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## Aposing intensional quantifiers

Project : « Déterminants et inférences », ILF project (2010-2015).  
 Part of this project : the semantics of intensional determiners : *few, many, almost...*  
 What I present, in this talk is an on-going work which tries to use a syntactic construction, apposition, as a tool for investigating the semantics of determiners.

### 1 Starting point : Anscombe et Ducrot (1983 : 20)

- (1) ? Peu d'automobilistes dépassent le 120 , presque 20%.  
 Few drivers go over 80 m.p.h , almost 20%

The sentence (1) is odd, unacceptable. WHY ?

Anscombe and Ducrot's observations :

- Some quantifiers, like *presque* are acceptable in (1) iff they are introduced by *mais* (but) and are unacceptable without *mais*: *more than, at least...presque*
- Some quantifiers are acceptable in (1) without *mais* : *less than, at most...*
- “20%” is not a relevant parameter of the problem : any other proportion yields the same judgments.

Anscombe and Ducrot's story :

Structures like (1) are acceptable iff the detached elements can be interpreted as an argument supporting the choice of the initial quantifier.

In order to do that, the second quantifier must have the same “argumentative orientation” than the first.

*Mais* (but) reverses the argumentative orientation of a quantifier.

In order for this theory to work, each (or at least some) quantifier should be associated in the lexicon with a layer of meaning associating it to an argumentative orientation (positive/negative).

Although ingenious and suggestive the approach has some drawbacks: it makes the semantics more complex by introducing “argumentative orientation” as a new primitive in the definition of lexical items, and for some it may sound rather stipulative: in order to explain some unacceptabilities, you declare that they are argumentative in nature, and then you stipulate the argumentative orientations deriving the facts.

A natural question is thus:

Is it possible to derive the observed facts without buying Anscombe and Ducrot's argumentative theory, in a more conservative and parsimonious approach?

## 2 Revisiting the data

For AD, (1) is seen as a reduced version of a two sentences discourse such that the second sentence must support the first one. In many discourse theories (e.g. Mann & Thompson 1988) it is called a *justification* relation.

But :

- Even if one accepts to look at the structure with a discourse-oriented eye, what it looks like is much more like *elaboration* than *justification*. The detached quantifier of (1) when acceptable, can be followed by “to be precise” without any meaning change :  
(2) Few drivers go over 80 p.m.h., less than 10%, to be precise.

But “to be precise” cannot be used for true *justifications* in discourse

(3) I cannot work with him. He is too stupid, # to be precise.

- (1) exemplifies a syntactic structure (not a discourse) and most linguists would say it is a case of *apposition*. This makes the huge literature on this topic a resource to explore. So, the contrast between versions with *mais* and versions without might be just a matter of contrast between coordination (with *mais*) and apposition (bare quantifier).
- The crucial quantifiers of (1) *few* and *almost* are intensional quantifiers. The constraints observed by AD should be related to what we have to say otherwise about intensional quantifiers, and used to throw some light on their properties.
- Unnoticed by AD, ‘Presque aucun’ (almost none) is fine in (1) but bad with *mais*.

## 3. Apposition VS coordination

The construction illustrated by (1), with a bare detached quantifier would be considered by many linguists as an *apposition*.

Many authors (del Gobo 2003, De Vries (2002) after Koster (1995, 2000) claim that appositive nominals *specify* the DP that precedes them, the second DP providing further information about the first one.

Associated semantic condition : the apposition (APP) denotes a logical subset of the denotation of the anchor (ANCH).

The construction illustrated by (1) can be seen, thus, as a special case of apposition. Special because it involves two quantifiers, and because APP is reduced to a bare quantifier.

QUANT <sub>1</sub>	A	B	QUANT <sub>2</sub>
Few	drivers	go over 80	Almost 20%
ANCHOR			APPOSITION

There is a sharp contrast between coordination (e.g. *mais*) and apposition :

Few boys, but many girls, came	coordination	
Few boys came, * many girls	*apposition	ill-formed
Few boys came, less than three (boys)	apposition	correct

#### 4 Apposition and extensional determiners

Intensional determiners (Keenan & Stavi 1986).

Test : if two speakers can agree on the quantity or proportion denoted by a determiner and can disagree that the determiner applies, the determiner is intensional. A determiner is extensional otherwise.

Few, many, almost  $a$  are intensional

More than six, exactly six, about six are extensional

For extensional quantifiers, apposition is licensed for all couples of quantifiers satisfying the semantic associated constraint (if APP denotes a subset of ANCH):

(4) More than ten students, twelve (to be precise), came.

(5) \* More than ten students, less than twenty, came.

Compare to the corresponding coordination :

(6) More than ten students, and less than twenty, came.

(7) More than ten students, but less than twenty, came.

#### 5 Intensional determiners

Working hypothesis : an intensional determiner  $Q$ , in  $Q$ - $A$ - $B$ , expresses comparison between  $\alpha$ , the actual cardinality  $|A \cap B|$  or the proportion  $|A \cap B|/|A|$ , and a subjective constant  $n$ , a norm.

A norm is the estimated value of  $|A \cap B|$  or  $|A \cap B|/|A|$  in some possible world considered by the speaker as the relevant standard of comparison.

A norm can be : what  $\alpha$  should be,  $\alpha$  might have been,  $\alpha$  is in most worlds,  $\alpha$  is w.r.t. another contextual parameter, etc.

Links to be made :

- “faultless disagreement” and predicates of “personal taste” , Lasersohn (2005).
- “Implicite comparatives” Kennedy (2001).

Basic analysis of *few* :

For simplicity reasons, I consider only the proportional reading of *few*:

Few	drivers	go over 80	almost 20%
$\alpha < n$ $\alpha =  D \cap D > 80  /  D $			

$n$  is a subjective value chosen by the speaker. All we know is that this value is bigger than  $\alpha$ .

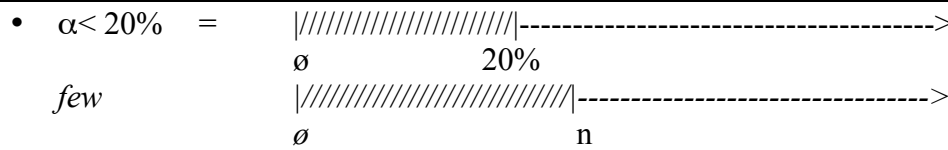
**6. Extensional appositions to *few*.**

Reminder: apposition requires that APP *specifies* ANCH. APP must cover a subset of ANCH  
 Since ANCH contains an unknown value (*n*), the semantic constraints will be satisfied via accommodation.

When ANCH is intensional, if APP can be interpreted as specifying ANCH (i.e. covering a subset of ANCH’s alternatives) it is so interpreted.

Illustration:

Few	drivers	go over 80	less than 20%
$\alpha < n$			$\alpha < 20\%$
$\alpha < 20\% < n$			



It is possible to accommodate values for *n* such that “less than 20%” be a specification.  
 Hence : the sentence is acceptable under accommodation, which makes the speaker’s norm less private : her norm is higher than 20%.

A case of apposition failure :

(8) Few drivers go over 80, \*more than 20%

Few	drivers	go over 80	more than 20%
$\alpha < n$			$\alpha > 20\%$
Failure : there is no <i>n</i> satisfying the semantic associated constraint.			



There is no way to make the alternatives covered by “more than 20%” a subset of the alternatives covered by *few*. Except by accommodating *n* as 100%, a very unlikely option.  
 This sentence (8) is not acceptable for the same reason that (8’) is not :

(8’) Less than 100 students, more than 90 , came at the party.

The proposal predicts that the only extensional quantifiers which can fail to satisfy the associated semantic constraint of *few* are unbound comparative determiners.

- Approximation quantifiers : about 100, between 50 and 80
- Precise quantifiers : exactly 34

Will be accepted because there can be successful accommodations for them. This prediction is borne out at least for denotational determiners. And all predictions are based on logical properties of determiners, without any need to use argumentative values.

## 7 Intensional appositions to *few*

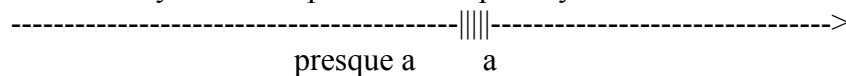
The original example (1) is based on the impossibility to use *presque n* (almost *n*) as an APP to the ANCH *few*.

A big literature on *almost*, and a large one on *presque* in classical semantics.

I will focus only on the properties of *presque n* which are needed for explaining its behavior in the original example (1) :

*Presque* has a denotational meaning component on which there cannot be any disagreement among speakers.

In a nutshell : *presque a* asserts that the actual quantity or proportion  $\alpha$  is ranked on a scale strictly under the position occupied by *a*.



Note that the natural order of numbers is not always the one one has to consider :

Il fait presque 0°C

It is almost 0°C

can mean over 0° in the temperature is lowering (Fall)

can mean under 0° is the temperature is rising. (Spring)

The scalar nature of *presque* explains why “almost nothing” is licensed and regular although “less than nothing” is only accepted as a stylistic device. The reason is that “nothing and “zero” can be used (as a marked case) as the top of the scale.

*Presque* has also an intensional meaning component associated to the proximity to the point of reference.

To be brief : *presque a* “means close to *a*” and “close” is an intensional predicate that can be formulated as a comparison to a subjective norm:

A is close to B if the distance between A and B is under some standard of smallness on which speakers can disagree.

Both components has been extensively discussed in the literature. But they cannot, as far as I know, offer an explanation for what happens with *presque* in (1).

On the contrary, the denotational property leads to expect that *presque* should be O.K. because it resembles a comparative of inferiority. *Presque a = less than a*.

As for the property related to the closeness to the point of reference, it does not change anything and predicts that it should be as good as “slightly less than” is :

(9) Peu d’automobilistes dépassent le 80, un tout petit peu moins de 20°.

Few drivers go over 80, slightly less than 20%

(Note that this “slightly” adjunction makes any extensional comparative (of superiority or inferiority) good as an apposition to *few*, also a prediction of the proposal).

Conclusion : the properties most often associated to *presque* in the literature, even if taken separately, lead to expect that *presque* should be acceptable, which is, unfortunately, not the case.

## 8 An enriched analysis of *presque a*

There is, I think, a property of *presque a* which is not clearly captured by the current analyses.

Independent evidences :

A basic fact, is that if someone tells you that her income is “*presque a*”, you are invited to infer that she is happy about that income, that she thinks “it is not that bad”. This cannot derive from the “less than + close to” analysis.

Consider the very hypothetical dialogue (10):

- (10) A - You just said your salary is now 1950 €. So I can write in my paper : “X, a worker making now almost 2000 €...”  
 B- I would not say that myself. You know, what I make is nothing compared to what is needed for living in Paris.

What is a matter of disagreement is neither inferiority nor closeness, it is the way the amount of money is evaluated when compared to a contextual norm.

What B is insisting on is that for saying himself “*presque a*”, it should be the case that for him, the amount of money is *above* a contextual norm.

Independent confirmations :

Correlations :

-----> crisis  
 <----- jobs

The more there is crisis, the less there are jobs.

- (11) ?A cause de la crise, l’entreprise propose presque une centaine d’emplois.  
 Because of the crisis, the firm offers almost 100 jobs.

A causal relation leads to expect that the number of proposed jobs will be inferior to what it is otherwise.

Why is *presque* awkward? In my view because *presque* implies that the actual number is *above* a contextual norm.

A concessive relation, in case there is a known correlation, implies on the contrary that the actual quantity will be above the standards. And *presque* is perfect :

- (12) Malgré la crise, l’entreprise offre presque une centaine d’emplois  
 In spite of the crisis, the firm proposes almost 100 jobs.

Conclusion : there are independent evidences for claiming that the semantics of *presque a* in addition to the “less than and close to” components implies that for the speaker the actual quantity is above a contextual norm.

<i>presque a</i>	1. $\alpha < a$ on a scale	lower ranking	ext.
	2. $\alpha \approx a$	closeness	int.
	3. $\alpha > n$	higher than a subjective norm	int.

NB : given (2) the formulation “ $a > n$ ” for (3) would not be substantially different.

The assumed semantics for *presque* is obtained as a conjunction of these tree components. It is likely that something more must be added, because one of the components, the extensional “ $\alpha < a$  on a scale” seems to be backgrounded (see a.o. Horn 2002).

1. - The back-grounding of the “negative part” is an assumption made by most theories I know of, although it may be achieved by different means.

It is needed (Nouwen 2006) for explaining examples like :

(13) Je suis heureux que presque tous mes amis soient venus à mon anniversaire  
I am glad that almost all my friends came to my birthday party.

The speaker is glad that the number of her friends coming is very close to the maximum, not that not all her friends came.

	2. What the lexical item <i>presque</i> realizes is the association of two opposed	
comparatives	$\alpha < a$ on a scale	denotational
	$\alpha > n$	intensional

This association is very rare and contrasts strongly with a general tendency associating intensional implicatures *co-oriented* with denotational comparatives:

For instance, *less than 2.000 €* is a denotational comparative of inferiority and can be used without any implicature :

(14) For people making less than 2.000 €, the tax rate is 35%

But in conversation, if someone says her salary is *less than 2.000 €* you will immediately infer that she is not pleased with this amount and conveys the judgment that what she makes is under her subjective norm.

So denotational comparatives generate, as a rule, co-oriented intensional comparisons.

In the case of *presque*, a lexical item combines, as parts of its meaning, if we are right, two antagonistic denotational/intensional comparisons.

So if this lexical item is used, it is probably that the intensional part of its meaning is the most salient for the speaker.

Note that French, for instance; offers at least three ways for expressing the same denotational content :

	Un peu moins de a A little less than a	à peine a barely a	presque a almost a
Int	?	$\alpha < n$	$\alpha > n$

This might explain that the choice of *presque* foregrounds its intensional content, and background what could have been expressed by the other items

Although I think that this backgrounding of the denotational ‘less than’ part of the semantics of ‘presque’ is needed elsewhere, it will not play any role in the solution I propose for the puzzle.

### 9 Argumentative puzzle solved without argumentation

Part of the problem is that examples like (1) combine, within a syntactic construction, two intensional determiners : *peu* and *presque* (*few* and *almost*).

A minimal assumption is that any use of an intensional determiner is an implicit comparison to a contextual norm; in principle, any intensional determiner is open to the choice of any norm.

One is free to say things like :

(15)

A. Have you many students in your course?

B. Well, compared to what it was last year, they are few, but considering the number of essays I will have to read, I would say they are many.

Consider now simple discourses.

(16) ? J’ai peu d’argent. J’ai presque 200 €  
I have little money. I have almost 200€

(17) J’ai peu d’argent, mais j’ai presque 200 €.  
I have little money, but I have almost 200 €

The discourse relation most speakers would want to associate to (16) is *elaboration*, and many of them find that the discourse is not well formed. (17) is well-formed and would be analyzed by discourse theorists as a *contrast*.

So in general, it is possible to combine with discourse relations intensional determiners evaluating differently the same quantity. It is possible to combine a sentence stating that  $\alpha$  is superior to a norm  $n$ , and a sentence stating that  $\alpha$  is inferior to another norm  $n'$ .

But elaboration imposes specific constraints.

(18) J’ai peu d’argent. J’ai à peu près 10€	I have few money. I have about 10€
moins de 10 euros	less than 10 €
* plus de 10 euros	*more than 10 €
* presque 10 euros	almost 10 €

As already said, elaboration rests on the same semantic relation than apposition, i.e. a specifying relation.

\*plus de 10 euros can be explained by a purely logical constraint (see above)

\*presque 10 euros cannot be explained via its extensional content.

•       -----|||-----|----->  
          10       n

Would be a perfect accommodation. And it works perfectly for the extensional equivalent “un tout petit peu moins de 10 euros”

So the problem is located in the interaction between the semantic relation *specification* and the *intensional* layer of the quantifier *presque*.





## 10 Further research

Other applications of “apposition” as a tool: building a “scale of precision” for quantifiers. Work in progress in collaboration with E. Vlachou (Aegean University) : if a quantifier is accepted as an apposition to another one, it covers a subset of its alternative. It is more precise.

The relation between apposition and specification has been accepted as a working hypothesis. It would remain to make a link between this semantic relation and the very nature of apposition.

The status of apposition between sentence grammar and discourse grammar would be a track worth exploring. Although we thought AD were not right in considering (1) as a small discourse, exemplifying a *justification* relation, we were lead to underline that there are many similarities between apposition and another discourse relation, namely *elaboration*, both exemplifying a specifying relation.

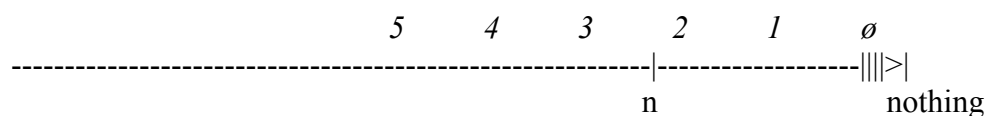
Extending the analysis of *presque* outside the mere counting domain “presque+numeral” to the combination with verbs for instance.

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Appendice : *presque rien*, (almost nothing).

Regular semantics : a quantity under «nothing » on a scale, and above the norm  $n$ .



« Nothing » must be considered as higher than the actual quantity, which means that the standard scale must be reversed, « nothing being » its top-most element.

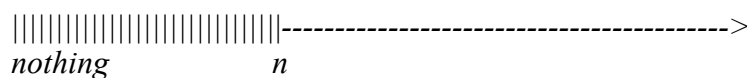
A. How much do you make.

B. Almost nothing

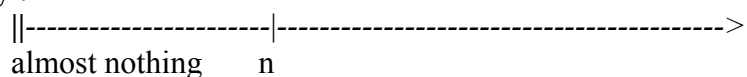
The actual salary is close to nothing, and higher (on the reversed scale) than the norm  $n$ .

Why is « almost nothing » licensed in apposition to *few* ?

*Few*



There is a successful specifying accommodation under unification of the intensional variables, namely :



APP denotes a subset of ANCH inferior to  $n$ . The rescuing element is the reversed scale taking “nothing” as the top most element.

Only *nothing* triggers the reverse scale. Even very small numbers do not : “presque 1%” = “between 0 and 1%”.