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Topic universality in OT inputs

1 Introduction

In Newson & Gáspár (2001) we argued that while the subject feature in the input of Optimality Theoretical syntax is a compulsory element, the topic feature is optional. In other words, subjecthood is always assigned to input elements, but topichood is not. This is not an appealing distinction: there is no extra-theoretical reason to distinguish in such a way between languages that are organized according to the topic/comment and the subject/predicate distinction.

In this paper I would like to claim that the topic feature, too, is a compulsory part of the OT input, just like the subject feature. Whether a topic is actually marked in the grammatical sentence is up to the grammar to decide. In the following sections I will show that it is possible to provide analyses under this assumption for languages with diverse topic/comment behavior. I will demonstrate this specifically for English, German, Hungarian and Japanese. First, however, I will review the OT assumptions that provide the framework for my analysis as well as the mechanics of our previous model (Newson & Gáspár 2001).

2 The OT framework and subject universality

The framework that I adopt is a restrictive version of OT, which makes use only of alignment and faithfulness constraints (Newson 2000b) — rendering the notions of phrase and structure epiphenomenal. In OT the input and the candidate set are standardly assumed to be the same for all languages. Systematic differences between languages arise from different constraint rankings, which affect how the candidates are evaluated (Prince & Smolensky 1993) and not from language-dependent specifications of differences in the lexical inventory.

Following Newson (1998, 2000a), I assume that it is the input, not the optimal candidate of the OT syntactic apparatus, which is subject to semantic interpretation.

(1) input → generation and evaluation of candidate set → optimal expression
  ↓
semantic interpretation

As an OT grammar maps inputs into output structures, assumptions about the input are of crucial importance. In Newson & Gáspár (2001) we adopted the standard OT position (Grimshaw 1997) that inputs consist of a list of lexical elements, plus a specification of the assignment of thematic and information roles, such as topic and focus. We argued that subjecthood is a universal feature of the inputs: i.e., that some element, the one that is most prominent according to Grimshaw's (1990) argument prominence hierarchy, will bear the subject feature in every input.

Thus for a sentence *John loves Mary* the input was represented as follows.

(2) $\begin{bmatrix} \text{loves} \\ \text{x} = \text{sub} = \text{John} \\ \text{y} = \text{Mary} \end{bmatrix}$

The evaluation component of the grammar consists of ranked and violable constraints, as is standard in OT. The alignment constraints are gradient, which means they can be violated to different degrees. When two elements are in competition with each other for one alignment position, one will win, but the losing element will still prefer the second best position to any other slot in the sequence.

Calculating the degree of violation of an alignment constraint is a matter of counting the number of elements between an element and the position required by that constraint. This, however, assumes that the element is on the right side of the target predicate with respect to the constraint. This cannot be the case in every candidate: the element may be on the wrong side of its target. As Newson (2000b) showed, elements will prefer to violate an alignment constraint by keeping on the right side but being further removed from the target edge (which he terms an EDGE VIOLATION, marked by ∗), even if they could be nearer to the target position if they swapped sides (a SIDE VIOLATION marked by ✫).

For English, the Sp (Subject–predicate) alignment constraint ranked above pS as well as other constraints it is potentially in conflict with, results in subjects appearing in the preverbal position.

(3)

	English	Sp	pA	pS	Ap
☞	John_{sub} loves Mary		✫	✫	✫
	John_{sub} Mary loves	∗!	✫✫	✫	∗
	loves John_{sub} Mary	✫!	∗		✫✫
	loves Mary John_{sub}	✫!	∗	∗	✫✫
	Mary John_{sub} loves		✫✫!	✫	∗
	Mary loves John_{sub}	✫!	✫		✫

In Hungarian, on the other hand, the notion of subject seems to have little relevance, and there is certainly no position that can be considered the subject position (É. Kiss 1994). Because constraints are universal, once we have introduced the Sp/pS pair of constraints, we are stuck with them for the grammar of all languages. In Newson & Gáspár (2001) we demonstrated that no matter how low we ranked the subject–predicate alignment constraints, they would still have an effect: even low ranked pS would require the post verbal subject to come to the immediate right of the verb, destroying the free order of post-verbal arguments.

The solution we proposed was to rank the subject constraints high, above the otherwise highly ranked faithfulness constraint, which requires output candidates to be faithful to the input (Prince & Smolensky 1993). Just like any other constraint, the faithfulness constraint, too, can be violated by an optimal candidate—provided that violation occurs in order to satisfy a higher ranking constraint. The only way of satisfying both the Sp and pS constraints is by getting rid of the subject feature. This way both constraints would be vacuously satisfied. This occurs at the cost of violating the faithfulness constraint, but if Sp and pS are ranked above the faithfulness constraint, such a violation will be legal. The result is that in Hungarian the subject alignment constraints have no effect as the subject feature is never present in the winning candidate. We could thus maintain that a universal input feature plays no part in the grammar of the language.

The alignment constraints discussed so far have all been predicate alignment constraints, concerned with the relationship between a predicate and its arguments. Before proceeding to the analysis, I would like to motivate another family of alignment constraints. In my dissertation (Gáspár in preparation) I introduce the family of first/last constraints. To satisfy these constraints the element has to surface at the beginning or the end of the string determined by the input elements. These types of alignment constraints differ from the predicate alignment constraints discussed so far in as much as they do not describe a licensing relationship. They do, however, confirm to the other restrictions on alignment constraints: they come in pairs, and they are general in as much as such first/last constraints can be operative for any input element.

Arguments for the existence of first/last constraints within an alignment framework can be found in several languages. Pereltsvaig (2004) argued within a minimalist account that topics in Italian and Russian do not correspond to a specific syntactic positions, but are associated with a specific linear position: the left-edge of the string. Certain Japanese topics also appear string-initially and cannot be scrambled over, as I will demonstrate later in this paper.

3 The analysis

3.1 English

English appears sometimes, but not always, to mark its topics syntactically. Topics are marked clause-initially when they are not subjects. The input for *Mary, John loves* would look like (4).

(4) $$\begin{bmatrix} \text{loves} \\ \text{x} = \text{sub} = \text{John} \\ \text{y} = \text{top} = \text{Mary} \end{bmatrix}$$

If the Tp constraint is ranked lower than the Sp constraint (but above pT and pA), the topic will still strive to appear preverbally, but will be pushed into 'second best' position by the subject. This will incur an extra violation of pA, which would require all arguments, including the subject and the topic, to appear post-verbally—but this is lower ranked, so will be outmaneuvered. We have the following ranking for English:

(5) English: Faith > Sp > Tp > pA > pS, pT, Ap

The operation below will turn the input in (4) into a grammatical sentence.[1]

(6)

English	Sp	Tp	pA	pS	pT	Ap
John$_{\text{sub}}$ loves Mary$_{\text{top}}$		☆!	☆	☆		☆
John$_{\text{sub}}$ Mary$_{\text{top}}$ loves	∗!		☆☆	☆	☆	∗
loves John$_{\text{sub}}$ Mary$_{\text{top}}$	☆!	☆	∗		∗	☆☆
loves Mary$_{\text{top}}$ John$_{\text{sub}}$	☆!	☆	∗	∗		☆☆
☞ Mary$_{\text{top}}$ John$_{\text{sub}}$ loves		∗	☆☆	☆	☆	∗
Mary$_{\text{top}}$ loves John$_{\text{sub}}$	☆!		☆		☆	☆

But what about the SVO word order — when there appears to be no topic in English? Such topicless sentences are certainly more common in English. We could suppose that in these cases it is the subject that is marked for topic status in the inputs of these sentences, and a preverbal topic-subject satisfies both Sp and Tp fully at the same time by being left-adjacent to the verb. In other words, the English topic is always syntactically represented, but when it coincides with the subject the topic is given no special positioning over and above its position as a subject. It is only when a non-subject is marked as topic that we see any overt sign of the topic.

The affect of this assumption is similar in spirit to the account given for focused English subjects in Grimshaw & Samek-Lodovici (1998). In their account the constraint AlignFocus requires the focused constituent to be right adjoined to VP, while Subject requires clauses to have subjects. Their account contrasts Italian and English. In Italian AlignFocus dominates Subject, and subject-focused sentences have a null-subject in the canonical, preverbal subject position. In English, the constraints are ranked the other way. As a result, even when a subject is marked for focus in the input, it will retain its preverbal subject position, and the optimal candidate will be the same as the optimal candidate for an input with no focus marking on the subject (Grimshaw & Samek-Lodovici 1998 : 213).

What is common in the two analyses is that an input with topic/focus marking on the subject resolves to the same optimal candidate as an input without topic/ focus marking in English. The difference is that whereas in my analysis the topic constraint is satisfied when a subject is marked for topic status, in Grimshaw & Samek-Lodovici (1998) the focus constraint is violated when the subject is marked for focus status in the input.

3.2 German

Jacobs (2001) has argued that German, like Hungarian, makes use of topics rather than subjects in its grammar. Sentences have a topic–comment rather than a subject–predicate structure.

[1] As faithfulness is ranked on top of the hierarchy, underparsing of the features is not a viable option. To keep the table simpler, I am not representing candidates with underparsed topic or subject features. They will all incur a fatal violation of Faith above the constraints represented here.

In a German main clause a topicalized expression precedes the verb, which is in always in second (V2) position. Jacobs (Jacobs (1999, 2001)) assigns no importance to the notion of subjecthood in his grammar and divides German constructions into what he calls topic and anti-topic clauses. The vast majority of sentences are topic constructions, characterized by a special stress pattern. A German topic-comment sentence has a characteristic stress pattern that is related to the division of the expression into a topic, which is introduced in the first step and a comment, added in the second (Hockett 1958). This is illustrated in (7)—where "ˊ" marks rising and "ˋ" falling intonation.)

(7) a. **(subject) topic**
ˊPeter ˋschläft
Peter sleeps
'Peter is sleeping.'

b. **(non-subject) topic**
in der ˊKüche hat Peter geˋschirr gespült
in the-DAT kitchen has Peter dishes washed
'In the kitchen, Peter did the dishes.'

An example for an anti-topic construction is shown in (8) below. Such constructions are always introduced by subjects.

(8) a. **(subject) anti-topic**
die Poliˋzei kommt
the police comes
'The police are coming'

b. **(non-subject) anti-topic**
$\emptyset$

Jacobs (1999, 2001) draws up a list of diagnostic criteria that a sentence needs to meet to be anti-topic, or "integrated".

(9) X is integrated into Y only if

a. X is a syntactic argument of Y
b. If Y assigns a θ-role to X, it is one that involves proto-patient properties or appearance on the scene
c. Y does not assign a spatio-temporally unlimited property to X (i.e., the relationship is non-generic) and
d. Y does not contain more than one constituent with lexical (as opposed to functional) meaning. (Jacobs 1999 : 71–72)

If one of these conditions is not met for the semantic representation of a sentence, X and Y are said to be informationally separated and the syntactic manifestation of the clause will be topic-comment. If the conditions are all met, we have an anti-topic sentence. The anti-topic sentences thus form a limited subclass of V2 constructions: syntactically non-complex arguments of unaccusative predicates.

Most of the expressions, on the other hand, are organized according to a topic-comment, not a subject-predicate, dimension. (Jacobs (2001) in fact argues that there is no unitary functional notion underlying all topic-comment constructions in languages. Rather, the constructions that are normally called topic are related by semantic and pragmatic similarities to prototypical cases, and they should be recognized as different sentence types. However, the V2 constructions of concern to us here are a unified subtype under his analysis as well.)

This approach simplifies the account for V2 word order in German main clauses under an alignment analysis. If the grammar made use of the subject notion, which the verb would have to follow, we would need extra mechanisms to explain why a topicalized constituent may replace the subject in the single preverbal slot of the main clause.

Jacobs's (2001) analysis of German, on the other hand, easily lends itself to an alignment account under the assumptions of this paper, in which I claim that the topic feature is not only universal but is present in every input. In German Tp is the only highly ranked Xp constraint, meaning that there is only one preverbal constituent, the topic. Subject–verb word order under this assumption would need to be viewed as topic–verb order, with the constituent marked for subject also marked as topic and the subject feature underparsed just like in Hungarian.

Anti-topic constructions, however, are problematic for this analysis: it is unclear what would get topic marked in the input. I will return to this problem after providing an analysis for Japanese topic data — but let me briefly review Hungarian, which in many ways is similar to German.

3.3 Hungarian

The analysis of stereotypical topic–comment Hungarian sentences is fairly straightforward, and compulsory topic marking in the input causes no problems: these sentences have topics anyway.

(10) Marit$_{\text{top}}$ szereti János
Mari-TOP loves János
'Mary, John loves.'

Since the topic in these cases is preverbal, Tp (Topic-predicate) needs to dominate pT (predicate-Topic). To ensure that the topic feature is not underparsed, both need to be ranked below the faithfulness constraint.

The other relevant constraint is the argument–predicate alignment constraint. Since arguments that are not fronted for a particular reason appear post-verbally, pA (predicate–Argument) needs to dominate Ap. Crucially, both of these need to be ranked below Tp, so that topic fronting, a violation of pA, is allowed if the fronted argument is a topic, and so the fronting is required to satisfy higher ranking Tp. The ranking for Hungarian then is as follows:[2]

(11) Hungarian: Sp, pS > Faith > Tp > pA > Ap, pT

[2] A comma between two constraints indicates that their relative ranking has not been determined. Whether they are equally ranked or not may be decided by looking at other phenomena of the language.

The input for (10) is (12a) and the evaluation table that churns out (10) as the optimal candidate is in (12b).

(12) a. $\begin{bmatrix} \text{szereti} \\ \text{x} = \text{sub} = \text{János} \\ \text{y} = \text{top} = \text{Marit} \end{bmatrix}$

b.

	Hungarian	Sp	pS	Faith	Tp	pA	Ap	pT
	Marit$_{top}$ János$_{sub}$ szereti		☆!		∗	☆☆		☆
	Marit$_{top}$ szereti János$_{sub}$	☆!				☆	☆	☆
	János szereti Marit$_{top}$			∗	☆!	☆	☆	
	János Marit$_{top}$ szereti			∗		☆☆!	∗	☆
	szereti János Marit$_{top}$			∗	☆!	∗	☆☆	∗
	szereti Marit$_{top}$ János			∗	☆!	∗	☆☆	
	Marit$_{top}$ János szereti			∗	∗!	☆☆	∗	☆
☞	Marit$_{top}$ szereti János			∗		☆	☆	☆

When the word order is SVO, the cause is not the special status of subjects, but the topic status of the subject argument in the input. This is in line with É. Kiss's (1994) analysis of basic clause structure.

Just like in German, in Hungarian, too, there are sentences that have no initial topic. In fact, É. Kiss (1994) has used the existence of these to argue for a verb initial underlying, or basic, word order.

(13) a. Alakult egy énekkar
formed a choir
'A choir was formed.'

b. Megjött a vonat
PERF-came the train
'The train has arrived.'

c. Esik a hó
Falling the snow
'It is snowing.'

All É. Kiss's (1994) examples are single-argument expressions of unaccusative verbs—the very same group of verbs that yield anti-topic constructions in German. These are problematic for the analysis discussed so far, as it is not apparent what is marked for topic status. The following analysis of Japanese will help find an answer to this question and round out the analysis for German and Hungarian.

3.4 Japanese

The behavior of topics in Japanese is far more complex than in German, Hungarian and English. Japanese sometimes marks its topic morphologically and sometimes syntactically. There are also cases when topics are marked both ways, as well as cases when there is no topic marking. Before giving an account of the phenomena, I will review the relevant topic patterns.

Under the traditional generative view of Japanese (Kuno 1973), topics marked by the particle *-wa* occupy a special position, left-adjoined to IP (S in Kuno 1973) at the top of the clause. Topic marking, however, is not compulsory: not every sentence includes a *-wa* marked constituent. Nominative marking does not override topic marking, as I have argued it does in English, since an element may appear either with *-wa* or nominative marker *-ga*, depending on its topic status. This then is a problem for the analysis: if both topic and subject are compulsory input elements, no ranking of the constraints would predict that they are both attested in some but not all sentences. Before addressing this issue, let me review another view of Japanese — one that will lead me to conclude that the theory presented here can be adopted to accommodate the Japanese topic-marking data.

The traditional analysis of the topic-subject relationship is untenable, at least according to Tateishi (1994), who argued that there is no special clause initial position for the *-wa* marked constituent and there is no syntactic reason to distinguish between *-ga* and *-wa* marked NPs. In other words, a subject NP marked with *-wa* is simply a special kind of subject.

There is, however, a second *-wa* slot available at the front of the sentence, reserved for non-subject topics, which have to be strictly *-wa* marked.

(14) a. Chomusukii$_i$-wa/*ga Jiroo-ga Hanako-ni jibun$_i$-no musuko-san-o
Chomsky-TOP/*NOM Jiroo-NOM Hanako-DAT self-GEN son-Mr./Mrs.-OBJ
shookai-shi-ta
introduce-do-PAST
'Chomsky$_i$, Jiro introduced his$_i$ son to Hanako.'

b. Hannin-wa/*ga Jiroo-ga ayashii
perpetrator-TOP/*NOM Jiroo-NOM suspicious
'The perpetrator, Jiro is suspicious. (=The perpetrator, I suspect Jiro is.)'
(Tateishi 1994 : 102)

Tateishi (1994) calls sentences such as (14) examples of the Pure Topic Construction. Unlike the other kind of *-wa*, this *-wa* can never be replaced with a *-ga*. In his Government and Binding Theoretical account, the ordinary *-wa* (or *-ga*) is base generated in the Spec, IP position. The Pure Topic position, on the other hand, is the specifier of the outermost extended verbal projection, MP, otherwise reserved for the modal auxiliary *daroo* ('I guess/must') (Tateishi 1994 : 116).

Tateishi (1994) lists several arguments to differentiate the special, pure topic position from other nominal positions. For an alignment account the crucial one is that the pure topic position cannot be scrambled over by a focused constituent, such as an object. Whatever happens the pure topic position must be sentence initial.

(15) a. *jibun$_i$-no musuko-san-o Chomusukii$_i$-wa Jiroo-ga Hanako-ni
self-GEN son-Mr./Mrs.-OBJ Chomsky-TOP Jiroo-NOM Hanako-DAT
shookai-shi-ta[3]
introduce-do-PAST
'Chomsky$_i$, Jiro introduced his$_i$ son to Hanako.'

[3] Ungrammaticality is not due to a binding violation. As Tateishi (1994) explains, the reconstruction of the binding relation between *jibun* and the subject is possible as long as *jibun* is not a direct object (Tateishi 1994 : 110, footnote 12).

b. *Taroo$_i$-o hannin-wa Jiroo-ga t$_i$ ayashin-deiru
Taroo-OBJ perpetrator-TOP Jiroo-NOM suspect-PROG
'The perpetrator, Jiro suspects is Taro.' (Tateishi 1994 : 110)

The existence of pure topics suggests that we cannot silence the topic constraint by ranking it above the faithfulness constraint and so allowing for the option of the topic feature to be underparsed. Scrambling facts suggest that the position of the pure topic is not determined in terms of its alignment to the verb: it does not just have to be pre-verbal, it has to be in front of all other pre-verbal constituents. This requires a T1 (=Topic First) constraint that is highly ranked, though below Faith, so that the topic feature does not get underparsed.

If underparsing the topic feature is not an option and every input needs to have an element marked for topic status, how can we account for the *-ga*/*-wa* alteration in the θ-marked subject slot?

Ga and *-wa* marked subject NPs carry different meanings. This needs to be captured in the input. When a subject comes out *-wa*-marked, it needs to be topic-marked in the input as well — since it is the input that forms the basis of interpretation. This would satisfy the requirement that every input needs to include an element with a topic feature.

When the subject is *-ga*-marked, not *-wa*-marked, the compulsory topic marking needs to fall on some other input element. The other arguments or adjuncts cannot be topic marked in this case, because if they were, the result would be a fronted *-wa*-marked constituent, the pure topic construction. (Objects and other arguments cannot get in-situ *-wa* marking.) Furthermore, the interpretation of *-wa*-less sentences is certainly not that they carry a topicalized non-subject argument or adjunct. Since interpretation is read off the input, this lack of topicalization of non-subject arguments and adjuncts needs to be apparent in the input as well. The only input element left to fulfill the requirement that each input needs to contain a topic feature is the verb.

Verbs, or predicates, are normally seen as the counterparts of topics: the predicate makes a statement about the topic. So marking the predicate as a topic sounds odd. However, if we assume that the topic is a *prominent* element carrying *old* information, then there seems to be nothing wrong with suggesting that a verb can bear the topic feature. In case of the sentence 'John drank wine' we may be aware that drinking took place, but do not know who drank what. The important point for our purposes is that none of the arguments are prominent, old information, so none can be topics. This is precisely what we want to account for *-wa*-less Japanese examples.

Every input needs to have a subject, and the thematic subjecthood of an element is represented in syntax by it being the *-ga*/*-wa* marked constituent least far from the verb. (Objects, for instance, would come between the subject and the verb in non-scrambled sentences, but objects will be easy to distinguish in the string as they can never be *-wa*-marked without moving them to the pure topic position.) If the input subject is not marked for topic, it will surface with *ga*. If it is, it will surface with *-wa*. (Which of them is going to mark the subject will be decided in the input: morphological markers are input elements.)

The pure topic position is governed by a T1 constraint—as scrambling facts illustrate. This needs to be the dominant constraint, since the pure topic position cannot be scrambled over. Then would come F1 (Focus First), which would account for the scrambling of the focused constituent, such as an object, to the sentence-initial but post pure topic position. Ap also needs to be highly ranked to account for the fact that direct and indirect objects are closer to the verb than subjects. S1 needs to be below Ap but higher than Sp. This is because if Sp were to determine the position of the subject, it would place the subject in the immediate pre-verbal slot: since the subject is an argument of the verb as well, that would not cause an extra violation of higher ranking Ap.

This ranking, however, would catapult the topic-marked subject to the front of the clause, in front of the scrambled focal constituent. The only way I see to get around this problem is to assume that alignment constraints may relativise to particular elements, so that we have $\mathrm{T1}_{\mathrm{subj}}$ and $\mathrm{T1}_{\mathrm{non\text{-}subj}}$ and $\mathrm{T1}_{\mathrm{pred}}$. These could then be ranked differently, with only $\mathrm{T1}_{\mathrm{non\text{-}subj}}$ high. This is clearly not a very elegant solution as $\mathrm{T1}_{\mathrm{non\text{-}subj}}$ is a very specific constraint—so the account is descriptive rather than explanatory at best. Though this is a problem, the assumption is not related to my principle goal of investigation, the universality of topics. A more detailed study of Japanese within the framework adopted here may well identify other similar problems of subject asymmetry, and would lead the way to a more satisfactory solution.[4] For now, let me accept the existence of these relativized constraints.

The ranking we have for Japanese is the following:

(16) Japanese: Faith $>$ $\mathrm{T1}_{\mathrm{non\text{-}subj}}$ $>$ F1 $>$ Ap $>$ S1 $>$ Sp, pS, pA, $\mathrm{T1}_{\mathrm{subj}}$, $\mathrm{T1}_{\mathrm{pred}}$, $\mathrm{T\Omega}_{\mathrm{subj}}$, $\mathrm{T\Omega}_{\mathrm{pred}}$, $\mathrm{T\Omega}_{\mathrm{non\text{-}subj}}$, FΩ, pT, Tp

In the following tables, I will show how this ranking yields the attested word order patterns.

[4] The data summarized here was in fact a very simplistic recapitulation of Tateishi's (1994) account of the distribution of *-ga*/*-wa*. The most radical aspect of Tateishi's (1994) book was the separation of the Pure Topic Construction from the Major Subject Construction, and arguing that Japanese is configurational with three distinct preverbal nominal slots: Spec, MP, Spec, CP and Spec IP. The Major Subject is a double nominative construction where there is no genitive-head relationship between two adjacent nominative arguments, but where only the second of these arguments is theta-marked by the verb. The *-ga* or *-wa*-marked Major Subject allows to be scrambled over. Though it is called a subject position because of the *-ga*/*-wa* marking, a distinction between the ordinary subject and this subject would need to be made in the input, and probably also among the constraints. The order of the subjects is crutial, with the theta-marked one closer to the verb.

i. nihon-no tabemono-ga/*no sakana-ga umai
Japan-GEN food-NOM/*GEN fish-NOM good
'It is Japanese food among which fish is good.'
(Tateishi 1994 : 101)

ii. nihon-no tabemono-wa/*ga sakana-ga fugu-ga umai
Japan-GEN food-TOP/*NOM fish-NOM bowlfish-NOM good
'Speaking of Japanese food, among fish, bowlfish are good.'
(Tateishi 1994 : 128–129)

(17) a. Topic-object-wa, Subject-ga, Indirect object-ni, Verb

b. $$\begin{bmatrix} \text{Verb} \\ \text{x} = \text{sub} = \text{Subject} \\ \text{y} = \text{top} = \text{Object} \\ \qquad \text{z} = \text{Ind. Obj.} \end{bmatrix}$$

c.

	Japanese	$T1_{ns}$	Ap	S1	$T1_{subj}$	Tp	Sp
	Subj. Obj_t Ind.Obj. Verb	*!	***			*	**
☞	Obj_t Subj. Ind.Obj. Verb		***	*		**	*
	Obj_t Ind.Obj. Subj. Verb		***	**!		**	
	Subj. Ind.Obj. Obj_t Verb	*!	***				**
	Ind.Obj. Obj_t Subj. Verb	*!*	***	**		*	
	Ind.Obj. Subj. Obj_t Verb	*!*	***	*			*

(18) a. Topic-object-wa, Focus indirect object-ni, Subject-ga, Verb

b. $$\begin{bmatrix} \text{Verb} \\ \text{x} = \text{sub} = \text{Subject} \\ \text{y} = \text{top} = \text{Object} \\ \text{z} = \text{foc} = \text{Ind. Obj.} \end{bmatrix}$$

c.

	Japanese	$T1_{ns}$	F1	Ap	S1	$T1_{subj}$	Tp	Sp
	Subj. Obj_t $Ind.Obj._{\cdot f}$ Verb	*	**	***			*	**
	Obj_t Subj. $Ind.Obj._{\cdot f}$ Verb		**	***	*		**	*
☞	Obj_t $Ind.Obj._{\cdot f}$ Subj. Verb		*	***	**		**	
	Subj. $Ind.Obj._{\cdot f}$ Obj_t Verb	**	*	***				**
	$Ind.Obj._{\cdot f}$ Obj_t Subj. Verb	*		***	**		*	
	$Ind.Obj._{\cdot f}$ Subj. Obj_t Verb	**		***	*			*

(19) a. Topic-object-wa, Topic-subject-wa, Indirect Object-o, Verb

b. $$\begin{bmatrix} \text{verb} \\ \text{x} = \text{sub} = \text{top} = \text{Subject} \\ \qquad \text{y} = \text{top} = \text{Object} \\ \qquad\qquad \text{z} = \text{Ind. Obj.} \end{bmatrix}$$

c.

	Japanese	$T1_{ns}$	F1	Ap	S1	$T1_{subj}$	Tp	Sp
	$Subj_t$ Obj_t Ind.Obj. Verb	*		***			***	**
☞	Obj_t $Subj_t$ Ind.Obj. Verb			***	*	*	***	*
	Obj_t Ind.Obj. $Subj_t$ Verb			***	**	**	**	
	$Subj_t$ Ind.Obj. Obj_t Verb	**		***			**	**
	Ind.Obj. Obj_t $Subj_t$ Verb	*		***	**	**	*	
	Ind.Obj. $Subj_t$ Obj_t Verb	**		***	*	*	*	*

(20) a. Topic-subject-wa, Object-o/Indirect Object-ni, Verb

b. $$\begin{bmatrix} \text{verb} \\ \text{x} = \text{sub} = \text{top} = \text{Subject} \\ \hfill \text{y} = \text{Object} \\ \hfill \text{z} = \text{Ind. Obj.} \end{bmatrix}$$

c.

	Japanese	$T1_{ns}$	F1	Ap	S1	$T1_{subj}$	Tp	Sp
☞	Subj$_t$ Obj. Ind.Obj. Verb			***			**	**
	Obj. Subj$_t$ Ind.Obj. Verb			***	*	*	*	*
	Obj. Ind.Obj. Subj$_t$ Verb			***	**	**		
☞	Subj$_t$ Ind.Obj. Obj. Verb			***			**	**
	Ind.Obj. Obj. Subj$_t$ Verb			***	**	**		
	Ind.Obj. Subj$_t$ Obj Verb			***	*	*	*	*

(21) a. Focus Indirect Object-ni, Topic-subject-wa, Object-o, Verb

b. $$\begin{bmatrix} \text{verb} \\ \text{x} = \text{sub} = \text{top} = \text{Subject} \\ \hfill \text{y} = \text{Object} \\ \hfill \text{z} = \text{foc} = \text{Ind. Obj.} \end{bmatrix}$$

c.

	Japanese	$T1_{ns}$	F1	Ap	S1	$T1_{subj}$	Tp	Sp
	Subj$_t$ Obj. Ind.Obj.$_f$ Verb		**	***			**	**
	Obj. Subj$_t$ Ind.Obj.$_f$ Verb		**	***	*	*	*	*
	Obj. Ind.Obj.$_f$ Subj$_t$ Verb		*	***	**	**		
	Subj$_t$ Ind.Obj.$_f$ Obj. Verb		*	***			**	**
	Ind.Obj.$_f$ Obj. Subj$_t$ Verb			***	**	**		
☞	Ind.Obj. Subj$_t$ Obj Verb			***	*	*	*	*

(22) a. Subject-ga, Indirect Object-ni/Object-o, Verb

b. $$\begin{bmatrix} \text{verb} = \text{top} \\ \text{x} = \text{sub} = \text{Subject} \\ \hfill \text{y} = \text{Object} \\ \hfill \text{z} = \text{Ind. Obj.} \end{bmatrix}$$

c.

	Japanese	$T1_{ns}$	F1	Ap	S1	$T1_{sub}$	Tp	Sp	$T1_{pr}$
☞	Subj. Obj. Ind.Obj. Verb$_t$			***			*	**	***
	Obj. Subj. Ind.Obj. Verb$_t$			***	*		*	*	***
	Obj. Ind.Obj. Subj. Verb$_t$			***	**		*		***
☞	Subj. Ind.Obj. Obj. Verb$_t$			***			*	**	***
	Ind.Obj. Obj. Subj. Verb$_t$			***	**		*		***
	Ind.Obj. Subj. Obj Verb$_t$			***	*		*	*	***

The option of assigning the compulsory topic-feature to the predicate we had to assume for Japanese allows us to account for the unaccusative Hungarian sentences in (13) that had a neutral interpretation even though they had no preverbal topic: the verbs carry the compulsory topic feature in the input. The option of topic-marking the verb also allows us to treat Jacobs' (1999) German anti-topic construction under the current model: German topics are compulsory input elements, but when the verb gets the topic marking we get an intonationally different V2 sentence.[5] (The Tp/pT pair of constraints is violated equally by all faithful candidates.)

4 Conclusion

In this paper I have attempted to offer a cross-linguistic account of the topic feature, assuming that it is a compulsory part of OT inputs, just like the subject feature. If the assumption can be upheld, it would provide for a simpler theory, in which both subject/predicate and topic/comment languages receive the same treatment.

The analysis was shown to be compatible with languages in which the topic feature plays an important role in word order (German, Hungarian) as well as a language in which it has marginal status (English) and attempted to capture the very complex topic marking patterns in Japanese.

As part of the analysis I have made use of a new family of alignment constraints: first/last constraints that govern the position of input elements with respect to the entire string rather than only the predicate.

A number of questions have been raised that require further research to answer. The analysis for Japanese necessitated the introduction of constraints that relativize to particular elements, robbing the analysis of some explanatory power. Languages other than the ones discussed here may or may not be compatible with the present analysis. It is hard to see how the present analysis could be expanded to account for an OVS or OSV language in which only non-object topics would be syntactically marked—a variation on the English pattern. If there are several languages that mix and match syntactic marking with morphological marking in various ways, it is unlikely that the present account could be upheld.

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[5] I am assuming that interpretative reasons account for the fact that only in the case of unaccusative verbs do we have this option in both German and Hungarian.

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