Coherence relation and clause linkage: Towards a discourse approach to adjunct islands in Chinese

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Coherence Relations and Clause Linkage: Towards a Discourse Approach to Adjunct Islands in Chinese

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Abstract This paper proposes that adjunct island effects (Ross, 1967; Cattell, 1976) receive a discourse-semantic explanation. The exact formulation of this explanation builds upon previous work (*e.g.* Kehler, 2002) on island effects of conjuncts (Ross, 1967), which explains asymmetrical extraction from coordinate structures in English (that is, violations of the coordinate structure constraint) in terms of certain coherence relations (Hobbs, 1979). I show that asymmetric extraction from adjuncts in Chinese (that is, violations of the adjunct island constraint) is also sensitive to coherence relations. I argue that such similarities exist because coherence relations may be expressed by either a coordinative and a subordinative structure, and the variation in the syntactic realizations of coherence relations can be characterized through an independently motivated interclausal relations hierarchy that governs the mapping between semantics and syntactic linkage (van Valin, 2005).

1 Introduction

One of the key assumptions within the mainstream generative literature is that the adjunct island phenomenon (Ross, 1967; Cattell, 1976) results from a syntactic locality constraint. In other words, adjunction constitutes a syntactic domain that is impenetrable for extraction (Chomsky, 1982; Huang, 1982).

Previous literature often assumes that overt extraction from adjuncts in Chinese is an instantiation of this locality constraint (Lin, 2005; Ting & Huang, 2008).[1,2] This is motivated by data such as the following:

(1)   *[*Laoban* [*mianshi-wan t_i yihou*] *chuqu chi fan-le*]   *de   yingpinzhe*$_i$
            Boss   interview-PRF t_i after   go.out eat meal-PRF REL applicant
            'The applicant$_i$ [that the boss went out for meal [after (he) interviewed t_i]]'

(2)   [*Laoban* [*mianshi-wan t_i yihou*] *jueding luyong t_i*] *de   yingpinzhe*$_i$
            Boss   interview-PRF t_i after   decide   recruit t_i REL applicant
            'The applicant$_i$ [that the boss decided to recruit t_i [after (he) interviewed t_i]]'

Both (1) and (2) are relative clause constructions where the relative head corresponds to an argument slot within the adjunct part of the relative clause. (1) is unacceptable, whereas (2) is good.[3] The unacceptability of (1) as well as the acceptability of (2) are in line with what syntactic approaches predict (Chomsky, 1982; Contreras, 1984; Cinque, 1990). According to these approaches, (1) is ruled out by the adjunct island constraint, whereas (2) is good because a second gap occurs in the matrix part of the relative clause, creating a parasitic gap environment (Engdahl, 1983), so that the entire structure is subject to an escape hatch mechanism that is able to circumvent the adjunct island constraint.[4]

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[1] By using the term *extraction* I am following the conventional terminological use in the literature, although I am not committed to there being any real extraction/movement.

[2] Island effects also show up in Chinese in *in situ* constructions such as *in situ wh*-question, whose island inducing behaviors differ from that of constructions involving overt extraction (Huang, 1982). This paper will be solely about the adjunct island phenomenon in overt extraction.

[3] An asterisk is consistently used in this paper to denote any kinds of degraded judgment, regardless of whether the degradation is syntactic, semantic or pragmatic by nature.

[4] It suffices for the purpose of this paper to say that the circumvention effect of parasitic gap construction has been claimed to be derived from certain escape hatch mechanisms. No attempts will be made to explicate the variegated versions of escape hatch mechanisms proposed in the literature. See Culicover (2001) for a detailed survey.

However, in a very cursory way, Xu (1990: 461) mentions (towards the end of a paper dedicated to parasitic gaps in Chinese) that the following example is acceptable:

(3) *Nei tian de xi$_i$, wo* [*yinwei bu xihuan t$_i$*] *mujian xiuxi de   shihou zou-le*.

   That day REL play, I   because NEG like t$_i$ interlude break REL time go-PRF

   'The play$_i$ on that day, I left during the intermission period [because I had a

   disliking for t$_i$].'

Xu's example involves overt extraction from an adjunct, which contradicts predictions by a syntactic theory. Yet this observation went largely unnoticed in the Chinese literature,[5] and the question of which characterizable natural class(es) of Chinese adjuncts is exceptional to adjunct island constraint has not been raised nor answered.

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[5] One reason Xu's example has been ignored is that generative syntacticians working on Chinese disagree over whether topicalization is a kind of movement or not (*e.g.* Ting & Huang, 2008). Therefore, it is not clear to them whether movement is involved in (3) or not. If topicalization is not licensed by movement, but by certain empty pronominal strategy (coindexing), then the fact that asymmetric extraction from across topicalization induces no island effects presents no challenge against a syntactic locality theory of adjunct islands in Chinese. In this paper, I will consistently provide only relativization examples in my argument against a syntactic locality theory. Huang et al (2009) have presented evidence that relativization constructions in Chinese, especially those where the relative head corresponds to an argument position within the relative clause, are licensed by movement. As such, they believe that, in relativization, the island effects induced during extraction from across adjuncts are caused by movement. Therefore, I believe that relativization might make for a good testing ground between a syntactic theory and a non-syntactic theory of adjunct islands.

As an anonymous reviewer points out to me, Huang et al's (2009) position is not a consensus position, and it is quite possible that even within relativization, empty pronominal strategy plays a role in licensing. However, I hope to stress that even if relativization is assumed to involve non-movement licensing, it does not directly argue against the formulation of my theory. This is because, in my theory, the presence or absence of island effects are sensitive to coherence relations (as to be detailed in Section 3 and 4). Therefore, I remain neutral to whether movement or empty pronominal binding serve to license relativization, and argue that none of these licensing mechanisms play an explanatory role in island effects. If a syntactic theory of islands wants to argue that the presence or absence of island effects are due to the presence/absence of movement, the burden falls upon such theory to show why island-inducing abilities can be predicted by coherence relations.

In the present paper, I attempt to look deeper into this question and provide an answer. This is particularly apt given that, in recent years, the status of the adjunct island constraint has come under continuous scrutiny. Importantly, both empirical and experimental evidence (Truswell, 2007; Polinsky et al., 2013; Hofmeister et al., 2013; Abrusan, 2014) have shown that extraction from adjuncts induces crosslinguistically less robust island effects compared to extraction from across other strong island domains (such as complex noun phrases or subject clauses). For example, Truswell (2007: 156-157) discusses the following well-known acceptable sentences in English, which violate the adjunct island constraint:

(4)   a. *What_i did Mary drive John crazy [trying to fix t_i]?*
        b. *Which song_i did John go home [whistling t_i]?*

Also, in an experimental study, Polinsky et al. (2013) finds that, among their native English subjects, grammatical control sentences such as (5a), which violate no island constraints, have only a very slight advantage over sentences such as (5b-c), which should have incurred adjunct island effects. The judgmental differences here, as they argue, are statistically insignificant enough to challenge the notion that a syntactic locality constraint is in place (Polinsky et al, 2013: 347):[6]

(5)   a.*This is the dish_i that, although the chef overcooked the sauce, the guests enjoyed t_i.*
      b.*This is the dish_i that, although the chef overcooked t_i, the guests were not upset.*
      c. *Which dish_i did Gina think that, although the chef overcooked t_i, the guests were not upset?*

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[6] This result is echoed by a number of similar experimental studies, which converge on the conclusion that adjunct island effects are heterogeneous (Hiramatsu, 2000; Sprouse et al., 2010; Heestand et al., 2011). Certain adjunct island environments, such as the *although*-adjunct used in Polinsky et al. (2013)'s test examples, induce consistently high acceptance ratings among subjects. It is rather unclear among generative syntacticians which types of adjuncts are more (or less) inducing for extraction, but as I will show in this paper, this very heterogeneity is what my theory predicts.

In sum, a growing body of evidence calls into question whether the adjunct island phenomenon really follows from a syntactic locality constraint.[7]

My paper seeks to contribute to this debate by proposing a non-syntactic explanation of the adjunct island phenomenon. Specifically, I present new data that draw attention to a parallelism that has not hitherto been noticed: I show that extraction from a structured subset of adjuncts in Chinese exhibits very similar distributional patterns with those in the extraction from conjuncts in English. Importantly, extraction from conjuncts has been argued convincingly in the previous literature (Schmerling, 1972; Goldsmith, 1985; Lakoff, 1986; Deane, 1990; Na and Huck, 1992; Kehler, 2002; Chaves, 2012) to be governed by discourse-semantic coherence relations (Hobbs, 1979). I argue in this paper that the same coherence relations need to be invoked to account for the extraction from adjuncts. As a result, the adjunct island constraint is also semantically conditioned, as opposed to the standard view where the constraint falls within the autonomy of syntax.

The rest of this paper is structured as follows: in section 2, I summarize the coherence account of conjuncts; in section 3, I show that extraction from Chinese temporal adjuncts behaves in a strongly parallel way to extraction from English conjuncts; section 4 proposes that the coherence account needs to be extended to explain extraction from adjuncts in Chinese, where the adjunct island phenomenon arises when the coherence-based extraction condition cannot be met; section 5 explains that the reason coherence relations apply to conjuncts and adjuncts alike is because both constructions may syntactically encode a shared set of coherence relations, assuming in each language the mapping between syntax and semantics follows an independently motivated interclausal relations hierarchy (van Valin, 2005); section 6 concludes the paper.

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[7] Abrusan (2014), among others, suggests that adjunct islands belong to weak islands, as opposed to strong islands. Even within the generative community, it is a concensus to treat weak island phenomena as nonsyntactic (Szabolcsi, 2006). Meanwhile, there are also some proposals (e.g. Stepanov, 2007) that the subject island phenomenon has systemic exceptions. In essence, evidence abounds that the classification of different island phenomena into a uniform strong island constraint is not upheld upon closer scrutiny, and the variation in judgments with respect to them warrants a piece-by-piece approach towards each individual island phenomenon.

2 Coherence and Conjuncts

In this section, I summarize previous contributions to the coherence-based theory of conjuncts. Ross (1967) first notes that, normally, extraction from conjuncts occurs across the board.[8] This is later formulated as the coordinate structure constraint, which dictates that the extracted element needs to correspond to a position in both conjuncts. (6) exemplifies the CSC:[9]

(6)   *Which person$_i$ did John know t$_i$ and Mary meet t$_i$?*

Nevertheless, aside from such symmetric extraction, it has been noted from early on that asymmetric extraction can also take place across conjuncts, such as the following (Ross, 1967; Schmerling, 1972; Goldsmith, 1985):

(7)   a.*That's the stuff$_i$ that the guys in the Caucasus drank t$_i$ and lived to be a hundred.*
          b. *How many lakes$_i$ can we destroy t$_i$ and not arouse public antipathy?*
          c. *Which liquor$_i$ did you go to the store and buy t$_i$?*

Intuitively, (7a) expresses a Result (causative) relation between the two conjuncts: the second event is construed as a natural consequence following from the first event. (7b) expresses a Violated Expectation (concessive) relation between the two conjuncts: the second event is an unexpected development given the first event. In (7c) the first event provides an Occasion (scene, setting, frame, etc.) in which the second event occurs. In all these cases, the element being extracted corresponds to a position within one conjunct,

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[8] In this paper, I consistently employ the term *conjunct* to denote the construction that instantiates the clause linkage strategy/structure of coordination, and *adjunct* to denote the construction that instantiates the clause linkage strategy/structure of subordination. While this use is common among the more formal syntax-oriented approaches to island constraints, it is not often assumed by the more typologically-informed literature. Indeed, pre-theoretical constructs that are crosslinguistically robust are always hard to define in the first place. What this paper tries to say is that within individual languages such as Chinese and English, distinguishing coordination from subordination is meaningful based on language-general criteria, and such distinction can give us useful typological generalizations, which will be the topic in the latter part of this paper.

[9] Constructions such as (6) are henceforth referred to as ATB.

but not the other (hence the name *asymmetric extraction*). Symmetric extraction is always possible in these relations. What (7) indicates is that the CSC is not an absolute constraint. When the two conjuncts are parallel to each other, the CSC is obligatory, but it is only optional when the two conjuncts stand in other relations.

Drawing upon previous approaches, Kehler (2002) argues that symmetric and asymmetric extraction from conjuncts can receive a unified coherence-based explanation. First of all, he assumes that, for any conjuncts to be asserted felicitously, coherence relations (*e.g.*, Parallel, Result) must be inferred and established between conjuncts as we have done in (6-7).

This assumption is based on Hobbs' (1979) seminal work. Hobbs formulates that establishing a coherence relation requires that a link be identified between the propositions denoted by the utterances in a passage. The establishment of Parallel, Result, Violated Expectation and Occasion relations proceed as follows, respectively:[10]

(8) Parallel:

Infer $P(a_1, a_2,…)$ from the assertion of S_1 and $P(b_1, b_2,…)$ from the assertion of S_2, where for some property vector q_i, $q_i(a_i)$ and $q_i(b_i)$ for all i.

(9) Result:

Infer P from the assertion of S_1 and Q from the assertion of S_2, and infer $P{\rightarrow}Q$.

(10) Violated Expectation:

Infer $(P{\rightarrow})Q$ from the assertion of S_1 and infer $\neg\, Q$ from the assertion of S_2.

(11) Occasion:

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[10] Kehler's original ontology assumes a neo-Humian tripartite structure of coherence relations, where the interpropositional relations fall into one of the three categories: Resemblance, Cause-Effect and Contiguity. The Parallel relation falls within the Resemblance category. Both Result and Violated Expectation relations constitute the Cause-Effect category and Occasion is part of Contiguity. The motivation and validity of this tripartite structure do not bear directly upon the arguments of my approach. Therefore, to avoid an overgrowth of terminology, I will only talk about the more specific coherence relations throughout this paper.

Infer a change of state for a system of entities from the assertion of S_2,

establishing the initial state for this system from the final state of the assertion of

S_1.

Second, to explain the symmetric and asymmetric extraction of conjuncts, Kehler (2002) proposes the following condition:

(12)   Kehler's Condition for Extraction

    A potential common topic for the conjuncts may undergo extraction.

In essence, Kehler is saying that when the link of two conjuncts constitutes a coherent scenario about a particular entity, that entity remains salient throughout the scenario and is the common topic. Thus, it becomes extractable.

Take the Parallel relation for example: once we infer (8) and establish a Parallel coherence relation between propositions S_1 and S_2, it follows that we can determine candidates for a common topic in a programmatic way. First, any assertion of a proposition in a particular situation can be construed as being about a particular entity. Assume a situation where the assertion of S_1 (*i.e.* denoting a relation P (a_1, a_2, ..)) is construed as being about a_1, *i.e.* S_1 is a statement that a_1 bears the property of being in the relation P with other entities. Then we infer that parallel to S_1, the assertion of S_2 under the same situation is a statement that b_1 is related to other entities by the relation P. Here a_1 and b_1 occupy the same formal position within the n-place predicate P, and they share the property of q_1.

Result relation determines potential common topics in a similar manner. As (9) shows, the second event of Q forms a causal link with the first event of P. Consequently, the final state of Q will connect with the P-event and serves also as P's result state. Given a situation where the assertion of P is construed as about an entity within P, Q will be part of the coherent scenario that centers around that entity, even if the entity doesn't correspond to any constituent in the representation of Q. As a result, this entity qualifies as a common topic in this scenario, so that it can be extracted from its conjunct. In a Violated Expectation the first event and the second event also form a causal link so that the inferences about salient scenario are similar with Result relation, except that normally after the assertion of the first utterance S_1, we would infer that P does not cause $\neg$ Q (*i.e.*, $P \rightarrow Q$), but from the second utterance S_2 we infer that P leads to $\neg$ Q contrary to our

previous expectation. It is in this sense that previous literature has proposed to analyze a concessive relation as involving negation of a causal relation (Koenig, 1991; Koenig & Siemund, 2001).

As for the Occasion relation, Kehler (2002: 129) argues that the following examples exemplify the common role that a preparatory event/preparatory events can play in the overall narrative structure:

(13)   a. *I went to the store and bought some whiskey.*

b. *Here is the whiskey$_i$ that I went to the store and bought t$_i$.*

(14)   a. *Harry went to the store, bought a cake, loaded it in his car, drove home and unloaded it.*

b. *Here is the cake$_i$ that Harry went to the store, bought t$_i$, loaded t$_i$ in his car, drove home and unloaded t$_i$.*

(15)   a. *You can sip this brandy after dinner, watch TV for a while, sip some more of it, work a bit, finish off, go to bed and still feel fine in the morning.*

b. *This is the sort of brandy$_i$ that you can sip t$_i$ after dinner, watch TV for a while, sip some more of t$_i$, work a bit, finish off, go to bed and still feel fine in the morning.*

In general, there is no hard requirement for a salient entity to be present within all the events that comprise of a coherent narrative scenario. The preparatory events, which form an Occasion relation with the matrix events, can function to introduce a change of state. Kehler assumes that the narrative (simple or complex) structure revolves around several focal events that are about a particular salient entity. Besides these focal events that the salient entity explicitly participates in, there are transitory scene-setting events that prepare the way for the entity to undergo change of states. We infer from the assertion of the matrix event that a change of state has occurred, so that we are in the previous state during the preparatory event and make the transition to the new state with the start of the matrix event. As such, the preparatory event serves to link up a coherent scenario centering around a salient entity participating in different states and qualifies that entity as a common topic throughout the scenario.

In all the above examples, the extracted element corresponds to an element within the clause(s). Under a syntactic approach this is the only possibility allowed in extraction,

which necessarily involves an extracted element to be semantically identical with a trace and binds it. However, as Kehler argues, the notion of common topic does not impose a strict total identical requirement onto the extracted element. Instead, when two events form a coherent scenario, a common topic only needs to be some entity that shares a common property with the salient entity within the scenario and may remain underspecified with respect to the other properties (Kuno, 1974; Lakoff, 1986). In other words, the common topic can be a supercategory of the salient entity. This is because the property that gets predicated of the salient entity can be construed as being **about** the superordinate category and providing information about it. In this way, the common topic can be an aboutness topic and be partially identical with the salient entity, so that extraction can occur in a broader sense, where the common topic is in a dislocated position, without leaving behind a gap. Kehler presents the following "gapless extraction" example to illustrate this possibility (Kehler, 2002:126):

(16)   a. *Speaking of reading materials, John bought the books and Bill bought the magazines*.

        b. *Speaking of mysteries of the universe, the guys in the Caucasus drink that stuff and live to be a hundred*.

In (16a), the preposed element *reading materials* does not correspond to a slot within either of the conjuncts, giving rise to a gapless extraction.[11] Crucially, *reading materials* is specified with the sortal typing property common to both *the books* and *the magazines*, while being underspecified with regards to other properties, thereby subsuming both *the books* and *the magazines* and serving as their common topic (Lakoff, 1986). Similarly, in (16b), a mysterious drink referred to as *that stuff* is construed as the salient entity within the causal scenario here, and the preposed element *mysteries of the universe* qualifies as a common topic by subsuming *that stuff*.

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[11] Here I follow the common practice, using *gapless extraction* to denote the special displacement constructions where a displaced element doesn't correspond to any elements within the clause, while not committing myself to believing that extraction (in the sense of movement) is involved.

3 Chinese Adjunct Data

In the first section, data from the previous literature were given to show that, in Chinese, asymmetric extraction from a temporal adjunct may give rise to unacceptability. Syntactic approaches take this fact as evidence that the adjunct island constraint, as a syntactic locality constraint, is operative within temporal adjuncts.[12] Below I show that this is not the full picture. I present examples involving asymmetric extraction from temporal adjuncts that do not induce island effects. Importantly, I show that the ability to violate island constraints in these temporal adjunct extraction examples bear systematic resemblances to the extraction phenomena discussed above for English conjuncts.

Before I start, some discussions about the typological properties of Chinese conjuncts and adjuncts need to be in place. In Chinese, a coordinative marker *erqie* is used for clausal and sentential coordination (Li & Thompson, 1981; Zhu, 1982; Huang et al, 2009). Unlike in English, *erqie* cannot be used as a phrase-level coordinator:

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[12] In this paper the object of study is temporal adjunct clauses. Chinese does not mark for finiteness (Hu et al, 2001), thereby the various nonfinite adjuncts in English (such as small clauses, infinitival purpose clauses, bare present participial clauses, etc.) that have been shown to circumvent island effects cannot be tested in Chinese. Among finite adjuncts, those that directly encode causation or concessive relations, such as clauses headed by subordinators *because* or *although*, have also been shown to induce very weak unacceptability (see my discussion about Polinsky et al.'s experimental results in Section 1)*.* The island-free Chinese example Xu (1990) provided belongs to this category. A conceivable reanalysis attempt within the syntactic approaches would be to divide adjuncts into several classes. Some adjuncts, inducing weak or no island effects, are argued to be only semantic adjuncts, but not syntactic adjuncts (Graf, 2013). In comparison, temporal adjuncts are seen as reliable, genuine syntactic adjuncts that robustly induce island effects. This underlies the common practice in the Chinese literature (Xu, 1990; Lin, 2005; Ting and Huang, 2008) to investigate temporal adjuncts only. Another feature of adjunct clauses is that many relations such as causal, concessive and conditional can be formally expressed as temporal adjuncts (Xu, 1990), based on pragmatic inferences. This makes temporal adjuncts a particularly good testing ground: if even this supposedly robust island domain of temporal adjuncts can receive variable judgment patterns dependent upon what semantic relations it may encode, then the arguments for a syntactic approach are significantly weakened. This is what I will pursue in this paper.

(17)   a. *Zhangsan jie-le   yi-ben shu, erqie Lisi ding-le   yi-ben zazhi.*

       Zhangsan borrow-PRF   one-CLF book, ERQIE Lisi subscribe-PRF one-CLF magazine

       'Zhangsan borrowed a book, and Lisi subscribed for a magazine.'

    b. **Zhangsan xihuan paobu erqie   sanbu.*

       Zhangsan like   jogging ERQIE walking

       'Zhangsan enjoys jogging and walking.'

    Temporal adjuncts in Chinese are headed by a subordinative adverbial *yihou* 'after'. The adjunct construction exhibits a fixed word order, where the adjunct clause precedes the matrix clause, illustrated by the temporal adjunct in the following:[13]

(18) a. *Xuesheng-men* [*kan-guo   nei-bu   han-ju yihou*] *dou xiang qu shou'er luxing*.

     Student-PL   watch-EXP DEM-CLF Korea-drama after all want go Seoul travel

    'All the students wanted to go to Seoul for travel [after (they) watched that Korean

     drama].'

   b. **Xuesheng-men dou xiang qu shou'er luxing* [*kan-guo nei-bu han-ju   yihou*].

     Student-PL   all want go Seoul travel watch-EXP DEM-CLF Korea-drama after

While in English, *and*-conjuncts are able to encode four coherence relations, the *erqie*-conjuncts in Chinese do not have such a broad function. Aside from the Parallel relation (which is the default semantic relation expressed by coordination), *erqie*-conjunct may also encode Violated Expectation relation, but not Result or Occasion. (19) illustrates the failure for Chinese *erqie*-conjunct to express a Result relation:

(19) **Xuesheng-men kan-guo   nei-bu   han-ju   erqie dou xiang qu shou'er luxing*.

     Student-PL   watch-EXP DEM-CLF Korea-drama ERQIE all want go Seoul travel.

   'The students watched that Korean drama and all wanted to go to Seoul for travel.'

   In sum, the Chinese *erqie*-conjunct has a restricted range, and the multifunctionality of English *and*-conjuncts is taken up mostly by the Chinese *yihou*-adjunct, as the contrast

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[13] Later in my paper (pg. 27-28), I presented several standard tests (iterability, positional mobility, etc.) to establish that the two clauses linked by *erqie* are coordinative, and the two clauses linked by *yihou* are in a subordination relation.

between (18a) and (19) shows. Below I present examples involving extraction from Chinese temporal adjuncts, in which three of the four coherence relations (*i.e.* Violated Expectation, Result, Occasion) are being encoded by adjunct constructions.

To begin with, I argue that the following sentences in (20-21) are acceptable,[14] contrary to the predictions of syntactic approaches.

(20)   a.[*Zhangsan* [*yi yujian t$_i$ yihou*] *jiu gen yuanlai nüyou fenshou*] *de nei-ge nühair*$_i$

       Zhangsan once meet t$_i$ after then with then girlfriend break.up REL DEM-CLF girl

       'The girl$_i$ [that Zhangsan decided to break up with his then girlfriend [after (he)

        met t$_i$]]'

    b. [*Xuesheng-men* [*kan-guo   t$_i$ yihou*]   *dou xiang qu shouer lvyou*] *de nei-bu*

       Student-PL   watch-PRF t$_i$ after   all desire go Seoul travel REL DEM-CLF

       dianshiju$_i$

       TV.drama

       'The TV drama$_i$ [that students all wanted to go to Seoul for travel [after (they)

        viewed t$_i$]]'

(21)   a. [[*Chubanshang jueding chuban t$_i$ yihou*] *zuozhe fan'er youyuqilai*] *de nei-ben*

       Publisher   decide publish t$_i$ after   author yet   be.reluctant REL DEM-CLF

       xiaoshuo$_i$

       novel

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[14] The Chinese adjunct sentences given in this section were constructed based on my own judgment. I then consulted a group of native-speaking linguists (N=6) and a group of non-linguist native-speaking undergraduate students (N=6) in a questionnaire-style, informal survey. My consultants were asked to rate these sentences on a scale of 1-4 (1 being terrible and 4 being perfect/comfortably acceptable). Three additional sentences, taken from previous literature, were also added as control: the first sentence is a canonical island example, involving extraction from adjunct in an Occasion relation. The second and the third sentences are island-free examples considered as involving legitimate extraction by the previous literature. The second sentence is an example of extraction from the matrix clause (island-free). The third example is a parasitic gap construction (island-free). The acceptance ratings of my constructed sentences are comparable with the second and the third control sentences. Also, judgment does not vary much among my consultants. I thank an anonymous reviewer for convincing me of the necessity to add this discussion.

'The novel_i [that the author became reluctant [after the publisher decided to
    publish t_i]]'

    b. [[*Dajia chongman qidai   de   du-wan   t_i yihou*] *que   juede nianqingyidai*
       People full.of expectation ADV read-PRF t_i after rather feel younger.generation

       de   daoyan fan'er buru laoyidai]   *de nei-bu   dianying_i*
       POSS director yet   lesser.than older.generation REL DEM-CLF film

       'The film_i [that the audience felt that those younger generation directors were
         even less competent than the older generation [after (they) had watched t_i
         with great expectation]]'

In both (20a) and (20b), the event denoted by the adjunct and the event denoted by the
matrix clause are not only temporally contiguous, but also causally related to each other:
The adjunct event not only temporally precedes the matrix event, but also causes the
matrix event to occur. In both (21a) and (21b), the matrix event occurs contrary to the
normal expectation based on the adjunct event. In other words, examples in (20-21)
resemble asymmetric extraction from English conjuncts in Result and Violated
Expectation relations.

Moreover, examples such as (1) (repeated below as (22a)) are cited in the previous
literature as typical illustrations of adjunct island phenomenon. If extraction occurs across
the matrix clause and not across the adjunct, there will be no island effects, as we see in
(22b). Importantly, in these examples, the adjunct event stands in an Occasion relation
with the matrix event. The adjunct event serves the preparatory, scene-setting function,
and the matrix event is the focal event. In (22a), the extracted element corresponds to an
entity within the preparatory event. In (22b), the extracted element corresponds to the
focal event.

(22)   a.*[*Laoban* [*mianshi-wan   t_i yihou*] *chuqu chi fan-le*]   *de   yingpinzhe_i*
         Boss   interview-PRF t_i after   go.out eat meal-PRF REL applicant
         'The applicant_i [that the boss went out for meal [after (he) interviewed _i]]'

        b. [*Laoban* [*mianshi-wan yingpinzhe yihou*] *chuqu chi t_i*]   *de   fan_i*
         Boss   interview-PRF applicant after   go.out eat t_i   REL meal
         'The meal_i [that the boss went out for _i [after (he) interviewed an applicant]]'

This again bears resemblance to the pattern of extraction witnessed in English conjuncts in an Occasion relation. As Deane (1991) first notes, when an Occasion relation is inferred between propositions such as in (23a), extraction from the second conjunct is possible, but extraction from the first conjunct (the preparatory event) is bad, as the contrast in (23b-c) illustrates.

(23)   a. *He went to the store and bought something.*

       b. *What$_i$ did he go to the store and buy t$_i$?*

       c .*What store$_i$ did he go to t$_i$ and buy groceries?*

Furthermore, Xu (1990: 458) notes that the following example is also acceptable:

(24)   *Zhe-bu jiqi$_i$,*   [*faming t$_i$*] *de ren*   [*zao-hao t$_i$ yiqian*] *yijing si-le*].
       DEM-CLF machine, invent t$_i$ REL person make-PRF t$_i$ before already die-PRF
       'This machine$_i$, the man [who had invented t$_i$] died [before someone finished
        building t$_i$].'

A syntactic approach predicts that parasitic gap construction circumvents island condition. However, according to syntactic explanations, whatever escape hatch mechanism that **connects** the parasitic gap with the other gap should be blocked in an environment such as (24), since the non-parasitic gap in this example is also contained within an island domain (here a complex NP island) and thereby cannot "get out" to connect with the parasitic gap (Cinque, 1990). In view of this, Xu concludes that either some additional mechanism allows (24) to be an legitimate structure, or more plausibly, some nonsyntactic factors are at play.

Crucially, in (24) we again see that the matrix event and the adjunct event stand in one of the coherence relations, *i.e.* a Violated Expectation relation. Indeed, I argue that (24) exemplifies a systematic pattern: when coherence relations can be identified, parasitic gap constructions are freely acceptable, no matter how deep the two gaps are embedded. For example, (25a-b) are also good:

(25)   a. [[*t$_i$ chuban yihou*] *quan guo*   *dou xianqi-le*   *gubaore*   *yihou*]
           t$_i$ publish after entire country all unleash-PRF old.castle.fever after
           chubanshang jueding like   *zeng*   *yin t$_i$*] *de nei-ben xiaoshuo$_i$*

publisher   decide immediately enlarge print t$_i$ REL DEM-CLF novel

'That novel$_i$ [that the publishers decided to reprint t$_i$ [after the entire country

was seized by an 'old castle fever' [after t$_i$ went public]]]'

b. [[*Dang duzhe* [*duguo t$_i$ yihou*] *dou xiang zhidao wangzi he gongzhu zuihou*

When reader read   t$_i$ after all   want   know prince and princess finally

zenmeyang-le yihou] *zuojia fan'er bu xiang   jixu   xie t$_i$ le*] *de tonghua$_i$*

how-PRF   after author yet   not want continue writing t$_i$ PRF REL fairy.tale

'The fairy tale$_i$ [that the author no longer wants to keep writing t$_i$ [after the

readers all felt curious about what turned out of the prince and the princess

[after (they) read t$_i$]]]'

In these examples, the parasitic gap is embedded in two consecutive adjunct clauses, creating what Cinque (1990:43) called the "double embedding" environment. As a consequence, similar to the case with (24), syntactic approaches would rule out such parasitic gap constructions, since whatever connection mechanism that gets the parasitic gap across one adjunct island domain will not be sufficient to get it across a second adjunct domain. Nevertheless, in both (25a-b), despite the multiple embeddings, Result and Violated Expectation relations are coherently established (respectively) throughout the entire relative clause, and in both cases native speakers readily accept the constructions as good, even though the strings in the relative clauses are extremely long.

Finally, Chinese temporal adjuncts bear another similarity with English conjuncts with regard to gapless extraction. As has been mentioned above, in English, a common topic needs not correspond to entities within the conjuncts and may belong to a superordinate category. In Chinese, a superordinate category can also serve as a common topic and occupy a dislocated position, leading to gapless constructions in adjunct environments, such as (26a-b):

(26)   a. *Fabiao,   Zhangsan* [*xie-guo   lunwen yihou*] *you chu-le   shu.*

Publications, Zhangsan   write-PFV paper   after   also publish-PRF books

'(Speaking of) publications, Zhangsan also published books [after (he) wrote

papers].'

b. *Nei-ge keti,   jiaoshou* [*du-guo   zhaiyao yihou*] *jiu gandao henyou xinxin.*

DEM-CLF project, professor read-PFV   abstract after then feel quite confident

'That project, the professor felt quite confident [right after (he) read an abstract].'

4 A Coherence Approach to the Adjunct Island Constraint in Chinese

The new data in (20-26) suggest that extraction from adjuncts and from conjuncts need to be characterized in a uniform way: here a common set of coherence relations are encoded by a subordinative structure in one language and by a coordinative structure in another language, but the extraction possibilities for the two structures resemble each other. [15] Therefore, a plausible conclusion would be that extraction is sensitive to coherence relations, not to the particular syntactic structures. In order to explain the extraction patterns for temporal adjuncts in Chinese, we can rephrase the adjunct island constraint as a semantic condition, by expanding on Kehler's original formulation of extraction condition to cover both conjuncts and adjuncts:

(27) Kehler's Extraction Condition (expanded)

A potential common topic, as identified via the establishment of interpropositional coherence relations in a clause linkage type of propositional units (coordinative or subordinative), may be extracted from that linkage.

This enables us to extend Kehler's explanation to the case with adjuncts. Instead of stipulating that adjuncts are impenetrable for extraction, under a coherence-based explanation adjunct island phenomenon arises when (27) cannot be met. Specifically, when two events stand in an Occasion relation, the first event prepares an occasion for

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[15] Here the resemblance is between Chinese temporal adjunct (*yihou*-adjunct) and English *and*-conjunct. When other Chinese adjuncts are taken into consideration, the parallelism cannot be maintained. For example, the Conditional relation falls within the four Coherence relations, according to van Valin's formulation of the semantics relation continuum. Chinese *yaoshi*-adjunct (*if*-adjunct) is able to express Conditional relation. Adjunct island effects arise for *yaoshi*-adjunct when extraction occurs from across the adjunct. Since English *and*-conjunct fails to encode Conditional, there is no conjunct-adjunct parallelism for the Conditional relation. This paper will consistently limit its discussion to temporal adjucnts, meanwhile noting that adding *yaoshi*-adjunct into the consideration does not change the overall implicational interclausal hierarchy that governs the clause linkage--semantic relation mapping (see discussions on Section 4). I thank an anonymous reviewer for pointing this out to me.

the second event to denote a change of state, so that the second event is marked as a focal event, within which one entity may be salient and serve as the common topic. Entities in the first event, which is construed as preparatory and marking the transition of states for the focal event, cannot qualify as common topics, hence Kehler's extraction condition is violated when asymmetric extraction occurs from the first clause (*i.e.* the adjunct). This leads to the adjunct island effects. On the other hand, when two events stand in a Result relation, they form a coherent scenario centering around an entity within the first event. Therefore such entity will be the common topic for both events and extraction can occur from the first clause. In this way, the exceptions to adjunct island constraint as in (20) are accounted for. The same reason explains why extraction from the adjunct is possible when the two events establish a Violated Expectation relation. Consequently, coherence theory explains why adjunct island effects are sensitive to the manipulation of coherence relations.

Moreover, as the extraction condition is defined in terms of coherent scenarios, this theory predicts that parasitic gap extraction (PG) is always good: in a parasitic gap construction, the two events share one common event participant (*i.e.* the entity denoted by the extracted element), which means a common entity remains salient for both events, thus always satisfying the requirement for the two events to constitute a coherent scenario around a common topic. For example, in (2), repeated below:

(28) [*Laoban* [*mianshi-wan* t_i *yihou*] *jueding luyong* t_i] *de   yingpinzhe$_i$*

   Boss   interview-PRF t_i after   decide   recruit t_i REL applicant

   'The applicant$_i$ [that the boss decided to recruit t_i [after (he) interviewed t_i]]'

Here the two events stand in an Occasion scenario. The relative head, *the applicant*, belongs to both the adjunct-denoted interviewing event and the matrix-denoted recruiting event. Thus, *the applicant* is not only salient within the scene-setting event but also remains salient within the focal event, so that the coherent scenario as a whole centers around it.

Importantly, this situation is only part of the broader observation that in all the coherence relations that temporal adjuncts are able to encode, it is always the case that PGs are good. In other words, there is no need to stipulate a specialized constraint for PG,

as opposed to other adjunct constructions. Rather, the circumvention effect of PG follows naturally from the coherence-based extraction condition.[16]

Furthermore, this theory also renders a natural explanation for the example given by Xu, which I mentioned in (24) (repeated below):

(29) *Zhe-bu   jiqi,   [faming t_i] de   ren   [zao-hao t_i yiqian] yijing   si-le*].
     DEM-CLF machine, invent t_i REL person make-PRF t_i before already die-PRF
     'This machine$_i$, [the man who had invented t_i] died [before someone made t_i].'

In particular, such example has been shown to contrast in acceptability with examples with a similar structure, such as (30) (Ting & Huang, 2005):

(30) **Zhe-bu   jiqi,   [faming t_i] de   ren   [zai t_i chu maobing yiqian] yijing   si-le*]
     DEM-CLF machine, invent t_i REL person at t_i happen problem before already die-PRF
     'This machine$_i$, [the man who had invented t_i] had already died [before t_i became problematic].'

If we follow several pragmatic-based proposals in assuming that the propositional content embedded within a relative clause is often not focused (Erteschik-Shir and Lappin, 1979; van Valin, 1998; Goldberg, 2006), it follows that if the subject of a sentence is a complex NP comprising of a relative clause, then the matrix clause and the adjunct clause of that sentence do not provide new information about entities within the relative clause of the subject, unless the semantic content of the relative clause forms a coherent scenario together with the rest of the sentence. While, in (29), the correlation between an invention event and a manufacturing (coming into being) event induces such a coherent scenario, this correlation is lost in (30), causing the sentence to be infelicitous.

Finally, for gapless extraction where the displaced element corresponds to no elements in both clauses, the same mechanisms as in cases with gapped extraction will apply. One such case is mentioned in (26a), which I repeat below:

(31) *Fabiao,   Zhangsan* [*xie-guo   lunwen yihou*] *you chu-le   shu*.
     Publications, Zhangsan   write-PFV paper   after   also publish-PRF books

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[16] Although at present this account has no clear solution to what gives rise to the anti-c-command property typically associated with parasitic gaps (Engdahl,1983).

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'(Speaking of) publications, Zhangsan also published books [after (he) wrote papers]'

Here *publications*, as a superordinate category of both *books* and *papers*, is salient in both events. Hence, the coherent scenario centers around *publications*. Similarly, in (26b) (repeated below):

(32)   *Nei-ge keti,*   *jiaoshou* [*du-guo*   *zhaiyao yihou*] *jiu gandao henyou xinxin.*
        DEM-CLF project, professor read-PFV   abstract after   then feel   quite confident
        'That project, the professor felt quite confident [right after (he) read an abstract].'

The entity (*paper*) *abstract* appears within the first event (the cause event) and remains salient in the second event (the result event). Therefore, the whole scenario centering around the salient entity, *the abstract*, can be construed as providing information about *the project*, which serves as a superordinate category of which *the abstract* is a part.

In sum, by making an extension of the Kehler-style coherence theory, we are able to account for the full range of data related to the extraction from adjuncts, which include the adjunct island effects but also encompass the various circumvention effects. Apart from this empirical advantage over syntactic approaches, we also unify the adjunct island constraint and the coordinate structure constraint in terms of a same set of semantico-pragmatic factors.

This unification, however, might motivate a reanalysis explanation from the syntactic perspective:[17] it could be argued that adjunction in these examples is not real adjunction, but rather the two clauses combined in this particular adjunction form a coordinative structure. If this is the case, then the adjunct island constraint, as a structural locality constraint, is still maintained even though coherence relations can serve as licensing conditions for extraction from conjuncts.

This idea of coercing one structure into another has been entertained in previous works (Huybregts & van Riemsdijk, 1987; Williams, 1990). For example, Williams hypothesizes that the more a subordinative structure exhibits syntactic and semantic

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[17] I thank an anonymous reviewer for pointing this out to me.

symmetry, the greater the chance that it would be construed as coordinative. This would explain why parasitic gap constructions resemble across-the-board extraction from conjuncts: the structures underlying parasitic gap constructions can be construed as coordinative to a differing degree. Hence, the PG-ATB parallelism is due to that a subset of PGs are actually subject to the licensing rules governing ATB constructions, and the varying levels of acceptability for different PGs (Engdahl, 1983) are reduced to a gradable scale of "coordinativeness".

However, I think this sort of coercion is undesirable. First, without precise characterization, it is never clear how to coerce a subordinative structure into a coordinative structure, nor is it clear what it means when we talk about **'graded' coordinativeness** (Postal, 1991; McCawley 1998). In particular, this coercion idea is originally motivated for parasitic gaps, but now that we see asymmetric extraction is also possible, we would have to **coerce those subordinative structures underlying asymmetric extraction into coordinative,** too. It, thus, seems that most subordinative structures share some "coordinativeness" to a certain degree. The problem, then, becomes where should a line be drawn. In particular, even those adjunct structures from which extraction cannot occur might also have the option of being coerced into coordinative structures. This is because these structures participate in an Occasion relation. If they are coordinative, they can still be correctly ruled out under the coherence account by the ban on extraction from the first conjunct in an Occasion relation. If so, there might be **no uncontroversially subordinative structures** upon which adjunct island constraint applies**,** given the way that structural coercion is seen as "graded".

Additional evidence against a reanalysis approach comes from the fact that Chinese also encodes coherence relations using a uncontroversially coordinative construction. Chinese expresses clausal coordination via the clausal conjunction marker *erqie*, which serves as the translation equivalent of *and* in English (Li and Thompson, 1981; Huang et al., 2009). While, in English, *and*-conjunct is able to encode four coherence relations, in Chinese, only Parallel and Violated Expectation coherence relations can be encoded by *erqie*-conjunct. This option is not available for the Result and Occasion Relations. Meanwhile, in Chinese the temporal *yihou*-adjunct is able to encode Occasion, Result and

Violated Expectation relations, but not Parallel relation. The encoding pattern of coherence relations in Chinese is illustrated as follows:

(33)   a. *Neige   ren$_i$,   Mali   tanqi-guo   t$_i$ **yihou/erqie** Jimu jian-guo t$_i$?*
              DEM-CLF person   Mary talk.about-EXP t$_i$ after/and   Jim   met-EXP t$_i$
              'Which person$_i$, did Mary talk about t$_i$ and Jim meet t$_i$?'

         b. *Duoshao-tiao hupo$_i$, women keyi huidiao t$_i$ **yihou/erqie** bu yinqi gong fen*?
              How.many-CLF lake we   can destroy   t$_i$ after/and   NEG   arise public outcry
              'How many lakes$_i$, can we not arise public outcry after (we) destroy t$_i$?'

         c. *Nei-ge jiushi [gaojiasuo de ren he-le   t$_i$ **yihou/*erqie** huo dao yibaisui] de dongxi$_i$.*
              DEM-CLF COP Caucasus REL guy drink-PRF t$_i$ after/and live till 100 (age) REL stuff
              'That is the stuff$_i$ that people in Caucasus lived till a hundred years old after (they)
               drank t$_i$.'

         d. *Zhei-ge   weishiji$_i$, wo qu shangdian **yihou/*erqie** mai-de t$_i$.*
               DEM-CLF whiskey   I   go   store   after/and   buy-PRF t$_i$
              'This whiskey$_i$, I bought t$_i$ after (I) went to the store.'

If we follow the reasoning of a reanalysis approach and assume that the temporal adjunct and the matrix clause linked by *yihou* 'after' are actually coordinative, it will be mysterious why this **coerced** coordinative structure behaves differently from a **canonical** coordinative structure. [18]

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[18] It seems clear that at least a subset of the four coherence relations encoded by *and*-conjuncts in English can also be encoded by adjunct constructions. This is implicitly assumed in the observations that some parasitic gap constructions are coordinative-like (*e.g.* Williams, 1990). For example, the following parasitic gap constructions:

(i)   a. *Which articles$_i$ did John file t$_i$ without reading t$_i$?*
      b. *Which professor$_i$ was John intent on impressing t$_i$ without succeeding in drawing the attention of t$_i$?*

express the same Violated Expectation relation as expressed in the following *and*-conjuncts which I already mentioned above (Goldsmith, 1985):

(ii)   a. *How many lakes$_i$ can we destroy t$_i$ and not arouse public antipathy?*
       b. *How much$_i$ can you drink t$_i$ and still stay sober?*

5   Interclausal hierarchy and clausal linkage

In the previous section, I show that there is not much promise for the traditional syntactic theory of adjunct islands or an reanalysis effort to rescue the syntactic explanation. On the contrary, I argue that what is needed is an extension of the coherence account. In the following, I present the motivation for such extension. Importantly, I propose that, in order to explain the data in (33), we need to resort to the general patterns governing the mapping between syntax and semantics. Specifically, I argue that the variation in syntactic realizations of coherence relations can be characterized through an independently motivated interclausal relations hierarchy. This renders a natural explanation for why a common sensitivity to coherence relations can be found in Chinese adjuncts and English conjuncts.

The interclausal relations that underlie the connection of two (or multiple) propositional units have been investigated from a variety of perspectives (*e.g*., Haiman & Thompson, 1988), albeit much less is known about them compared to what we know about intraclausal relations. It goes without much dispute that such interclausal relations as causation, concession or circumstance are conceptual by nature and are operative when clauses or sequences of clauses are uttered in a certain discourse. It remains to be agreed upon whether they are fundamentally semantic or rhetorical/interactional (Couper-Kuhlen & Kortmann, 2000). Hobbs' coherence relations presume a rhetorial-interactional stance, where the inferences of interpropositional relations are contingent upon contexts, rather than built into the semantics of the markers for these relations. For the purpose of this paper this distinction shall not concern us, with the understanding that a more context-

Whether or not a gap appears in the second clause here does not seem to change the semantic relations. For example, in

(iii) *Which professor$_i$ was John intent on impressing $\__i$ and ended up not drawing the attention of $\__i$?*

The coherence relation is parallel to (ib). Therefore, English also allows multiple syntactic realizations of the same coherence relations. The natural prediction would be that English adjuncts will also exhibit an asymmetric extraction pattern similar to Chinese, for which I provide tentative evidence in the closing paragraphs of this paper.

independent approach to represent the relations in terms of semantics is also available. For example, Koenig & Siemund (2000: 353) captures the intuition of Hobbs regarding concession (*i.e.*, concessive relation expresses the violation of normal expectation) in terms of a division between presupposed propositional content and asserted propositional content, as shown in Table 1:

Causal constructions	Concessive constructions
Because p, q (form)	Although p, q (form)
$P \rightarrow Q$; P (presupposition)	$\neg P \rightarrow Q$; P (presupposition)
P & Q (assertion)	P & Q (assertion)

Table 1

This semantic representation of causation and concession are essentially the same as Hobbs' representations in (9-10). Similarly, one can formulate Occasion or Parallel in semantic terms.

If we leave aside the semantic-rhetorical distinction and focus on how these relations are syntactically encoded, one central issue we need to address will be that each of these relations can be realized by different linguistic means (Couper-Kuhlen & Kortmann, 2000). This should hardly come as a surprise for us, as different languages may adopt either more clause-internal syntactic linking devices (or even lexicalized constructions) or more inter-clausal devices to encode interpropositional relations. However, despite the differences between languages' morphosyntactic properties, there exists the intuition that when it comes to the syntax-to-semantics linking, an iconic, implicational hierarchy is at play (Silverstein, 1976; Givon, 1980; Foley and van Valin, 1984; van Valin and LaPolla, 1997; van Valin, 2005), such that **tighter semantic relations between propositional units tend to be expressed by stronger linkage strategies**.

This hierarchy expresses a relation between two continuums (continua), one on the semantic side and one on the syntactic (clause linkage) side. In the following, I discuss motivations behind each continuum, and then I describe the implicational hierarchy that connects the two continua.

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On the semantic side, I follow van Valin's (2005) proposal and assume that interclausal semantic relations form a continuum based on the ranking of tightness. Tightness is expressed on a hierarchy, which is in turn derived from the interaction of a series of independently motivated and more basic subhierarchies. A non-exhaustive initial approximation of four of these subhierarchies is given by van Valin (2005: 211) as below:

(34) Semantic subhierarchies (where > denotes 'tighter than')

   a. TEMPORAL HIERARCHY:

   Phrases of a single event > simultaneous events > sequential events > unspecified

   b. CAUSAL HIERARCHY:

   Physical > verbal > underspecified [nondefeasible] > inferred [defeasible]

   c. PARTICIPANT'S MENTAL DISPOSITION:

   Intention > Perception > Belief > Knowledge

   d. NECESSARILY SHARED PARTICIPANT: Yes > No

Based on these criteria, van Valin is able to present a ranking of a large number of semantic relations. As mentioned above, the differences between van Valin's semantically-oriented classification of interclausal relations and Hobbs' discourse-oriented coherence relations do not need to concern us here. It follows, then, that one can match the four Hobbs' coherence relations with corresponding interclausal relations on van Valin's continuum. Specifically, we have (Hobbs') Occasion corresponding to (van Valin's) Circumstance, Result corresponding to Reason, Violated Expectation to Concession, and Parallel to Simultaneous/Sequential Action. According to van Valin, these four relations are ranked from the tightest to the least tight as follows:

(35)   Occasion > Result > Violated expectation > Parallel

This cline seems rather intuitive. In terms of the temporal subhierarchy, all the four relations depict two sequential events, yet there are still finer distinctions among them. First, if in a sequence of [event A, event B], event A can be construed as the Occasion (temporal setting) of the following event B, then event A is the temporal parameter of event B. The temporal parameter (as well as locative parameter) of an event is inherently specified as part of the representation within that event that is relevant for interpretation

(Kamp & Reyle, 1983; Pratt & Francez, 2001; von Stechow, 2002). As such, the Occasion relation describes the tightest relation among those relations denoting sequential events.

Second, as for a Result relation, the causation that involves the two sequential events here corresponds to inferred causation on the causal subhierarchy, which is less tight than explicit (underspecified) causation.[19] The implicit nature of the causation type in Result is clear when compared with the causation type encoded with an explicit *because*-subordinate clause (van Valin, 2005: 212):

(36)   a. *After Zhangsan met a girl, he broke up with his girlfriend.*

        b. *Zhangsan broke up with his girlfriend, because he met a girl.*

        c. *I drank that stuff, and I lived to be a hundred.*

        d. *I lived to be a hundred, because I drank that stuff.*

The English sentence in (36a) expresses inferred causation, while (36b) expresses underspecified causation. Similarly, (36c) is inferred compared to (36d). In both the inferred and underspecified causation types, the exact nature of the causation is not specified, enabling several intermediate states to intervene between the cause and the effect. Apart from that, the inferred causation can be defeasible. For example, in (36a), it could be the case that Zhangsan met a girl but was not infatuated with her, yet an ensuing

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[19] The causation relations we discuss here that are encoded by conjuncts and adjuncts are **underspecified** causation, regardless of whether the causative meaning is expressed with an explicit marker or not. Underspecified causation differs from specified causation. Following the causal subhierarchy in (31), the first and tightest specified causation type is physical causation, where there is some sort of physical action on the part of the causer on the causee; the second specified causation type is verbal causation, where the causer affects the causee by speech.

Both specified causation relations often denote highly institutionalized activities where the causing event and the causee event are considered as routinely occurring together and as two phases of the same action. Crosslinguistically, such causative events are often realized within the morphology or by clause linkage structures below the clausal level (*e.g.* English *John shot Mat dead,* German single verb construction *erschiessen* 'shoot to death', etc.) Thus, without going into details about the vast topic of causality, it suffices to say that the Result relation pertains to a less tight causation type that must be expressed by two distinct events.

quarrel with her girlfriend causes them to break up. In terms of the tightness continuum, then, a Result relation is not as tight as an Occasion relation, although the two events are clearly more connected than two events that are not causally related.

Third, the two events in a Violated Expectation relation also form a causal link, but this is not something inherent from the semantic properties of the two events. Rather, it needs to be seen as an *ad hoc*, one-time causal link (the second event in a Violated Expectation relation depicts an event that is not normally construed as a Cause based on its semantic properties, but are factually causative in this case). As such, the level of tightness is weaker than that of a Result relation.

Finally, a Parallel relation comprises of two temporally sequential or simultaneous events. The two events are independent, other than being temporally contiguous. In terms of the subhierarchies, this relation occupies a lower point on the continuum.

On the syntactic side, the strength of a clause linkage structure is understood as how formally integrated two juncts (*i.e.* sentences, clauses, phrases, etc.) connected in that linkage are to each other (van Valin, 2005: 209). van Valin argues that we can rank linkage in a strong-to-weak continuum, starting from nuclear-level coordination/subordination, to core-level and then to clause-level and sentential level linkages.

Among different juncture types, clause level linkage is relevant to our current discussion in Chinese.[20,21] Importantly, subordinative clause linkage has long been viewed as being formally more integrative than coordinative clause linkage (*i.e.* clausal subordination is stronger than coordination, in van Valin's terms). For example, there is much evidence that subordination exhibits more dependence or more embeddedness than coordination (Lehmann, 1988), in that a subordinate clause may function as a constituent of the matrix clause, thus being resistant to iterativity, being subject to positional permutability without logico-semantic change, or being subject to pronominal cataphora,

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[20] And crosslinguistically, it is also a general tendency for Hobbs' relations to be encoded at the clausal level (van Valin, personal communication).

[21] I am grateful to an anonymous reviewer for drawing my attention to how van Valin originally formulated this continuum.

as well as the lack of independent illocutionary force marking, etc. (Haspelmath, 2004; Fabricius-Hansen and Wiebke, 2008).

I already mentioned that intuitive knowledge allows us to treat *yihou*-adjunct in Chinese as the translation equivalent to *after*-adjunct, and *erqie*-conjunct in Chinese as the translation equivalent to *and*-conjunct. Importantly, the above mentioned diagnostics also serve well to distinguish the *yihou*-adjunct in Chinese as a syntactically more subordinative construction, as opposed to the *erqie*-conjunct, which behaves in a way that is expected for a genuine coordinative structure.

To just name a few diagnostics, we can see that an *erqie*-conjunct can be iterated (*i.e.*, A conj B , then A conj (B conj C), and so on), whereas a *yihou*-adjunct is resistant to iterativity:

(37)   a. *Ta jie-le   shu   erqie mai-le   zazhi.*
           He borrow-PRF book   ERQIE buy-PRF magazine
           'He borrowed books and bought magazines.'

        b. *Ta jie-le   shu, (erqie) mai-le zazhi,   erqie   ding-le   baozhi.*
           He borrow-PRF book, (ERQIE) buy-PRF magazines, ERQIE subscribe.to-PRF newspaper
           'He borrowed books, bought magazines, and subscribed to newspapers.'

(38)   a. *Ta jie-le   shu   yihou mai-le   zazhi.*
           He borrow-PRF book YIHOU buy-PRF magazine
           'He bought magazines after (he) borrowed books.'

        b. **Ta jie-le   shu, (yihou)   mai-le   zazhi,   yihou ding-le   baozhi.*
           He borrow-PRF book (YIHOU) buy-PRF magazine YIHOU subscribe.to-PRF newspaper

Furthermore, an *erqie*-conjunct has fixed positions, but a *yihou*-adjunct exhibits positional mobility with regards to the matrix clause:

(39)   a. *Ta [zai mai-le   shu   yihou] jie-le   baozhi.*
           He AT buy-PRF book YIHOU borrow-PRF newspaper
           'He borrowed newspaper after (he) bought books.'

        b. *[Zai mai-le shu yihou], ta jie-le baozhi.*

        c. *Ta jie-le baozhi, [zai mai-le shu yihou].*

(40)   a. *Ta mai-le   shu   erqie jie-le   baozhi.*

He buy-PRF book ERQIE borrow-PRF newspaper

'He bought books and borrowed newspapers.'

b. *Mai-le shu erqie, ta jie-le baozhi.

c. *Ta jie-le baozhi, mai-le shu erqie.

Based on these diagnostics, we establish that *yihou*-adjunct is stronger than *erqie*-conjunct. While this conclusion is robust in the individual case of Chinese, we need to bear in mind the caveat that these diagnostics do not provide a clear-cut and absolute division between subordination and coordination, when the full range of crosslinguistic data are examined (Holler, 2008; Bril, 2010). In a recent paper, Bickel (2010) conducts a statistical study using these diagnostics as variables to predict probabilistic clusters that may serve as typological prototypes. What Bickel's results reveal is that many of the pre-established clause linkage types are better analyzed as spread out in a continuum than as forming crosslinguistically valid prototypes. Nonetheless, as a tendency Bickel still finds evidence for a specific prototype of subordination, in which the subordinate clause resembles a coordinative clause in displaying symmetry with the matrix clause and finiteness, but differs from a coordinative clause in having more limited ability for illocutionary scope marking, flexible position, question formation or focusing within the clause, etc (Bickel 2010: 93). As such, Bickel identifies this prototype as *and*-like subordination, which is crosslinguistically robust.

It is clear that the *yihou*-adjunct in Chinese fits well within this prototype, as it differs from a coordinative structure in criteria such as (37-40), and at the same tine it behaves in an *and*-like manner with its strongly symmetric status exhibited in both clauses, the finite marking for both clauses as well as the considerable overlapping with *erqie*-conjunct in the range of semantic relations they are able to encode.[22]

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[22] It needs to be pointed out that since several independent diagnostics already establish *yihou*-adjunct as being formally more integrated than *erqie*-conjunct within the individual language of Chinese, this formal distinction stands on its own and does not hinge upon whether crosslinguistic prototypes of coordination and subordination exist or not. Thus, even if Bickel's conclusion regarding *and*-like subordination is problematic, it will not weaken the claim that there are two clausal linkage structures in Chinese that differ in formal integrativeness.

I now discuss the hierarchy that characterizes the mapping between the semantic continuum and the syntactic side. Here I focus on the implicational nature of the hierarchy as it is applied to an individual language.[23] At the clausal level, there is often not as many linkage structures as the number of semantic relations. This means we do not expect the syntax-semantics mapping within a language to be isomorphic, but rather to be one-to-many correspondences. As such, each clause linkage structure can map to a set of semantic relations, and considerable overlapping would exist (*i.e.* one semantic relation is encoded by several clause linkage structures). In view of this, the implicational hierarchy is formulated in a specific way, such that given a set of semantic relations mapped onto a stronger clause linkage structure, the tightest relation in that set will be tighter than, or at least as tight as, the tightest semantic relation within the set corresponding to a weaker clause linkage structure. Alternatively, given a set of clause linkage structures that are mapped to a tighter semantic relation, the strongest among them will be stronger than, or at least as strong as, the strongest clause linkage structure within the set that are mapped onto a less tight semantic relation (van Valin, 2005: 209).

Below I show that the interclausal relations hierarchy formulated in this way neatly explains the mapping between Hobbs' relations and *erqie*-conjunct/*yihou*-adjunct. As we already see in (33), the set of relations encoded by *erqie*-conjunct overlap with those

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[23] From a crosslinguistic perspective, each language has its own cut-off points for the syntax-semantics mapping, so that the same semantic relation may well be mapped onto two different linkage structures for two languages. Also, each language only has available a small subset of clause linkage structures that they may employ in encoding semantic relations. The interclausal hierarchy, thus, is manifested in a way that the tightest semantic relations tend to be encoded by the strongest clause linkage structure for some languages, and the less tight semantic relations tend to be mapped to less strong clause linkage. Therefore, although languages employ clause linkage of varying strengths for a given semantic relation, we should expect a tight semantic relation to be encoded by very strong clause linkage structure in **some** languages. For example, the semantic relation on top of the hierarchy, causative relation involving direct physical causation (see note 15), may be encoded by a variety of clause linkages for different languages, but for certain languages such as Turkish and Lakhota it is grammaticized into the morphology. At the lowest end of the hierarchy, relations denoting simultaneous actions or unspecified actions can be expressed by asyndetic constructions in many languages, *i.e.* expressed by two clauses that totally lack any connective devices (van Valin, 2005).

encoded by *yihou*-adjunct. The respective semantic encoding possibilities of the two clause linkage structures are summarized in Table 2:

Clausal Linkage Type	Range of encoded semantic relations
Clausal Subordination (*yihou*-adjunct)	Occasion (√), Result (√), Violated Expectation (√), Parallel (*)
Clausal Coordination (*erqie*-conjunct)	Occasion (*), Result (*), Violated Expectation (√), Parallel (√)

(√ means the said semantic relation can be encoded by the said clause linkage type;

 *means the said semantic relation cannot be encoded by the said clause linkage type.)

Table 2

Based on their respective semantic encoding patterns, the pattern of overlapping can be schematized as in Diagram 1:
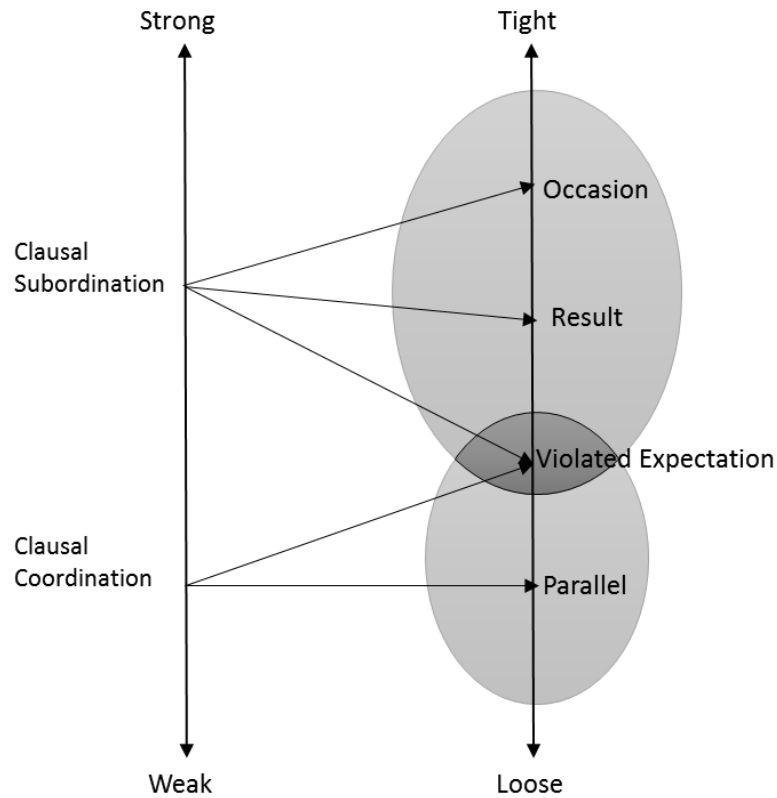

Diagram 1 Clause linkage-Semantic relation mapping in Chinese

We see that the tightest coherence relations, Occasion and Result, can only be encoded by the stronger clause linkage type, subordination (*yihou*-adjunct); The intermediate

Violated Expectation may be encoded by either subordination or coordination (*erqie*-conjunct), and the least tight Parallel must be encoded by the weaker coordination.

Therefore, the mapping pattern clearly **accords with** van Valin's implicational characterization: the set of semantic relations mapped onto subordination are {Occasion, Result, Violated Expectation}, the other set mapped onto coordination are {Violated Expectation, Parallel}. The tightest semantic relation(s) in the first set, Occasion (as well as Result), is tighter than the tightest semantic relation from the second set (*i.e.* Violated Expectation). We can easily see that the implicationality also holds from the opposite direction: for example, the set of clause linkage structures mapped onto Violated Expectation are {subordination, coordination}, and the set mapped onto Parallel is only {coordination}. The strongest clause linkage structure from the first set is stronger than the strongest clause from the second set (*i.e.* subordination is stronger than coordination).

Of course, the degrees to which different languages' mapping patterns mesh with the implicational hierarchy differ from one another, so that the iconicity existing between the semantic and the syntactic sides only expresses itself as a general tendency. That (as a tendency) this hierarchy is valid has been supported by several studies done on typologically distinct languages. For example, in his survey of Q'eqchi Maya, Kockelman (2003: 41) finds that the mapping between several complement-predicate constructions of varying clause linkage types and their semantic relations is in accordance with the predictions of the interclausal relations hierarchy. Similar results have been obtained in Guerrero (2011) for Southern Uto-Aztecan languages with regards to purpose clauses, as well as for Japanese with regards to clause-chaining participial constructions (Ohori, 2001). These languages of rich morphological marking make use of different ranges on the clause linkage continuum from analytical languages such as Chinese, yet both independently observe the hierarchy.

In section 4, I showed that we need to extend Kehler's coherence explanation to the extraction behaviors in both conjuncts and adjuncts. The implicational interclausal relations hierarchy **justifies** this extension: Since extraction is possible for the salient entities that may serve as common topics, then in cases where more than one propositional unit is involved, the condition for extraction will only be determined by the interpropositional relations. This is because the establishment of interpropositional

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relations decides which entity is salient and qualifies as a common topic. The same set of interpropositional relations are syntactically realized by different clause linkage structures in different languages in accordance with the implicational interclausal hierarchy. This is why we see that similar extraction behaviors are sometimes witnessed in extraction from adjuncts, and sometimes in extraction from conjuncts: they are just overt manifestations of the same set of coherence relations. As a result, we can make Kehler's extraction condition in (27) even more general, with no reference to syntactic realizations whatsoever:

(41)   Kehler's Extraction Condition (generalized)

A potential common topic, as identified via the establishment of interpropositional coherence relations, may be extracted.

Finally, the examples in English as discussed in the previous literature also go well with the predictions of interclausal relations hierarchy. For example, Truswell (2007) presents the following example (repeated from (4a)):

(42)   *What$_i$ did Mary drive John crazy* [*trying to fix t$_i$*]?

(42) violates the adjunct island constraint. As we can see, the participial adjunct and the matrix clause can be construed as standing in a Result relation. Also, the example in Polinsky et al (2013) in the form of a rational clause (repeated from (5c)):

(43)   *Which dish$_i$ did Gina think that, although the chef overcooked t$_i$, the guests were not upset?*

corresponds to the Violated Expectation relation. Truswell discusses typical island-inducing sentences such as the following (Truswell, 2007: 156-157):

(44)   a. **What$_i$ did John build this house* [*thinking about t$_i$*]?
        b. **What$_i$ does John dance* [*whistling t$_i$*]?

According to him, the reason this sentence sounds quite off under normal circumstances is because it is hard to argue that the event of thinking is in any way related to the event of buildng a house, or the event of dancing is in any way related to whistling, apart from them being temporally overlapping. This contrasts with the following sentences (Truswell, 2007: 156-157):

(45)   a. *What$_i$ did John arrive* [*whistling t$_i$*]?

    b. *What$_i$ did John die* [*thinking about t$_i$*]?

In such cases, it is intuitive to consider whistling as a reasonable action John would do accompanying his going home up till his arrival, or for the activity of thinking to accompany John towards his death. Based on these examples, Truswell seeks to capture the extraction from adjunct in terms of a Single Event condition, where two actions are said to form a single event if they are both spatiotemporally overlapping and necessarily sharing the agent or bearing a causation relation to each other.

From a coherence point of view, we already see that the interpropositional relations characterized in Truswell's single event condition correspond to Result or Violated Expectation. On the other hand, a typically bad example, such as **What$_i$ did John build this house* [*thinking about t$_i$*]?, denotes two temporally contiguous but otherwise independent actions (*i.e.* Parallel relation). Furthermore, the accompanying relation as expressed in (45) corresponds to the Manner relation in van Valin's (2005) semantic continuum. A Manner relation ranks higher than the four Hobbs' coherence relations, because all actions are performed with a (explicit or implicit) manner, so that in terms of the semantic subhierarchies of van Valin, if one action serves as the manner with which another action is performed, the two actions tend to form phases within a single event and also have strong preferences to share participants. Syntactically, it has been suggested that the English participial construction used in (45) is not really an adjunct, but a depictive clause (Truswell, 2010). According to Schultze-Berndt and Himmelmann (2004), crosslinguistically depictive constructions are more formally integrated than genuine adjuncts, and Manner relation tends to be mapped to depictives. Thus, based on the generalized Kehler's extraction condition, we shouldn't be surprised that a tighter interpropositional relation is realized by some clausal subordinative structure that is stronger than adjunct, and asymmetric extraction from this structure should be possible as far as a salient common topic is established in such a relation.

The patterns in the extraction from adjuncts as witnessed in the previous literature can then be represented in diagram 2:

(Where √ means asymmetric extraction from adjunct is possible (witnessed);

        * means asymmetric extraction from adjuncts has not been witnessed in the

previous   literature.)

Manner(√)   Result(√)   Violated Expectation(√)   Parallel(*)

Tight ←————————————————————————————————→ Loose

Diagram 2   Patterns of extraction from adjuncts in English

Based on this perspective, we can explain Truswell and Polinsky et al's examples by proposing that whereas in a Parallel relation, an entity within one event fails to remain salient within another, in the other tighter relations, it is possible for an entity to occur in one event but be salient throughout the coherent scenario. This suggests that a coherence theory of English adjunct islands is promising, although we apparently need far more data before we can fully evaluate it. Indeed, there are reasons to believe that the coherence approach is more desirable than the somewhat *ad hoc* formulation of single event proposed by Truswell. In a Manner relation, it makes sense to say the two actions fall within a single event. Nonetheless, the same can hardly be said for all causative relations (for instance, in (42) one can readily allow some intervening events in between Mary's trying to fix something and John's becoming crazy, therefore the two events need not be temporally overlapping). It would be even less plausible for the single event requirement to hold for the concessive examples in Polinsky et al (2013)'s rational clauses, which clearly have a temporally sequential reading.

It is also important to note that Truswell's examples involve nonfinite participial constructions that find no Chinese counterparts, given that Chinese is generally agreed to be a language with no finiteness marking (Hu et al., 2001). The fact that two distinct sets of syntactic devices receive a similar explanation is a particularly encouraging sign that the formulation in discourse-semantic terms is on the right track.

Now a natural expectation for a discourse-semantic theory would be that it extends to all languages in a predictive manner, which I believe will be very worth doing once we set out to understand the complexities in crosslinguistic syntactic encodings.

6 Conclusion

This paper studies the rich patterns in extraction from adjuncts by underscoring a hitherto unnoticed distributional parallelism between extraction from adjuncts and extraction from conjuncts. Specifically, the paper shows that asymmetrical extraction from adjuncts in

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Chinese (that is, violations of the adjunct island constraint) is not only possible but behaves on a par with asymmetrical extraction from conjuncts in English (that is, violations of the coordinate structure constraint). The latter phenomenon has been successfully accounted for using coherence relations (Hobbs, 1979; Kehler, 2002). The conjunct-adjunct similarities prompt me to argue that both these asymmetrical extractions are acceptable if certain coherence relations are met. The exact syntactic realizations of each coherence relation are subject to language-specific variation (by coordination or subordination), and the particular means each language employs to express the discourse relations can be shown to follow a general implicational interclausal hierarchy, such that the differences in each language's extraction behaviors do not pose a problem for treating them in terms of general semantic factors.

This approach echoes Kehler (2002, 2010) and many others' treatments of extraction from conjuncts by showing that certain island phenomenon can be accounted for in a principled manner by resorting to semantico-pragmatic factors. As Kehler points out, the consequence of a nonsyntactic account of extraction from conjuncts is that we either give up the view of the strict autonomy of syntax within the architecture of grammar, or are forced to take up a weaker view that the coordinate structure constraint (CSC) is not specified within syntax. Even if we go with the weaker view, the same logic would follow in the case with adjuncts, thus **leaving us with no needs to posit adjunct island constraint a structural locality constraint within grammar**. Therefore, I give further credence for **weakening the autonomous role of syntax within grammar** (Kehler, 2002).

One of the most important consequences of this approach is the fact that **no specialized, dedicated parasitic gap mechanisms** are needed, since the acceptability of parasitic gaps follows directly from the coherence condition. Therefore, a generalized coherence account simultaneously provides itself as an explanation for adjunct island effects and for parasitic gaps' circumvention effects. This implies that the structural specifications within grammar can be made significantly simpler, compared to the convictions in the mainstream literature.

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