The Order of Demonstrative, Numeral, Adjective and Noun

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1. those three black horses
   Dem Num Adj N

2. Overview of paper
   a. Report on the relative frequency of the different orders in a sample of 528 languages
   b. Comparison of the generative approach of Cinque (2005) to my own account in terms of five surface principles
   c. Both approaches use a set of principles to account for the relative frequency of the different types
   d. A crucial difference is that Cinque's account is formulated in terms of syntactic categories while mine is in terms of semantic categories independent of the syntactic realization of these semantic categories

3. Universal 20 of Greenberg (1963):

   When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always in that order. If they follow, the order is either the same or its opposite.

4. a. If all three modifiers precede the noun:

Dem-Num-Adj-N (DNAn)	104
*Dem-Adj-Num-N (DANn)	3
*Num-Dem-Adj-N (NDAn)	2
*Num-Adj-Dem-N (NADn)	0
*Adj-Dem-Num-N (ADNn)	0
*Adj-Num-Dem-N (ANDn)	0

   b. If all three modifiers follow the noun

N-Adj-Num-Dem (nAND)	163
N-Dem-Num-Adj (nDNA)	8
*N-Adj-Dem-Num (nADN)	34
*N-Dem-Adj-Num (nDAN)	11
*N-Num-Adj-Dem (nNAD)	10
*N-Num-Dem-Adj (nNDA)	1

   c. If two of them precede the noun

Dem-Num-N-Adj (DNnA)	37
*Num-Dem-N-Adj (NDnA)	0
Dem-Adj-N-Num (DAnN)	14
*Adj-Dem-N-Num (ADnN)	0
Num-Adj-N-Dem (NAnD)	8
*Adj-Num-N-Dem (ANnD)	0

   d. If two of them follow the noun

Adj-N-Dem-Num (AnDN)	5
Adj-N-Num-Dem (AnND)	5
Num-N-Dem-Adj (NnDA)	5
Num-N-Adj-Dem (NnAD)	63
Dem-N-Num-Adj (DnNA)	9
Dem-N-Adj-Num (DnAN)	47

5. Walman (Torricelli; Papua New Guinea): Noun-Adj-Num-Dem (nAND)

ngko-y	mntim-mntim	wiey	ntaynien
thing-PL	small.PL-small.PL	two	this.PL
N	Adj	Num	Dem

   'these two little things' (my own data)

6. Greenberg's formulation is too strong in that exceptions have been found, primarily with respect to the order when all three follow the noun.

7. Akha (Burmese-Lolo, Tibeto-Burman): N-Adj-Dem-Num (nADN)

tshɔ́-hà	jɔ-mỳ	xhø	njì	ɣà
person	good	those	two	CLSFR
N	Adj	Dem	Num	

'those two good persons' (Hansson 2003: 241)

8. Noon (North Atlantic, Niger-Congo; Senegal): N-Dem-Adj-Num (nDAN)

enoh-cii	cii	ci-yaanaaw-cii	ci-daaŋkah-cii
cow-DEF	DEM	ATTR-white-DEF	ATTR-ten-DEF
N	Dem	Adj	Num

'these ten white cows' (Soukka 2000:129)

9. Haya (Bantu, Niger-Congo; Tanzania): N-Num-Dem-Adj (nNDA)

enjú	zaŋge	ibily'	êz'	ézi-lúŋgi
house	my	two	these	NC-good
N		Num	Dem	Adj

'these two good houses of mine' (Byarushengo 1977:13)

10. Dhivehi (Indic, Indo-European; Maldive Islands (India)): Dem-Adj-Num-N (DANn)

mi	ra^{n}gaḷu	tin	fot
this	good	three	book
Dem	Adj	Num	N

'these three good books' (Cain and Gair 2000: 33)

11. Ingush (Nakh-Dagestanian; Russia): Dem-Adj-Num-N (DANn)

uq	b-oaqqa-cha	qea	wazh-agh
this.OBL	GEND-big-OBL	three.OBL	apple-LAT
Dem	Adj	Num	N

'(about) these three big apples)' (Nichols 2011:446)

12. Wuvulu (Hafford 1999: 49): Num-Dem-Adj-N (NDAn)

guapalo	ei	pani
two	DEF	hand

'the two hands'

13. Sierra Popoluca (Mixe-Zoque; Mexico): Num-Dem-Adj-N (NDAn)

ʔiku-kóm	tukuteen	jeʔm	pok
3ERG-fill.COMPL	three	that	gourd
	Num	Dem	N

'He filled the three gourds.' (de Jong Boudreault 2009: 248)

Cinque's Approach

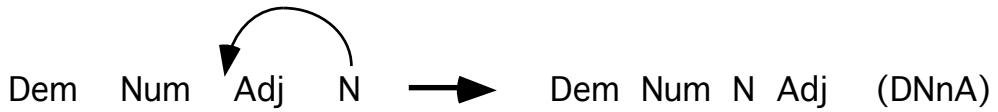
15. Approach of Cinque (2005):
    a. All languages are underlyingly Dem-Num-Adj-N.
    b. Other types are achieved via movement.
    c. All movement is leftward and upward.
    d. Only constituents containing the noun move.
    e. Different combinations of movements are less marked or more marked.

16. Relative markedness of different types of movement in Cinque's account:

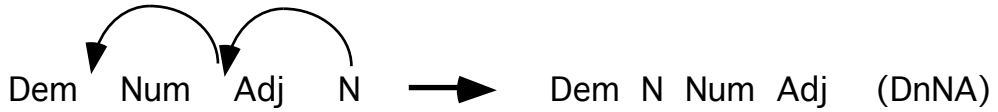
    a. Unmarked: no movement at all.
    b. Unmarked: movement of what he calls pied-piping of the whose-picture type, which amounts to movement of a constituent containing the N, where the N is on the left edge of the constituent that moves.
    c. Marked: movement without pied-piping, i.e. extraction of the N out of a larger constituent
    d. Very marked (if even possible): a special case of (c), "subextraction" of the N out of N+Adj within N+Adj+Num
    e. Very marked: movement of what he calls pied-piping of the picture-of-who type, which amounts to movement of a constituent containing the N, where the N is not on the left edge of the constituent that moves.
    f. Marked: partial movement: the constituent that moved could move further up the tree but doesn't
    g. Unmarked: total movement: the constituent that moved could not move any further than it has moved

17. a. If nothing moves, then we get DNAn.

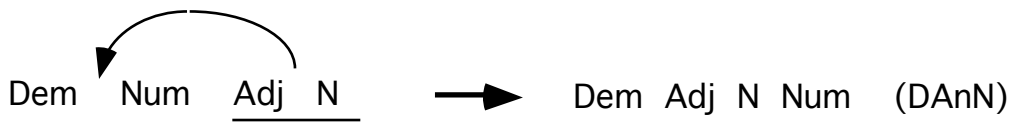
    b. If just the N (or NP in Cinque's terms) moves once, we get DNnA: (line 5 of (11) below)



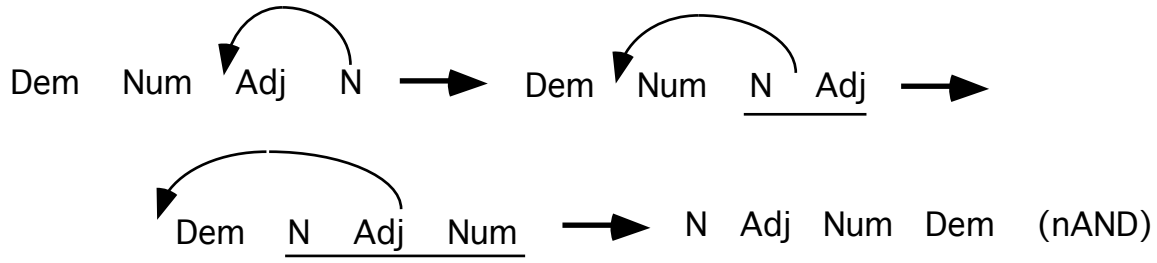
    c. If just the N moves twice, we get DnNA: (line 10)



    d. If there is pied-piping, the N moves along with some constituent it is part of. If the Adj+N moves once, we get DAnN: (line 8)



e. If there is successive pied piping from DNAn to DNnA to DnAN and finally to nAND, then we get the mirror image of DNAn: (line 1)



18. How Cinque's approach predicts the nonexistence of the types he claims do not exist:

a. The only possible order if all three modifiers precede the noun is DNAn, because if anything moves, something containing the n must move leftward, in which case we won't have three modifiers preceding the noun. Hence *DANn, *NDAn, *ADNn, *NADn, and *ANDn.
b. There is no way that we can get Num+Dem before the n, since the only way for Num to precede Dem is if some constituent containing both Num and n moves in front of Dem, in which case Dem will not precede the n. Hence *NDnA.
c. The same explains why we cannot get Adj+Num or Adj+Dem before the n. Hence *ANnD and *ADnN.
d. We cannot get NnDA because for the Num+n to move past the Dem, the Adj would have to come with them, since only constituents can move.
e. We similarly cannot get nNDA for an analogous reason. To get it, we would have to move n+Num past Dem without moving Adj, but then we wouldn't be moving a constituent.

Orders predicted not to exist by Cinque (2005) and the languages with these orders in my sample:

19. a. Num-N-Dem-Adj (NnDA) (line 14)

Austro-Asiatic: KATUIC: Katu (Costello 1969: 22)
Austronesian: YAPESE: Yapese (Jensen 1977: 168)
Austronesian: OCEANIC: Kilivila (Senft 1986: 105), Teop (Mosel and Spriggs 1992: 42, 54; Mosel and Thiesen 2007: 97), Drehu (Tryon 1967: 61)

b. Kilivila (Senft 1986: 104, 105)

na-lima	vivila	mi-na-si-na	na-manabweta	mina	Tauwema
CLSFR-five	girls	this-CLSFR-PL-this	CLSFR-beautiful	from	Tauwema
Num	N	Dem	Adj		

'these five beautiful girls from Tauwema'

20. Dem-Adj-Num-N (DANn) (line 16)

Indo-European: INDIC: Dhivehi (Cain and Gair 2000: 33)
Nakh-Daghestanian: NAKH: Chechen (Johanna Nichols, p.c.), Ingush (Nichols 2011: 669)

21. Num-Dem-Adj-N (NDAn) (line 17):

Austronesian: OCEANIC: Wuvulu
Mixe-Zoque: MIXE-ZOQUE: Sierra Popoluca

22. N-Num-Dem-Adj (nNDA) (line 18):

Niger-Congo: BANTOID: Haya

23. Comparing Cinque's predicted frequencies with actual frequencies in my sample

		Cinque			Dryer Data		
		marked options	#marked options	#lgs (acc. to Cinque)	#lgs (my sample)	# genera	# fams
1	nAND	none	0	very many	163	76	34
2	DNAn	none	0	very many	104	54	32
3	DnAN	14f	1	many	47	36	24
4	DNnA	14f	1	many	37	29	23
5	***NnAD***	***14e, 14f***	***2+***	***few***	***63***	***28***	***11***
6	nADN	14c	1	few	34	17	8
7	***nDAN***	***14d, 14f***	***2+***	***very few***	***11***	***9***	***6***
8	***DAnN***	***14e, 14f***	***2+***	***very few***	***14***	***9***	***5***
9	nNAD	14c	1	few	10	8	7
10	DnNA	14c, 14f	2	very few	9	7	6
11	NAnD	14e, 14f	2+	very few	8	5	5
12	***nDNA***	***14c***	***1***	***few***	***8***	***5***	***4***
13	***AnND***	***14e***	***1+***	***very few***	***5***	***3***	***2***
14	NnDA	*	*	none	5	3	2
15	AnDN	14c, 14e	2+	very few	5	3	2
16	DANn	*	*	none	3	2	2
17	NDAn	*	*	none	2	2	2
18	nNDA	*	*	none	1	1	1
19	NADn	*	*	none	0	0	0
20	NDnA	*	*	none	0	0	0
21	ADnN	*	*	none	0	0	0
22	ADNn	*	*	none	0	0	0
23	ANDn	*	*	none	0	0	0
24	ANnD	*	*	none	0	0	0

24. a. Type NnAD is much more common than Cinque's theory predicts (line 4)
b. Type nDAN is more common than Cinque's theory predicts (line 7)
c. Type DAnN is more common than Cinque's theory predicts (line 8)
d. Type nDNA is less common than Cinque's theory predicts (line 12)
e. Type AnND is less common than Cinque's theory predicts (line 13)

An Alternative Approach

25. Iconicity Principle 1:

The adjective and numeral tend to occur closer to the noun than the demonstrative when the demonstrative and the adjective or numeral (or both) occur on the same side of the noun.

Iconicity Principle 2:

The adjective tends to occur closer to the noun than the numeral when they occur on the same side of the noun.

The Asymmetry Principle

Exceptions to the iconicity principles will occur only with postnominal modifiers; the iconicity principles apply more strongly to prenominal modifiers than they do to postnominal modifiers.

The Postnominal Adjective Preference

Noun-adjective order is preferred over adjective-noun order

Intra-Categorial Harmony

The demonstrative, numeral, and adjective tend to all occur on the same side of the noun.

26. Frequencies of different orders and degree of conformity with my five principles

		IP1	IP2	AP	NA	IC	#*s	#lgs	#genera	#fams
1	nAND	Y	Y	Y	Y	Y	0	163	76	34
2	DNAn	Y	Y	Y	*	Y	1	104	54	32
3	DnAN	Y	Y	Y	Y	*	1	47	36	24
4	DNnA	Y	Y	Y	Y	*	1	37	29	23
5	NnAD	Y	Y	Y	Y	*	1	63	28	11
6	nADN	*	Y	Y	Y	Y	1	34	17	8
7	nDAN	*	Y	Y	Y	Y	1	11	9	6
8	***DAnN***	***Y***	***Y***	***Y***	*****	*****	***2***	***14***	***9***	***5***
9	nNAD	Y	*	Y	Y	Y	1	10	8	8
10	DnNA	Y	*	Y	Y	*	2	9	7	6
11	NAnD	Y	Y	Y	*	*	2	8	5	5
12	nDNA	*	*	Y	Y	Y	2	8	5	5
13	AnND	Y	Y	Y	*	*	2	5	3	2
14	NnDA	*	Y	Y	Y	*	2	5	3	2
15	AnDN	*	Y	Y	*	*	3	5	3	2
16	DANn	Y	*	*	*	Y	3	3	2	2
17	NDAn	*	Y	*	*	Y	3	2	2	2
18	***nNDA***	*****	*****	***Y***	***Y***	***Y***	***2***	***1***	***1***	***1***
19	NADn	*	Y	*	*	Y	3	0	0	0
20	NDnA	*	Y	*	Y	*	3	0	0	0
21	ADnN	Y	Y	*	*	*	3	0	0	0
22	ADNn	*	*	*	*	Y	4	0	0	0
23	ANDn	*	*	*	*	Y	4	0	0	0
24	ANnD	Y	*	*	*	*	4	0	0	0

Key: How each order conforms to each of the five principles, and the number of languages and genera of each order. (If one of the iconicity principles, IP1 or IP2, is violated by prenominal modifiers, I treat this as also violating the Asymmetry Principle (AP), but if they are violated by postnominal modifiers, then I treat this as consistent with AP.)

IP1	Iconicity Principle 1
IP2	Iconicity Principle 2
AP	Asymmetry Principle
NA	The Postnominal Adjective Preference
IC	Intra-Categorial Harmony
#*s	Number of principles violated
#lgs	Number of languages of given order
#genera	Number of genera containing languages of given order
#fams	Number of families containing languages of given order

Syntax or Semantics?

27. Cinque's approach assumes that the generalizations about the possible orders of demonstrative, numeral, adjective and noun can be described (and explained) in terms of syntactic categories.

28. I claim that the generalizations *cannot* be described (or explained) in terms of syntactic categories.

29. Rather, the relevant notions of demonstrative, numeral, and adjective are semantic notions which are realized syntactically in different ways in different languages.

30. a. In some languages, adjectives are a distinct word class.
    b. In some languages, semantic adjectives are verbs grammatically and when modifying nouns are really relative clauses.
    c. In some languages, semantic adjectives are verbs grammatically, but can still modify nouns directly without occurring as relative clauses.
    d. In some languages, semantic adjectives are really verbs in internally-headed relative clauses so that the noun (or noun phrase) is the subject and the semantic adjective is the predicate so that the semantic adjective is not modifying the noun at all.

31. Ojibwa (Rich Rhodes, p.c.)

a.	nini	*e-* gnoozi-*d*		*b.*	nini	*e-* ngamo-*d*
	man	REL-tall-3SG			man	REL-sing-3SG
	'a tall man'				'a man who is singing'	

32 Kutenai (my own data)

hu	wu·kat-i	k=sahan	pałkiy.
1.SUBJ	see-INDIC	SUBORD=bad	woman

'I saw the bad woman.'

b. hu qaki?-ni k=sahan pałkiy
1.SUBJ say-INDIC SUBORD=bad woman
'I said that the woman was bad.'

33. a. In some languages, numerals are a distinct word class.
b. In some languages, numerals belong to the class of adjectives.
c. In some languages, numerals modify classifiers and these classifier phrases modify the noun.
d. In some languages, numerals modify classifiers and these classifier phrases serve as heads of which the noun (and other modifiers) are dependents.
e. In some languages, numerals (without classifiers) exhibit head-like properties, implying that the noun is a dependent of the numeral.
f. In some languages, numerals are verbs grammatically and when modifying nouns are really relative clauses.
g. In some languages, numerals are really verbs in internally-headed relative clauses so that the noun (or noun phrase) is the subject and the numeral is the predicate so that the numeral is not modifying the noun at all.

34. Swahili (Ashton 1947)

a. ma-chungwa ma-wili
NC6(PL)-orange NC6(PL)-two
two oranges

b. ki-su ki-refu
NC7-knife NC7-long
a long knife

c. ki-jiji hi-ki
NC7-village this-NC7
'this village'

35. Irish (Nolan 2012: 232)

dhá theach salach
two house dirty
Num N Adj
'two dirty houses'

36. Sre (Manley 1972: 157)

bàr nəm sraʔ pa khay dɔ
two CLSFR book new his this
Num N Adj Dem
'these two new books of his'

37. Rif Berber (Kossmann 2000: 160, 108)

a. tl̲aṯa [n təwrar]
three [GEN hill]
'three hills'

b. axxam [n wəryaz]
house [GEN man]
'the man's house'

38. Creek (Martin 2011:315, 392)

a. honan-tá:ki hokkô:l-os
man-PL two:RESULTATIVE.PERF-DIMIN
'two men'

b. asêy ifá wo·hk-í a:-hôył
that dog bark.EVENTIVE-DUR DIR-stand:RESULTATIVE.PERF
'those dogs standing over there barking'

39. Kutenai

hu wu·kat-i ki=ʔas niɬtahaɬ.
1.SUBJ see-INDIC SUBORD=two young.man
'I saw two young men.'

40. a. In some languages, demonstratives pattern with articles (and perhaps possessive words), in which case they can be analysed as belonging to a category of determiners).
b. In some languages, demonstratives do not pattern with the articles in the language, in which case they do not belong to the category of determiners.
c. In some languages, there are no articles, and there is little motivation for positing a category of determiner, and demonstratives may be a distinct word class.
d. In some languages, demonstratives are grammatically adjectives.
e. In some languages, demonstratives and articles freely combine with constituents other than nouns (such as clauses), so that they are more head-like than nouns.

44. My claim is that the generalizations expressed by the five principles, resulting in the different frequencies of the 24 types, apply *regardless* of the syntactic realization of the semantic categories of demonstrative, numeral and adjective, that these generalizations cannot be expressed as generalizations over syntactic categories.

45. Crucially, the *data* regarding the relative frequency of the different types is based on classifying languages according to the *semantic* categories.

46. For example, the unattested and rare types are unattested and rare regardless of the syntactic realization of these semantic categories.

47. Cinque suggests [footnote 2] that in some languages that seem to be exceptions to his theory of what types are possible, in which adjectives appear outside numerals or even outside demonstratives, the "adjectives" are really verbs and hence are really relative clauses. He observes that relative clauses crosslinguistically tend to occur outside numerals and either inside or outside demonstratives, so that "adjectives" which are really relative clauses should occur outside numerals.

48. Cinque's approach would seem to predict that we should find languages in which semantic adjectives are verbs and in which the semantic adjective precedes the demonstrative or numeral before the noun, such as Dem-Adj-Num-N or Adj-Dem-Num-N.

49. Dhivehi (Cain 2000: 91)

mi fot ra^{n}gaḷu.
this book good
'This book is good.'

50. Ingush (Nichols 2011: 520)

Gettara dika d-y.
very good GEND-be.PRS
'That's wonderful.'

In many cases, even when semantic adjectives are verbs, they still conform to the same principles governing the position of adjectives relative to demonstratives and numerals

51. In Amis (Wu 2006: 96, 97), relative clauses based on verbs expressing semantic adjectives must occur inside numerals, closer to the noun (a, b) while other relative clauses can occur on either side of numeral (c, d):

a. Mi-cakay cingra t-u tusa tata'ak-ay ***kuhting-ay*** *a* fafuy.
ACTOR-buy 3SG.NOM DAT-CN two big-FAC ***black-FAC*** *LINK* pig
Num Adj N
'He is going to buy two big **black** pigs.'

b. *Mi-cakay cingra t-u ***kuhting-ay*** tusa tata'ak-ay a fafuy.
ACTOR-buy 3SG.NOM DAT-CN ***black-FAC*** two big-FAC LINK pig
Adj Num N
'He is going to buy two big **black** pigs.'

c. Ma-araw aku k-u-ya ta-tulu a tawinan
UNDERGOER-see 1SG.GEN NOM-CN-that PL-three LINK mother.animal
Num
a ***mi-repel-an*** ***n-i*** ***mayaw*** ***a*** kulong.
LINK ***MI-catch-LA*** ***GEN-PPN*** ***Mayaw*** ***LINK*** water.buffalo
Rel N
'I saw the three female water buffaloes **caught by Mayaw**.'

d. Ma-araw aku k-u-ya ***mi-repel-an*** ***n-i*** ***mayaw*** ***a***
UNDERGOER-see 1SG.GEN NOM-CN-that ***MI-catch-LA*** ***GEN-PPN*** ***Mayaw*** ***LINK***
Rel
ta-tulu a tawinan a kulong.
PL-three LINK mother.animal LINK water.buffalo
Num N
'I saw the three female water buffaloes **caught by Mayaw**.'

52. In Nias (data from North dialect, Lea Brown, p.c.), both semantic adjectives and semantic numerals occur in relative clauses that follow the noun they modify (ignoring a distinct construction where the numeral precedes the noun, used when the NP is interpreted as indefinite). But adjective relative clauses occur inside the numeral relative clauses while other relative clauses occur outside numeral relative clauses.

a. No u-bunu n-asu s=afusi si=dua rozi.
PAST 1SG-kill ABS-dog REL=white REL=two CLSFR
N Adj Num
'I killed the two white dogs'

b. *No u-bunu n-asu si=dua rozi s=afusi.
PAST 1SG-kill ABS-dog REL=two CLSFR REL=white
N Num Adj
'I killed the two white dogs'

c. No u-bunu n-asu si=dua rozi si=mörö.
PAST 1SG-kill ABS-dog REL=two CLSFR REL=sleep.
N Num Rel
'I killed the two dogs that were sleeping.'

d. *No u-bunu n-asu si=mörö si=dua rozi.
PAST 1SG-kill ABS-dog REL=sleep REL=two CLSFR
N Rel Num
'I killed the two dogs that were sleeping.'

53. Creek (Martin 2011: 393)

ma ifá laslat-í: toccî:n-i: pó:si
that dog black-DUR three:RESULTATIVE.PERF-DUR cat
Dem N Rel Rel

á:ssi:c-í foll-â:t
chase.EVENTIVE-DUR go.about:TRIPLURAL:RESULTATIVE.PERF
Rel

'those three black dogs going around chasing cats'

54. Tukang Besi (Donohue 1999a: 171, 152)

a. No-meha na watu iso.
3REAL-red NOM rock yon
'That rock is red.'

b. Jari no-'eka di wunua=no.
so 3REAL-go.up OBL house=3POSS
'So she went up to her house.'

Semantic adjectives are verbs but occur inside possessive clitics while other relative clauses occur outside possessive clitics:

c. Te ana morunga=su k<um>onta-'e na ana(a)
CORE child young=1SG.POSS hold<SUBJ.REL>-3OBJ NOM child
N Adj=Poss Rel ...

u riirii ba'i measo'e.
GEN duck PREV REF.this

'my young child who was holding that duckling' (Donohue 1999a: 307)

55. In Chickasaw (Pamela Munro, p.c.), both numerals and semantic adjectives are verbs and occur in internally-headed relative clauses to express meanings corresponding to adnominal numerals and adjectives in other languages. But despite the fact that neither is modifying the noun, the order is still N-Adj-Num-Dem:

[[Ofi' losa] tochchí'na] yamm=at sa-lhiyoh-tok.
dog be.black be.three that=NOM 1sg.II-chase-PST
'Those three black dogs chased me.'

But

56. Yapese: Num-N-Dem-Adj (NnDA)

rea kaarroo roog neey [ba roowroow]
SG car 1SG.POSS this [be red]
N Dem Adj
'this red car of mine' (Jensen 1997: 168)

57. Teop: Num-N-Dem-Adj (NnDA)

te=a hausik vai a beera
PREP=ART hospital this ART big
'to this big hospital' (Mosel and Thiesen 2007: 96)

58. Kilivila: Num-N-Dem-Adj (NnDA)

m-to-si-na su waga sena nanakwa taga
this-human-PL-this 3PL.POSS canoe very fast but

ma-waga-si. i-kaliseva-si.
1PL-canoe-PL 3-run.off-PL

'Their canoes are very fast, but our canoes are outstanding' [*literally* 'they run off']
(Senft 1986: 87)

59. Slave: Dem-N-Num-Adj (DnNA)

Michael hayi luge tat'e i lek'a i welu i wohsee.
Michael N.MRKR fish three REL 3.fat REL 3.netted REL 1SG.OPT.boil
N Num Adj
'I will boil the three fat fish that Michael netted.' (Rice 1989: 1316)

60. Girawa: Dem-N-Num-Adj (DnNA)

na-n en oirori mokup ra-u.
2SG-GEN dog two black be-3SG.PRES
'Your two black dogs are (there).' (Gasaway, Lillie, and Sims 1977: 48)

61. Number of genera containing languages classified by whether semantic adjectives are verbs and whether they occur closer to the noun than numerals when both occur on the same side of the noun

	Adj closer to noun than Num	Num closer to noun than Adj	Percent closer
Adj is verb	30	4	.88
Adj is not verb	106	12	.90

62. Number of genera containing languages classified by whether semantic adjectives are verbs and whether they occur closer to the noun than demonstratives when both occur on the same side of the noun

	Adj closer to noun than Dem	Dem closer to noun than Adj	Percent closer
Adj is verb	32	3	.91
Adj is not verb	99	10	.91

63. Begak Idaan

asu gayo təllu tassa' no
dog big three CLSFR yonder
'those three big dogs' (Goudswaard 2005: 272)

64. Other nAND languages in which numerals normally occur with classifiers:

Busa (Wedekind 1972: 23-24)
Sgaw Karen (Jones 1961: 43)
Nuosu (Gerner 2013: 64)
Palaung (Mak 2012: 110)
Stieng (Miller 1976: 24-25)
Bunong (Bequette 2013: 28, 33)
Brao (Miller 1976: 29-30)
Khmer (Ehrman 1970: 19)
Kasong (Sunee 2003: 172)
Thai (Smyth 2002: 33-37)
Tukang Besi (Donohue 1999a: 197, 304)
Tugun (Hinton 1991: 45)
Irarutu (Matsumara and Matsumara 1991: 105-106)
Keo (Baird 2002: 186, 255)
Taba (Bowden 2001: 179, 242)
Loniu (Hamel 1994: 54, 94)
Nuaulu (Bolton 1990: 71)
Klon (Baird 2008: 63-64, 81)
Adang (Haan 2001: 124, 295-304)
Abun (Berry and Berry 1999: 67-69)
Maybrat (Brown 1990: 47, 56)
Meyah (Gravelle 2004: 167)
Hatam (Reesink 1999: 79)
Tidore (Van Staden 2000: 166, 193)
Bribri (Margery Peña 1982: xxvii)

65. Languages with DNAn order with numeral classifiers

Baluchi (Axenov 2006: 232)
Central Kurdish (Blau 1980: 80; Strunk 2003: 1)
Iranian Azerbaijani (Lee 1996: 124)
Mangghuer (Slater 2003: 90, 95, 233)
Burushaski (Yoshioka 2012: 177)
Cantonese (Matthew and Yip 1994: 88)
Hayu (Michailovsky 1988: 123, 170)
Chantyal (Noonan 2003: 329)
Athpare (Ebert 1997: 108)
Rukai (Li 1973: 73-74)
Palauan (Josephs 1975: 480)
Huehuetla Tepehua (Kung 2007: 405, 422, 493-503)

66. DNnA languages with numeral classifiers:

Khasi (Rabel 1961: 131)
Ojibwa (Kathol and Rhodes 1999: 75-78; Valentine 2001: 883)
Desano (Miller 1999: 4, 51)
Baure (Danielsen 2007: 158, 169)
Palikur (Green and Green 1972: 23-25)
Yagua (Payne 1990: 97, 144).

67. Maʷ̌ea (Guerin 2008: 74) (nADN)

Vu-n	vuae	ror	i	rua	ra-r-tur	marrmarvitu.
stem-POSS'D	tree	this	LIG	two	3PL-DU-stand.up	close
	N	Dem		Num		

'These two trunks here are close to each other.'

70. Number of genera containing languages, classified by whether the language has numeral classifiers and whether the numeral plus classifier occurs closer to the noun than demonstratives when both occur on the same side of the noun

	Num closer to noun than Dem	Dem closer to noun than Num	Percent closer
Lg has numeral clsfr	44	4	.92
Lg lacks numeral clsfr	83	16	.84

71. Number of genera containing languages, classified by whether the language has numeral classifiers and whether the numeral plus classifier occurs closer to the noun than adjectives when both occur on the same side of the noun

	Adj closer to noun than Num	Num closer to noun than Adj	Percent closer
Lg has numeral clsfr	47	3	.94
Lg lacks numeral clsfr	84	8	.91

The semantic basis of the the Postnominal Adjective Preference

72. Order of adjective and noun, in languages where semantic adjectives are verbs and languages where semantic adjectives are not verbs

	AdjN	NAdj	Percent NAdj
Adj is verb	31	70	.69
Adj is not verb	87	164	.65

Is Intra-Categorial Harmony semantic?

73. Number of genera containing languages where the numeral and demonstrative occur on the same side of the noun or different sides of the noun, distinguishing languages with numeral classifiers from languages lacking numeral classifiers

	Num and Dem occur on same side of noun	Num and Dem occur on different sides of noun	Percent same side
Lg has classifiers	68	36	.65
Lg lacks classifiers	167	55	.72

74. Number of genera containing languages where the numeral and adjective occur on the same side of the noun or different sides of the noun, distinguishing languages with numeral classifiers from languages lacking numeral classifiers

	Num and Adj occur on same side of noun	Num and Adj occur on different sides of noun	Percent same side
Lg has classifiers	71	29	.71
Lg lacks classifiers	174	58	.75

Towards an explanation for the principles

75. a. The two Iconicity Principles probably reflect the same principles governing order among descriptive adjectives, whereby more inherent properties occur closer to the noun (e.g. *a beautiful black horse* vs. *??a black beautiful horse*).
    b. I have no good explanation for The Asymmetry Principle.
    c. The Intra-Categorial Harmony Principle has long been assumed. It was once thought to be part of the general correlations with the order of object and verb, but given that none of these three pairs of elements correlate in order with the order of object and verb (except possibly numeral and noun, but here it is NumN that correlates with VO and NNum that correlates with OV), this is not the case. But independent of the correlations with the order of object and verb, there is still a separate set of correlations within the noun phrase.

76. Explaining the Postnominal Adjectival Preference

    Relationship between the order of adjective and noun and the order of relative clause and noun in languages where adjectives are not verbs

	AdjN	NAdj
RelN	31	17
NRel	26	90

Summary

77. a. My principles predict the relative frequency of the different types better than Cinque's
    b. The principles governing the order of demonstrative, numeral, adjective, and noun are based on semantic categories, not syntactic ones

References

Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 3: 315-332.

Greenberg, Joseph H. 1963. Some universals of grammar with particular reference to the order of meaningful elements. *Universals of language*, ed. by Joseph Greenberg, 73-113. Cambridge, Mass: MIT Press.