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*An epistemological and a concrete argument against innatist explanations of language***

1. *Premise. Innatist or functional approaches to the nature of language*

The existence of language in the human endowment has rightly been regarded as something unique and extraordinary. Some, among whom the most authoritative and influential is Noam Chomsky, have claimed and tried to demonstrate that the acquisition and working of language cannot be explained if language itself is not present in the brain at birth, namely in the form of an innate Universal Grammar[1].

Still, it cannot be disregarded that the complex nature of both language users and situations within which language is used, fix very many constraints that limit and define the space within which language can vary, thus shaping language and making it be what it is (Simone & Lombardi Vallauri, 2010; 2011). For this reason, there appear to be promising paths of explanation that can be pursued (in the opinion of many) by means of naturalistic and pragmatic arguments, without the intervention of putative innate grammars in the brain[2]. The advantage of this perspective is that it results in the adoption of an *epistemologically prudent* attitude, for the reasons we will briefly sketch.

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** I wish to thank Francesca Masini and Caterina Mauri for the many useful comments on earlier versions of this text, and Raffaele Simone for much common work leading to it.

[1] Cf. e.g. Chomsky (1986; 1988). Lombardi Vallauri (2004; 2014), Sampson (2005), Christiansen & Chater (2008) *inter alia* for a survey on the innatist position.

[2] I refer to the 'innatist' trend initiated by Chomsky in many works, endorsed by many, among whom e.g. by Pinker (1984), which has become one of the dominant paradigms of present-day philosophy of language.

2. *Explaining language universals*[3]

Evans and Levinson (2009), along with many others, underline that «it is vital to point out that *a property common to languages need not have its origins in a 'language faculty'*, or innate specialization for language. First, such a property could be due to properties of other mental capacities – memory, action control, sensory integration, etc. Second, it could be due to overall design requirements of communication systems. […] Universals can also arise from so-called functional factors, that is to say, the machining of structure to fit the uses to which it would be put». They also recall that, as a consequence, the «appeal to innate concepts and structure should be a last resort» (Cf. Tomasello, 1995). I would like to add some arguments in favour of this position[4].

When two possible paths of explanation are available for some fact(s), although both lead to hypotheses that fit the phenomena, one may be preferrable on methodological (i.e. epistemological) grounds. Indeed, the issue of explaining language universals is a good example of such a situation.

The opposition between 'formal' and 'functional' approaches in today's linguistics has been described many times (e.g., Newmeyer, 1998; Darnell *et al.*, 1999). For our purposes, we can summarize it here as the choice between two representations of language, namely as a *computational system* and as a *transactional device*[5].

A. Language as a computational system: Strongly 'formal' approaches treat language as a computational system depending on some dedicated linguistic (more properly 'grammatical') modules in the brain, where they are the result of evolution[6]. Thus, the core

[3] I agree with Evans & Levinson that (at least the majority of) the features usually called 'language universals' are not universal, but at best widely diffused. And I agree with Cristofaro (2010) about the fact that many so-called linguistic universals are rather the result of our giving the same, universal name, to phenomena that are actually different from language to language. We will go on calling them 'universals' on practical grounds.

[4] Cf. Lombardi Vallauri (2004; 2008; 2012; 2014) for some attempts in this direction.

[5] Cf. Simone & Lombardi Vallauri (2010; 2011).

[6] Cf. for instance the following claim: «There are speculations about the evolution of language that postulate […] first some mutation that permits two-unit expressions (yielding selectional advantage in overcoming memory restrictions on lexical explosion), then mutations permitting larger expressions, and finally the Great Leap that yields Merge. Perhaps the earlier steps really took place, but a more parsimonious speculation is

language properties derive from a specific innate 'language faculty' and are largely indifferent to the requirements of use. Probably the best characterization of this hypothesis sees the human mind as endowed with a set of 'switchers' that decide the actual value assumed by each parameter in a given set[7]. In this perspective, since language is identified by a set of specifiable rules (a grammar), anything not responding to such rules is confined in an 'external' space (generative linguistics calls it 'E-language') as opposed to the rule-governed section ('I-language')[8]. Only I-language is studied by theoretical linguistics[9]. Meaning is not vital to it[10], its structures are not affected by use. In sum, language has very little to do with the world, the language users, their intentions and goals, and so on. It is an 'autonomous' system, rather than a tool for human communities to solve their problems in the world[11].

B. Language as a transactional device: According to 'functional'[12] approaches, on the other hand, language is a 'transactional' device inasmuch as language and its users affect each other in various senses and ways[13]. Language organization and patterns have developed and are constantly reshaped to permit interactions between users; as a consequence, structure is affected by use. Moreover, being a symbolic

that they did not, and the Great Leap was effectively instantaneous, in a single individual, who was instantly endowed with intellectual capacities far superior to those of others, transmitted to offspring and coming to predominate […]» (Chomsky, 2005: 11-12).

[7] About the Principles and Parameters version of Generative Grammar cf. e.g. Cook & Newson (1996) and Chomsky (2005: 8-10).

[8] Elsewhere (e.g. Hauser *et al.*, 2002), this distinction turns into that between a FLN (Faculty of Language – Narrow) and a FLB (Faculty of Language – Broad).

[9] For one of the clearest and strongest expositions of this point of view, cf. what Jackendoff (1997) proposes as the 'Mentalist Stance', according to which important properties of human language «can be effectively studied without taking account of social factors».

[10] This is exactly the opposite of the position witnessed and accounted for by Chafe (2002), whose importance, I think, cannot be overestimated.

[11] For this reason, Deacon (2003) describes the computational conception of language as «the most serious source of confusion about the nature of language universals». See also Fauconnier (1994) in the same perspective.

[12] I use this term just for convenience. I consider it, however, reductive and inexact, since 'functional approaches' not only underline the 'functional' character of language, but more in general emphasize its pragmatic orientation.

[13] The term 'transactional' is from Dewey & Bentley (1949), who stressed that the object of knowledge (the 'known') is not indifferent to, but affected by, the very subject who is knowing it (the 'knowing'). This implies that the 'known' and the 'knowing' interact and influence each other.

system, language is related to the entities it symbolizes, and this relationship can be studied[14].

In this approach, the distinction between 'I-language' and 'E-language' is unnecessary, theory-dependent and *ad hoc*. On the contrary, everything in language is 'true language' and has to be explained through general principles. What may appear fragmentary, marginal, occasional and non-responding to specifiable rules may be explained as the effect of a variety of forces and drives not deriving from the computational dimension: economy, analogy, frequency, accumulation, efficiency, adaptation, and even mere historic contingency.

3. *Epistemological criteria*

At the current stage of research no demonstration is available to justify the choice of approaches A or B (Cf. Lazard, 2006). Selecting one or the other is a matter of pre-theoretical preference. Still, I would like to argue that the difference between the two alternatives can be assessed in terms of their respective epistemological dignity.

The knowledge we have so far of the working of the brain is quantitative rather than qualitative, being based on imaging techniques as PET and fMRI as well as on the measurements of event related potentials (ERPs) in the brain, such as N400 or P600, and the like. More specifically, what we know is that the brain activates (at best: in certain precise areas) when performing certain tasks. We partially know the nature of such an activation in terms of increased biochemical activity; but we completely ignore what the relation may be between physical activity and its subjectively perceived counterparts, viz. thought, language, conscience and so on. There is no substantial cue to understand how something absolutely immaterial as consciousness can arise from something material as biochemical activity[15]. According to Libet's (2005: § 5.1.1.-5.7.) still valid, authoritative summary:

> Why subjective experience emerges from appropriate neuronal activities may be no more answerable than similar questions about other fundamental phenomena. That is, why does mass have inertia? Why do masses exhibit gravitational attraction?

[14] To say it otherwise, semiotics (rather than, for instance, psychology or computer science) is the meta-theory for linguistics (see Dressler, 1990).

[15] Interim hypotheses, among others, in Edelman (1987; 1992; 2007).

> Why does matter behave both in wave-like and quantal fashions? […] The emergence of conscious subjective experience from nerve cell activities is still a mystery.

This is the extent to which we can 'grasp' the relation between the mind (including language) and the brain[16].

On the other side, we have a wide-ranging knowledge of how language works, consisting in the accurate description of hundreds of languages and a wide agreement on the existence of dozens (possibly hundreds) of linguistic 'universals'[17], i.e. properties whose existence is hardly ascribable to mere hazard.

Now, the conceptual links we can establish between our knowledge of language and our knowledge of its anthropological bases vary dramatically according to whether we adopt a computational or a functional approach. This is shown in Diagram 1:

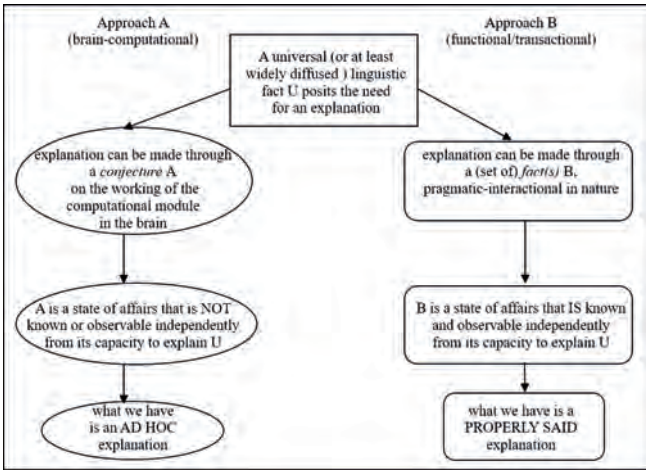

Diagram 1: Two explanatory paths.

[16] Others express the same lack of confidence in the current possibility to assess how the structure and working of the organism and especially of the brain reflects itself in the working of language. See for instance, Moro (2006: 234): «Troppe sono le variabili fisiche, troppo profonda è la nostra ignoranza del sistema neuronale che sovrintende alle funzioni linguistiche, troppo lontano è il raggiungimento di una "linguistica mendeliana" che ci porti a individuare i geni che controllano la facoltà di linguaggio». (Too many are the physical variables, too deep is our ignorance of the neuronal system which rules the linguistic functions, too far are we from a 'Mendelian linguistics' which would lead us to identify the genes that control the language faculty).

[17] As already mentioned, on the question whether the features that are usually presented as linguistic universals are really universal or just strong tendencies, I basically agree on the positions held by Evans & Levinson (2009) and Cristofaro (2010).

The difference between type A and type B explanations is one of epistemological dignity. This affects the interpretation of any linguistic fact. For instance, we may accept as 'universal' that in any language the existence of dedicated reflexive pronouns (as opposed to personal pronouns) for the first person implies the same for the second person, and so on for the third person (cf. Comrie, 1993). In such a case, we might search for an explanation in terms of brain organization (approach A). Since it is still impossible to establish what could be in the brain, for instance, such things as the anatomical/physiological bases for pronouns, we are compelled to suppose a hypothetical 'structure in the brain' whose existence may, among other things, decide that any language must have dedicated reflexive pronouns more strongly for the third person than for the second, etc. It may be the right guess, but there is no way to check it independently, by means of specific, qualitative inquiry of brain phenomena. As a consequence, if such a structure is meant to be an explanation for linguistic facts, it is an *ad hoc* explanation, circular and tautological in nature.

Under such conditions, the best we can do is still to assume a specialized brain module as an explanation for linguistic facts, but *only in case there is no other possible path to get an explanation* for those facts. Otherwise, solutions in terms of 'brain structure' should be regarded as violations of Occam's razor, since what they definitely do is to create *entia* (*explicationis*) *praeter necessitatem* from scratch, in order to account for things that can be explained in other terms with a stronger connection to empirically observable facts. For example, if the preference for reflexive pronouns in the third person can be explained pragmatically, since this means having recourse to real and observable facts, this explanation must be preferred to the ones that oblige us to *ad hoc* stipulations (such as the existence of a dedicated brain structure), and methodologically rules them out.

Now, crucially, there hardly exists any linguistic universal that cannot be (at least in part) accounted for in terms of pragmatic constraints. Evans and Levinson (2009) hint at this more than once, and I think one must agree with them that the explanation for most (if not all) widely diffused linguistic features can be found in the existence of 'attractors' that are cognitive, functional (communicational) or cultural-historical in nature[18]. There is not enough space here to develop the issue, but we may

[18] Although it has been dealt with in detail at least since Hawkins (1988), the issue of providing explanations to language universals still awaits for the linguists to devote to it the efforts that it deserves. Cf. Lombardi Vallauri (1999) for a survey of explanation

recall at least one example of how the structure of communicative situations can force all languages to adopt the same grammatical preferences. The above mentioned universal implication noticed by Comrie (1993) in the distribution of reflexive pronouns does not need a brain-oriented explanation because an evident, pragmatic one is possible[19].

4. *By way of example: a case of pragmatical explanation*

In a language, if a distinction between reflexive vs. non-reflexive personal pronouns exists for the first and second person (*me/myself*, *you/yourself*), the same distinction always obtains also for the third (*him/himself*). Such an implication clearly results from the increasing need for disambiguation among different possible referents, that one can observe when moving from the first and second persons to the third.

Unlike English, German has the same pronoun for direct object and reflexive object reference in the first (*mich*) and second person (*dich*); but in the third person they are different as in English:

	masculine	feminine	neuter
direct object personal pronouns	*ihn*	*sie*	*es*
reflexive pronoun		*sich*	

Table 1: Third Person Pronouns in German.

Although ungrammatical, the English utterance in (1c') **I wash me* is not more ambiguous than its German equivalent (1b):

I person	reflexives	personal pronouns
English	(1a) *I wash myself*	(1c) *You wash me* (1c') **I wash me*
German	(1b) *Ich wasche mich*	(1d) *Du wäschst mich*

Table 2: First Person Pronouns.

paths. Simone & Lombardi Vallauri (2010; 2011) are attempts at giving a very general picture of the constraints that reality puts on how human language is made and works.

[19] Cf. Simone & Lombardi Vallauri (2010; 2011). On this matter, in a typological perspective, cf. also Lazard (2007).

This is because the first person pronoun is a 'pure indexical': in any situation there cannot be more than one person whom the first person pronoun can refer to, namely the one who produces the utterance. As a consequence, the existence of *myself* as distinct from *me* is redundant. In principle, some ambiguity may possibly arise with the second person, for instance in the case of German (2b), but only if two possible addressees are present in the communicative context and may be pointed at separately (possibly by separate gestures), which is quite rare a circumstance. In the latter case, an English speaker would utter (2c') instead of (2a):

II person	reflexives	personal pronouns
English	(2a) *You wash yourself*	(2c) *I wash you* / (2c') *You$_1$ wash YOU$_2$*
German	(2b) *Du wäschst dich*	(2d) *Ich wasche dich*

Table 3: Second Person Pronouns.

Conversely, ambiguity would be highly frequent if German had no morphological means to distinguish the Direct Object personal pronoun from the reflexive *in the third person*, since contexts with more than one 'he' or 'she' or 'it' are quite natural and frequent, making both reflexive and transitive action probable when the third person of the verb is involved. Consistently, German has a dedicated reflexive pronoun for the third person:

III person	reflexives	personal pronouns
English	(3a) *He washes himself*	(3c) *I wash him* (3c') *He$_1$ washes him$_2$*
German	(3b) *Er wäscht sich*	(3d) *Ich wasche ihn* (3d') *Er$_1$ wäscht ihn$_2$*

Table 4: Third Person Pronouns.

In sum, explanations of linguistic 'universals' given in pragmatic terms are to be preferred, and they make explanations in terms of an innate Universal Grammar useless. This implies that it is a crucial task for linguistics to seek such explanations as actively and as systematically as possible. This approach has been practiced mainly in diachronic

linguistics, both in comparative Indo-European studies as represented in their mature stage by the label *économie des changements phonétiques* (Martinet, 1955), and later on by research on grammaticalization. Probably due, in part, to the prevalence of linguistic theories related to the 'computational' and syntactocentric approach over the past decades, less has been done so far in the foundational dimension, i.e., in trying to find pragmatic explanations for why the structure of language *must* include certain features and why it does so more or less universally.

5. *Errors in innatist explanations*

A second, more substantial drawback of innatist arguments is that, in order to 'feel compelled' to explain the knowledge of language in terms of innate grammar, innatists often need to disregard relevant portions of reality. This has triggered strong opposition to the Argument from the Poverty of the Stimulus on the part of many scholars[20].

Recourse to the Poverty of the Stimulus argument often implies reasoning as if the child acquiring the language only had access to *syntactic* information about the utterances (s)he is exposed to. When (s)he can avoid errors against which the stimulus doesn't contain *syntactic* information, the child is seen as endowed with innate grammatical knowledge.

We will try to exemplify the presence of this kind of fallacy in the innatist treatment of linguistic facts which will prove to be better accounted for in terms of semantic knowledge on the part of the speakers.

[20] Cf. e.g. Putnam (1971), Sampson (2002; 2005), Pullum & Scholz (2002), Lombardi Vallauri (2004; 2008; 2012; 2014), Scholz & Pullum (2006), and other works cited in the references below. The Poverty of the Stimulus Argument is well-known. One of its formulations is the following (from Cecchetto & Rizzi, 2000: 119): «Humans acquire a natural language early in life, without specific instruction, apparently in a non-intentional manner, with limited individual variation in spite of the fragmentary and individually variable courses of experience which ground individual knowledge of language. More importantly, the precise understanding of fragments of the adult knowledge of language reveals the massive presence of "poverty of stimulus" situations: our adult knowledge of language is largely underdetermined by the data available in childhood, which would be consistent with innumerable generalizations over and above the ones that speakers seem to unerringly converge to. This empirical observation is of great importance, as it grounds the necessity of postulating a structured system of predetermined linguistic principles which guide language acquisition; it also leads to the expectation of a fundamental cross-linguistic uniformity of human languages».

6. *Negative polarity items and* downward entailment

Crain and Pietroski (2002) point out that a Negative Polarity Item such as *any* can appear in contexts like (1-10)[21]:

(1) *I don't talk to any other linguists*
(2) *I never talk to any other linguists*
(3) *I usually arrive at the gym before any other linguist wakes up*
(4) *I went to the gym without any money*
(5) *If any linguist goes to the gym, I go swimming*
(6) *I forbid any linguists to go swimming*
(7) *I doubt that any linguist can refute Chomsky*
(8) *No linguist with any brains admires Chomsky*
(9) *No linguist has any brains*
(10) *Every linguist with any brains admires Chomsky*

On the contrary, *any* is not acceptable in (11):

(11) **Every linguist has any brains*

Crain and Pietroski underline as particularly interesting that *any* can occur in the first argument of *every*, as in (10), but not in its second argument, as in (11).

The explanation proposed for such facts is bound to the concept of *downward entailment*, which we briefly summarize here, following Crain and Pietroski (2002:171-172).

Ordinary declarative sentences license inferences from subsets to sets, like in (12):

(12) *Noam bought an Italian car* → *Noam bought a car*

This is called an *upward entailment*. By contrast, a downward entailing linguistic environment licenses inferences from sets to their subsets. Sentential negation actually creates this kind of context:

(13) *Noam didn't buy a car* → *Noam didn't buy an Italian car*

[21] Crain and Pietroski extend their analysis to another feature of the English language, namely disjunctive interpretation of the conjunction *or* (exclusive-*or*, as opposed to inclusive-*or*), which seems to have the same distribution as *any*. We will not dwell on the issue, which, in any case, does not affect our reasoning.

Now, the first argument of *every* is a downward entailing environment (which we will represent as ↓), while the second argument of *every* is not: if every linguist bought a car, then it follows that every Italian linguist bought a car, but it doesn't follow that every linguist bought an Italian car.

As a consequence, if every linguist who has a car admires Chomsky, every linguist who has an Italian car does the same:

(14) *Every linguist with ↓ a car admires Chomsky*
→
Every linguist with an Italian car admires Chomsky

Conversely, the second argument of *every* is an upward entailing environment (which we will represent as ↑): if someone has an Italian car, (s)he consequently has a car. Thus,

(15) *Every linguist has ↑ an Italian car*
→
Every linguist has a car

As we have seen, *any* is licensed in the first, but not in the second argument of *every*:

(10) *Every linguist with ↓ any brains admires Chomsky*
(11) **Every linguist has ↑ any brains*

One can further verify in examples (1-11) that the acceptability of *any* and downward entailing environments go together. The situation can be described by the following Rule:

Rule (A): Negative Polarity Items (such as *any*) are licensed in downward entailing environments.

According to Crain and Pietroski we face a classical case of poverty of the stimulus, because in the language acquisition process the concepts of downward and upward entailment are not accessible to the speakers, but at the same time such concepts are the only possible explanation for the distribution of *any*, which the speakers apply without errors. We should deduce from this that Rule (A) resides in the speakers(' brains) at birth.

This hypothesis is undermined by a double fallacy[22]. We will try to show why.

[22] The remarkable ease by which such a hypothesis has been formulated is typical of very many works supporting the Poverty of the Stimulus Argument. On the matter, cf. Sampson (2002; 2005), Lombardi Vallauri (2004; 2008; 2012; 2014).

7. Any *in upward entailing environments*

First, it is false that *any* is only licensed by downward entailing environments, and that it cannot occur in the second argument of *every*. This is shown by (16-19). To make it clear that the contexts where *any* appears are upward entailing environments, we give in brackets utterances where this is more evident because they license inferences from the subset to the set:

(16) John/*Every linguist admires/will admire ↑ any Chomskian*
(John/Every linguist admires/will adm. an Italian car
→
John/Every linguist admires/will admire a car)

(17) John/*Every linguist has ↑ any brains he wants*
(John/Every linguist has an Italian car he wants
→
John/Every linguist has a car he wants)

(18) John/*Every linguist may/can have ↑ any brains, if he works hard enough*
(John/Every linguist can have an Italian car
→
John/Every linguist can have a car)

(19) *It was impossible for ↑ any air to get out*
(It was impossible for an Italian car to get out
→
It was impossible for a car to get out)

The fact that *any* can occur in the second argument of *every* and in upward entailing environments not only proves that Rule A is not necessary for language acquisition and consequently *may not be in the brain*; it also proves that Rule A *cannot exist in the brain*, because otherwise *it would prevent language acquisition*, which on the contrary takes place in all individuals.

In any case, the reason why children acquire the capacity to use *any* must be found elsewhere. We will see that it is possible to explain why *any* occurs in upward entailing environments like (16-19), and that the explanation does not rest on syntax.

8. *What the stimulus contains, beside syntax*

In addition to the reason we have just seen, the hypothesis that the use of *any* needs to be based on Rule A residing in the brain at birth is ingenuous because it ignores that language acquirers have much more than syntax at their disposal: the stimulus also contains information about the *meaning* of utterances and about the *situations* in which they are produced. Every utterance which is produced is endowed with a syntactic structure, but at the same time it activates meanings within a communicative situation. Pretending that all that happens in a communicative act belongs to syntax is simply wrong; nevertheless, this is exactly what is done (implicitly, because doing it explicitly would hardly be possible) all the times scholars allow themselves to conclude that the stimulus is poor from the mere fact that there is *syntactically* a lack of information[23].

Since, as we have shown, the presence of *any* is neither licensed by downward entailing environments nor by its being located in the first argument of *every* (instead of the second), it remains to be explained why *any* can occur in (1-10) and in (16-19), but not in (11) nor, more generally, in any declarative sentence:

(20) *John has any brains/cars/patience

What all cases where *any* is acceptable have in common is a semantic feature not directly associated with a syntactic position, namely the fact that the context has prepared, for the expression introduced by *any*, a *non referential interpretation*. Clearly, *any* is associated to the feature [– REFERENTIAL], which bans it from linguistic environments where the semantics of the utterance requires the opposite feature [+ REFERENTIAL][24].

By 'referentiality' we mean the capacity of a linguistic element to refer to some entity which is identifiable in the portion of reality established by the discourse. Every nominal, as part of the lexicon, stands for a set of semantic features that identify a *class* of referents. For

[23] Unfortunately, this still happens very often in current linguistics. There are plenty of good linguists who overlook a fact that is evident to general speakers, namely that utterances concern 'reality' in several ways and senses (Cf. Chafe, 2002; Lombardi Vallauri 2004; 2008; 2012; 2014; Simone & Lombardi Vallauri 2010; 2011).

[24] Cf. e.g. Vendler (1962) for an early and still somewhat vague, but quite insightful presentation of this idea, in terms of what he calls 'existential import' and 'existential neutrality'.

instance, the word *book* identifies the class of books. In this classifying function it is *not yet* referential; but when, actualizing its meaning in an utterance, it ceases meaning a *type* of referents and it passes to mean one or more *individuals* belonging to that class (thus presenting them as also belonging to the context established by the unfolding discourse), then it acquires referentiality. This holds both for definite reference (*I have read these two books*) and for indefinite reference (*I have read a nice book*), because in both cases what is meant is not the class of books, but a set of individuals belonging to that class. The function performed is no longer that of classifying, but that of *identifying*.

Now, the behaviour of *any* in utterances (1-11) depends precisely on its being non-referential. A non-referential interpretation of nominals is allowed by negative predications, which refer to a type of entity to say that *no token* of the type is present in the context created by the discourse, as in (1), (2), (8) and (9):

(1) *I don't talk to any other linguists*
(2) *I never talk to any other linguists*
(8) *No linguist with any brains admires Chomsky*
(9) *No linguist has any brains*

The same holds for predications that are in some way privative, as in (3), (4) and (6):

(3) *I usually arrive at the gym before any other linguist wakes up*
(4) *I went to the gym without any money*
(6) *I forbid any linguists to go swimming*

Hypothetical or dubitative predications do not deny that a token of the type mentioned can appear in the context of discourse, but they are compatible both with its presence and its absence, as occurs in (5) and (7):

(5) *If any linguist goes to the gym, I go swimming*
(7) *I doubt that any linguist can refute Chomsky*

Finally, the same absence of referentiality, i.e. of the reference to an item actually present and identifiable in the context of discourse, holds for predications where *any* falls within the scope of a universal quantifier, which sets the reference to any entity / all entities of the

considered type, and as a consequence not necessarily one (or more) in particular, as in (10):

(10) *Every linguist with any brains admires Chomsky*

In all these cases, the utterance doesn't mean to denote and identify some entities endowed with *presence in the context of discourse*, rather to *describe the features that define a category of entities*. An utterance with *any* precisely communicates that in the context of discourse *there are not* entities belonging to that category. The function it carries out, as we have said, is that of classifying and not that of identifying.

On the contrary, the context created by simple assertive and affirmative predications, as in (11), requires a referential nominal, thus making the use of *any* inappropriate[25]:

(11) **Every linguist has ↑ any brains*

In fact, here the utterance prepares the assertion that in every linguist there actually are some entities (namely, brains); as a consequence, it requires for the nominal to be endowed with identifying capacity, i.e. to be referential.

That *any* expresses non-referentiality of the nominal it introduces is confirmed by the fact that *some* has (though not in all its uses) the opposite function. And obviously there are plenty of 'elastic' contexts where either can occur, with no change at all in syntactic structure, causing opposite referentiality values of the introduced nominal. Cf. what happens in examples (21) and (22) (resuming Crain & Pietroski, 2002: (4) and (6), with some modifications):

(21) a. *I went to the colloquium without any presentation letters*
b. *I went to the colloquium without some presentation letters*

(22) a. *I forbid any linguists to go swimming*
b. *I forbid some linguists to go swimming*

In these (downward entailing) contexts it is possible to express either a referential or a non-referential meaning, and the different results are obtained by choosing *some* or *any*. In (21a) the speaker affirms to have entered the colloquium without presentation letters, and such letters

[25] Notice that in (11), differently from (10), *any* does not fall within the scope of the quantifier *every*.

may have never existed, as shown by a possible continuation in (21a'):

(21) a'. *I went to the colloquium without any presentation letters:*
I've actually never possessed any such letter.

In (21b), on the contrary, the speaker claims to have entered the colloquium without some presentation letters, and (s)he means some precise and real letters. This is shown by the (in)acceptability of the different possible prosecutions (21c and d) of (21b'):

(21) b'. *I went to the colloquium without some presentation letters:*
c. **I've actually never possessed any such letter.*
d. *I had forgotten them at my home.*

Similarly, (22a) doesn't refer to any linguist, while (22b) implies that there is, in the context of discourse, a small set of linguists to whom the prohibition to go swimming applies. Independently from syntax (which does not vary here), speakers choose which indefinite pronoun/adjective to use according to semantic needs.

Still, Crain and Pietroski try to explain the situation in merely syntactic terms. A simplistic explanation, they say, may be that «the NPI [*scil.* Negative Polarity Item] *any* is licensed in constructions in which *not* precedes *any*». But this, they point out, is ruled out by examples (23) and (24) (= (28) and (29) in Crain & Pietroski) because «in both […] *not* precedes *any*, whereas *any* is licensed only in the second example» (Crain & Pietroski, 2002: 173):

(23) *The news that Noam had not won was a surprise to some/*any of the linguists*

(24) *The news that Noam had won was not a surprise to some/any of the linguists*

They therefore conclude that a deeper generalization is preferable (174), namely that:

Rule (B): Negation must c-command an NPI to license it.

In extreme synthesis, in generative grammar a constituent A is said to c-command a costituent B when B is located no matter how many nodes under a node C immediately superordinate to A. Actually, only

in (24) above, and not in (23), *not* c-commands *any*. Speakers would be able to assess the different acceptabilities of *any* in utterances like (23) and (24) because their brains contain the innate notion of c-command. In principle, this is possible. But is it necessary? In other words, is it really necessary to postulate a putative structure in the brain? Or is it possible to recognize some alternative explanation for the facts, possibly one which may also be the object of critical scrutiny?

A merely syntactic explanation for the distribution of *any* (like that provided by Crain and Pietroski) appears partial. In their opinion, awareness of the different acceptabilities of utterances like (23) and (24) should be out of the reach of language users if they were not endowed with the innate notion of c-command, residing in the brain at birth. They further argue in this direction by means of examples (25) and (26) (their (32a-b), cf. Crain & Pietroski, 2002: 174):

(25) *The bear who laughed never expected to find any dogs at the party*

(26) **The bear who never laughed expected to find any dogs at the party*

Crain and Pietroski observe that in both cases *any* is preceded by the negative adverb *never*, but this negation allows for the use of *any* only in (25). This, they claim, is due to the fact that only in (25) *never* c-commands *any*.

This may be the best *syntactic* explanation of the difference between (25) and (26); and, due to its extremely abtract nature, it seems difficult for the speakers to acquire such a notion from the stimulus if they are not already endowed with it at birth. But, crucially, syntactic information is not the only kind of information present in utterances of this kind. Consequently, it is not the only element we can take into account in order to explain the speakers' competence.

In fact, it is not only the syntactic structure of the utterance which directly constrains the use of *any*: rather, it is mainly its semantic counterpart, i.e. the fact that *never* has semantic scope over *any* in (25) but not in (26). Syntax obviously participates by drawing the boundary between the two clauses (the main and the declarative clause), i.e. between the two predications (a boundary which, by the way, seems evident without recourse to the notion of c-command); but the incompatibility between (26) and *any* is first of all semantic in nature.

To be factual, in (25) the adverb *never* d i r e c t l y precedes, and

consequently modifies, the verb *expected to find*, while in (26) it modifies the verb *laughed*. This suggests to the conceptualization capacity of any language acquirer that in (25) the dogs are within the scope of the negation carried by *never*: the bear *did not expect* to find dogs. In (26), on the contrary, the negation acts inside the relative clause: the bear never laughed, but *expected* to find some dogs. In the first case – non-referential because the predication is negative – the concept 'dogs' is activated in order to define a category of entities not represented by any item in the context of discourse. In the second case – referential because the negation only acts on the predication of the relative clause – the same concept should identify some individuals evoked within the context of discourse (of course, if *any* did not intervene 'illegally', interfering with the referential interpretation of the dogs in the utterance).

Humans know reality even without recourse to syntax, and this is shown by all non-linguistic behaviour where we directly take into account reality itself. For instance, if we hear a telephone ring we lift the receiver, not the coffeepot cover; and if we don't hear any noise we don't lift anything; and so on. We know that by acting on some thing we affect that thing and not other things. There is no reason to think that this kind of capacities are suspended when we use a language. Rather, conceptualization arising from non-linguistic experience and that triggered by linguistic input can interact and are largely of the same nature. For example, when we are told 'answer the phone', we lift the receiver, and when we are told 'check if coffee is ready', we lift the coffeepot cover.

Similarly, speakers are able to realize that negation affects the constituent to which it is closest, not others. That speakers are able to take advantage of the comprehension of what is and what is not negated in linguistic utterances, is shown by many types of behaviour that have nothing to do with being able to assess the grammatical acceptability of a word (like *any* in our case) in a given syntactic context. For example, if someone tells us: 'never answer the phone', we don't touch it; but if they tell us: 'answer the phone which I never painted in green', although the utterance contains *never*, we will answer the next phone calls. By denying the human capacity to deal with meanings, one is (obviously) led to believe that all kinds of linguistic behaviour must find their explanation in syntax. But this is denying the obvious, because humans steadily deal with meanings.

9. *Conclusions*

As we have shown, the grammatical behaviour of *any* can be acquired without the presence of a syntactic module in the brain at birth, because such a behaviour can be explained by the knowledge all speakers are capable of developing about reality and the different meanings that can be expressed in relation to it. The need to express such meanings through language, and to keep them distinct from each other, leads to using *any* when one wants to obtain a non-referential meaning, that is in a classifying function; and it leads to not using it in the opposite case, i.e. in an identifying function.

Likewise, constraints set by actual situations make the distinction between personal and reflexive pronouns more useful for the third person than for the first and second persons. In many cases, explanations that are semantic and pragmatic in nature proceed from the direct observation of facts, and make the recourse to the hypothesis of an innate universal grammar (which is, on the contrary, purely speculative) less necessary, if not completely useless.

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