

Unalternative Constraints Cross-Linguistically

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1 Hypotheses, Aims and Methods

This is a project in comparative theoretical linguistics. Its theoretical aim is to explore a new way of formalizing the semantics and pragmatics of grammatical emphasis, or focus, called Unalternative Semantics (UAS), in its various cross-linguistic applications. Its empirical aim is to extend the use of a sophisticated semantic formalism to focussing in languages of the non-standard-European variety. While a number of such languages have been described, they have neither been analyzed in detail semantically, nor informed the development of theoretical tools for modelling such phenomena. This is the gap the present project is designed to fill.

Unalternative Semantics is a new approach to deriving semantic focus alternatives compositionally, being developed by the PI starting in late 2014. The exclusive scope of the application is the funding of two pre-doc/PhD positions for (yet-to-be-identified, see below) researchers to pursue research within this innovative framework, using novel data, in their PhD projects and complete their theses under the supervision of the PI.

This work will involve a substantial amount of systematic elicitation, i. e. field work, to be carried out via interviews with consultants and questionnaires, largely via the internet. There might also be a moderate amount of instrumental work to explore prosodic properties of focus realization in the languages to be investigated. Mostly, though, this is a theoretical project. It will involve a broad and systematic analysis of the existing literature and data resources (both in grammars and on-line), the development of specific hypotheses and theoretical models, and their application to old and new data.

2 Background

2.1 Notional

The study of grammatical emphasis or focus has become a central topic in linguistic research over the past two decades, as witnessed by a vast number of conferences and workshops on the topic, as well as national and international research projects in which it figures prominently, or even center-stage (e. g. the Sonderforschungsbereich 632, “Information structure: The linguistic means for structuring utterances, sentences and texts” in Potsdam/Berlin). This research has substantially broadened our understanding

of, particularly, the prosody of focussing, as well as our knowledge of the variety of devices for expressing grammatical focus cross-linguistically (see e. g. Zimmermann & Onea, 2011, for an instructive overview).

However, very little of this work has truly informed the development of the semantic/pragmatic framework for modelling such phenomena, which is essentially the same as 20 or even 30 years ago (see sec.2.2 below). Similarly, work on the interpretation of focus and information structure (i. e. the content, as opposed to the underlying formal apparatus) has virtually exclusively concentrated on the garden-variety English-type focus phenomena, connected to pitch accenting and stress,¹ the one notable exception being work on the pre-verbal focus position in Hungarian, which has spurred a number of theoretical proposals.²

In short: While we do know that, and to a good extent how, intonational phrasing, syntactic rearrangement and morphological marking are used cross-linguistically to realize focussing, this knowledge has left little mark on the theoretical modelling of focus interpretation. This is where the proposed project comes in.

2.2 Theoretical

Starting with von Stechow (1981) and Rooth (1985) the semantics of focussing has been modelled using FOCUS ALTERNATIVES. If, for example, *ignored* is the focus in the sentence *Kim IGNORED Max*, the semantics provide a set of alternatives, sentential meanings, which correspond to the meanings of sentences like *Kim greeted Max*, *Kim kissed Max*, *Kim outranks Max* etc. Conditions on the contextual felicity of focussing will then make reference to this set of alternative meanings, e. g. saying that one of them was previously suggested to be true (i. e. we are contradicting that).³

A theory of focussing should deliver the right pairings of sentences including their intonational highlighting (or whatever other means a language uses to realize focussing) and contexts. In virtually all existing theories this

¹e. g. Beaver & Clark (2008), Constant (2012), Geurts & Van Der Sandt (2004), Toosarvandani (2010), Wagner (2012), to name the most influential ones

²Horvath (1986), É. Kiss (1998), Onea & Beaver (2011) a.o.

³Bonomi & Casalegno (1993) are perhaps the one exception, where alternatives are expressed in the form of less specific propositions or formulae, e. g. ‘there was an event (of unspecified nature) in which Kim was the agent and Max was the theme’; this framework, however, has never been developed into a complete theory of focussing; in fact, the only substantial place where the proposal has been picked up, Beaver & Clark (2008), explicitly states its equivalence, for all intents and purposes, to alternative semantics.

is achieved in the following way: A syntactic structure and its prosodic realization, particularly stress and accenting, is related to a formal identification of the focus in it, usually by means of a syntactic diacritic ‘F’, the F(ocus) Marker.⁴ The F-markers in turn influence the calculation of F-alternatives (FAs) for the constituent(s) bearing them, as well as larger constituents containing those. The FAs thusly calculated are finally related to aspects of the context (or — in the case of associated focus — to other elements in the sentence) by focus-related conditions.

Often one prosodic realization is judged to be compatible with a number of different context types, which then is modelled as a Focus Ambiguity: the relation between prosody and F-marking is one-to-many, and each F-marking in turn is related to a set of F-alternatives (one-to-one).

3 Unalternative Semantics

3.1 General: UAS and SAS

Unalternative Semantics (UAS) is a new approach to deriving semantic focus alternatives compositionally, being developed by the PI. Like ‘standard’ alternative semantics (SAS) (Rooth, 1985, 1992, 1996) it ultimately characterizes a set of meanings which can serve as a contextual target for focussing, i. e. a question under discussion, a rhetorically parallel sentence, or an utterance to be corrected or juxtaposed; in what follows, I will call these *Potential Focus Targets* (or PFTs for short). In contradistinction to existing approaches, UAS is characterized by the following features:

- UAS characterizes PFTs via *negative constraints* or *restrictions* on what *cannot* be a PFT
- UAS does not rely on syntactic focus marking, e. g. F-features, as standardly assumed.
- UAS associates each (analyzed) sentence with exactly one set of restrictions. There is no grammatical focus ambiguity, as in all existing approaches.

⁴Reinhart (1995) directly relates a prosodified structure to a (or several) constituent(s), its focus. No formal interpretation of these objects is given, but it seems fair to say that a sentential structure plus a separate structure corresponding to the focus in it is equivalent to a sentential structure including a diacritic marker on the sub-constituent that is the focus. The only version of focus *semantics* without F-markers I am aware of is in an unpublished manuscript by Roger Schwarzschild, Schwarzschild (1997).

- As a consequence of the last two points, UAS can associate a single given structure with several, unrelated Focal Targets in a given context.

Crucially, UAS is not just a reformulation of regular alternative semantics. For example, a regular transitive VP in English, with stress on the object, will be associated with the unalternatives $R^{\setminus V} \mathbf{O}$ — ‘any property expressible by a transitive verb other than V, plus O’, or informally: ‘V is not a narrow focus’. This means that any of the following could hold: O is a narrow focus, O is part of a discontinuous focus, VP is (part of a) focus, VP is (part of) the background of a focus. No equivalent set of alternatives is derivable in SAS; in other words, UAS makes distinct predictions about what ‘natural classes’ of PFTs for a single structure could be.

3.2 Previous Work

A first series of papers by the PI (Büring forthcoming_b, forthcoming_a, b) outlines how UAS accounts for standard phenomena surrounding intonational focus of the variety found in English, German, and various other European languages. Distinguishing traits of the analyses in those papers are:

- a simple treatment of discontinuous foci
- the exclusion of overfocussing without invoking transderivational constraints
- a stringent separation of the effects of focussing and givenness

3.3 Program

The proposed project explores applications of UAS (and, by way of comparison, SAS) to cases that go beyond the standard applications of focus semantics and are in many instances problematic for them. These can be divided into three main categories:

- further applications to Germanic-type, *flexible accent* languages
- cross-linguistic applications specific to non-intonational focus marking in languages other than standard European ones (NSE languages)
- cross-linguistic applications to non-intonational focus marking types found in standard European *and* NSE languages

The idea is to for the pre-docs to become acquainted with the framework and its guiding ideas by collaborating with the PI on topics in the first

category, and after that, to develop their own research on a NSE language on one or several of the topics in the second category. Topics in the third category will be addressed in collaboration with the PI inasmuch as the languages investigated by the pre-docs display them, but are not part of the core of the proposed project.

4 Flexible Accent Languages

This first category contains phenomena that are found in standard European languages, but for which a novel type of analysis within the framework of UAS is envisaged.

4.1 Intonational Phrasing

In SAS the presence/absence of an accent is the only aspect of focus realization relevant to semantics; in UAS so far, relative metrical weight has been used instead, much to the same effect. The new project is to look into effects of intonational phrasing; the working hypothesis is that additional phonological (minor) or intermediate (major) phrase boundaries can serve to mark one element as focus, without marking everything else in the clause as background. An example is given in (1) (from Schwarzschild, 1999, see also Kehler, 2005; Büring, 2012).

- (1) (John quoted Mary at great length but) he only MENTIONED SUE.

Here, the verb is marked by an additional accent, followed by a prosodic phrase boundary. Intuitively, this is done to express a contrast between *quote at length* and *mention*, in addition to that between *Mary* and *Sue*. The challenge is to explain how and why the pre-final accent on the verb indicates an additional focus, how to interpret these formally, and how to explain the fact that the putative backgrounds to both foci — *Sue* and *mentioned*, respectively — need not be given in the context. The general idea is that separate phrasing of verb and object is the cue to indicating the simultaneous presence of two disjoint sets of PFTs, whereas, as is generally assumed in UAS, givenness is only relevant in the context of deaccenting (not backgrounding, see sec. 4.4 below).

4.2 Second Occurrence Focus

UAS already captures something very close to the Domain Theory of Focus proposed in Büring (2013/15) and the predictions it makes about Second Occurrence Focus (SOF). This is to be investigated in detail. Furthermore, the hypothesis is that aspects of prosodic phrasing (see sec.4.1 above) may be the key to solving a remaining puzzle of that approach, the contrast between (2) and (3), the former of which is judged to be highly marked (on the meaning where *only* excludes other places, rather than other foods), whereas the latter is impeccable (on the reading where *only* excludes other foods; examples from Schwarzschild, 2006 and Rooth, 1992, respectively; small caps indicate second occurrence foci, i. e. phrasal stress, but no accent).

(2) (What did John *only* eat in PARIS?) — #? John *only* ate CRÊPES in PARIS.

(3) People who GROW rice *only* EAT RICE.

For Büring (2013/15), (2) is bad because the answer focus *crêpes* linearly intervenes between *only* and its associated focus *Paris*. But the same configuration obtains in (3), where *eat* intervenes between *only* and *rice*.

In UAS, (2) is excluded for basically the same reason: the background of the SOF on *Paris* itself contains non-trivial focus restrictions (that *eat* is not a narrow focus), which is ruled out on principled grounds. In (3), on the other hand, the two foci are structural sisters, i. e. both restrictions are introduced at the *same* node, the VP dominating *eat rice*, not one within the background of the other. *Ceteris paribus*, nothing is wrong with that, given a proper formalization of such ‘twin restrictions’.

Further investigation is needed to see whether this distinction cuts along the empirically correct lines, though a look at the problematic cases collected in Büring (2013/15) appears promising. Subsequently, investigation of SOF in languages other than English and German —still wanting at present— should serve to test the derived generalizations further.

4.3 Contrast, Focussing and Givenness

The sets of PFTs derived in UAS are generally subsets of the focus alternatives derived in SAS. For example, a VP with neutral prosody (main stress/accent on the object) has the set of all VP meanings as its Focus Alternatives (FAs) in SAS; its PFTs in UAS are all VP meanings *minus*

those one would get from narrow V focus. While this is unproblematic, in fact advantageous, for contrastive focus and other foci that would fall under Rooth’s (1992) ‘individual case’, it requires a different treatment for Rooth’s ‘set case’, i. e. answer focus. For example, not all potential answers to a question like ‘what did Kim do?’ are PFTs for *Kim drank BEER* — propositions like ‘Kim brewed beer’ are not included.

The solution envisaged in UAS so far essentially reduces the set cases to the individual case: at least *some* elements of the question meaning (other than the literal meaning of the answer) must be PFTs of the answer. However, stronger conditions are conceivable, e. g. that one of the PFTs must be a pragmatically relevant, yet exclusive alternative to the literal meaning. This opens the way for a treatment of cases in which narrow focus appears impossible because of a lack of ‘true contrast’, e. g. Wagner’s (2006; 2012) *convertible* cases.

- (4) (Mary’s uncle, who produces high-end convertibles, is coming to her wedding. I wonder what he brought as a present.)
- a. #He brought a [RED convertible]
 - b. He brought a red CONVERTIBLE.

At the same time, we can *loosen* pragmatic conditions on focussing, e. g. that the focal target need not be contextually salient, merely identifiable (and relevant, . . .); saliency (‘givenness’) of background elements is no longer part of the condition on focussing (but still a condition on deaccenting/prosodic demotion, see also sec. 4.4 below). This may solve the major problem for accounts like Wagner (2012) (and its refinement in Katzir, 2013), namely that either too many or too few focal targets are predicted to be available in a context (depending on how exactly saliency is defined).

Taken together, we can slice the cake very differently now: strengthening the condition on focussing (to include true contrast) while *weakening* the condition on PFTs (identifiable, but not necessarily salient) promises to lead to an analysis that accounts for Wagner’s observation, but also general cases of ‘anaphoric deaccenting’ (a topic tentatively explored in Buring, forthcomingb) (see sec. 4.4 below).

4.4 Deaccenting

According to the perspective outlined in sec.4.3, deaccenting is analyzed as the reflex of backgrounding (in a focus domain) and contextual givenness; *both* are necessary conditions for deaccenting, but deaccenting may be *forced* only by focussing. A novel prediction made by this hypothesis is that deaccenting *outside* of a focus may be obligatory, while deaccenting *within* a focus is generally optional. This hypothesis will be tested for languages that show givenness deaccenting (English, German, Dutch a.o.) using experimental methods, in particular web questionnaires (along the lines of the informal survey reported in Büring, 2012).

4.5 Integration

Integration, as understood here, is the phenomenon by which a verb and an argument are realized with a single phrasal stress/accent, on the argument.⁵ Especially in intransitive sentences, where the presence/absence of integration arguably corresponds to the distinction betweenthetic and categorical sentences, the question of when which option is chosen has been discussed for at least 40 years, without a satisfying answer; while non-integrated sentences share suggestive interpretive commonalities with narrow argument focus sentences, it is generally acknowledged that they, too, are pragmatically broad focus, all-new sentences, excluding narrow focus as the theoretical modelling of non-integrated sentences (*pace* in particular Gussenhoven, 1983).

Since UAS allows for several foci at the same time, and dissociates backgrounding from givenness (s. a. on both points) we hypothesize that non-integrated structures are in fact instances of focussing within a focus, essentially cashing out the intuition about narrow focus without abandoning the generalization that even categorical sentences can be all-new/broad focus.

5 Beyond Flexible Accent Languages

This second category contains central topics to the project, which are typically found in NSE languages.

⁵The term integration was coined in Jacobs (1992), but systematic discussion of the phenomena involved goes back at least to Schmerling (1976) for English, and Bierwisch (1966) and Kiparsky (1966) for German; for a connection to thethetic/categorical distinction see particularly Sasse (1987).

5.1 Focus Movement and Focus Positions

As is well known, many languages of the world have—usually peripheral—structural or linear positions reserved for foci, Hungarian being the most well-studied example. Movement to such positions is in many cases optional, but only possible for elements to be interpreted as foci. An analysis in terms of movement triggered by a focus feature is therefore problematic, at least in frameworks in which movement always has a last resort character.

The straightforward analytical option in UAS is to associate focus positions with a restriction to the effect that its *complement* may not be/contain a narrow focus, but to leave movement as optional. The first step is to explore this option in detail for a language with focus movement such as Basque or Hausa.

The second step should investigate closely what the relation between the elements in focus position and the pragmatic focus is exactly. It has been observed, in particular, that the moved constituent may be just a *part* of the pragmatic focus (e.g. Fanselow 2007); this is in principle expected from the point of view of UAS, which does not identify *the* focus structurally, but only whether something is, may be, or cannot be part of a focus (see also sec.6.5 below). The goal is to find out what the facts about the relation of focus positions and pragmatic focus are cross-linguistically, and how to model them in detail.

5.2 Un-focus Positions

A typical situation, especially in African languages, is that focus seems to be marked only on very specific grammatical functions/parts of speech. A representative case is Hausa, in which a sentence with neutral SVO order may realize any kind of pragmatic focus, except subject focus.⁶ For example (5) may answer the questions ‘What happened?’, ‘What did Tanko do?’, ‘What did Tanko do regarding the taxes?’ or ‘What did Tanko pay?’, but not ‘Who paid the taxes?’.

- (5) Tankò yaa biyaa hàãaa,ji-n (ne).
T. 3sg.perf pay taxes-DET PRT
‘Tanko paid the taxes.’

UAS offers a very natural modelling for this type of situation: Have a struc-

⁶Data from Hartmann & Zimmermann (2007 and p.c.).

tural negative constraint to the effect that something in canonical syntactic subject position *cannot* be a narrow focus. That is, a subject in Hausa has essentially the same properties by structural default that a prosodically weak sister constituent has in English: It may be part of a focus, or the background, but not itself be a narrow focus.

This type of phenomenon may provide very strong arguments for two tenets of UAS: That PFTs are (negatively) restricted, rather than introduced, and that the restrictions on PFTs are generally relational, but not generally related to prosodic features. Therefore it will be a central part of the project to document and analyze such patterns in detail.

A narrowly focussed subject in Hausa will be realized by movement to a left-peripheral focus position, as in (6-A1).⁷

- (6) Q: Wàa ya-kèè kirà-ntà?
who 3sg-rel.cont call-her
 ‘Who is calling her?’
- A1: Daudàa (nee) ya-kèè kirà-ntà.
D. PRT 3sg-rel.cont call-her
 ‘Dauda_F is calling her.’
- A2: #Daudàa ya-nàa kirà-ntà.
D.F 3sg-cont call-her

Assuming that the need for *some* movement can be explained along the lines just sketched, and that the *suitability* of the focus position as a target of that movement can be derived as discussed in sec.5.1, the next question to be addressed is whether movement to this position is the *only* option, and if so (as appears to be the case in Hausa), why (recall again that UAS does not have a native way of forcing focus movement to a particular position, only focus interpretation for a position, or ‘focus flight’ *from* a position). An answer to be explored, though, has to do with the possible interpretation of movement itself, as discussed in sec.6.2.

5.3 Focussing Morphemes

Equally typical cross-linguistically is the morpho-syntactic marking of focus by focus particles or affixes. Again, such marking can be obligatory, but only for particular grammatical functions or parts of speech. For example, narrow

⁷That the subject is in the focus position is evident from the relative form of the verb, which is used if and only if the focus position is filled.

subject and object focus in Chickasaw is standardly (perhaps exclusively) realized by attaching a focus-marking suffix to the focus; other foci (V, VP, S. . .) are not marked in this way (Gordon, 2007; Munro & Willmond, 2008, and p.c.; underlining marks nasalization).

- (7) a. Hattak-at koni(-a) pisa
man-NOM skunk(-ACC) see
 ‘The man sees a skunk.’
- b. Hattak-akoot koni(-a) pisa.
man-CONTRFOC.NOM skunk(-ACC) see
 ‘[A man]_F sees a skunk.’
- c. Hattak-at koni-ako pisa.
man-NOM skunk-CONTRFOC.ACC see
 The man sees [a skunk]_F.

The project explores a reconceptualization of the picture, which relates it to ‘un-focus positions’ (sec.5.2): Positions/grammatical functions that *require* focussing morphemes to signal focussing are position which otherwise are restricted *not* to be narrow foci. That is, a regular Chickasaw subject, like a Hausa subject, is incapable of being a narrow focus by structural default. Attachment of a focussing morpheme serves the same purpose as movement in Hausa: To signal a deviation from the structural default. Constituents which are not *sui generis* restricted in this way are, by contraposition, not in need of narrow focus marking by special morphemes.

The project is to work out an analysis along these lines and explore its consequences and predictions. In particular, we need to investigate empirically whether there are cross-linguistic regularities in which foci on which elements are in need of such marking, and which are not (a particularly interesting possibility being that a larger focus may require marking only if its sub-constituents would, if narrowly focused; in other words, a language should not have to mark e.g. VP focus morphologically, unless it also has to mark narrow object focus in that way).

6 Further Cross-Linguistic Topics

This third group contains phenomena which occur in European and NSE languages alike. UAS may shed new light on the modelling of those, too. However, they are not part of the core project, but only to be investigated to the extent that the languages under investigation for the topics in sec. 5

prominently display them. For this reason, the discussion of these will be rather short.

6.1 Givenness Movement

Many languages, European and elsewhere, move given elements to a peripheral position, German, Dutch, Italian and Russian being examples. One line of reasoning⁸ sees these as ‘clear-the-way’ movements to remove non-focal elements from structural focus position (e.g. main stress position). This view, however, requires additional assumptions to explain givenness movement of elements from non-focal positions (see e.g. López, 2009, for this argument), as well as for the fact that elements so moved cannot be part of a broader focus (for which e.g. Büring, 2001, invokes additional transderivational economy constraints).

An alternative more congenial to UAS is to assume that these movements themselves mark the moved constituent as non-focal by introducing a restriction on the target site. Again, this is hard to model using F-markers or similar devices (foremost because the movements do not mark focus, but ‘un-focus’). A conceptually similar analyses to the one envisaged here, however, is found in Kučerová (2007). Based on the data found there and the studies mentioned initially, the project will be to explore this analytical avenue across different languages and language families.

6.2 Focus/Topic Movement

Neeleman & Van De Koot (2008) propose that sometimes movement to an adjoined position marks focus and/or topics and their domains *sui generis* (i.e. without additional features or dedicated positions). This interesting proposal, however, is not connected up to formal theories of focus interpretation, and indeed is not obviously compatible with standard views on grammatical focus marking.

They do jibe well, though, with the ideas of UAS, constituting basically the inverse case of givenness movement (see sec.6.1 above), and may thus be analyzable along parallel lines.

⁸E.g. Zubizarreta (1998), Büring & Gutiérrez-Bravo (2001), Büring (2001), Samek-Lodovici (2005), Szendrői (2000, 2001) a.o.

6.3 Focus Types

The literature contains various descriptions of focus realizations compatible with only a limited class of pragmatic focus types. Widely known examples include exhaustive or identificational focus in Hungarian,⁹ or preposed contrastive (as opposed to informational or answer) focus in Italian.¹⁰

The project goals in this area are empirical and theoretical: What is the natural typology of such restricted focus positions cross-linguistically, and how can these restrictions be formulated formally? These questions are in principle addressable in SAS, but only in a cumbersome way: different focus realizations (e. g. positions) would need different (syntactic) representations, whose semantic interpretation (e. g. in terms of alternatives) then need to be subject to different pragmatic conditions. The route is potentially shorter in UAS, where the realization itself can be tied to a particular kind of restriction on PFTs; whether or to what extent the content of the restriction can then itself be used to ‘select’ a particular pragmatic type of focus, however, is something to be investigated in this project (alternatively, UAS, too, would need a way to connect focus types, or restriction types, to different pragmatic conditions).

6.4 Ellipsis

Apart from ‘feeding’ prosodic realization and semantic/pragmatic interpretation, F-features are occasionally put to syntax-internal use. A particularly convincing case of this is the generalization that focused elements may not be elided. Notably, this restriction applies, in the case of broader foci, to *all* elements in focus, not just the ones realizing it by heavy stress, so it is not obvious what could take the role of focus marking in this generalization in UAS, which eschews the use of such marking in the syntax.

The initial hypothesis in this regard is that ellipsis, rather than being sensitive to the presence of syntactic focus marking, itself introduces restrictions on PFTs. In its simplest incarnation, the hypothesis would say that ellipsis introduces a restriction that the elided material is not (part of) the focus.

Refinements of this are worth exploring. If the marking instead conveyed that the *remnant* of the ellipsis *is* part of a focus, this might open the door

⁹Szabolcsi (1981), Horvath (1986), É. Kiss (1998), Onea & Beaver (2011).

¹⁰Rizzi (1997), Samek-Lodovici (2006), Cruschina (2012), Cruschina & Remberger (to appear) a.m.o.

to an analysis of ‘maximize ellipsis’ effects (Merchant, 2004; Takahashi & Fox, 2005), i. e. cases where ellipsis, if it happens at all, has to apply to the biggest background constituent that can be elided.

This area also intersects in an interesting way with embedded focus domains (sec.4.2). A hypothesis in keeping with observations in the literature is that focus *may* be elided if the operator it associates with is elided, too, as in (8).

- (8) (Mary only has TWO pairs of SHOES, and) JILL does ~~only have two pairs of shoes~~, too.

This may be made to follow from UAS in parallel to restrictions on embedded foci (including SO foci) in general, the restriction being that a lower restriction on PFTs (the focus of *only*, signalled by shifting stress from *shoes* to *two* in (8)) may only be in the background of the higher focus (the restriction on PFTs introduced by the ellipsis) if it has been ‘retrieved’ (by *only*) already.

6.5 Pied-Piping

Focus movement (sec.6.2) as well as movement to a focus position 5.1 (and possibly givenness movement, sec.6.1, though the facts are less well described here) allows for the familiar type of *pied-piping*, whereby only a sub-constituent of the moved constituent is pragmatically (and, where applicable, prosodically) focussed.

In accounts that rely on feature checking, pied-piping facts have always been problematic, since the actual feature is not, on the face of it, in an appropriate relation to a checking head, requiring additional stipulations such as non-local checking relations or feature percolation mechanisms. For the case of focus-related movements at least, UAS may provide a more palatable alternative treatment, since it generally only involves restrictions of the kind ‘I am/am not (*part of*) a focus’. Therefore, pied-piping a super-constituent of a focus to a position that introduces such a restriction is not problematic. In fact, the opposite would be, i. e. UAS predicts *ceteris paribus* that pied-piping of non-focal material is permitted even in cases where movement of the smaller focus may in principle be possible (preposition stranding in English being a case in question). Inversely, to the extent that pied-piping is *impossible* in such configurations, additional restrictions need to be invoked.

7 Application Specifics

7.1 Scientific/Scholarly Aspects

The main goal this project hopes to achieve is to provide a formal framework for modelling focus that is more flexible—and hence better suited for cross-linguistic application—than the existing ones. The starting point for this framework are the innovative ideas developed in Unalternative Semantics, some of which can already be cast in the form of specific, essential hypotheses; most centrally that PFT (‘focus alternatives’) are *restricted*, not introduced, by grammatical markings (i. e. unmarked structures correspond to more, rather than less PFTs); that the realization and interpretation of focus is genuinely and always relational (which, interestingly, it is not where mediated by a privative feature F); and that relational restrictions on PFTs, can in principle be attached to any dimension of grammatical representation.

At the same time, UAS is also in essential part subject to development/implementation. Specifically, the questions...

- what specific grammatical configurations (accenting, phrasing, morpho-syntax...) signal the presence of restrictions (‘introduce them’),
- what the exact format of these restrictions should be, and
- by what conditions and rules the resulting PFTs are related to the discourse or other aspects of pragmatics or semantics

...are not answered in advance, and should to varying extents receive different answers for different languages.

So the project has a specific guiding framework, but is not designed to prove one particular analysis. Given this, it is extremely likely to produce significant, original and stimulating results, both theoretically and notionally (i. e. enhancing our systematic understanding of the cross-linguistic means of emphasizing).

The project is bound to break new ground by bridging the gap between the highly formalized semantic work carried out on Germanic languages (or flexible accent languages in general) and the by now substantial amount of cross-linguistic work on (so-called) focus marking in other, specifically non-standard-European languages. It is to be expected that the tight connections to neighboring (language) departments in Vienna and other places (such as Graz and Salzburg, in both of which the PI has partaken in research activities in the area of information structure) will spurn related research

activities and projects in those departments, as well as possibly neighboring disciplines (psycholinguistics, computation linguistics, informatics).

The project's potential impact or importance is that of research on information structure and focus in linguistics in general: exploration of a widespread, perhaps universal, grammatical category which is not confined to one single aspect of grammar (syntax, morphology, phonology), and goes beyond the traditional logical concept of linguistic meaning. This has proven to be a stimulating and expanding area of linguistics, but it is also just that: one (central, yet) specific aspect of a comparably small discipline. It squarely falls within the realm of pure research ('Grundlagenforschung'), and broader consequences beyond the field of linguistics or cognitive science more in general cannot, at this point, be assessed seriously.

We do hope that by making the overall framework, the data, as well as the methods used easily available (see also sec. 7.3), we will make it particularly easy for researchers with similar interests to benefit from the experience gained in the project.

7.2 Resources

No materials or machines are requested, since the PI already has, or has access to, all necessary hardware, particularly recording equipment, microphones etc., and open domain software (Praat, R, Survey Monkey, Open Office a.m.o.) is fully sufficient for the purposes at hand. Also, the department of linguistic's infrastructure, including library, web resources, printing, copying and mailing, are available. The only resource requests regard research positions ('human resources') and travel expenses.

The two pre-doc positions applied for constitute the minimum for a research project of this size and complexity. While the research program could easily employ a post-doc position, too, it is believed that adequately qualified pre-docs will be able to contribute the necessary work; at the same time, this kind of position promises the greatest benefit in terms of promoting starting researchers, and fits best with, and contributes most effectively to, the existing landscape of positions within the larger field of linguistics and cognitive science at the university of Vienna (see this section below).

The two pre-doc positions at the core of the project are to be filled competitively, based on an international call for applications on the Linguist List; additionally, the PI will encourage colleagues at universities with pertinent

research groups (e.g. UC London, Potsdam, Frankfurt, Stuttgart, Tübingen, ZAS) to identify and encourage suitable candidates. Given the amount of recent interest in information structure research cross-linguistically, and the international visibility of linguistics in Vienna in general, and the PI in particular, the positions are expected to attract competitive applicants with a pre-existing interest in the topic of focus and/or information structure. Preference will be given to candidates with research interests/a record of research on non-European languages, with the choice of specific languages open (in as much as the languages show some of the types of focus markings characterized above).

Research on European languages (sec. 4) in particular will be carried out in collaboration with the PI, but need not be central to the research interest of the pre-docs.

At the University of Vienna, the pre-docs will be part of a large community of junior and senior researchers, first and foremost at the department of linguistics, but also the departments of English, Romance, German, African Languages and Finno-Ugric languages, all of which collaborate on PhD classes and programs. The Cognitive Science Platform, of which the PI is a co-founder, connects them to a large community of (PhD) researchers, various resources for training in transferable skills, and the Vienna Doctoral School *Cognition, Behaviour and Neuroscience* (director: Prof. T. Bugnyar). Additionally, the PI collaborates closely with researchers, senior and junior, at the Institut für Schallforschung of the Austrian Academy of Science, which can be called upon in particular for the phonetic aspects of the proposed research.

Given this extremely broad set of expertise and opportunities, the pre-docs will be in an excellent position to do internationally competitive state-of-the-art research in theoretical comparative linguistics (including formal semantics, for which the PI is a leading expert). Since there are two parallel pre-doc positions in the project, there will also be ample room for collaborative work and discussion on the specific topic of the project, since the two will contribute to the ‘critical mass’ of researchers in this general area, but also be able to bounce off each other’s ideas specific to the project.

To further enhance international contact and visibility, the project proposal requests travel funding for each of the researchers involved to attend three

international conferences or workshops on pertinent topics, with the opportunity to extend their stay to about a week in order to collaborate with leading researchers at those venues. Additionally, the pre-docs will receive funding to attend the Linguistic Society of America’s summer institute in year one or two (depending on the start time of the project) to help them make international connections and further their linguistic education, in particular with regard to field work and experimental methods.

7.3 Work Plan and Dissemination

Given the nature of the proposed project, and in particular the fact that its emphasis will to a significant extent be based on the research interests of the pre-docs an exact work plan is hard to anticipate. Table 1 gives a rough overview; the sub-topics listed in sections 4 and 5 are included, ordered according to their inter-dependencies. Sub-topics outside of the immediate PhD areas of the two, in particular those outlined in section 6 will be worked on jointly by the PI and the pre-docs but are, for the reasons outlined at the beginning of sec. 6 not included in the table.

MONTH	WORK	TOPICS
1–6	review of semantic/pragmatic literature on focus, if necessary training of pre-docs in formal semantics; familiarization with unalternative semantics, applications to known data; 4.1, 4.2	
7–12	finalizing PhD topics; collaborative work with PI on flexible accent languages (to continue throughout year 2) ; pre-docs attend LSA institute	4.3, 4.4
13–24	work on NSE languages, data elicitation, first modelling	4.5
ca.18~24	preparation & first visit of outside scholars	
25–28	continued work on NSE languages, incorporating feed- back/input from visitors	5.1, 5.2,
29–33	integration & comparison of individual sub-projects by both pre-docs and PI	5.3
ca.28~34	second visit of outside scholars/small workshop or conference	
34–36	preparation of final publications	

Table 1: Proposed Work Plan

Dissemination of results will be in the form of international conference presentations and journal publications. Within the three years of the project, the goal is to publish at least six, single authored or co-authored articles in peer-reviewed, high impact-factor journals such as *Natural Language and*

Linguistic Theory, Language, Linguistics & Philosophy or the *Studies in African Linguistics*. In years two and three, the pre-docs are expected to present at at least two international conferences (i. e. eight presentations total) such as GLOW, NELS, SALT, WCCFL, WECOL, BLS, CLS, Sinn & Bedeutung or SinFonIJA. In years two and three, the project plans to invite a group of four leading international researchers —to be selected according to the main strands of research at the time— to visit for a period of four days to consult on the progress of the project. Since the project is expected to generate international interest, the second of these visits is tentatively scheduled to be combined with a small workshop/conference on the topic, to be held in Vienna. This should further enhance the international visibility of the project, and might result in the publication of a volume of collected papers e. g. in the series *Wiener Arbeiten zur Linguistik*, of which the PI is a co-editor.

All data collected during the course of the project will be made openly accessible via the University of Vienna’s open access web services (the data are strictly anonymous and non-personal, mostly if not exclusively linguistic data with accessibility judgements and audio files). Additionally, the project will maintain a blog aimed at a non-specialist audience, as well as a web site which is scheduled to contain, among other things, training materials for linguists who are interested in pursuing research projects similar to the present one within the general UAS framework.

7.4 Research Institutions and Partners

The project will be situated at the department of general linguistics at the University of Vienna, under the auspices of the Cognitive Science Research Platform. The infrastructure of the department as well as the expertise of the professors and post-docs working in the department can be tapped at any point (see also sec.7.2).

The following national and international colleagues have agreed to cooperate with the proposed project for specific aspects and/or language Groups:

- Univ.-Prof. Dr. Adams Bodomo (Vienna), Prof. Dr. Malte Zimmermann (Potsdam) and Prof. Dr. Katharina Hartmann (Vienna/Frankfurt) for African languages
- Univ.-Prof. Dr. Eva Remberger and Dr. Silvio Cruschina (Vienna) for Romance languages

- Prof. Dr. Daniel Hole (Stuttgart) for South-East Asian languages
- Prof. em.a Pamela Munro, PhD (UCLA) for American Indian languages
- Assoc. Prof. Dr. Sylvia Moosmüller (Austrian Academy of Sciences, Institut für Schallforschung, Vienna) for phonetic and experimental aspects of the data to be investigated.

Other collaborations might be sought depending on the research interests of the pre-docs.

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