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The Fall and Rise of Universals on Relativization

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Abstract

This article discusses linguistic universals concerning relative clause constructions, which are relatively well-studied, both by typologists and theoreticians. It turns out that several universal statements formulated in the past – e.g. in Downing's (1978) seminal work – must be weakened to tendencies or less on the basis of present knowledge. Following Odden (2003), statistical universals are rejected for the reason that cross-linguistic statistics is inherently unreliable, and may have nonlinguistic causes. However, some absolute universals and universal implications concerning relativization still stand; moreover, some interesting new ones can be formulated. If these universals can be maintained, they constitute (indirect) hypotheses concerning the human language faculty, which need to find an explanation within a specific linguistic model.

Keywords: universals, tendencies, relative clauses

1. Introduction

1.1. Linguistic Universals

Linguistic universals (in the broad sense) can be divided into four types:

(1) a. absolute universals: for all languages: p
b. implicational universals: for all languages: p → q
c. general tendencies: for most languages: p
d. implicational tendencies: for most languages: p → q

What concerns us here is the difference between universals and tendencies, or – in Odden's (2003) words – between absolute and statistical universals. Statistical claims with respect to properties of languages are extremely problematic. Why would this be so? First, considering dialectal variation and geo-political issues, it is difficult to decide what counts as an individual language to begin with. Second, there is the problem of underdocumentation. Only a small percentage of all 6800 (?!) languages (according to the Ethnologue) have been studied in some detail. Third, Odden (2003) shows that samples have always been biased in practise, for instance because the inclusion of a (relatively) isolated language in the sample automatically leads to overrepresentation of that language family. Fourth, related to this, there are so many languages and language families that a representative sample must be extremely large, which causes practical problems. Fifth, most importantly, even a truly random and representative sample would obscure the asymmetries in the genetic history of language. That is, language families can be statistically over- or underrepresented because of historic reasons unrelated to language. Finally, it is unknown to what extent the presently observed languages reflect the full potential of the human language faculty. Therefore, I think Odden (2003:64) is right in

claiming that “the obvious solution is to reject statistical universals [tendencies] and focus instead on clear-cut absolute universals [universals]”. A linguistic universal, whether it is theoretical or observational, is an explicit or implicit hypothesis concerning the workings of the language faculty. A tendency or statistical statement such as “43% of all languages is OV”, even if it were true (but in fact it cannot be properly tested), is less interesting since the percentage could be due to anything.

In this article, I will restrict the search for universals to a particular empirical domain, namely the relative clause construction, which has received ample attention in the literature by typologists as well as theoreticians. An important reference from this perspective is Downing (1978), who discussed universals and tendencies with respect to relative clauses almost three decades ago. We will see that several statements that were originally universal must be weakened to tendencies on the basis of the knowledge gathered since then. Thus, the whole enterprise is a specific illustration of the saying “the more you know, the less you know”. However, a number of universals still stand, and, what is more, I will also show that some new universal hypotheses can be formulated with present knowledge.

1.2. Relative Clauses

An example of a relative construction in English is given in (2):

(2) the man who I saw in the park yesterday

Here *the* is the ‘external determiner’, *man* is the ‘head NP’, *that I saw in the park yesterday* a restrictive relative clause, and *who* a relative pronoun. Relative clauses are defined as follows (based on Grosu 2002:145):

(3) A ***relative clause*** is a *subordinated* clause that includes, at some level of semantic representation, a *variable* that ultimately gets bound in some way by an element of the matrix.

We have to keep in mind that relative clauses come in many different types (see below for details). Semantically, relative clauses are restrictive, appositive, or 'maximalizing' (e.g. amount relatives; see further Section 2.2). An example in English is given in (4):

(4) a. (Jill spoke to) the lecturers that failed the test on didactics. *restrictive*
b. (Jill spoke to) the lecturers, who failed the test on didactics. *appositive*
c. (Jill spilled) the milk that there was in the can. *maximalizing*

Syntactically, four main types can be distinguished: relative clauses are postnominal (as in English), prenominal, circumnominal (head-internal), or correlative.[1] These are illustrated in (5). Example (5a) is taken from Givón (1984:655), (5b) from Lehmann (1984:64), (5c) from Cole (1987:277), and (5d) from Srivastav (1991:639).[2]

[1] Following the insights in Srivastav (1991) and others, I will only refer to left-extraposed relatives as correlatives.

[2] The following abbreviations are used in the glosses (in alphabetical order): ACC = accusative, ANIM = animate, CL = clitic, COMPL = complementizer, D3 = deictic third person, DAT = dative, DEM = demonstrative, ERG = ergative, EVID = evidential, GEN = genitive, IMP(ERF) = imperfect, INST = instrumental, MASC = masculine, NUMCL = number classifier, NOM = nominative, NR = nominalizer, PART = participle, PASS = passive, PEFV = perfective, PERF = perfect, PL = plural, POSS = possessive, PRES = present, PTL = particle, REAL = realis, REL = relative element, SG = singular, SPEC = specific, S(U)BJ = subject, TOP = topic, TRANS = transitive.

(5) a. ha-isha she-Yoav ohev ot-a … [Israeli Hebrew]
the-woman REL-Yoav loves ACC-her *postnominal*
'the woman that Yoav loves …'

b. Wǒ bǎ nǐ gěi wǒ de shū
I ACC [you give I NR] book
diūdiào-le. [Mandarin Chinese]
loose-PERF *prenominal*
'I have lost the book you gave me.'

c. Nuna bestya-ta ranti-shqa-n alli
[man horse-ACC buy-PERF-3] good
bestya-m ka-rqo-n. [Ancash Quechua]
horse-EVID be-PAST-3 *circumnominal*
'The horse that the man bought was a good horse.'

d. Jo laRkii khaRii hai, vo lambii hai. [Hindi]
REL girl standing is DEM tall is *correlative*
lit. 'Which girl is standing, she is tall.'
'The girl who is standing is tall.'

Each main type can be found in different language families. There is also variation with respect to relative elements (e.g. relative pronouns, resumptive pronouns), finiteness, nominalization, and the position of the external determiner. Some useful references to typological work are Peranteau et al. (1972), Andrews (1975), Keenan & Comrie (1977), Downing (1978), Comrie (1981), Givón (1984), Lehmann (1984), Keenan (1985), Smits (1988) and De Vries (2001). For a recent overview of relative clause constructions from a theoretical perspective, see Bianchi (2002), Grosu (2002), and De Vries (2002).

2. Relative Clauses: Universals and Tendencies

2.1. General Statements

Since relative clauses are an important manifestation of recursion, which is generally thought to be an essential property of human language, the hypothesis in (6) is quite plausible; see also Lehmann (1984:401). The same can be inferred from Keenan & Comrie (1977:68), Downing (1978:381), and Givón (1984:651).[3]

(6) *All languages have relative clauses.*

A few non-typical types of relatives are hard to recognize as such. It is even claimed by some authors (e.g. Derbyshire 1979:26, Bakker & Hengeveld 1999), that Hixkaryana (and probably other languages) do not have relative clauses. However, this is contradicted by Lehmann (1984:401) in a footnote, with whom I agree on this point. Consider (7), taken from Derbyshire (1979:26):

(7) a. nomokno harha kanɨhnohnyenhɨyamo [Hixkaryana]
he-came back one-who-destroyed-us
'The one who was destroying us all, has come back.'
b. nomokno harha xofrye, kanɨhnohnyenhɨyamo
he-came back sloth one-who-destroyed-us
'The sloth, who was destroying us all, has come back.'

As I see it, the subject *kanɨhnohnyenhɨyamo* in (7a) is a free relative; in (7b) the same phrase functions as an appositive (nonrestrictive) relative clause, which is related to the head NP *xofrye* 'sloth'. There is no example of a headed restrictive relative;

[3] I will leave aside the so-called 'accessibility hierarchy' discussed in Keenan & Comrie (1977), Lehmann (1984) and Bakker & Hengeveld (1999).

so if Derbyshire's description is correct and complete, the most usual type of relative is lacking.[4] However, both (7a) and (7b) satisfy the definition of relative clause provided in (3): there is a variable and the relevant clauses are subordinated (at least with respect to the main clause). In general, it seems reasonable to me to subsume free relatives and appositive relatives under relative constructions.

Some remarks are in order here. The relative clauses in (7) are explicitly nominalized. This is by no means exceptional; see especially Givón (1984:663ff), Lehmann (1984:149ff, 168ff) and Culy (1990:27ff, 200ff). Moreover, free relatives generally function as arguments; therefore they are usually analyzed as complex noun phrases (which are different from embedded questions). Furthermore, De Vries (to appear) analyzes appositive relatives as (semi-)free relatives that are paratactically related to the antecedent (like appositions); (7b) seems to fit such an analysis very well.

In short, the hypothesis in (6) still stands. However, not all languages have all types of relatives (obviously), and apparently not all languages have what is often thought to be the 'canonical' type of relative, viz. headed restrictive relatives. Notice that 'headed restrictive' is a combination of two criteria. Let us separate the two and ask the following questions:

(8) a. Do all languages have headed relatives?
b. Do all languages have restrictive relatives?

The second question will be discussed in the next section. The first question cannot be straightforwardly answered. What does *headed* mean for a relative construction? Circumnominal relatives

[4] An alternative strategy mentioned by Derbyshire is the addition of a descriptive main clause, e.g. "A visitor came. He was an old man" in English. It would be interesting to see how a relative construction with a quantified head NP can be translated in Hixkaryana, but there is no such example in Derbyshire's grammar.

are not externally headed by an NP, at least not in an obvious way (but some analyses claim they are, covertly). If Kayne's (1994) raising (or promotion) analysis is correct, even postnominal relatives are 'internally headed'; there is only an external determiner (position). We might assume, therefore, that 'headed' implies that the relative clause at hand is embedded within the highest projection of a noun phrase (say, DP). This is the case for post-, pre- and circumnominal relatives. However, it is also the case for free relatives, which is not what was intended in the first place. Moreover, it is not the case for correlatives, which are bare CPs according to Grosu & Landman (1998). Thus, a syntactic view of 'headed' in this context is not very insightful. However, the following hypothesis can be stated:

(9) *All languages have semantically headed relatives.*

Here, 'semantically headed' means: somewhere there is a full noun phrase that can be semantically understood as the antecedent of the relative construction. The logical next question, then, is (10):

(10) Do all languages have free relatives?

Lehmann (1984:293ff) shows that free relatives can be found in all main types of relatives (so there is a tendency towards *yes*). However, not all languages actually use the available strategy. Known exceptions are Japanese, Djirbal and Bambara, which instead make use of 'light heads' meaning 'person' or 'thing'. An example is (11), taken from Lehmann (1984:299, my translation):

(11) Kinoo it-ta koto-o wasure-ta. [Japanese]
[yesterday say-PAST] thing-ACC forget-PAST
'I forgot what I said yesterday.'

The strategy displayed in (11) can be compared to the use of semi-free relatives in English, e.g. *the one who…*, in which the head NP is pronominal.

2.2. Semantic Types

Let us return to the issue in (8b) – do all languages have restrictive relatives? Downing (1978:381) claims that it is to be answered positively. Notably, typological surveys so far have been limited to restrictive relatives. Consequently, much less is known about appositive relative constructions. The general intuition is that appositives are less basic than restrictives. Apparently, all (or at least most) languages have restrictive relatives, but not all of these have appositives. (Note, in this respect, that appositives can easily be paraphrased.)

However, the situation is much more complicated. Grosu & Landman (1998), building on Carlson (1977), Srivastav (1991), and Jacobson (1995) show at length that the traditional dichotomy between restrictive and appositive relatives is incomplete. They posit a third semantic type of relative clauses, which they dub 'maximalizing', with several subtypes. An example is the degree relative (or 'amount relative') in (12). (In English, the presence of *there* forces a degree reading.)

(12) John looked at the mice that there were in the cage.

Notice that the meaning is not restrictive in the usual sense: there is no implied group of mice that is not in the cage; rather, the whole amount of mice in the domain of discourse is in the cage. In short, the relative clause contains a degree variable, which is maximalized upon. There are two diagnostics for a maximalizing semantics: first, there are certain restrictions on the external determiner (e.g. *the, every, the few*, but not *some, few, no*); second, stacking is impossible

(e.g. …*the mice that there were in the cage (* that there had been freely walking in the house yesterday*)).

It has turned out that not only amount relatives, but also free relatives and correlatives (and maybe a subtype of circumnominal relatives) are semantically maximalizing. An illustration of the correlative construction is provided in (13), a Hindi example taken from Grosu & Landman (1998:164/5).

(13) [jo laRke KhaRe hai], ve/sab/*kuch/*adhiktam
WH boys standing are those/all/*few/*most
lambe haiN [Hindi]
tall are
lit. 'Which boys are standing, they/all/*few/*most are tall.'

The correlative strategy is the primary relativization strategy in many languages. Very often (perhaps always), there is also a secondary strategy of another main type. However, if there are languages without such a secondary strategy, or if this strategy is also necessarily nonrestrictive, we cannot say that all languages have restrictive relatives. Unfortunately, I do not have decisive information on this matter. (Hindi has postnominal and right-extraposed restrictives, but interesting candidates for further research are Wappo and Gaididj.) Finally, recall that Hixkaryana has free relatives (which are maximalizing) and appositives. If these observations are correct, the answer to (8b) is *no*. What we can say, however, is (14):

(14) *All languages have nonappositive (i.e. restrictive or maximalizing) relative clauses.*

Appositives are found in languages from very distinct families, but not every language has appositives. In fact, the semantics of appositives is incompatible with the correlative, the circumnominal,

and the prenominal strategy. The reason is that an appositive relative is a paratactially construed specification that involves E-type anaphora; see Del Gobbo (2003), De Vries (to appear), and the references there. Consequently, it must linearly follow the antecedent. Therefore, we may posit the following implicational universal:

(15) *If a relative clause is semantically appositive, it is syntactically postnominal.*

One may ask if all postnominal (or right-extraposed) relatives allow for an appositive reading. I cannot think of any reason why this would not be the case, but but the answer is unknown, really.

Let me finish this section by summarizing the possible mappings between syntactic and semantic types of relatives.

Table 1. Possible mappings between syntactic and semantic types of relative clauses.

syntactic type / semantic type	Appositive	restrictive	maximalizing
postnominal	+	+	+
prenominal	-	+	+
circumnominal	-	+	+
correlative	-	-	+
free relatives	-	-	+

Here, a plus means that the combination exists; a minus that it does not. Recall that free relatives can be of any syntactic main type. The table makes clear that the postnominal strategy is the most flexible with respect to the semantics. This may be one of the reasons why it is (or rather: seems to be) the dominant strategy, cross-linguistically. However, as I indicated in the introduction, we

have to be reserved and cautious in drawing conclusions that involve language statistics.

2.3. Word Order

Word order phenomena are the domain of linguistic universals par excellence. Several claims have been put forward concerning basic word order (VO/OV) and relative clause types. Potential universals are listed in (16). It has turned out that all of these are false, and tendencies at best.

(16) a. postnominal RC ↔ VO ?
b. prenominal RC → OV ?
c. correlative RC → OV ?
d. circumnominal RC → OV ?

Downing (1978:383) formulates (16a) as a strong tendency. Even this is too much. I collected a long list of postnominal relatives in OV languages (see De Vries 2002:409-410). Examples are Hopi, Bora and Farsi; see e.g. (17), taken from Givón (1984:661):

(17) oohĩĩbye walle mẽẽtsá-wá
dog:SUBJ [woman:SUBJ table-POSS/CL
hallú-vu picyõõ-be úmivá [Bora]
top-to put-it/CL] flee:PEFV *OV–post*
'The dog that the woman put on the table fled.'

The inverse implication is also not universal. There are some VO languages with nonpostnominal relative strategies, for instance Dagbani, ancient Greek and Mandarin Chinese; see e.g. the circumnominal relative in (18), taken from Lehmann (1984:118, my translation):

(18) a mi o nə ti saan-so
you know [he SR give stranger-SPEC:ANIM
ləgri la. [Dagbani]
money] PTL *VO–cir*
'You know the stranger whom he gave the money.'

The possibility in (16b) is also formulated as a strong tendency in Downing (1978:392): almost all prenominal relatives occur in OV languages. He mentions Chinese as a counterexample, but there are more, e.g. Finnish and Palauan – see the prenominal (participial) relative in (19) for instance, taken from Keenan & Comrie (1977:71):[5]

(19) Pöydällä tanssinut poika oli sairas. [Finnish]
[on table having danced] boy was sick *VO–pre*
'The boy who had danced on the table was sick.'

Downing (19878:396) suggests that if the word order is not OV, there must be a clause-final marker. However, the only example is *de* in Chinese. In Finnish there is no such marker. It seems to me that at present there is not enough data to support any universal claim concerning the prenominal strategy in non-SOV languages.

Correlatives were believed to occur in OV languages exclusively (16c); see Downing (1978:400). As a tendency this implication may be correct, but it does not hold universally. Counterexamples are ancient Greek and medieval Russian; see e.g. (20), taken from Keenan (1985:166):

[5] Unlike Mandarin Chinese, Finnish has postnominal relatives as well. Nevertheless, the prenominal strategy can be considered a true relative construction; see Karlsson (1972) for more information.

(20) I kotoruju zvezdu potrebno
and which:ACC star necessary
bylo nam videt', tu zvezdu
was to us to see that star
zaslonilo tucheju [medieval Russian]
was covered by cloud *VO–cor*
'The star we needed to see was covered by cloud.'

Finally, it has been stated that circumnominal relatives occur in verb final languages only (16d); see e.g. Downing (1978:399) and Cole (1987). However, Culy (1990) stresses that this universal implication is incorrect. Counterexamples are Moore, Dagbani and American Sign Language; see e.g. (18) above. Furthermore, Cole (1987:282) states that circumnominal relatives are found only in languages that manifest null NPs in place of lexical pronouns etc. in most argument positions. Unfortunately, this has also turned out to be incorrect; see Culy (1990:240ff) for discussion.

In the sections to follow I will highlight some further properties of the syntactic main types of relatives separately, starting with postnominal relatives. Finally, Section 2.8 discusses the use of relative elements.

2.4. Postnominal Relatives

A postnominal relative follows the head NP by definition. The relative gap can be filled by a relative pronoun – which is then preposed – or a resumptive pronoun, depending on the language (see also Section 2.8 below). Crucially, it cannot be filled by a full lexical NP (e.g. a copy of the head NP); see (21) in English:

(21) friends that I saw (*friends) yesterday

To my knowledge, there are no counterexamples, so we may

formulate the following universal hypothesis (see also Downing 1978:390):

(22) *The relative gap of a (restrictive/maximalizing) post-nominal relative clause cannot be filled by a lexical NP.*

Note, however, that (22) does not apply to appositive constructions; compare e.g. (23a) – appositive – to (23b) – restrictive – in Dutch:

(23) a. *De avonden,* welk boek van Reve veel
De avonden, which book of Reve much
gelezen wordt, is herdrukt. [Dutch]
read is, has been reprinted
'*De avonden* [the evenings], which book by Reve is read by many people, has been reprinted.'

b. *Deze roman welk boek Reve geschreven
this novel which book Reve written
heeft, is herdrukt.
has has been reprinted
'*This novel which book Reve has written, has been reprinted.'

The additional internal head NP in (23a) functions as an epithet; the sentence is stylistically marked: it has a literary flavour. The difference displayed in (23a/b) can be explained by a theory that has an NP position available in appositives but not in restrictives. I am not arguing for or against such a theory here (see De Vries 2004 for discussion), but note that it is crucial that (22) is a universal. If it were only a statistical tendency, it would be useless in this respect.

2.5. Prenominal Relatives

Prenominal relatives precede the head NP by definition. Often, these clauses are nominalized to a certain degree. Again, the gap cannot be fully lexicalized (cf. Downing 1978:396); consequently, (22) can be strengthened to (24):

(24) *The relative gap of a nonappositive adnominal relative clause cannot be filled by a lexical NP.*

Here, 'adnominal' is short for postnominal or prenominal.

Downing (1978:400) suggests that the prenominal strategy universally excludes the correlative strategy. This hypothesis has turned out to be false. Counterexamples can be found in Hurric (cf. Lehmann 1984:75ff) and Tamil. An illustration of the latter is provided in (25) and (26), taken from Keenan & Comrie (1978:73):

(25) Anta manitan aṭi-tt-a peṇmaṇi(y)-ai
that man hit-PAST-PART woman-DO
jāṉ kaṇ-ṭ-āṉ. [Tamil]
John see-PAST-3SG:MASC *prenominal*
'John saw the woman that that man hit.'

(26) Enna(k) katti(y)-āḷ koṛi(y)-ai anta manitan
which knife-with chicken-DO that man
kolaippi-tt-āṉ anta katti(y)-ai
kill-PAST-3SG:MASC that knife-DO
jāṉ kaṇ-ṭ-āṉ. [Tamil]
John see-PAST-3SG:MASC *correlative*
lit. 'Which knife the man killed the chicken, John saw that knife.'
'John saw the knife with which the man killed the chicken.'

Prenominal relatives can but need not be participial – compare e.g. (25) to (5b). It is sometimes thought that participial relatives are always prenominal, but this is incorrect. Examples of postnominal participial relatives exist in e.g. Djirbal and Greenlandic. An example of the latter is given in (27), taken from Lehmann (1984:77, my translation):

(27) puiši piniar-tu-p
seal hunt-PART.ACTIVE-GEN/ERG
pi-ša-a [Greenlandic]
catch-PART.PASS-POSS.3SG
'seal that the hunter has caught'

Many languages use nonfinite (de)verbal modification of noun phrases that looks like relativization. Consider the following examples in Dutch (whose primary strategy is postnominal and finite, like English):

(28) a. de door Joop gewassen kleren *participial relative?*
the by Joop washed clothes
'the clothes washed by Joop'
b. de de kleren wassende man *gerundial relative?*
the the clothes washing man
'the man washing the clothes'
c. de door Joop te wassen kleren *infinitival relative?*
the by Joop to wash clothes
'the clothes to be washed by Joop'

Notice that (28a) and (28c) are passive. Therefore, the relative head NP is the subject in each case. Downing (1978:396/7) states that the restriction to subjects is a universal property of participial [nonfinite] relatives (modulo special processes such as the possessive construal in Turkish). This, however, is incorrect;

witness (29), a Telugu example taken from Lehmann (1984:50, my translation):

(29) Mīru nāku ic-cin-a pustukamu
[you:PL:NOM me give-PAST-PART] book:NOM
cirigipŏ-yin-adi. [Telugu]
tear up-PAST-3SG
'The book you gave me has been torn up.'

Here, the relative head NP has the object role within the relative clause – according to Lehmann, any role is possible. As far as I can judge, there is no special process going on.

2.6. Circumnominal Relatives

Circumnominal relatives are head-internal by definition (but note that the head is not always *in situ*; see Lehmann 1984 and Basilico 1996). These clauses are nominalized. Culy (1990:203) explicitly states that the possibility of having head-internal relatives for a language is dependent on the existence of nominalized clauses of a similar type. This makes sense, so let us phrase this implication as a universal hypothesis:

(30) *If a language has circumnominal relatives, it also has at least one other type of nominalized sentences with the same morphological properties.*

As circumnominal relatives are nominalized, there is an external determiner position. Sometimes an external determiner, Case marker or adposition shows up (see e.g. Keenan 1985:161ff). A Mohave example is provided in (31), taken from Lehmann (1984:111):

(31) [Hatčoq ʔavi:-m ʔ-u:ta:v]-n^{y}-č
[dog stone-INST SBJ.1-hit]-DEF-NOM
n^{y}əʔi:l^{y}-pč. [Mohave]
black-REAL
'The stone with which I hit the dog was black.'
(*or* 'The dog which I hit with the stone, was black.')

It seems that the following peculiar generalization holds (based on Culy 1990):

(32) *If the external determiner of a circumnominal relative construction is visible, it follows the RC.*

Therefore, circumnominal relatives are unproblematic in D-final languages (i.e. languages where the regular order in noun phrases is N D), but potentially problematic in D-initial languages. It turns out that they occur in D-initial languages only if determiners are never pronounced in the unmarked case; furthermore, in marked cases, e.g. where D is demonstrative, relatives clauses are unacceptable.[6]

Finally, Grosu & Landman (1998) suggest an interesting

[6] See De Vries (2002:139ff) for a possible explanation of (32) in terms of the formal syntactic derivation combined with a functional strategy that involves shunning of irregular patterns (as an alternative for Culy's 1990:207ff proposal, which is stipulative and also not strong enough). In brief, the internal D must be linked to the external D for feature checking, but there is no overt *wh*-movement (which can feed this link), as there is no relative pronoun. (This is related to the indefiniteness effect of the internal head described in Williamson (1987) and Culy (1990).) After covert *wh*-movement – note that island effects have been detected in Lakota and some other languages – the internal D is locked in the complementizer position. Consequently, pied piping of the entire CP to the specifier position of the external DP is necessary, independently of the strong/weak setting of D's features. As a result, the external D position is universally clause-final in circumnominal relatives. In N-D languages this is fine, but in D-N languages this goes against the regular pattern; hence overt determiners are shunned in this construction, which is only possible if unmarked Ds are regularly unpronounced.

correlation between the absence of an external determiner and the semantics of the construction:[7]

(33) *If there is no external determiner in a circumnominal relative construction, the semantics is maximalizing.*

For instance, in Quechua (no D) an indefinite interpretation and stacking of relative clauses is unacceptable, whereas in Lakota (D overt) both possibilities are available; see Grosu (2002) for more discussion. Thus, if there is no overt external material, the situation is comparable to that in free relative constructions. Future research will have to show if the hypothesis in (33) can be upheld.

2.7. Correlatives

Correlatives are preposed/left-adjoined relative clauses. Like circumnominal relatives, they are head-internal. The internal head is usually accompanied by a dependent relative pronoun. The main clause contains a correlate, i.e. a personal or demonstrative pronoun, sometimes in combination with a copy of the head NP. According to Keenan (1985:164) and others, correlatives are bare sentences, i.e. not nominalized: they do not occur in DP positions, and an external determiner, Case marker or adposition is excluded. The semantics is maximalizing, as explained in Section 2.2 above.

A special property of the correlative strategy is that it allows for 'multiple relativization'. There are three possibilities, schematically indicated in (34):

[7] The opposite implication "overt D → restrictive interpretation" cannot be correct. For instance, Culy (1990) reports determiner restrictions for Moore, which has an overt external D.

(34) a. [[wh_1 wh_2…]$_{RC}$ […D_1…D_2…]] *bijection*
b. [[wh_{1+2}…]$_{RC}$ […D_1…D_2…]] *split correlate*
c. [[wh_1 wh_2…]$_{RC}$ […D_{1+2}…]] *split wh*

An Hindi example of (34a) is given in (35), taken from Srivastav (1991:650):

(35) jis laRkii-ne$_i$ jis laRke-ko$_j$ dekhaa
[REL girl-ERG REL boy-ACC saw]
us-ne$_i$ us-ko$_j$ passand kiyaa. [Hindi]
DEM-ERG DEM-ACC liked
'Which girl saw which boy, she liked him.'

On the basis of Hindi and closely related languages, we may formulate the following hypothesis:

(36) *The correlative strategy allows for multiple relativization.*

However, note that the empirical basis for this universal is still meagre.

2.8. Relative elements

A relative element gives a clue with respect to subordination, attribution, the construction of the relative 'gap', or a combination thereof. There are several types: relative pronouns, resumptive pronouns, relative complementizers and verbal affixes.

Relative pronouns are used in postnominal relatives and correlatives. Downing (1978:390) states that relative pronouns in postnominal relatives are always clause-initial (although they are sometimes embedded in a PP or NP). In other words: relative pronouns are moved to the CP domain, like interrogative pronouns. Since this property has more or less become the definition of

relative pronouns (which contrasts with resumptive pronouns), it is not very surprising that it seems to be a universal. However, the situation may be more complicated. Consider the correlative construction in the (closely related) languages Bambara, Maninka, Mandinka and Vai. The head noun and the relative pronoun are *in situ*; see e.g. (37), taken from Lehmann (1984:135, my translation):

(37) n ye tyɛ̀ mìn ye, ò be
[I COMPL man REL see] D3 IMPERF
fìnì fère [Bambara]
cloth:DEF sell
'The man who I saw was selling the cloth.'

Here the relative pronoun is *mìn* (plural: *mìnu*), which is formally similar to interrogative pronouns. Crucially, Bambara has *wh*-in-situ in questions; this explains the pattern in (37). The unrelated language Hindi also has *wh*-in-situ in questions, but interrogative phrases can be optionally preposed. According to Mahajan (2000), this optionality is reflected in the correlative construction.

Hindi as well as Bambara has a secondary postnominal relative strategy in which the same relative pronouns are used. In this construction, the relative pronoun can (in Bambara: must) also be left in situ. An example is (38), taken from Mahajan (2000:204):

(38) mujhe vo a:dmi: si:ta:-ko jo acc^{h}a:
I:DAT DEM man [Sita-DAT REL nice
lagta: hɛ pasand nahĩ: hɛ [Hindi]
seem-IMP be-PRES] like not be-PRES
'I do not like the man who Sita likes.'

At first sight, the pronoun in the relative clause in (38) would be called a resumptive pronoun. However, both the morphology and

the situation in correlative clauses lead to the conclusion that we are dealing with an in situ relative pronoun.[8]

It seems that relative pronouns are unacceptable in prenominal relative constructions (see also Downing 1978:396):

(39) *Relative pronouns cannot be used in prenominal relatives.*

The situation would involve cataphora, which could be problematic because of the high position of the relative pronoun within the relative clause.[9] If so, the use of a resumptive pronoun is not predicted to be problematic in a prenominal relative. Indeed, they occur in e.g. Chinese and Nama. This pattern seems to be rare, though.

Finally, as far as I know, relative pronouns as well as resumptive pronouns are unacceptable in circumnominal relatives (cf. Culy 1990:26).[10]

(40) *Relative pronouns and resumptive pronouns cannot be used in circumnominal relative constructions.*

Therefore, relative pronouns are restricted to postnominal relatives and correlatives. Notice that they are not generally obligatory in these constructions. Postnominal relatives without relative pronouns are quite common outside the Indo-European language phylum. Correlatives without relative pronouns are much

[8] Note that resumptive pronouns equal personal or demonstrative pronouns; relative pronouns are either specialized (e.g. Slovenian *Kdòr*) or interrogative (e.g. Latin *quis*) or demonstrative (e.g. Danish *den*). Hindi *jo/jis* is specialized.

[9] See De Vries (131ff) for an attempt to relate (33) to a violation of Binding Principle C, and for a criticism of Kayne's (1994:92ff) idea that a prenominal relative is an IP.

[10] The language Bambara has often been cited as having circumnominal relatives that involve a relative pronoun. However, Culy (1990:30ff) clearly shows that this is a mistake.

rarer; examples are Diegueño and Wappo.

Turning to relative particles, we see that many languages use a complementizer. It may equal another subordinator (e.g. English *that*), but it can also be specialized (e.g. Czech *co*). Other complementizer-like particles are nominalizers (e.g. Chinese *de*) or attributive particles.

Relative particles are common in postnominal relatives, rare in prenominal relatives, maybe even rarer in correlative constructions (examples, however, can be found in Gaididj and Warlpiri), and virtually absent in circumnominal relatives (but Dagbani seems to have one). Interestingly, it seems that prenominal relatives only use clause-final relative complementizers, but postnominal (and other) relatives only clause-initial ones:

(41) *Relative complementizer particles are clause-final in prenominal relatives, and clause-initial elsewhere.*

Two examples are given in (42) and (43), taken from Lehmann (1984:95/62, my translation):

(42) Orang yang datang itu Ahmed. [Indonesian]
person [REL come] DEF Ahmed *postnominal*
'The man who came was Ahmed.'

(43) šī ve kâlâ-phu [Lahu]
[know NR] white-man *prenominal*
'white man who knows it' *or*
'white man who is well-known'

Another type of relative particle is the relative verbal affix (of which there are many different kinds). Cross-linguistically, relative

affixes are attested in every main type of relative.[11] Downing (1978:399) claims that they can be used in circumnominal relatives only if the same language also has prenominal relatives with the same marker. However – apart from the problem that it is hard to imagine a possible reason for this potential universal – it seems that relativization in Japanese constitutes a counterexample. Japanese has a prenominal relative strategy, but also a secondary circumnominal strategy. These are illustrated in (44) and (45), taken from Itô (1986:109/110), who builds on earlier work by S. Kuroda:[12]

(44) omawari-wa akiya-kara mono-o
policeman-TOP [empty house-from things-ACC
hakobidasiteiru doroboo-o tsukamaeta. [Japanese]
carry out] thief-ACC caught *prenominal*
'The policeman caught the thief that was taking
things out from an uninhabited house.'

(45) omawari-wa doroboo-ga akiya-kara
policeman-TOP [thief-NOM empty house-from
mono-o hakobidasiteiru-no-o tsukamaeta. [Japanese]
things-ACC take out]-NR-ACC caught *circumnominal*
'The policeman caught the thief that was taking
things out from an uninhabited house.'

In (45) the nominalizing affix *no* is used, whereas this particle is absent (in fact unacceptable) in (44).

Let us consider possible combinations of relative elements. Although double marking is quite rare, the possibilities indicated

[11] Although relative affixes are relatively common in postnominal, prenominal and circumnominal relatives, they are extremely rare in correlatives. An example in Hurric, however, is provided in Lehmann (1984:77).

[12] I follow Culy (1990:256) in that the relative particle *no* is a nominalizing affix in these cases (contra Itô, who analyzes it as a complementizer).

in Table 2 have been attested:

Table 2. Possible combinations of relative elements.

	rel. pronoun	resumptive pronoun	rel. complementizer
rel. affix	+	+	–
rel. complementizer	+	+	
resumptive pronoun	–		

Of these, the combination of a resumptive pronoun with a complementizer seems to be the most common. It is illustrated in Farsi (Persian) – an SOV language with postnominal relatives – taken from Comrie (1981:141); see (46):

(46) Hasan mardi-rā ke zan (u-rā) zad
Hasan man-ACC [that woman he-ACC hit]
mišenāsad. [Farsi]
knows
'Hasan knows the man that the woman hit.'

Here, the complementizer *ke* is used next to the (optional) resumptive pronoun *urā*. Furthermore, the combination of a resumptive pronoun with a relative affix can be found in several Bantu languages.

The combination of a relative pronoun and a complementizer exists in various dialects of the Germanic languages (but also in Hungarian and Tunisian Arabic). It is illustrated in Aarschot Dutch in (47), taken from Dekkers (1999:58):

(47) de stoelen di (da) kapot zijn [Aarschot Dutch]
the chairs which that broken are
'the chairs that are broken'

I know only one example of a relative pronoun with a relative affix, namely in Hurric; see Lehmann (1984:77).

What is more interesting are the combinations in Table 2 that seem to be forbidden. We may state (48) and (49):[13]

(48) *A relative pronoun excludes a resumptive pronoun, and vice versa.*

(49) *A relative complementizer excludes a relative particle, and vice versa.*

The rationale behind the universal implication in (48) is that there is only one internal determiner position available. Both a relative pronoun and a resumptive pronoun are related to the relative 'gap', i.e. the position that corresponds with the internal function of the head NP.[14] The function of a relative particle is different: it is related to subordination. Therefore, a relative or resumptive pronoun is compatible with a subordinating particle in principle, whether it is a complementizer or an affix. The combination of a complementizer with a verbal affix is functionally redundant (although it is not syntactically excluded); this explains (49). However, since there are many subtypes of relative affixes (see De Vries 2002:175ff for an

[13] Ironically, Downing (1978:390) formulates something equivalent to (48) as a tendency. However, the Rumanian (apparent) counterexample Downing notes involves clitic doubling (cf. Smits 1988:56-60).

[14] Notice in this respect that resumption must be distinguished from *intrusion* (cf. Sells 1984), which is a repair strategy such as (i) in English.

(i) I am looking for those documents *which* I can never remember where I put *them*.

Here, the intrusive pronoun *them* is used next to the relative pronoun *which* in order to save the sentence, which is otherwise unacceptable because the relative gap is inside an island.

overview), the universal validity of (49) is doubtful, even though there is no evidence to the contrary yet.

Finally, notice that the use of relative elements is not universally obligatory. For instance, we can say *the man I saw* in English. Downing (1978:390) notes that subject relatives demand a sentence-initial relative element; see also Smits (1988:70-71). This is illustrated in (50):

(50) a. the man that/ø I saw yesterday
b. the man that/*ø saw me yesterday

The difference in (50) exists in e.g. Danish and Vietnamese as well, but as a linguistic generalization it is incorrect. Several languages use 'zero relativization' as the primary or only strategy, e.g. Lakota, Yucatecan, Japanese or Ijo. An example is (51), taken from Lehmann (1984:83, my translation).

(51) Hun-tul maak u k'ahool Pedro ha?s
a-NUMCL man [3 know Pedro] banana
u kon-ik. [Yucatecan]
3 sell-TRANS
'A man who knows Pedro sells bananas.'
(*or:* 'A man who Pedro knows sells bananas')

There is no relative element in the relative clause; both a subject interpretation and an object interpretation is possible.

Nevertheless, it seems that there is a correlation between the presence of relative elements and an appositive interpretation. For instance, zero relativization is possible in Danish, but only if the interpretation is restrictive; see (52), adapted from Smits (1988:261).

(52) a. flyvemaskine-en som/ø mor rejste
airplane-the that mother travelled
med I går [Danish]
in yesterday *restrictive*
'the airplane mother travelled in yesterday'
b. flyvemaskine-en, som/*ø mor rejste
airplane-the that mother travelled
med I går *appositive*
in yesterday
'the airplane, which mother travelled in yesterday'

As I do not know any example of an appositive relative without a relative element, I submit the following hypothesis:

(53) *An appositive relative clause must contain a relative element.*

The intuition behind (53) is that the relation between the antecedent and the relative clause is paratactic in appositive relatives, contrary to the situation in restrictive relatives; therefore, the need for an interpretative clue (hence a relative element) is higher in appositives than in restrictives.[15]

3. Summary and Conclusion

In general, one may say that the more data becomes available, the less universals can be maintained. I showed that some universals concerning relative construtions formulated in the past – e.g. in Downing's (1978) seminal work – must be weakened to tendencies or less on the basis of present knowledge, which makes them much

[15] See De Vries (to appear) for a discussion in terms of generative syntax.

less interesting. Following Odden (2003), I rejected statistical universals for the reason that cross-linguistic statistics is inherently unreliable, and may have nonlinguistic causes. However, some absolute universals and universal implications concerning relativization still stand; moreover, some interesting new ones can be formulated. All these are collected in (54):[16]

(54) a. *All languages have relative clauses.*
b. *All languages have semantically headed relatives.*
c. *All languages have nonappositive (i.e. restrictive or maximalizing) relative clauses.*
d. *If a relative clause is semantically appositive, it is syntactically postnominal.*
e. *The relative gap of a nonappositive adnominal relative clause cannot be filled by a lexical NP.*
f. *If a language has circumnominal relatives, it also has at least one other type of nominalized sentences with the same morphological properties.*
g. *If the external determiner of a circumnominal relative construction is visible, it follows the RC.*
h. *If there is no external determiner in a circumnominal relative construction, the semantics is maximalizing.*
i. *The correlative strategy allows for multiple relativization.*
j. *Relative pronouns cannot be used in prenominal relatives.*
k. *Relative pronouns and resumptive pronouns cannot be used in circumnominal relative constructions.*

[16] Notice that (54b) and (54c) are stronger versions of (54a). If (54a) turns out to be wrong, they might be changed into implications: *if a language has relative clauses, it has semantically headed clauses*; and *if a language has relative clauses, it has nonappositive relatives.* We can also deduct the following implication: *if a language has free relatives, it has semantically headed relatives.*

l. *Relative complementizer particles are clause-final in prenominal relatives, and clause-initial elsewhere.*
m. *A relative pronoun excludes a resumptive pronoun, and vice versa.*
n. *A relative complementizer excludes a relative particle, and vice versa.*
o. *An appositive relative clause must contain a relative element.*

If these universals can be maintained, they give a clue on the workings of the mind: each universal is an (indirect) hypothesis concerning the human language faculty. Ideally, each of them finds an explanation within a specific model of language. In the course of the text I hinted at some possible explanations, but clearly there is much room for future thinking on the subject.

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