sleep*, “sauter” *jump*, “nager” *swim*, “pleurer” *cry*, etc) in either the *present* tense or the *imparfait*. Crucially, the activity verbs in French make the “reduced clause” strategy unavailable (see the discussion of (2b) in section 4.1).

4.2.1.4 Procedure

The children were tested individually in a separate room by one experimenter, during school hours. They watched stories on a computer. Each story was followed by the target sentence that the children had to judge as a good or bad description of what had happened in the story. Children were told that what they heard was sometimes right, sometimes wrong. When they did not agree, children were asked to explain why.

Crucially, the test sentences involving an embedded *present* were uttered before the story ended, that is, while the activity described by the embedded clause was still ongoing. For instance, a sentence such as “Le singe a volé le chapeau de la fille qui pleure” *The monkey stole the hat of the girl who is crying* was uttered while a girl was still crying.

The experiment was divided into three 15-minute sessions with a one-week break between sessions. There was a total of 29 items (16 target items and 13 filler items) distributed as follows: 11 items (6 target and 5 fillers) in the first session, 9 items (5 target and 4 fillers) in the second sessions and 9 items (5 target and 4 fillers) in the third session.

Filler items were used both as distractors and as control items. The filler items involved sentences yielding *yes* or *no* responses. Filler items tested different linguistic phenomena such as comprehension of reflexives or VP ellipsis, thereby preventing the participants from deducing an experimental pattern. Fillers were also used to control whether the participants paid attention to the task. Participants who failed more than two filler items were excluded from the experiment. Target items and filler items were presented in a random order, which was kept constant across subjects. The number of *yes/ no* answers across items was balanced.

The experiment was preceded by a pre-session run one week before the first experimental session. The role of this session was twofold: 1) to make a selection among children who were later included in the experiment and 2) to get children used to answering

no. The pre-session consisted of 9 *yes/ no* items. The items requiring a *no* answer outnumbered those requiring a *yes* answer (6 *no*-items vs. 3 *yes*-items). Children who failed more than 4 items were excluded from the experiment.

4.2.1.5 Experimental conditions

To test the construal of the present in relative clauses under a matrix past, we used two experimental conditions: the “simultaneous present” and the “indexical present” conditions, illustrated with the stories in (15) and (16), respectively:

(15) **Pure simultaneous present**

Voici 2 singes. Un dort dans la chaise à balancer, l'autre est debout. Un lapin arrive. Il renverse ce singe [celui dans la chaise à balancer]. [Le singe ne va plus s'asseoir sur la chaise.] Ensuite, le lapin s'en va en courant. Ce singe [celui qui était debout en début de l'histoire]: “Je suis fatigué, je vais me reposer”. Il s'assied dans la chaise à balancer. Il s'endort. Maintenant, il dort.

Here are 2 monkeys. One is sleeping in the rocking chair, the other is standing. A rabbit comes and knocks over this monkey [the one in the chair]. [The monkey is not going back to sit on the chair anymore.] Then, the rabbit runs away. The other monkey: “I am tired, I'll go rest in the chair”. He goes to sit in the rocking chair. He falls asleep. He is now sleeping on the chair.

[While the monkey is sleeping...]

a. Test sentence: Le lapin a renversé le singe qui *dort* dans la chaise à balancer.

“The rabbit knocked over the monkey who is sleeping in the rocking chair.”

The context in (15) satisfies the felicity conditions required by the use of the definite description *the monkey who is sleeping on the chair*: there is a monkey who is sleeping at the time the sentence is uttered. This context was designed to make an indexical present *false*—the monkey who is now sleeping is *not* the same monkey that the rabbit knocked over—and a simultaneous present *true*—the monkey that the rabbit knocked over was sleeping at the time when the knocking over took place.

Let's now turn to the context for an indexical present, illustrated with the story in (16):

(16) **Pure indexical present**

Voici une histoire avec 2 filles. Elles sont au zoo. Il y beaucoup d'animaux: des pandas, des singes, des zèbres. Cette fille a très peur. Elle n'a jamais vu un singe avant! Elle pleure, elle pleure! Cette fille [l'autre fille] n'a pas peur. Elle dit: "Arrête de pleurer, nous allons bientôt rentrer! Regarde ces animaux! Ils sont très gentils!"

Elle se rapproche du singe. Son chapeau tombe et le singe vole son chapeau et s'en va. Plus tard, les filles s'en vont elles aussi. Sur leur chemin de retour, cette fille [celle dont le singe a volé le chapeau] tombe et se fait mal. Maintenant, elle pleure, elle pleure!

[Pendant que la fille pleure...]

Here are two little girls. They are at the zoo. There are lots of animals at the zoo: pandas, monkeys, zebras. This little girl is very scared; she has never seen a monkey before. She is crying, look! She's crying! This little girl [the other girl] is not scared. She says: "Stop, crying, we will soon go home. Look at these animals! They are very nice!" She gets closer to the monkey. Her hat falls on the ground and ... the monkey steals her hat! He runs away with his hat. Later on, the girls go home. On their way back home, this little girl [the second girl, who got her hat stolen] stumbles and falls. She hurts herself. Now she is crying!

[While the girl is crying...]

a. Phrase test: Le singe a volé le chapeau de la fille qui *pleure*.

"The monkey stole the hat of the girl who is crying."

The context in (16) is appropriate for an indexical use of the embedded present in (16b): there is a girl who is now crying. The sentence in (16b) is thus *true* in the context given in (16): the girl who is *now* crying got her hat stolen by a monkey at some time in the past. Notice that the context in (16) is also appropriate for a simultaneous construal of the embedded present in (16b): there was a girl who was crying at the *hat-stealing* time, but that girl was not the girl whom the monkey stole the hat. (16b) is thus *false* on a simultaneous construal.

4.2.1.6 Results

The following graph summarizes the results for the present in a relative clause under a matrix past:

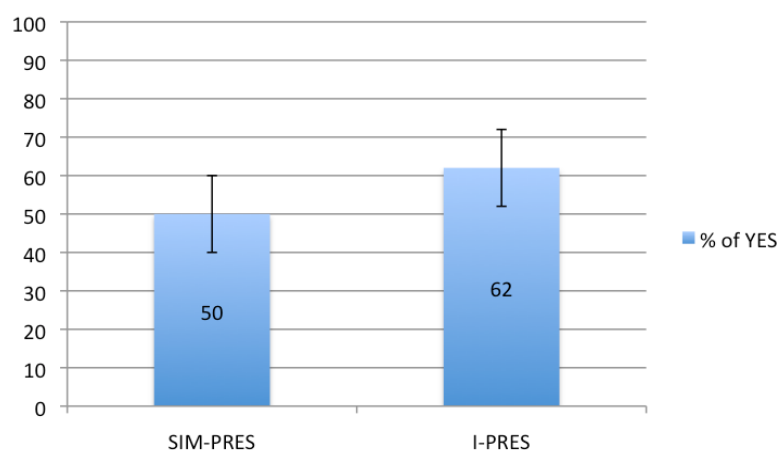


Figure 1. Experiment 2. Children: percentage of *yes* responses for *present* under *past*

As can be seen in Figure 1, in the simultaneous case, children sometimes, namely 50% of the time, accept the present. This percentage represents the mean of *yes* answers across subjects. A closer look at the distribution of responses reveals that children divide up into two groups: one group who consistently accepted the test items and another group who consistently rejected the test item. The graph in Figure 2 shows the bimodal distribution with 11 children always answering *no* and 11 children always answering *yes*.

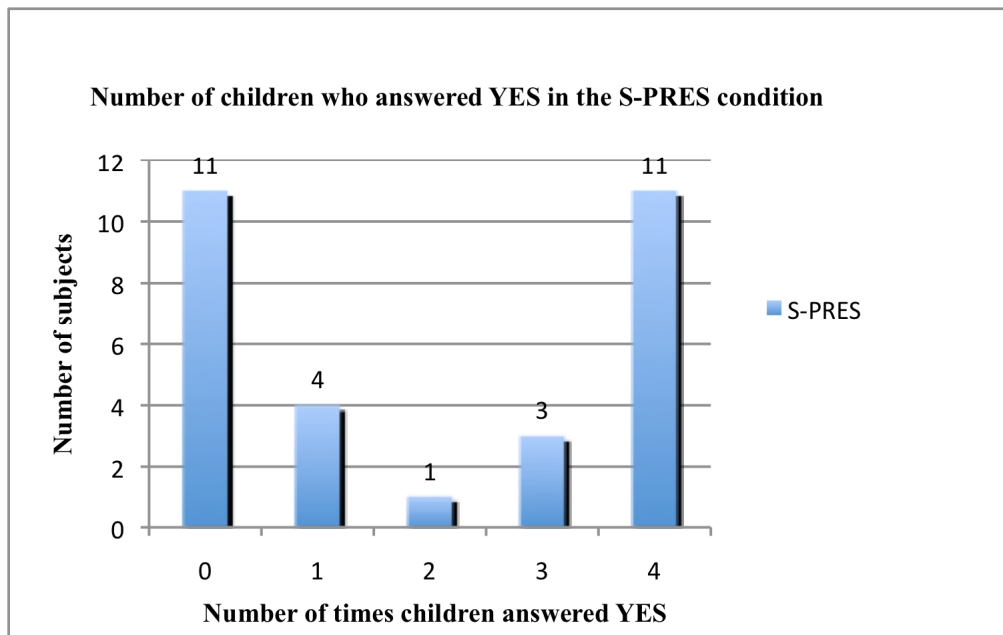


Figure 2. S-PRES condition: the distribution of children as a function of the no of times they answered *yes*

In the indexical condition, children answered *yes* 62% of the time. There were 19 children who consistently volunteered *yes* answers and 10 children who consistently volunteered *no* answers in this condition. One child had a half-*yes* half-*no* pattern. A graph showing the distribution of children as a function of the number of times they gave a *yes* answer in the indexical present condition is given in Figure 3, below:

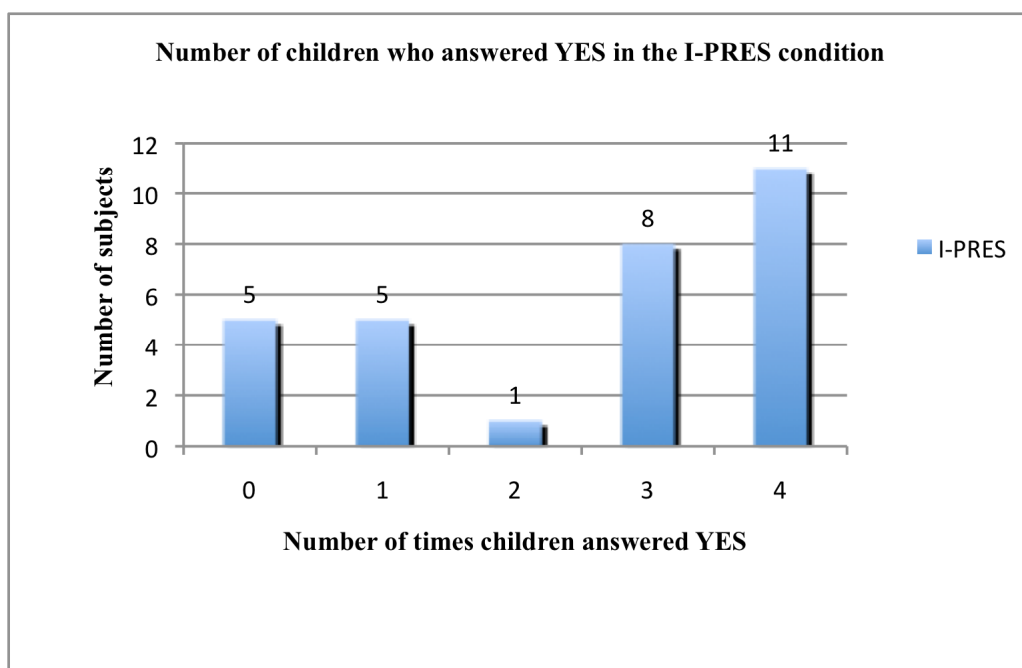


Figure 3. I-PRES condition: the distribution of children as a function of the no of times they answered *yes*

Children were then divided according to their responses in both the “simultaneous present” and the “indexical present” conditions. The following two patterns emerged:

- 1) **the “French-like” pattern** consisting of 12 children who systematically⁶⁸ **rejected** the “simultaneous present” construal while accepting the “indexical present” construal
- 2) **the “Japanese-like” pattern** consisting of 13 children who systematically **accepted** the “simultaneous present” construal together with the “indexical present” construal.

The results with the simultaneous present show that some French children, unlike the French adults but like the Japanese adults, accept this construal whereas others, like the adult French, do not accept this construal. I conclude that these results indicate that some children have a French-like/ indexical present while others have a Japanese-like/ dependent present. The results thus bring evidence for the co-existence of two grammars in child French— a French grammar and a Japanese grammar, which supports the *Multiple Grammar Hypothesis* (Roeper 1999, Legate and Yang 2002, Yang 2000, 2011) of language acquisition. I will come back to this hypothesis in the conclusion of this thesis.

4.2.1.7 Intermediate summary

The main findings with the present showed that some children, unlike French adults, but like Japanese adults, accept both the simultaneous and the indexical construal of the present, while others only accept the indexical construal of the present. On the basis of these findings, I concluded that French children divide up in two groups: one group consisting of children with a French-like indexical present and another consisting of children with a Japanese-like zero present tense.

4.2.2 The adult experiment

The same experiment was run with French adults. The adults were used as a control group and at the same time as a basis of comparison for the children’s responses.

⁶⁸ Here and below, “systematically” means that children answered *yes/ no* to three or four out of four trials testing the relevant construals.

4.2.2.1 Participants

We tested 20 adults, students in the *Lettres Modernes* and *Sciences du Langage* departments, at the University of Nantes. They all received extra points at the final acquisition exam.

4.2.2.2 Procedure

Unlike children, who were tested individually, the adults were divided in 2 groups of 10 which were tested on two different days, at the university, outside class hours. Adults were asked to watch stories on computer and write down their answers on a sheet of paper. Whenever they disagreed with the test sentence, the adults were asked to explain why.

4.2.2.3 Results

The results of the adult group are summarized below:

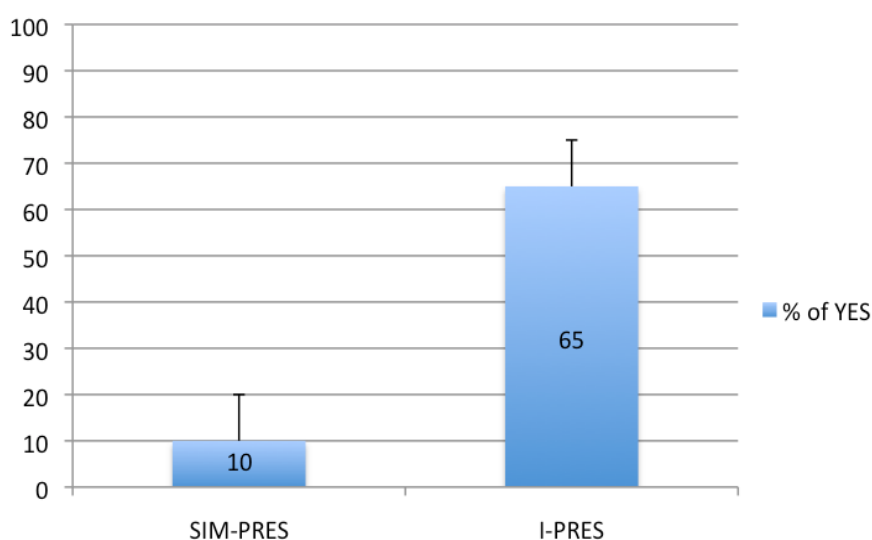


Figure 4. Experiment 2. Adults: percentage of *yes* responses for *present* under past

The simultaneous construal of the present was almost always rejected (90% *no* answers). We take the 10% acceptance of the simultaneous present to indicate noise in the data. Indeed, this percentage represents the contribution of three out of twenty adults: one who answered *yes* to all four test items and two others who answered *yes* to one of the four items. All the other adults systematically rejected the simultaneous construal of the present.

The indexical construal of the *present* was accepted 65% of the time. The percentage of *yes* answered in the “indexical present” condition (65%) is similar to the percentage of acceptance obtained with children in the same condition (62%)⁶⁹.

Overall, the adults’ results indicate a high rate of rejection of the simultaneous present and a good rate of acceptance of the indexical present⁷⁰. These results confirm our expectations based on the data available in the literature on languages such as English, where a present in a relative clause under a matrix past yields only an indexical construal.

4.2.3 The children *versus* the adults

Figure 5 recapitulates the child and adult findings with the present.

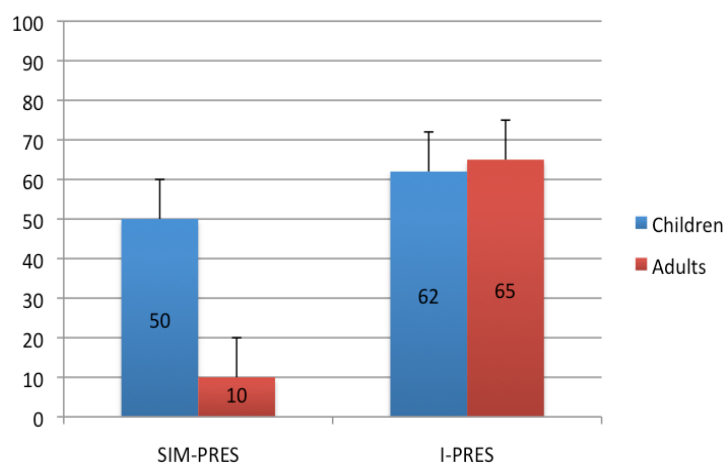


Figure 5. Children *versus* adults: percentage of *yes* responses for *present* under past

We performed chi-square analyses on the results which revealed a significant difference between the two groups in the simultaneous present condition, ($\chi^2(1) = 33.06$, $p < .001$), but no significant difference between the two groups in the indexical present condition ($\chi^2(1) = .17$, $p = .680$).

⁶⁹ As we will see in the following section, the statistical analysis showed that there was no significant difference between the two percentages.

⁷⁰ The *rejection* of this case by some children and some adults does not indicate problems with temporal interpretations, but arguably is induced by other factors. Specifically, it could be that the rejection of this form is due to the fact that the speakers have a preference for another form—the *imparfait*—to describe the situation in question.

That children and adults accepted the indexical construal of the present at similar rates indicates that children have adult-like construals of the present. The significant difference between children and adults with respect to the simultaneous construal of the present shows that some French children, unlike French adults, also allow a simultaneous construal of the present, even when the “reduced clause” strategy is no longer available.

In sum, on the basis of the findings in Experiment 2, two conclusions emerge: (in the absence of the “reduced clause” strategy),

- (i) (*some*) children, unlike adults, accept the simultaneous construal of the present in relative clauses embedded under a matrix past
- (ii) children, like adults, accept the indexical construal of the present in relative clauses embedded under a matrix past

The second finding suggests that the absence of indexical construals in Experiment 1 should indeed be attributed to the use of the “reduced clause” strategy and not to a prohibition of indexical present in the child grammar hypothetically stemming from a difficulty with inverse scope structures.”

In the following section, I will take up the first finding, i.e., the acceptance of the simultaneous construal of the present in relative clauses embedded under a matrix past. I will argue that this finding brings evidence for the presence of a zero present in child language.

4.2.4 Evidence for the “zero-tense” analysis

Children accepted the simultaneous construal of the present 50% of the time. Although this percentage seems problematic, a comparison between children and adults revealed that there was a significant difference between the two groups in the simultaneous present condition—that is, children accepted the simultaneous present significantly more often than the adults (see section 4.2.3 above). How can we account for children’s acceptance of the simultaneous construal of the present? Recall that in Experiment 1 children also accepted the simultaneous present construal (80% of the time). We argued that this result was compatible with two analyses: a “reduced clause” analysis and a “zero-tense” analysis. In Experiment 2, the “reduced clause” analysis is no longer available. This is because this experiment uses activity verbs in the embedded clause, which, in French, make the “reduced clause” strategy unavailable, since the output would be an ungrammatical sentence. Our predictions were that

children should accept the simultaneous construal if *they have a zero present alongside an indexical present* (cf. (14i)). Given that some children systematically accepted this construal, I conclude that these children have a dependent/ zero-present tense in their grammar.

4.2.5 Summary

The results with the simultaneous present in Experiment 2 show that some French children have zero-tenses. These results corroborate the results in Experiment 1, where children allowed the simultaneous construal of the present 80% of the time. The acceptance of the simultaneous construal of the present together with the acceptance of the indexical construal of the present indicates that some French children have a Japanese-like grammar. Moreover, the fact that some children accepted the simultaneous present whereas others did not indicates the co-existence of two grammars in child French: a French-like grammar and a Japanese-like grammar.

Now, once we assume that French child grammar allows the zero present tense option, we predict that French children should allow other construals which have a zero present tense component. In the following section, I present another experiment, one which tests the construal of a future under past in French child language and which shows that this prediction is correct.

4.3 Future in child grammar: zero present plus modal

In languages like French or English, there are two morphological realizations of future in embedded contexts: a *simple future*, as in (17) and a *future in the past* form, as in (18).

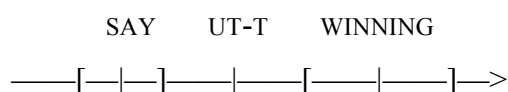
(17) Jean a dit que Marie *gagnera* la course.

“John said that Mary will win the race.”

(18) Jean a dit que Marie *gagnerait* la course.

“John said that Mary would win the race.”

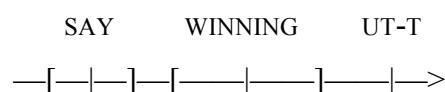
(19) a. **Future-shifted *after* UT-T**



FUTURE/

FUTURE IN THE PAST

b. **Future-shifted *before* UT-T**



***FUTURE/**

FUTURE IN THE PAST

The sentence in (17) with a *simple future* in the embedded clause can be only used in a future-shifted after UT-T context, where the embedded eventuality (i.e., *Mary's winning the race*) follows UT-T, as illustrated in (19a). Crucially, (17) cannot be used in a future-shifted before UT-T context, where the embedded eventuality follows the matrix eventuality but precedes UT-T, as illustrated in (19b). In contrast, the sentence in (18) with a *future in the past* in the embedded clause can be used either in a future-shifted after UT-T context ((19a)) or a future-shifted before UT-T context ((19b)).

I assume that, morphologically, simple future consists of a present tense plus a future operator that I dub FUT⁷¹, while the future in the past consists of a *zero*-(imperfective) past⁷² plus FUT. Under this analysis, the sentences in (17) and (18) have structures along the lines of (20):

(20) a. [PAST he say that [PRES [FUT [Mary win the race]]]]

b. [PAST he say that [Ø [FUT [Mary win the race]]]]

Notice that under this analysis, the use of the future in the past in the future-shifted contexts presupposes knowledge of complementation since the realization of the zero tense as *past* arises via agreement with the higher matrix tense.

Now, there is very little experimental work on children's understanding of the future in embedded contexts. To my knowledge, there is no study testing the construal of the future under past in child language. In 2009, we ran a pilot study with 14 monolingual French

⁷¹ This future operator is none other than Abusch's (1988) modal operator *woll*.

⁷² This decompositional analysis of the future has precedents in the literature (see Ogihara 1996, Abusch 1997 and references therein.)

children ranging between 3;8 – 5;5 (mean = 4;7) from a kindergarten in Nantes⁷³. The aim of this study was to gain a better understanding of French children’s construal of the future in embedded contexts and thus contribute to the research on the acquisition of tense in embedded contexts. In the following section, I discuss this experiment. I show that French children surprisingly accept and also (to a certain extent) produce a future under past in the future-shifted before UT-T context. I take these results to indicate that French children have a dependent construal of the future. I propose an analysis on which the dependent future is analyzed as a zero present plus modal. Under this analysis, the acceptance of the future under past in the future-shifted before UT-T context is expected, on the assumption that French children have zero present tenses in their grammar.

4.3.1 Future under past: the comprehension task

We tested French children’s comprehension of the future under past construal using sentences involving embedded complement clauses with activity verbs (‘acheter’ *buy*, ‘donner’ *give*, ‘sauter’ *jump*, etc). The matrix verb was invariably ‘dire’ *say*, inflected for the past (*passé composé*). The embedded tense was a simple future. To illustrate the kind of target sentence used in this experiment, consider the following example:

- (21) Les garçons ont dit qu’ils *donneront* une banane au chimpanzé.
 “The boys said that they were giving the chimpanzee a banana.”

How should we expect children to behave with regard to these examples? Recall that according to Hollebrandse, all children irrespective of whether they have complementation or not should accept the future-shifted reading *after* UT-T because, on this context, the embedded eventuality is in the future with respect to both *the matrix event-time* and *UT-T*. Children should thus accept (21), whether they have a dependent grammar of tense (i.e., the evaluation time is the matrix event-time) or an independent grammar of tense (i.e., the evaluation time is UT-T).

The crucial case is thus the future-shifted before UT-T. Children who have not acquired complementation, and therefore, have independent interpretations of embedded

⁷³ I am extremely grateful to the principal and teachers of the kindergarten *Marie-Anne de Boccage* in Nantes for allowing me to return to their school for this new experiment.

tenses (i.e., they interpret the embedded future with respect to UT-T) should **reject** this case, since in this case the embedded eventuality occurs before UT-T, and the embedded future tense denotes a time that falls within the past and not the future with respect to UT-T. Children who have acquired complementation should also **reject** this case, on the assumption that they know that future in their target language (adult French) can only be indexical, i.e., it can only express subsequence with respect to UT-T. On the other hand, if children who have acquired complementation also allow a (non target convergent) dependent future, they should accept this case.

In (22) and (23), I illustrate the kinds of stories used to test the future-shifted before UT-T reading and the future-shifted after UT-T reading:

(22) **Future-shifted before UT-T**

Anne est dans la cuisine. Papa revient du marché. Il a acheté des légumes, des fruits et un Kinder. Papa: “Anne, tiens, un Kinder pour toi, je sais que tu aimes cela.” Anne: “Merci, papa, je *mangerai* le Kinder plus tard.” Plus tard, Anne mange tout le Kinder. Ensuite, elle va se coucher dans sa chambre.

Anne is the kitchen. Daddy comes home from the market. He has bought vegetables, fruits, and a kinder bar. Daddy: “Anne, here is a Kinder for you, I know you love Kinder chocolate.” Anne: “Thanks, dad, I will eat it later”. Later on, Anne eats the whole Kinder. Then, she goes to sleep in her room.

a. Experimenter: Chronos, qu’est-ce que Anne a dit à propos du Kinder?

“Chronos, what did Anne say about the Kinder?”

b. Chronos: Anne a dit qu’elle **mangera** le Kinder.

“Anne said that she will eat the Kinder.”

(23) **Future-shifted after UT-T**

Anne et Marie sont avec leur Maman dans la cuisine. Maman: “Les filles, c’est bientôt l’heure du dîner et, si je me rappelle bien, vous avez promis de cuisiner pour nous ce soir, n’est-ce pas? Mais je ne vois rien pour le moment!” Anne et Marie: “Ne t’inquiète pas, Maman, nous allons faire une tarte!” Plus tard, Maman dit: “Les filles, c’est l’heure du dîner, nous avons très faim!”

Anne and Mary are with their Mummy in the kitchen. Mummy: “Girls, it’s almost dinner time and you promised to cook us something this evening, right? But I don’t see anything done, yet! Ann and Mary: “Don’t worry Mummy, we will prepare a pie!” Later on, Mummy says: “Hey girls, it’s dinner time, we’re very hungry!”

a. Experimenter: Chronos, qu’est-ce que Anne et Marie ont dit à propos de la tarte?
“Chronos, what did Ann and Mary say about the pie?”

b. Chronos: Anne et Marie ont dit qu’elles **feront** une tarte.
“Anne and Mary said that they will make a pie.”

4.3.1.1 Results⁷⁴

Table 7 summarizes the main findings of the comprehension experiment:

Table 7. French children: future in complement clauses under past. Comprehension task

Tense	Context					
	Future-shifted <i>before</i> UT-T			Future-shifted <i>after</i> UT-T		
	Adult French	Independency Hypothesis	Child French	Adult French	Independency Hypothesis	Child French
Future	No	No	88% yes	Yes	Yes	96% yes

Recall that according to Hollebrandse’s Independency Hypothesis, a child with an *independent* interpretation of the embedded tense should **reject** the future-shifted reading before UT-T of a future while **accepting** the future-shifted reading after UT-T.

Our results show that French children **accept** the future-shifted reading before UT-T (88% *yes* answers) as well as the future-shifted reading after UT-T (96% *yes* answers). On the basis of these results, and in particular, on the basis of the acceptance of the future-shifted reading **before** UT-T, I conclude that French children have a *dependent* future alongside an

⁷⁴ The comprehension as well as the production data (see section 4.3.2 below) were first discussed in Lungu (2010).

indexical future. In section 4.3.3, I propose an analysis of the dependent construal of the future. I now turn to the findings of the production task.

4.3.2 Future under past: the production task

The same 14 children who participated in the comprehension task were included in the elicited production task. The aim of this experiment was to see what tense forms children use to express *futurity*. We included the same two contexts as the ones used in the comprehension task: the future-shifted before UT-T context, where the eventuality described in the embedded clause follows the matrix event but precedes UT-T, and the future-shifted after UT-T context, where the embedded eventuality follows the matrix event but does not yet occur at UT-T. Since this is a production task, the puppet Chronos only utters the beginning of the test sentence. The child's task is to help the puppet finish the sentence.

The two contexts are illustrated with the stories in (24) and (25):

(24) **Future-shifted *before* UT-T**

Pierre est dans le jardin avec son chien. Dans le jardin, il y a un coffre. Le coffre est plein de pièces de monnaie, tu vois! [*l'expérimentateur montre à l'enfant les pièces dans le coffre*]. Le chien court autour du coffre. Et, regarde ce qu'il fait, il renverse le coffre! Maintenant, toutes les pièces sont par terre. Pierre: "Ne t'inquiète pas, je ramasserai les pièces plus tard!" Plus tard, Pierre ramasse les pièces. Il met toutes les pièces dans le coffre.

Pierre is in the garden with his dog. In the garden, there is a trunk. The trunk has coins inside, you see [the experimenter shows the child the coins in the trunk]. The dog is running around the trunk. And, look what he does! He turns the trunk upside down! All the coins are now on the grass. Pierre: "Oh, don't worry, I will put the coins back in the trunk." Later on, Pierre puts all the coins in the trunk.

a. Experimenter: Chronos, qu'est-ce qu'il a dit, Pierre, à propos des pièces?

"Chronos, what did Pierre say about the coins?"

b. Chronos: Pierre a dit que...euh, j'ai oublié, tu peux m'aider?

"Pierre said that...oh, I forgot, can you help me?"

(25) **Future-shifted *after* UT-T**

C'est une histoire avec deux filles. Elles jouent dans le jardin. Regarde, il y a un âne. Je suis sûre que les filles ont envie de faire un tour avec l'âne. Les filles:
"Oui, nous *ferons* un tour avec l'âne!"

This is a story with two girls. They are playing in the garden. Look, there is a donkey. I'm sure the girls would like to ride the donkey. The girls: "Yes, we will ride the donkey!"

a. Experimenter: Chronos, qu'est-ce que les filles ont dit à propos de l'âne?

"Chronos, what did the girls say about the donkey?"

b. Chronos: Les filles ont dit que...euh, j'ai oublié, tu peux m'aider?

"The girls said that... oh, I forgot, can you help me?"

Given Hollebrandse's Independency Hypothesis, we make the following predictions⁷⁵:

- (i) children who **have not acquired complementation** should volunteer a **past** in the future-shifted before UT-T case, since in this context, the embedded eventuality occurs before UT-T, and a **future** in the future-shifted after UT-T context, since in this context the embedded eventuality takes place after UT-T
- (ii) children who **have acquired complementation** and know that their language is an SOT language, should volunteer a **future in the past** in the future-shifted before UT-T context, since this is the tense form used in adult French to express a future meaning with respect to the matrix event-time. These children should volunteer either a **future** or a **future in the past** in the future-shifted after UT-T context, since both tense forms are legitimate in this context.

According to our Dependent Tense Hypothesis, if children have zero dependent tenses,

⁷⁵ As far as production is concerned, Hollebrandse distinguishes between complement and non-complement children. Note that there is a third class— children having acquired complementation but not SOT. Hollebrandse's predictions for this class are not clear.

- (i) they could volunteer either a simple future or a future in the past in both the future-shifted before UT-T and the future-shifted after UT-T scenarios.

In the following section, I turn to the results.

4.3.2.1 Results

Table 7. French children: future in complement clauses under past. Production task

Tense	Future-shifted before UT-T	Future-shifted after UT-T
Future	15%	38%
Future in the past	24%	35%

Recall that in French, as in English, a simple future under past is indexical, i.e., it expresses subsequence with respect to UT-T. The simple future is thus felicitous in a future-shifted *after* UT-T context, but crucially not in the future-shifted before UT-T context. However, as we can see in Table 7, some children do volunteer to some extent (15%) a future in the future-shifted *before* UT-T context. How can we interpret these results on Hollebrandse's hypothesis? Can we take the production of the future in the future-shifted before UT-T context to suggest that children have acquired complementation but not SOT? No, since some of these children also volunteer a *future in the past* in the same future-shifted *before* UT-T context. The fact that they produce a future in the past means that these children do have SOT, that is, just like adults, children interpret the past (*imparfait*) component of the embedded future in the past as a zero tense bound by a matrix past (cf. (20b) above).

In the future-shifted after UT-T context, the tense forms most frequently used are the *future* and a *future in the past* (38%— future and 35%— future in the past). This is expected on an adult grammar of French, but not on a non-adult *independent* grammar, which predicts that children should only produce a simple future in this context. The use of the future in the past in the future-shifted *after* UT-T context thus shows that children have acquired dependent construals of tenses, that is, complementation and SOT.

In sum, the interesting result in the production experiment is the use of the simple future in the future-shifted before UT-T context. I take it that this result provides evidence that French children have a *dependent* future, alongside an indexical future. In the following section, I propose an analysis of the dependent future in child French.

4.3.3 Analysis of the (dependent) future under past in French child grammar

The future under past experiment showed that French children *accept* the future-shifted construal before UT-T of a future in complement clauses embedded under a matrix past (88% of *yes* answers) and *produce* (to a certain extent, 15%) a future in the future shifted before UT-T context. Let's consider again this context, illustrated with the following story:

(26) **Future shifted *before* UT-T context**

Pierre is in the garden with his dog. In the garden, there is a trunk. The trunk has coins inside, you see [the experimenter shows the child the coins in the trunk]. The dog is running around the trunk. And, look what he does! He turns the trunk upside down! All the coins are now on the grass. Pierre: “Oh, don't worry, I will put the coins back in the trunk.” Later on, Pierre puts all the coins in the trunk.

a. Experimenter: Chronos, qu'est-ce qu'il a dit, Pierre, à propos des pièces?

“Chronos, what did Pierre say about the coins?”

b. Chronos: Pierre a dit que...euh, j'ai oublié, tu peux m'aider?

“Pierre said that...oh, I forgot, can you help me?”

c. Child (H. 5;04): Pierre a dit qu'il **rangera** ça plus tard.

“Pierre said that he will put this away later.”

As we can see in (26), in the story, Pierre makes a statement about a future eventuality (the collection of the coins) using a simple *future*. Later on, the eventuality takes place: Pierre puts all the coins in the trunk. As shown in (26c), to report Pierre's statement, the child volunteers a simple *future*. Since the context makes it explicit that the embedded eventuality takes place before UT-T, I conclude that the child's use of the future here can only be an instance of *dependent* (future) tense.

To account for the dependent construal of the future, I suggest that the embedded future consists of a *zero* present tense plus the future modal FUT, as in (27b). This analysis follows straightforwardly on the assumption that French child grammar includes a *zero* present alongside an indexical present.

(27) a. Pierre said that he *will* collect (the coins) later.

b. [PAST [Pierre say that [Ø [FUT [he collect ... later]]]]]

The zero tense in this structure ensures that the embedded eventuality (*the coins' gathering*) is located in the future with respect to the matrix *saying* eventuality⁷⁶. This interpretation is thus true in a future-shifted before UT-T context, since in this context, the embedded eventuality does occur in the future with respect to the matrix eventuality.

4.4 Summary

The previous chapter ended with the following question: do children allow a zero tense construal of the present in relative clauses? This chapter provided an affirmative answer to this question. Three arguments support the zero tense thesis: **(i)** children, unlike the adults, accept the simultaneous construal of a present in relative clauses under a matrix past in environments which make the reduced clause strategy unavailable, **(ii)** they accept dependent construals of the future in complement clauses under a matrix past, and **(iii)** they volunteer not only the future in the past but also the simple future (which in the target language can only be indexical) in future before UT-T contexts.

We have thus provided evidence from both production and comprehension of the future for the hypothesis that children have non-convergent zero tense construals of the present tense, put forth in the previous chapter on the basis of our comprehension study on the present. Children's adult use of a future in the past (in both future-shifted contexts) has brought convincing evidence that children also have a zero *past* (on the assumption that the future in the past is analyzed as a zero past plus a future modal) in their grammar.

Below, I recapitulate the inventory of zero tenses in both adult and child French:

⁷⁶ The precise reason for this involves articulating the structure a bit more. The zero tense is a bound variable, and in fact what we have is a structure more like the following:

(i) [PAST [Pierre say that 1 [Ø₁ [FUT [he collect ... later]]]]]

It is the *binding* of the zero tense in this structure that ensures that the *gathering* is located after the saying. Why will become clear in later chapters when I present my assumptions concerning the semantic value of *say*.

Table 8. The inventory of zero tenses (under past) in French adult *versus* French child grammar

	French adult grammar	French child grammar
Simultaneous present	—	$\emptyset_{\text{PRES}}$
Future	—	$\emptyset_{\text{PRES}} + \text{FUT}$
Future in the past	$\emptyset_{\text{PAST}} + \text{FUT}$	$\emptyset_{\text{PAST}} + \text{FUT}$
Simultaneous past ⁷⁷	$\emptyset_{\text{PAST}}$	$\emptyset_{\text{PAST}}$

This contrasting inventory of zero tenses is exactly what was predicted on our Zero Tense Hypothesis, given in chapter 1 and repeated in (28) below:

(28) The Zero Tense Hypothesis

- a. Zero tenses are present in child language early on.
- b. Zero tenses in child language surface as both past and present.

In the next chapter, we will return to an important difference we have observed between Experiment 1 and Experiment 2: while children in Experiment 1 performed very poorly in the indexical present condition (they volunteered *yes* answers at a rate of only 16%), children in Experiment 2 did much better in this condition (they volunteered *yes* answers at a rate of 62%). As we will see in the next chapter, the same kind of pattern is observed with the *past under past* configuration. Building on the discussion of this chapter, we will address the question of why we find this pattern.

⁷⁷ Notice that the results for the simultaneous construal of a past in complement clauses under a matrix past, that we have not discussed here (but see D&L 2009), were also very good (100% *yes* answers). We acknowledge that it is more difficult to argue that children have a zero past just on the basis of the acceptance of the simultaneous construal of a past under past, since as we have already mentioned in Chapter 1, this construal is compatible with both a dependent (zero tense) analysis and an independent analysis of tense. However, given children's behavior regarding the future in the past, which provides strong evidence in favor of the presence of a zero past in their grammar, we believe that we can safely argue that children's simultaneous construal of the past in complement clauses can also receive a zero tense analysis.

CHAPTER 5

Past in relative clauses under a matrix past in child language

The comparison of Experiment 1 and Experiment 2 raises a question: Why is children's performance on the non-simultaneous/ indexical construal of the present in relative clauses better in Experiment 2 (62% *yes* answers) as compared to Experiment 1 (23% *yes* answers)? The discussion of the last chapter suggested an answer to this question: the children of Experiment 1 make use of a "reduced clause" strategy, and moreover, in the reduced clauses that result from the strategy, they force binding of the time variable in the PP. In Experiment 2, because the "reduced clause" strategy is not available, the indexical readings resurface.

Recall that, at the outset, when we considered the results concerning the indexical construal of the present in Experiment 1, we noted that it was compatible with two analyses: a "scopal" analysis (see chapter 3, section 3.3.1.8.3) and a "reduced clause" analysis (chapter 4, section 4.1.2). Now, as we have seen in chapter 4, section 4.2.1.6, the results with the indexical construal of the present in Experiment 2 provide evidence against the "scopal" analysis by showing that sometimes "pure indexical" construals of the present are available. But how much evidence is there more precisely for the alternative approach that we considered—the approach on which children not only reduce clauses when they can but also force binding in the reduced clauses that they create? In this chapter we will see some further evidence for this.

In this chapter I report the results of two different parts of the same experiments, testing the construal of the *past* in a relative clause under a matrix past. I show that the results for the non-simultaneous construal of the past, like those for the non-simultaneous construal of the present, are poorer in Experiment 1 (only 26% *yes* answers) than in Experiment 2 (96% *yes* answers). As we will see, these results with the past provide additional evidence for the "reduced clause" strategy in child language. Just as importantly, we will also consider the relevance of past tense relative clause data for Hollebrandse's Independency Hypothesis. I will suggest that in fact Hollebrandse's own data go more in the direction of the Zero Tense Hypothesis.

This chapter is organized as follows: section 5.1 reviews the interpretation of the past in a relative clause under a matrix past across languages. Section 5.2 discusses Hollebrandse's (2000) experiment investigating the construal of the past in relative clauses under a matrix past with Dutch children. Section 5.3 and section 5.4 discuss the two experiments with French children. These experiments show that the pattern of childrens' responses in the present under past configuration mentioned above is replicated with the past under past configuration, thus bringing evidence for the "reduced clause" strategy in child language. Section 5.5 concludes.

5.1 The cross-linguistic data

Recall that there is no difference between SOT languages like English/ French and non-SOT languages like Japanese as far as past tensed relative clauses are concerned. Thus, in both kinds of languages, an imperfective past in a relative clause embedded under a matrix past as in ((1)) can express a *simultaneous*, a *past-shifted* or a *future-shifted* interpretation.

- | | | |
|-----|--|---------------------|
| (1) | a. John talked to the boy who was crying. | English |
| | b. Jean a parlé avec le garçon qui pleurait. | French |
| | c. Taroo-wa nai-te i -ta otoko- o nagut-ta | Japanese |
| | Taroo-TOP cry-PROG-PAST boy-ACC hit-PAST | |
| | "Taro hit a/ the boy who was crying." | (Ogihara 1996: 156) |

In what follows, I turn to the interpretation of past tensed relative clauses in child language. I first discuss Hollebrandse's (2000) experiment with Dutch children. Hollebrandse's data show that Dutch children have adult-like interpretations of past tensed relative clauses, in that they accept both simultaneous and non-simultaneous construals of the past in relative clauses. I then turn to two experiments with French children. The results of the first experiment (Experiment 1), which, recall, involves relative clauses with copula "être" *be* plus a locative *PP*, show that French children *accept* simultaneous construals of relative clauses and *reject* non-simultaneous construals of relative clauses. The results of the second experiment (Experiment 2), which, recall, involves relative clauses with *activity verbs*, show that French children accept both simultaneous and non-simultaneous construals of relative clauses. On the basis of these two experiments, I conclude that French children have adult-like interpretations of the past in relative clauses embedded under a matrix past, and that the contrast between

Experiment 1 and Experiment 2 concerning past tense brings further evidence for the availability of the “reduced clause” analysis in French child language.

5.2 Hollebrandse’s relative clause experiment

Hollebrandse tested the interpretation of past tense in relative clauses embedded under a matrix past with 52 Dutch children ranging from 4;0 to 8;6, using a Truth Value Judgment Task. Recall that, relative clauses, unlike complement clauses, have independent interpretations. More specifically, tense in a relative clause may be interpreted with respect to UT-T, rather than with respect to the matrix event-time. Recall also that, for Hollebrandse, children that have acquired tense allow independent temporal construals. We can thus state Hollebrandse’s acquisition hypothesis for relative clauses as follows:

(2) **Relative clause acquisition hypothesis**

The temporal interpretation of relative clauses should pose no difficulties for children, irrespective of whether they acquired complementation or not.

Hollebrandse tests his Independency Hypothesis with sentences such as (3), involving a past tensed *stative* predicate embedded under a matrix past tense⁷⁸, under five experimental conditions, graphically depicted in (4):

- (3) Raakte Koekiemonster een olifant aan die op een bordje stond?
touch-PAST C.M. an elephant PART that on a plate stand-PAST
“Did Cookie Monster touch an elephant that was on a plate?”

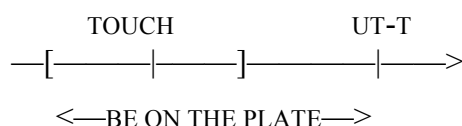
(Hollebrandse 2000: 166)

⁷⁸ Note that although Hollebrandse did not test the construal of a *present* in complement clauses in SOT languages, he did test it in relative clauses (see chapter 3, section 3.2).

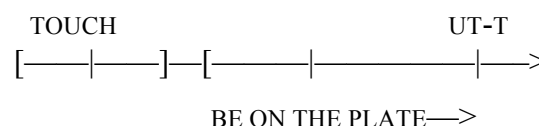
(4) **Hollebrandse's conditions for past in a relative clause under a matrix past:**

i. Cases that *include* UT-T

a. Simultaneous including the UT-T

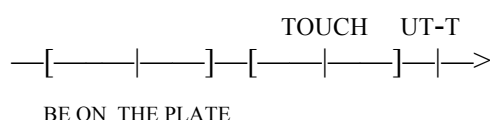


b. Future-shifted including the UT-T

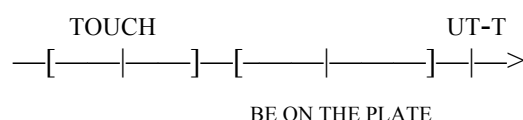


ii. Cases that *do not* include UT-T

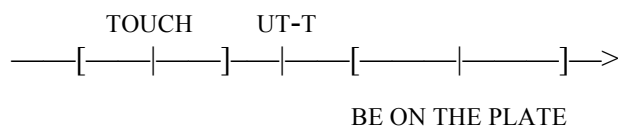
c. Past-shifted



d. Future shifted before UT-T



e. Future shifted after UT-T



As we can see in (4), Hollebrandse distinguishes between **(i) cases which include UT-T time**: the simultaneous including UT-T case, where the embedded eventuality *overlaps the matrix eventuality and still holds at the UT-T* ((4a)) and the future-shifted including UT-T case, where the embedded eventuality *follows the matrix eventuality and still holds at UT-T* ((4b)) and **(ii) cases which do not include UT-T**: the past-shifted case, where the embedded eventuality *precedes the matrix eventuality* ((4c)), the future-shifted before UT-T case, where the embedded eventuality *follows the matrix eventuality and precedes UT-T* ((4d)) and the future-shifted after UT-T case, where the embedded eventuality *follows UT-T* ((4e)).

Let us now look at Hollebrandse's predictions. Assuming children have acquired *past* tense, they should behave as follows, in view of the (adult or non-adult) independent interpretation of tense that allows them to interpret the embedded eventuality with respect to UT-T:

- (i) children should **reject** the sentence in the future-shifted after UT-T scenario, since in the scenario proposed to test this reading, the embedded eventuality *has not yet occurred* at UT-T, and thus, the use of the past in the embedded clause would be ungrammatical.
- (ii) children should **accept** the sentence in the future-shifted before UT-T, the simultaneous including UT-T and the future-shifted including UT-T scenarios, since, in all these scenarios, the embedded eventuality occurs *before* UT-T, so the *past* in the relative clause would be grammatical⁷⁹.

A few remarks on the use of the past tense in the cases which include UT-T. Notice that, in the future shifted including UT-T case ((4b)), the use of the past tense in the relative clause is not very felicitous since the relative clause eventuality, future shifted relative to the matrix eventuality, *still holds at UT-T*. As Hollebrandse observes, participants might reject this case because they have a preference for a *present* tense, which is more felicitous in this context. Consider now the simultaneous including UT-T case ((4a)), where the relative clause eventuality holds at UT-T, and also *overlaps the matrix event-time*. One possible analysis of the sentence that would make it true in this scenario is an analysis where the past tense in the relative clause is a zero tense – in this case, we would have a zero past bound by the matrix past, yielding a simultaneous reading. If a zero tense, unlike past tense, does *not* compete with present, then speakers who give the sentence this analysis should accept the sentence in this scenario, unlike in the future-shifted including UT-T case. This is exactly what happened. Both children and adults accepted the simultaneous including UT-T case. I take this result to mean that children treat the past in the simultaneous case as a zero tense (see section 5.2.2 for discussion).

⁷⁹ I have slightly simplified Hollebrandse's position here. In fact, Hollebrandse adopts a stricter view of the Independency Hypothesis according to which children should accept only those cases where the embedded eventuality strictly occurs before UT-T. On this view, children should reject the simultaneous including UT-T and the future-shifted including UT-T cases of a past because in these cases the embedded eventuality *overlaps* UT-T. As we will see below, children (as well as adults) *reject* the future-shifted including UT-T case, but *accept* the simultaneous including UT-T case. Hollebrandse's version of the Independency Hypothesis does not explain this pattern. See our discussion in section 5.2.2 below.

5.2.1 Results

Let us now look at the results for the Dutch children, summarized below:

Table 9. Hollebrandse (2000): past in relative clauses under past

Age in years	Past shifted		Future-shifted before UT-T		Future-shifted after UT-T		Simultaneous including UT-T		Future-shifted including UT-T	
	yes	no	Yes	no	yes	no	yes	no	yes	no
4 (n = 9)	37	48	78	4	7	19	74	7	70	7
5 (n = 3)	67	33	56	22	0	67	89	11	33	67
6 (n = 13)	56	41	64	28	2	72	62	33	31	64
7 (n = 21)	75	24	54	44	2	81	83	8	30	60
8 (n = 5)	87	7	73	6	0	100	80	20	13	73
adults (n = 12)	92	8	67	33	0	100	72	28	6	94

Recall that Hollebrandse's premise is that, in adult grammar, tense in relative clauses, unlike tense in complement clauses, has an *independent* interpretation, i.e., it is interpreted with respect to UT-T. The predictions were that children, whether they acquired complementation or not, should (i) *accept* the cases where the embedded eventuality occurs before UT-T (except maybe when the eventuality extends to include UT-T, if there happens to be a preference for *present* in such cases) and (ii) *reject* the future-shifted after UT-T case, since in the scenario used to test this reading, the embedded eventuality has not yet occurred at UT-T, which makes the use of the past tense in the relative clause ungrammatical. These predictions are for the most part borne out. Dutch children, like Dutch adults, accepted the past-shifted, the future-shifted before UT-T and the simultaneous cases and rejected the future-shifted after UT-T case. Participants (be it children or adults) also rejected **the future-shifted including UT-T reading**⁸⁰.

Recall from our discussion above, that on this reading, the use of the past tense in the relative clause is odd, given that the embedded eventuality still holds at UT-T. Conceivably, children rejected this case because, like adults, they have a preference for a present tense.

⁸⁰ Some children (the 4 year olds) did however accept this case. Assuming that the (correct) "no" answer in this context is due to a pragmatic principle that results in a preference for a present over past, we can conjecture that 4 year olds might have answered "yes" because they lack this principle.

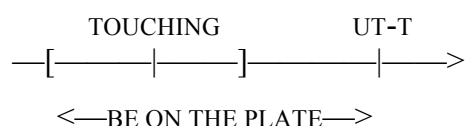
To sum up, the results of the relative clause experiment show that children have an adult-like behavior of tense in relative clauses as expected on the acquisition hypothesis given in (2). Can we take these results as evidence for Hollebrandse's Independent Tense Hypothesis? My answer is: *no*. Recall that Hollebrandse puts forth the Independent Tense Hypothesis to account for non-adult construals of complement clauses. But, as we have just seen, relative clauses in adult language allow independent tense construals and children's construals of relative clauses are adult-like. I thus conclude that children's adult-like relative clause construals do not provide evidence for the independent tense acquisition hypothesis.

5.2.2 The cases that include UT-T

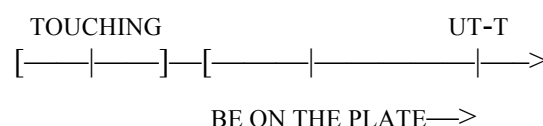
Consider again Hollebrandse's cases that include UT-T— the simultaneous including UT-T case and the future-shifted including UT-T case— illustrated in (4i) and repeated in (5a)-(5b), below:

- (5) Did Cookie Monster touch an elephant that *was* on a plate?

a. Simultaneous including UT-T



b. Future-shifted including UT-T



In the simultaneous including UT-T context ((5a)), the elephant that Cookie Monster touches is on the plate at the *touching* time and is still on the plate at UT-T. In the future-shifted including UT-T context ((5b)), the elephant that Cookie Monster touches is on the plate at some time that follows the *touching* time and overlaps UT-T. In fact, Hollebrandse's view of tenses is such that the Independency Hypothesis as he formulates it predicts that children could *reject* both cases, since in both cases, the embedded eventuality overlaps UT-T (see footnote 65). Below, I give the relevant passage from Hollebrandse (2000) which states this:

They [*the two cases*] could be rejected because part of the relative clause's event overlaps with utterance time and therefore the event cannot be expressed with a past tense, i.e., the event is not completely prior to the utterance-time.

Hollebrandse (2000: 171)

However, Hollebrandse observes that children could also accept both these cases given that with an embedded (imperfective) past the described eventuality is not required to completely precede UT-T. Now, the fact is that children (as well as adults) *accepted* the simultaneous case but *rejected* the future-shifted case. Hollebrandse's hypothesis cannot explain this pattern. In particular, this hypothesis fails to explain why children, as well as adults, treat the simultaneous including UT-T reading and the future-shifted including UT-T reading of the past differently. If, consistently with Hollebrandse's Independency Hypothesis, participants construed the embedded past in both contexts as an instance of independent tense expressing anteriority with respect to UT-T, they should have rejected both readings.

To explain children's (as well as adults') pattern, I take a different stance. I argue that children (and adults) treat these two cases differently, because they treat the past tense in the two cases differently. Specifically, participants (be it children or adults) treat the past tense in the future-shifted including UT-T context as an instance of independent tense, expressing anteriority with respect to UT-T and reject the sentence because they find the use of the past pragmatically odd given that the embedded eventuality still obtains at UT-T. Unlike Hollebrandse, I do not claim that participants (be it children or adults) reject this case because the meaning of the tense implies that the embedded eventuality should be over at UT-T. Rather, they reject it on pragmatic grounds. Concretely, to describe the future-shifted context either an embedded *past* or an embedded *present* could be used in the test sentence. However, given that the embedded eventuality still holds at UT-T, the present is more appropriate. Participants thus reject the sentence simply because they prefer the present to the past.

Now, in the simultaneous including UT-T context, participants treat the past as an instance of zero tense, expressing overlap with the matrix event-time. They thus accept the sentence because in this context, the embedded event does indeed overlap the matrix-event, even if it also overlaps UT-T. Zero tense does not compete with present tense, so they do not have the same grounds for rejecting the sentence.

To conclude, I suggest that the acceptance of the simultaneous including UT-T construal brings evidence for zero tenses in Dutch child language while the rejection of the future-shifted including UT-T construal (by both Dutch children *and* Dutch adults) should receive a pragmatic explanation.

5.3 Experiment 1: past in relative clauses under a matrix past

5.3.1 Participants

The participants are the same 14 French children who participated in the “present under past” experiment (see chapter 3, section 3.3.1.1).

5.3.2 Method

The experimental task is a Truth Value Judgment Task, with stories acted out with toys and props. The participants’ task is to say whether the test sentence is a correct description of the story acted out or not.

5.3.3 Design

Since the aim of this experiment is to test the temporal interpretation of relative clauses, we manipulated *tense* and *context* as within-subject factors. The test sentences involve object relative clauses. The matrix clauses always involve *transitive verbs* while the embedded clauses always involve *stative predicates*, consisting of the copula *be* plus a *PP*. We resorted to this kind of predicate because it allows the three readings that we aimed to test: simultaneous, past-shifted and future-shifted. The predicates used in the main and embedded clauses are given in Table 2, repeated here in Table 10:

Table 10. French Experiment 1: main clause and relative clause predicates

Main clause predicates	Embedded clause predicates
donner de l'eau <i>give water</i>	être sur la table <i>be on the table</i>
donner du pain <i>give bread</i>	être sur la voiture <i>be on the car</i>
embrasser <i>kiss</i>	être sur la boîte <i>be on the box</i>
caresser <i>pet</i>	être dans le jardin <i>be in the garden</i>
donner une fleur <i>give a flower</i>	être sur la chaise <i>be on the chair</i>
toucher <i>touch</i>	être dans le panier <i>be in the basket</i>
donner un kinder <i>give a kinder</i>	être dans la chambre <i>be in the room</i>
brosser <i>brush</i>	être près des champignons <i>be near the mushrooms</i>
donner des croquettes <i>give kibbles</i>	

The matrix tense is a *passé composé*, which as noted earlier is the tense form commonly used in spoken French to express past completed events. The relative clause tense is an *imparfait*, the tense form contributing an *imperfective* viewpoint in French.

5.3.4 Procedure

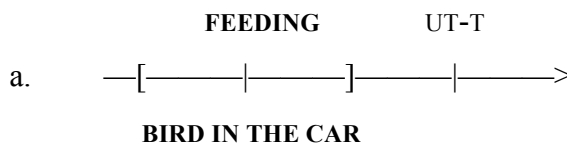
The children were tested individually in a separate room by two experimenters: one acting out the stories and the other one playing the role of a puppet, a purple koala, named Chronos. Before the experiment begins, the children are told that Chronos lives in a faraway galaxy, and that he came to France because he wanted to improve his French. The experimenter tells the child that he wants to help Chronos, but that Chronos is too shy to speak with her. However, he would be very happy to speak with children. The experimenter then invites the child and the puppet to participate in a game where she would act out stories in front of them. At the end of each story, Chronos utters the test sentence, which the child then judges as *true* or *false*. Children are also told that the puppet sometimes says silly things and that they should tell him when that happens because in so doing they would help him improve his French.

5.3.5 Predictions and experimental conditions

On the null hypothesis according to which they have an adult grammar of tense in relative clauses, children should accept all the cases where the embedded eventuality precedes UT-T. We tested four such cases: **(i)** a “pure simultaneous” case, where the embedded eventuality

overlaps the matrix eventuality but no longer holds at UT-T ((6)); **(ii)** a *double access* case, where the embedded eventuality overlaps both the matrix eventuality and UT-T ((7)); **(iii)** a *future-shifted before UT-T* case, where the embedded eventuality follows the matrix eventuality and precedes UT-T and finally ((8)); **(iv)** a *past-shifted* case, where the embedded eventuality precedes the matrix eventuality ((9)). Below, I give a sample story for each of these cases.

(6) Relative clauses: pure simultaneous context



Dans cette histoire, il y a deux oiseaux. Un est sur le tapis, l'autre dans une voiture. Il y a Anne qui arrive. Elle nourrit cet oiseau [celui dans la voiture]. Ensuite, l'oiseau s'envole.

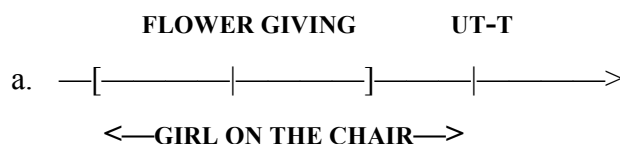
There are two birds in this story, one on the floor, the other in a roofless car. Anne feeds the bird in the car a piece of bread. The bird then flies away.

b. Chronos: Anne a nourri l'oiseau qui était dans la voiture.

“Anne fed the bird who was in the car.”

The story in (6) makes true a simultaneous construal of the *imparfait*, where *the bird that Anne fed was in the car at the feeding time*.

(7) Relative clauses: double access context



Dans cette histoire, il y a 2 filles. Une est sur la chaise. L'autre est dans le chariot. Regarde qui arrive! Un clown! Le clown a une fleur dans sa main. Il donne la fleur à cette fille [celle qui est sur la chaise].

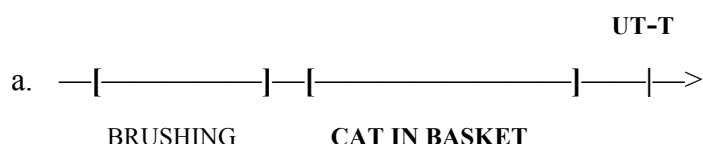
This is a story with two girls. One is on the chair. Another one is in the trolley. Look, look who's coming. A clown! The clown has a flower in his hand. He gives the flower to this girl [the one on the chair].

b. Chronos: Le clown a donné une fleur à la fille qui était sur la chaise.

“The clown gave a flower to the girl who was on the chair.”

The story in (7) makes true a *double-access* construal of the *imparfait*, where the *girl is on the chair* during an interval that overlaps both the matrix event-time and UT-T.

(8) **Relative clauses: future-shifted before UT-T**



Dans l’histoire, il y a deux chats. Un est dans le lit, l’autre, sur le tapis. Maman caresse ce chat [le chat dans le lit]. Ensuite, le chat saute dans le panier. Un peu plus tard, le chat [celui que Maman a caressé] voit un oiseau et court après lui.

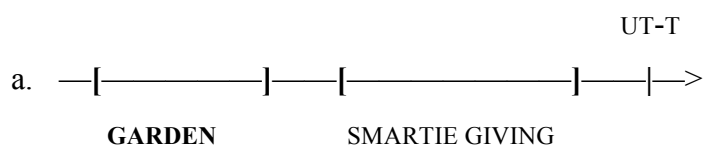
There are two cats, one on the bed, the other_T on the floor. Mummy brushes the cat on the bed who later jumps into the basket. Later on, the cat [the one on the bed] sees a bird and runs after it.

b. Chronos: Maman a brossé le chat qui était dans le panier.

“Mummy brushed the cat that was in the basket.”

The story in (8) makes true a future-shifted interpretation of the *imparfait*, where *the cat that Anne brushed gets into the basket after Anne brushing him but is no longer in the basket at UT-T*.

(9) **Relative clauses: past-shifted context**



Dans cette histoire, il y a deux pirates. Un pirate est dans le jardin. L'autre est dans la maison. Ce pirate [celui dans le jardin] va dans la cuisine. Papa arrive et lui donne un smartie.

There are two pirates in this story. One is in the garden, the other in the house. This pirate [the one in the garden] goes into the kitchen where Daddy gives him a smartie.

b. Chronos: Papa a donné un smartie au pirate qui était dans le jardin.

“Dad gave a smartie to the pirate who was in the garden.”

The story in (9) makes true a past-shifted interpretation of the *imparfait*, where *the pirate is in the garden before Daddy gives him the smartie*.

5.3.5.1 Results

The following graph summarizes the results. The percentages are calculated on the basis of the total number of *yes* answers in each condition.

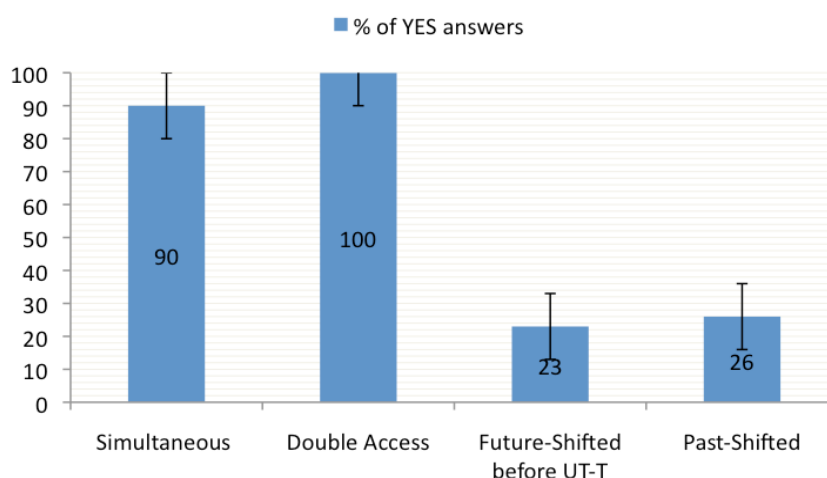


Figure 6. French Children: percentage of *yes* responses for *past* under *past* in Relative Clauses

The results show that children have a tendency to **accept** the simultaneous and the double access construals (90%-100% of *yes* answers) and **reject** the future-shifted and the past-shifted construals (23%-26% of *yes* answers only). The high rejection of the non-simultaneous construals (77% of *no* responses in the *future-shifted* condition and 74% of *no* responses in the *past-shifted* condition) is unexpected under the hypothesis that children have an adult-like behavior with respect to the interpretation of the past in relative clauses under a matrix past: adults accept the readings that precede UT-T.

In conclusion, the results of the relative clause experiment show that French children enforce simultaneous construals of a past under past in relative clauses. In the following section, I will discuss a possible explanation for these results.

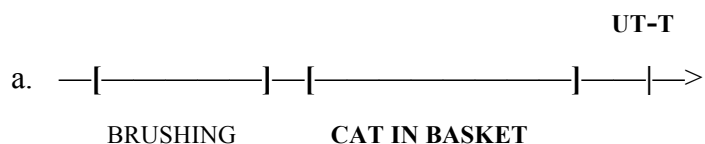
5.3.5.2 Children's preference for simultaneous construals: a pragmatic account

As we have just shown in section 5.3.5.1 above, children reject the non-simultaneous construals, while accepting the simultaneous construal of a *past* in a relative clause under a matrix past. Recall from our discussion in Chapter 3, section 3.3.1.6.1 that children also rejected the non-simultaneous construal of a *present* in a relative clause under a matrix past. I observed then that the rejection of the non-simultaneous construal of the present is in principle compatible with two accounts: **(i)** a *scopal account*, according to which children have problems with inverse scope structures (cf. D&L 2011, see chapter 3, section 3.3.1.8.3) and **(ii)** a “*reduced clause*” *account*, according to which children analyze relative clauses as “reduced clauses” (see chapter 4, section 4.1.2.).

Now, can we maintain the same two possibilities for the results with *past tensed relative clauses* under a matrix past? The answer is: *no*. Although the scopal analysis together with the Observation of Isomorphism can explain children's behavior with respect to the future-shifted reading of the past in relative clauses, it fails to explain children's rejection of the past-shifted reading.

Let us consider again the contexts for the two shifted-readings that we tested: the future-shifted reading ((8)) and the past-shifted reading ((9)), repeated here in (10) and (11):

(10) Relative clauses: future-shifted before UT-T context



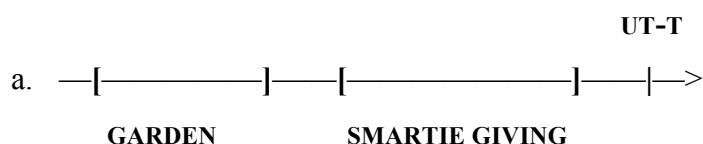
There are two cats, one on the bed, the other, on the floor. Mummy brushes the cat on the bed who later jumps into the basket. Later on, the cat [the one on the bed] sees a bird and runs after it.

b. Chronos: Maman a brossé le chat qui était dans le panier.

“Mummy brushed the cat that was in the basket.”

- c. Child (S. 5;09): Non, parce que t'avais dit qu'elle l'avait brossé là [le panier] et elle l'a brossé là [le lit].
 “No, because you had said that she had brushed it there [the basket] and she brushed it there [the bed].”

(11) **Relative clauses: past-shifted context**



There are two pirates in this story. One is in the garden, the other in the house. This pirate [the one in the garden] goes into the kitchen where Daddy gives him a smartie.

- b. Chronos: Papa a donné un smartie au pirate qui était dans le jardin.
 “Dad gave a smartie to the pirate who was in the garden.”
- c. Child (Y. 6;00): Non, qui était dans la cuisine!
 “No, who was in the kitchen!”

As the children’s answers in (10c) and (11c) above show, they reject the future-shifted and the past-shifted readings of the past 77%, enforcing instead a simultaneous construal. The scopal analysis together with the Observation of Isomorphism can account for the rejection of the future-shifted reading if we adopt an approach to tense like Ogihara’s. Recall from our discussion in chapter 2, section 2.4.1.3.3 that, on an approach along the lines of Ogihara’s, the future-shifted reading requires an inverse scope structure. If children do not have access to inverse scope structures (cf. the Observation of Isomorphism), they should then fail to assign to the relative clause the adult LF structure that yields the future-shifted reading. Instead, they should assign to the relative clause an LF structure isomorphic to the surface scope structure, where the relative clause past occurs under the scope of the matrix past, and is thus interpreted in relation to the matrix event-time. This structure yields either a past-shifted interpretation (if the embedded past is interpreted as a true past) or a simultaneous interpretation (if the embedded past is interpreted as a zero tense), both of which are false in a future-shifted context. Thus, children should reject the test sentence in (10a).

But children also *rejected* the past-shifted reading 74% of the time. The scopal analysis cannot account for this result because the past-shifted reading *can* be obtained with

an LF structure isomorphic to the surface scope structure. Therefore, on a scopal analysis, we expect children to *accept* this construal, which is not what happened⁸¹.

To account for the rejection of both the past-shifted reading and the future-shifted reading of the past in relative clauses, I argue—pursuing the approach that I pursued in the previous chapter—that these are due to the fact that children analyze relative clauses as “reduced clauses”.

Recall that our hypothesis was that children resort to the “reduced clause” strategy whenever this is available (see chapter 4, section 4.1.2). In Experiment 1, the predicates used in the relative clause—the copula *be* and a locative *PP*—make the reduced clause strategy available. Children thus resort to this strategy. The sentences that result after applying the “reduced clause” strategy to the test sentences in (10b)-(11b) are given in (12a)-(12b) below:

(12) a. Maman a brossé le chat dans le panier.

“Mummy brushed the cat in the basket.”

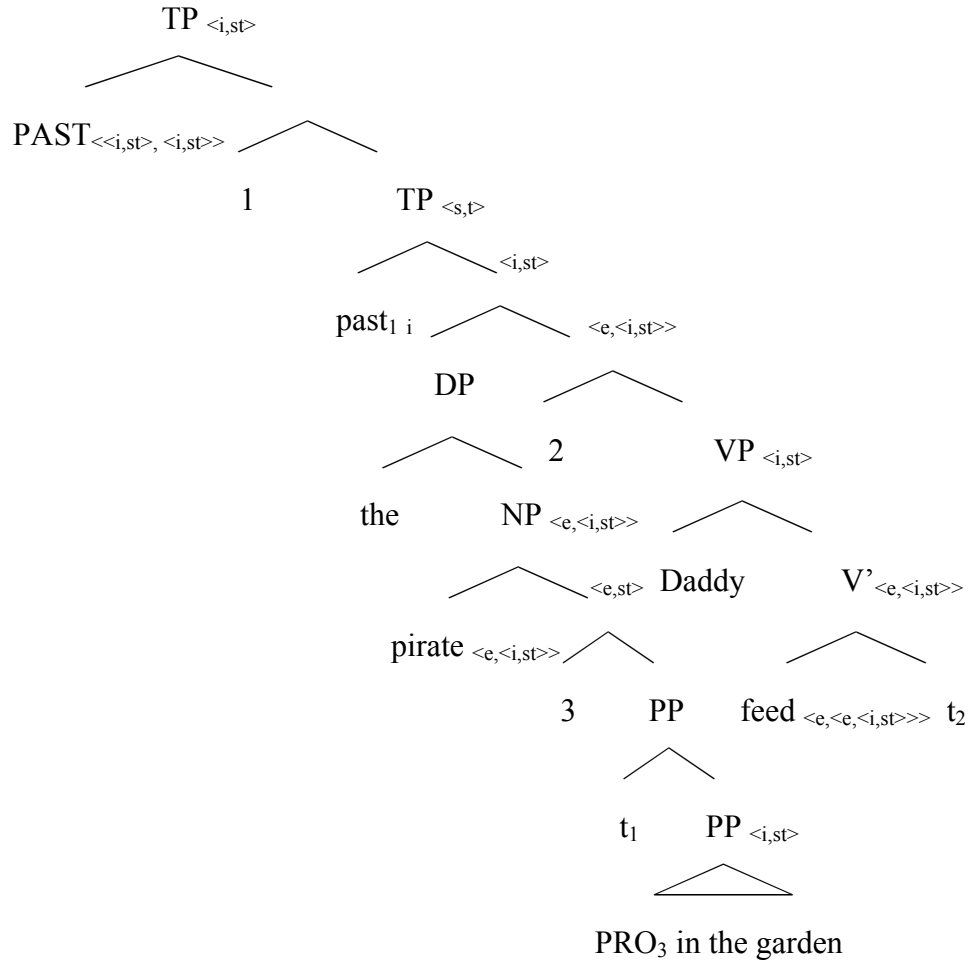
b. Daddy gave a smartie to the pirate in the garden.

“Papa a donné un smartie au pirate dans le jardin.”

As argued in chapter 4 section 4.1.2, in child grammar, sentences such as (12) are analyzed as in (13), where the temporal argument of the reduced clause is bound by the matrix past:

⁸¹ In D&L (2009), we admitted that we had no satisfying solution for the rejection of the past-shifted reading of the past in relative clauses. However, we noted that the dependent past-shifted reading of relative clauses in extensional contexts reflects a more general problem of scope theories of tense (see Stowell 1995, who denies the existence of such readings).

(13)



The structure in (13) gives rise to a simultaneous construal, where the embedded eventuality overlaps the matrix eventuality. But this construal is false in both the future-shifted scenario (*the cat that Mummy brushes is not in the basket at the “brushing” time*) and the past-shifted scenario (*the pirate that Daddy feeds a smartie is not in the garden at the “feeding” time*). Children thus reject the test sentences in (12a) and (12b), respectively.

5.3.5.3 Intermediate summary

So far, we have seen that Experiment 1 with French children revealed that French children accept simultaneous interpretations of the past while rejecting future-shifted and past-shifted readings of the past in relative clauses. In the previous section, we have shown that a scopal analysis together with the Observation of Isomorphism is able to account for the rejection of the future-shifted reading, but fails to account for the rejection of the past-shifted reading. In contrast, we have seen that a “reduced clause” analysis allows us to account straightforwardly for the rejection of both past and future-shifted readings. Moreover, as we have shown in chapter 4, section 4.1.2, the “reduced clause” analysis allows us to account for French

children’s rejection of the indexical construal of the present in relative clauses embedded under a matrix past. In other words, this strategy is able to account for the unexpected results with both the *present* and the *past* in relative clauses under a matrix past.

However, as already mentioned in chapter 4, section 4.1.2, once we adopt the “reduced clause” analysis, according to which children prune the structure of the relative clause, omitting certain elements among which the embedded tense, we can no longer tell what construals children allow for tense in relative clauses. To remedy this, we set up another experiment – another part of the Experiment 2 that we considered in Chapter 4 – where we sought to make the “reduced clause” option unavailable by using as input sentences in which the embedded relative clauses involve *activity verbs*. In French, these kinds of sentences make the “reduced clause” strategy unavailable— as we can see in (14), applying the “reduced clause” analysis to a sentence like (14a) would lead to an ungrammatical sentence ((14b))⁸²:

- (14) a. Jean a embrassé la fille qui dort/ dormait.
 “John kissed the girl who sleep-PRES/ IMP.”
- b. * Jean a embrassé la fille dort/ dormait.
 “John kissed the girl sleep-PRES/ IMP.”

Since the hypothesis is that children resort to the “reduced clause” strategy only when the output is a grammatical sentence, we predict that replacing the previously used predicates (the copula “être” *be* plus a locative PP) —which make the “reduced clause” strategy available— with new ones (activity verbs)— which make the “reduced clause” strategy unavailable— will force children to project the whole structure including the embedded CP, and consequently interpret the embedded tense. If this line of reasoning is correct, we will be able to determine what interpretations children assign to embedded tenses.

5.4 Experiment 2: adult-like construals of the past in relative clauses

In section 5.3.5.2, I showed that French children, unlike French adults, rejected the future-shifted construal of an *imparfait* in relative clauses. To explain this non-adult finding, I considered two analyses: **(i)** the scopal analysis of relative clauses together with the

⁸² Remember that this is only true for languages like French, since in languages like English, applying the “reduced clause” strategy to (14b) would result in a grammatical sentence (see footnote 45).

Observation of Isomorphism in child language (cf. D&L 2009, 2011) and (ii) the “reduced clause” analysis. The scopal analysis explains the lack of a future-shifted reading as follows: the future-shifted reading involves an inverse scope structure but children’s difficulties with LF structures non-isomorphic to surface structures (cf. the Observation of Isomorphism) make the adult inverse scope structure unavailable, which results in rejection of this case. By contrast, the “reduced clause” analysis of relative clauses has it that children construe relative clauses as reduced structures. Reduced structures give rise to a simultaneous construal, *false* in the future-shifted scenario; hence the rejection of this case.

Recall that, in Experiment 2, the “reduced clause” strategy is no longer available since this experiment used *activity verbs*, which, as shown in chapter 4, section 4.1, do not allow pruning of the relative clause since the result would be an ungrammatical sentence. If children admit the same analysis of past tense that adults do, the predictions then are that children should

- (i) **accept** the simultaneous construal of the *imparfait*.
- (ii) **accept** the future-shifted construal of the *imparfait* before UT-T.

The kind of scenario used to test these predictions are illustrated in (15) and (16), respectively:

(15) **Future-shifted *imparfait***

C’est une histoire avec un petit garçon. C’est son anniversaire aujourd’hui. Il est à l’école. Regarde, sa maîtresse arrive et lui donne un avion pour son anniversaire. Le garçon: “Ouah, un avion! C’est mon jouet préféré! Merci!” Plus tard, le garçon va à la maison, prend son chien et va avec lui au jardin public. Dans le jardin, regarde, il y a un autre garçon; celui-ci est assis sur un banc. Plus tard, le petit garçon et son chien rentrent chez eux.

This is a story with a little boy. It’s his birthday today. He is at school. Look, his teacher is coming and gives him a toy plane for his birthday. The boy: “Wow, a plane! That’s my favorite toy! Thank you!” Later on, the boy goes home. He takes his dog for a walk. He goes to the park, where, look, there is another boy, sitting on a bench! Later, the boy and his dog go back home.

a. Test sentence: La maîtresse a donné un avion au garçon qui *promenait* son chien.

“The teacher gave a plane to the boy who was walking his dog.”

The context in (15) illustrates the future-shifted construal of the *imparfait* under past, where the embedded eventuality (*the dog walking*) follows the matrix eventuality (*the plane offering*), but precedes UT-T. If children have adultlike interpretations of relative clauses, they should accept this construal.

(16) **Simultaneous *imparfait***

Dans cette histoire, il y a 2 oiseaux. Un vole par-dessus l’enclos, l’autre est dans l’herbe. Regarde, il y a un tigre! Regarde ce que le tigre fait: il saute et mord cet oiseau [celui qui vole]. L’oiseau est blessé! Il s’assied dans l’herbe!

In this story there are two birds. One is flying over the paddock, the other is lying in the grass. Look, there is a tiger! Look what the tiger does: he jumps and bites this bird [the one who is flying]. Oh, the bird is hurt! he lies down on the grass.

a. Test sentence: Le tigre a mordu l’oiseau qui *volait* par-dessus l’enclos.

“The tiger bit the bird who was flying over the paddock.”

The context in (16) makes a simultaneous construal of the *imparfait true*: the bird that the tiger bit was flying over the paddock at the *biting* time. We expect that children answer *yes* in this context given that the flying precedes UT-T (we expect this whether we have a *past* in the relative clause or whether we have a zero tense bound by the matrix *past*).

5.4.1 Results

The results are summarized in Figure 7 below.

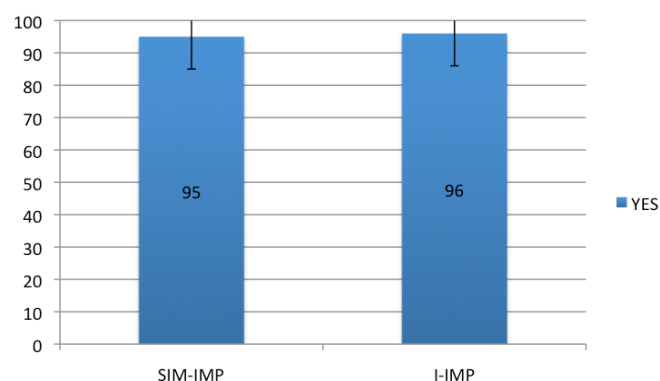


Figure 7. Experiment 2. Children: percentage of *yes* responses for *past* under *past*

As we can see in Figure 7, the results for the past (*imparfait*) in both the simultaneous and the future-shifted conditions are almost at ceiling (95-96% of *yes* answers).

The acceptance of a simultaneous construal is compatible with two analyses: **(i)** an independent analysis, on which the embedded past is construed as a true past tense expressing anteriority with respect to UT-T and coreferential with the matrix past; and **(ii)** a zero tense analysis on which the embedded past is construed as a zero tense bound by the matrix past. In chapter 6, section 6.2.5.1, I will provide arguments from the literature on the acquisition of pronouns suggesting that we can plausibly interpret French children's findings as evidence for a zero tense analysis of the simultaneous construal of the past.

The high acceptance of the future-shifted construal of the *imparfait* (96% of *yes* answers) clearly shows that children construe the *imparfait* as a *true* past tense expressing anteriority with respect to UT-T. Now, recall that, in Experiment 1, the future-shifted construal of the *imparfait* was accepted only 23% of the time. The contrast between Experiment 1 and Experiment 2 as far as the acceptance of the future-shifted *imparfait* is concerned constitutes clear evidence for the “reduced clause” strategy in child language. After all, the salient difference between Experiment 1 and Experiment 2 is that the stative predicates used in Experiment 1 (copula *be* plus a locative PP) could feed the “reduced clause” strategy, while the activity verbs used in Experiment 2 could not.

In sum, Experiment 2 shows that, when the reduced clause strategy is not available, children have adult-like readings of the *imparfait*: plausibly, then, for French children just as for French adults, the *imparfait* is ambiguous between a *true* past tense and a zero tense.

5.5 Summary

For Experiment 1, I showed that children have a tendency to reject non-simultaneous construals of the *present* and the *imparfait* in relative clauses containing stative predicates (specifically, the pure indexical construal of the present was accepted only 16% of the time and the future-shifted construal of the *imparfait* was accepted only 23% of the time). I observed that these results were compatible with two analyses. On one analysis— the “reduced clause” analysis— children interpret the relative clause as a reduced, tenseless clause which lacks the TP projection. The “reduced clause” structure in child language gives rise to a simultaneous reading which is false in both of the two non-simultaneous contexts (i.e. the “indexical present” context and the “future-shifted *imparfait*” context). Hence, children reject these cases. On the alternative analysis— the scopal analysis—, children project the whole structure for the sentence but have difficulties with inverse scope interpretations (cf. *the Observation of Isomorphism*). Assuming that both the indexical construal of the present and the future-shifted construal of the *imparfait* require inverse scope structures, we can explain why children reject these construals.

Experiment 2 was designed to make the “reduced clause” strategy unavailable and thus force children to project the whole structure including the CP and the TP projections for the relative clause. Assuming children have an adult-like interpretation of tense, the prediction was that they should accept the non-simultaneous construals. This prediction was borne out. Unlike children in Experiment 1, children in Experiment 2 accepted both the indexical construal of the present (62% of *yes* answers) and the future-shifted construal of the *imparfait* (96% of *yes* answers). I argued that children’s acceptance of the above mentioned non-simultaneous construals of the present and the past brings evidence for the existence of adult-like indexical (present and past) tenses in French child grammar.

Finally, the contrast between Experiment 1 and Experiment 2 with respect to the non-simultaneous construals (**rejected** in Experiment 1 and **accepted** in Experiment 2) suggests that the surprising results with the non-simultaneous construals in Experiment 1 *cannot* be attributed to children’s difficulties with inverse scope interpretations (cf. *Observation of Isomorphism* in child language). Rather, this contrast suggests that the rejection of the non-simultaneous cases in Experiment 1 should be attributed to the “reduced clause” strategy, available in Experiment 1, but not in Experiment 2.

CHAPTER 6

Past in complement clauses under a matrix past in child language

In this chapter, I discuss Hollebrandse's (2000) SOT experiments testing the construal of the *past in complement clauses* embedded under a matrix past. Hollebrandse's main finding is the acceptance of the future-shifted reading before UT-T of a past in a complement clause under a matrix past. On Hollebrandse's view, this finding results from independent interpretations of tenses in complement clauses, which are due to lack of complementation. I argue, contrary to Hollebrandse, that children who accept the future-shifted reading before UT-T *do* have complementation and moreover have *dependent* interpretations of tenses in complement clauses. On my proposal, future-shifted readings before (and after) UT-T are in fact *futurate* readings of the past in child language. This hypothesis will be developed and tested experimentally in the next chapter.

This chapter is organized as follows: section 6.1 recapitulates the construals of past under past in SOT and non-SOT languages. Section 6.2 discusses Hollebrandse's (2000) SOT experiment testing the construal of past in complement clauses under a matrix past. It then provides a critical discussion of Hollebrandse's results and gives arguments against the idea that they stem from lack of complementation in the way he imagines. I conclude this chapter with a discussion of dependent tenses in language acquisition, and more specifically of the acquisition status of zero tenses. Drawing a parallel between the acquisition of zero pronouns and the acquisition of zero tenses, I argue that zero tenses are present in child language from early stages of language acquisition.

6.1 SOT *versus* non-SOT languages

Recall that in an SOT language like English or French, sentences with a past in a complement clause under a matrix past such as (1a)-(1b) have either a *simultaneous* interpretation, where the subordinate eventuality overlaps the matrix event, or a *past-shifted* interpretation, where the subordinate eventuality precedes the matrix event. In contrast, in non-SOT languages like

Japanese, sentences with a past in a complement clause under a matrix past such as (1c) have a past-shifted interpretation only.

- | | | |
|-----|--|----------|
| (1) | a. John said that Mary was sick. | English |
| | b. Jean a dit que Marie était malade. | French |
| | c. Taro-wa Hanako-ga byooki-dat-ta to it- ta. | Japanese |
| | Taro-TOP Hanako-NOM be-sick-PAST that say-PAST | |
| | “Taro said that Hanako had been sick.” | |

Importantly, a past in a complement clause embedded under a matrix past (in either SOT or non-SOT languages) does not allow a *future-shifted* interpretation, where the embedded eventuality follows the matrix eventuality. As discussed in chapter 2, according to Abusch (1994, 1997), the lack of the future-shifted interpretation in complement clauses can be imputed to a restriction on the interpretation of the embedded tense in intensional contexts, known as the *Upper Limit Constraint* (ULC) (Abusch, 1994: 110):

(2) **The Upper Limit Constraint (Abusch 1994: 110)**

The local evaluation time⁸³ is an upper limit for the reference of tenses.

Applied to sentences such as (1), the ULC precludes a future-shifted reading, where the embedded eventuality follows the matrix eventuality, while allowing either a past-shifted reading where the embedded eventuality precedes the matrix eventuality, or a simultaneous reading, where the embedded eventuality overlaps the matrix eventuality.

In SOT languages, unlike in non-SOT languages, temporal overlap with the matrix past requires an embedded past. This difference was stipulated as the *SOT parameter* (see (6), chapter 2), repeated in (3) below:

⁸³ For Abusch, the term “local evaluation time” refers to the speaker’s or attitude holder’s “now”, i.e. the time that a sentence or a thought is “about.”

(3) The SOT parameter

- i. in SOT languages like English or French, simultaneous construals under a matrix past require a *past*
- ii. in non-SOT languages like Japanese, simultaneous construals under a matrix past require a *present*.

In what follows, I turn to previous acquisition work, namely Hollebrandse (2000), who tests the acquisition of embedded tense in three languages: English, Dutch and Japanese. Hollebrandse observes that all children have a tendency to *accept* the future-shifted reading of the past in complement clauses under a matrix past. To explain this finding, Hollebrandse proposes the Independency Hypothesis, which explains the acceptance of the future-shifted reading of a past in a complement clause under a matrix past as being due to absence of complementation. I argue that this hypothesis is not well founded and that children accepting this reading have indeed acquired complementation. I suggest a different explanation for the acceptance of future-shifted readings, according to which children analyze these construals as futurate construals of the embedded past.

6.2 Hollebrandse (2000): The Independency Hypothesis applied to Complement clauses

Hollebrandse tests the construal of a past in a complement clause under a matrix past in Dutch, English and Japanese, using a Truth Value Judgment Task with four experimental conditions^{84,85}: **(i)** *the simultaneous* condition, where the eventuality described in the embedded clause overlaps the matrix event time, **(ii)** *the past-shifted* condition, where the embedded eventuality is prior to the matrix event-time, and two *future-shifted* conditions: **(iii)** *the future-shifted before UT-T* condition, where the eventuality described in the embedded clause is subsequent to the matrix event-time but *precedes UT-T*, and **(iv)** *the future-shifted after UT-T* condition, where the embedded eventuality follows UT-T.

⁸⁴ In a more recent study (Hollebrandse et al. 2001), the author also tests the construal of a past in a complement clause under a matrix past with Italian children.

⁸⁵ Hollebrandse's experiments included both a comprehension and a production task. In the following sections, I will review only the comprehension experiments, since only the comprehension findings are relevant to our discussion of the French data.

Hollebrandse's view is based on the following premises:

- (4) In complement clauses,
 - i. the embedded tense situates the time of the event with respect to the **matrix event time**.
 - ii. the exclusion of the **future-shifted reading** of the past in a complement clause under a matrix past depends on whether children know (4i).
 - iii. children know (4i) as long as they have acquired complementation.

Against this background, Hollebrandse proposes the Independency Hypothesis, repeated in (5) below. The Independency Hypothesis is a hypothesis about what children who do *not* know (4i) do.

(5) **Independency Hypothesis:**

For children who have not acquired complementation, the evaluation time for the embedded eventuality is UT-T.

According to this view, children may have an independent interpretation of tenses due to absence of complementation, that is, absence of knowledge of the structural dependency between the embedded tense and the matrix tense. Thus, assuming children have acquired past tense but have not acquired complementation, children should **(i)** *accept* the *simultaneous*, the *past-shifted* and the *future-shifted before UT-T* cases, since in all these cases, the embedded eventuality precedes UT-T and **(ii)** *reject* the *future-shifted after UT-T* case, since in this case the embedded eventuality follows UT-T.

On the other hand, if children have acquired complementation, they interpret the embedded *past* eventuality with respect to the matrix event-time, and so they should *accept* the *past-shifted* case, since, in this case, the embedded eventuality *precedes* the matrix eventuality. Children should also *accept* the *simultaneous* case; if they know that their language is an SOT language, where past expresses temporal simultaneity with respect to the matrix past. Finally, they should reject both *future-shifted* cases, since in these cases the embedded eventuality *follows* the *matrix event-time* which for these children is the evaluation time of the embedded eventuality.

So, for Hollebrandse, the crucial case that distinguishes children who have acquired complementation from children that have not is the *future-shifted before UT-T*. According to Hollebrandse's Independency Hypothesis, children who *allow* this case are children who lack complementation. These children have an *independent* interpretation of tenses, that is, they interpret the embedded *past* tense with respect to UT-T.

Below I illustrate the contexts that Hollebrandse used to test the four readings described above. The reader should pay close attention to the *future-shifted* cases, since these two cases will be of particular importance for us.

(6) a. **Simultaneous reading (including UT-T)**

Excerpt of the Dutch experiment of a question testing a simultaneous reading (E2)	
KM:	<i>Hé, zeg. Ik heb net een nieuwe schuur gekregen. En dit zijn mijn autootjes. Ik rijd al mijn autootjes de schuur in.</i> (hey, say. I have just a new barn gotten. and these are my cars. I drive all my cars the barn in)
B:	<i>Hoi, Cookie Monster! Hoe is het?</i> (hi, C.M.! how is it?)
KM:	<i>Goed, Bert. Ik reed zojuist al mijn autootjes de schuur in en nu staan ze in de schuur.</i> (fine B. I drove just all my cars the barn in and now stand they in the barn)
Exp:	<i>Zei Cookie Monster dat zijn autootjes in de schuur stonden?</i> (E2) (said C.M. that his cars in the barn stood) "Did Cookie Monster say that his cars were in the barn?"

b. **Past-shifted reading**

Excerpt of the Dutch experiment of a question testing a real past reading (E1)	
B:	<i>Koekie Monster. Je moet ook nog al je rommel rond je schuur opruimen.</i> (C.M. you must also still all your mess around your barn clean up)
KM:	<i>Ok, Bert. Ik rijd mijn auto's naar binnen. Ik zet mijn dieren in de schuur. Nu zijn mijn dieren ook in de schuur, maar daarnet waren ze nog buiten.</i> (ok B. I drive my cars to inside. I put my animals in the barn. Now are my animals too in the barn, but just were they still outside)
Exp:	<i>Zei Cookie Monster dat zijn dieren buiten waren?</i> (E1) (said C.M. that his animals outside were) "Did Cookie Monster say that his animals were outside?"

c. Future-shifted before UT-T

Excerpt of the Dutch experiment of a question testing a forward shifted reading before utterance time (E3)	
B:	<i>Zal ik eens kijken of ik een banaan voor je kan vinden, Cookie Monster?</i> (shall I look if I a banana for you can find, C.M.)
KM:	<i>Ja Bert, ik wil een banaan op mijn bordje hebben.</i> (yes, B. I will a banana on my plate have)
<Bert puts the banana on C.M.'s plate>	
Exp:	<i>Zei Cookie Monster dat hij een banaan op zijn bordje had?</i> (said C.M. that he a banana on his plate had) "Did Cookie Monster say that he had a banana on his plate?"

d. Future-shifted after UT-T

Excerpt of the Dutch experiment of a question testing a forward shifted reading after utterance time (E4)	
B:	<i>Hé, Cookie Monster, het eten is klaar. Kom we gaan eten!</i> (hey, C.M. the food is ready. Come we go eat)
KM:	<i>Maar ik wil al mijn dieren nog in de schuur zetten. Dan zijn al mijn dieren in de schuur.</i> (but I want all my animals still in the barn put. then are all my animals in the barn)
B:	<i>Nee, Cookie Monster daar is geen tijd meer voor. We moeten nu gaan eten.</i> (no, C.M. there is no time for. we must now go eat)
Exp:	<i>Zei Cookie Monster dat zijn dieren in de schuur waren? (E4)</i> (said C.M. that his animals in the barn were) "Did Cookie Monster say that his animals were in the barn?"

(Hollebrandse 2000: 121-124)

Hollebrandse expects to find the following child profiles:

- (i) the **"non-complement"** children: children who have not acquired complementation and thus have an *independent* interpretation of tenses in complement clauses. These children will interpret the embedded past tense with respect to **UT-T** rather than with respect to the matrix event-time.
- (ii) the **"complement"** children: children who have acquired complementation, and thus have a *dependent* interpretation of tenses in complement clauses.

These children will interpret the embedded past with respect to the **matrix event-time**.

Hollebrandse states that there are three developmental stages in the acquisition of temporal interpretations of complement clauses in SOT languages (assuming children have acquired *past* tense):

Stage 1: children lack complementation, i.e., they have independent interpretations of embedded tenses.

They *accept* the future-shifted reading before UT-T.

Stage 2: children have acquired complementation, i.e., they have dependent interpretations of embedded tenses.

They *reject* the future-shifted reading before UT-T of complement clauses.

Stage 3: children have acquired SOT, i.e., they know that temporal simultaneity under a matrix past requires an embedded past tense.

Given that English and Dutch are SOT languages, English and Dutch children are expected to pass through the three stages. By contrast, given that Japanese is a non-SOT language, Japanese children are expected to pass only through the first two stages.

Let us now look at the predictions for each of the four experimental conditions. I will first discuss the predictions for the simultaneous and past-shifted cases. Then, I will discuss the predictions for the future-shifted cases.

As far as the **past-shifted** reading is concerned, Hollebrandse predicts that all children should **accept** it. “Non-complement” children should accept it because the embedded eventuality occurs before *UT-T*, which, for these children, is the evaluation time for the embedded eventuality, whereas “complement” children should accept it because the embedded eventuality occurs before the *matrix-event* time, which, for these children, is the evaluation time for the embedded eventuality.

Turning now to the **simultaneous** case, “non-complement” children should **accept** it because the embedded event takes place before UT-T. As far as “complement” children are concerned, the predictions for the simultaneous case depend on whether the target language is an SOT language or not. Thus, if the target language is an SOT language (English, Dutch), “complement” children acquiring this language could **accept** the simultaneous reading, if they have acquired the SOT rule. However, if the target language is a non-SOT language

(Japanese) “complement” children acquiring this language should **not accept** it since, in Japanese, past only expresses anteriority with respect to the matrix event-time.

The predictions for the simultaneous and past-shifted cases are summarized below:

Table 11. Hollebrandse (2000): Predictions for the simultaneous and past-shifted cases

Temporal interpretations	“Non-complement” child	“Complement” child	
		SOT	Non - SOT
Simultaneous	yes	yes	No
Past-shifted	yes	Yes	

Let us now look at the results, summarized in Table 12:

Table 12. Hollebrandse (2000): Results for the simultaneous (SIM) and past-shifted (PS) cases

Dutch			English			Japanese		
% of yes per age group ⁸⁶	SIM	PS	% of yes per age group	SIM	PS	% of yes per age group	SIM	PS
3 (n = 14)	98	91	3 (n = 8)	88	88	3 (n = 2)	100	100
4 (n = 16)	85	65	4 (n = 14)	88	69	4 (n = 20)	95	88
5 (n = 20)	95	72	5 (n = 11)	85	100	5 (n = 9)	93	82
6 (n = 11)	94	73	6 (n = 20)	93	83	6 (n = 1)	100	100
7 (n = 1)	67	100	7 (n = 9)	78	81	—	—	—

Notice that, overall, all children *accepted* both the **past-shifted** and the **simultaneous** construals. As Hollebrandse observes, the acceptance of the past-shifted case is unsurprising. Children accept this case either because they have an independent interpretation of the embedded past, i.e., they interpret the embedded past as expressing anteriority with respect to **UT-T**, or because they have a dependent interpretation of the embedded past, i.e., they interpret the embedded past as expressing anteriority with respect to the **matrix event-time**.

The acceptance of the simultaneous case is also unsurprising. Children accept this case either because they interpret both the matrix and the embedded eventuality as anterior to **UT-T and overlapping each other**, or they accept it because they interpret the embedded eventuality with respect to the **matrix eventuality and they treat their language as an SOT language**, where temporal simultaneity between the matrix and the embedded eventualities requires an embedded past tense.

⁸⁶ The number of participants per age group is indicated in parenthesis.

Let us now consider the predictions and the results for the future-shifted cases. These cases have special significance for Hollebrandse because on his view they allow us to tease apart “complement” from “non-complement” children. Recall that “non-complement” children should **accept** the future-shifted *before* UT-T case, since, in this case, the embedded eventuality takes place before UT-T, whereas “complement” children should **reject** it, since in this case the embedded eventuality does not take place before the embedded event-time, which recall is the evaluation time for these children. Both complement and non-complement children should **reject** the future-shifted after UT-T case, since, in this case, the embedded eventuality takes place *after* UT-T.

The expected patterns for the future-shifted scenarios are summarized in Table 13:

Table 13. Hollebrandse (2000): Predictions for the future-shifted cases

Child profiles	Future-shifted before UT-T	Future-shifted after UT-T
“Complement” children	No	No
“Non-complement” children	Yes	No

As we can see in Table 13, the **acceptance** of the future-shifted before UT-T case *together* with the **rejection** of the future-shifted after UT-T case would provide evidence for the lack of complementation, while the rejection of both future-shifted cases would provide evidence for the presence of complementation.

Let us now look at the experimental findings for **the future-shifted cases** for the three languages, summarized in Table 14:

Table 14. Hollebrandse (2000): past in complement clauses under past

Dutch			English			Japanese		
% of yes per age group	FS before UT-T	FS after UT-T	% of yes per age group	FS before UT-T	FS after UT-T	% of yes per age group	FS before UT-T	FS after UT-T
3 (n = 14)	95	71	3 (n = 8)	71	62	3 (n = 2)	100	100
4 (n = 16)	87	56	4 (n = 14)	81	55	4 (n = 20)	85	85
5 (n = 20)	78	50	5 (n = 11)	82	64	5 (n = 9)	70	41
6 (n = 11)	42	12	6 (n = 20)	87	51	6 (n = 1)	100	100
7 (n = 1)	67	0	7 (n = 9)	48	7	—	—	—

In his summary of these experimental findings, Hollebrandse remarks that there is a general tendency with all children to accept **both future-shifted readings** but that the acceptance of

these readings decreases over time. As for the acceptance of the future-shifted reading *after* UT-T, Hollebrandse argues that this is just an effect of age: the younger the children are, the more liberal they are with respect to the temporal interpretation of sentences. As for the acceptance of the future-shifted reading before UT-T, Hollebrandse argues that this is due to lack of complementation.

6.2.1 A closer look at Hollebrandse's results

In this section, I take a closer look at the results. I show that some findings cast doubt on the validity of Hollebrandse's view.

6.2.1.1 Japanese simultaneous past under past: independent or zero tense?

The first finding that we will examine is the *acceptance* of the simultaneous construal of the past by the Japanese children. Recall that in the adult Japanese grammar, past under past in complement clauses only yields a past-shifted construal. Why did Japanese children accept the simultaneous construal? Let us consider two explanations. The first assumes Hollebrandse's Independency Hypothesis and its background assumptions, while the second assumes our Zero Tense Hypothesis. On the Independency Hypothesis, one could explain this result by saying that the Japanese children lack complementation. Since they lack complementation, Japanese children interpret the embedded past as expressing anteriority with respect to UT-T; since in the simultaneous context, the embedded eventuality does occur before UT-T, children accept the test sentence.

Notice, however, that among the Japanese children who accept this reading there are 4-to-6-year-old children and that the rate of acceptance of this reading is very high, ranging between 95% and 100%. Does this mean that Japanese children aged 4-5-6 have not yet acquired complementation? Given the age of these children, it would be quite implausible (we will return to this point in section 6.2.2 below).

The second explanation for Japanese children's acceptance of the simultaneous reading assumes our Zero Tense Hypothesis, repeated below:

(7) **The Zero Tense Hypothesis**

- a. Zero tenses are present in child language early on.
- b. Zero tenses in child language surface as both past and present.

According to the Zero Tense Hypothesis, Japanese children accept the simultaneous construal of the past in complement clauses because, just like their French peers, they have a zero *past* tense in their grammar. Japanese children's acceptance of simultaneous construals of the past together with their acceptance of the simultaneous construal of the present embedded under a matrix past suggests that Japanese children, like French children, pass through a stage where they have zero past tenses alongside zero present tenses in their grammar. This is expected on clause (b) of our Zero Tense Hypothesis.

6.2.1.2 The acceptance of the future shifted after UT-T

The second finding that I would like to discuss is the *acceptance* of the future-shifted *after* UT-T case. The question that we may ask is whether the very same children who accept the future-shifted *before* UT-T case *also* accept the future-shifted reading *after* UT-T. This would be surprising under Hollebrandse's view, which implies that children who **accept** the future-shifted before UT-T case lack complementation and therefore should **reject** the future-shifted after UT-T case (since they have acquired past tense). Unfortunately, the results reported in Hollebrandse (2000) do not allow us to check whether this pattern was observed. However, irrespective of how each child behaved with respect to both future-shifted cases, the acceptance of the future-shifted after UT-T alone remains mysterious under the Independency Hypothesis, since this hypothesis predicts that children, whether they acquired complementation or not, should reject this case (provided they have acquired past tense).

Summarizing, Hollebrandse's results do not seem to provide strong evidence for the idea that children may lack complementation and behave in accordance with the Independency Hypothesis. First, the acceptance of the simultaneous construal of the past by Japanese children does not provide strong evidence of the lack of complementation because, as we have just showed, this finding is compatible with both an independent and a dependent (zero tense) analysis of past tense. Second, even if we assume that the acceptance of the future-shifted reading before UT-T brings evidence for the absence of subordination, how can we explain the acceptance of the future-shifted reading *after* UT-T?

In the following section, I provide a critical evaluation of Hollebrandse's claim that children may lack complementation and behave in accordance with the Independency Hypothesis. I argue that Hollebrandse's view is not well founded and that the acceptance of the future-shifted reading before UT-T should receive a different explanation.

6.2.2 Assessing the Independency Hypothesis

In proposing the Independency Hypothesis, Hollebrandse implies that some children (i) have acquired past tense but (ii) have not acquired complementation, and, consequently, do not know that tense in complement clauses is evaluated with respect to the matrix tense. As regards (i), it is plausible that the children Hollebrandse has in mind have acquired past tense. As several authors have independently shown (Weist, 1989, Wagner 1998, Valian 1991, a.o), children start using tense morphology correctly in simple clauses as early as age 2. Since the children whose data we are concerned with here are 4-5 year old children, it is highly unlikely that children at these ages have not yet acquired past tense. In what follows I will concentrate on (ii). As I understand Hollebrandse, behind his position in (ii) is the more specific idea that, when children accept the future-shifted reading before UT-T of the past in a complement clause under matrix clause, that is because the children lack complementation. In this section, I will question this idea. My intention in doing so is to question more generally the Independency Hypothesis and the assumptions on which it is based.

In the introduction of section 6.2, we have seen that Dutch, American and Japanese children accept the future-shifted reading before UT-T of an (imperfective) past in complement clauses under a matrix past at rates ranging between 42% and 100%. Hollebrandse specifically tries to prove that lack of complementation is responsible for these acceptances of the future shifted before UT-T reading. To do so, Hollebrandse uses what he takes to be an independent test of complementation, the *Theory of Mind* test^{87,88}, which examines children's capacity to assign (false) beliefs to other people.

⁸⁷ The concept of "*Theory of Mind*" was introduced by Premack and Woodruff (1978) and denotes the capacity that an individual has to impute mental states to himself or to others.

⁸⁸ The false belief tests that Hollebrandse used are variants of the "Sally-Anne" task (Wimmer and Perner 1983, Baron-Cohen, Leslie and Frith 1985, Mitchell 1996) and the "Smarties" task (Perner, Leekam and Wimmer 1987, A. Gopnik and J. W. Astington 1988). In the classical version of the "Sally-Anne" task, children are shown a story involving two characters, Sally and Anne, who have a basket and a box. Sally also has a marble, which she places in the basket. Then, she leaves to take a walk. During Sally's absence, Anne takes the marble from the basket and places it in the box. Sally returns and the child is asked where Sally will look for the marble. The child passes the task if s/he answers that Sally will look in the basket, where she put the marble. The child fails the task if s/he answers that Sally will look in the box, where the child knows the marble is. In the "Smarties" task, the experimenter shows the child a box of candies called "Smarties" and asks the child what s/he believes to be the content of the box. The experimenter opens the box and shows the child that in fact the box contains pencils. The experimenter then recloses the box and asks the child what s/he thinks another person

Following de Villiers (1995) who argues that the acquisition of complementation is a prerequisite for the development of Theory of Mind, Hollebrandse expects to find a correlation between the future-shifted reading before UT-T and the Theory of Mind results. Specifically, he expects that children who *fail* the Theory of Mind tests *accept* the future-shifted reading before UT-T. According to Hollebrandse, the statistical analyses performed on the results confirm this prediction. Therefore, he concludes that the lack of complementation is indeed responsible for the acceptance of the future-shifted reading before UT-T.

However, a closer look at the results of the analyses shows that the expected correlation between the future-shifted reading before UT-T and the Theory of Mind results is actually non-significant, as I will claim, which to my mind invalidates Hollebrandse's argument. The paragraph reporting the results of the statistical tests reads as follows (the relevant passages are marked in bold):

We then found that **Theory of Mind had an almost significant effect only on the dependent variable “forward shifted reading before utterance time” ($p = .060$).**

There was no effect on the other dependent variable, forward shifted reading after utterance time. In the last case we did find a significant effect of age ($p = .0054$).

(Hollebrandse 2000: 215-216)

We see here that the result of the analysis testing the correlation between Theory of Mind and the future shifted reading before UT-T, which for Hollebrandse is the crucial argument for lack of complementation, reveals an **almost significant** value of **.06**. However, assuming, as is standardly the case, that a statistical result is significant if the p value is inferior to **.05**, the fact that the statistical result revealed a p value of **.06** invites the opposite conclusion, that **there is no correlation** between Theory of Mind and the future-shifted reading before UT-T. I thus conclude that there is no clear evidence that complementation is responsible for the acceptance of the future-shifted reading before UT-T.

(for instance, the child's best friend), who did not see the content of the box, will think is inside. The child passes the task if s/he thinks that another person will answer that the box contains “Smarties” and fails the task if s/he answers that another person will think that the box contains pencils. To pass the task, the child must be able to understand that other people might have beliefs about a certain state of affairs different from his/her own beliefs. The research on false beliefs has shown that children pass the tasks at age 4-5.

Now, leaving aside the relation between Theory of Mind and tense interpretation, there are two arguments that go against the idea that lack of complementation lies behind the acceptance of the future-shifted reading before UT-T: **(i) age** and **(ii) the acceptance of the future-shifted reading after UT-T**.

Consider **age**, first. Notice that cross-linguistically children who accept the future-shifted reading before UT-T are children aged **4, 5** and even **6**. The question is whether we can claim that at these ages children have not yet acquired complementation. The data available in the acquisition literature suggest that children at these ages do have complementation. In particular, it has been argued that the major types of complex sentences appear between ages 2 and 4 (see Bowerman 1979, Antinucci and Parisi 1975). Other studies, testing the relation between the acquisition of complementation and the acquisition of Theory of Mind (De Villiers and Pyers 1997, De Villiers 2004) ran a longitudinal study with children aged between 3 and 5 years old aiming among other things⁸⁹ to investigate children's syntactic development. One task used to test children's linguistic development *The Memory for Complements in Described Mistakes* involved pictures describing a story in which a character makes a mistake, tells a lie or has a false belief. The child's task was to report what the content of the mistake was. The experiment included verbs of thinking (*think, believe*) and verbs of communication (*say, tell*), as illustrated by the following excerpts taken from de Villiers and Pyers (1997: 1043):

(8) a. **Context for 'think'**

He [*the character*] thought he found his ring, but [*second picture*] it was really a bottle cap.

b. Test question: What did he think? [*Pointing back at first picture.*]

c. i. "Reality" answer: (He thought that he found) **a bottle cap**.

ii. Correct answer: (He thought that he found) **a ring**.

⁸⁹ The major goal of De Villiers and Pyers' study was to investigate the relation between language and mind. To this effect, the authors developed a battery of tests concomitantly testing children's knowledge of complementation and the development of the capacity of understanding false beliefs. On the basis of the experimental results, the authors conclude that knowledge of complementation does indeed determine successful false beliefs performance.

(9) a. **Context for ‘say’:**

She [*the character*] said she found a monster under her chair, but [*second picture*] it was really the neighbor’s dog.

b. What did she say? [*Pointing back at first picture.*]

c. i. “Reality” answer: (She said that she found) **a dog**.

ii. Correct answer : (She said that she found) **a monster**.

De Villiers and Pyers show that 3 year olds answer what the character found in reality, that is “a bottle cap”/ “a dog”, but that **4 year olds** correctly answer what the character thought or said he had found, that is “a ring”/ “a monster”.

These studies thus show that Theory of Mind is acquired by age 4. This in turn makes it at least plausible that complementation is acquired not long afterwards, which means that the acceptance of the future-shifted before UT-T reading by 5-6 years old children in Hollebrandse’s experiments cannot be due to absence of complementation.

The second argument against the idea that lack of complementation lies behind the future-shifted reading before UT-T is once again **the acceptance of the future-shifted reading after UT-T** of an (*imperfective*) past. Again, if we look back at the results we can see that at children aged 4, 5, 6 accept this reading at rates ranging between 41% and 64%. As we said above (see the introduction of section 6.2), this is unexpected on Hollebrandse’s assumptions. Recall that the Independency Hypothesis does not predict the acceptance of the future-shifted reading *after* UT-T of a *past*.

I conclude that the acceptance of the future shifted reading before UT-T is not due to absence of complementation. In the following section, I will suggest, contrary to Hollebrandse, that children aged 4, 5, 6 do have *dependent* tenses in their grammar and that the acceptance of both future shifted readings, also observed with 4-5 years old French children, should consequently receive a different explanation. In chapter 7, section 7.2.1.3, I will suggest that the acceptance of the future-shifted readings is due to a modal treatment of the *past*. But until then, I will ask the reader to be patient.

6.2.3 More arguments against the Independency Hypothesis

In what follows, I consider two more arguments against the Independency Hypothesis and in favor of the hypothesis that emerged from our experiments with French children that children have dependent tenses.

The first argument in favor of the Dependent Tense Hypothesis, developed in chapter 4, section 4.3.3, is French children's **acceptance** of the future-shifted before UT-T construal of a *simple future* under a matrix past, illustrated with the following context:

(10) **Future-shifted before UT-T context**

Anne is in the kitchen. Daddy comes home, he's been to the market. He has bought vegetables, fruits, and a kinder bar. Daddy : "Anne, here is a Kinder for you, I know you love Kinder chocolate." Anne: "Thanks, dad, I will eat it later". Later on, Anne eats the whole Kinder. Then, she goes to sleep in her room.

a. Experimenter: Chronos, qu'est-ce que Anne a dit à propos du Kinder?

"Chronos, what did Anne say about the Kinder?"

b. Chronos: Anne a dit qu'elle *mangerait* le Kinder.

"Anne said that she will eat the Kinder."

c. Child: *Yes*.

The fact that children accept the simple future in this context shows that they have a *dependent (future) tense* in their language. As we saw in chapter 4, section 4.3.2.1, this comprehension finding is corroborated by **production** data, which shows that some children also volunteer a dependent future in the future-shifted before UT-T scenario.

Recall that the French future, like its English counterpart, is arguably an indexical tense decomposed as a *present* plus a modal FUT (cf. chapter 4, example (20a)), as shown in (11a). When it occurs under a matrix past, the simple future can only express subsequence with respect to UT-T. To express subsequence with respect to the matrix event-time (i.e., the future-shifted before UT-T scenario), French requires a *future in the past* (e.g. *mangerait*), decomposed as a zero past tense plus a future modal, as shown in (11b) (cf. chapter 4, example (20b)).

(11) **Adult French**

a. *simple future*: pres + FUT

b. *future in the past* : Ø_{PAST} + FUT

To account for the dependent construal of the future in the child grammar, I suggested that the embedded future consists of a *zero* present tense plus the future modal FUT, as in (12). This analysis follows straightforwardly on our Zero Tense Hypothesis, which posits that French child grammar includes a *zero* present alongside an indexical present.

(12) **Child French**

dependent future: Ø_{PRES} + FUT

This analysis follows straightforwardly on our Zero Tense Hypothesis, which posits that French child grammar includes a *zero* present alongside an indexical present.

The second argument in favor of the Dependent Tense Hypothesis is provided by French children's production data. As we also saw in chapter 4, section 4.3.2.1, French children **produce** a *future in the past* in the future-shifted *after* UT-T scenario, where the embedded eventuality *did not take place at the UT-T*:

(13) **Future-shifted after UT-T context**

This is a story with two girls. They are playing in the garden. Look, there is a donkey! I'm sure the girls would like to ride the donkey. What do you think, girls? The girls: "Yes, we will ride the donkey!"

a. Experimenter: Chronos, qu'est-ce que les filles ont dit à propos de l'âne?

"Chronos, what did the girls say about the donkey?"

b. Chronos: Les filles ont dit que...euh, j'ai oublié, tu peux m'aider?

"The girls said that... oh, I forgot, can you help me?"

c. Child (T. 4; 02): ... qu'elles *monteraient* sur l'âne.

"...that they would ride the donkey."

d. Experimenter: Et est-ce qu'elles sont montées sur l'âne?

“And did they ride the donkey?”

e. Child (T. 4; 02): *Non*.

“No”.

In adult French, in a future-shifted after UT-T scenario, both a simple future and a future in the past are allowed. The simple future expresses subsequence with respect to UT-T, while the future in the past expresses subsequence with respect to the *matrix past tense* (cf. SOT environment). The fact that children volunteer a future in the past in the future-shifted after UT-T scenario thus shows that they interpret the embedded event with respect to the matrix event-time. This, in turn, suggests that these children have a *dependent* interpretation of tense.

6.2.4 Intermediate summary

So far, we have seen that, for Hollebrandse, the acceptance of the future-shifted reading before UT-T of a past in complement clauses under a matrix past diagnoses children who have not acquired complementation. In sections 6.2.2 and 6.2.3, I provided arguments against this. I concluded that the hypothesis that there are children who have not acquired complementation is not warranted (at least for the cases that Hollebrandse has in mind) and that the acceptance of the future-shifted reading before UT-T should receive a different explanation.

6.2.5 The *early* acquisition of “zero tenses”

In this thesis, I have made use of Kratzer’s “zero tense” analysis of SOT phenomena to explain the *simultaneous construals* of the present and the past (be it in complement or relative clauses) embedded under a matrix past in French child language. Recall that Kratzer’s “zero tense” analysis is couched within a referential approach, according to which tenses are the analogues of pronouns— for Kratzer, tenses, just like pronouns, can have indexical or bound variable interpretations, *and* a zero tense is a bound tense just like a zero pronoun is a bound pronoun (see our discussion in chapter 2, section 2.4.3). I specifically follow Kratzer in assuming the existence of zero tenses that are bound variables. In this section, I extend the parallel between bound tenses and bound pronouns to the acquisition domain. I suggest that the data on the acquisition of bound pronouns presented in the literature point in the same

direction as data on the acquisition of bound tenses presented here: around age 4-5, children have knowledge of structural dependency.

6.2.5.1 Parallel between zero tenses and zero pronouns in child language

Let us start by considering pronouns. The point is simply that the acquisition data show that children are competent with bound variable readings of pronouns at the age of 5. On Kratzer's view, bound variable pronouns are zero pronouns. Given the facts about pronouns, it is quite natural to expect that tenses are parallel and that children are equally competent with zero tenses at the same age.

Several studies investigating the acquisition of anaphors/ reflexives and pronouns (Chien and Wexler 1990, Grimshaw and Rosen 1990, McDaniel et al. 1990, Avrutin and Wexler 1992, Sigurjonsdottir and Coopman 1994) argue that children acquiring English or other Germanic (and Slavic) languages perform well with sentences with reflexives ((14a)-(14b)) or sentences with pronouns where the potential antecedent of the pronoun is a quantified expression ((14d)). The difficulties that children have seem rather to concern sentences with pronouns where the potential antecedent of the pronoun is a referential expression ((14c)).

- (14) a. Mama Bear_i is touching herself_{i/*j}.
b. Every bear_i is touching herself_{i/*j}.
c. Mama Bear_i is touching her_{*i/j}.
d. Every bear_i is touching her_{*i/j}.

Here, briefly, is a summary of the differences and the way in which they have been analyzed. Chien and Wexler (1990)'s original experiment used a Picture Verification Task (a variant of the Truth Value Judgment Task), in which children were shown a picture in which the characters in question were either touching themselves or touching someone else. The child hears a sentence uttered by a puppet who is looking at the pictures together with the child; the sentence describes the picture either correctly (**match condition**) or incorrectly (**non-match condition**). The child's task is then to say whether the puppet was right or wrong. The results of the experiment show that at around **age 5**, children give adult-like responses to sentences involving **reflexives** with either name or quantifier antecedents (14a)-(14b). However, 5 year olds exhibit a different behavior with sentences involving **pronouns**.

Specifically, in **the non-match condition**, 5 year olds behave at chance (50% of correct responses) with sentences involving pronouns with **lexical antecedents** ((14c)), while behaving adult-like (84% of correct responses) with sentences involving pronouns with quantified antecedents ((14d)). This result was replicated in other Germanic and Slavic languages⁹⁰.

Grodzinsky and Reinhart (henceforth, G&R 1993) argue that the acquisition data point to the fact that there are two ways of resolving anaphora between a pronoun and its antecedent: **(i) bound variable** anaphora and **(ii) coreference**, bound variable anaphora being the default construal. Thus, consider the following example:

(15) Mary_i thinks she_{i/j} is a great writer.

The sentence in (15) has two readings. On one reading, the pronouns *she* is interpreted as *Mary*. On another reading, *she* refers to some other individual salient in the discourse. What interests us here is the first reading, where *she* and *Mary* bear the same index. This reading is ambiguous between two LFs (cf. G&R), as shown below:

- (16) a. Mary ($\lambda x. (x \text{ thinks } x \text{ is a great writer})$)
 b. Mary_i ($\lambda x. (x \text{ thinks she}_i \text{ is a great writer})$)

(16a) illustrates the bound variable interpretation, where the property of admiring *oneself* is attributed to Mary. (16b), on the other hand, illustrates the *coreferential* interpretation, where the property of thinking about *Mary* as being a great writer is attributed to Mary⁹¹.

The conclusion on the basis of childrens' pattern of response in (14) is that children are competent with bound variable anaphora— and therefore with sentences containing either reflexives (on the assumption that reflexives are construed as bound variables), or sentences containing pronouns with potential quantified antecedents. In particular, they know the

⁹⁰ However, recent studies (see Elborne 2005, Conroy et al. 2009, a.o) have argued that the previous findings do not show a real asymmetry between quantified and lexical antecedents; rather they are an artifact of experimental design. Elbourne (2005) thus concludes that children do indeed have problems with pronouns and that their problems do not disappear when confronted with sentences with quantified antecedents.

⁹¹ Note that (16a) and (16b) are truth-conditionally equivalent. According to G&R, these are precisely the cases that pose problems to children.

constraints on the use of pronouns as bound variables. Their difficulties are limited to cases of coreference, where they do not respect constraints on the use of pronouns.⁹².

Let us now go back to the tense acquisition data. Extending the parallel between pronouns and tenses to the domain of acquisition, the null hypothesis would be that children are equally competent with the binding of a zero embedded tense by the matrix past tense. If they have difficulties, these difficulties are more likely to involve the possibility of coreference between the matrix and the embedded past tenses (assuming a referential approach to tense such as Kratzer's). This contrasts with the mentality behind Hollebrandse's view, which assumes that children start off with independent construals and that they acquire dependent construals later on.

6.3 Summary

This chapter presented the previous acquisition findings on the construal of past under past in child language. In section 6.1, I recapitulated the interpretations of both past tensed complement and relative clauses under a matrix past in SOT *versus* non-SOT languages. In section 6.2, I provided a critical discussion of Hollebrandse's (2000) SOT experiment. We saw that Hollebrandse's most important and interesting finding is the acceptance of the future-shifted construal of the past in complement clauses. The Independency Hypothesis imputes this non-adult construal to the lack of complementation. I argued, contrary to Hollebrandse, that children accepting the future-shifted construal of the past do have complementation. And therefore that Hollebrandse's interesting finding should receive a different explanation. Finally, I turned to the acquisition of zero tenses. Drawing a parallel between the acquisition of zero pronouns and the acquisition of zero tenses, I argued, contrary to what one would expect given Hollebrandse's view, that zero tenses are likely to be present in child language from early stages of acquisition.

⁹² According to G&R, childrens' difficulties with coreferential interpretations should not be imputed to a syntactic deficit but to *processing* limitations.

CHAPTER 7

Futurate readings of the past: evidence from French child language

In the previous chapter, I argued against the Independency Hypothesis which, recall, states that children's acceptance of the future-shifted reading *before* UT-T of a past in complement clauses under a matrix past should be attributed to lack of complementation. One telling datum that specifically cast doubt on the Independency Hypothesis was the acceptance of the future-shifted construal *after* UT-T of the past in complement clauses under a matrix past. In this chapter, I discuss two experiments which show that French children accept and also volunteer a past in both a future-shifted before UT-T and a future-shifted after UT-T context. To explain this pattern, I propose the Modal Hypothesis, according to which these results reflect a (non) adult futurate use of the past.

This chapter is organized as follows: I first discuss the distribution of futurate construals in simple and embedded contexts. I then present Copley's (2002) account for futurate readings in simple contexts and show that this account does not capture all futurate construals. In particular, I show that, although this account explains adult futurate readings of the imperfective past in *both* future-shifted before and after UT-T contexts, it fails to explain adult futurate readings of the present perfect, which, importantly, (at least) in French, are restricted to future-shifted after UT-T contexts. I thus propose an alternative analysis, which succeeds in accommodating all futurate readings in simple as well as embedded contexts. On this proposal, the contrasting behavior of the imperfective past and the present perfect in French with respect to the distribution of futurate readings lies in the indexicality of the present component of the present perfect. I then turn to the acquisition data with French children and show that these data bring evidence in favor of the idea that acceptance of an embedded past in future-shifted contexts is due to a futurate treatment of the past, one that involves an implicit modal. Finally, the proposal that (French) children have a zero present in their grammar alongside an indexical present explains why children, unlike adults, allow future(at)e readings of the present perfect in future-shifted before UT-T contexts.

7.1 Futurates

In many languages (English, French, Italian, Spanish, to mention just a few), there are two ways of referring to future events: **(i)** a morphological *future* as in (1a) and **(ii)** a morphological *present* with a future-oriented eventuality as in (1b). The latter is traditionally known as a *futurate*:

- (1) a. Marie *chantera* demain.
Mary sing-FUT tomorrow
“Mary will sing tomorrow.”
- b. Marie *chante* demain.
Mary sing-PRES tomorrow
“Mary sings tomorrow.”

The conditions associated with the use of these two future forms are not the same. While a morphological present can express a future meaning only when it occurs with *plannable* eventualities, a morphological future is perfectly fine with both plannable or unplannable eventualities. To see this, consider the sentences in (2) and (3), due to Copley (2002: 29-30):

- (2) a. The Red Sox are playing the Yankees tomorrow.
b. The Red Sox will play the Yankees tomorrow.
- (3) a. #The Red Sox defeat the Yankees tomorrow.
b. The Red Sox will defeat the Yankees tomorrow.

The sentences in (2) contain a plannable eventuality (*the Red Sox' playing*). Hence, both a morphological present ((2a)) and a morphological future ((2b)) are possible. In contrast, the sentences in (3) contain an unplannable eventuality (*the Yankees' defeat*). This means that we cannot use a morphological present to express a future meaning, as shown by the oddity of (3a). However, we can use a morphological future as shown in ((3b)).

Futurates differ from simple futures in another important respect: while futurates require the presence of a future adverb, simple futures do not. The sentences in (4) lack a future adverb. However, while (4a), with a morphological future can express a future

meaning, (4b), with a simple present, cannot. (4b) can only express an indexical meaning, where the singing takes place at UT-T.

- (4) a. Marie *chantera*.
 “Mary will sing.”

- b. Marie *chante*. # FUTURATE
 “Mary is singing.”

As we can see, there are a number of differences between simple futures and futurates. In what follows, I will be concerned with the syntax and semantics of futurate constructions in simple and embedded contexts⁹³.

7.1.1 Futurates in simple contexts

I start by considering the futurate readings of present tensed sentences such as (5)⁹⁴:

- | | | |
|-----|--------------------------------|---------|
| (5) | a. Mary <i>sings</i> tomorrow. | English |
| | b. Marie <i>chante</i> demain. | French |
| | c. Maria <i>canta</i> domani. | Italian |
| | d. Maria <i>canta</i> mañana. | Spanish |

The general wisdom (see Dowty 1979, Copley 2002, Kaufmann 2005, a.o.) is that the use of the present in (5) requires the existence of a current *plan* made by some entity which has control over whether *Mary's singing tomorrow* happens.

Now, futurate readings are also possible with an *imperfective* past⁹⁵, as shown in (6):

⁹³ For a detailed discussion of the differences between simple future and futurates, see Copley (2002).

⁹⁴ I am very grateful to Anne Dagnac, Myriam Uribe-Etxebarria and Fabio del Prete for the French, Spanish and Italian judgments.

⁹⁵ For a detailed discussion of the imperfective past (*imperfecto*) and the perfective past (*préterito*) in Spanish, see Cipria and Roberts 2001.

- (6) a. Mary *was singing* tomorrow.
 b. Marie *chantait* demain.
 c. Maria *cantava* domani.
 d. Maria *cantaba* mañana.

It is interesting to compare these futurates with cases of past tensed modals with future orientation. It is well known that past tensed modals⁹⁶ with future orientation give rise to a counterfactual interpretation, conveying the speaker's belief in the falsity of the proposition with which the modal combines. The sentence in (7a) is thus compatible with the continuation in (7b) which denies the occurrence of the eventuality of *Mary's winning the game*:

- (7) a. Mary *might have* won the game the following day...
 b. ... but she didn't.

However, Laca (2008) argues that this test in itself is not sufficient to prove that the past modal in (7a) is counterfactual. According to her, a genuine counterfactual construal should be incompatible with a continuation conveying the speaker's certainty as to the truth of the proposition under discussion. The modal in (7a) clearly has this property, as we can see by the oddness of (8):

- (8) Mary might have won the game the following day, #and so she did.

The question that now arises is whether the futurate reading of the imperfective past in (6) gives rise to a counterfactual construal. If we apply Laca's test to the French sentence in (6b), for instance, repeated here in (9a), we obtain the sentences in (9b) and (9c), which are both well formed:

- (9) a. Marie chantait demain.
 "Mary was singing tomorrow".
 b. Marie chantait demain, mais ce n'est plus le cas.
 "Mary was singing tomorrow, but this is no longer the case."

⁹⁶ For discussion of counterfactual readings of past tensed modals, see Condoravdi (2001), Hacquard (2006), a.o.

c. Marie chantait demain, et c'est toujours le cas.

“Mary was singing tomorrow and it is still the case (that she is singing tomorrow).”

I thus conclude that the futurate reading of the imperfective past (*imparfait*) does not have a counterfactual meaning. Following Ippolito (2004), I suggest that the imperfective past in (6) simply conveys the information that the speaker is not endorsing the proposition expressed by the sentence. To see this, consider the following example from French:

(10) Autant que je sache, Marie *chantait* demain.

“As far as I know, Mary was singing tomorrow”.

The sentence in (10) conveys that the speaker is no longer sure about, or does not have trustworthy evidence about the plan of Mary's singing tomorrow. This is compatible with a situation where the plan of Mary's singing tomorrow still holds at UT-T, but also with a situation where the plan of Mary's singing tomorrow no longer holds at UT-T. That is, it does not entail that Mary is not singing tomorrow anymore.

So far, we have seen that in simple contexts, both the present and the past can yield futurate readings. However, while the use of the present entails that the speaker endorses the proposition expressed by the sentence, the use of the past does not. In what follows, I will consider the role of aspect in the licensing of futurate readings.

7.1.1.1 Aspect and futurates

I now turn to the question of whether aspect contributes to the availability of futurate readings. I will show that aspect does indeed play a role in licensing futurate readings. To see this, let us look more closely at different tense-aspect combinations in sentences with futurate readings.

In English, futurate readings are possible with either a simple present, as in (5a), repeated in (11a) below, or a present progressive, as in (11b):

(11) a. Mary *sings* tomorrow.

b. Mary *is singing* tomorrow.

In Romance languages like Spanish or Italian, which, like English, have both a simple present and a present progressive, futurate readings are only allowed with the simple present, as illustrated in (5c) and (5d), repeated here in (12a) and (12b) respectively:

- (12) a. Maria *canta* domani. Italian
 b. Maria *canta* mañana. Spanish

In particular, in these languages, the present progressive does not allow a futurate reading, as shown by (13a) and (13b) below:

- (13) a. *Maria sta cantando domani. Italian
 Mary be-PRES sing-PRES PART tomorrow
 “Mary is singing tomorrow.”
 b. *Maria está cantando mañana. Spanish
 Mary be-PRES sing-PRES PART tomorrow
 “Mary is singing tomorrow.”

This is also the case of the French aspectual (locative) construction “être en train de”, which is used to instantiate the progressive aspect in French, as shown in (14):

- (14) *Marie est en train de chanter demain. French

Moreover, in Italian, Spanish or French, the *past* progressive does not allow a futurate reading either:

- (15) a. *Maria stava cantando domani. Italian
 Mary be-PAST sing-PRES PART tomorrow
 “Mary was singing tomorrow.”
 b. *Maria estaba cantando mañana. Spanish
 Mary be-PAST sing-PRES PART tomorrow
 “Mary was singing tomorrow.”

- c. *Marie *était* en train de chanter demain. French
 “Mary was EN-TRAIN-DE sing tomorrow”

Interestingly however, in all Romance languages considered here (French, Spanish, Italian), futurate readings are also possible with a *present perfect*, as the following examples adapted from Saussure (2011, 2012) show⁹⁷:

- (16) a. Jean *est* bientôt *arrivé* à Paris. French
 b. Para last res, ya *he* *llegado* a casa
 for the three, already have.1sg. arrived home Spanish
 “By three, I will have arrived home”.
 c. Tra un attimo, *siamo* *arrivati*. Italian
 in a little while, be.1pl. arrived
 “In a little while, we will have arrived.”

How about the progressive *versus* perfective past in English? The English past progressive allows a futurate reading, as shown in (17a). However, past *perfective* does not, as shown by the ungrammaticality of (17b):

- (17) a. Mary *was singing/ was arriving* tomorrow.
 b. * Mary *sang/ arrived* tomorrow.

To sum up, we can make the following generalizations concerning the distribution of futurate readings in simple sentences cross-linguistically:

⁹⁷ The futurate reading of the English present perfect is highly degraded, as shown in (i). However, when it occurs in the context of a futurate temporal adjunct, this reading becomes available, as shown in ((ii)), taken from Moens and Steedman (1988: 25):

- (i) */? In two hours, John *has arrived* in Paris.
 (ii) *Once the Mets play the Fish on Sunday*, they have finished for the season.

(18) **Generalizations**

- (i) in both English and Romance languages, the **simple present** allows futurate readings
- (ii) a. in English, the (**present/ past**) **progressive** allows a futurate reading, while in Romance languages like Spanish and Italian, or French— which have both a progressive and an imperfective— the progressive does not.
b. the Romance **imperfective past** allows a futurate.
- (iii) the Romance (and marginally the English⁹⁸) **present perfect** allows futurate readings.
- (iv) neither the English nor the Romance **perfective past** allows futurate readings.

To conclude, this section showed that aspect does play a role in triggering futurate readings, although their distribution within and across languages is difficult to untangle. In the following section, I will discuss futurate readings in embedded contexts.

7.1.2 Futurates in embedded contexts

In this section, I discuss the distribution of futurate readings in embedded contexts. I consider two temporal configurations: a present under past and a past under past. Let us start with the present under past configuration, illustrated with the following English and French examples:

- (19) a. John said that Mary *is* tired.
a'. Jean a dit que Marie *est* fatiguée.
- b. *John said that Mary *is* tired tomorrow.
b'. *Jean a dit que Marie *est* fatiguée demain.

Recall from our discussion in chapter 2, section 2.2, that in languages like English or French, a sentences such as (19a/a') with a present tensed complement clause embedded under a

⁹⁸ See footnote 83.

matrix past has a double-access interpretation, where the embedded eventuality (*Mary's tiredness*) overlaps both the matrix event-time (*John's saying*) and UT-T. Crucially, (19a) cannot yield a *future*-shifted interpretation, where *Mary's tiredness* follows UT-T, as shown by the ungrammaticality of (19b/b'). As discussed in chapter 2, section 2.3, the future-shifted reading of (19b/b') is excluded by Abusch's ULC, which prevents an embedded tense (here, the present) from denoting a time later than its local evaluation time (*John's saying*).

Notice, however, that when the embedded clause contains a *plannable eventuality*, the sentence becomes grammatical:

(20) a. John said that Mary *is singing* tomorrow.

b. Jean a dit que Marie *chante* demain.

Examples such as (20) raise two questions. First, how can we explain the contrast between (19) and (20)? In other words, how can we explain the grammaticality of (20)? And second, are cases such as (20) counterexamples to Abusch's ULC constraint? To answer the first question, the grammaticality of examples such as (20) is precisely due to the presence of an embedded plannable eventuality (*singing*). That is, when the embedded clause contains a plannable eventuality, the sentence becomes grammatical under a future(at)e reading. As we shall see in the following section when we discuss the semantics of the futurate, futurity with a plannable eventuality is arguably contributed by an implicit *modal* that makes reference to a plan. This leads us to the second question: do examples such as (20) constitute counterexamples to Abusch's ULC? The answer is: *no*. Recall that the ULC is a constraint on *tenses*. This constraint thus prevents a *tense* from denoting a time *later* than its evaluation time. Assuming that (20) contains a modal, it is the modal and not the present tense on this modal that gives the future orientation of the eventuality. The ULC is thus obeyed. That is, present does not denote a time later than the "local evaluation time".

Note that on this analysis, (20), just like (19a/a'), expresses a double access construal. However, while in (19a/a') it is *Mary's alleged state* which is required to be construed as double access, in (20) it is the *plan of Mary's singing* which is required to be construed as double-access relative to both *John's saying* and UT-T. In other words, we have here a present tense that describes a time interval extending from the saying time to UT-T, and it is used to locate the temporal component of the modal that makes reference to a plan. To illustrate this, consider the sentence in (21b) uttered in the context given in (21a):

(21) a. Context: Three days ago, Mary decided to quit the stage. So, there is no longer a plan for her to sing tomorrow.

b. #La semaine dernière, Marie a dit qu'elle chante demain.

“Last week, Mary said that she *is singing* tomorrow.”

What makes (21b) odd is the fact that the *plan* that would have led to *Mary's singing tomorrow* does not hold at UT-T. To report Mary's claim, a past tense is required⁹⁹. A similar effect can be observed in the case of typical double access sentences as illustrated by the following examples adapted from Ogihara (1996):

(22) a. Context 1: *Peter is* in the garden.

Mary (shortsighted) says to Alex: “John is in the garden.”

a'. Alex: Mary said that John *is in the garden*, but she is wrong.

It's not John, it's Peter!

b. Context 2: *Peter leaves the garden*. [*There is no one else in the garden.*]

b'. Mary said that John *#is/ was* in the garden.

This leads us to the next topic of discussion: the construal of past tensed futurates embedded under a matrix past.

Recall from our discussion in chapter 2, section 2.1.1 that, in SOT languages, sentences such as (23) with an imperfective past in a complement clause under a matrix past can have a simultaneous interpretation where *Mary's tiredness* overlaps *John's saying time* or a past-shifted interpretation, where *Mary's tiredness* precedes *John's saying time*:

⁹⁹ As the attentive reader might notice, both (9b), repeated in (i) and (21b), repeated in (ii), describe cases where the plan does not hold at UT-T. However, while ((9b)/(i)) is acceptable, ((21b)/(ii)) is odd in the context in (21a).

(i) Marie chantait demain, mais ce n'est plus le cas. [(9b)]

(ii) # La semaine dernière, Marie a dit qu'elle chante demain. [(21b)]

The explanation for this contrast is that, in ((9b)/(i)), the use of the past tense merely requires the plan to hold at a past time. This is compatible with a situation where the plan does not hold at UT-T, which is the case in ((9b)/(i)). On the other hand, in ((21b)/(ii)), the use of the present requires the plan to hold at UT-T. Since this is not the case in the context given in (21a), the sentence in ((21b)/(ii)) is odd.

- (23) a. John said that Mary *was* tired.
 b. Jean a dit que Marie *était* fatiguée.

Crucially, (23) cannot have a future-shifted interpretation, where *Mary's tiredness* follows *John's saying*. As in the case of a present under past, the future-shifted interpretation of the past under past is excluded by the ULC. To account for the two interpretations of (23), Ogihara proposes an SOT rule which *optionally* deletes the embedded past under identity with the matrix past (see chapter 2, section 2.4.1). When SOT applies, the embedded clause becomes tenseless. Its predicate is evaluated at the matrix event-time giving rise to a simultaneous interpretation. When the SOT rule does not apply, the embedded past preserves its past tense meaning, thus denoting anteriority with respect to the matrix past. This gives rise to a past-shifted reading. On a Kratzer-style approach like the one that I have been arguing for, we also have two structures, but the structure that corresponds to the output of Ogihara's SOT rule is a structure with a zero tense.

Now, let us consider a past tensed futurate embedded under a matrix past, illustrated with the examples in (24):

- (24) a. John said that Mary *was singing* the following day/ tomorrow.
 b. Jean a dit que Marie *chantait* le jour d'après/ demain.

Notice that (24) allows a future interpretation, where *Mary's singing* follows *John's saying* time and can either precede or follow UT-T, as shown by the use of the adverbs “the following day”/ “tomorrow”. As stated above, under the assumption made for the present under past, this does not represent a violation of the ULC constraint, since, as in the case of the present tensed futurate in (20), the future interpretation in (24) is the contribution of a future oriented modal, not a tense. As we shall see later on, the embedded modal in examples like (24) is licensed when the embedded clause contains a plannable eventuality. This proposal will be developed in section 7.1.3 below.

Finally, let us consider the present perfect under past configuration, illustrated with the following examples from French:

- (25) a. La semaine dernière Jean a dit que, la semaine prochaine, il a soutenu
the week last John has said that the week next he has defended
sa thèse.
his dissertation
“Last week John said that next week he defended his dissertation.”
- b. #Il y a deux semaines Jean a dit qu' une semaine plus tard, il a soutenu
there is two weeks John has said that a week more later he has defended
sa thèse.
his dissertation
“Two weeks ago John said that a week later he defended his dissertation.”

Examples such as (25) show that the futurate reading of sentences with a present perfect under a matrix past is allowed when the embedded eventuality follows UT-T ((25a)) but not when the embedded eventuality follows the matrix eventuality and precedes UT-T ((25b)).

To recapitulate, in embedded contexts, both a present and a past allow futurate readings. In Romance languages, where both an imperfective past and a present perfect allow futurate readings, the futurate reading of the imperfective past is available in both future-shifted before UT-T and in future-shifted after UT-T contexts (cf. (24b)), whereas the futurate reading of the present perfect is restricted to future-shifted after UT-T contexts (cf. (25)).

In the next section, I will discuss formal accounts of futurates in simple and in embedded contexts.

7.1.3 The semantics of futurates

I now turn to the semantics of futurates in simple and embedded contexts. I first discuss Copley's (2002) analysis for futurates in simple contexts. I show that this analysis cannot capture the futurate construal of the Romance present perfect in simple contexts. I then propose an alternative analysis of futurates that captures all futurate readings in both simple and embedded contexts.

7.1.3.1 Copley (2002)

As stated in the previous section, futurates involve the existence of some kind of *plan* and therefore of *some entity* responsible for it. Copley calls the entity in charge of the plan a

director. According to Copley, the director has two properties: (i) he is *capable* of determining whether a certain eventuality will happen and (ii) he is *committed* to the eventuality happening. So for example, in Copley's view, the sentence *Mary is singing tomorrow* makes reference to an entity that is capable of determining whether Mary will sing tomorrow, and it states that this entity is committed to Mary's singing tomorrow.

For Copley, "*director-hood*" (the fact that the entity in question has control over whether the eventuality happens)¹⁰⁰ is part of the presupposition of futurates whereas the *director's commitment* to the eventuality happening is part of the assertion of futurates.

Copley frames this idea in terms of modality. She adopts a Kratzerian treatment of modality (cf. Kratzer 1981, 1991) according to which modals are interpreted relative to two kinds of *conversational backgrounds* (i.e. functions from worlds to propositions): a *modal base*, which provides a set of accessible worlds and an *ordering source*, which establishes an ordering among the worlds in the modal base. On Copley's analysis, futurates involve a metaphysical modal base with bouletic¹⁰¹ (and in certain cases inertial¹⁰²) ordering sources.

¹⁰⁰ To express this idea, Copley defines direction as follows:

Direction (Copley 2002: 52)

An entity *d* *directs* a predicate of worlds *P* in *w* at *t* iff:

$\forall w', d$ has the same abilities in w' as in w :

$[\forall w''$ metaphysically accessible from w' at t

and consistent with d 's commitments in w' at t :

$[\forall w'''$ metaphysically accessible from w at t :

$[[P (w'')] \Leftrightarrow [[P (w''')]]]]]$

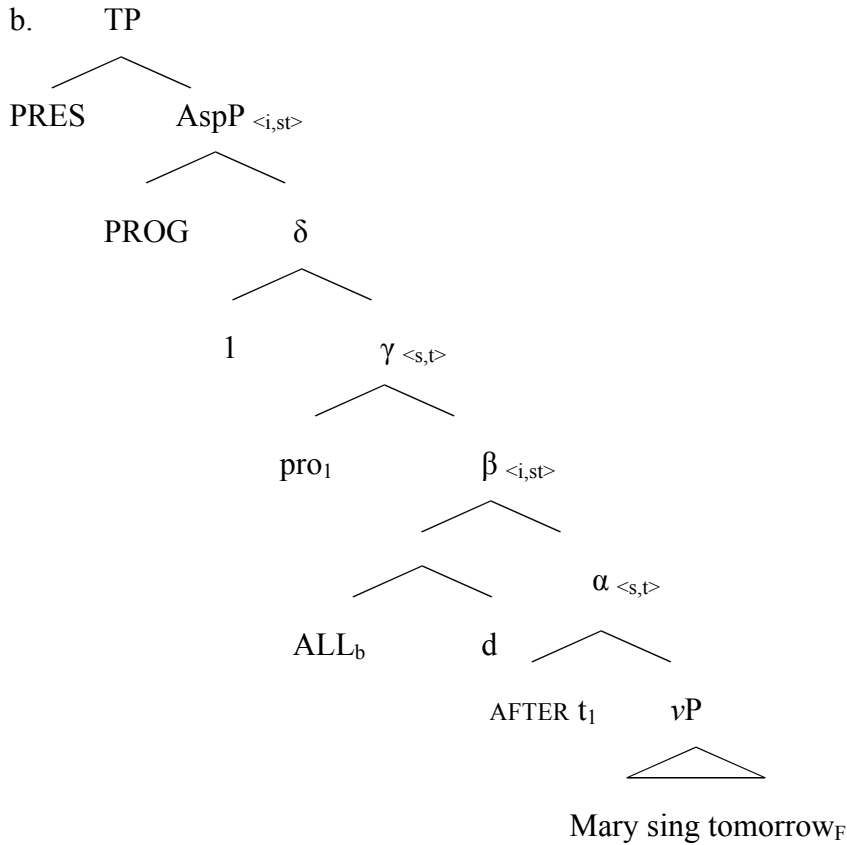
¹⁰¹ "Bouletic" modality concerns what is possible or necessary given someone's desires. In this case, the desires would be those of the director.

¹⁰² The concept of "inertia world" was introduced by Dowty (1979). "Inertia worlds" are worlds which are exactly like our world up to a certain time and in which the future course of events after this time develops in ways most natural given the past course of events. For Copley, futurates have inertial ordering sources when there is no animate director whose commitments would provide a bouletic ordering source. Examples of futurates with inertial ordering sources involve sentences which describe meteorological phenomena or facts about the world that animate entities cannot control as in (i):

(i) The sun rises tomorrow at 5: 45 a.m.

In what follows, I take up Copley’s proposal and propose a compositional analysis of the futurate reading of (11b), repeated below in (26a), which might not correspond to what Copley had in mind in all its details but which seeks to be true to her overall proposal¹⁰³. On this proposal, the structure for the sentence is as in (26b):

(26) a. Mary is singing tomorrow.



A few remarks on the structure in (26b), which is rather complicated once we look below tense and aspect. ALL_b represents Copley’s modal operator, which on this analysis, is located lower than both tense and aspect and above the νP¹⁰⁴. This operator takes the director d as an argument and the constituent [ALL_b d] can be thought of as expressing “the director is committed to”. More specifically, the constituent [ALL_b d] quantifies over “bouletic alternatives” of the director, worlds that conform to the director’s commitments (the subscript “b” in ALL_b is there to remind us of “bouletic”). [ALL_b d] takes a proposition p, provided by

¹⁰³ I would like to thank Orin Percus for his help here.

¹⁰⁴ The νP is the projection that introduces the agent of the event (cf. Kratzer 1996, a.o).

its complement, and yields a property of times, one that holds of a time at which the director is committed to *p* happening. (The variable *pro*₁ in the structure is the temporal argument of ALL_b: it furnishes this time¹⁰⁵.)

Next, if we look at the complement of [ALL_b *d*] there are two complications. On the one hand, there is an implicit future marking [AFTER *t*₁]. Copley assumes the presence of this element because her entry for ALL_b does not, on its own, imply that the director's commitments concern later times. On the other hand, there is focus marking on *tomorrow*. For Copley, this focus marking plays a role in deriving what she takes to be the presupposition of the sentence, namely, that the director has control over whether Mary will *ever* sing. However, as intuitively the user of the sentence in (26a) does not merely presuppose that the director has control over whether Mary will *ever* sing but more specifically over *when* Mary will sing, in what follows I will omit the details of the calculation that derives this, and leave it open how to derive the result that the director has control over whatever we take him to have control over¹⁰⁶.

Let us now see the derivation of the semantic value of (26b):

- (27) a. [[Mary sing tomorrow]]^{g,c} = $\lambda t. \lambda w. \text{Mary sings at } t \text{ in } w \text{ and } t \text{ is within tomorrow}(c)$ ¹⁰⁷

¹⁰⁵ While Copley does not include this element in her structure, I have done so for expository reasons. It makes the calculation of the semantic value of the structure more straightforward.

¹⁰⁶ As far as Copley's derivation of the presupposition goes, the idea is as follows. Consider first the constituent to which aspect attaches: given what we have said, this constituent will yield a property that holds of times *t* such that, at *t*, the director is committed to the proposition that *Mary sings after t at some point within tomorrow*. Copley aims moreover to derive at this level a requirement that, at *t*, *the director directs the proposition that Mary sings after t*. She does this by having [ALL_b *d*] access the focus value of its complement. Given that the complement of [ALL_b *d*] expresses the proposition that Mary sings after *t*₁ *at some point within tomorrow*, its focus value will contain *the proposition that Mary sings after t₁ at some point within today*, *the proposition that Mary sings after t₁ at some point within the day after tomorrow*, and so forth, and the union of these propositions will just be *the proposition that Mary sings after t₁*. For Copley, [ALL_b *d*] introduces the presupposition that *d* directs the proposition that is the union of its complement's focus value.

¹⁰⁷ I use "tomorrow(*c*)" here to abbreviate "the day after *t_c*."

b. $[[\text{AFTER } t_1]]^{g,c} = \lambda p_{\langle i, st \rangle}. \lambda w. \text{ there is some time } t' \text{ such that } t' > g(1) \text{ and } P(t')(w) = 1$

c. $[[\alpha]]^{g,c} = \lambda w. \text{ there is some time } t'$
such that $t' > g(1)$ and
Mary sings at t' in w and
 t' is within tomorrow(c)

d. $[[\text{ALL}_b d]]^{g,c} = \lambda p_{\langle s, t \rangle}. \lambda t. \lambda w. \text{ for all worlds } w' \text{ metaphysically accessible from } w$
at t and consistent with $[[d]]^{g,c}$'s commitments at t in w ,
 $p(w') = 1$

(Henceforth, we will just refer to the value of the “director argument” as “ d ”).

e. $[[\beta]]^{g,c} = \lambda t. \lambda w. \text{ for all worlds } w' \text{ metaphysically accessible from } w \text{ at } t \text{ and}$
consistent with d 's commitments at t in w ,
there is some time t'
such that $t' > g(1)$ and
 t' is within tomorrow(c) and
Mary sings at t' in w'

f. $[[\gamma]]^{g,c} = \lambda w. \text{ for all worlds } w' \text{ metaphysically accessible from } w \text{ at } g(1) \text{ and}$
consistent with d 's commitments at $g(1)$ in w ,
there is some time t'
such that $t' > g(1)$ and
 t' is within tomorrow(c) and
Mary sings at t' in w'

g. $[[\delta]]^{g,c} = \lambda t. \lambda w. \text{ for all worlds } w' \text{ metaphysically accessible from } w \text{ at } t \text{ and}$
consistent with d 's commitments at t in w ,
there is some time t'
such that $t' > t$ and
 t' is within tomorrow(c) and
Mary sings at t' in w'

h. $[[\text{PROG}]]^{g,c} = \lambda P_{\langle i, st \rangle}. \lambda t. \lambda w. \text{ there is some time } t'' \text{ such that } t'' \text{ includes } t \text{ and}$
such that $P(t'')(w) = 1$

- i. $[[\text{AspP}]]^{\text{g,c}} = \lambda t. \lambda w. \text{there is some time } t''$
 such that t'' includes t and
 such that for all worlds w' metaphysically accessible
 from w at t'' and consistent with d 's
 commitments at t'' in w ,
 there is some time t'
 such that $t' > t''$ and
 t' is within tomorrow(c) and
 Mary sings at t' in w'
- j. $[[\text{PRES}]]^{\text{g,c}} = t_c$ ¹⁰⁸
- k. $[[\text{TP}]]^{\text{g,c}}(w) = 1$ iff
 there is some time t''
 such that t'' includes t_c and
 such that for all worlds w' metaphysically accessible from w at t'' and
 consistent with d 's commitments at t'' in w ,
 there is some time t'
 such that $t' > t''$ and
 t' is within tomorrow(c) and
 Mary sings at t' in w' .

Let us turn now to the futurate reading of the present perfect in Romance languages illustrated in (16) and repeated here in (28). I see this use of the present perfect as creating difficulties for Copley's analysis.

- (28) a. Jean *est* bientôt *arrivé* à Paris. French
 b. Para last res, ya *he* *llegado* a casa
 for the three, already have.1sg. arrived home Spanish
 “By three, I will have arrived home”.

¹⁰⁸ For simplicity, here and in what follows, I will assume that “present” simply denotes t_c (it then gets used to refer to UT-T).

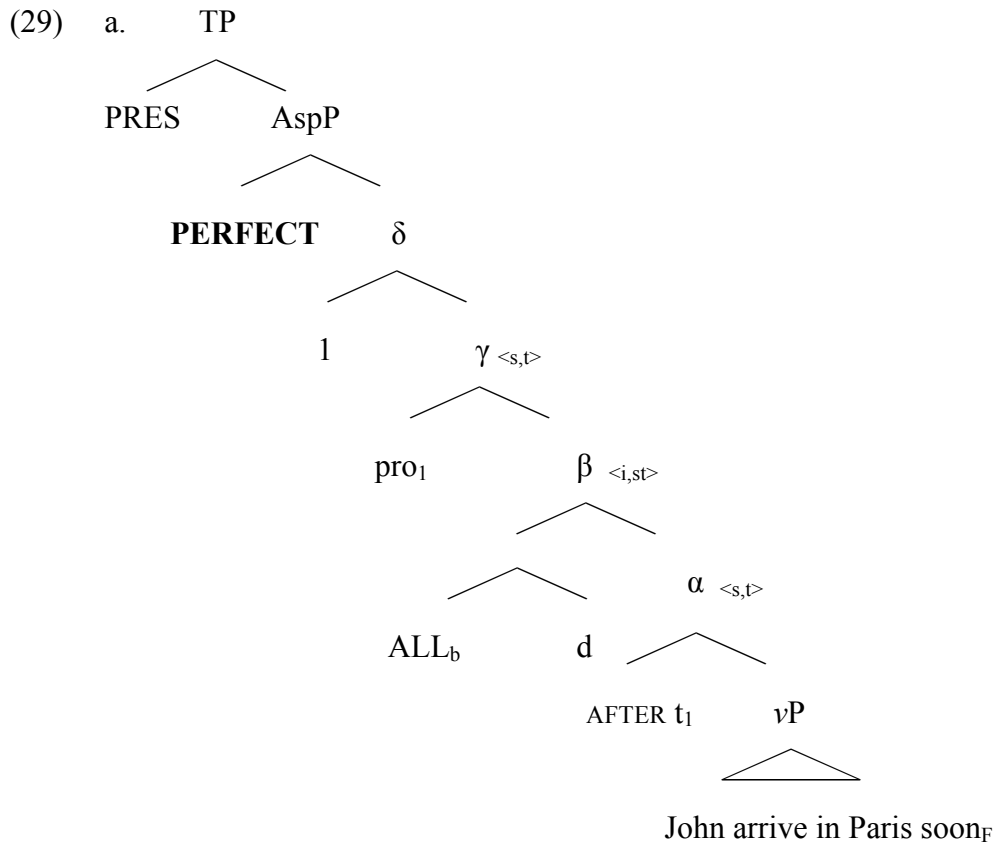
c. Tra un attimo, *siamo arrivati*.

Italian

in a little while, be.1pl. arrived

“In a little while, we will have arrived.”

In order to account for the futurate reading of the present perfect, we would have to assume that the perfect operator in Romance is a licenser for the modal ALL_b . On Copley’s assumptions, (28) would be associated with a structure such as (29a):



b. $[[\delta]]^{g,c} = \lambda t. \lambda w. \text{ for all worlds } w' \text{ metaphysically accessible from } w \text{ at } t$
 and consistent with d 's commitments at t in w ,
 there is some time t'

such that $t' > t$ and

t' is not long after t_c and

John arrives in Paris at t' in w'

c. $[[\text{PERFECT}]]^{g,c} = \lambda P. \lambda t. \lambda w. \text{ there is a time } t'' \text{ such that } t'' < t \text{ and } P(t'')(w) = 1$

- d. $[[\text{PERFECT } \delta]]^{\text{g.c}} = \lambda t. \lambda w. \text{there is some time } t''$
 such that $t'' < t$ and
 such that for all worlds w'
 metaphysically accessible from w at t'' and
 consistent with d 's commitments at t'' in w ,
 there is some time t'
 such that $t' > t''$ and
 t' is not long after t_c and
 John arrives in Paris at t' in w'
- e. $[[\text{TP}]]^{\text{g.c}} = \lambda w. \text{there is some time } t'' < t_c$
 such that
 for all worlds w' metaphysically accessible from w at t'' and
 consistent with d 's commitments at t'' in w ,
 there is some time t'
 such that $t' > t''$ and
 t' is not long after t_c and
 John arrives in Paris in w' at t' .

As we can see in (29e), assuming a structure such as (29a) we obtain an interpretation according to which at some past time there was a plan for John to go to Paris soon after the utterance time. But this is not the correct interpretation of (28). What (28) actually states is that there is a *current plan* according to which John's arrival in Paris takes place some time soon. Examples such as (28) thus show that we cannot maintain in general that Copley's modal operator can appear just below aspect, which would be the natural assumption given her analysis of (26a).

In the following section, I will propose an alternative analysis that can account for all futurate readings in a straightforward way.

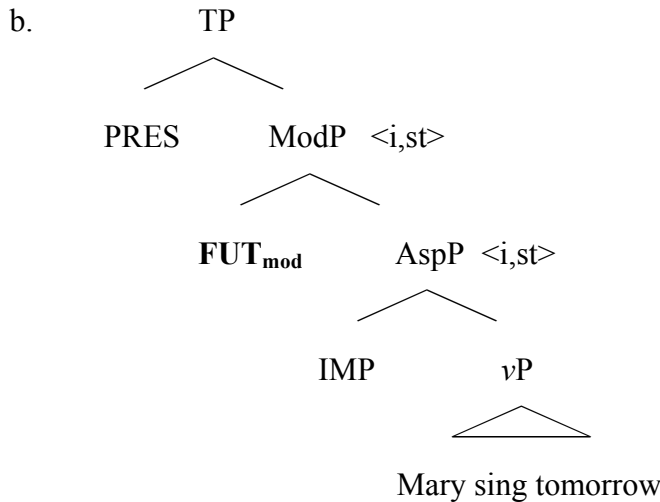
7.1.3.2 Alternative analysis

To accommodate the futurate reading of the Romance present perfect, I propose to adjust Copley's analysis in the following way. I suggest that futurates involve a modal operator (FUT_{mod}) that occupies the head position of a Modal Phrase (ModP) and that shifts the reference time into the future. Unlike Copley, I argue that this operator is located below tense

and above aspect and that it selects a property of times instead of a property of worlds. I retain from Copley's analysis the idea that futurates make reference to a plan, that they do so by making reference to a director responsible for the plan, and that they describe the content of the plan by making reference to the director's commitments. I will assume that the director is not present in the syntax but rather is contextually determined – that is, who this individual is can be recovered from the context parameter.

Let us now see how this analysis derives the futurate reading of the present and the past. For convenience, I will illustrate the analysis with English examples. In the structures in (30b)-(31b), “IMP” stands for the imperfective operator whose semantic value is given below¹⁰⁹:

(30) a. Mary *is* singing tomorrow.



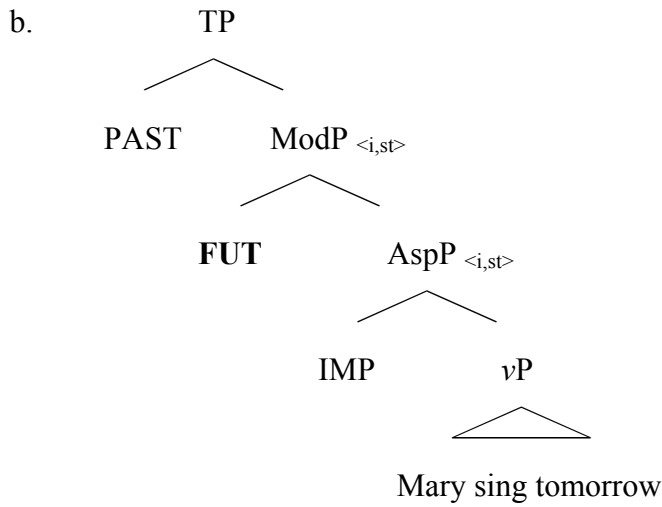
c. $[[IMP]]^{g,c} = \lambda P_{\langle i,st \rangle}. \lambda t_i. \lambda w_s. \text{there is some time } t' \text{ such that } t' \text{ includes } t \text{ and}$
 such that $P(t')(w) = 1$

d. $[[FUT_{mod}]]^{g,c} = \lambda p_{\langle i,st \rangle}. \lambda t. \lambda w. \text{for all worlds } w' \text{ compatible with director}(c)'s$
 commitments at t in w , there is a time t'' such that
 $t'' > t$ and such that $p(t'')(w') = 1$

¹⁰⁹ I assume that the semantic value given for the imperfective operator IMP covers the English progressive, but not the Romance progressive, since the Romance progressive does not convey futurate readings (see examples (13), (14), (15) above).

- e. $[[[(30b)]]]^{g,c} = \lambda w.$ for all worlds w' compatible with $\text{director}(c)$'s commitments
 at t_c in w , there is some time t''
 such that $t'' > t_c$ and
 such that for some time t' ,
 t' includes t'' ,
 t' is within $\text{tomorrow}(c)$ and
 Mary sings at t' in w'

(31) a. Mary *was* singing tomorrow.



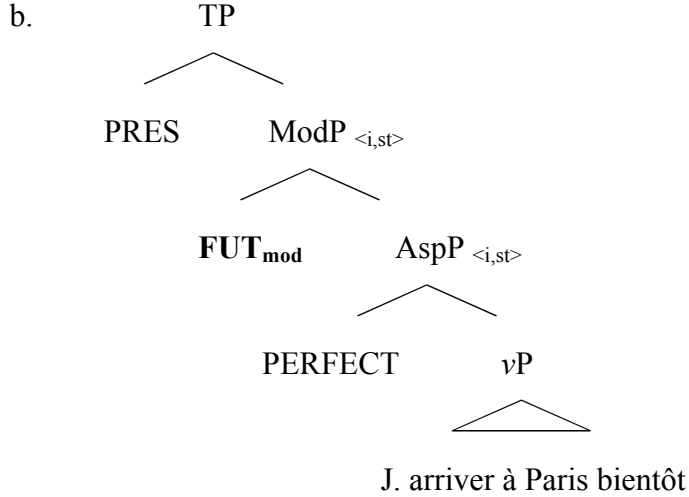
- c. $[[[PAST]]]^{g,c} = \lambda P_{\langle i,st \rangle}. \lambda t_i. \lambda w_s.$ there is some time t''' such that $t''' < t$ and
 such that $P(t''')(w) = 1$ ¹¹⁰

- d. $[[[(31b)]]]^{g,c} (t_c) = \lambda w.$ there is a time t'''
 such that $t''' < t_c$
 and for all worlds w' compatible with $\text{director}(c)$'s
 commitments at t''' in w , there is some time t''
 such that $t'' > t'''$
 and such that for some time t' ,
 t' includes t'' , t' is within $\text{tomorrow}(c)$
 and Mary sings at t' in w'

¹¹⁰ Note that I am assuming a ‘back-shifting’ PAST à la Ogihara. Thus, as I mentioned in Chapter 2, although I am arguing for a zero tense approach, I am assuming a variant of Kratzer’s approach here rather than adopting her approach in all its details.

Let us now turn to the analysis of futurate readings of the present perfect illustrated in (28). On this analysis, the futurate reading of the French example given in (28a) and repeated here in (32a) has the structure in (32b):

(32) a. Jean *est* bientôt *arrivé* à Paris.



c. $[[\text{AspP}]]^{\text{g},c} = \lambda t. \lambda w. \text{there is a time } t' \text{ such that } t' < t$

and t' is soon after t_c

and John arrives in Paris at t' in w

d. $[[\text{ModP}]]^{\text{g},c} = \lambda t. \lambda w. \text{for all worlds } w' \text{ compatible with director}(c)'s$

commitments in w at t , there is a time t''

such that $t'' > t$

and there is a time t'

such that $t' < t''$ and t' is soon after t_c

and such that John arrives in Paris at t' in w'

e. $[[\text{(32b)}]]^{\text{g},c} = \lambda w. \text{for all worlds } w' \text{ compatible with director}(c)'s$

commitments in w at t_c , there is a time t''

such that $t'' > t_c$

and there is a time t'

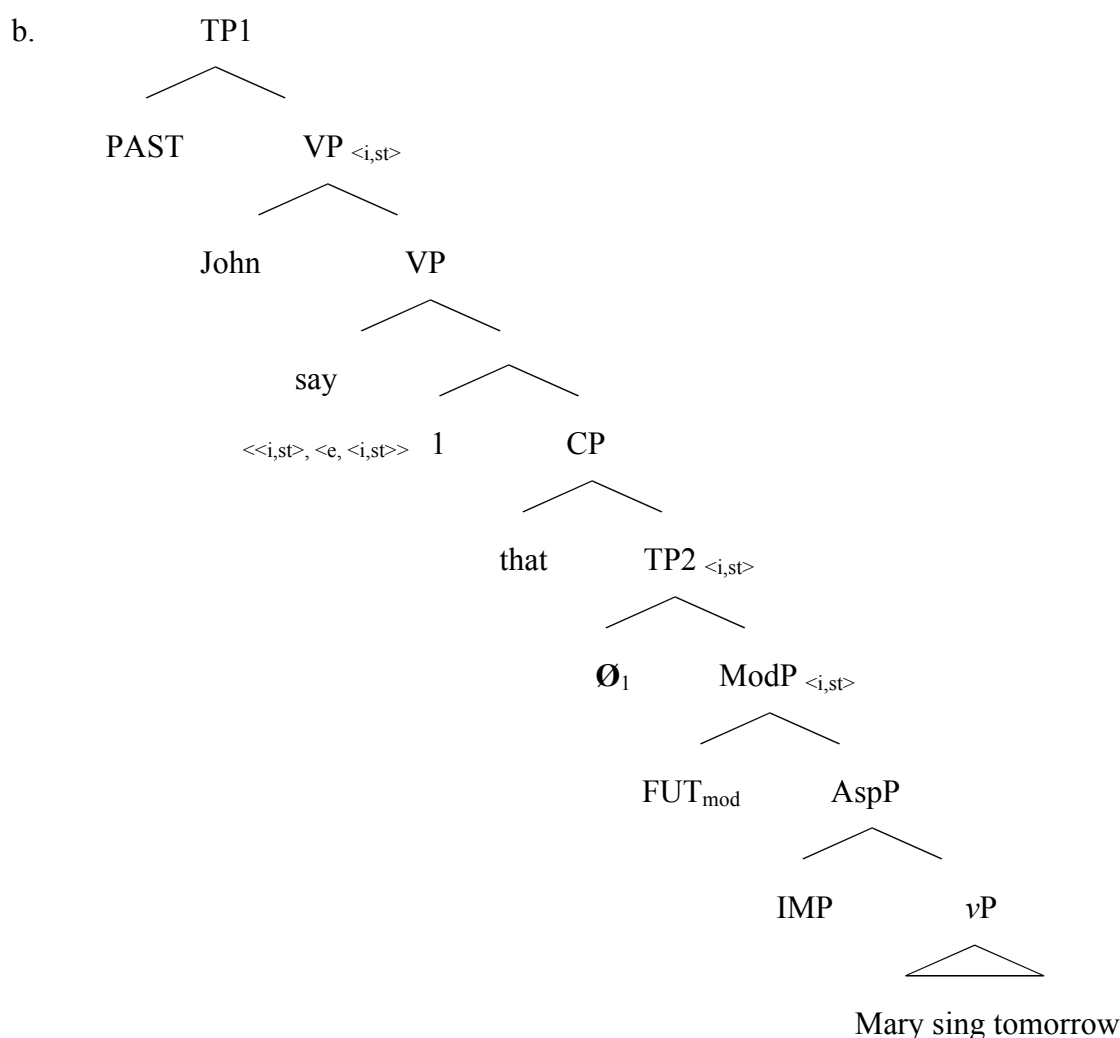
such that $t' < t''$ and t' is soon after t_c

and John arrives in Paris at t' in w'

According to this analysis, the present tense provides the reference time for the FUT_{mod} modal, whereas the perfect relates the time of the event to the future reference time provided by the modal. We thus obtain an interpretation according to which there is a current plan for *John* to arrive in Paris at some time (t') prior to another time (t'') that follows UT-T (t_c). We can thus see that assuming our analysis of futurates, we can explain the futurate reading of the present perfect in Romance languages.

Let's now turn to embedded contexts. Under our analysis, the futurate reading of sentences with an imperfective past under a matrix past such as (24a), repeated here in (33a), has the structure in (33b):

(33) a. John said that Mary *was singing* tomorrow.



- c. $[[\text{ModP}]]^{g,c} = \lambda t. \lambda w. \text{for all worlds } w'$
 compatible with director(c)'s commitments at t in w,
 there is a time t',
 such that $t' > t$
 and such that for some time t'',
 t'' includes t'
 and t'' is within tomorrow (c),
 and Mary sings at t'' in w'.

Assuming a lexical entry for “say” as in (34a), the sentence’s truth conditions are as in (34b):

- (34) a. $[[\text{say}]]^{g,c} = \lambda q_{\langle i, st \rangle}. \lambda x_e. \lambda t_i. \lambda w_s. \text{for all worlds } w'' \text{ compatible with what } x \text{ says at } t$
 in w, $q(t)(w'') = 1$ ¹¹¹

- b. $[[(33a)]]^{g,c} (t_c) = \lambda w. \text{there is a time } t'''$
 such that $t''' < t_c$
 and such that, for all worlds w'' compatible with what John
 says at t''' in w, it is the case that
 for all worlds w'
 consistent with director(c)'s commitments in
 w'' at t''',
 there is a time t'
 such that $t' > t'''$
 and such that, for some time t'',
 t'' includes t' and t'' is within tomorrow(c),
 and Mary sings at t'' in w'.

Note that in (33b) there is a zero tense that is locally bound, by the binder 1¹¹². As a result of this zero tense, the reference time of the embedded FUT is the matrix event-time, that is,

¹¹¹ I have assumed here that *say* selects for a temporal property, as assumed by von Stechow (1984) and others in order to account for “temporal *de se*”. At the same time, for simplicity I have not given a semantic value that derives temporal *de se* in the way usually assumed. I think that the reader can substitute the value usually assumed without any very damaging consequences to the analysis.

John's saying time. This results in the truth conditions in (34b) according to which at some time in the past (t''), John said that there was a plan for Mary to sing at a later time (t'), which is contained within the day following UT-T (tomorrow(c)). This is the correct interpretation of the sentence. (One might wonder if we can also have a structure with an embedded PAST. I believe that the sentence does not in fact have the interpretation that would result, which could talk about a plan prior to John's saying time. If this is the case, then in Ogihara's terms the SOT rule is obligatory here¹¹³.)

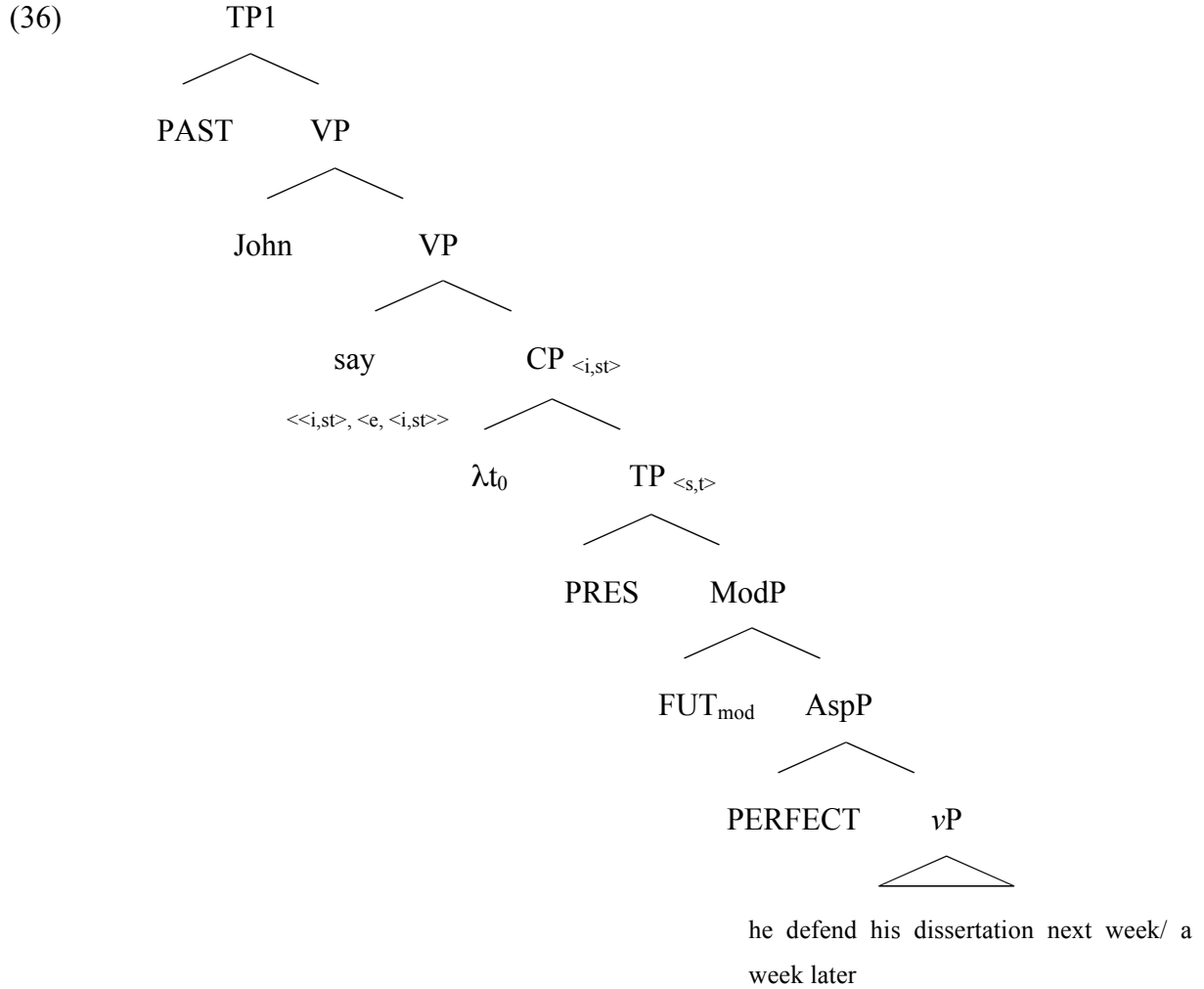
Going back to the Romance present perfect in embedded contexts, recall from our discussion in section 7.1.2 above that this also allows a futurate reading but in a more restricted set of contexts than its imperfective counterpart. More precisely, unlike the imperfective past which allows the futurate reading in contexts where the planned eventuality occurs either before or after UT-T, the present perfect allows it only in contexts where the planned eventuality occurs after UT-T. Below, I repeat the relevant French examples in (25) with an embedded present perfect:

- (35) a. La semaine dernière, Jean a dit que, la semaine prochaine, il a soutenu sa thèse.
 last week John has said that next week he defend-PC his dissertation
 “Last week John said that next week he defended his dissertation.”
- b. #Il y a deux semaines Jean a dit qu'une semaine plus tard, il a soutenu sa thèse.
 two weeks ago John said that a week later he defend-PC his dissertation
 “Two weeks ago John said that a week later he defended his dissertation.”

¹¹² This means that the *past* pronunciation of the zero tense arises not merely via binding but in a more indirect way, mediated by the verb. See von Stechow (2004) for more discussion of this kind of phenomenon.

¹¹³ Portner (2003) proposes a similar idea for all SOT phenomena. Indeed, unlike Ogihara who argues that the SOT rule is optional, Portner contends that the SOT rule is obligatory and that simultaneous and past-shifted construals result from independent principles related to the aspectual properties of the embedded predicate (see also Gennari 1999): an embedded *stative* predicate can yield either a simultaneous or a past-shifted reading, while an embedded *eventive* predicate can yield only a past-shifted reading.

Our analysis suggests an explanation for this contrast. Note that the present perfect in the embedded clause contains a present tense and this tense must be interpreted because it does not appear in an SOT context. We thus have a structure such as (36)¹¹⁴:



Notice that, since present is indexical, FUT talks about a plan that is in effect at UT-T (and that has been in effect since the *saying time* if we take into account the fact that present under past has a *double access* reading). Now, the sister of FUT denotes a property of times following a thesis defense that occurs either after UT-T ((35a)), or before UT-T ((35b)). On the assumption that it does not make sense to talk about a plan for an eventuality that precedes the time of the plan, (35a) is predicted to be acceptable while (35b) is not.

To recapitulate, our discussion of the distribution of futurate readings of a past under past in sections 7.1.1 and 7.1.2 has brought to light a striking contrast between the

¹¹⁴ The unpronounced λt_0 in (36) is there to convert the TP denotation, a proposition, into a temporal property that can serve as *say*'s argument.

imperfective past and the present perfect in Romance languages (in matrix as well as in embedded contexts). We saw that, in embedded contexts, while the futurate reading of the imperfective past is available in both future-shifted before and after UT-T contexts ((24)), the futurate reading of the present perfect is restricted to future-shifted after UT-T contexts ((25a) vs. (25b)). In this section, we have revised Copley's modal account in order to capture futurate readings of the present perfect in Romance. On our proposal, the contrasting behavior of the the present perfect vs. the imperfective past follows from the indexicality of the present component of the present perfect. The indexicality of the present component of the present perfect moreover requires the plan to be read *double access*, overlapping both the matrix past time of saying and the time of speech.

7.2 Futurate readings of the past under past in child French

In this section, I report two experiments conducted with French children investigating their understanding of futurity in embedded contexts. The experiments concern complement clauses. The first experiment reveals that French children accept and (to a certain extent) volunteer a past (*imparfait*) in future-shifted before UT-T as well as in future-shifted after UT-T contexts. To explain this pattern, I propose the Modal Hypothesis, according to which French children construe the past (*imparfait*) as a *futurate*. The Modal Hypothesis predicts that the aspectual class (states *versus* activities) and the tense (*imparfait versus* passé composé) of the embedded predicate should influence children's behavior—that is, futurate readings should be more difficult to obtain with states than with activities. Moreover, as we shall see, the Modal Hypothesis together with the Zero-tense Hypothesis predicts a difference between adult and child grammars under the future-shifted before UT-T condition: if children have a zero tense present in their grammar, alongside an indexical present, then, unlike adults, they should allow present perfect futurates in future-shifted before UT-T contexts. We will see that the facts bear out this prediction.

7.2.1 The first *futurate* experiment

This study was conducted with 14 monolingual French children ranging between 3;8 – 5;5 (mean = 4;7) from a kindergarten in Nantes¹¹⁵. The aim of this study was to test French

¹¹⁵ These are the same children who participated in the future under past experiment (see chapter 4, section 4.3).

children's understanding of the future-shifted readings of the *past* in a complement clause embedded under a matrix past. The experiment included a comprehension part and a production part. In what follows, I discuss the two parts separately. I start with the comprehension experiment.

7.2.1.1 Comprehension task

We tested French children's comprehension of the future-shifted construal using sentences involving embedded complement clauses with activity verbs ('acheter' *buy*, 'donner' *give*, 'sauter' *jump*, etc). The matrix verb was invariably 'dire' *say*, inflected for the past (*passé composé*). The embedded verb was an activity verb inflected for the past (*imparfait*). The kind of target sentence used in the experiment is given in (37):

- (37) Les garçons ont dit qu'ils *donnaient* une banane au chimpanzé.
"The boys said that they were giving the chimpanzee a banana."

Sentences such as (37) were tested in either a *future-shifted before UT-T* scenario, illustrated in (38) or a *future-shifted after UT-T* scenario, illustrated in (39):

(38) Future-shifted before UT-T

Lucie et Suzie sont dans le jardin. Le jardin n'est pas dans un très bon état! Les fleurs ont besoin d'eau, la table est sale. Lucie et Suzie: "Nous *allons arroser* les fleurs." Les filles prennent l'arrosoir et arrosent les fleurs. Maintenant, les fleurs ont de l'eau!

Lucy and Suzy are in the garden. The garden doesn't look so good! The flowers need water; the table is dirty. Lucy and Suzy: "We are going to water the flowers!" So, the girls take the watering can and water the flowers. Now the flowers have water!

- a. Experimenter: Chronos, qu'est-ce que Lucie et Suzy ont dit à propos des fleurs?

"Chronos, what did Lucy and Suzy say about the flowers?"

- b. Chronos: Elles ont dit qu'elles *arrosaient* les fleurs.

"They said that they were watering the flowers."

(39) **Future-shifted after UT-T**

Voici Tommy et Pierre. Ils ont une épée. Ils veulent cacher l'épée pour jouer avec elle plus tard. Tommy et Pierre: "Où est-ce qu'on peut cacher l'épée? Oh, regarde, un trésor! Nous *cachons* l'épée dans le trésor."

Here is Tommy and Peter. They have a sword. They want to hide it to play with it later. Tommy and Peter: "Where shall we hide this sword. Oh, look, a treasure chest! We will hide the sword inside".

a. Experimenter: Chronos, qu'est-ce que Tommy et Pierre ont dit à propos de l'épée?
"Chronos, what did Tommy and Peter say about the sword?"

b. Chronos: Ils ont dit qu'ils *cachaient* l'épée dans le trésor.
"They said that they were hiding the sword in the treasure chest."

Now, let's consider what the predictions of the Independency Hypothesis are. Recall that, according to this hypothesis and its background assumptions, the acceptance of the future-shifted reading before UT-T of a past tensed complement clause under a matrix past indicates lack of complementation. Assuming children interpret the *imparfait* as a true past tense, on the Independency Hypothesis we expect to find the following profiles:

(i) children who lack complementation

should **accept** the future-shifted reading before UT-T and **reject** the future-shifted reading after UT-T.

(ii) children who have complementation

should **reject** both the future-shifted reading before UT-T and the future-shifted reading after UT-T.

7.2.1.1.1 Results

The results of this experiment, given in Table 15, show that children accept both cases at very high rates: 92% of acceptance of the future-shifted before UT-T case and 91% of acceptance of the future-shifted after UT-T case.

Table 15. French “futate” experiment. Comprehension task

Tense	Context					
	FS before UT			FS after UT		
	Target	Independency Hypothesis	Child French	Target	Independency Hypothesis	Child French
Past	No	Yes	92% yes	No	No	91% yes

Assuming the Independency Hypothesis, this pattern of responses is surprising. Recall that the Independency Hypothesis predicts that children who **accept** the future-shifted reading before UT-T should nonetheless **reject** the future-shifted reading after UT-T. How can we then explain the acceptance of the future-shifted reading after UT-T? I argue that the acceptance of the future-shifted after UT-T is due to the fact that children construe the past (*imparfait*) as the tense on an unpronounced modal rather than as merely a tense on the pronounced verb. In other words, the children allow futurate readings with the past tense. In section 7.2.1.3, I will return to this issue. I now turn to the production task.

7.2.1.2 Production task

The same 14 children who participated in the comprehension task were included in the elicited production task. Recall that the aim of this experiment (already stated in chapter 4, section 4.3.2) was to check what tense forms children use to express *futurity*. We included the same two contexts as the ones used in the comprehension task: the future-shifted before UT-T context, where the eventuality described in the embedded clause follows the matrix event but precedes UT-T ((40)), and the future-shifted after UT-T context, where the embedded eventuality follows the matrix event but does not occur by UT-T ((41)):

(40) Future-shifted before UT-T

Pierre est dans le jardin avec son chien. Dans le jardin, il y a un coffre. Le coffre est plein de pièces de monnaie, tu vois! [*l'expérimentateur montre à l'enfant les pièces dans le coffre*]. Le chien court autour du coffre. Et, regarde ce qu'il fait, il renverse le coffre! Maintenant, toutes les pièces sont par terre. Pierre: “Ne t'inquiète pas je ramasserai les pièces plus tard!” Plus tard, Pierre ramasse les pièces. Il met toutes les pièces dans le coffre.

Pierre is in the garden with his dog. In the garden, there is a trunk. The trunk has coins inside, you see [the experimenter shows the child the coins in the trunk]. The dog is running around the trunk. And, look what he does! He turns the trunk upside down! All the coins are now on the grass. Pierre: “Oh, don’t worry, I will put the coins back in the trunk.” Later on, Pierre puts all the coins in the trunk.

a. Experimenter: Chronos, qu’est-ce qu’il a dit, Pierre, à propos des pièces?

“Chronos, what did Pierre say about the coins?”

b. Chronos: Pierre a dit que...euh, j’ai oublié, tu peux m’aider?

“Pierre said that...oh, I forgot, can you help me?”

(41) **Future-shifted after UT-T**

C’est une histoire avec deux filles. Elles jouent dans le jardin. Regarde, il y a un âne. Je suis sûre que les filles ont envie de faire un tour avec l’âne. Les filles:

“Oui, nous *feront* un tour avec l’âne!”

This is a story with two girls. They are playing in the garden. Look, there is a donkey. I’m sure the girls would like to ride the donkey. The girls: “Yes, we will ride the donkey!”

a. Experimenter: Chronos, qu’est-ce que les filles ont dit à propos de l’âne?

“Chronos, what did the girls say about the donkey?”

b. Chronos: Les filles ont dit que...euh, j’ai oublié, tu peux m’aider?

“The girls said that... oh, I forgot, can you help me?”

Recall the predictions according to the Independency Hypothesis:

- (i) children who **have not acquired complementation** should volunteer a **past** in the future-shifted before UT-T context, since in this context, the embedded eventuality occurs before UT-T and a **simple future** in the future-shifted after UT-T context, since in this context the embedded eventuality takes place after UT-T.
- (ii) children who have acquired complementation and know that their language is an SOT language should volunteer a **future in the past** in the future-shifted before UT-T context, since this is the tense form used in adult French to

express a futurity with respect to the matrix event-time. These children should volunteer either a **simple future** or a **future in the past** in the future-shifted after UT-T context, since both tense forms are legitimate in this context.

- (iii) children who **have acquired complementation** but do not know that their language is an SOT language should volunteer a **simple future** in the future-shifted before UT-T context and also in the future-shifted after UT-T context. These children **should not** volunteer a future in the past in either future-shifted contexts.

Notice that one advantage of the production experiment is that it can be used as a test for the acquisition of SOT. As stated in (iii) above, children who have acquired complementation but do not know that their language is an SOT language, *should not* volunteer a future in the past (e.g. *mangerait*), since the future in the past is the tense form used in SOT languages to report futurity under a matrix past. Recall from chapter 4, section 4.3 that a future in the past can be analyzed as a zero (past) tense plus a future modal (FUT), whereas a simple future would rather be made up of a present and a FUT:

- (42) a. [$\emptyset_{\text{PAST}}$ FUT] *future in the past*
- b. [PRES FUT] *simple future*

On the other hand, if children volunteer a future in the past in the future-shifted contexts, this will be evidence that they have acquired SOT.

7.2.1.2.1 Results

Table 16. French “futate” experiment. Production Task

Tense	Future-shifted before UT-T	Future-shifted after UT-T
Future ¹¹⁶	15 %	38%
Future in the past	24%	35%
Past (<i>Imparfait</i>)	44%	20%

As we can see in Table 16, in the future-shifted before UT-T context, **past** (*imparfait*) is the tense form most frequently volunteered (44%). This seems to support Hollebrandse’s hypothesis that children lack complementation. Interestingly, however, children who volunteered a **past** (*imparfait*) in the future-shifted before UT-T context also volunteered a **future** in the same context. For illustration, consider the stories in (43i) and (43ii), followed by the child answers in (43ib)-(43iib):

(43) **Future-shifted before UT-T**

i. *Story I*

Pierre : « Je suis très content ! Ce soir *j’aurai* un déguisement de fantôme. » Plus tard dans la soirée, regarde, son papa lui offre un déguisement de fantôme.

Pierre: “I’m very happy! This evening I will have a ghost costume.” Later that evening, his daddy gives him a ghost costume.

a. Chronos: Je n’ai pas bien compris. Pierre a dit qu’il ...

“I didn’t understand very well. Pierre said that...”

b. Child (P. 4 ;10): Il a dit que... en fait il disait que...il **va** se déguiser en fantôme.

¹¹⁶ French has two ways of expressing future temporal reference: an inflected future (e.g. *je partirai*) or a periphrastic future (e.g., *je vais partir*), consisting of the verb “aller” *to go* plus infinitive. Children have volunteered both forms. Here, I have counted both forms under the label “future”. My analysis of the periphrastic future goes along the same lines as the analysis proposed for the simple future— specifically, I assume that the periphrastic future should be analyzed as present plus a future operator, which in this case, is simply the future-oriented verb *aller*.

ii. *Story 2*

Pierre va chez le fleuriste. Il achète une superbe fleur. Pierre : « Je *donnerai* cette fleur à Marie. » Il va ensuite chez Marie et lui donne la fleur.

Pierre goes to the flower shop. He buys a beautiful flower. Pierre: "I will give this flower to Mary". Later on, he goes to Mary's house. He gives Mary the flower.

a. Chronos: Je n'ai pas bien compris. Pierre a dit qu'il ...

"I didn't understand very well. Pierre said that..."

b. Child (P. 4;10): Il a dit qu'il **donnait** la fleur à elle.

"He said that he give-IMP the flower to her".

This pattern (i.e., the fact that the child produced both an *imparfait* and a *future* in the future-shifted before UT-T context illustrated with the stories in (44i) and (44ii) is unexpected on the Independency Hypothesis, which, as we previously showed, predicts that children who produce a **past** in the future-shifted before UT-T context *should not* produce a **future** in the same context. I thus conclude that the fact that children produce an *imparfait* in the future-shifted before UT-T context is not due to absence of complementation.

Turning to the future-shifted after UT-T context, notice that the tense forms most frequently used are *future* and *future in the past* (38%— future and 35%— future in the past). This is expected on an adult grammar of French, but not on a non-adult independent grammar, which predicts that children should only produce a future in this context. Recall that what distinguishes the future from the future in the past is that future combines a modal component with an indexical present whereas future in the past combines a modal component with a zero past (cf. the representations given in (42) above). The use of the future in the past in the future-shifted after UT-T context thus shows that children do have complementation, that is, they interpret the embedded tense with respect to the matrix tense and not to UT-T.

Interestingly, children who produced a *future in the past* also produced an *imparfait* in the future-shifted after UT-T context, as illustrated below:

(44) **Future-shifted after UT-T**

i. *Story 1*

Maman: Le bébé doit bientôt se coucher. Mais, il ne s'endort pas si on ne le berce pas. Et moi, je ne serai pas à la maison pour le faire, car j'ai un rendez-vous chez le médecin! Les filles: « Nous allons bercer le bébé! ».

Mummy: "The baby will soon need to sleep. And, he won't go to sleep unless someone rocks him. I won't be home to do that, since I have to go see the doctor! The girls: "We will rock the baby!"

a. Chronos: Les filles ont dit que...

"The girls said that..."

b. Child (C. 4 ;05) : Elles ont dit qu'elles *berceraient* le bébé.

"They said that they would rock the baby."

c. Experimenter: Est-ce qu'elles ont bercé le bébé?

"Did they rock the baby?"

d. Child (C. 4 ;05): Non.

"No".

ii. *Story 2*

Les pirates: « Un trésor! » Nous allons voler le trésor!

Pirates: "A treasure chest!" We will steal the treasure chest!"

a. Chronos: Les pirates ont dit qu'ils...

"The pirates said that..."

b. Child (C. 4 ;05): Les pirates ont dit qu'ils *volaient* le coffre.

"The pirates said that they steal-IMP the treasure chest!"

c. Experimenter: Est-ce qu'ils ont volé le coffre?

"Did they steal the treasure chest?"

d. Child (C. 4 ;05): Non.

"No."

As the exchange between the experimenter and the child above shows (see (44ic-d)-(44iic-d), the child does know that the embedded eventuality has not taken place at UT-T. However, he

volunteers a past (*imparfait*) (44iib). This is unexpected under the Independency Hypothesis, which predicts that children, whether they have acquired complementation or not, should not produce a **past** tense in this context. This is because, in the future-shifted after UT-T context, the embedded eventuality takes place in the future relative to speech time, which makes the use of a **past** tense inappropriate.

The question is how to explain the use of the *imparfait* in the future-shifted context after UT-T? In the following section, I will suggest that children's use of the past in *both* future-shifted contexts is due to a *futurate* construal of the *imparfait*.

7.2.1.3 Futurate construals of the *imparfait* in child French

In chapter 4, section 4.3.3, I argued that the production findings with the future provide further evidence for the presence of zero tenses in child grammar on the assumption that future is analyzed as a present tense plus a future modal. The point is that the facts about production can be explained if we assume that the children can treat present tense as a zero tense. This further supports the hypothesis that children have *dependent* tenses in their grammar.

Here, I argue that the comprehension data (the acceptance of the future-shifted readings of the *imparfait* and the production data (the fact that children volunteer an *imparfait* in both future-shifted contexts) suggest that children construe the past (*imparfait*) as a futurate. Under this analysis, children analyze the *imparfait* in the future shifted contexts as a zero tense plus a FUT_{mod} , as illustrated below:

(45) a. Les pirates ont dit qu'ils *volaient* le coffre.

“The pirates said that they were stealing a treasure chest.”

b. [PAST the pirates say that 1 [$\emptyset_1$ FUT_{mod} they steal a treasure chest]]

- c. $[[(45b)]]^{g,c} (t_c) = \lambda w. \text{there is a time } t''' \text{ such that } t''' < t_c$
 and for all worlds w'' compatible with what the pirates say at
 t''' in w ,
 it is the case that
 for all worlds
 consistent with director(c)'s commitments in w'' at t''' ,
 there is a time t'' ,
 such that $t'' > t'''$
 and such that the pirates steal the treasure at
 t'' in w' ¹¹⁷.

The analysis in (45b) gives rise to the truth conditions in (45c), which state that the sentence in (45a) is true only if, according to what the pirates said, the *stealing* follows the *past saying-time*. For these conditions to be met, the stealing can either precede UT-T (as is the case in the future-shifted before UT-T) or follow it (as is the case in the future-shifted after UT-T context). Hence, children accept both these readings.

7.2.1.4 What licenses futurate readings in child language?

Recall that the major condition for the licensing of futurate readings is that the eventuality be of the plannable type. Futurate readings are possible with activity verbs (e.g. *sing* (46a)), with plannable states (e.g., *be in Paris*, (46b)), but not with states that cannot be planned (e.g. *be tired* (46c)):

- (46) a. Jean a dit que Marie *chante* demain.
 “John said that Mary sings tomorrow.”
 b. Jean a dit que Marie *est* à Paris demain.
 “John said that Mary is in Paris tomorrow.”

¹¹⁷ For simplicity, I assume here that the DP *the pirates* is a referring term like a name, and that *they* is coreferential with it. I also assume that, in this case, the context of evaluation of the sentence is one that determines the pirates themselves to be the director.

c. *Jean a dit que Marie *est fatiguée* demain.

“John said that Mary is tired tomorrow.”

In our experiment, the embedded clauses included activities and accomplishments (e.g., *steal, rock the baby, feed, water the flowers, etc*), which are plannable, and thus compatible with a futurate reading. Now, if the Modal Hypothesis proposed here is correct, we predict that if we change the embedded predicate to an unplannable one, children should reject the future-shifted reading. This prediction was tested in a follow-up experiment that I present in the next section.

Recall also that, in French, not only the *imparfait* but also the *passé composé* allows a futurate reading in embedded contexts, although in a much restricted set of contexts, (that is, the futurate reading of a *passé composé* under past is limited to contexts where the embedded eventuality is planned to occur *after* UT-T).

As we will show below, the Modal Hypothesis together with the Zero-tense Hypothesis predicts a difference between adult and child grammars under the future-shifted before UT-T condition: if children have a zero-tense present in their grammar alongside an indexical present, then, unlike adults, they should allow present perfect futurates in future-shifted before UT-T contexts. This prediction was tested in a follow-up experiment that we will present just afterwards.

7.2.2 The second *futurate* experiment

The aim of this experiment was to test the validity of the Modal Hypothesis proposed to account for the acceptance of the future-shifted reading of an *imparfait*. Recall that this hypothesis states that, in contexts which license futurate readings (i.e., when the embedded predicate is of the plannable kind— for instance an *activity verb*), children accept this reading because they construe the embedded *imparfait* as a futurate.

The Modal Hypothesis makes the following predictions:

- (i) in contexts which **license** a futurate reading (i.e., when the embedded predicate is of the plannable kind— for instance an agentive *activity verb*), children should **accept** a sentence with an embedded *imparfait* under a matrix past in a future-shifted before UT-T scenario.

- (ii) in contexts which **do not license** a futurate reading (i.e., when the embedded predicate is of an unplannable kind— for instance, **unplannable states**), children should **reject** a sentence with an embedded *imparfait* under a matrix past in a future-shifted before UT-T scenario.

Turning to the *passé-composé*, what predictions do we make? Our discussion of the distribution of adult futurate readings (section 7.1.2) has highlighted an interesting contrast between the imperfective past and the present perfect: while the imperfective past yields a futurate in both future-shifted before and after UT-T contexts, the present perfect yields a futurate only in future-shifted after UT-T contexts. On the uniform account of the semantics of futurates developed in section 7.1.3.2, this contrast between the imperfective past and the present perfect in the adult grammar follows from the indexicality of the present component of the present perfect, which forces planned eventualities to be in the future of the speech time (and which moreover requires the plan to be read *double access*, overlapping both the matrix past time of saying and the time of speech). However, throughout this thesis, I have argued that (French) children have a zero-tense present in their grammar, alongside an indexical present. Our Zero Tense Hypothesis combined with the Modal Hypothesis makes the following predictions for the *passé composé*:

- (i) children who have (only) an indexical present in their grammar should **reject** a sentence with an embedded *passé composé* under a matrix past in a future-shifted before UT-T scenario.
- (ii) children who have a zero present in their grammar alongside an indexical present should **accept** a sentence with an embedded *passé composé* under a matrix past in a future-shifted before UT-T scenario.¹¹⁸

Below, I present an experiment designed to test these predictions.

¹¹⁸ This prediction will be discussed further in section 7.2.2.1.8 where we run through the semantic derivation of a present perfect futurate on a zero-tense construal of the present.

7.2.2.1 The experiment¹¹⁹

7.2.2.1.1 Participants

15 children aged between 5;04 and 6;02 (mean = 5;07) participated in this experiment. 6 children were eliminated for not paying attention to the task. The remaining 9 children were included in the analysis.

7.2.2.1.2 Method

We used the same Truth Value Judgment Task, with two experimenters, one telling stories with toys and props in front of children and the other one playing the role of the puppet Chronos, and at the same time writing down the children's answers. At the end of the story, the first experimenter asked Chronos a question. The children's task was to tell if what Chronos said was right or wrong. Children were told that Chronos sometimes says silly things and encouraged them to correct him when they thought he said something wrong. Children's answers were recorded with a digital voice recorder.

7.2.2.1.3 Design

We used a 2 x 2 design, with **tense** (passé composé *versus* imparfait) and **verb class** (states *versus* activities) as within-subject factors. The test sentences involved embedded complement clauses with **activities** (“jouer au ballon” *play the ball*, “manger des carottes” *eat carrots*, “cuisiner du poulet rôti” *cook chicken*, “manger de la tarte”, *eat some pie*, “compter les pièces” *count the coins*, “cacher le trésor” *hide the treasure*, “ramasser les oeufs”, *collect the eggs*), **plannable states** (“avoir un déguisement” *have a costume*) and **unplannable states** (“être fatigué” *be tired*).

7.2.2.1.4 Procedure

The children were tested individually in a separate room by one experimenter, during school hours. They listened to stories acted out with toys and props. Each story was followed by the

¹¹⁹ This study was conducted in collaboration with Laurence Voeltzel and Hahn Nguyen. We are very indebted to the kindergarten “Frédureau” in Nantes for granting us permission to run this experiment.

target sentence that the children had to judge as a good or bad description of what had happened in the story. Children were told that what they heard was sometimes right, sometimes wrong. When they did not agree, children were asked to explain why.

The experiment consisted of 6 stories each containing two scenes. There were 22 experimental items: 12 target items and 10 fillers. The fillers were *yes/no* questions about what happened in the story or *true/false* sentences involving complement clauses. The expected answer to fillers was the opposite of what was expected for the target items. The fillers were used to control whether children paid attention to the task and to prevent children from guessing what was tested. Participants who failed more than two filler items were excluded from the experiment. Target and filler items were presented in a random order, which was kept constant across subjects. There were 10 expected *yes* answers and 12 expected *no* answers.

7.2.2.1.5 Experimental conditions

There were three experimental conditions¹²⁰: the “*imparfait* activity”, illustrated in (47); the “*imparfait* state”, illustrated in (48) and the “*passé composé* activity”, illustrated in (49):

(47) *Imparfait* (IMP) activity

C'est dimanche après-midi. Jérémy et Louis sont dans le jardin. Jérémy voit arriver un lapin. Jérémy: « Regarde! Qu'est-ce qu'il est mignon, ce lapin. Je vais aller lui chercher une carotte. » Louis: « Oui, il mangera la carotte ». Jérémy va chercher une carotte dans la cuisine et la donne au lapin. Le lapin mange la carotte et Jérémy caresse le lapin.

It's Sunday afternoon. Jérémy and Louis are in the garden. Jérémy sees a rabbit coming. He says: "Look how nice this little rabbit is! I'll bring a carrot for him!" Louis: "Yeah, he will eat the carrot!" Jérémy goes into the kitchen, takes a carrot and gives the carrot to the rabbit. The rabbit eats it up. Jérémy pets him on the back.

¹²⁰ We did not include a *passé composé* state condition because the combination of a *passé composé* and a *state* is not very felicitous in French, as (i) shows:

(iv) #Hier Jean a été fatigué.
 “Yesterday, John be-PC tired.”

a. Chronos: Est-ce que Louis a dit que le lapin *mangeait* la carotte?

“Did Louis say that the rabbit was eating the carrot?”

(48) **i. *Imparfait* (IMP) state (plannable)**

Après le travail, Pierre, l’ami de Papa: « Tu viens prendre un verre avec moi? »

Papa : « Non merci, je dois chercher un cadeau pour Lucas, car demain c'est son anniversaire ». Pierre: « T’as une idée de ce que tu vas lui acheter ? »

Papa : « Je veux lui acheter un déguisement de fantôme. »

Pierre : « Ah, ouais, Lucas aura un déguisement de fantôme ! »

Papa achète le déguisement de fantôme.

[Le lendemain, Lucas reçoit son cadeau: un beau déguisement de fantôme.]

After work, Pierre, Daddy’s friend: “Will you join me for a drink?”

Daddy: “Non, I can’t, I have to look for a present for Lucas, it’s his birthday tomorrow.” Pierre: “And do you know what you will buy for him?”

Daddy: “I want to buy him a ghost costume.”

Pierre: “Wow, Lucas will have a ghost costume!”

Daddy buys a ghost costume.

[The next day, Lucas receives his present: a beautiful ghost costume].

a. Chronos: Est-ce que Pierre a dit que Lucas *avait* un déguisement de fantôme?

“Did Pierre say that Lucas had a *ghost costume*?”

ii. *Imparfait* (IMP) state (unplannable)

Dans la chambre de Lucas, il joue au fantôme avec son déguisement. Il est tard et Lucas ne veut pas aller au lit.

Sa maman va voir son papa : « Tu sais, Lucas ne veut pas aller se coucher. Il a école demain matin ! »

Papa : « Oui, et bah il sera fatigué ! »

[Lucas reste jouer un petit peu plus. Puis il se couche.

Le lendemain matin, il se lève.] Lucas dit: « Oh là là, j’ai sommeil ! J’ai sommeil! »

Lucas is playing with his ghost costume in his room. It's late and he does not want to go to bed. His mummy goes see his daddy: "You know, Lucas does not want to go to bed. And he has school tomorrow!"

Daddy: "Well, yeah, he will be tired!"

[Lucas plays a little more in his room and then he goes to bed.]

The following morning, he gets up]. Lucas says: Oh, I feel so sleepy! I feel so sleepy!"

a. **Chronos:** Est-ce que le père a dit que Lucas était fatigué ?

"Did father say that Lucas was tired?"

(49) ***Passé Composé (PC) activity***

Joe, le pirate, est sur son bateau avec son ami Crochet et un matelot.

Joe : « Regardez devant, une île déserte! Allons voir si on y trouve quelque chose. »

Le bateau s'approche de l'île. Joe : « Vous deux, surveillez le bateau ! Moi, j'y vais. »

Il arrive sur l'île... Joe : « Hé ho, j'ai trouvé un coffre à trésor, il est rempli de pièces! » Matelot: « Mais que va t-il faire du trésor? » Crochet : « Il *comptera* les pièces ». Le pirate compte: « un, deux, trois... Ouah, cinq pièces d'or !»

Joe, the pirate, is on his boat with his friends, Captain Hook and a sailor. Joe : « Look ahead of us! I see a desert island! Let's go see if we can find anything there." The boat approaches the shore. Joe: "You two keep an eye on the boat! I'll go take a look on the island." He arrives on the island. Joe [shouting]: "Hey, I've found a treasure chest! It's full of gold coins!" The sailor: "What will he do?" Captain Hook: "He will count the coins!" Joe counts the coins: "One, two, three... Five gold coins!"

a. Chronos: Est-ce que Crochet a dit que le pirate *a compté* les pièces ?

"Did Captain Hook say that the pirate counted the coins?"

According to the Modal Hypothesis, which states that children's answers in the future-shifted scenarios depend on their compatibility with a futurate reading, the predictions are as follows. Under the **IMP activity** condition ((47)), children should accept the *imparfait*, since this condition is compatible with a futurate construal of the *imparfait*. Under the **IMP state** condition, they should **accept** it insofar as the state in question is plannable ((48i)) and **reject** the *imparfait* insofar as the state in question is unplannable ((48ii)). Moreover, the Modal

Hypothesis combined with the Zero-tense Hypothesis predicts a difference between child and adult grammars: unlike adults, children who have a zero-tense present alongside an indexical present in their grammar should **accept** a sentence with an embedded *passé composé* under a matrix past in a future-shifted before UT-T scenario ((49)).

7.2.2.1.6 Results and discussion

The results are summarized in Figure 8.

To see whether there was a difference between the three experimental conditions, the results were entered in a Friedman ANOVA analysis. The analysis revealed a statistically significant difference between conditions ($\chi^2(2) = 8.867$, $p = .012$). Post-hoc analysis with Wilcoxon Signed-Rank Test was conducted with a Bonferroni correction applied, resulting in a significance level set at $p < 0.017$. The test showed a significant difference between the **IMP activity** and the **PC activity** conditions ($z = -2.428$, $p = .015$), a non-significant difference between the **IMP activity** and the **IMP state** conditions ($z = -2.372$, $p = .018$), and no difference between the **IMP state** and the **PC activity** conditions ($z = -.791$, $p = .429$).

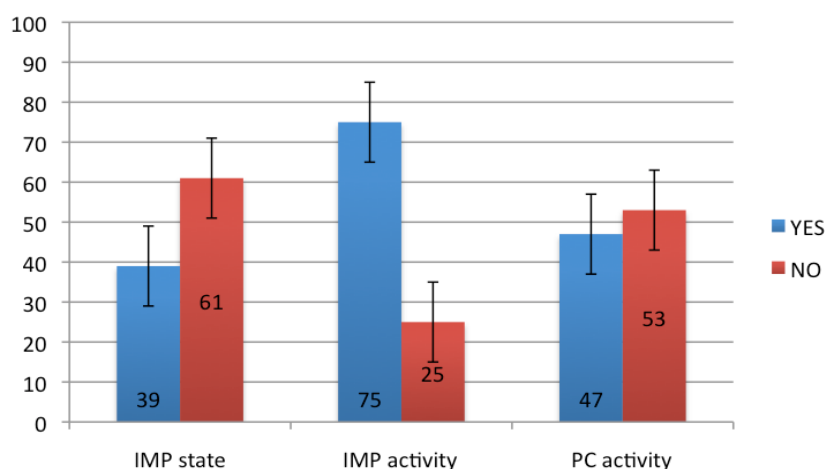


Figure 8. Percentage of yes/no answers in the second “futurate” experiment

The results thus show that children accepted the future reading of the *imparfait* with activity verbs significantly more often than the futurate reading of the *passé composé* with activity verbs. This is expected under the Modal Hypothesis, which, recall, predicts that children should accept the *imparfait* and reject the *passé composé* in the future-shifted before UT-T condition, since this condition is not compatible with a futurate construal of the *passé composé*.

Finally, our data reveals that some children also accept the *imparfait* with states. An individual examination of the individual responses showed that all children rejected the *imparfait* with unplannable states. This result is expected under the Modal Hypothesis, which predicts that children should accept the future reading of the *imparfait* with plannable states, because these kinds of states allow futurate readings and reject it with unplannable states, because these kinds of states do not allow a futurate reading.

7.2.2.1.7 Futurate construals of the *passé composé* in child French

In this section, I would like to discuss the results for the *passé composé*. We have seen that *some* children accept sentences with a *passé composé* in the future-shifted before UT-T scenario (47% yes answers).

Recall from our discussion in section 7.1.3.2 that, in adult French, what prevents the futurate reading of the *passé composé* in the future-shifted before UT-T scenario is the *indexicality* of the *present* component of the *passé composé*. The indexicality of the present requires that the plan for the embedded eventuality be read as in force at UT-T (and, in fact, that it be read moreover as double access, that is, overlapping both the past matrix time of saying and the time of speech). On the assumption that it does not make sense to talk about a plan for an eventuality that *precedes* the time of the plan— as is the case in the future-shifted before UT-T context— a sentence with a *passé composé* is not acceptable to describe a future-shifted before UT-T scenario.

Now, as we have shown throughout this dissertation, French children, unlike French adults also have a *zero* present alongside an indexical present in their grammar. If children construe the present component of the *passé composé* as a zero rather than as an indexical tense, we can explain the acceptance of the *passé composé* in the future-shifted before UT-T scenario¹²¹.

On a zero tense analysis of the present component of the *passé composé*, the test question in (49a), repeated below in (50a), uttered in the future-shifted before UT-T scenario ((50)), has the structure in (50b) (abstracting away from the interrogative component):

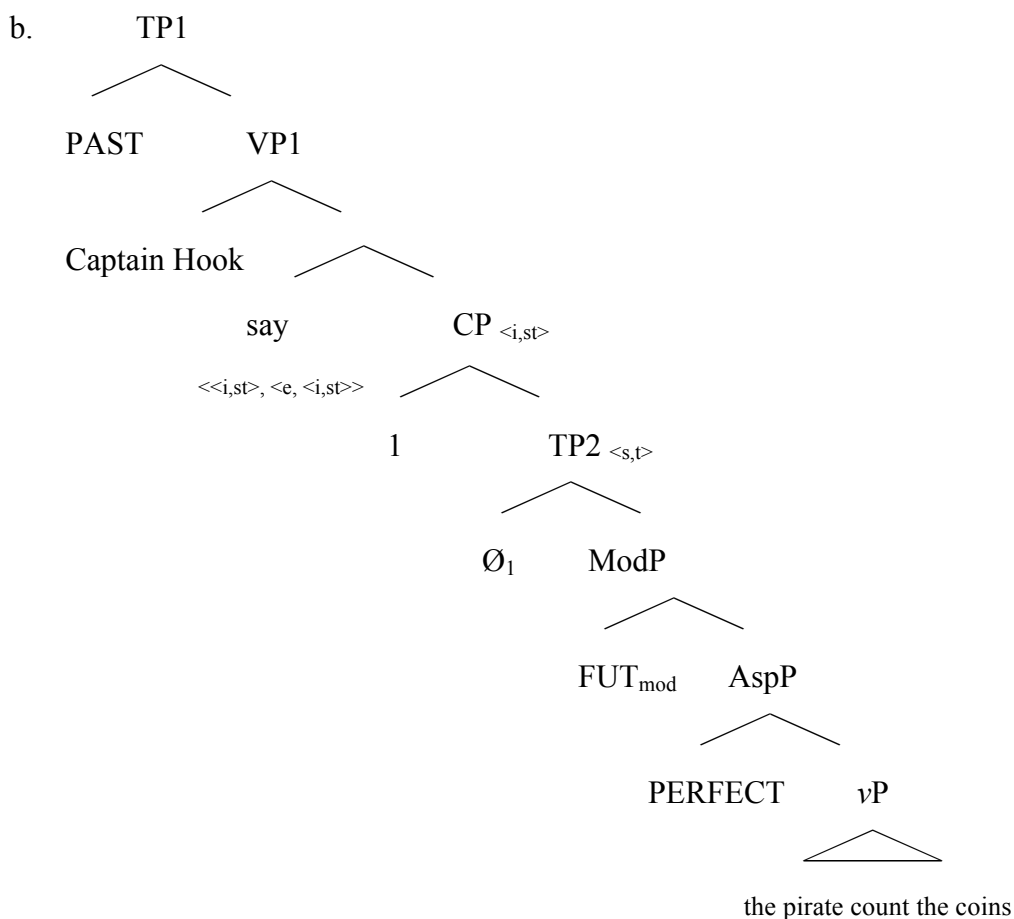
¹²¹ I would like to thank Hamida Demirdache for suggesting this to me.

(50) *Passé Composé (PC) activity*

Joe, the pirate, is on his boat with his friends, Captain Hook and a sailor. Joe : « Look ahead of us! I see a desert island! Let's go see if we can find anything there.» The boat approaches the shore. Joe: “You two keep an eye on the boat! I'll go take a look on the island.” He arrives on the island. Joe [shouting]: “Hey, I've found a treasure chest! It's full of gold coins!” The sailor: “What will he do?” Captain Hook: “He will count the coins!” Joe counts the coins: “One, two, three... five gold coins!”

a. Est-ce que le Capitaine Crochet a dit que le pirate a compté les pièces?

“Did Captain Hook say that the pirate counted the coins?”



The semantic value of (50b) is calculated as in (51):

(51) Calculation:

- a. $[[\text{AspP}]]^{g,c} = \lambda t_i. \lambda w_s.$ there is some time t' such that $t' < t$
and such that the pirate counts the coins at t' in w
- b. $[[\text{ModP}]]^{g,c} = \lambda t. \lambda w.$ for all worlds w' compatible with director(c)'s
commitments in w at t , there is a time t'' such that
 $t'' > t$ and
there is a time t' such that $t' < t''$ and such that
the pirate counts the coins at t' in w'
- c. $[[\text{TP2}]]^{g,c} = \lambda w.$ for all worlds w' compatible with director(c)'s
commitments in w at $g(1)$, there is a time t'' such that
 $t'' > g(1)$ and
there is a time t' such that $t' < t''$ and such that
the pirate counts the coins at t' in w'
- d. $[[\text{CP}]]^{g,c} = \lambda t. \lambda w.$ for all worlds w' compatible with director(c)'s
commitments in w at t , there is a time t'' such that
 $t'' > t$ and
there is a time t' such that $t' < t''$ and such that
the pirate counts the coins at t' in w'
- e. $[[\text{VP1}]]^{g,c} = \lambda t. \lambda w.$ for all worlds w'' compatible with what C.H says at t in w , it
is the case that,
for all worlds w' compatible with director(c)'s commitments
in w'' at t , there is a time t'' such that
 $t'' > t$ and
there is a time t' such that $t' < t''$ and such that
the pirate counts the coins at t' in w'

f. $[[[TP1]]]^{g,c}(t_c) = \lambda w_s$. there is some time t''' such that

$t''' < t_c$ and

for all worlds w'' compatible with what C.H says at t''' in w ,
is the case that,

for all worlds w' compatible with director(c)'s
commitments in w'' at t''' , there is a time t'' such that

$t'' > t'''$ and

there is a time t' such that $t' < t''$ and such that

the pirate counts the coins at t' in w'

Given the structure in (50b), (50a) talks about a plan that holds at *Captain Hook's saying time*, and the plan is about an eventuality that precedes some time later than the *saying time*. Specifically, the structure expresses that Captain Hook said of a plan that held at that time that, according to the plan, at some later time the pirate would have counted the coins. (Notice that according to the structure in (50b), nothing precludes that the time of the counting precedes the saying time. However, since it makes no sense to talk about a plan for an eventuality that occurs before the time of the plan, this interpretation is excluded.)

To conclude, the finding with the *passé composé* (i.e. the acceptance of the futurate reading of the *passé composé* in the future-shifted after UT-T context) corroborates our previous findings with both the *present* under past (see chapter 3, section 3.3.1.5.1 and chapter 4, section 4.2.1.6) and the simple future under past— in both comprehension (see chapter 4, section 4.3.1.1) and production (see chapter 4, section 4.3.2.1), attesting to the existence of a zero present tense in French child grammar.

7.3 Summary

This chapter discussed futurate readings of the *imparfait* and the *passé composé* embedded under a matrix past in French child language. I first discussed the cross-linguistic distribution of futurate readings in simple and embedded contexts. I showed that in French, there is an interesting difference between the *imparfait* and the *passé composé* with respect to the futurate construal in embedded contexts: while the *imparfait* allows a futurate construal in both a future-shifted *before* UT-T scenario and a futurate shifted *after* UT-T scenario, the *passé composé* allows it only in a futurate shifted *after* UT-T scenario. I then discussed Copley's analysis of futurate readings in simple contexts and showed that this proposal cannot

account for the futurate reading of the *passé composé*. I thus proposed an alternative analysis, which succeeds in accommodating all futurate readings in simple as well as embedded contexts. On this analysis, the contrasting behavior of the *imparfait* and the *passé composé* with respect to the distribution of futurate readings lies in the indexicality of the present component of the present perfect. Turning to the acquisition data with French children, I showed that these data bring evidence in favor of a futurate treatment of the past in future-shifted contexts. Finally, the proposal that (French) children have a zero present in their grammar alongside an indexical present explains why children, unlike adults, allow future(at)e readings of the present perfect in future-shifted before UT-T contexts.

Conclusion

Results, implications and future research

In this section, I present a summary of the main findings presented in this dissertation as well as their relevance for theories of language acquisition. I conclude with some questions and suggestions for future research.

1. Summary

Chapter 1 introduced the topic of this dissertation— the interpretation of tense in embedded contexts in French child language— our goals and methodology. It further set up the theoretical background and situated our study with respect to previous acquisition research.

Chapter 2 discussed the interpretations of *present under past* and *past under past* in both complement clauses and relative clauses in two kinds of languages: (i) SOT languages (English/ French) and (i) non-SOT languages (Japanese). This discussion led to two major generalizations:

3. English/ French-like languages differ from Japanese-like languages with respect to the simultaneous construal under a matrix past.

This difference was formulated in terms of the SOT parameter, stated as follows:

The SOT parameter

- (i) in SOT languages like English or French, simultaneous construals under a matrix past require a *past*
 - (ii) in non-SOT languages like Japanese, simultaneous construals under a matrix past require a *present*
4. All languages preclude the future-shifted construal of a past in a complement clause embedded under a matrix past.

The research questions addressed in this dissertation were the following:

- (i) To which extent do children acquiring an SOT language like French know that temporal simultaneity under a matrix past requires an embedded *past* tense?
- (ii) Do children have adult knowledge of the dependency relation between the embedded complement clause and the matrix clause?
- (iii) To which extent do children know that a past in a complement clause under a matrix past *cannot* express a future-shifted reading?

The rest of the dissertation sought to provide an answer to these questions.

Chapters 3 and 4 focused on adult-like and non-adult-like readings of *present under past and future under past*. The main finding with the present under past was that (i) some French children have a grammar that yields non-adult simultaneous readings for *present* tense in embedded clauses under a matrix past. To explain this finding, we suggested that children, unlike adults, construe present as a *zero* tense. The main findings with the future under past were that (i) children have a non-adult dependent future alongside an indexical future in their grammar (ii) children volunteer a future in the past in both the future-shifted before UT-T context and the future-shifted after UT-T context. To explain (i), we suggested that the dependent future in child grammar is analyzed as a zero present plus a future modal. This analysis follows straightforwardly on the assumption that children have a zero present in their grammar (alongside an indexical present). To explain (ii), we suggested that children, like adults, construe the future in the past as a zero *past* plus a future modal. These findings led to the formulation of the Zero Tense Hypothesis in chapter 4:

(1) **Zero Tense Hypothesis**

- a. Zero tenses are present in child language early on.
- b. Zero tenses in child language surface as both past and present.

The idea underlying the Zero Tense Hypothesis is that zero tenses are present in child grammar from early stages of language acquisition and that children have both options of the SOT parameter. Interestingly, the two-option setting of the SOT parameter seems to be attested in some adult languages, like Upper Austrian, where both a past and a present can express a

simultaneous construal. That children go through a stage involving a parameter setting not part of the target grammar, but reflecting a setting for other languages is expected under the Continuity Hypothesis, according to which child language variation from the target language is constrained by Universal Grammar (Crain and Thornton 1998).

The last three chapters focused on the construal of *past under past*. Chapter 5 provided evidence for the presence of adult-like simultaneous and non-simultaneous (future-shifted) readings of the past in relative clauses under a matrix past. Chapter 6 offered a critical discussion of Hollebrandse's Independency Hypothesis and reviewed our arguments in favor of the Zero Tense Hypothesis. Finally, Chapter 7 discussed two last experiments testing the construal of the past (*imparfait* and *passé composé*) in complement clauses under a matrix past in future-shifted contexts. The main findings with the *imparfait* were that French children allow and volunteer an *imparfait* in both a future-shifted before UT-T context and a future-shifted after UT-T context. The acceptance of the *imparfait* in the future-shifted after UT-T context was taken as evidence against the Independency Hypothesis and led to the formulation of the Modal Hypothesis, stated as follows:

(2) **Modal Hypothesis**

Children construe the past in future-shifted contexts as a *futurate*.

The main finding with the *passé composé* is that some children accept the *passé composé* in the future-shifted before UT-T context, unavailable in the adult grammar. We suggested an explanation for this finding based on the Modal Hypothesis together with the Zero Tense Hypothesis: children assign a futurate reading of the *passé composé* and accept the sentence in the future-shifted before UT-T context because they construe the *present* component of the *passé composé* as a *zero tense*.

2. Implications

The new results of our study are the acceptance of the simultaneous construal of the *present* under past in both complement clauses and relative clauses and the acceptance of the *passé composé* under a matrix past in the future-shifted before UT-T scenario. We claimed that both these results are due to the existence of a zero present in child grammar. Moreover, in chapter 4 we showed that, in French child grammar, a non-adult zero present co-exists with an adult indexical present. Interestingly, Hollebrandse's experiment with Japanese children, reviewed

in chapter 6, showed that the Japanese children, unlike the Japanese adults, also accepted the simultaneous reading of both the present and the past in complement clauses. These results corroborate our results with French children thus showing that children speaking languages with different options for the SOT parameter pass through a stage where both options are activated. This is a very interesting result which is compatible with the Multiple Grammar Hypothesis of language acquisition (Valian 1991, Roeper 1999, Legate and Yang 2002, Yang 2000, 2011) according to which children pass through a stage where they have available more than one grammar to evaluate the input.

This view of language acquisition raises an interesting learnability question: how do children eliminate the non-adult option? The defenders of the *Multiple Grammars Model* of language acquisition have already addressed this question. Adopting a parameter view of language acquisition, Valian (1991) suggested that children go through a stage where they entertain both a positive and the negative value of a certain parameter. Valian argues that a child proceed to parameter setting when confronted with input data unanalyzable by his/her current grammar. For instance, in the case of the *pro-drop* parameter— Valian’s case study—the trigger to parameter setting is the acquisition of the “expletive-*there*” constructions. More recently, Yang (2002, 2011) proposed a more formal view of the multiple grammars model. According to Yang, language acquisition involves competition between several grammars. When a grammar succeeds in analyzing a certain sentence, this grammar is rewarded, when it fails, it is punished. As learning proceeds, successful grammars become stronger by gaining more weight in the hypothesis space. Convergence on the target grammar occurs when the non-target competitors have been eliminated from the grammar.

3. Future research

This study highlighted several issues that deserve further investigation.

1. **The Zero Tense Hypothesis.** The evidence that we gave for this hypothesis is only based on French child language (and to a certain extent on Japanese child language). The prediction is that the “two tense-option” stage should be attested across all child grammars. Only future research can validate this prediction. Our hope is that this study will raise interest in testing the Zero Tense Hypothesis in other SOT and non-SOT languages.

2. The distributions of futurate readings in simple and embedded contexts both within and across languages. Our study showed that aspect plays an important role in licensing futurate readings. While in some languages (English) the progressive aspect licenses futurate readings, in others (i.e., Spanish, which has both progressive and imperfective forms) the progressive does not license futurate readings.

This study also highlighted an interesting contrast between Romance and English regarding the availability of the futurate construal of the present perfect. In chapter 7, we pointed out the fact that while in Romance languages, this reading is available in both simple and embedded contexts, in English it is highly restricted. To illustrate this contrast, consider the following example:

- (3) Context: I'm defending my thesis on December 12, 2012. Today, it is October 12, 2012. I'm speaking with my sister on the phone. I tell her:
- a. A Noël, j'*ai soutenu* ma thèse.
 - b. */??? At Christmas, I *have defended* my thesis.

The futurate reading of the present perfect in English, however, is not completely prohibited. As Moens and Steedman (1988) showed, this reading is sometimes available in the context of a futurate temporal adjunct, as exemplified in (4):

- (4) *Once the Mets play the Fish on Sunday*, they have finished for the season.

What is the source of these differences between English and Romance? A discussion of futurate readings in English should also take into account examples such as (5):

- (5) The exam is over in one minute.

Examples such as (5) raise several questions. What is the correct analysis for (5)? How should we explain the contrast between (5) and (3b)? These questions are worth exploring in future research.

3. Indexical expressions in child language. Our study of children's interpretation of tenses led to some interesting data regarding children's interpretations of tenseless expressions, such as locative PPs (e.g. *on the chair*, *in the garden*, etc). The data revealed that children enforce

simultaneous construals of these expressions. This suggested that the simultaneous construals of tenseless expressions are easier to interpret than non-simultaneous indexical construals. We suggested that children's difficulties with indexical construals of tenseless expressions is due to their difficulties integrating discourse information. These results raise a more general question: how do children treat indexical expressions?

I would like to end this study with some production findings that, will hopefully convince the reader that the acquisition of indexicality is a very promising domain of inquiry:

- (6) Context: Anne says: I will give the milk to my baby sister.

Anne gives the milk to her sister.

Child (T. 4 ;02): Anne a dit qu'elle lui **donnait** le biberon à **ma** petite sœur.

"Anne said that she was giving the milk to my little sister."

- (7) Context: Marie says to the cat: I will play with you. Later on, she plays with the cat.

Child (A. 5 ;05): Elle a dit **que je** vais jouer avec toi plus tard.

Child (P. 4 ;11) : Marie a dit qu'elle **jouait** avec le chat **maintenant**.

Bibliography

- Abusch, Dorit. 1988. Sequence of Tense, Intensionality and Scope. In H. Borer (ed), *Proceedings of the Seventh West Coast Conference for Formal Linguistics*. Stanford, California: CSLI Publications.
- Abusch, Dorit. 1994. Sequence of Tense Revisited: Two Semantic Accounts of Tense in Intensional Contexts. In H. Kamp (ed), *Ellipsis, Tense and Questions*. *DYANA-2*. Amsterdam: University of Amsterdam. 87-139.
- Abusch, Dorit. 1997. Sequence of Tense and Temporal *De Re*. *Linguistics and Philosophy* 20. 1-50.
- Altshuler, Daniel. 2004. A Simultaneous Perception of Things: SOT in Russian. *Snippets* 8.
- Altshuler, Daniel. 2008. Narrative Effects in Russian Indirect Reports and What They Reveal about the Meaning of the Past Tense. In T. Friedman and S. Ito (eds), *Proceedings of Semantics and Linguistic Theory* 18. Cornell University: CLC Publications. 19-36.
- Anand, Pranav and Valentine, Hacquard. 2007. When the Present is All in the Past. In L. de Saussure, J. Moeschler and G. Puskas (eds), *Recent Advances in the Syntax and Semantics of Tense, Mood and Aspect*. Berlin: Mouton de Gruyter. 209-228.
- Antinucci, Francesco and Parisi, Domenico. 1975. Early Semantic Development in Child Language. In E.H. Lennenberg and E. Lennenberg (eds), *Foundation of Language Development, a Multidisciplinary Approach* 1, New York: Academic Press. 189-202.
- Avrutin, Sergey and Peter Coopmans. 2000. Children Who Build Bridges. In S.C. Howell, S.A. Fish and T. Keith-Lucas (eds), *Proceedings of the 24th Annual Boston University Conference on Language Development*. Somerville, Massachusetts: Cascadilla Press. 80-91.
- Avrutin, Sergey and Ken Wexler. 1992. Development of Principle B in Russian: Coindexation at LF and Coreference. *Language Acquisition* 2. 259–306.
- Baron-Cohen, Simon, Alan M. Leslie and Uta Frith. 1985. Does the Autistic Child Have a Theory of Mind? *Cognition* 21. 37-46.
- Boogaart, Ronny. 1999. Aspect and Temporal Ordering: A Contrastive Analysis of Dutch and English. PhD dissertation. Amsterdam: University of Amsterdam.
- Bowerman, Melissa. 1979. The Acquisition of Complex Sentences. In M. Garman and P. Fletcher (eds), *Studies in Language Acquisition*. Cambridge: Cambridge University Press. 285-305.

- Chien, Yuchin and K. Wexler. 1990. Children's Knowledge of Locality Conditions in Binding as Evidence for the Modularity of Syntax and Pragmatics. *Language Acquisition* 1. 225–295.
- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Cipria, Alicia and Craige Roberts. 2001. Spanish Imperfecto and Pretérito: Truth Conditions and Aktionsart Effects in a Situation Semantics. In *Natural Language Semantics* 8. 297–347.
- Comrie, Bernard. 1985. *Tense*. Cambridge, MA: Cambridge University Press.
- Condoravdi, Cleo. 2001. Temporal Interpretation of Modals. Modals for the Present and for the Past. In D. Beaver, S. Kaufmann, B. Clark and L. Casillas (eds), *Stanford Papers on Semantics*. CSLI Publications.
- Conroy, Anastasia, Eri Takahashi, Jeffrey Lidz, and Colin Phillips. 2009. Equal Treatment for All Antecedents: How Children Succeed with Principle B. *Linguistic Inquiry* 40. 446–486.
- Copley, Bridget. 2002. *The Semantics of the Future*. PhD dissertation. Cambridge, MA: MIT.
- Demirdache, Hamida and Oana Lungu. 2011. Zero-Tense vs. Indexical Construals of the Present in French L1. In R. Musan, M. Rathert and R. Thierof (eds), *La Linguistische Arbeiten/ Linguistics Today, Tense Across Languages*. Berlin/ Boston: Mouton de Gruyter. 233–256.
- Demirdache, Hamida and Oana Lungu. 2010. Zero-time arguments in French Child Language. In M. Duguine, S. Huidobro and N. Madariaga (eds), *Linguistik Aktuell/ Linguistics Today, Argument Structure and Syntactic Relations*. Amsterdam/Philadelphia: John Benjamins. 305–323.
- Demirdache, Hamida and Oana Lungu. 2008. Sequence of Tense in (French) Child Language. In J. van Craenenbroeck and J. Rooryck (eds), *Linguistic Variation Yearbook* 8. Amsterdam/ Philadelphia: John Benjamins. 101–131.
- De Saussure, Louis. 2012. Remarques sur l'usage futur du passé composé. *Revue Tranel (Travaux neuchâtelois de linguistique)* 51. 45–60.
- De Saussure, Louis. 2011. Le passé composé en usage futur et la pertinence au présent. In *Journal of French language studies* 22–02. 189–206.
- De Villiers, Jill and Jennie Pyers. 1997. Complementing Cognition: the Relationship between Language and Theory of Mind. *Proceedings of the 21st Annual Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press.

- De Villiers, Jill. 2004. Getting Complements on Your Mental State (Verbs). In J. Van Kampen, and S. Baauw (eds). *Proceedings of GALA 2003*. Utrecht: LOT. 13-26.
- Dowty, David. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.
- Enç, Mürvet. 1986. Towards a Referential Analysis of Temporal Expressions. *Linguistics and Philosophy* 9. 405–426.
- Enç, Mürvit. 1987. Anchoring Conditions for Tense. *Linguistic Inquiry* 18 (4). The MIT Press. 633-657.
- Elbourne, Paul. 2005. On the acquisition of Principle B. *Linguistic Inquiry* 36. 333–365.
- Gennari, Silvia. 1999. *Tense Meanings and Temporal Interpretation*. PhD dissertation. Providence, Rhode Island: Brown University.
- Gopnik, Alison and Janet Astington 1988. Children's Understanding of Representational Change and its Relation to the Understanding of False Belief and the Appearance-Reality Distinction. *Child Development* 59. 26-37.
- Grimshaw, Jane and Sara Rosen. 1990. Knowledge and Obedience: The Developmental Status of the Binding Theory. *Linguistic Inquiry* 21. 187–222.
- Grodzinsky, Yosef and Tanya Reinhart. 1993. The Innateness of Binding and Coreference. *Linguistic Inquiry* 24. 69–102.
- Grønn, Atle and Arnim von Stechow. 2010a. *Future versus Present in Russian and English Temporal Adjunct Clauses*.
- Grønn, Atle and Arnim von Stechow. 2010b. Complement Tense in Contrast: The SOT parameter in Russian and English. To appear in *Russian in Contrast*.
- Hacquard, Valentine. 2006. *Aspects of Modality*. PhD dissertation. Cambridge, MA: MIT.
- Hamann, Cornelia. 2011. Binding and Coreference: Views from Child Language. In J. de Villiers and T. Roeper (eds), *Handbook of Generative Approaches to Language Acquisition*. Dordrecht: Springer. 247-290.
- Heim, Irene. 1991. Semantics and Morphology of Person and Logophoricity. Ms. Tübingen.
- Heim, Irene. 1994. Comments on Abusch's Theory of Tense. In H. Kamp (ed), *Ellipsis, Tense and Questions*. DYANA, University of Amsterdam. 143-170.
- Heim, Irene and Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell Publishers.
- Hollebrandse, Bart. 2000. *The Acquisition of Sequence of Tense*. PhD dissertation. Amherst, MA: University of Massachusetts.
- Hollebrandse, Bart, Denis Delfitto, Angeliek Van Hout and Andrea de Vroeg. 2001. Italian

- Sequence of Tense: Complementation or Imperfectivity? In Anna H.-J. Do et al. (eds), *Proceedings of the 25th Annual Boston University Conference on Language Development*. Somerville: Cascadia Press. 343-352.
- Kaplan, David. 1977. Demonstratives. In J. Almog, J. Perry and H. Wettstein (eds), *Themes from Kaplan*. New York: Oxford University Press. 481-563.
- Kaufmann, Stefan. 2005. Conditional Truth and Future Reference. *Journal of Semantics* 22. 231-280.
- Kaufmann, Stefan, Cleo Condoravdi and Valentina Harizanov. 2006. Formal Approaches to Modality. In W. Frawley (ed), *The Expression of Modality*. Berlin: Mouton de Gruyter. 71-106.
- Katz, Graham. 2002. Tense Selection and the Temporal Interpretation of Complement Clauses. In *Proceedings of Sinn und Bedeutung* 6. 169-184.
- Khomitsevich, Olga. 2008. *Dependencies across Phases: from Sequence of Tense to Restrictions on Movement*. PhD dissertation. Utrecht: University of Utrecht.
- Krämer, Irene. 2000. *Interpreting Indefinites. An Experimental Study of Children's Language Comprehension*. PhD dissertation. Utrecht: University of Utrecht.
- Kratzer, Angelika. 1981. The Notional Category of Modality. In H. J. Eikmeyer and H. Rieser (eds), *Words, Worlds, and Contexts. New Approaches in Word Semantics*. Berlin: de Gruyter. 38-74.
- Kratzer, Angelika. 1991. Modality. In A. von Stechow and D. Wunderlich (eds), *Semantics: An International Handbook of Contemporary Research*. Berlin: de Gruyter. 639-650.
- Kratzer, Angelika. 1994a. *The Event Argument and the Semantics of Voice*. Ms. University of Massachusetts, Amherst.
- Kratzer, Angelika. 1994b. On External Arguments. In E. Benedicto and J. Runner (eds), *Functional Projections. University of Massachusetts Occasional Papers* 17. 103-130. University of Massachusetts, Amherst.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In J. Rooryck and L. Zaring (eds), *Phrase Structure and the Lexicon*. Dordrecht: Kluwer. 109-137.
- Kratzer, Angelika. 1998. More Structural Analogies Between Pronouns and Tenses. *Proceedings of Semantics and Linguistic Theory* 8. Ithaca, New York: CLC Publications. 92-110.
- Kusumoto, Kyiomi. 1999. *Tense in Embedded Contexts*. PhD dissertation. Amherst, MA: University of Massachusetts.

- Ippolito, Michaela. 2004. Imperfect Modality. In J. Guéron and J. Lecarme (eds), *The Syntax of Time*. Cambridge, MA: MIT Press. 359-387.
- Laca, Brenda. 2005. Périphrases aspectuelles et temps grammatical dans les langues romanes. In H. Bat-Zeev Schyldkrot and N. Le Querler (eds), *Les périphrases verbales*. Amsterdam: John Benjamins. 47-66.
- Laca, Brenda. 2007. Mood in Spanish. In B. Rothstein and R. Thieroff (eds), *Mood in the languages of Europe*. Amsterdam: John Benjamins.
- Laca, Brenda. 2008. On Modal Tenses and Tensed Modals. To appear in Selected Proceedings of Chronos 2008.
- Lasnik, Howard and Mamoru Saito. 1992. *Move α* . Cambridge, MA: MIT Press.
- Legate, Julie-Anne and Charles Yang. 2002. Empirical Re-assessment of Stimulus Poverty Arguments. *The Linguistic Review* 19. 151-162.
- Lewis, David. 1979. Attitudes *De Dicto* and *De Se*. *The Philosophical Review* 88. 513-43.
- Lidz, Jeffrey and Julien Musolino. 2006. On the Quantificational Status of Indefinites: the View from Child Language. *Language Acquisition* 13. 73-102.
- Lungu, Oana. 2008. Tense in Embedded Contexts: the Case of Romanian. *Bucharest Working Papers in Linguistics* 10 (1). 21-37.
- Lungu, Oana. 2010. Les temps subordonnés en français L1: le cas du futur. *Proceedings of Young Researchers' Colloquium in Language Acquisition (Colloque des Jeunes Chercheurs en Acquisition du Langage)*, Université Lumière Lyon 2, available online at <http://www.ddl.ishlyon.cnrs.fr/colloques/AcquisiLyon/index.asp?Action=Edit&Language=FR&Page=Actes>
- Lungu, Oana. 2012. Temporal Construals of Relative Clauses. *Proceedings of Chicago Linguistics Society* 47.
- May, Robert. 1977. The Grammar of Quantification. PhD dissertation. Cambridge, MA: MIT.
- Matsuo, Ayumi and Bart Hollebrandse. 1999. The Acquisition of Sequence of Tense in Japanese. In A. Greenhill et al. (eds), *Proceedings of the 23rd Annual Boston University Conference on Child Development*. Somerville: Cascadilla Press. 431-442.
- McDaniel, Dana, Helen Cairns and Jennifer Hsu. 1990. Binding Principles in the Grammars of Young Children. *Language Acquisition* 1. 121-139.
- Mitchell, Peter. 1996. *Acquiring a Conception of Mind: A Review of Psychological Research and Theory*. Hove: Psychology Press.

- Moens, Marc and Mark Steedman. 1988. Temporal Ontology and Temporal Reference. *Computational Linguistics*. 14 (2).
- Murasugi, Keiko. 1991. *Noun Phrases in Japanese and English: A Study in Syntax, Learnability, and Acquisition*. PhD dissertation. Storrs: University of Connecticut.
- Ogihara, Toshiyuki. 1996. *Tense, Attitudes and Scope (Studies in Linguistics and Philosophy 58)*. Dordrecht: Kluwer.
- Ogihara, Toshiyuki. 1999. Double-Access Sentences Generalized. *Proceedings of Semantics and Linguistic Theory (SALT) 9*. Ithaca, New York: CLC Publications.
- Partee, Barbara. 1973. Some Structural Analogies between Tenses and Pronouns in English. *The Journal of Philosophy* 70 (18). 601-609.
- Partee, Barbara. 1984. Nominal and Temporal Anaphora. *Linguistics and Philosophy* 7. 243-286.
- Percus, Orin and Oana Lungu. 2011. Simultaneous Analyses for Simultaneous Present. In N. Li and D. Lutz (eds), *Proceedings of Semantics and Linguistics Theory 20*. 735-755.
- Perner, Josef, Sue Leekam and Heinz Wimmer. 1987. Three-Year-Olds' Difficulty with False Belief: the Case for a Conceptual Deficit. *British Journal of Developmental Psychology* 5. 125-137.
- Portner, Paul. 2003. The Temporal Semantics and Modal Pragmatics of the Perfect. *Linguistics and Philosophy* 26. 459-510.
- Premack, David and Guy Woodruff. 1978. Do Chimpanzees Have a Theory of Mind? *Behavioral and Brain Sciences* 1 (4). 515-526.
- Roeper, T. 1999. Universal Bilingualism. *Bilingualism: Language and Cognition* 2. 169-186.
- Schaden, Gerhard. 2003. *L'aspect neutre en français et en allemand. Temporalité et aspectualité dans les temps du passé*. Mémoire de DEA. Université Paris 8.
- Schlenker, Philippe. 2000. *Propositional Attitudes and Indexicality: a Cross-Categorical Approach*. PhD dissertation. Cambridge, MA: MIT.
- Schlenker, Philippe. 2003. A Plea for Monsters. *Linguistics and Philosophy* 26. Netherlands: Kluwer Academic Publishers. 29-120.
- Sigurjónsdóttir, Sigga, and Peter Coopmans. 1996. The Acquisition of Anaphoric Relations in Dutch. In *Amsterdam Series on Child Language Development, ASCLD 5*. Amsterdam: Instituut Algemene Taalwetenschap 68.
- Smith, Carlota. 1991. *The Parameter of Aspect*. Dordrecht: Kluwer Academic Publishers.
- Smith, Carlota. 2009. The Temporal Reference of the English Futurate. In R. P. Meier

- et al. (eds), *Text, Time and Context. Studies in Linguistics and Philosophy* 87. Dordrecht: Springer. 147-160.
- Sthioul, Bertrand. 1998. Le passé composé: une approche instructionnelle. In S. Vogeleer, A. Borillo, C. Vetter and M. Vuillaume (eds), *Temps et discours*. Louvain-la-Neuve: Peeters. 79-94.
- Stowell, Tim. 1993. Syntax of Tense. Ms., University of California, Los Angeles.
- Stowell, Tim. 1995. The Phrase Structure of Tense. In J. Rooryck and L. Zaring (eds), *Phrase Structure and the Lexicon*. Dordrecht: Kluwer.
- Stowell, Tim. 2007. The Syntactic Expression of Tense. *Lingua* 117. 437-463.
- Valian, Virginia. 1991. Syntactic Subjects in the Early Speech of American and Italian Children. *Cognition* 40. 21-82.
- Valian, Virginia. 2006. Young Children's Understanding of Present and Past Tense. In *Language Learning and Development* 2. 251-276.
- Von Stechow, Arnim. 1984. Structured Propositions and Essential Indexicals. In F. Landman and F. Feldman (eds), *Varieties of Formal Semantics. Proceedings of the 4th Amsterdam Colloquium*. Dordrecht: Foris Publications. 385-404.
- Von Stechow, Arnim. 1995. On the Proper Treatment of Tenses. In M. Simons and T. Galloway (eds), *Proceedings of SALT 5*. Cornell Working Papers in Linguistics. 362-386.
- Von Stechow, Arnim. 2003. Feature Deletion under Semantic Binding: Tense, Person, and Mood under Verbal Quantifiers, In Makoto Kadowaki, Shigeto Kawahara (eds), *NELS 33, GLSA*. Amherst, MA: University of Amherst. 397-403.
- Von Stechow, Arnim. 2004. Binding by Verbs: Tense, Person and Mood under Attitudes. In H. Lohnstein and S. Trissler (eds), *The Syntax and Semantics of the Left Periphery*. Berlin – New York: Mouton de Gruyter. 431-488.
- Von Stechow, Arnim. 2009. Tenses in Compositional Semantics, In: W. Klein (ed), *The Expression of Time in Language*. Berlin: Mouton de Gruyter.
- Wagner, Laura. 1998. *The Semantics and Acquisition of Time in Language*. PhD dissertation. University of Pennsylvania.
- Weist, Richard. 1989. Time Concepts in Language and Thought: Filling the Piagetian Coid from Two to Five Years. In I. Levin and D. Zakay (eds), *Time and Human Cognition: A Life-Span Perspective*. Amsterdam: Elsevier. 63–118.

- Wimmer, Heinz and Josef Perner. 1983. Beliefs about Beliefs: Representation and Constraining Function of Wrong Beliefs in Young Children's Understanding of Deception. *Cognition* 13 (1). 103-128.
- Yang, Charles. 2000. *Knowledge and Learning in Natural Language*. PhD dissertation. Cambridge, MA: MIT.
- Yang, Charles. 2011. Computational Models of Language Acquisition. In J. de Villiers and T. Roeper (eds), *Handbook of Generative Approaches to Language Acquisition*.

Résumé en français

Cette étude examine l'interprétation du présent, du futur et du passé (*imparfait* et *passé composé* (PC)) enchâssé sous un passé en français L1. Le résultat le plus probant avec le *présent* est l'acceptation de la lecture simultanée non adulte. Pour expliquer ce résultat, nous suggérons que les enfants, contrairement aux adultes, interprètent le présent comme un temps zéro. Les résultats avec le *futur* montrent que les enfants, contrairement aux adultes, ont un futur dépendant— ils acceptent et produisent un *futur* dans un contexte futur avant le moment d'énonciation (ME). Selon notre analyse, le futur dépendant des enfants serait un présent zéro plus un modal futur. Les enfants acceptent et produisent également un *futur sous un passé* dans un contexte futur avant ME aussi bien que dans un contexte futur après ME. Nous affirmons que, dans ces cas, les enfants, comme les adultes, interprètent le futur dans le passé comme un *passé* zéro plus un modal futur. Sur la base de ces données, nous proposons l'Hypothèse des Temps Zéro (HTZ), selon laquelle un temps zéro— présent tôt dans la grammaire des enfants— fait surface soit comme un *présent* soit comme un *passé*. Les résultats avec l'*imparfait* indiquent une forte acceptation de l'*imparfait* dans les deux contextes futurs. Cela nous amène à formuler l'Hypothèse Modale (HM), selon laquelle les enfants interprètent l'*imparfait* comme un *futurate*. Enfin, les résultats avec le PC indiquent une acceptation non adulte du PC dans le contexte futur avant ME. Selon notre analyse, les enfants acceptent ce cas parce qu'ils assignent une interprétation *futurate* au PC et interprètent la composante *présent* du PC comme un temps zéro.

Mots-clés: acquisition du langage/ français langue maternelle/ concordance des temps/ propositions subordonnées complétives/ propositions subordonnées relatives/ présent/ imparfait/ passé composé/ futur/ temps zéro/ temps indexical/ *futurate*.

Titre en anglais

Tense in embedded contexts: the view from (French) child language

Résumé en anglais

This study investigates French children's construal of the *present*, the *future* and the *past* (*imparfait* and *passé composé*—PC) in *complement* and *relative* clauses under a matrix *past*. The main finding with the *present* is that children accept non-adult simultaneous readings of the *present* under past. To explain this finding, we suggest that children, unlike adults, construe present as a *zero* tense. The main findings with the *future* are that children, unlike adults, have a dependent future— they accept and volunteer a *future* in the future-shifted before utterance-time (UT-T) context. On our proposal, children's dependent future is analyzed as a zero present plus a future modal. Like adults, children also accept and volunteer a *future in the past* in the future-shifted before UT-T context as well as in the future-shifted after UT-T context. We state that, in these cases, children, like adults, construe the future in the past as a zero *past* plus a future modal. These findings led to the formulation of the Zero Tense Hypothesis (ZTH), which states that children have zero tenses early on; a zero tense in child grammar surfaces as both *present* and *past*. The main finding with the *imparfait* is that children accept and sometimes volunteer an *imparfait* in both future-shifted contexts. This leads to our Modal Hypothesis (MH), which states that children construe the *imparfait* as a *futurate*. Finally, the main finding with PC is the non-adult acceptance of PC in the future-shifted before UT-T context. We propose an explanation based on MH together with ZTH: children assign a *futurate* reading to PC and accept the sentence because they construe the *present* component of PC as a *zero* tense.

Keywords: language acquisition/ French child language/ Sequence of Tense/ complement clauses/ relative clauses/ present/ imparfait/ passé composé/ future/ zero tense/ indexical tense/ *futurate*.

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