Types of freezing effects.

LUIGI RIZZI
TG3
Criterial Freezing

(1)a  John wonders [which_Q book Q [ Bill read __ ]]

   b * Which book does John wonder [ __ Q [ Bill read __ ]]

   (Lasnik & Saito 1992)

(2) Criterial Freezing: A phrase satisfying a Criterion is frozen in place

Can a descriptive principle like (2) be deduced from more general principles?
The « inactivation » approach
( inspired by Chomsky 1995)

A-movement can take place when the moved element has a feature to check.

(2) John seems [ __ to be sick ]

Once the feature is checked, further movement becomes impossible:

(3) * John seems [ __ is sick ]
Bošković (2008): inactivation in A’-chains

(1) John wonders [$Q[\text{Bill read } \text{which}_Q \text{book}]] \rightarrow \text{movement}

(2) John wonders [$\text{which}_Q \text{book} Q[\text{Bill read } \_]]$

At this point, $Q$ is checked, so that the phrase is not movable, and the following cannot be derived:

(3) $*\text{Which}_Q \text{book } Q \text{ does John wonder [ } \_ Q [\text{Bill read } \_]]$
More complex cases are not amenable to inactivation: Q and Top

(1) \([\text{quale}_Q \text{ di questi libri}_{\text{Top}}]\)
   ‘Which one of these books’

(2) Gianni si domandava \([\text{quale}_Q \text{ di questi libri}_{\text{Top}}]\) Q [volessimo leggere __]
   ‘Gianni wondered which one of these books we wanted to read’

(3) \([\text{Di questi libri}_{\text{Top}}]\) Top Gianni si domandava \([[\text{quale}_Q \__]\) Q [volessimo leggere __]]
   ‘Of these books, Gianni wondered which one we wanted to read’

(4) * \([\text{Quale}_Q \text{ di questi libri}_{\text{Top}}]\) Top [Gianni si domandava [__ Q [volessimo [leggere __]]]]
   ‘Which one of these books Gianni wondered we wanted to read read’
More complex cases are not amenable to inactivation: Q and Foc (in cleft)

(1) \([\text{ quale}_Q \text{ di questi libri}_{Foc}]\)  
   ‘Which one of these books’

(2) Gianni si domandava \([\text{ quale}_Q \text{ di questi libri}_{Foc}]\)  \(Q\) [volessimo leggere __]  
   ‘Gianni wondered which one of these books we wanted to read’

(3) \(E' \text{ [di questi libri}_{Foc}]\) Foc che Gianni si domandava  \([\text{ quale}_Q \__]Q\) [volessimo leggere __]]  
   ‘Of these books, Gianni wondered which one we wanted to read’

(4) \(*E' \text{ [quale}_Q \text{ di questi libri}_{Foc}]\) Foc che  [ Gianni si domandava [ __ Q [volessimo [leggere __]]]]  
   ‘Which one of these books Gianni wondered we wanted to read read’
A revision of criterial freezing

(3) [Di questi libri_{Top}] Top Gianni si domandava [ [quale_{Q}___ ] Q [volessimo leggere ___ ]]  
‘Of these books, Gianni wondered which one we wanted to read’

The possibility of subextracting a constituent from the criterial configuration shows that the original formulation is too strong

(1) Criterial Freezing I: A phrase satisfying a criterion is frozen in place

(2) Criterial Freezing II: In a criterial configuration the criterial goal is frozen in place

The « criterial goal » is the element marked with the criterial feature and attracted (with a phrase containing it) to the LP.
Subextraction is possible, but not pied-piping of the whole phrase: Q and Q

(1) [ quanti$_Q$ capitoli di quale$_Q$ libro ]
   How many chapters of which book’

(2) Di quale libro Q non sai [ quanti capitoli __ ] Q dovremo leggere __?
   ‘Of which book don’t you know how many chapters we should read’

(3) * Quanti capitoli di quale libro Q non sai __ Q dovremo leggere __?
   ‘How many chapters of which book don’t you know we should read?’
The whole criterial configuration can be moved but not undone

An entire criterial configuration can be moved as a whole, for instance, an indirect question can be clefted or topicalized, but the criterial configuration cannot be “undone”:

(1) [[Quanti libri di questo autore] Q [siano stati pubblicati nel 1967]] Top non lo so davvero __

‘How many books by this author have been published in 1967, I really don’t know

So, a criterial configuration cannot be “undone” by movement, while less can be extracted (subextraction), or the whole configuration can be moved.
The subject position as the halting point of A-chains

Under current assumptions, subjects move from the VP to a subject position in the high IP zone. Movement of the subject to its final position may involve many steps:

(8)a Mary will [ __ meet Bill ]
   b Mary seems [ __ to be likely [ __ to be nominated __ ]]

(9) There is a Subject Criterion

(10) The interpretive counterpart of subjecthood: an argument is selected and taken as the starting point in the description of the event, which is presented as “being about” that argument.
The subject position expresses the «aboutness» relation

The “aboutness” effect is clearly illustrated by active-passive pairs:

(11)a    Piero ha colpito Gianni
          ‘Piero has hit Gianni’

          b    Gianni è stato colpito da Piero
          ‘Gianni has been hit by Piero’

The same “hitting” event is presented as being about the agent in (11)a, and about the patient in (11)b. So, passivisation may be seen as a device to shift aboutness from one argument to another in the argument structure of the verb.
Aboutness is independent from information structure: « all new » environments.

(1) Che cosa è successo?
   ‘What happened?’

(2) Un autobus ha tamponato una macchina
   ‘A bus hit a car’

(3) Una macchina è stata tamponata da un autobus
   ‘A car was hit by a bus’
The Calabrese effects

The Calabrese effect: *pro* in the following clause (in the same complex sentence, or in discourse) always picks out the aboutness subject, the agent in the active and the patient in the passive (Calabrese 1986):

(12)a Quando Mario↓ ha picchiato Antonio↑, *pro↓,↑* era ubriaco

‘When Mario hit Antonio, pro was drunk’ (pro = Mario)

(12)b Quando Antonio↓ è stato picchiato da Mario↑, *pro↓,↑* era ubriaco

‘When Antonio was hit by Antonio, pro was drunk’ (pro = Antonio)
The overt pronoun switches the antecedent

(12)a Quando Mario\(_i\) ha picchiato Antonio\(_k\), lui\(_{i,k}\) era ubriaco
  ‘When Mario hit Antonio, pro was drunk’ \hspace{1cm} (lui = Antonio)

b Quando Antonio\(_k\) è stato picchiato da Mario\(_i\), lui\(_{i,*k}\) era ubriaco
  ‘When Antonio was hit by Antonio, pro was drunk’ \hspace{1cm} (lui = Mario)
All new contexts

This also happens in “all new” discourse contexts, with DP’s expressing new information:

(13) Q: Che cosa è successo?
  ‘What happened?’

  A Un ragazzo ha buttato a terra un vecchio
  ‘A boy threw an old man to the ground’

  A’ ... poi pro ha cominciato a urlare
  ‘...then pro started to scream’
All new contexts

We have parallel effects when the all-new sentence is passivized: the interlocutor can choose to answer question (14)Q with a passive sentence, as in (14)A; again, in the following sentence (14)A’, pro picks out the surface subject of predication, in this case the patient of the passive sentence:

(19)Q: Che cosa è successo?
‘What happened?’

A Un vecchio, è stato buttato a terra da un ragazzo,
‘An old man was thrown to the ground by a boy’

A’ ... poi pro, *i ha cominciato a urlare
‘...then pro started to scream’
A classical line of research (e.g., Li & Thompson 1976) addresses similarities and differences between subjects and topics. Let us focus on this issue on the basis of the analysis developed so far.

Both subject and topic involve aboutness. In a subject - predicate configuration, the predicate says something about the subject; in a topic – comment configuration, the comment says something about the topic (Reinhart 1981).

But the appropriateness conditions for the use of topics are stricter, though: in “what happened?” contexts, a subject can be felicitously used, but a topic cannot:
(22) Q: Che cosa è successo?
   ‘What happened?’

   A: Un ragazzo ha buttato a terra un vecchio
      ‘A boy threw an old man to the ground’

   A’: # Un vecchio, un ragazzo lo ha buttato a terra
       ‘An old man, a boy threw him to the ground’
A condition on felicitous use of topics

(23)Q  Che cosa è successo a tuo fratello?
‘What happened to your brother?’
A:  Mio fratello, un ragazzo lo ha buttato a terra
‘My brother, a boy threw him to the ground’
A’: Mio fratello, lo ha buttato a terra un ragazzo
‘My brother, threw him to the ground a boy’

Here the brother is introduced in the context, hence it can be felicitously picked out as a topic. The relevant notion seems to be akin to Pesetsky’s (1987) D(iscourse)-linking.
Subject and topic

(28) **Top**: a. Interpret the Spec as a D-linked argument about which a comment is made
   
b. Interpret the complement as the comment about the Spec.

(29) **Subj**: a. Interpret the Spec as the argument which the predicate is about.
   
b. Interpret the complement as the predicate
questo libro
this book

lo dovremmo leggere __ domani
we should read __ tomorrow

"Topic"-"Comment"

Interpret the topic as
a D-linked argument

Interpret the comment
as being about the topic
questo libro
this book

barà pubblicato __ domani
will be published __ tomorrow

"Subject"-“Predicate”

Interpret the subject as an argument

Interpret the predicate as being about the subject
### Bare quantifiers can be subjects but not topics

| (1) | Tutto è successo nella notte |
|     | ‘Everything happened in the night’ |
| (2)a | Mario ha visto tutto |
|      | ‘Mario saw everything’ |
|      | b * Tutto, Mario lo ha visto |
|      | ‘Everything, Mario saw (it)’ |
| (3)a | Non ho capito niente |
|      | ‘I understood nothing’ |
| (3)  | Nessuno ha parlato |
|      | ‘Nobody spoke’ |
| (4)a | Non ho sentito nessuno |
|      | ‘I heard noone’ |
|      | b * Nessuno, lo ho sentito |
|      | ‘Nobody, I heard (him)’ |
|      | b * Niente, lo ho capito |
|      | ‘Nothing, I understood it’ |
NB: bare quantifiers can be focalized

(5) TUTTO hanno visto!
   ‘EVERYTHING they saw!’

(6) NESSUNO ha sentito!
   ‘NOONE he heard!’

(7) NIENTE ho capito!
   ‘NOTHING I understood!’
Properties of Subj

(22) Properties of Subj:

a. ... Fin ... Subj ... T ............ (Cardinaletti 2004, etc.)

b. Subj attracts a nominal element to its Spec.

c. Subj triggers the aboutness interpretation at the interface

NB: the Calabrese effect is sensitive to the aboutness property: in NSL, pro subject picks out the referent of the aboutness subject of the preceding clause.
Languages using a system of subject clitics distinct from the agreement morphology on V may instantiate Subj (Rizzi 1986, Poletto 2000, Manzini and Savoia 2005, etc.)

(23)a El fio el mangia l pom (Milano)
   ‘The boy Subj eats the apple’

b Qualchidun al telefonara al profesuor (Forni Avoltri, Friulian)
   ‘Somebody Subj will phone the professor’

c Nisciun u me capissce (Alassio)
   ‘Nobody Subj me understands’ (Poletto 2000, 142)
Subj is distinct from AgrS

Can Subj be assimilated to AgrS, the functional head in which agreement is checked? There are some reasons to believe that Subj is distinct from, and higher than AgrS: we have dissociations (Cardinaletti 2004) in:

- Psych-verbs involving « quirky subjects » (Belletti & Rizzi 1988):

(1) A Gianni piacciono le idee strane
    ‘To Gianni please 3Pl strange ideas’ = Gianni likes strange ideas

- Inverse copular constructions (Moro 1998, 2000):

(2) La causa della rivolta sono le idee di Gianni
    ‘The cause of the riot are 3Pl Gianni’s ideas’
That – trace effects

Perlmutter (1970) discovered subject-object asymmetries in extraction across that:

(25)a * Who do you think [ that [ ___ will come ]]?  
      b Who do you think [ that [ Mary will meet ___ ]]?

The that-trace effect, or the Fixed Subject Constraint (Bresnan 1977), analyzed as ECP violations in Government-Binding (Chomsky 1981): traces must be “properly governed”, e.g., governed by a lexical head: an object trace is properly governed, a subject traces is not.
That – trace effects: Subject – object asymmetries as ECP violations

The phenomenon became less central in minimalism, as the ECP was based on government, and, more importantly, did not have a natural place in the principled typology of minimalist principles:

i. Formal principles of locality/economy in syntax, and

ii. Interface principles

The ECP didn’t naturally belong to any of these two categories.

Moreover, as that-trace effects were found to be dialect specific (Sobin 2005), the phenomenon fell out of center stage.
Subj – Obj Asymmetries with indirect questions in English

That trace effects are not found in certain varieties of English (Sobin 2005). Asymmetries in cases of extraction from indirect questions are found systematically:

(26)a * Which mechanic do you wonder whether ___ Subj could fix the car?
   b ? Which car do you wonder whether the mechanic Subj could fix ___?

(27)a * Which mechanic do you wonder how ___ Subj could fix the car?
   b ? Which car do you wonder how the mechanic Subj could fix ___?

(28)a * Which mechanic do you wonder what __ Subj could fix ?
   b ? (?) Which car do you wonder who Subj could fix __ ?
Subj-Obj asymmetries in non-finite contexts: across complementizer *for*
Adapted from Kayne (1980), Postal (1974)

(1) I would prefer [ for [ John Subj to talk to Mary]]

(2) a * Who would you prefer [ for [ __ Subj to talk to Mary ]]?

   b Who would you prefer [ for [ John Subj to talk to __ ]]?

(3) Who do you work for __?
Asymmetries in French

(1) Je crois que Jean viendra
   ‘I believe that Jean will come’

(2) * Qui crois-tu que __ viendra?
   ‘Who do you think that __ will come?’

(3) Qui crois-tu que Jean va rencontrer __ ?
   ‘Who do you think that Jean is going to meet __?’
66 speakers evaluated cases of subject and object extraction across que and qui with a 5 point Likert scale

(1) * Qui croit-elle que ___ recevra les candidats?
   ‘Who does she think that ___ will receive the candidates?’

(2) % Qui croit-elle qui ___ recevra les candidats?
   Who does she think qui ___ will receive the candidates?’

(3) Qui croit-elle que le directeur recevra ___?
   ‘Who does she think that the director will receive ___?’

(4) * Qui croit-elle qui le directeur recevra ___?
   ‘Who does she think that the director will receive ___?’
66 speakers evaluated cases of subject and object extraction across que and qui with a 5 point Likert scale.
That-trace effects are not limited to Indoeuropean languages (thanks to E. Aboh)

C/ Gungbe and Ede-yoruba don't allow for wh extraction of an embedded subject.

(4)a. mɛŋu ɣe a vɛdo qt e *(e) na wa Gungbe
     who FM you believe-PERF that he FUT come

     b. tani o l’ero wikpe *(o) fe lo Ede-yoruba
        who you think that he FUT go

This also holds for cases of extraction from embedded questions:

(5)a. mɛ qtɔŋpo qt e un ma ywen ni *(e) sigan wa
     person one that I Neg know whether (he) can come
That-trace effects as criterial freezing effects

If we have
i. Criterial freezing, and
ii. The subject criterion

that-trace effects can be deduced:

(25)a * Who do you think [ that [ ___ Subj will come ]]?  
b  Who do you think  [ that [ Mary Subj will meet ___ ]]?

(26) You think that who Subj will come

*
An ECP approach to the asymmetries, based on the idea that a trace should be properly governed is too weak, because it fails to naturally distinguish between

(2) * Who would you prefer [ for [ __ Subj to talk to Mary ]]? 

(3) Who do you work for __?

If preposition for is an appropriate governor for the trace, why should complementizer for not be?

Freezing under the subject criterion draws the distinction here.
Comparison ECP – Freezing 2.
adapted from Kayne 1981, thanks to P. Hirschbühler

(1) ?(?) Combien crois-tu que [__ d’invités] Subj viendront?
   ‘How many do you think that of guests will come

(2) * Combien d’invités crois-tu que ___ Subj viendront?
   ‘How many of guests to you thin that will come?

   (Kayne 1975, 1981, Obenauer 1976)

If what goes wrong in (2) is a government requirement, the violation would presumably hold of (1) as well.

Freezing under the Subject Criterion draws the distinction: Freezing is violated in (2) but not in (1), where subextraction does not involve the criterial goal (the marginality being due to some other constraint, left-branch extraction, etc.)
Lack of that-trace effects in Null Subject Languages


(35) Chi credi che abbia telefonato?
‘Who do you think that has telephoned?’

(36)a Che meccanico non sai se potrà riparare la macchina?
‘Which mechanic don’t you know if could fix the car?’
b Che macchina non sai se il meccanico potrà riparare?
‘Which car do you wonder if the mechanic could fix?’
Connection with the null subject parameter:

Rizzi 1982, 1990: In null subject languages, the subject can be null, or occupy a clause-final position, from where it can be extracted without violating the ECP (in the classical GB analysis):

(38)a  pro ha telefonato
       ‘pro has telephoned’

       b  pro piove
           ‘pro is raining’

       c  pro ha telefonato Gianni
           ‘pro has telephoned Gianni’

       b  Chi credi [ che [ pro abbia telefonato __ ]]? 
           ‘Who do you believe that has telephoned?’

The generalization appears to be correct, but some details are problematic.
Subject inversion as focalization

(40) Belletti (2002, 2004): “free subject inversion” is in fact subject focalization, involving movement of the subject to a Foc projection in the vP periphery. This is shown, e.g., by the impossibility of backward pronominalisation for postverbal subjects (test based on Chomsky 1976):

(41)a Quando pro, è annoiato, Gianni telefona

‘When pro is bored, Gianni calls’

b * Quando pro, è annoiato, telefona Gianni

‘When pro is bored, calls Gianni (Subj)’
Lack of typological correlation between subject inversion and subject extraction

(43) But, if subject inversion is subject focalization, the inversion position cannot offer an “escape route” to avoid criterial freezing and that-trace effects: one would expect the subject to get frozen in the inverted position.

(44) In fact, a direct connection between subject inversion and the violation of that-trace, as in (37), is made implausible by typological considerations: there are Null Subject languages which do not have subject inversion (subject focalization in the low vP periphery) and still permit free violations of that-trace (Salulessa 2004 on Lingala, Chao 1981 for an early discussion of BP along similar lines, and Nicolis 2005 for a general assessment). So, the violability of that–trace in NSL’s does not seem to be contingent on “free inversion”.
(1)a Abeti / ye / __ a-zo-kend-e

‘Abeti / she / __ 3sAgrS-CONT.PRES-leave-fv = Abeti / she is leaving

b. mbula / __ e-nok-i

‘CL9 rain / __ 3sgAgrS-rain =The rain rains’
Lingala (Bantu language spoken in Dem.Rep. of Congo, etc.) (Salulessa 2004)

c. Kiaku a-ye-i
   ‘Kiaku 3sg-AgrS-come-PERF-fv = Kiaku has come

c’. * ___ a-ye-i Kiaku
   ‘___ 3sgAgrS-come-PERF-fv Kiaku = has come Kiatu

d. Kiaku a-zal-i mwana i oyo to-lob-ak-i ete ___ a-kumb-ak-i motuka
   ‘Kiaku 3sg-AgrS-be-PRES CL.1-child who 1pl-AgrS-say-PST-fv that ___ 3sg-AgrS-drive-PST-fv CL.3-car
      ‘Kiaku is the child who we said that ___ has driven a car’.
That-trace violations are possible when expletive pro is available

(45) Nevertheless, the evidence that in languages NSL’s like Italian the subject is extracted from a lower position is robust and diversified (Ne cliticisation in Italian, Rizzi 1982, agreement patterns in Northern Italian Dialects, Brandi & Cordin 1989, case patterns in Arabic dialects, Kenstowicz 1989, quantifier floating properties in Brazilian Portuguese, Menuzzi 2000, etc.)

(46) The correct typological connection seems to be with the availability of expletive pro (Nicolis 2005). If expletive pro is available (also in partial pro-drop languages like Brazilian Portuguese: Menuzzi 2000), it can be used to formally satisfy the subject criterion, thus permitting extraction of the thematic subject from a lower position, distinct from the lower focalization position. The availability of the low focus position for subjects is an independent property, possibly linked to the Null Subject Parameter (maybe the fact of being a NSL is a necessary condition for it), but not an automatic consequence of the NSP.
Partial NS languages: Brazilian Portuguese (Chao 1981, Menuuzzi 2000)

(36)a. João disse que *(eles) saíram
    Joao said that (they) left

b. * João disse que saíram eles
    ‘Joao said that left they’
Brazilian Portuguese (Chao 1981),
Menuuzzi (2000)

(38)a  pro parece que o José passou por aqui
‘seems that J. came by here’

b  pro choveu a noite inteira
‘rained all night’

(37)  Quem o João disse que vai chegar tarde?
‘Who J. said that is going to arrive late?’

(37’) Quem o João disse que pro Subj vai __ chegar tarde?
Who  Joao   said  that pro  Subj  is going to arrive late?’
The typological correlation

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<th>English</th>
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<th>Italian</th>
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The role of expletive pro

So, the generalization seems to be that if the language has expletive pro it does not give rise to that-trace effects.

This can be immediately expressed in terms of the freezing approach: pro formally satisfies the Subj Criterion, thus avoiding the freezing of the thematic subject, which can be extracted from a lower, non-freezing position.

(39) Chi credi [che [pro Subj ___ abbia telefonato ]]? (Rizzi & Shlonsky 2007)
    ‘Who do you think that has telephoned?’
Strategies to avoid freezing of subjects

1. Null expletive insertion (Null Subject Languages)

2. Overt expletives (Danish, Norwegian, French…)

3. Resumptive pronoun strategy (Gungbe, Yoruba, …)

4. Clausal truncation (English, Scandinavian, …)

5. Anti-agreement effects (Kinande, Berber, …)

6. Pied-piping of the embedded clause (Quechua, …).
Other skipping strategies: English

In English, if the complementizer is dropped, extraction becomes possible:

(69)a * Who do you think that __ will come?
   b Who do you think __ will come?

(70) ... you think [ that [ who Subj __ will come ] ]

Different languages use different strategies to make subject extraction possible. In (Standard) English extraction is made possible by complementizer deletion. Presumably here the whole CP+SubjP complex is truncated, so that there is no freezing position and the subject can be extracted from a lower position (say, Spec T):

(71) Who do you think [ C [ Subj [ __ will come ] ] ]
Other skipping strategies: Scandinavian

English appears to avoid the problem by using a reduced structure. Other languages achieve the result by introducing more structure, e.g., an overt expletive:

(75)a Vi ved hvem *(der) taler med Marit  
   ‘We know who der talked with Marit’  
   (Danish, Taraldsen 1986, 2001)

b Vi vet hvem *(som) snakker med Marit  
   ‘We know who som talked with Marit’  
   (Norwegian, Taraldsen, op. cit.)
Could it be that *der/som* directly fill the subject position, thus functioning exactly like the overt counterpart of expl *pro*? No, presumably they are in a higher position in the structure, as is shown by the fact that they interfere with V-2:

(76) Hvem (*som) snakker med Marit? (Norwegian, main questions)

‘Who talked with Marit?’

So, they may be the nominal counterpart of Fin, close enough to Subj to formally satisfy the Subject Criterion:

(77) ... hvem Fin[+N] Subj[+N] .... (Rizzi & Shlonsky 2007)
French

We proposed a similar analysis for que>qui in French (based on Taraldsen 1986): qui = que+–i, where –i is akin to expletive il:

(78) Qui crois-tu [ t’ qu- [ -i Subj [ viendra t ] ] ] ?
‘Who do you think qui will come?’ (Taraldsen 2001, adapted by Rizzi & Shlonsky 2007)
Anti-agreement: Kinande (Schneider-Zioga 2000, 2007)

(1) a. Kambale a-langIra Marya<----- CANONICAL AGREEMENT
   K. agr-saw Mary
   ‘Kambale saw Mary.’

   b. *lyOnI yO a-langIra Marya
      Who that (canonical).agr-saw Mary

   c. lyOnI yO u-langIra Marya <----- ANTI-AGREEMENT
      Who that WH.agr-saw Mary
      ‘Who saw Mary?’
Anti-agreement in Northern Italian Dialects? Brandi & Cordin (1989) on rural varieties in the province of Florence

(25)a  Le ragazze le son venute
   ‘The girls Scl have come+3fpl’

b  Gli è venuto delle ragazze
   ‘Scl has come+3ms some girls girls’

c  Quante ragazze gli è venuto?
   ‘How many girls Scl has come 3ms?’

c  Quante ragazze tu credi che e’ sia venuto
   ‘How many girls do you believe that Scl has come+3ms?’

NB: Gli before a vowel → e’ before a consonant : e’ viene, gli è venuto
Imbabura Quechua (Equador): Obj extraction or pied-piping of the complement


(1)a ima-ta-taj       Maria-ka [ Juzi __ miku-shka-ta ]      kri-n?
     what-ACC-Q    Maria-TOP    José     eat-NOMINALIZER-ACC    believe-Agr

  ’What does Maria believe that José ate?’

b [ ima-ta       wawa       miku-chun] -taj     Maria __      kri-n?
     what-ACC     child       eat        Q       Maria       believe-Agr

  ‘What does Maria believe the child eats?’

  Lit. [what the child eats] does Maria believe?
Imbabura Quetchua: Subject « extraction » requires pied-piping of the whole clause

(1) * pi-taj Maria-ka [ __ chayamu-shka-ta ] kri-n ?
   who-Q Maria-Top arrive-NOM-ACC believe-agr
   ‘Who does Maria believe has arrived?’

(2) [pi chayamu-shka-ta] - taj Maria __ kri-n?
   who arrive-NOM-ACC Q Maria believe
   ‘Who does Maria believe (that) has arrived?’
   Lit. ‘[Who has arrived] does Maria believe?’