Let me say right away that I do not consider (“formal”) linguistic theory and linguistic typology as two separate approaches. The in-depth, abstract analysis of a certain phenomenon (say, how a restrictive relative clause is built) and the study of what variation there is concerning that phenomenon (how many ways of forming restrictive relative clauses are found across languages) are two sides of the same inquiry.

In the ideal case, linguistic theory should simultaneously account for the in-depth properties of the phenomenon and for its range of variation across languages (for example, by showing how the existing variants can be reduced to a unitary structure by selecting distinct parametric options). To my mind it would be desirable, for example, if (prenominal and postnominal) externally headed relative clauses, internally headed ones, as well as headless (“free”), adjoined, and correlative relative clauses could be shown to instantiate (derive from) one and the same underlying structure (see Kayne 1994: Chapter 8 and Cinque forthcoming, for some discussion and an attempt in this direction).

Surely, not everyone shares the conviction that this is the ideal case, even though methodologically everyone, I think, should preliminarily strive to achieve just that. The reason is simply that, were we not to look for a unitary underlying plan, we would probably miss it, if there is one.

Be this as it may, in-depth, abstract, analyses of a certain phenomenon and the study of its crosslinguistic variation should not be alternative enterprises competing with each other. It is only an accident of recent history, destined to be overcome, that they are mostly practiced by separate communities of researchers. And it is only an accident of recent history that linguistic typology has been mostly developed by scholars working within functionalist approaches to language. To the extent that the results achieved within linguistic typology are solid results (and many certainly are), they constitute data that any approach, whether functionalist or formal, has to deal with.
In recent times, there are in fact signs that the two approaches may be converging a little more than in the past.

On one side, as Baker & McCloskey (2007) observe, more and more researchers working within the generative approach have started to pay attention to (and even ventured accounts of) some of the results of linguistic typology. See, for example, Kayne (1994, 1998, 2003), Baker (1996, 2003), de Vries (2002), Julien (2002), Kihm (2005), A. Simpson (2005), Svenonius (2006), Whitman (2005), Cinque (1999, 2005a, b). Some, like Benincà & Poletto (2005), have even come to propose, much in Greenberg’s original spirit, crosslinguistic generalizations expressed in the form of implicational statements (“If a Romance language or dialect has adverbial clitics it has dative clitics; if it has dative clitics it has accusative clitics”, etc.; cf. Benincà & Poletto 2005: 227–228).1

On the other side, there are typologists who do not shy away from the same kind of abstract analyses that are proposed within the generative approach. To take a recent example, Plank (2006) arrives at the conclusion that the principle governing the internal hierarchical organization of nominal phrases cannot be stated in a revealing and exceptionless way on the “manifest” or superficial order of these elements. This is because at such level the principle that requires adjectives to be closer to the N than numerals, and numerals to be closer to the N than demonstratives (giving rise to the prevailing orders: Dem Num A N and N A Num Dem), is patently contradicted by some languages displaying the order N Dem Num A. That principle can however be stated as exceptionless, he suggests, at a more abstract level. What has to be assumed is that the N in the latter languages has raised across A Num and Dem in a structure like [Dem [Num [A [ N]]]]: essentially the same conclusion reached in Cinque (2005b).

Plank suggests that the same holds of the principle that establishes the relative order of adjectives with respect to the noun (say, those of Value, Size, and Colour). Since “the two most common orderings are mirror images of each other” (Value Size Colour N and N Colour Size Value – as already suggested in Hetzron 1978 and Sproat & Shih 1988, 1991), there is plausibly a principle that enforces Colour to be closer to the N than Size and Size to be closer to the N than Value. Yet, once again, Plank adds, such a principle cannot be stated at the superficial level owing to the existence of languages (like Maltese and some of the Celtic languages) which display the surface order N Value Size Colour.2

1. Also see the brief discussion below of Bianchi’s (2004) implicational scale concerning optional resumptive pronouns in relative clauses.

2. Exactly the same can be said of the principle that determines that Aspect is closer to the V than Tense, and Tense closer to the V than (speech act) Mood (see Cinque 2006a). This principle (which is a generalization of Bybee’s 1985 “principle of relevance” governing the
Note that Mallinson & Blake’s (1981: 29) criticism against the postulation of abstract word orders underneath surface orders does not apply here as here the postulation of a single universal hierarchy coupled with independently needed movements does some job. It derives the attested orders without also deriving the unattested ones (such as A Num Dem N or Colour Size Value N). See Cinque (2005b) and Plank (2006) for more detailed discussion.

Despite these convergences, a fundamental difference remains. This rests not so much in the conception of what counts as an explanation for why languages are the way they are. Functionalist approaches programmatically take such an explanation to be found “‘outside’ of language, in terms of general cognition or in terms of the communicative functions of language” (Dryer 2006: 4). But the possibility that the Faculty of Language may ultimately be shaped on the level of evolution by “principles that are language- or even organism-independent”, such as “principles of data processing, structural architecture, and computational efficiency” (Chomsky 2005: 1, 8) has been assumed throughout the history of generative grammar.3 Plainly, there are different levels of “explanation”, internal and external to grammar, ontogenetic and phylogenetic.

Nor does the difference rest in the fact that typology deals with linguistic variation and the limits imposed thereon by implicational generalizations, “the universals of linguistic typology” (Croft 2003: 282), while the generative approach deals with what is invariant. Linguistic variation (as that uncovered by comparative syntax) is no less important to the generative enterprise than the study of the abstract invariant principles that enter into an account of language acquisition and use. This is especially true for the variation found in closely related languages and dialects (micro-variation), but the same holds for the order of suffixes) also cannot be stated as an absolute principle at a superficial level because of languages instantiating the orders V TNS ASP, V MOOD TNS, and V MOOD TNS ASP. (Bybee 1985, in fact, gives it as a mere tendency.) It can, however, be stated as an absolute principle (whatever it ultimately follows from) if the latter orders are obtained via leftward movement of the V(P) from the unique universal hierarchy [Mood,speech,act [Tense [Aspect [V]]]].

As noted in Cinque (2006a), V TNS ASP is found in, among other languages, Kharia (Munda; Bilgiri 1965: 59), Ngarinyin (Kimberley, northwestern Australia; Coate & Coate 1970: 43), Pagibete (Bantu; Reeder 1998: 42), Ute and Tumpisa Shoshone (Uto-Aztecan; Givón 1980: 92, Dayley 1989: 348) (and as an alternative order in Warlpiri; 1 Simpson 1991: 111, 411); V MOOD TNS in Xârâcùù (Moyse-Faurie 1995: 157, Lynch 2002: 774), and Tinrin (Osumi 1995: 204), two Melanesian (Austronesian) languages of New Caledonia, and in the Salishan languages Klallam (Montler 2004: 304), Saanich (Montler no date: Section 2.6.2.1.1) and Sooke (Efrat 1969: 189); V MOOD TNS ASP, which seems to be rarer, in Comox (Central Coast Salish; Harris 1977: 139).

3. See, for example, Miller & Chomsky (1963), Chomsky (1975: Chapter 2), Chomsky & Lasnik (1977: Section 1.2).

What constitutes the irreducible difference between the generative and functionalist approaches to language is rather the “biolinguistic” commitment of the former: the postulation of a “Faculty of Language” (or Universal Grammar) as one “component of human biology that enters into the use and acquisition of language” (Chomsky 2005: 2). This postulation has a number of important consequences; among these the fact that all languages are variants of one and the same system (which forces the search for a unitary account of any aspect of linguistic structure, be it the internal structure of phrases, the topic and focus articulation of the sentence, relative clauses, etc.), and the fact that any concept entering description of a language is (pace Dryer 2006: 5, to appear) not just a convenient way to express the empirical generalizations to be explained by external functional principles, but a claim to truth, in the sense that it is either correct or not (or rather “more correct than other alternatives”).

My intention here, however, is not to discuss the relative merits or demerits of functionalist and formal approaches in their attempt to explain the nature of linguistic phenomena or the findings of typological research. The current state of our knowledge leaves little space anyway for lasting explanations.5

The more limited point that I would like to make is that attention to the findings of formal approaches to language (in syntax and semantics) may help strengthen the very results of typology (and of grammar writing).

For reasons of space I will draw my examples in support of this view from just one phenomenon: the relative clause.

Attention to the findings of generative grammar, in one of its variants (the standard theory, generative semantics, the extended standard theory, or relational grammar) characterized the early work in typology (Dryer to appear), with fruitful results. To take one example, Ross’s (1967) work on “chopping” and “copying” rules, island constraints, extraposition, etc., had some influence precisely on the typological analysis of relative clauses (Keenan & Comrie 1977, Comrie 1981: Chapter 7, Keenan 1985).

4. As Benincà (1994: 7–8) and Kayne (2005: 8) point out, the study of closely related languages and dialects is the best approximation we have to a controlled experiment in linguistics. We cannot manipulate a phenomenon to see whether by changing one of its parts we cause changes in any other part of that phenomenon or of other phenomena of the language (which would point to the interdependence of those parts). However “by examining sets of very closely related languages, languages that differ from one another in only a relatively small number of syntactic ways, we can hope to achieve something of the same effect” (Kayne 2005: 8).

5. This also seems to be Chomsky’s assessment of the current situation: “No one familiar with the field has any illusion today that the horizons of inquiry are even visible, let alone at hand, in any domain” (2005: 8).
More recently, this attention seems to have faded. Yet, it could contribute, I think, to enlarge the data base (in leading one to look for new facts and correlations) and to formulate more appropriate analyses.

Consider, for example, the finding, in more recent work in formal syntax and semantics, of a third type of relative in addition to non-restrictives and restrictives (with which it was once lumped together): the amount (or degree, or maximalizing) relative (Carlson 1977, Heim 1987, Grosu & Landman 1998). One example of an amount relative is given in (1), under the “identity of amount” reading of the Head.

(1)  It will take us the rest of our life to drink the champagne that they spilled that night (Heim 1987: 38)

The “identity of substance” reading (a less plausible one in such a context) is instead the only reading available to the corresponding restrictive relative.6 Amount (or maximalizing) relatives differ from restrictive relatives in a number of syntactic ways. For example, they (as opposed to restrictives) can only be introduced by strong determiners (definite articles or universal quantifiers), not by weak ones (such as indefinite articles or multal/paucal quantifiers); see (2).

(2)  Every/*Some man there was on the life-raft died (Carlson 1977: 521)

They do not admit wh-pronouns, but only that and zero complementizers:

(3)  Every man that/*who there was disagreed (Carlson 1977: 526)

They do not allow “stacking” of non-coordinated clauses:

(4)  *Jake noticed the headway we made that Fred said we couldn’t make (Carlson 1977: 540)

And they do not allow extraposition:

(5)  a. *Mary praised the headway last year that John made (Hulsey & Sauerland 2006: 114)

b. *Every man died that there was on the life-raft

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6. As Carlson (1977) and Grosu & Landman (1998) observe, certain kinds of relatives are only of the amount (or maximalizing) type: relatives relativizing an idiom chunk (The headway that Mel made was satisfactory), relatives relativizing the predicate NP of a there-insertion context (Every man there was on the life-raft died), relatives relativizing a NP in a VP involving Antecedent Contained Deletion (Mary put everything that he could in his pocket), headless (or “free”) relatives (I’ll eat what is in the fridge), etc.
Possibly more interesting from a typological perspective is the fact that the tripartition among restrictive, non-restrictive, and maximalizing relatives has implications, uncovered in Bianchi (2004), for the pronoun retention strategy.

After distinguishing three types of resumptive pronouns in relative clauses – (i) the ones optionally alternating with a gap; (ii) the obligatory ones, in PPs or possessive positions; (iii) the ones rescuing island violations, for which also see Sells (1984) and de Vries (2002: 165–169) – Bianchi suggests, on the basis of some crosslinguistic evidence (carefully adding “to be further tested against a larger sample of languages”), that optional resumptive pronouns give rise to the implicational scale: non-restrictive > restrictive > maximalizing (Bianchi 2004: 80). That is, if an optional resumptive pronoun is possible in a restrictive relative it is also possible in a non-restrictive one (but not necessarily vice versa). She also says that she found no language with optional resumptive pronouns in maximalizing relatives (citing however Yiddish, as analysed in Prince 1990, as a possible case).7

The recognition of the existence of maximalizing relatives is connected to another issue recently in the centre of attention of both formal syntactic and semantic work. The question whether relative clauses involve a “matching” derivation (whereby the relative clause contains a full internal copy, to be later reduced, of the external Head) or a “raising” (or “promotion”) derivation (whereby what appears to be the external Head is actually generated inside the relative clause and moves to an initial position within the relative clause itself, thus giving the impression of being external).

Although the “raising” analysis has a rather long history (having been proposed in Brame 1967 and further developed in Schachter 1973 and Vergnaud 1974), it was only after Kayne’s (1994) discussion that it became a serious alternative to the classical “matching” analysis (Ross 1967, Chomsky 1977, 1981).

While there is cogent evidence that amount (or maximalizing) relatives involve “raising”, as the Head is necessarily interpreted inside the relative clause (Grosu & Landman 1998, Grosu 2000, Bhatt 2002), it is still a moot question whether restrictive relatives should involve only a “raising” derivation (Kayne 1994, Bianchi 1999, de Vries 2002), or both a “raising” and a “matching” one, depending on the Head’s need to be interpreted inside or outside the relative clause (Sauerland 1998, Grosu & Landman 1998, Aoun & Li 2003).

In this connection, typological evidence coming from prenominal and Head Internal Relative Clauses could crucially bear on this question.

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7. If true, the implicational scale leads to the expectation that Yiddish should also have optional resumptive pronouns in both restrictive and non-restrictive relatives (which seems to be the case; see Lowenstamm 1977 and Prince 1990).
Potentially interesting from a typological point of view is the question whether all languages have amount/maximizing relatives in addition to restrictive relatives (non-restrictive relatives, to which I come back, are apparently missing in some languages; see Cinque 2006b and references cited there), and the question whether there is any relation with the pre- or postnominal positioning of the relative clause.

Suggestive evidence that prenominal relatives can be maximalizing (and thus that a “raising” derivation is also possible prenominally) is provided by Aoun & Li’s (2003) discussion of Chinese. They explicitly note (2003: 138–139) that idiom chunks, like the NP *cu ‘vinegar’ in (6), can be relativized:

(6) [[ta chi de] cu] bi shei dou da
he eat de vinegar compare who all big
‘His jealousy (lit., the vinegar he eats) is greater than anyone else’s.’
(Aoun & Li 2003: 138)

Clearly it would be crucial to gather more crosslinguistic evidence bearing on this question.

The “raising” derivation of (restrictive) relatives may also provide an interesting account of one type of Case attraction discussed in the literature (that whereby the external Head bears not the Case that would be assigned to it in the matrix clause, but that which is assigned to the relativized position within the relative clause).8

For example, in Dari, a Farsi variety of Afghanistan (Houston 1974), alongside ordinary cases like (7), where the Head is nominative given its subject role in the matrix, one also finds cases like (8), where the Head despite its subject role in the matrix bears Accusative or Dative Case, as a function of its role within the relative clause, thus showing Inverse Case Attraction:9

(7) a. dox tar ey ke jon mišnose inja æs
   girl ART.NOM COMP John know.3 here be.3
   ‘The girl that John knows is here.’ (Houston 1974: 43)

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8. This is sometimes called Inverse (Case) Attraction to distinguish it from the case in which a relative pronoun bears the same Case borne by the external Head rather than the one which would be assigned to it within the relative clause (see, e.g., Comrie 1981: 139, Bianchi 1999: 92–94).

9. The same is true of Iranian Farsi, or Persian (Comrie 1981: Section 7.2.4; Payne 1982: Footnote 4; Aghaei 2003, 2006), and of other Iranian languages (Payne 1982: 358). On the restrictions on Inverse Attraction in Dari (matching requirements, locality, etc.), see the detailed discussion in Houston (1974).
b. \(\text{be\'ca ey ke mori kitoba bare-i\'sh dod}\)
   \[\text{boy ART.NOM COMP Mary book.ACC to-him gave.3}\]
   \[\text{be.here.3}\]
   ‘The boy that Mary gave a book to is here.’ (Houston 1974: 40)

(8) a. \(\text{doxtar ey ra [ke jon mi\'sno\'se] inja as}\)
   \[\text{girl ART ACC COMP John know.3 here be.3}\]
   ‘The girl that John knows is here.’ (Houston 1974: 43)

  b. \(\text{ba be\'ca ey [ke mori kitoba dod] injes}\)
   \[\text{to boy ART COMP Mary book.ACC gave.3 be.here.3}\]
   ‘The boy that Mary gave a book to is here.’ (Houston 1974: 40)

An analogous case is provided by the Albanian dialect of Xranje (Bevington 1979); see, for example, (9).

(9) a. \(\text{djali } [q\'e e pash\'e un\'e] iku}\)
   \[\text{the.boy.NOM that him saw I left}\]
   ‘The boy that I saw left.’ (Bevington 1979: 273)

  b. \(\text{djalen } [q\'e e pash\'e un\'e] iku}\)
   \[\text{the.boy.ACC that him saw I left}\]
   ‘The boy that I saw left.’ (Bevington 1979: 274)

This possibility is readily explainable, it seems, under a “raising” analysis of the relatives that display Inverse Case Attraction. If what looks like the external Head is actually the internal one, which has raised to the front of the relative clause, as illustrated in (10) below, no special “attraction” is involved. The Case borne by the Head (the one assigned to the relativized position within the relative clause) is the one we should in fact expect, given that the apparently external Head originates (and remains) within the relative clause itself:10

(10) a. \[\text{[DP [CP doxtar ey ra [ke jon mi\'sno\'se]}}\]
   \[\text{girl ART ACC COMP John know.3}\]
   \[\text{(DOXTAR)] inja as}\]
   \[\text{girl here be.3}\]
   ‘The girl that John knows is here.’

  b. \[\text{[DP [CP djalen [q\'e e pash\'e un\'e]}}\]
   \[\text{(DJALI)] iku}\]
   \[\text{the.boy.ACC that him saw I boy left}\]
   ‘The boy that I saw left.’

10. In (10) I also assume an external Head, which remains in situ and is not pronounced (this is what capitalization indicates); cf. Cinque (forthcoming) for discussion.
Interesting support for such an analysis comes from a property that relative clauses displaying Inverse Case Attraction have, which is not shared by the corresponding relatives without Attraction.

Both Houston (1974) and Bevington (1979) note that in the presence of Case Attraction extraposition is no longer possible (recall that the impossibility of extraposition was seen above to be a hallmark of maximalizing relatives, which necessarily involve “raising” of the Head):\(^\text{11}\)

(11) a. *doxtar ey ra inja as [ke jon mišnose]  
girl ART ACC here be.3 COMP John know.3  
‘The girl is here that John knows.’ (Houston 1974: 43)  
b. doxtar ey inja as [ke jon mišnose]  
girl ART(NOM) here be.3 COMP John know.3  
‘The girl that John knows is here.’

(12) a. *djalen iku [qê e pashê unê]  
the.boy,ACC left that him saw I  
‘The boy left that I saw.’ (Bevington 1979: 274)  
b. djali iku [qê e pashê unê]  
the.boy,NOM left that him saw I  
‘The boy left that I saw.’ (Bevington 1979: 273)

Why should “raising” of the Head be incompatible with extraposition of the relative clause is a deeper question, and one that cannot be addressed here. See Cinque (forthcoming) for discussion.

\(^{11}\) The same is true of Iranian Farsi (Persian). As noted in Aghaei (2003, 2006), Inverse Case Attraction in Iranian Farsi is optional (i), blocks extraposition (ii), and is only possible in restrictive relative clauses (compare (ib) and (iii)), the latter fact possibly suggesting that non-restrictives do not involve a “raising” derivation:

woman-RES(NOM) that yesterday saw-2sg today here-is3sg  
‘The woman whom you saw yesterday is here today.’ (Aghaei 2006: 81)  
b. zan-i ro [ke diruc did-i] ‘emruz ‘injâ-st  
woman-RES ACC that yesterday saw-2sg today here-is3sg  
‘The woman whom you saw yesterday is here today.’ (Aghaei 2006: 81)

woman-RES(NOM) today here-is that yesterday saw-2sg  
‘The woman is here today that you saw yesterday.’ (Aghaei 2006: 85)  
woman-RES ACC today here-is that yesterday saw-2sg  
‘The woman is here today that you saw yesterday.’ (Aghaei 2006: 85)

(iii) *‘an mard-e mosen ro [ke diruc did-am] ‘emruz raft  
that man-EXZ old ACC that yesterday saw-I today went.he  
‘That old man, who I saw yesterday, went today.’ (Aghaei 2003: 2)
Of potential relevance for typological investigations is also the evidence that Head Internal Relative Clauses do not constitute a unitary type of relative clause. Recent work in formal syntax and semantics on such relative clauses suggests that two different types should be recognized (Basilico 1996 and Grosu & Landman 1998). One of them, displayed by Lakhota (Siouan), Mojave and Diegueño (Yuman), and Koyukon and Tanaina (Northern Athabaskan), shows an indefinite restriction on the internal Head (which can be preceded by an indefinite article, a numeral, or an indefinite quantifier, but not by a definite article, a demonstrative, or a universal quantifier). The other, exemplified by Quechua and Navajo, among other languages, shows no such restriction. Interestingly, other properties correlate with this distinction. Those languages that display the indefinite restriction show no sensitivity to island constraints and allow stacking, while those that do not have the indefinite restriction show island sensitivity and do not allow stacking. These clusters of properties can hardly be accidental, and clearly call for an explanation (which should presumably include the assumption that “movement” of the Head is involved in the latter, though not in the former).

As a final point, let me mention my own work on non-restrictive relative clauses (Cinque 1982, 2006b), which also appears to point to the existence of two different types of such relatives: a sentence grammar one, virtually identical to restrictive relatives, and a parenthetical or discourse grammar one, with quite different properties. The latter but not the former, for example, can have a proposition as an antecedent (Sheila was beautiful, which was too bad), can have independent illocutionary force (There is then our father, by whom will we ever be forgiven for what we have done?), can retain the internal Head (The French procured allies, which allies proved of the utmost importance), can have pied-piping of phrases other than PPs (… delicious entertainments, to be admitted to one of which was a privilege,…), etc. Certain languages (Italian and other Romance languages) have both types; others have only one (English appears to have just the parenthetical or discourse grammar one, while Northern Italian dialects and Japanese only have the sentence grammar one). Still others have neither; that is, they apparently lack non-restrictives entirely, having to resort either to coordination – like Gungbe (Kwa; Aboh 2005, personal communication) and Bunun (Formosan Austronesian; Jeng 1977: 195) – or to the apposition of generic nouns (like ‘person’) followed by a restrictive clause, as is generally the case in Mixtecan, to judge from Bradley & Hollenbach (eds.) (1992).

Though brief, I hope that this review of some of the work carried out in formal syntax and semantics on the specific phenomenon of relative clauses may have shown that formal approaches can contribute insights of interest to linguistic typology, just as linguistic typology contributes to the research of formal approaches to language.
A note on linguistic theory and typology

In a similar vein, I think that “basic linguistic theory”, which has become the metalanguage most commonly used in typologically oriented grammars (Dryer to appear), could better serve its purpose if it kept abreast of the findings of work in formal syntax and semantics, just as it does with those of the functional-typological approach.

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Abbreviations:
acc accusative; art article; comp complementizer; ez ezafe; nom nominative; res restrictive; sg singular.

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— (forthcoming). The pronominal origin of relative clauses: Toward a unified analysis.


A note on linguistic theory and typology 105


