N-Initial and Pronominal-Initial Relative Clauses in Mandarin[1]

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Abstract:

This paper describes the syntactic condition on N-initial relative clauses (RC) and pronominal-initial RCs in Mandarin Chinese. An N-initial RC is only licensed when the head noun is extracted from the subject position of a non-finite clause and the complex NP as a whole is used as a subject of a generic sentence. The plural pronouns (except 1PL EXCLUSIVE) license both restrictive and attributive RCs. In subject positions, pronouns (except 1PL EXCLUSIVE and 2PL) can restrict the reference of the Num-RC-(NP), with or without the "antecedent" NP; and co-indexing with its antecedent in Dem-RC-(NP). 1PL EXCLUSIVE and 2PL can only co-index with the RC-(NP). Both "head" initial RCs respect subject/object asymmetry, the relativization site must be the subject.

Keywords:
> N-initial, pronominal-initial, relative clause (RC), extraction of the subject, demonstrative, numeral

1. Introduction

Although it is rarely discussed in the literature and also rarely occurrs, there are N-initial relatives in Mandarin (Dong 2003).

(1) ***dangshi-ren*** [*dui jueding bu-fu   de*]*, ke-yi shenqing fu-yi.*
     involved-people   to decision not-agree DE can-by apply   re-discuss
     "If there is a party, no matter who, if the party disagrees with the decision, they can apply for an appeal." (Dong 2003)

That a structure is "rare" can due to its special semantics; in other words, it has a restrict set of syntactic constraints. Head initial RCs in Mandarin are "rare" exactly due to their highly specified syntax/semantics.

This paper focuses on head initial RCs. In section 2, I describe the syntactic conditions on N-initial RCs. The head noun is a relativized subject of a non-finite clause and main clause predicate of the complex NP must not be anchored.

In section 3, I describe another type of head-initial RC, i.e. pronominal (Pron)-initial RCs. The pronoun must also be the relativized subject of the RC. There are both restrictive and appositive Pron-initial RCs. The complex pronoun **can** occur in

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[1] I'd like to thank Éva Dékány for her help and comments. The dialect described here is Beijing Mandarin.

existential or presentational sentences with Locative inversion, where a simple pronoun is barred due to the Definiteness Effect. The requirement of Num-(CL) and Dem in [Pron (Dem (Nom)) RC] depends on the number of the head pronoun, the interpretation of the complex pronoun and the position of the complex pronoun in the main clause.

We can see the internal structure of DP is directly related to its external structure.

2. N-initial RCs

Suppose we have a pair of conditional sentences, as in (2)[2].

(2)a. *yi   ge gao zhong sheng, ruguo mei   zhou   qu san ci   jiuba,*
    one   CL high school student if   every   week   go three time pub

jiu   hui   bei   jiyu jinggao-chufen.
then   will   by   give warning-punishment
    "If a High school student goes to pubs three times a week, he will be given a warning."

 b.   *yi   ge gao   zhong sheng, ruguo mei   zhou   qu san   ci   jiuba,*
    one   CL high school student if   every   week   go three time pub

jiu   kao-bu-shang daxue .
then   exam-not-up   college
    "If a high school student goes to pubs three times a week, he won't be able to pass the college entrance exam."

The subject can be relativized, and when the NP is the head noun (boldfaced in 3, 4), it can precede (3) or follow the relative clause (4).

(3)   ***Gao   zhong sheng***, *mei   zhou   qu san   ci   jiuba   de,*
    Hight school student every   week   go three time pub   DE

jiyu jinggao-chufen.
give warning-punishment
    "High school students, whoever go to pubs three times a week, will be given a warning."

(4)   *mei   zhou qu san   ci   jiuba   de **gao zhong sheng**,*
    every   week go three time   pub   DE high school student

genben kao-bu-shang daxue.
earthly exam-not-up college
    "High school students who go to pubs three times a week won't pass the college entrance exam at all."

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[2] The subject *yi ge gaozhongsheng* "a high school student" can follow the conjunction in both sentences, *ruguo yi ge gaozhongsheng…* "if a high school student", whether the subject is topicalized or not doesn't have effect on the relativization.

The closest paraphrase of the sentence with N-initial RC (3) is (5), where both a prepositional *duiyu* "to" and an auxiliary *yao* "will" needs to be added.

(5) <u>*dui-yu*</u> *mei   zhou qu san   ci   jiuba   de **gao zhong sheng**,*
     as.to   every   week go three time   pub   DE high school student

<u>*yao*</u>   *jiyu jinggao-chufen.*
will   give warning-punishment
     "High school students who go to pubs three times a week, should be given a warning."

In other words, the main clause that takes an N-initial RC as its argument cannot take an NP with N-final RC and yet expecting to stand as an independent sentence (6). Either adding a coordinate sentence (6) or adding an auxiliary (7) is required.

(6) *mei   zhou qu san   ci   jiuba de gao zhong sheng,   jiyu jinggaochufen;*
     every week go three time pub   DE high school student give warning

*(qu san   ci   yishang de, jiyu yanzhong-jinggao-chufen)
  go three time above   DE give serious-warning-punishment
     "High school students who go to pubs three times a week will be given a warning; those who go more than three times a week, will be given a serious-warning."

(7) *mei   zhou qu san   ci   jiuba de gao zhong sheng **hui** jiyu jinggaochufen*
     every week go three time pub   DE high school student will give warning.
     "High school students who go to pubs three times a week will be given a warning."

On the other hand, the main clause that licenses an NP with N-final RC, can also license an NP with an N-initial RC. The main clause predicate in (8) is the same as that in (4b).

(8) *Gao zhong sheng, mei   zhou qu san ci   jiuba de,*
     Hight school student every week go three times pub   DE

<u>*genben kao bu shang daxue.*</u>
earthly exam-not-up   college
     "High school students, whoever go to pubs three times a week, won't pass the college entrance exam at all."

The condition for licensing N-initial RCs is more restricted than that for N-final RCs, the main restrictions come from both conditions on extraction domain (what a possible relativization site is) and the condition on the type of predicate that takes N-initial RC:
For the relativization site:
     (i)   The head noun must be the subject gap.
               A Theme can be the head noun only when being promoted to

the subject position of the RC via passivization.
        (ii)   Temporal adverbs in the RC must be non-deictic.

For the complex NP:
        (iii)   an NP modified by an N-initial RC cannot occur in existential sentences when LocP is promoted.
        (iv)   This complex NP cannot be the subject of a progressive sentence or the subject of any anchored predicate.
        (v)   Demonstratives (Dem) *zhei/nei* 'this/that' and/or Numeral-Classifier (Num-CL) can't precede the RC.
        (vi)   Dem and/or Num-CL cannot precede the NP modified by a post NP relative clause.

In §2.1, I argue that properties (i, ii) show that the head noun is raised from a non-finite IP. In §2.2, I take (iii, iv) to suggest the N-initial can't be the subject of a finite clause (i.e. an Utterance time (t*) anchored clause). In §2.3, I take the inverted word order in N-initial RC to be related to the English auxiliary inversion in subjunctives and the position of relative pronouns (preceding –*ever*) in free relatives.

2.1 Restriction on the gap
        The head noun must be an extracted subject. A Theme can be the head noun only when being promoted to the subject position of the RC via passivization (9).

(9)   a.   *xuesheng __ bei kaoshiti nan-dao   le   de, keyi shui-jiao*
               student   __   by test   puzzle-fall ASP DE can sleep-nap
               'If there are any students, whoever they are, if they are puzzled by the test, they can sleep.'

      b.   **xuesheng, kaoshiti   nan-dao   le __ de, keyi shui-jiao*
              student   test   puzzle-fall ASP __DE can sleep-nap

        The licensing position for subject (spec-IP, or Agr$_s$) is higher than that of the object (Agr$_o$). The extraction gap cannot be headed by any predicate, i.e. cannot be in the Complement of vP.
        Temporal adverbs in the RC must be non-deictic.

(10)   *Er   nianji yi-shang de xiaoxuesheng,*
        two grade a-bove   DE pupil
        'pupils above Grade 2, (whoever they are, if they)'

a.   **zuo-tian/ *xia yibai bu jiao   zuoye   de,   jiyu chufen.*
       *yesterday/*next week not hand.in homework DE   give warning

b.   *liangxu san tian   bu jiao   zuoye   de,   jiyu chufen.*
       Continue three day   not hand.in homework DE   give warning
       "… don't hand in their homework for three successive days, should get a warning."

c.   *qian   yi tian bu jiao zuoye   de, di-er tian xuyao buqi.*
       before one day not hand.in homework DE second day need   submit
       "… don't hand in their homework, should submit it on the next day."

Non-deictic Temporal nominals are argued to be licensed at spec-TP (Di 2006); Deictic temporals link the event time of the sentence directly into the Utterance time, t*. Here, we see a future distinction on non-deictic temporal nominals. The T-linked non-deictic temporal NPs (*san-tian qian* "three days before"), cannot be licensed in N-initial RC (11).

(11)   **san-tian   qian   bu jiao   zuoye   de,   jiyu chufen*.
           *three day   before not hand.in   homework DE   give warning

The phrase doesn't anchor to the t*, and since the complex N-initial NP cannot be licensed as argument in a t* linked sentence (see §2.2), the kind of temporal nominals that can be licensed must not link to the t* directly (deictic temporal) or indirectly (via matrix clause).

To sum up, the relativization site of N-initial RC must be the subject and the complex NP must not be the subject of an anchored predicate, i.e. it is a subject of a non-finite clause.

2.2 Distribution of NPs with an N-initial RC
Complex NPs with an N-initial RC cannot be object (12), after preposition *bei* "by" or *ba* "get" (13), nor can they be the possessor (14).

(12)   *xiaozhang shuo   le <u>* N-initial   </u>*
           principle criticize   LE

(13)   a.   *xiaozhang ba <u>* N-initial   </u> shuo   le*
               principle   get   criticize   LE

        b.   *xiaozhang bei <u>* N-initial   </u> shuo   le*
               principle   by   criticize   LE

(14)   <u>** N-initial*   </u>*de haizi   /shoujuan*
                       DE children   /handkerchief

An NP modified by an N-initial RC can only be the subject of limited types of predicates, as we have seen, it can be the subject of modal verbs *neng* "can, allow, able", *keyi* "can, allow", or a predicate that conveys the meaning of permission or a necessary consequence *hui* "will, shall" (see all the grammatical sentences for illustration).
Complex NPs with N-initial RC cannot be the subject of a raising predicate *haoxiang* "seems" (15) or a control predicate *xiang* "want" (16).

(15)   **N-initial   haoxiang   shui zhao   le.*
                     seem   sleep asleep   LE
          "It seems that ___ has already fell asleep."

(16)   **N-initial   xiang shui jiao   le.*
                     want   sleep nap   LE
          "___ want to sleep."

NPs modified by N-initial RCs cannot occur in existential sentences (17).

(17) a.   *cao   ping shang tang zhe **xuesheng bu jiao   zuoye   de.**
             Grass gound up   lie ASP student   not hand.in homework DE.

     b.   ***xuesheng bu jiao   zuoye   de** zai cao   ping shang tang zhe.*
             student   not hand.in homework   DE at grass gound up   tie ASP.

This complex NP cannot be the subject of a progressive sentence (18b) or the subject of any anchored predicate (19).

(18) a.   ***Jiazhang bu canjia jiazhang-hui de,** keyi zai cao-chang chou-yan.*
             Parents   not attend parent-meeting DE can   at play-ground smoke
             'Parents, whoever they are, if they are not attending the meeting, can smoke on the playground."

     b.   ***Jiazhang bu canjia   jiazhang-hui de,** zheng zai   cao-chang   chou-yan.*
             Parents   not attend parent-meeting DE just   be.at play-ground smoke

(19)   *Jiazhang bu canjia   jiazhang-hui   de, mingtian qu jian xiaozhang.*
        Parents   not attend parent-meeting DE tomorrow go see principle

Demonstratives (Dem) *zhei/nei* 'this/that' and/or Num-CL can't precede the RC (20), which is a special property for N-initial. In N-final RCs, having Dem or Num preceding the RC are both grammatical (21).

                 NP   Dem   RC
(20) a.   * xuesheng zhei/nei [*bei kaoshi-ti nan-dao   le   de*], keyi shui-jiao
             Student   this/that by test   puzzle-fall ASP   DE can sleep-nap

                 NP   Num CL   RC
     b.   * xuesheng si   ge [*bei kaoshi-ti nan-dao   le   de*], keyi shui-jiao
             Student   four CL   by test   puzzle-fall ASP   DE can sleep-nap

        Dem   RC   NP
(21) a.   *zhei/nei [bei kaoshi-ti nan-dao   le   de*] **xuesheng** *keyi shui-jiao le*
             this/that by test   puzzle-fall ASP DE student   can sleep-nap LE
             "The/that student who has been puzzled by the test can sleep now."

        Num   CL   RC   NP
     b.   *si   ge [bei kaoshi-ti nan-dao   le de*] **xuesheng** *dou shui-jiao le*
             four   CL   by test   puzzle-fall ASP DE student   DOU sleep-nap LE
             "The four students who have been puzzled by the test can sleep now."

A Dem and/or Num-CL cannot precede the NP modified by a post NP relative clause (22); whereas N-final RCs gladly allow Dem or Num-CL to precede the head nouns (23).

        Dem   NP   RC

(22) a. *zhei/nei **xuesheng** [*bei kaoshi-ti nan-dao   le de*], *keyi shui-jiao (le)*
           this/that student   by test   puzzle-fall ASP DE   can sleep-nap (LE)

               Num   CL NP   RC
b.   *si   ge **xuesheng** [*bei kaoshi-ti nan-dao   le de*], *keyi shui-jiao*
           four   CL student   by test   puzzle-fall ASP DE   can sleep-nap

               Num CL NP   RC
b'.   *si   ge **xuesheng** [*bei kaoshi-ti nan-dao   le de*], *dou shui-jiao le*
           four   CL student   by test   puzzle-fall ASP DE DOU sleep-nap LE

                           RC   Dem   NP
(23)   a.   [*bei kaoshi-ti nan-dao   le de*] *zhei/nei* **xuesheng** *keyi shui-jiao le.*
                   by test   puzzle-fall ASP DE this/that student   can sleep-nap LE
                   "The/that student who has been puzzled by the test can sleep now."

                           RC   Num CL NP
        b.   [*bei kaoshi-ti nan-dao   le de*] *si   ge* **xuesheng** *dou shui-jiao le.*
                   by test   puzzle-fall ASP DE four CL student   DOU sleep-nap LE
                   "The four students who have been puzzled by the test can sleep now."

The complex NP with a post-nominal RC can only occur in a predicate that is not anchored to t* directly or indirectly. A relativized subject raised out of a non-finite clause forming a complex NP. The NP itself can only be the subject of a non-finite (generic) sentence.

The restricted syntactic properties match their special semantics (informally): the predicate scopes over the N-initial RC subject in **all** possible worlds; but the **existence** of the subject is not presupposed in any specific world(s).

2.3 Derivation

An N-initial RC is licensed as a subcase of the overlapping condition where one will use a subjunctive and a free relative. Informally put, the semantics of the sentences is: *whoever/whatever the NP (x) is, if x is an element in RC, then something will happen on x.*

In English, for certain high registers, auxiliary inversion can be used to form counterfactual condition (24).

(24)   a.   *Had we known that, we would have told you.*
        b.   *Were I the President, …*

In free relatives, a subpart of relative pronoun precedes the morpheme –*ever*.

(25)   *There is a lot of violence in whatever Parker writes.* (Fintel 2000)

There is a universal meaning encoded in certain free relatives (Dayal 1997, Fintel 2000), and Kayne (1994, 2005) suggests that *whatever* has two morphemes, a relative pronoun and a morpheme *ever*, a morpheme also found in indefinite *ever-y*. A relative pronoun is a determiner whose NP has raised to become the "head" of the relative. If a free relative has a relative pronoun, it has a "head". The derivation for free relatives involve raising the relative pronoun over *ever*.

If we take English *what-ever* in having the relative pronoun raised to precede a raised remnant DP *ever*; then in English, we have also find head-internal RCs. The "special" word order of relative pronoun preceding the head noun (*ever*) in English free relatives should also linked to the special semantics of free relatives.

The word order of the N-initial RC in Mandarin is "special" because its semantics is special. The "inversed" order of the NP and its modifier is not surprising as we have seen that inversion can be used to mark certain conditional sentence (although not the same type) in other language.

The derivation I suggests for N-initial RC, taking (1) as an example and repeated here as (26a), involve raising the RC and the main clause predicate (as illustrate in (26b, c).

(26)a. **dangshi-ren**   *dui jueding bu-fu*   *de, ke-yi shenqing fu-yi*.
          involved-people to decision not-agree DE can-by apply   re-discuss
          "If there is a party, no matter whom it consists of, if the party disagrees with the decision, they can apply for an appeal."

b.   The NP *dangshiren* "a party" raises up to Spec-ModP, thus becomes the argument of the ModP.
          Merge *de* as a complimentizer which attracts the remnant of the lower clause.
          Raise the Comp of ModP to spec of CP.
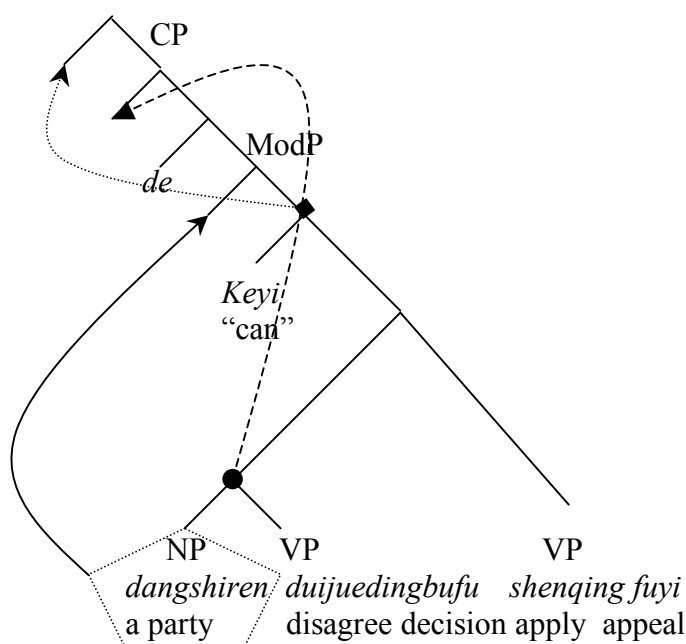
c.   Raise CP to the spec of non-finiteP, to become the argument of non-finite predicate.
          This triggers a remnant movement that contains the head noun to spec of a null universal operator CP (the head is where English *ever* finally lands).
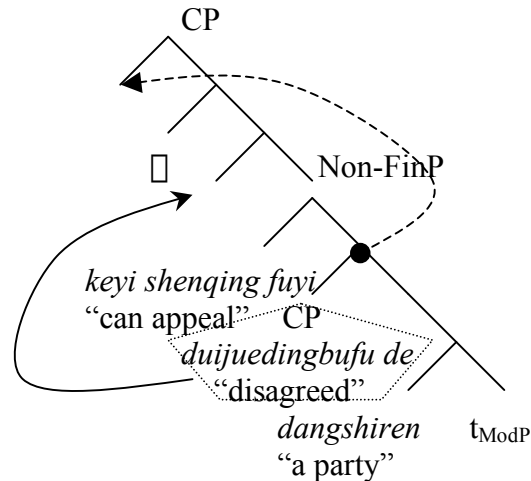
In this derivation, raising NP to a subject position, spec-ModP, is crucial in trigger the following movements. If the NP originates in the object position, it will miss the subject position (or violate Relativized Minimality (Rizzi, Stark 2001)).

3. Pronominal-initial RCs

When the head noun is a Pronoun (Pron), the subject gap is still required. In (27a) when the pronoun is the object, a Pronoun-initial RC is not allowed (28b). A Pron-final RC (28a), although very unnatural, is better than Pron-initial RC.

(27)   a.   *Nana kan-jian le _____.*
                look-see LE
             "Nana saw _____." (fill " _____ " with pronouns)

        b.   _____ *bei Nana kan-jian le.*
                by   Nana   look-see LE
             "_____ has been seen by Nana."

(28)   a.   ?(?) [*Nana kanjian de*] _____

        b.   *_____ [*Nana kanjian de*]

When we have an extracted subject, such as (27b), the Pron-final is still very unnatural (29a) but the Pron-initial become acceptable (29b), for both singular (29-b1) and plural (29-b2). The morpheme *men* turns singular pronouns into "plural" of the corresponding person.

(29)   a.   ?(?) [*Nana kanjian de*] _____

        b1.   *wo/ni/ta*   **(zhei ge)*   *bei Nana kan-jian de*
             1SG/2SG/3SG   this GE   by Nana look-see DE

        ye   *bian*   *cheng* *shitou le.*
        also   change into   stone LE
             e.g. "I was turned to stone by Nana just by being looked at."

b2.　　*wo/ni/ta*　　　*men ?(zhei xie)*　　　*bei Nana kan-jian de*
　　　1SG/2SG/3SG　MEN　this some　　　by Nana　look-see DE

dou　　bian　cheng　shitou　le.
DOU　change into　stone　LE
"We/You/They, who have been seen by Nana, are all turned to stone."

　　　Demonstratives (Dem) are needed in order to make the complex pronoun stand as an argument. Dem is not necessary for plural pronound (29b2), but it is required when the pronoun is singular (29b1).
　　　Whether a Dem is required or not does not only depend on the number of the pronoun. When the pronoun is singular, the appearance of Dem is also depending on the main predicate. In (30a) Dem is required, in (30b) it is optional, in (30c), when the subject of the main clause is a subpart of the pronoun, Dem is again required.

(30)a.　**wo/ni/ta**　　　***(zhei (ge))*　*kai*　　*chuzu de*　　*nar　dou renshi*
　　　1SG/2SG/3SG　*(this CL)　　　drive　taxi　DE　　　where DOU know
　　　e.g. "I'm the best taxi-driver, so I know every street."

b.　　**wo/ni/ta**　　　**(*zhei (ge)*)**　　*kai*　　*chuzu de*　　*nar　bu renshi?!*
　　　1SG/2SG/3SG　(this CL)　　　drive　taxi　DE　　where not know
　　　e.g. "Is there a place that I, a taxi-driver, don't know?!"

c.　　**wo/ni/ta**　　　***(zhei (ge)) kai**　　*chuzu de*　　*shoutou bu　fuyu*
　　　1SG/2SG/3SG　*(this CL)　drive　　taxi　DE　　hand　　not affluent
　　　e.g. "I, a taxi-driver, am not rich."

　　　Deictic nominal temporal adverbs can occur in the Pron-initial RC, either in RC or in the main clause, or even both (31).

(31)　*wo/ni/ta　　men zuo tian　kai　guo zhei liang chuzu　de*
　　　1SG/2 SG/3 SG MEN yesterday　drive ASP this　CL　taxi　　DE

jintian dou　bei jiao dao gong'an-ju　　qu le.
today DOU　by call to　police-station　　go LE
　　　e.g. "Those who drove this taxi yesterday are all called to the police-station today."

　　　And Pron-initial RC can be subjects or objects of various types of predicates (examples and details see §3.1, §3.2). Dem and Num affects the interpretation of the complex pronoun (§3.1), and also determines their distribution (§3.2).

3.1 Dem / Num and the semantics of the complex pronoun
　　　Dem cannot precede or follow a simple pronoun in Mandarin (32), nor can Num-CL (33).

(32)　a.　　　**zhei/nei Pron*
　　　　　　this/that

b.   *Pron zhei/nei

(33)   a.   *liu/yi   ge Pron
              six/one CL

      b.   *Pron liu /yi ge
                  six /one CL

Pron-final RCs can be licensed with strong unnaturalness (34a); however in the presence of Dem, Pron-initial is the only order: (35a) is unnatural, while (35b) a Pron-final RC with Dem is completely out.

(34)   a.   ?? *kai   chuzu de wo men bing   bu   fuyu.*
              Drive taxi   DE 1SG MEN frankly   not   rich
              "We taxi drivers are not rich."

      b.   *wo men kai   chuzu de bing   bu   fuyu.*
              1SG MEN drive taxi   DE frankly   not   rich
              "We taxi drivers are not rich."

(35)   a.   ?(?)*kai   chuzhu de ta-men, nar   you zhou-mo a.*
                 drive   taxi   DE 3SG-MEN where have week-end FORCE

      b1.   *zheixie kai   chuzhu de ta-men, nar   you   zhou-mo a.
              these   drive   taxi   DE 3SG-MEN where have week-end FORCE

      b2.   * kai   chuzhu de zheixie ta-men, nar   you   zhou-mo a.
              drive   taxi   DE these   3SG-MEN where have week-end FORCE

Num-CL is also impossible for a Pron-final RC, neither singular (36a) nor plural (36b).

(36)   a1.   *yi ge kai   chuzhu de ta,   nar   you   zhou-mo a.
               one CL drive   taxi   DE 3SG   where have week-end FORCE

      a2.   * kai   chuzhu de yi ge ta,   nar   you   zhou-mo a.
              drive   taxi   DE one CL 3SG   where have week-end FORCE

      b1.   * si ge kai   chuzhu de ta-men, nar   you   zhou-mo a.
               four CL drive   taxi   DE 3SG-MEN where have week-end FORCE

      b2.   * kai   chuzhu de si   ge ta-men, nar   you   zhou-mo a.
              drive   taxi   DE four CL 3SG-MEN where have week-end FORCE

Dem and Num can be licensed in Pron-initial RC (37).

(37)   *ta-men (zheixie / liu ge) kai   chuzhu de, nar   you zhou-mo a.*
        3SG-MEN these   six CL drive taxi   DE where have week-end FORCE
        "How could they, those/the four who are taxi drivers, have time to enjoy a week-end?"

Dem has the effect of licensing a modifier for singular pronouns and functioning as a Determiner that introduces an argument to a sentence (30), a Num-CL can also function as D (38).

(38)a. **_wo/ni/ta_** ***(_yi (ge)_)** **_kai_** **_chuzu de_** _nar_ _dou renshi_
1SG/2SG/3SG *(one CL) drive taxi DE where DOU know
e.g. "I'm a taxi-driver, so I know everywhere."

b. **_wo/ni/ta_** **(_yi (ge)_)** **_kai_** **_chuzu de_** _nar_ _bu renshi?!_
1SG/2SG/3SG (one CL) drive taxi DE where not know
e.g. "Is there a place that me, a taxi-driver, don't know?!"

c. **_wo/ni/ta_** ***(_yi (ge)_)** **_kai_** **_chuzu de_** _shoutou bu fuyu_
1SG/2SG/3SG *(one CL) drive taxi DE hand not affluent
e.g. "I, a taxi-driver, my life is not rich."

In subject positions of non-existential/presentational sentences, Dem and Num differ slightly in meaning. With Dem, the person (denoted by the pronoun) distinguishes himself from the rest taxi-drivers. The presupposition is: I know every street. It doesn't imply that all taxi-drives know every street in town. When Num is used, the presupposition is: all taxi-drivers know the streets. Because I am a taxi-driver, so I know every street.

In other words, when singular pronoun is the head noun, in [Pron$_{SG}$ Num RC] it restricts the RC, i.e. modifying the RC in a way an attributive adjective modifies the NP. In [Pron$_{SG}$ Dem RC], the pronoun and the RC co-index.

Plural pronouns, all marked by the morpheme _men_, allow Dem (Num-CL) but don't require them in the corresponding sentences (39).

(39) a. **_wo/ni/ta_** **_men (zhei si ge)_** **_kai_** **_chuzu de_** _dou bu fuyu_
1SG/2SG/3SG MEN (this four CL) drive taxi DE DOU not affluent
"All six of us/you/them who are taxi-drivers are all not very rich."

b. **_wo/ni/ta_** **_men (zhei si ge)_** **_kai_** **_chuzu de_** _nar bu renshi?!_
1SG/2SG/3SG MEN (this four CL) drive taxi DE where not know
"How could there be a place that the six of us/you/them who are taxi-drivers don't know?"

c. **_wo/ni/ta_** **_men (zhei si ge)_** **_kai_** **_chuzu de_** _shoutou bu fuyu_
1SG/2SG/3SG MEN (this four CL) drive taxi DE hand not affluent
"The six of us/you/them who are taxi-drivers are all not very rich."

For _women_ "1PL EXCLUSIVE" and _nimen_ "2PL" complex pronouns with Dem, the semantics of [_wo/ni-men_ Dem RC] is the same as having a Num in singular pronoun-initial RC ([Pron$_{SG}$ Num RC]). Namely, the main predicate scopes over **all** members denoted by the RC, and the pronoun identifies the same set of entities as those identified by the RC.

In other words, the restrictive pronoun meaning (where the pronoun pick up a subset of RC, and the main predicate scopes over the pronoun) is not available for

women "1PL EXCLUSIVE" and *nimen* "2PL".

When the pronoun is *zanmen* "1PL INCLUSIVE" and *tamen* "3PL", the pronoun is used as an appositive modifier to the RC in [Pron RC], and they can be "restrictive clause" to the RC in [Pron Dem RC], both meanings can be derived in [Pron Num RC].

(40) *Lai,   (*kuaile de)³ zan-men   96jie   de   gan yi bei!*
      Come (*happy DE) 1SG(INC)-MEN 96grade   DE   dry one glass
      "Come on, let's/let us who are graduated in 1996, have a glass (of beer)!"

Both restrictive and appositive meanings in (40) are possible: it can be that there are people around the table who did not graduate in 1996 and therefore don't join the toasting; or everyone join the toasts. The reference of the complex DP depends on that of the RC. In (41), when the pronoun *zanmen* is not modified, everyone (the speaker and all the addressees in the context) must take part in the toasting.

(41) *Lai,   (*kuaile de) zan-men   gan yi bei!*
      Come (*happy DE) 1SG(INC)-MEN   dry one glass
      'Come on, let's have a glass (of beer)!'

In other words, the relative clause does restrict the reference of the pronoun in imperatives. *wo-men* "1PL EXCLUSIVE" cannot occur in imperatives, the *ni-men* "2PL", and *ta-men* "3PL" behaves like *zan-men* "1PL INCLUSIVE", they allow both restrictive and appositive RCs.

Del Gobbo (2001) cites Delorme and Dougherty (1972), who claim that only appositive relative clauses can modify first and second person pronouns, changing "you" into "we" yields ungrammaticality:

(42) a.   We, who are women, think that you, who are men, should go now.
      b.   *We, who are women, think that we, who are men, should go now.

If we use the inclusive pronoun *zanmen*, (42) cannot be replicated in Mandarin as both sentences will be bad (43). When we change the inclusive pronoun to exclusive pronoun *women* "1PL EXC", (42) can then be replicated (44).

(43) a.   *zanmen ji   ge nude   juede nimen ji   ge nande gai   zou le.*
              1PL INC several CL woman think 2PL several CL man should go LE

      b.   *zanmen ji   ge nude   juede zanmen/women   ji   ge nande*

---

³ Simple pronouns can be modified by adjectives, although fairly unnatural.

(i)   a.   ?(?)*kuaile   de women*
                pleased DE 1PL(EXCLUSIVE)
      b.   ? *xingfu de ta*
                happy DE 3SG

However complex pronouns as indicated in (40, 41) cannot be modified by adjectives.

1PL INC several CL woman think 1PL INC/1PL EXC   several CL man

gai   zou le.
should go LE

(44)   a.   *women ji   ge nude   juede nimen   ji   ge   nande*
            1PL EXC several CL woman think   2PL   several CL   man

gai   zou le.
should go LE

              "We women think that you men should go now."

          b.   **women ji   ge nude   juede zanmen/women   ji   ge nande*
            1PL EXC several CL woman think 1PL INC/1PL EXC   several CL man

gai   zou le.
should go LE

English doesn't have the inclusive vs. exclusive distinction, thus the contrast has been attributed to the property of pronoun's modifier. Mandarin shows that the restrictive/appositive distinction should be attributed to the interpretation of pronoun as well as the morpheme Dem/Num.

To sum up, Pron-initial RCs require an extracted subject gap. The pronoun cannot be further modified by adjectives, but when modified by post pronoun RC, the plural pronouns (except 1PL EXCLUSIVE) license both restrictive and attributive RC. In subject position, pronouns (except 1PL EXCLUSIVE and 2PL) can restrict the reference of the Num-RC-(NP), with or without the "antecedent" NP; and co-indexing with its antecedent in Dem-RC-(NP). 1PL EXCLUSIVE and 2PL can only co-indexing with the RC-(NP).

3.2 Dem/Num and the structural positions of Pron-initial RCs

Pron-initial RCs can occur in existential sentences (45), in subject position, they needs either a Dem or a Num-CL. For singular pronouns, taking 3rd person as an example (which carries over to 1st and 2nd person), Dem is required (45-a1), Num-CL degrades (45-a2), and a bare head pronoun-RC (45-a3) is ungrammatical.

(45)   ____   *zheng zai cao ping   shang tang zhe ne .*
                 right   at grass ground up   lie   ASP FORCE

                 Pron$_{SG}$ Dem CL   RC   NP
      a1.   *ta   zhei   ge* [*mei   jiao   zuoye   de*] ??(*ban-ganbu*)
                3SG   this   CL not.have hand.in homework DE   class-leader.
                "She, a class president who didn't turn in her homework, is lying on the grass."

                 Pron$_{SG}$ Num CL   RC   NP
      a2.   ??*ta   yi   ge* [*mei   jiao   zuoye   de*] (*ban-ganbu*)
                 3SG   one   CL not.have hand.in homework DE   class-leader.

                 Pron$_{SG}$ RC   NP
      a3.   **ta* [*mei   jiao   zuoye   de*] (*ban-ganbu*)
                 3SG not.have hand.in homework DE   class-leader.

a4.   *Ta*
        3SG
        "She is lying on the grass."

        Pron_{PL} Dem Num CL RC   NP

b1.   *tamen nei san ge* [*mei   jiao   zuoye   de*] (*ban-ganbu*)
        they   that   three CL not.have hand.in homework DE class-leader
         "Those three class presidents who haven't handed in their homework
are lying on the grass."

        Pron_{PL} Num CL   RC   NP

b2.   *tamen san ge* [*mei   jiao   zuoye   de*]   (*ban-ganbu*)
        they   three CL not.have hand.in homework DE   class-leader
         "Those three class presidents who haven't handed in their homework
are lying on the grass."

        Pron_{PL}   RC   NP

b3.   ?*tamen* [*mei   jiao   zuoye   de*] ?(*ban-ganbu*)
         they   not.have hand.in homework DE   class-leader
         "Those three class presidents who haven't handed in their homework
are lying on the grass."

b4.   *Tamen*
        they
        "They are lying on the grass."

For plural pronouns, when they are subjects in existential sentences, both Dem and Num-CL can make the complex pronoun a suitable DP, a pronoun with bare-RC (45-b3) is not perfect if the antecedent NP is not pronounced (45-b3). Dem in the RC of a singular complex pronoun forces the antecedent NP (45-a1) to be pronounced.

Locative Inversion is a place where we see the Definiteness Effect, i.e. a Dem preceded NP cannot be licensed.

(46)   *cao ping   *shang tang zhe zhei ge xuesheng.*
        Grass ground   up   lie   ASP this CL student

When the Ground is promoted, simple pronouns cannot be licensed (47-a4, 47-b4), but complex pronouns with Dem preceding the RC can be licensed. Again, in complex singular pronouns, Dem forces an overt antecedent (47-a1); when the pronoun is plural, no such requirement is necessary (47-b1). Num-CL can license a complex plural pronominal DP (47-b2), but it cannot license a DP with a singular pronoun (47-a2).

(47)   *cao   ping shang tang zhe*_____
        grass   ground up   lie ASP

        Pron_{SG} Dem CL   RC   NP

a1.   *ta   zhei ge* [*mei   jiao   zuoye   de*] ??(*ban-ganbu*)
        3SG   this   CL not.have hand.in homework DE   class-leader.

"She, a class president who didn't turn in her homework, is lying on the grass."

	Pron$_{SG}$	Num	CL	RC				NP
a2.	*ta	yi	ge	[mei	jiao	zuoye	de]	(ban-ganbu)
	3SG	this	CL	not.have	hand.in	homework	DE	class-leader.

	Pron$_{SG}$	RC				NP
a3.	*ta	[mei	jiao	zuoye	de]	(ban-ganbu)
	3SG	not.have	hand.in	homework	DE	class-leader.

a4. *Ta
      3SG

	Pron$_{PL}$	Dem	Num	CL	RC			NP
b1.	tamen	nei	san	ge	[mei	jiao	zuoye	de] (ban-ganbu)
	they	that	three	CL	not.have	hand.in	homework	DE class-leader

"Those three class presidents who haven't handed in their homework are lying on the grass."

	Pron$_{PL}$	Num	CL	RC				NP
b2.	tamen	san	ge	[mei	jiao	zuoye	de]	(ban-ganbu)
	they	three	CL	not.have	hand.in	homework	DE	class-leader

"Those three class presidents who haven't handed in their homework are lying on the grass."

	Pron$_{PL}$	RC				NP
b3.	??tamen	[mei	jiao	zuoye	de]	*(ban-ganbu)
	they	not.have	hand.in	homework	DE	class-leader

b4. *Tamen
      they

As theme object of a resultative, Dem is required by singular complex pronouns (48a) and it is optional for plural pronouns.

(48)a. *Nana zhongyu zhaodao le ta *(zhei ge) xue   yao   de le.*
Nana finally   find   LE 3SG *(this CL) learn   medicine   DE LE.
"Nana finally found him, who studied medicine."

b. *Nana zhongyu zhaodao le ta men (zhei si ge) xue   yao   de le.*
Nana finally   find   LE 3SG MEN (this four CL) learn   medicine DE LE.
"Nana finally found them, the four who studied medicine."

Num can only license an incomplete sentence for singular pronouns and also optional for plural.

(49)a. *Nana zhongyu zhaodao le ta *(yi ge) xue   yao   de (le),*
Nana finally   find   LE 3SG *(one CL) learn   medicine   DE LE

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*(ke   hai-shi bu jiejue wenti).
 but yet-be not solve problem
   "Nana finally found him, someone who studied medicine, but still that doesn't help much." (For instance, only a doctor can do the job, not a pharmacist).

b. *Nana zhongyu zhaodao le ta men (si ge) xue   yao   de le.*
   Nana finally   find   LE 3SG MEN (four CL) learn   medicine DE LE.
   "Nana finally found them, the four who studied medicine."

   To sum up, simple pronouns show the Definiteness Effect while complex pronouns don't. Dem cannot precede or follow a simple pronoun in Mandarin, but it can precede a post pronoun RC. In a complex singular pronoun, an obligatory Dem forces an overt antecedent; when the pronoun is plural, the Dem is optional and the NP doesn't have to be pronounced. A complex plural pronominal DP in the object position can be licensed without any Dem or Num. Dem and Num are also crucial in licensing complex singular pronouns in the object position of resultatives, only a Dem can license a complete sentence.

3.3 One of the derivations for Pron-initial RCs
   The fact that a complex pronoun can co-occur with Dem already makes Mandarin different from languages like English and Norwegian. What's more, a Dem inserted complex pronoun can occur in the places where a simple pronoun cannot, such as the Definiteness Effect position.
   English Pronouns cannot be modified easily, in Standard English, only 1st and 2nd plural can be modified by a RC. In some varieties of American English, a complex pronoun can take the accusative form in nominative position.

(50) a. *%Us linguists love beauty.*
   b. *Life is difficult for us students.*

   In Norwegian, pronouns can be modified easily, and the modified pronouns all take the Nominative form (Hestvik,1992).

(51) a. *hun/*henne med rød hatt*
      she / her with red hat
   b. *hun/*henne uten hår på hod-et*
      she/ her without hair on head-the
   c. *hun/*henne som går der*
      she/ her that walks there
             (from Hestvik 1992, changing *han* "he" to *hun* "she", as Tarald Taraldsen suggested due to the fact that nominatives and accusatives of masculine third singular often have the same form in many Norwegian dialects.)

   The Norwegian nominative case, a position marker, isn't sensitive to positions in complex pronouns. Dem, which can only be licensed in the preverbal position of an existential sentence when the DP is simple (52), can be licensed in both positions when occurring inside a complex pronoun. In this respect, the Mandarin Dem is similar to a case marker.

(52) a. ?? (??*zai*) *zhuang* *shang* *zuo* *zhe* ***nei*** ***ge haizi***.
              at bed up sit ZHE that CL child

    b. ***nei*** ***ge haizi*** *zheng zai* *zhuang shang* *zuo* *zhe* *ne*
       that CL child right at bed up sit ZHE NE
       "That/the child is sitting on the bed."

Although Dem cannot be licensed in complex pronouns in Norwegian, post-NP definite articles can be licensed.

(53) a. **den* *han som jeg snakket* *med* (Hestvik 1992, note 12)
        that/it he that I talked with

    b. *han* *gutt-en* *som* *jeg* *snakket* *med*
       he boy-the that I talked with

Again pointed out to me by Tarald Taraldsen, proximal demonstratives in Norwegian have the same form as the third person pronoun *den* "it", *det* "it, expletive" and *de* "they". Thus the ungrammaticality of (53a) can be related to the ungrammaticality of having stacked pronouns.

If Mandarin Dem is also closer to the Norwegian definite (*–en*, *-et*, *-a*) suffix, then the difference between Mandarin and Norwegian is where the morpheme occurs: Pron D RC N (Mandarin) vs. Pron N D RC (Norwegian). The word order difference can in part be explained by the hypothesis that Dem is a case marker as Nominative on pronoun is.
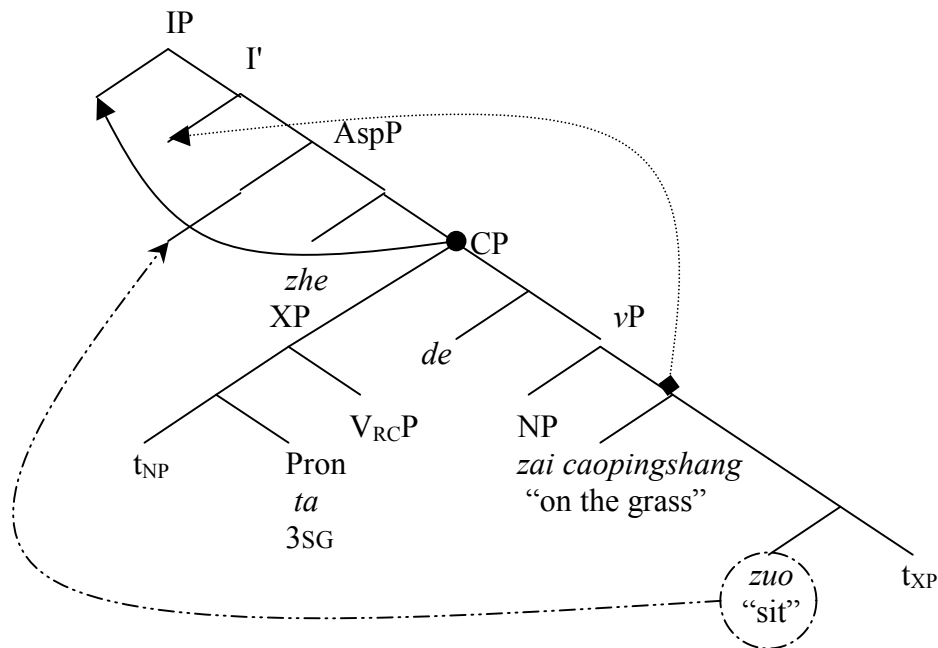
Leaving Norwegian aside, for complex pronouns in Mandarin, Dem is similar to the case markers that are lost in complex pronouns.

Thinking of Kayne (2002), pronoun and its antecedent start of their derivation together [*John he*]. I take the NP as merging with the pronoun and propose the derivation for (47-a1) is as in (54). Here, the NP doesn't come into the derivation with any specified reference, which features will be gained during the derivation.
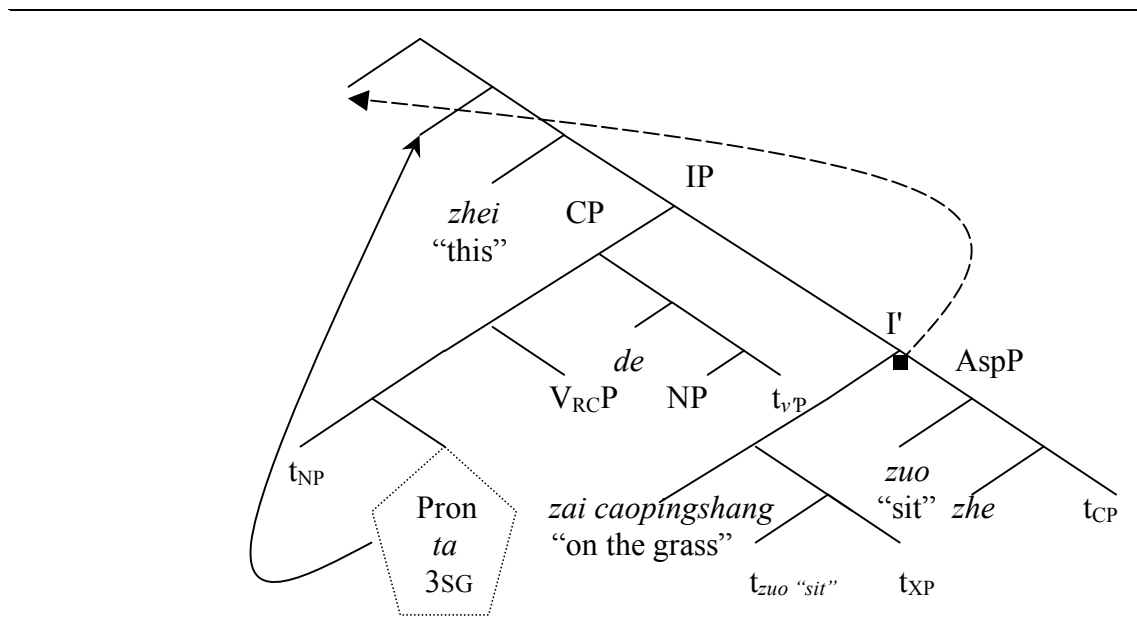
(54) a. Similar to the derivation of N-initial RCs, the NP raises up to the Spec of a verbal projection that licenses a subject and thus becomes the subject of the main predicate. Then raise the remnant to spec of *de* and Merge aspectual marker *zhe*.
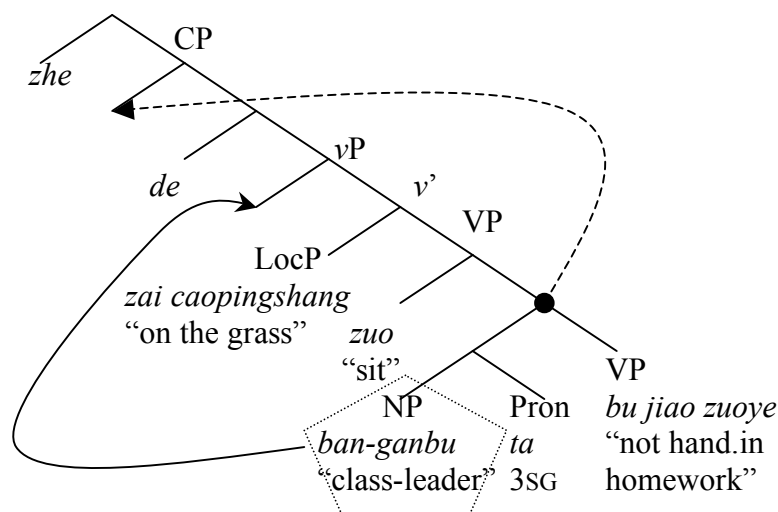
b.   Move *zuo* "sit" to Spec *zhe,* trigger remnant movement of *v*'P to I'. Move CP to spec IP.

IP
I'
AspP
CP
zhe
XP
de
*v*P
t_{NP}
Pron
ta
3SG
$V_{RC}P$
NP
zai caopingshang
"on the grass"
zuo
"sit"
t_{XP}

c. Merge Dem, trigger movement of pronoun. Raise the predicate I'.

IP
zhei
"this"
CP
I'
AspP
de
$V_{RC}P$ NP $t_{v'P}$
zuo
"sit" *zhe*
t_{CP}
t_{NP}
Pron
ta
3SG
zai caopingshang
"on the grass"
$t_{zuo \ "sit"}$
t_{XP}

The derivation in (54) can be refined once we have a clearer understanding of the verbal-aspectual system, in particular, where the LocP is licensed. What is important for the present analysis is that there is a NP raising to A-position in (54a) which is also found in (26b).

There are three semantic types of Pron-initial RCs in subject positions. First, the RC specifies the reference of the pronoun, as in (40). Plural pronouns, except 1PL EXCLUSIVE, in imperatives belong to this group. Secondly, pronouns (except 1PL EXCLUSIVE and 2PL) restrict the reference of a Num preceded RC. Thirdly, 1PL EXCLUSIVE and 2PL pronouns co-index with their antecedents in Dem preceded RCs.

In existential sentences, all pronouns co-index with their antecedent RC-(NP)s. Yet in singular pronouns, an obligatory Dem forces an overt antecedent; when the pronoun is plural, Dem is not required, and the NP doesn't have to be pronounced.

The derivation in (54) will *at most* capture the derivation of singular pronouns in existential sentences, in the Definiteness Effect position. It would be wrong to assume that it covers the derivation of all instances of Pron-initial RCs in all the aforementioned cases. The licensing of IP is consciously simplified, thus the interweaving licensing of a complex DP and its predicate (Sportiche 2002) is not represented. However, the raising of NP to an A-position, the important step that captures the subject/object asymmetry, is represented. This step should exist in all Pron-initial RCs.

4. Conclusion

Sportiche (2008) and Kayne (2007), take French *qui* and the English complementizer *that* as instances of a relative pronoun and a demonstrative, respectively. It is not apparent how the present analysis carries over to French and English[4], however, both N-initial and Pron-initial RCs respect subject/object asymmetry on the extraction gap, which is shared by the French *que/qui* alternation, as well as the English *that-trace effect. Therefore, the shared NP raising step in (54a) and (26b) should exist in subject related positions.

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[4] However, Taraldsen (2002) analyzes Vallader *qui* as *que* plus an *i* morpheme that is related to *id* "it", a special type of expletive (note 3). If expletive in existential involves a raising of *there* (Kayne 2006), the links among Mandarin, English, Romance and Norwegian should be all related to the raising a certain phrase.