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On a difference between English and Greek and its theoretical significance*

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1 Introduction

One of the major proposals concerning the possible *loci* of syntactic variation is the so-called *Borer-Chomsky conjecture* which Baker (2008) formulates as follows:

All parameters of variation are attributable to differences in features of particular items (e.g. the functional heads) in the lexicon.

In general, it is a somewhat more restricted version that is more widely accepted, namely that syntactic variation and parametric properties are restricted to properties of inflectional heads only.¹

In this note, I would like to suggest that the potential of a category to supply a label to a constituent that it *heads* is also a property that, though not strictly inflectional and clearly not restricted to functional heads, is a

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¹This is more in line with both Chomsky's and Borer's formulations.

locus of variation across languages. The empirical argument in favour of this position comes from the behaviour of certain coordinated structures in English and Greek (and to a much lesser extent French). It is well known that the preposition *With* in English also functions as a coordinator. The same is true in Greek but coordinations with *With* pattern differently in the two languages. In a nutshell, while in English the first conjunct must raise out of the *with* phrase, there is no such requirement in Greek. In this paper I consider more closely these patterns and argue that they are better understood if we extend Chomsky's (2013) proposal on structured coordination with *and* to the case of coordination with *with* and argue, *contra* Kayne (1994) that movement of the first conjunct is driven not by Case but by the requirements of the labelling process and more specifically the idea that while some categories may be able to label in some languages they may not in others. Taking Chomsky's idea that some categories may be assigned a feature [LABEL] that nothing can remove more seriously that he probably intended we can imagine that this feature is an integral part of lexical items. It follows that for categories that lack that feature, the labelling algorithm cannot identify any of their properties for externalisation and the conceptual-intentional system.²

The paper is structured as follows: in section 2 I present the facts of English concerning *with*-coordinations. Section 3 develops the account of *with* coordinations in English in labelling terms. In section 4 I turn to the Greek data and show that the patterns follow from the simple proposal that Greek *Me* (with) is a labelling category. I also discuss some interpretive issues relating to distributivity. Section 5 spells out some consequences of the analysis.

2 Coordination: *And* and *With*

The following paradigm in English is well known:

- (1) a. Sue and Sy are friends

²This is an important point to which we will return in section 5

- b. *Sue is friends and Sy
- (2)
- a. Sue is friends with Sy
 - b. *Sue with Sy are friends

Examples like those in (2) are found with a variety of symmetric predicates as Lakoff and Peters (1969) as well as Dong (1970) have discussed (cf. (3)) although with varying degrees of acceptability.

- (3)
- a. Sue is co-workers with Sy
 - b. Sy is mates with Sue
 - c. Sue is school/bandmates with Sy
 - d. ?Sy is siblings with Sue
 - e. Sue is twins with Sy
 - f. Sy is co-authors with Sy

Compare now (3) with its version where *with* is replaced by *and*

- (4)
- a. Sue and Sy are co-workers
 - b. Sue and Sy are mates
 - c. Sue and Sy are school/bandmates
 - d. Sue and Sy are siblings
 - e. Sue and Sy are twins
 - f. Sy and Sue are co-authors

The main difference between the paradigm in (3) and that in (4) is that with *and* coordinations the whole constituent remains together while with *with* the first conjunct must move out.

Beyond nominal predicates as above the pattern extends to verbal symmetric predicates such as *collide* or *fuck*:

- (5)
- a. Rosetta collided with comet 67P
 - b. Rosetta and comet 67P collided
 - c. *Rosetta with comet 67P collided
 - d. *Rosetta collided and comet 67P
 - e. Sue fucks with Sy every Wednesday evening

- f. *Sue with Sy fuck every Wednesday evening
- g. Sue and Sy fuck every Wednesday evening
- h. *Sue fucks and Sy every Wednesday evening

Lakoff and Peters (1969) suggested first that the preposition *with* was functioning here as a coordinator and, moreover, the *and* and *with* coordinations were related and should be transformationally linked through a process of replacing *and* by *with* and extraposing *with NP*. The issue of the relatedness of the two constructions as well as the basis for Lakoff and Peters's (1969) account was revisited, in light of the LCA, by (Kayne, 1994, section 6.3) who proposed that the reason for the commonalities between (1-a) and (2-a) is that they both derive from the same underlying structure, namely (6)

(6) [DP1 [[and/with] DP2]]

What sets the two constructions apart, for Kayne, is that there is a requirement for the first conjunct to move out of the conjoined phrase in (2-a) because it cannot be adequately Case licensed *in situ*. More specifically, while a phrase coordinated with *and* allows both conjuncts to be Case licensed by virtue of the fact that the whole coordinated constituent is in a Case-licensing position, this is not true of coordinated phrases with *with*. A somewhat different way of putting this restriction is that, from a Case theoretic point of view, DP coordination is only licit if Case can be distributed to both conjuncts. In the case of *and* this appears to be so. In the case of *with*, however, this does not happen because the second conjunct is case licensed by *with* while the first one has to get Case from an external source.

The latter way of putting the relevant constraints can be made to work further, in the sense that a constituent of the type *A and B* does distribute like its conjuncts whereas a constituent like *A with B* does not. But again if we assume that the construction is headed by the coordinator we would have to suggest that in the case of *with* it is still a Case assigning preposition rather than a coordinator, which in turn casts doubt on the analysis of these two constructions as deriving from identical underlying structures.

Moreover, under this analysis it is not clear why with different predicates it is impossible to extract the first conjunct of a *with* coordination:

(7) *Sue is French with Sy

For this, Kayne suggests that in order to obtain a distributive reading a coordinated phrase must be preceded by a distributor which may be overt or covert. This distributor, noted BOTH following Kayne's convention, forces the distributive reading on the coordinated phrase, which is, of course equivalent to a sentential coordination.

(8) BOTH [John and Mary] love cats \rightarrow John loves cats AND Mary loves cats.

And, of course, these cases are also fine with an overt distributor:

(9) Both john and Mary love cats.

In the case of *with* coordinations, however, the distributor, induces a barrier to the movement of the first conjunct. Thus, sentences with the following representation³ are out.

(10) John_i is human beings [BOTH [[e_i] with Bill]]

But it is unclear why this should be so. After all *both*, as a floating quantifier does not induce a barrier to the movement of its complement (cf. Sportiche, 1988). Equally, a modifying adjunct usually does not induce a barrier to movement of the specifier of the category to which it attaches. I will set aside the issues relating to interpretation and distributivity and revisit them briefly in section 4.1

As we can see, Kayne's analysis is problematic in various respects, and yet, it remains both plausible and attractive. In the following sections I will claim that the basic insights can be maintained and find more elegant and general expression in terms of the labelling requirements and possibilities in these structures.

³Kayne (1994, p. 66), his example (56).

3 Labelling and coordination

Chomsky (2013) puts forward a particular proposal regarding structured coordination (with *and*) according to that proposal coordinate structures start as (11):

$$(11) \quad [\alpha \text{ and } [\beta \text{ DP}_1 \text{ DP}_2]]$$

As β cannot be labelled because configurations of the type [XP YP] are problematic for the labelling algorithm (both heads are equally prominent), one of DP_1 or DP_2 must raise (say DP_1) and β receives the label of DP_2 . Importantly, however, α receives the label of DP_1 , reflecting the fact that the distribution of these coordinated structures is determined by the shared label of the two coordinated elements. As Chomsky notes, though, the construction remains headed by the conjunction which remains visible in order to determine the structure but is not available as a label. This entails that the whole constituent can be the target for movement yielding (12) as an instance of DP movement:⁴

$$(12) \quad [_{DP} \text{ Peter and Susan}] \text{ are } [-_{DP} \text{ Peter and Susan}] \text{ teachers}$$

Assuming this to be on the right track let's turn to the case of *with* coordinations. Given that (13), modelled on (12) is ungrammatical, it is clear that this proposal will not be applicable to *with*-coordinations.

$$(13) \quad *[_{DP} \text{ Peter with Susan}] \text{ are } [-_{DP} \text{ Peter with Susan}] \text{ teachers}$$

In these cases the distribution of the coordinate structure does not reflect the distribution of their shared label (DP); in fact, it does not constitute a well-formed constituent at all as the data show. It follows that the derivation will also be somewhat different. Keeping, however, as close as possible to the proposal on *and* will allow us to pinpoint the difference. The following is a

⁴To be sure, there are various questions surrounding Chomsky's proposal on coordination. For example, it is unclear what it means for the construction to be headed by the coordinator, which determines structure but does not supply a label. This requires further clarification on the assumption that the labelling algorithm identifies heads. We set this aside for now.

reasonable approximation of their derivation that preserves full parallelism between the *and* and the *with* case. Let us assume that DP_1 and DP_2 merge again like before yielding an unlabelable [XP YP] structure. Next, *with* merges with that syntactic object just like in the case of *and*. The difference, I claim, is that unlike *and*, *with* can provide a label for the resulting object and we have the following configuration:

$$(14) \quad [{}_{withP} \text{ with } [{}_{\alpha} DP_1 DP_2]]$$

At this point, DP_1 must raise so that α receives the label of DP_2 yielding (15):

$$(15) \quad [{}_{\beta} DP_1 [{}_{withP} \text{ with } [{}_{DP_2} \text{ } \cancel{DP_1} DP_2]]]]$$

Of course, the question that arises now is what label will β receive. As the two elements of β are [DP_1 withP] we are in the same situation as before where we have a [XP YP] configuration and one of the two elements must raise. DP_1 does and following merging of further material we obtain the initial contrast repeated here:

- (16) a. Sue is friends with Sy
 b. Sue and Sy are friends

If this is correct it is not Case but the requirement for the whole constituent to be labelled that is responsible for the movement of the first conjunct. The lack of label also accounts for the fact that the whole constituent cannot be targeted for movement, yielding the ungrammaticality of (2-b). Whether the constituent remains unlabelled is an important question that we will pick up in section 5.

Although this analysis provides an account of the basic patterns the ungrammaticality of (7) remains problematic. Within the analysis presented here, a covert distributor will not do the job both because assuming that it induces a barrier to movement is not an idea that is easy to implement in the general framework I am assuming but also because, in fact, even in cases like (2-a) the reading is *distributive* in the sense that the following is

a contradiction:

(17) #Sue is friends with Sy but Sy is not friends with Sue.

with a predicate like *being French*, however, this reading is not possible. Furthermore, the distributive reading is not really what matters, but rather the symmetric/reciprocal one. Thus, observe the following contrast:

- (18) a. Both Sebastien and Julie are French
b. *Both Sebastien and Julie are friends

With verbal predicates the contrast is perhaps even more telling:

- (19) a. Both Sue and Sy fucked (every/on Wednesday evening)
b. Both Rosetta and Galileo collided *(with comet 67P)

Clearly what is missing in the meanings of the examples above is this reciprocal/symmetrical meaning. There is no suggestion that Sue and Sy fucked (with) each other or that Rosetta and Galileo collided with each other. Of course, with an overt reciprocal the sentences are perfect:

- (20) a. Sue and Sy fucked each other
b. Rosetta and Galileo collided with each other

The sentences become significantly degraded by the addition of an overt distributor:

- (21) a. ???/* Both Sue and Sy fucked (with) each other
b. ???/* Both Rosetta and Galileo collided with each other

One way to extend the account presented here is to focus on the fact that while *and* and *with* appear to perform the same function and give rise to the same structures, it is also not true that they are synonymous.⁵ Specifically, I assume that *with* even as a coordinator retains its commitative meaning and θ licenses its DP complement (DP₂ in our examples). We can then ask

⁵In section 4.1 I revisit this issue and propose that even if we stick with distributivity, the results will come out right if we look more closely at the morphology of distributivity.

how is DP₁ θ -licensed.⁶ I propose here that a derivation involving a *with* coordination will converge only if both coordinated DPs can be independently θ licensed.⁷ This means that they will work only with two place predicates, either verbal (like *collide*, *fuck*, *dance*), in which case the DP will receive a thematic role in the subject position, or with symmetric relational nouns like *friends*, *co-workers* and so on where the thematic role will be available in the nominal extended projection.⁸ The idea, therefore is that unless the DP that moves out in order to allow the [DP withP] constituent to be labelled can be thematically licensed in its derived position the sentence will be ungrammatical, not as a result of lack of Case (Case can be assigned) or of lack of label, but as a violation of the θ -criterion. Labelling is important, however, as it is the label that allows thematic licensing in the case of *and* coordinations and prevents it in the cases of *with* with the results that we saw earlier. As noted earlier, there is lexical variation in the range of elements that allow the patterns involving *with* coordination. So, while with a relational, symmetric noun like *friends* it works fine, with others speakers find it less acceptable at first. Interestingly, with a noun like *enemy* which allows for a non-symmetrical reading the *with* coordination is possible only in the symmetrical reading:⁹

(22) She is mortal enemies with John

Assuming now this analysis, I turn to the corresponding Greek facts.

4 Greek

And coordinations in Greek show a behaviour similar to that of their English counterparts in the relevant respects, witness (23), (24):

⁶This is a legitimate question even if we have a coordination where we generally assume that θ licensing involves the whole constituent. The distribution of Case inside the *with* coordination also does not work in the same way.

⁷Again, in parallel with Case.

⁸The actual mechanism is not relevant here.

⁹Example (22) is taken from www.davidagler.com/teaching/criticalthinking/.../Handout3_AdHominemFallacy.pdf

- (23) O Kiriakos ke o Aris ine fili
 The Kiriakos and the Aris are friends
 Kiriakos and Aris are friends
- (24) *O Kiriakos ine fili ke o Aris
 The Kiriakos are friends and the Aris
 Kiriakos and Aris are friends

Greek *Me* (with) also functions as a coordinator (25), (26):

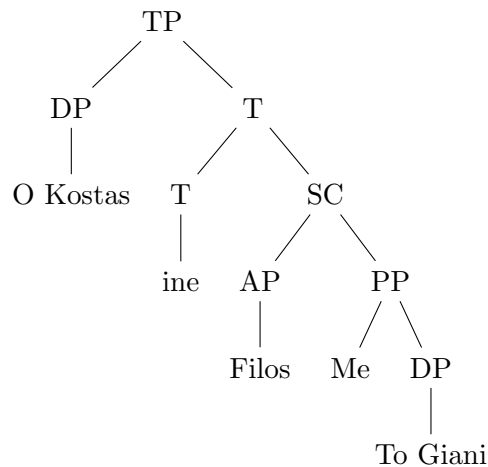
- (25) O Kostas me ton Ari ine fili
 The Kostas with the Ari are friends
 Kostas and Aris are friends
- (26) O kostas ine filis me ton Ari
 The Kostas is friend with the Aris
 Kostas is friends with Aris

At first sight, taking Greek and English to be basically the same, it looks like in Greek the first conjunct may remain *in situ*. From a Case theoretic perspective this is somewhat problematic. One would wonder why the same mechanism is not available in English. One approach could suggest that while we may unify Greek and English in terms of Case assignment in these constructions, the EPP requirement of C-T must be satisfied by DP movement in English while in Greek V-to-T suffices. This is a reasonable approach but raises the question why is it impossible to raise the whole withP to [spec T]. The labelling account developed here provides an explanation for that. However, this question may be moot at least in part given the evidence on agreement to which we now turn. There are some differences between *with* and *Me*. Consider the following:

- (27) *O Kostas ine fili me ton Ari
 The Kostas is friends with the Aris
 Kostas is friends with Aris
- (28) *Ego ime fili me ton Ari
 I am friends with the Ari
 I am friends with Aris

The agreement contrast between (25) and (26) on the one hand and (27) and (28) on the other is interesting when compared to the agreement found in the English *friends with* construction. In the Greek case, plural agreement on the predicate nominal is only triggered when the first conjunct of the [A with B] element stays in situ. If, however, the first conjunct raises to [Spec T], then agreement is in the singular both on the copula in T and the predicate nominal. Compare this to the English *friends with* construction (2-a) where the predicate nominal shows plural agreement but T bears singular features (from agreement with the subject). Now, given that the plural on the predicate nominal is pretty much the only tangible evidence we can lay our hands on in favour of the idea that the underlying structure involves a coordination, we can take the absence of plural agreement (together with the absence of any other factor that blocks plural agreement) as evidence that there is no underlying coordination in Greek and the right analysis of (26) is roughly (29):

(29)



friends with construction is not available in Greek. Under a Case theoretic approach, this is problematic given that *Me* assigns Case to its complement DP while DP₁ has its Case valued externally. So even pursuing that path one would have to find out why Greek allows this type of Case valuation in cases that look otherwise equivalent.

Given the discussion above and the agreement facts, it is, I suggest, reasonable to propose that the difference between Greek and English regarding *with* coordinations should be located in the labelling potential of *with/Me*.

In the previous section we saw that in English *with* was different from *and* in that it could supply a label. I want now to propose that in Greek *Me* is exactly the same as *Ke* (and) in terms of labelling potential¹⁰ i.e. neither can supply a label (in other words neither carries the feature [LABEL]) and, as a result, it is not surprising that the behaviour of *Me*-coordinations in Greek is similar to that of *and* coordinations (in Greek and English). Assuming this, the patterns follow.

Consider first the fact that the whole constituent will be labelled DP and as a result can be targeted for EPP driven movement and for Case valuation. Concerning Case, as we saw above, *Me* will Case license DP₂ while DP₁ will have its Case valued via Agree with T. The following examples show that the whole DP can appear preverbally in subject position with different nominal or prepositional predicates:

(30) Ego me ton patera mou imaste sinehia se sygroush
 I with the father mine are always in collision
 I am always fighting with my father

(31) Ego me ton Kosta imaste aderfia
 I with the Kostas are siblings
 Kostas and I are siblings

(32) Ego me ton Apostoli imaste panda antipali
 I with the Apostolis are always rivals
 Apostolis and I are always rivals

Assuming further that in some way coordinated phrases are marked as formally plural, agreement both with the predicate nominal and T is expected to be in the plural. This prediction is borne out.

Furthermore, we predict that these coordinated structures will be available with a wide variety of verbal predicates too. In other words not just with the symmetric ones with which they co-occur in English. Again the

¹⁰They are different in other ways, see section 4.1.

prediction is borne out as the following examples show:¹¹

- (33) O tragoudistis me ti sizigo tu tu ehun megali adinamia
The singer with the spouse his to-him have great weakness
The singer and his wife have a weak spot for him
- (34) O Kostas me ti Marina, pu ehun molis padrefiti, benun
The Kostas with the Marina, who have just married, enter
mesa sto saloni
in the living-room
Kostas and Marina, who just got married, enter the living room
- (35) O Nikos me ti Maria ehun dio pedia
The Nikos with the Maria have two children
Nikos and Maria have two children
- (36) O Sakis me ti Frini apoktisan pedi
The Sakis with the Frini obtained child
Sakis and Frini had a child
- (37) O Panagiotis me ti Hrisa ehun anagagi to kreopolio tus
The Panagiotis with the Hrisa have elevated the butcher's theirs
se horo sinathrisis
to space rally
Panagiotis and Hrisa have turned their butcher's shop to a major
gathering place
- (38) O Grigoris me ton Petro kserun pos tha se odigisoun
The Grigoris with the Petros know how will you drive
Grigoris and Petros know how to drive you around
- (39) Telika i Rihana me to Saudarava ine mazi edo ke
Finally the Rihana with the Saudi are together here and
mines
months
In the end Rihana and the Saudi man have been together for months

The interpretation of these examples is dependent on the predicate, if the predicate allows for a symmetric reading like (34), where if A is married to

¹¹The examples (33)-(38) were found with a simple google search.

B then B is also married to A, then this is what we obtain. If the predicate allows or requires a group reading, like (37), (38), this what we get. And finally, if the predicate allows or requires a distributive reading, like (33) or one reading of (35) this is again what we have.

Under the simple proposal that *Me* is a non-labelling head the data above are all expected. Let me now turn to a somewhat complicating factor, namely distributivity.

4.1 A complication: Distributivity

There seems to be one significant difference between *Ke* and *Me* in Greek. It is well known that in Greek, like in French, the coordinator can appear in front of both coordinated constituents:

(40) Pierre connaît et Isabelle et Marie
 Pierre knows and Isabelle and Marie
 Pierre knows both Isabelle and Marie

(41) O Kostas gnorizi ke ti Maria ke tin Eleni
 The Kostas knows and the Maria and the Eleni
 Kostas knows both Maria and Eleni

Kayne (1994, p.146 fn 16) for French and Chatzikyriakidis et al. (2015) for Greek have argued that the initial (outer) occurrence of the coordinator is in fact a distributive operator. Although this is generally true in the sense that the initial *Ke/Et* yields a distributive reading it is also true that this is only the case when the second (inner) coordinator is *and/ke/et*. Thus, in Greek, with a *Me* coordination no distributive readings are induced by the presence of an initial *Ke*, compare:

(42) Ke o Sakis ke i Soula sikosan ena trapezi
 And the Sakis and the Soula lifted a table
 Both Sakis and Soula lifted a table DISTRIBUTIVE

(43) Ke o Sakis me ti Soula sikosan ena trapezi
 And the Sakis with the Soula sikosan ena trapezi
 Sakis and Soula lifted a table COLLECTIVE

Now perhaps it is the committative meaning of *me* (which was suggested in section 3 for English and is presumably also valid for Greek) that somehow blocks the distributive reading. One way of putting this is to suggest that, semantically, the output of a *me* coordination is a *group* individual, acting in part as an atom, whereas this is not necessary for *ke* coordinations whose semantic value may be that of a *group* (in which case there is no difference with *Me*) but can also be an individual of type SUM which would be an appropriate argument for the distributive operator. However, examples like (44) seem to suggest otherwise in the sense that, as things stand, there is no immediate suggestion that the two teams form a group in a relevant sense:¹²

- (44) O Olimpiakos me ton Panathinaiko kserun pia apenandi se
 The Olimpiakos and the Panathinaikos know at-last against to
 pies omades tha agonistun
 which teams will play
 Olimpiakos and Panathinaiskos have at last found out which teams
 they will face

The reading of (44) is distributive in the sense that it corresponds to a sentential conjunction (45):

- (45) Olympiakos knows which team it will face AND Panathinaikos knows
 which team it will face.

Now adding an initial *Ke* to (44) does not have the desired effect:

- (46) Ke O Olimpiakos me ton Panathinaiko kserun pia
 And the Olimpiakos with the Panathinaikos know at-last
 apenandi se pies omades tha agonistun
 against to which teams will play
 Olimpiakos and Panathinaikos **ALSO** have at last found out which
 teams they will face (as well as some other group of teams)

In this case the reading is that of the additive *Ke*¹³.

¹²This is perhaps too strong. The two teams might form a group in the sense that they are the two Greek teams in the relevant international championship. I will set this aside for this paper.

¹³For more details on the additive *Ke*, see Chatzikyriakidis et al. (2015) and references

Another issue with the idea that the initial *Ke* is the distributive operator applying to an argument of SUM type is that *Ke qua* distributive operator is not available with plurals, which are routinely thought of as carrying the type of sums (Link (1983) and many more after him). Interestingly this is not true for English *Both*:¹⁴

(49) Ke ta pedia efagan gemista
 And the children ate gemista
 The children TOO ate gemista

(50) Both children ate gemista

Again the *Ke* on (49) is the additive *Ke* and does not give the desired distributive reading, unlike what we see in (50).

Setting aside this concern, these patterns can be understood in two ways which probably boil down to the same insight. On the one hand, as suggested earlier, we can think of inner *And/Ke/Et* as sum forming operators and outer *Ke/Et* as distributors acting upon these sums. In contrast *With/Me* are group forming operators whose outcome behaves in the relevant respects as an atom and therefore the distributor cannot act on them in the same way. This would mean that the reason why initial *Ke* followed by a *with* coordination can only be read as additive falls together with (51):

(51) Ke i epitropi apofasise tin isvoli stin Amorgo
 And the committee decided the invasion to-the Amorgos
 The committee (as well as some other organisation) decided the

therein

¹⁴In French the relevant sentences are altogether ungrammatical so we will not pursue the comparison further although the question why the distributive *et* cannot appear with plurals in any position is an intriguing one:

(47) *Et les enfants ont soulevé une table
 and the children have lifted a table
 The children have lifted a table (intended: each)

(48) Jean connaît les enfants
 Jean knows and the children
 (intended) Jean knows each child

invasion of Amorgos

The alternative way of analysing these patterns is to suggest that the distributive operator is in fact the discontinuous morpheme:

- (52) a. Both ... And
b. Ke ... Ke
c. Et ... Et

Again this idea predicts that adding *Both* or *Ke* in front of a *With/Me* coordination will not yield a distributive reading simply because, at least in these cases, it is just not the right morpheme for the intended meaning. I think that in this way also the ungrammaticality of Kayne's example (10), repeated here:

- (53) John_i is human beings [BOTH [[e_i] with Bill]]

While Kayne is right that distributivity is the key to understanding the judgement it is not because a covert BOTH blocks the extraction. Rather, it is because the distributive reading does not arise in these cases because the lexical material is just not right.

5 Some consequences

Let us take stock. I argued so far in this paper that a number of differences in the syntax of coordination both within and across languages can be understood in terms of the labelling potential of different categories and the labelling algorithm. The account developed here raises a number of questions primarily about the role of labels in syntactic derivations.

A particular point of debate regarding labelling going back to the early days of minimalism is whether labels are mere tags onto pieces of structure serving to identify them as a potential targets for operations such as internal Merge or AGREE at least,¹⁵ or active drivers of the deriva-

¹⁵The question of external merge is also relevant in terms of the elements that are identified for Merge.

tion. Chomsky (1993, 1995) took the former view. A different view was taken by Adger and Tsoulas (1999) who proposed that labels are complex and include category determining features from both merged elements, i.e. $\text{Merge}(\alpha, \beta) \rightarrow [\{\alpha, \beta\} \alpha, \beta]$. Crucially, the label $\{\alpha, \beta\}$ was taken to be semi-uninterpretable in the sense that one of the two categorial features that make it up (α and β) had to be eliminated. Eliminating that feature was done in the standard way, by seeking a goal in the numeration or the sub-array, agreeing, and merging it with the existing structure or, by internal merge raising an element with the required specification. In that proposal, computation was driven by the labels, whether on heads or intermediate projections. Although Chomsky’s recent proposals on labelling and the one from Adger and Tsoulas (1999) differ in many respects they converge on the idea that determining the label of a particular part of the structure is a driving force for computation and that in principle labelling need not obey endocentricity. They diverge on two important conceptual points, namely (a) whether the output of merge needs to be always labelled, and (b) what are labels required for. Regarding the former, Chomsky (2015) is particularly clear on this point (Chomsky, 2015, p. 6)

(54) Crucially, LA does not yield a new category as has been assumed in PSG and its various descendants, including X’ theory. Under LA, there is no structure $[\alpha X]$, where α is the label of X. LA simply determines a property of X for externalization and CI. It is therefore advisable to abandon the familiar tree notations, which are now misleading. Thus in the description of an $[XP, [YP, ZP]]$ structure, there is no node above either of the two merged constituents. There is no label for the root of the branching nodes.

Taking this at face value, it means that not every output of merge operations will be labelled. A question we might ask about this approach is what happens to elements such as $[\alpha, \beta]$ when LA has not identified a property for externalisation and CI. The issue is puzzling. Imagine that there is

some element X for which the Labelling algorithm as identified no property (I suppose that this would be its label) for externalisation and CI. What would that actually mean? In terms of externalisation it would mean that the element would not be pronounced. This is the reasonable understanding of the idea (from Chomsky (2015) that copies do not label. In other words the algorithm will identify no property of copies relevant to externalisation. *Wanna* contraction aside, this seems correct. But what of CI? Would one expect that such an element would be invisible also to the interpretive mechanisms? This seems problematic. Focusing on the cases of interest in this paper, both *and/ke* and (in Greek at least) *Me* coordinations would be such that the coordinator would provide no relevant property for externalisation and CI. If the reasoning based on copies is on the right track then the non labelling nature of the coordinators is a clear counterexample (they are after all externalised). But setting externalisation aside, in the case of CI it is unclear, in this case, how a structure [DP₁ and DP₂] would be interpreted. What does seem clear is that it is a property of the conjunction that is preeminent in the interpretation, namely whatever it is that turns that constituent into a plural (sum) entity. Assume for concreteness that the semantics for DP conjunction corresponds to set formation, or more precisely set-product formation, defined in its general form as follows (Heycock and Zamparelli, 2005, p.241):

$$(55) \quad \mathbf{Set\ Product\ (SP)} \\ \text{SP}(S^1, \dots, S^n) =_{def} \{X : X = A^1 \cup \dots \cup A^n, A^1 \in S^1, \dots, A^n \in S^n\}$$

The way this works is by taking one element from the denotation of each of the two conjoined elements and yielding their union for all elements of these sets. This is the property that is relevant to CI rather than the DP label that, as we saw, is assigned by the labelling algorithm. The DP label, however, (or at the very least the lack of label deriving from the conjunction) is precisely what accounts for the syntactic patterns. Thus, if the reasoning is correct, we are led to rethink the labelling process as follows: labels drive in part syntactic computation but in crucial respects do not represent properties for CI and externalisation. There is a mismatch

between the label relevant to the derivation itself and the CI/semantically relevant one. Labels are necessary and the labelling algorithm is a tool that affords insightful understandings of syntactic patterns but labels do not determine interface interpretation and do not reflect interface properties. Often in fact, as in the cases analysed in this paper, the syntactic label is at odds with the semantically relevant one.

6 Conclusion

In this paper I tried to rethink the properties of two types of coordination in English and Greek. I argued that the different behaviour of *and* and *with* coordination in English are the result of the fact that while *and* does not provide a syntactic label *with* does. In Greek, however, neither did resulting in different behaviours. If I am correct we probably also have to accept two higher level conclusions. First, that the (non)-labelling nature of a category can capture linguistic variation and perhaps it is a parametric property. Given that this is not an inflectional category, if I am correct then there is evidence for variation that, although ultimately located in the lexicon if we assume that there is a feature [LABEL], concerns the only thing that is determined internally to the computational system. The second conclusion, connected directly to the first, is that labelling is a process necessary for the syntactic computation and is neither determined by nor determines interface properties.

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