The formation of relative clauses in Jakarta Indonesian: data from adults and children[*]

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Our purpose in the present paper is to examine whether the relativized NP in *yang*-relative clauses in Colloquial Jakarta Indonesian (CJI) is or is not restricted to subjects. The data for the study were based on the database of the speech of children and adult-to-adult speech in CJI, as well as the linguistic judgments of two native speakers of CJI. The results of our analysis showed that for adult and child speakers of CJI, object gap relativization and adjunct relativization are also possible, in addition to the preponderance of relative clauses involving subject gap relativization. We argued that children and adults employ essentially similar strategies in forming relative clauses. Children, however, differ from adults in two respects, that is (i) children relativize from object position to an even lesser degree than adults do and (ii) children relativize from adjunct position more freely than adults do.

1. Introduction

Two major claims have been put forward regarding the positions which can be relativized in *yang*-relative clauses, the most frequently occurring type of relative clause in Indonesian. According to the first view (e.g., Dardjowidjojo 1973, Kana 1986, Sie 1988, Sneddon 1996, and many other earlier works), the strategy is only available for subjects. Under the second view (e.g., Chung 1976a, Musgrave 2001, Cole and Hermon 2005), the relativized NP is not restricted to subjects. Our purpose in the present paper is to examine this question with respect to Colloquial Jakarta Indonesian (henceforth Jakarta Indonesian).[1] We will show that for adult and child speakers of Jakarta Indonesian, in addition to the preponderance of relative clauses involving subject gap relativization, object gap relativization and adjunct relativization are also possible (though infrequent).[2] We shall claim that children and

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[1] Jakarta Indonesian is a regional dialect of Indonesian that is spoken on a daily basis in Jakarta, the capital city of Indonesia. It is used for inter-ethnic communication and increasingly also for intra-ethnic communication. It is also gaining currency as an informal lingua franca throughout urban areas in Indonesia. Jakarta Indonesian is distinct from Betawi Malay, the native dialect of the indigenous ethnic community of Jakarta. It is also distinct from Standard (and near-standard) Indonesian, varieties which are used in more formal contexts in Jakarta and throughout Indonesia. From the perspective of acquisition, Jakarta Indonesian is acquired naturally, automatically and completely by most or all children growing up in Jakarta. In contrast, Betawi Malay is acquired by at most a small minority of Jakarta children, alongside Jakarta Indonesian. Standard Indonesian is generally acquired by children at a later age via formal instruction in schools.

[2] The data for this study are based on three sources: 1) the MPI Jakarta Indonesian Database (a large database of naturalistic data based on the speech of children (henceforth *Child*) and their caretakers

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adults employ essentially similar strategies in forming relative clauses. Children, however, differ from adults in two respects: (i) Children relativize from object position to an even lesser degree than adults do and (ii) children relativize from adjunct position more freely than adults do. We shall argue that children and adults have the same grammar and attribute the discrepancy between the two groups to processing constraints affecting children and to the lack of knowledge of some pragmatic constraints by children.

The paper is organized as follows. In section 1 we provide a brief description of the strategies of relative clause formation in Standard Indonesian. We then proceed to discuss the two opposing views on the relativization possibilities of Indonesian relative clauses. In section 2 we describe the formation of relative clauses by adult and child speakers of Jakarta Indonesian. We conclude the paper in section 3 by discussing the discrepancies between adults' and children's strategies for forming relative clauses.

2. Relative clause formation in Standard Indonesian

According to Sneddon (1996) and Musgrave (2001), the most frequent type of relative clause in Indonesian is one that is formed with the complementizer *yang* and with a gap in place of the relativized NP, as illustrated in (1).

(1) a. *Orang$_i$ yang   ∅$_i$ duduk dekat jendela*
       person   COMP   sit   near   window
       'The person who is sitting near the window' (from Sneddon 1996)

    b. *Gadis$_i$ yang   ∅$_i$ dilihat Umar itu*
       girl   COMP   DI-see Umar   that
       'The girl that was seen by Umar' (from Sneddon 1996)

Note, however, that the complementizer *yang* is not normally used in relative clauses involving adjunct relativization (such as relativization of a time or place adverbial), as discussed in Sneddon (1996). Consider the following examples:

(2) a. *Saya ingat   hotel **di mana/tempat**   saya   pernah menginap*
       1SG remember hotel in   which/place   1SG   once   MEN-stay
       'I remember the hotel where I once stayed.' (YN)

    b. *Saya masih punya foto **waktu/ketika** saya   masih kecil*
       1SG   still have photo time/when   1SG   still small
       'I still have the pictures when I was a little boy.' (YN)

In such examples, however, the use of the complementizer *yang* can be felicitous when a time adverbial is relativized in a context in which a choice is presented between two previously mentioned times. Consider the example in (3).

(3) *Saya mencari   foto   yang kita pergi ke New York bukan yang   ini*
     1SG   MEN-look photo COMP 1PL go   to New York not   COMP this
     'I'm looking for the picture when we went to New York, not this one.

In addition to the strategy involving gaps in place of the relativized NPs, Indonesian allows what Musgrave (2001) refers to as the *resumptive pronoun* strategy. Relative clauses of this type are formed with the resumptive pronoun *-nya* in place of the relativized NP. This strategy allows possessors, objects of nasal-prefixed verbs, and the objects of some prepositions to be relativized:

(4)   a.   *Orang$_i$ yang mobil**nya**$_i$ dicuri*
             person COMP car-3   DI-steal
             'The person whose car was stolen' (from Sneddon 1996)

       b.   *Sebuah lagu$_i$ yang barangkali saudara akan menyukai**nya**$_i$*
             one   song COMP perhaps   2SG   will MEN-like-I-3
             'A song which perhaps you will like' (from Sneddon 1996)

       c.   *Rumah$_i$ yang di belakang**nya**$_i$ ada pohon mangga*
             house   COMP in back-3   exist tree   mango
             'The house behind which there is a mango tree' (from Sneddon 1996)

There are two opposite views regarding the accessibility of various positions in the relative clause when the *yang*-gap strategy is employed. Dardjowidjojo 1973, Kana 1986, Sie 1988, Sneddon 1996, and many other earlier works argue that in this type of relative clause, only a subject can be relativized. In Sneddon's words, "a relative clause can contain any constituent occurring in an independent clause except the subject, which is identical to the head of the embedding noun phrase ... If the [head] noun stands as object, the verb must be passive." (p. 286)

(5)   a.   *Orang$_i$ yang ∅$_i$ membangun rumah saya*
             person COMP   MEN-build   house 1SG
             'The person who built my house' (from Sneddon 1996)

       b.   *Tanah$_i$ yang ∅$_i$ sudah digarap*
             land   COMP   already DI-work
             'The land which has been worked' (from Sneddon 1996)

       c.   *Dokter$_i$ yang ∅$_i$ kami telpon segera datang*
             doctor COMP   1PL call   immediate come
             'The doctor who we called quickly came.' (from Sneddon 1996)

The examples in (5) illustrate the claim: In (5a) the subject of the active clause is relativized, while in (5b) and (5c) the derived subjects of the passive constructions are claimed to be relativized.

Crucially, in order to maintain the "subject constraint" on relativization, one has to argue that examples (5b) and (5c) both involve relativization on a passive subject. While the argument is easy to make in (5b), (5c) merits further discussion, since the verb appears in a bare form which could potentially be an active form (especially in the colloquial language, a variety in which the nasal prefix is often omitted, as described in Chung 1978).

There are two types of passive-like constructions in Indonesian. Using the terminology of Dardjowidjojo (1978) and Sneddon (1996), we shall refer to them here

as Passive Type One (P1) and Passive Type Two (P2) (although current research suggests that P2 is not a true passive but rather "object voice").[3] In P1, the NP corresponding to the object in the active clause is promoted to subject position, the verb is marked by the prefix *di-*, and the agent, the NP corresponding to the subject in the active clause, follows the verb (optionally preceded by *oleh* 'by'). Consider the examples below.

(6)   a.   *Siti mencium anak itu*   (Active)
             Siti MEN-kiss child that
             'Siti kissed that child.' (YN)

        b.   *Anak itu   dicium (oleh) Siti*   (P1)
             child that DI-kiss by   Siti
             'The/that child was kissed by Siti.' (YN)

In P1, the agent cannot precede the verb when it is not preceded by *oleh*.

(7)   a.   **Anak itu Siti dicium*
             child that Siti DI-kiss
             'The/that child was kissed by Siti.' (YN)

        b.   *Anak itu   oleh Siti dicium*
             child that by   Siti DI-kiss
             'The/that child was kissed by Siti.' (YN)

In P2, the NP corresponding to the object in the active clause is promoted to the subject position, while the NP corresponding to the subject in the active clause occurs immediately to the left of the verb. In contrast to P1, in P2 the prefix *di-* does not occur and the verb must have the bare form. Furthermore, the agent cannot be preceded by *oleh* 'by' and there is a strong preference that the agent be a pronoun (typically, first or second person).

(8)   a.   *Anak itu   saya cium*   (P2)
             child that 1SG   kiss
             'The/that child was kissed by me.' (YN)

        b.   **Anak itu   saya dicium/nyium*
             child that 1SG   DI-kiss N-kiss
             'The/that child was kissed by me.'

P2 sentences have additional characteristics: When the negative marker *tidak*, auxiliaries/modals like *boleh* 'can', *akan* 'will', aspectual/temporal auxiliaries like *sedang* 'progressive', *sudah/telah* 'already', *belum* 'not.yet', *pernah* 'ever' are present, they must precede the agent since one could argue that in P2 sentences, the agent is

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[3] See Arka and Manning (1998), Cole, Hermon, and Yanti (2008) and a variety of later works for a discussion of how passive and object voice differ. For a somewhat contrary view, see Nomoto and Kartini (2016), who argue for a continuum between passive and object voice. Mckinnon, Cole, Hermon and Yanti (2016) provide a diachronic account of the connection between object voice and passive. Additionally, in the functional literature some instance of *yang* are discussed in terms of nominalization (an idea attributed to Shibatani). In contrast, we make the assumption that, regardless of its function, *yang* is structurally a complementizer.

cliticized to the verb and therefore no element can interfere between the agent and the verb.[4]

(9)   a.   *Anak itu **tidak boleh** saya cium*   (P2 sentence)
           child that not   can   1SG kiss
           'The/that child cannot be kissed by me.'

      b.   **Anak itu saya* **tidak boleh** *cium*
           child that 1SG not   can   kiss
           'The/that child cannot be kissed by me.'[5]

The claim then is that (5c) is derived by a derivation in which the patient/theme undergoes passivization to subject position (via P2). Given that there are clear word order effects in Standard Indonesian associated with P2, there should be clear surface evidence for or against this derivation.

Alternatively, other researchers like Chung (1976a), Musgrave (2001), Cole and Hermon (2005) argue that direct object relativization from a clause with a bare verb is also possible (at least with respect to "near standard Indonesian", the Indonesian employed by educated non-linguist Indonesians who believe themselves to be speaking Standard Indonesian, but who may violate some prescriptive rules). Consider the following examples.

(10) a.   *Inilah   buku*$_i$ *[yang saya sudah baca* $\varnothing_i$]   (Object relativization)
           this.LAH book   COMP 1SG   already read
           'This is the book that I have read.' (YN)

      b.   *Inilah   buku*$_i$ *[yang* $\varnothing_i$ *sudah   saya baca]*   (Subject relativization)
           this.LAH book   COMP   already 1SG   read
           'This is the book that I have read' (YN)

As seen in (10), the modifying clause of the relative clause in (10a) differs minimally from that of (10b) in that the aspectual marker *sudah* follows the agent in (10a), but it precedes the agent in (10b). According to these researchers, the word order exhibited in (10b) is the word order expected in a P2 construction, but that in (10a) is not. Since P2 is involved in the derivation of (10b), what is relativized in (10b) is the subject. In contrast, since (10a) is an active clause with a bare verb and not a P2 clause, what is

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[4] Alternatively, Musgrave (2001) derives the word order from the position of the functional categories heading Aux and Aspectual phrases in Indonesian.

[5] We claim that this sentence in ungrammatical as a passive (P2). In other words, the NP *anak itu* in (9b) is not the subject of the sentence under the subject tests like those employed in Chung (1976b). The word order is well formed under a different derivation, a derivation which involves object topicalization (see Musgrave 2001, p. 60). There are a number of arguments for making this distinction. a. The example in (9b) is only grammatical with a topic-comment intonation in which there is a pause between the putative topic and the rest of the sentence. In fact, the intonation is identical to the one found in sentences derived by a copy rule, which have a topic-comment structure (Soemarmo 1970, inter alia):

(i)   *Anak itu,   saya **tidak boleh** cium dia*
          child that 1SG not   can   kiss him
          'The/that child, I cannot kiss him.'

b. One can argue that *anak itu* is a topic (adjoined to IP or perhaps a DP in Spec-CP position) rather than a subject, since it fails to behave like a subject under the tests used in Chung (1976b), tests which show that sentence initial DPs in the P2 construction are indeed subjects rather than topics. We do not have space to go through the arguments here.

relativized is a nonsubject NP. Thus, in addition to P2 subject relativization, direct nonsubject relativization also occurs. We take these arguments to be uncontroversial with regard to Standard Indonesian (or at least "near standard").

3. Relative clause formation in Jakarta Indonesian

In this section we provide data from both adult and child speakers of Jakarta Indonesian. We show that in this colloquial variety, the distinction exhibited in (10) is also instantiated. In other words, we shall argue that object relativization is possible in Jakarta Indonesian.

3.1 Adult data

The data given here were taken from two databases, a database of adult-to-adult speech database (A-A) and a one of adult-to-child speech (A-C). Relative clauses preceded by the complementizer *yang* were extracted and coded as having either a *subject gap* or a (potential) *nonsubject gap*. The relative clauses that are coded as having subject gaps are of three types. The first type contains an (active) verbal predicate and a relativized NP which is the subject of the verb, as illustrated in the following example:

(11)   [*Gua tipe orang* [*yang memberi*]*, gitu   lho*
          1SG type person COMP MEN-give   like.that EXCL
          [Speaker talking about the ideal boyfriend and girlfriend]
          'I am the type of person who gives, you see.' (A-A)

The second type has a passive verbal predicate (the verb has the prefix *di-*), as exemplified in (12).

(12)   [*Kita harus cari* [*yang   benar-benar dicintai*]
          1PL must find COMP really   DI-love-I
          [Speaker discussing the quality of a husband]
          'We has to look for the one that is really loved (by us).' (A-A)

The third type has a nonverbal predicate, as seen in (13).

(13)   [*yang halus kayak gini   nih*]
          COMP soft   like   like.this this
          [Speaker talking about the type of hair]
          'The hair which is soft like this' (A-A)

The relative clauses that are coded as having nonsubject gaps all have verbal predicates and are subdivided into four types. The first type contains clauses which are potential candidates for an analysis of P2, but which are also compatible with a direct relativization analysis:

(14)   [*yang saya hubungi*] *mungkin bangsa koperasi-koperasi   gitu*
          COMP 1SG contact-I perhaps like   cooperative-cooperative like.that
          [Speaker talking about marketing shoes]
          'The one which I contacted is some sort of cooperative.' (A-A)

The second type contains clauses which exhibit a word order that is only compatible with the word order of the P2 construction. As exemplified in (15), the adverb *udah* 'already' precedes the agent.

(15)   *Tarolah sahabat cewek* [*yang* **udah** *elu kenal   baek*] *gitu   kan*
         Put-LAH friend   female COMP already 2SG recognize good   like.that KAN
         [Speaker talking about the ideal boyfriend and girlfriend]
   'Say, a girl friend that you have really known very well, right?' (A-A)

The third type contains clauses which exhibit a word order that is incompatible with the word order of the P2 construction. As seen in the (16), the negative marker *nggak* follows the agent instead of preceding it.

(16)   *Pasti ada sesuatu   dalam diri dia* [*yang gua* **nggak** *punya*]
         sure exist something in   self 3SG COMP 1SG not   have
         [Speaker talking about the ideal boyfriend and girlfriend]
         'There must be something in her that I don't have.' (A-A)

The fourth type that we code as having a nonsubject gap (or perhaps no gap at all) is adjunct relativization, as exemplified in (17).

(17)   *Ini kan yang waktu Hizkia pergi sama Tante, Om   Uri.*
         this KAN COMP time   Hizkia go   with auntie uncle Uri
         [Speaker referring to a person that Hizkia did not remember]
         'This one [the person you saw] when you went with me, [it is] Uncle Uri.'[6]
         (A-C)

Figure 1 summarizes the frequency of relative clauses that are coded as having subject gaps and nonsubject gaps, and Figure 2 summarizes the frequency of the four types of nonsubject gap relativization.

	Adult-Adult (427/494 & 67/494)	Adult-Child (772/788 & 16/788)
■ Subject Gap Relativization	86.50%	98.00%
□ Nonsubject Gap Relativization	13.50%	2.00%
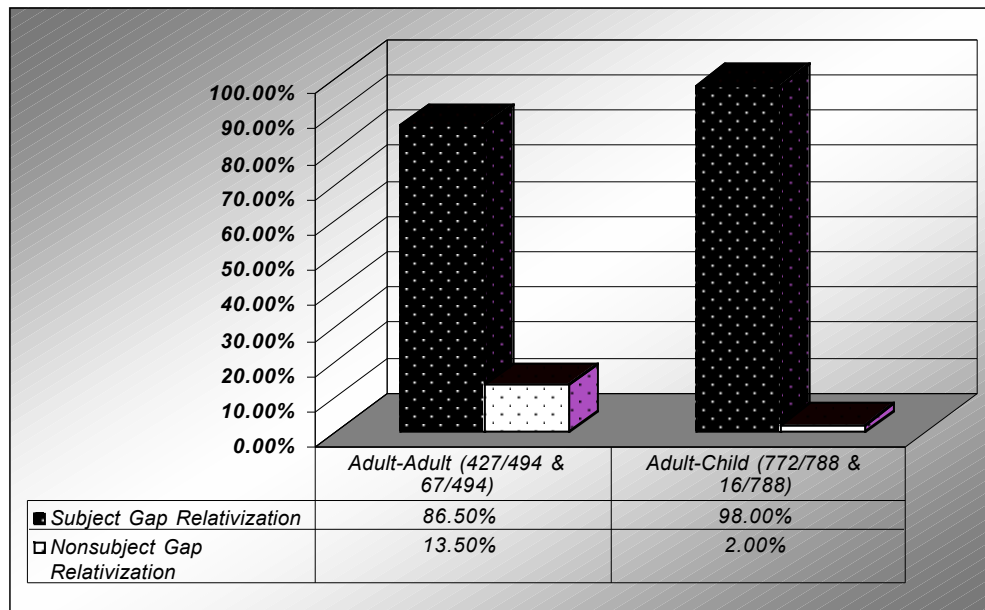
Figure 1: Subject versus nonsubject relativization (adults)

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[6] 'Hizkia' refers to the addressee (= 'you'); 'Tante' refers to the speaker (= 'me').
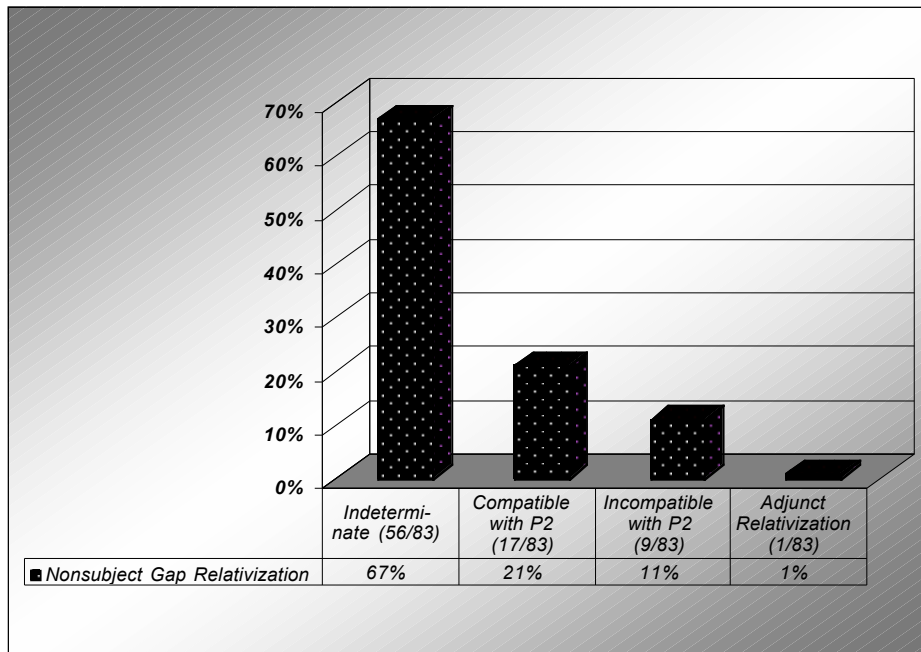
Figure 2: Nonsubject relativization (adults)

As seen in Figure 1, adults overwhelmingly use subject gaps and have few object gaps. Moreover, as we see in Figure 2, the majority of examples of nonsubject gaps are sentences that could be examples of either direct relativization on object position or relativization on a subject in a P2 construction. Consider the examples given in (18):

(18)   a.   *Cewek* [***yang elu mau***] *kayak apa?*
            female COMP 2SG want like   what
            [Speaker talking about the ideal boyfriend and girlfriend]
            'The girl that you want, what is she like?' (A-A)

       b.   *Bisa aja kan cewek itu   termasuk* [***yang dia idamkan***]
            can just KAN female that including COMP 3SG crave-KAN
            [Speaker talking about the ideal boyfriend and girlfriend]
            It is likely that that girl is the one he yearns for.' (A-A)

As seen in (18), the word order of the sentences inside the relative clauses does not indicate clearly whether they are instances of P2 sentences with a relativized subject and a pronominal agent, or of an active relative clause with an object gap, since neither the negative marker nor the auxiliaries are present in the sentence. In contrast, the word order of the following examples is compatible only with a P2 structure, since functional heads like negation, auxiliaries and aspectual markers cannot precede the subject in an active sentence.

(19)   a.   *Banyak* [*yang* ∅ ***bisa*** *kita buat*], *kayak Pelbba itu kan bisa*
            many   COMP   can 1PL make like   Pellbba that KAN can
            [Speaker discussing what can be done to generate more income]
            'There are many things we can do, take Pelbba for example.' (A-A)

      b.   *Tarolah sahabat cewek* [*yang* ∅ **udah**   *elu*   *kenal*   *baek*] *gitu*   *kan*
           put-LAH friend   female COMP   already 2SG recognize good like.that KAN
           [Speaker talking about the ideal boyfriend and girlfriend]
           'Say, a girl friend that you have really known very well, right?' (A-A)

The sentences of (19) differ from those of (18) in that the auxiliaries *bisa* 'can' and *udah* 'already' are present. As we see in (19), the auxiliaries *bisa* and *udah* precede the agents. Since the word order of the sentences in (19) is restricted to P2 sentences, it can be argued that what is involved in (19) is (derived) subject gap relativization rather than nonsubject gap relativization.

There are, however, in our adult data cases (nine out of eighty three) of nonsubject gap relativization which do not have the characteristics of P2 word order. Consider the examples below.

(20) a.   *Dan* [*yang gua* **bisa** *jalanin* ∅], *ya   gua jalanin*
          and   COMP 1SG can walk-IN   yes 1SG walk-IN
          [Speaker reminiscing on the hard times he used to have]
          'And whatever I can do, well I do it.' (A-A)

      b.   *The dark side of Yuli* [*yang banyak orang* **nggak** *tau* ∅]
           the dark side of Yuli COMP a.lot   person not   know
           [Speaker commenting on what Yuli has revealed about herself]
           'The dark side of Yuli that many people don't know.' (A-A)

      c.   *Nih,* [*yang suka buat maen* ∅ *Rizka*]
           this   COMP like for play   Rizka
           [Rizka's mother commenting on the toy]
           'This, the one that you, Rizka, like to play with' (A-A)

As we see in (20a) and (20b), the negative marker *nggak* 'not' and the auxiliary *bisa* 'can' occur between the subject and the verb rather than preceding the agent. This word order indicates that the sentences inside the relative clauses cannot be instances of the P2 constructions. (20c) is another problematic case for P2, since the agent is not adjacent to the verb due to predicate fronting which strands the agent. This suggests that the modifying relative clause is not an instance of the P2 constructions since in the P2 construction the agent cannot be separated from the verb. We therefore conclude that the type of relativization exhibited in (20) is different from that in (19). The facts exhibited in (20) can only be accounted for if we posit that the grammar of Jakarta Indonesian allows relativization directly from object position, as was previously argued in Chung (1976b), Musgrave (2001), Cole and Hermon (2005) with respect to Standard Indonesian (or, at least, 'near standard').

Finally, let us note the one case of adjunct relativization from the adult-to-child database, as illustrated in (17), repeated below.

(17)   *Ini kan   yang waktu Hizkia pergi sama Tante, Om   Uri.*
        this KAN COMP time   Hizkia go   with auntie uncle Uri
        [Speaker referring to a person that Hizkia did not remember]
        'This one [the person you saw] when you went with me, [it is] Uncle Uri.'
        (A-C)

As we have noted in section 1, the use of the complementizer *yang* is felicitous when a time adverbial is relativized in a context in which choice is presented between two or more previously mentioned pictures taken at different occasions. This is exactly the context in this utterance; if not, the sentence would only be grammatical without the complementizer *yang* in the adult language.[7]

To summarize, adults exhibit many examples of relativization on object position using the *yang*-gap strategy. Since some of the examples cannot involve P2 in the derivation (and many provide no clear evidence for P2), we conclude that object relativization is used in the colloquial language.

3.2 A note on the deletion of the nasal prefix

If we examine the relative clauses in (18), (19), (20), the similarity shared by all of them is the fact that the verbs have bare forms. To explain this, we shall consider a descriptive generalization, first put forward by Chung (1976a) and later adopted by Saddy (1991, 1992), Musgrave (2001), Cole and Hermon (2005), that the nasal prefix is not permitted whenever an NP is moved across a verb. A complicating factor is the observation that in the colloquial language the nasal prefix is often omitted in active sentences even when no NP is moved across the verb. (See Chung (1978) and Gil (2002) for discussions of verbal morphology in colloquial Indonesian.) As a result, we need to reexamine whether speakers obey the constraint that a bare verb must be used when the verb is followed by a trace or a gap. For example, if movement occurs in P2 sentences like (19) or in sentences involving object gap relativization like (20), we should expect speakers to obey the constraint that only bare verbs are allowed. Consider the following examples.

(21) a. *Gua nggak ngatain/katain dia goblok*   (Active)
          1SG not   N-say-IN/say-IN 3SG stupid
          'I didn't call him stupid.' (YN)

      b. *Dia nggak gua katain/*ngatain goblok*   (P2)
          1SG not   1SG say- IN /N-say-IN stupid
          'He was not called stupid by me.' (YN)

We have not examined all of our data for potential counterexamples to this generalization with respect to the P2 construction, but we have observed a relaxation of this constraint in two examples (2 out of 67) which involve clear object gap relative clauses:[8]

(22) a. *Nah itu* [*yang kita sendiri belum bisa **ng**antisipasi itu*]
          well that COMP 1PL self   not.yet can N-anticipate that
          [Speaker talking about the possibility of people being unable to pay their debts]
          Well, that is something that we have not yet been able to anticipate (A-A)

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b. *nggak, tapi sebenernya* [*yang tadi   Vincy **ng**omong itu*] *mungkin bener lho*
   not   but   actually   COMP earlier Vincy N-speak that maybe   true EXCL
   [Speaker commenting on what Vincy said on the boy-girl relationship]
   'No, but actually the thing that Vincy just mentioned may be right.' (A-A)

Given the word order, the sentences of (22) are arguably instances of object gap relativization and therefore it is predicted that the verbs inside the relative clauses should not have the nasal prefix. One could possibly argue that the examples in (18) are not bonafide examples of the gap strategy, since the pronoun *itu* in these examples could be analyzed as a resumptive pronoun. Some speakers, at least, consider these sentences degraded if *itu* is omitted. Thus, the sentences of (22) could be comparable to those that employ the nongap strategy with the resumptive pronoun *-nya*, as exemplified in (4b), repeated below.

(4b)   [*Sebuah lagu* [*yang barangkali saudara akan menyukainya*]
     one   song COMP perhaps   2SG   will   MEN-like-I-3
     'A song which perhaps you will like' (IRG)

To conclude, the examples of unexpected nasal prefixed verbs in our A-A database seem to be very rare (2 out of 67) and are open to an alternative analysis as a topic-comment clause with a resumptive pronoun. We do find, however, suggestions in the literature that there are poorly understood conditions under which the nasal prefix can appear on the verb of a relative clause. Chung (1976b) cites the following examples, attributed to Keenan (1972) (presumably from Standard Malay/Indonesian) but explicitly rejected as bad examples in Musgrave (2001):[9]

(23)   a.   *Ada seorang anak perempuan yang   saya ingin kamu **men**emui*
           exist one   child female   COMP 1SG want 2SG   MEN-see-I
           'There is a girl whom I want you to meet' (Chung, 1976, ex. 35)

     b.   *Anda melihat orang yang   saya **men**coba bunuh*
           2SG   MEN-see person COMP 1SG   MEN-try   kill
           'You saw the man who I tried to kill.' (Chung, 1976, ex 36)

We therefore note that the requirement that the nasal prefix not appear on verbs when movement over the verb has occurred is perhaps being eroded in the colloquial language. While the ban on the nasal prefix in this environment is an absolute generalization in Standard Indonesian, it seems to be instantiated only as an overwhelming statistical tendency in Jakarta Indonesian. Maybe this is due, as claimed in Gil (2002), to a change in the status of the nasal prefix. Gil argues that it has lost its grammatical status as a marker of active transitive verbs in the colloquial language. We, therefore, would predict that children should make errors with respect to this generalization: Children might have more frequent 'errors' than adults involving the use of the nasal prefix instead of a bare verb. We will observe below that this is in fact a greater tendency in the child grammar than in the adult grammar.

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[9] Chung also notes that the nasal prefix can never appear on the verb in SI if P2 (her object preposing rule) has applied:

(ii)   **Buku itu akan saya membaca*
       book the will   1SG MEN-read
       'The book was read by me./This book, I read.'

To sum up, we have shown in this section that subject gap relativization and direct object gap relativization are possible options in the grammar of adults speakers of Jakarta Indonesian and that speakers observe the constraint requiring nasal prefix deletion with a moved NP to a large extent (if not absolutely).
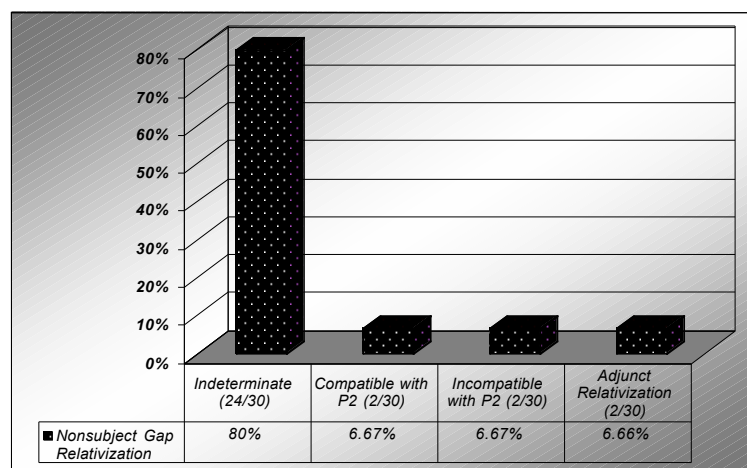
3.3 Child Data

Figure 3 shows the frequency of subject gap relativization and nonsubject gap relativization in the MPI database of naturalistic data based on the speech of three children (Hizkia, Riska, and Timothy) from the age 2;0 to 5;0.

	Subject Gap Relativization (2781/2811)	Nonsubject Gap Relativization (30/2811)
■ Child	99.00%	1.00%
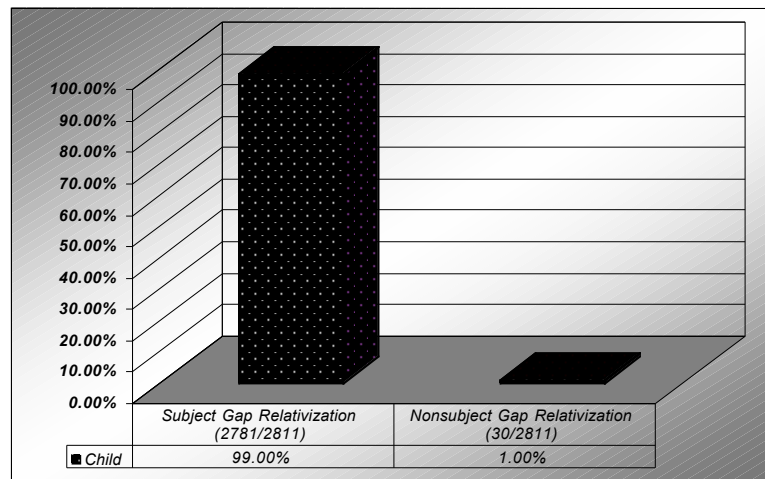
Figure 3: Subject versus nonsubject relativization (children)

The frequency of relative clauses coded as nonsubject relativization is given in Figure 4. In general, children seem only to allow relativization on subjects: while we found 86.50% of the A-A examples to contain subject relative clauses, the child data contains 99% subject relative clauses.[10]

	Indeterminate (24/30)	Compatible with P2 (2/30)	Incompatible with P2 (2/30)	Adjunct Relativization (2/30)
■ Nonsubject Gap Relativization	80%	6.67%	6.67%	6.66%

Figure 4: Nonsubject relativization (children)

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[10] Note, however, that in the adult to child speech an identical trend of 98% subject relative clauses was observed. We interpret the difference between the A-A and A-C registers to reflect the fact that adults try to follow the child grammar when talking to young children. Similar effects with respect to differences in types of relative clauses were noted in Hermon and Tjung (2002).

As we see in Figure 4, similar to the adult data, the majority of relative clauses (80%) coded as nonsubject gap relativization are those that contain a potential object gap, but for which a P2 analysis is also possible.

(24) a. *Ini* [*yang aku cari*]
          this COMP 1SG look.for
          [Child's mother and experimenter trying to make the child drink milk]
          'This is what I'm looking for.' (C)

      b. *Yang, yang,* [*yang Mama beli*]
          COMP COMP   COMP mother buy
          [Child referring to something that his mother bought]
          'The one... the one... the one that you, Mommy, bought' (C)

As we see in (24), the word order of the sentences inside the relative clauses does not clearly indicate whether they are instances of P2 sentences since neither a negative marker nor an auxiliary is present in the sentence. In contrast, the word order of the examples in (25) show that the sentences inside the relative clauses are compatible with the word order of P2 sentences.

(25) a. *Anjing* [*yang pernah Ica liat*]
          dog   COMP ever   Ica see
          [Child and experimenter talking about animals]
          'The dog I, Ica, have seen before.' (C)
      b. *Tante* [*yang udah   Ica kasi*], *ininya.*
          aunt   COMP already Ica give   this-3
          [Child giving experimenter fake money]
          'Auntie, what I, Ica, have given is this.' (C)

The sentences of (25) differ from those of (24) in that the aspectual marker *udah* 'already' and the adverb *pernah* 'ever' are present. As we see in (25), these words precede the agents, suggesting the word order of the P2 constructions. Thus, what is involved in (25) is (derived) subject gap relativization rather than nonsubject gap relativization.

Recall earlier that we found 9 cases of clear nonsubject gap relativization in adult speech. This led us to conclude that object gap relativization is an option available in the grammar of adult speakers of Jakarta Indonesian. Similar cases also occur in children's speech even though they are much less frequent than with adults. The two instances of such cases in the sample that we found are given in (26).

(26) a. *Soalnya   kan ada* [*yang Ca belom* ...]
          problem-3 KAN exist COMP Ca not.yet
          [Child referring to pictures in the magazine]
          'Because there is something that I haven't yet ...' (C)

      b. *Tapi yang, yang, yang, itu   yang* [*yang Pak Polisi lagi* ...]
          but   COMP COMP COMP that COMP COMP Mr. police in.progress
          [Child referring to the dog that the policeman has]
          'But, that is the one that Mr. Policeman was ...' (C)

As we see in (26), the modifying clauses are incomplete (the verbs are missing), but the fact that the aspectual markers *belom* 'not yet' and *lagi* 'in progress' follow the agent rather than precede it shows that these relative clauses cannot be instances of

the P2 construction. Therefore, we conclude that the examples of (26) have a derivation which involves direct relativization from object position.

To summarize, up to this point children appear to differ from adults only in certain minor ways. We show that they are able to employ both subject gap relativization and direct object gap relativization in their formation of relative clauses. Children, however, seem to have very few unambiguous object relatives as compared to adults (1% only of object relativization versus 13.5% in the adult-adult data). We shall try to provide an explanation for this difference in our concluding section. We shall next turn to two additional areas in which children seem to differ from adults.

Children appear to use a different strategy from adults in relativizing time adverbials (though we lack sufficient examples to be sure that the results are general). Consider the following examples:

(27) a. [*Yang Ica beli Kentucky ya, Bu?*]
           COMP Ica buy Kentucky yes mother
           [Child, his mother, and experimenter talking about cap worn by people working at McDonald's restaurant]
           'When I, Ica, bought Kentucky, right Mom?'

      b. [*Yang kita maen di Tasa* ...]
           COMP 1PL play in Tasa
           [Child and experimenter recalling someone they both know]
           'When we played at Tasa's'

As we see in (27), children differ from adults when relativizing a time adverbial. In the case of adults, the relativizer *yang* is only used in a restricted context, namely in a context in which choice is presented between two previously mentioned times. Children, however, do not obey this constraint. As we mentioned earlier in section 1, for adults in a normal context, when a time adverbial is relativized, only the words *waktu* 'time' and *ketika* 'when' are possible, but not the complementizer *yang*. Children, however, collapse the distinction between the two relativization strategies and employ the complementizer *yang* for both the normal and restricted contexts.

We shall next turn to a discussion of whether children obey the constraint on using bare verbs in relative clauses with an object gap. Given the marginality of the object gap strategy in child language, it is important to ask whether children obey the constraints on the use of bare verbs in this construction. After all, we noted a few random examples of violations in the adult language (2/67). Children have an even larger number of such 'violations' (4 out of 30). Consider the following examples.

(28) a. *tuh* [*yang Ibu   ng*ajar]
           that COMP mother N-teach
           [Experimenter asking child who Miss Ciko is]
           'That is the one that you, Mother, teach.'

      b. [*yang Tante Ernie m*bawa itu]
           COMP auntie Ernie N-bring that
           [Child and experimenter talking about toys]
           'The one that you, Auntie Ernie, brought'

It seems then to be a fact that children sometimes do not delete the nasal prefix of the verbs inside the relative clauses when relativizing an object.

4. Conclusions

We have observed three areas in which children seem to differ from adults: children use object gap relativization even less than adults; they overextend the environments for adjunct relativization; and they are less strict about observing the constraint requiring bare verbs than adults are. The question then arises of what can account for the adult-child differences, since the child does not exactly replicate the adult patterns.

It has been argued in the literature on the acquisition of relative clauses that subject relativization is inherently 'simpler' than object relativization and, that, as a result, even in languages like English, in which object relative clauses are very robust in the adult language, children will have a tendency to start out with a high proportion of subject relatives. Diessel (2009) attributes this directly to the *accessibility hypothesis*, which he views as closely related to Keenan and Comrie's (1977) Accessibility Hierarchy (AH). The AH asserts that if a language allows relativization of a certain syntactic role low on the hierarchy it also allows relativization of all positions higher on the hierarchy. In effect, the AH predicts that languages will always allow relative clauses with a subject gap, while object relativization is not universal. Keenan and Comrie speculate that the AH "directly reflects the psychological ease of comprehension. That is, the lower a position is on the AH, the harder it is to understand relative clauses formed on that position" (Keenan and Comrie 1977, p.88, see also Hawkins 1994, 1999).[11]

The literature on the acquisition of relative clauses suggests that the AH is operational in predicting the order of acquisition. It has been reported that children have fewer difficulties with subject relative than with object relative clauses (Brown 1971, De Villiers et al. 1979). Even for older children (age 10-11), Keenan and Hawkins (1987) noted that on a repetition task errors increased as the type of RC decreases in position on the AH. They conclude that "the order of acquisition appears to follow the AH, with subjects being mastered before full mastery of object (direct and indirect) relative clauses…" (Keenan and Hawkins 1987, p. 79). In a detailed longitudinal analysis of the development of relative clauses in natural child speech in English, Diessel (2002) reports that 77.5% of the earliest relative clauses (based on an analysis of relative clauses produced by Adam, Sarah, Nina and Peter from the CHILDES database) were relative clauses in which the subject was relativized (versus 20% object relativization). Diessel notes that up to about age 3;0 the children primarily used subject relatives, and only as the children grew older did the proportion of object

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[11] What the exact processing considerations are which make object relatives harder to comprehend and produce than subject relatives will not be discussed here. See Hawkins (1999) for a detailed discussion.

relatives increase. In fact by age 5;0 object relatives were more frequent than subject relatives).[12]

We would like to propose that the same pressure which results in children preferring subject relatives in English also plays a role in Indonesian. The child thus pays attention not only to the frequency of constructions in the adult input but also produces fewer object relatives due to processing conditions related to the AH.

Our second discrepancy between children and adults comes from the few instances in which children use *yang* relative clauses when relativizing on time adverbials. Adults only allow the use of *yang* under very limited circumstances (when choice between two previously mentioned times/places are involved). If the few instances recorded are representative of children generally, children have generalized the use of *yang* to a wider domain than adults. This is not surprising, since it is well known that children have trouble figuring out the discourse and pragmatic uses of various constructions (See, for example, the claims involving the errors children make with respect to the distribution of pronouns in early child language). Therefore, it could be claimed that children simply overgeneralize the use of *yang* when relativizing a time adverbial.[13]

As for the last difference (children's greater inaccuracy in using the verb with the nasal prefix instead of the bare verb) we would like to claim that this is a situation in which language change and variable input is resulting in the child having a different grammar from the adult. Adults seem to 'violate' the condition on bare verbs sporadically. This differs from individual to individual and possibly is affected by knowledge of the prescriptive rules of Standard and near Standard Indonesian, which dictate that only the bare verb is possible when the object is moved. Young children, who have no knowledge of prescriptive rules and little exposure to the standard language, interpret the variation as more general, which we take to mean that the rule is losing its grammatical status in the colloquial language.

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[12] For example, Nina's Relative clauses show the following asymmetry:

	0 - 2;11	3 - 3;11
Subject Relative Clauses	76%	47%
Object Relative Clauses	21%	33%

Nina's mother, on the other hand, produces 30.4% subject relative clause, and 59.3% object relative clauses (Diessel and Tomasello 2000, tables 8-9).

[13] When we search for children's use of *waktu* and *ketika* in our MPI database, we found that *ketika* is nonexistent and *waktu* is only used to introduce a time adverbial clause. We didn't find cases in which *waktu* is used to introduce a time-adverbial relative clause.

Abbreviations

3	3rd person pronominal clitic
1SG	1st person singular pronoun
2SG	2nd person singular pronoun
3SG	3rd person singular pronoun
1PL	1st person plural pronoun
MEN-	Nasal prefix in Standard Indonesian
N-	Nasal Prefix in Jakarta Indonesian
DI-	Passive prefix used in both Jakarta and Standard Indonesian
-I	Applicative suffix in Standard Indonesian
-IN	Applicative Suffix in Jakarta Indonesian
-KAN	Applicative suffix in Standard Indonesian
KAN	word used for affirmation
-LAH	Particle used for emphasis
COMP	Complementizer
EXCL	Exclamatory word

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