Ineffability in Grammar

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1. Introduction[*]

The architecture of Optimality Theory (OT) makes a number of strong predictions concerning the nature of language, one of which is that there should not be any ungrammatical structures that cannot be "repaired," i.e., OT predicts the non-existence of "absolute ungrammaticality"[1] or "ineffability."

An OT grammar consists of a universal set of constraints on representations. Differences between languages are expressed in terms of variations in the ranking of these constraints. Relative to a given input *i* an equally universal component GEN generates a set of candidate representations. A candidate *c* is the well-formed realization of *i* (*c* is the "optimal candidate") if and only if there is no other candidate *c′* which satisfies the constraint hierarchy better than *c* does. It follows that an optimal candidate in this sense can always be identified, so that there should be well-formed representations for all inputs, if the notion is defined in the way just indicated.

This prediction is not always borne out, and the failure of some inputs to find a surface realization has been called *ineffability* (Pesetsky 1997). For instance, in morphology, an input may consist of a set of morphemes, which the grammar combines in some order and some form. For most pairs of nouns and the diminutive suffixes *-chen* or -

[1] The term *absolute ungrammaticality* is not used here in contrast to *mild ungrammaticality* as in discussions of graded grammaticality, but in contrast to ungrammaticality relative to the existence of a "better" structure, as typical of OT.

lein of German, well-formed results can be computed, as (1a-b) illustrate, but a diminutive is avoided if the resulting phonological structure is not well formed. Though the data are not completely straightforward, the following generalization makes reasonable predictions: No output exists for diminutive formation when the *umlauted* vowel does not bear main stress (1c-f). Thus, the input {Európa, chen} cannot be mapped onto a grammatical output. It is ineffable (Féry 1994).[2]

(1)   a. Jahr –> Jährchen 'year, dim.'
            Woche –> Wöchlein 'week, dim.'
        b. Bruder –> Brüderchen 'brother, dim.'
            Mauer –> Mäuerchen 'wall, dim.'
        c. Mónat –>[?]Monätchen, [?]Monatchen, *Mönatchen, *Mönätchen 'month, dim.'
        d. Európa –> [?]Europächen, [?]Europachen, *Euröpächen 'Europe, dim.'
        e. Wérmuth –> [?]Wermüthchen, [?]Wermuthchen 'Vermouth, dim.'
        f. Wódka –> [?]Wodkächen, [?]Wodkachen, *Wödkachen, *Wödkächen 'vodka, dim.'

Likewise, in a basic model for OT syntax, an input may be made up of a number of words grouped into predicate-argument structures (PAS) (see Grimshaw 1997). For each clause, there is one such PAS. When the PAS composed of *meet, the foreign minister, who, in Afghanistan* corresponds to a subordinate clause, grammatical sentences cannot always be computed, as the contrast in (2) shows. Requirements imposed by the matrix clause may imply that *who* be placed into clause-initial position, as in (2a), but these requirements may come into conflict with classical island constraints, as in (2b), without there being an alternative way of formulating what (2b) was intended to express. The meaning that (2b) attempts to convey is ineffable in English and many other languages, if not in all.

(2)   a. who did the president think that the foreign minister met in Afghanistan?
        b. *who did the president resign although the foreign minister met in Afghanistan?

Linguists have been aware of such gaps in the generative capacity of grammars for quite some time (see, e.g., Hetzron 1975). They constitute no particular problem for grammars that employ devices such as inviolable constraints (see, e.g., Chomsky 1981), or conditions on the applicability of generative processes (see, e.g., Lexical Phonology, Kiparsky 1982). The ambitious assumptions made in OT, however, have turned ineffability into a major disturbing concern.

   There are, essentially, two types of reactions to OT's ineffability problem.[3] First, many approaches concentrate on exploring formal means by which OT might be amended, so that cases of ineffability can be dealt with. Among these proposals are

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[2]   We are only interested in diminutive formations, not in hypocoristics (nicknames) like *Frauchen* 'Mama' (for a dog) or *Opachen* 'grand pa', since there are lexicalized instances of the latter with no umlaut.

[3]   In addition, one can of course deny that there is a problem one needs to worry about. To the extent that outputs of grammatical computations need not be faithful to semantic aspects of the input, at least certain instances of ineffability fail to be a technical problem for OT (see, e.g., Legendre, Smolensky & Wilson 1998).

reference to null parses (see Prince & Smolensky 1993), bidirectional optimization (Wilson 1998), an additional control component (Orgun & Sprouse 1999), or the componential approach to metrics proposed by Hayes (2001). The latter four amendments may be called for independently, and they concede that classic/standard OT does not handle ineffability convincingly. The addition of the control component implies that ineffability is accounted for by a component external to and ordered after the OT grammar, whereas bidirectionality extends the domain of activity of OT by postulating that evaluation affects not only outputs generated from an input, but also potential inputs for outputs. In the second type of reaction, the existence of ineffability is taken as straightforward evidence for the claim that the domain of application of OT must be assessed conservatively. Thus, Pesetsky (1997) proposes that those aspects of syntax are amenable to an OT treatment that are concerned with the phonetic realization of abstract syntactic structure. All other aspects of syntax are free from conflictory principles. In a sense, the two kinds of reaction are similar.

The perspective of the present paper is different, having much in common with the general approach of Hetzron (1975): we wish to identify a *typology* of ineffabilities that helps to understand in which domains of language ineffability arises, and which domains are ineffability-free.

Ineffability is one of several properties of language which an OT grammar cannot account for straightforwardly. Other limitations arising as a consequence of OT's architectural decisions are the predicted absence of gradiency of grammatical judgments and optionality, due to the discrete decision-taking mechanism, and the impossibility of making reference to derivational steps within grammatical cycles, especially those leading to opacity, due to the nature of the EVAL component. These limitations resemble ineffability, since they appear to call for a more complex grammar. They also have in common that they relate to a situation in which the descriptive power of OT seems too restricted.[4]

Our answer is that at least ineffability is (by and large) related to architectural aspects of OT that are problematic on grounds quite independent of ineffability, so that ineffability needs no treatment of its own. First, the existence of "parochial" constraints cannot be denied, i.e., there are language-dependent morpheme-specific restrictions, such as the need of German -*chen* and -*lein* to be adjacent to a main stressed front vowel. The very existence of parochial constraints is incompatible with classical OT (since they are not universal) so moving them to a separate lexicon-based control component is called for on independent grounds. In this respect, we agree with many of the insights in Orgun & Sprouse (1999). Parochial constraints as a source of ineffability are addressed in section 3. They cover most (all?) cases of ineffability arising in the interface between morphology and phonology, and may be extended to some cases in syntax.

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[4]   A different, and in a sense opposite property of the grammar is its proneness to overgenerate. This is a problem which we will not consider in this paper, since it touches on an entirely different field of research from the one we are interested in here.

Second, quite a number of instances of ineffability in the syntax involve a situation in which abstract syntactic constellations simply cannot be filled by appropriate lexical items. Ineffability is due to lexical problems in this context, too, but the problems are of a different sort: they involve lexical "gaps" of a very specific type. If our solution is correct, it contributes to the still open discussion of what a syntactic input is (which is also relevant for the determination of which cases involve ineffability, and what is the proper interpretation of the term). These issues are addressed in section 4.

Section 5 is concerned with a remaining block of cases of ineffability coming from syntax: island constraints or the scope taking behavior of quantifiers. For many such cases, it can be shown that the winners of purely formal competitions are uninterpretable either in semantic or in pragmatic terms.

Solving the difficulties just mentioned (parochiality, absence of lexical items, nature of syntactic inputs) eliminates the corresponding cases of ineffability, so that ineffability ceases to be a difficulty. It is just a visible side effect of the suboptimal detail decisions made in classical OT. While the empirical scope of pure OT *is* affected by the necessary amendments, the attractive architectural properties of classical OT can be maintained for the core of the computational domain. Giving up the idea that *the best is good enough* altogether (or modifying it substantially) would leave unexplained why so many areas of phonology and syntax are completely immune to ineffability. Section 6 gives a summary and conclusion. But first, in the next section, the problem of ineffability is explained in more detail.

2.   Clarifying the concept of ineffability

Before we develop a classification of ineffabilities, the factors that determine the scope of the problem must be identified. Ignoring a possible philosophical dimension,[5] most (if not all) "meanings" can be expressed in one way or the other. Ineffability arises *relative to certain grammatical restrictions* of expression, and the concept is only useful to the extent that these restrictions can be identified. In OT, the nature of the input and what GEN can do to it define the limits of ineffability. Let us consider GEN first.

Sentence (3a) violates the (descriptive) generalizations that (a) neither *why* nor *how* may remain *in situ* and that (b) not more than one wh-word may be fronted in a question in English. (3a) is, arguably, an instance of ineffability in English, although its intended meaning *can* be expressed – not by rearranging or reshaping the morphemes in (3a), but by using a different type of construction, that is by using a paraphrase.

(3)   a.   *how did he fix the car why?
          b.   how did he fix the car, and why ?

Returning to the examples in (1c,d), it can be observed that ?*Monätchen* or ?*Europächen* are semantically irreproachable. There is no problem with the meaning of *kleiner Monat* 'small month' or *kleines Europa* 'small Europe'.

The intuition that (1c-f) and (3a) are cases of ineffability is grounded on the insight that the grammatical system does not allow an arbitrary mapping of linguistic units (phonemes, morphemes, words), of "inputs," onto well-formed linguistic expressions. GEN *can* perform a multitude of operations, but arguably it cannot do everything. For the syntax, we would grant it the capacity to arrange the words in any order, to move them from one position to another, to delete them (under certain circumstances), and to insert designated material. We want to deny it the freedom of mapping a monoclausal input onto a biclausal output, or to exchange content words (as would be necessary to relate (3a) and (3b)). In that sense, (3a) is *technically ineffable relative to a specific input* like {*how*, *why*, *he*, *fix*, *the*, *car*}, because GEN cannot map this input onto (3b).

In contrast, ungrammatical (4a) does *not* exemplify ineffability: it is just one application of deleting functional *that* away from the grammatical output (4b), and the deletion of functional material is among the operations that the generative component GEN is able to perform. (5a), however, belongs to the realm of ineffability, since we do not want to allow GEN to map a monoclausal structure onto a coordinate construction like (5b): such powerful syntactic operations have not been proposed so far – at least not outside discussions of ineffability.

(4)　　a. *who do you think that t has bought an apple?
　　　　b.　who do you think t has bought an apple?
(5)　　a. *who came why?
　　　　b.　who came, and why

Likewise, morphology should not have the power of transforming an input consisting of a noun and an affix into an output consisting of a noun and an independent adjective. In that sense, {*Europa*, *chen*} must not end up as *kleines Europa*. The same point can be illustrated for phonology. It is commonly assumed that an input consists of just a string of segments – understood as bundles of features – and that the relevant candidates consist of more or less the same segments with additional structure: prosodic and intonational structure, phonetic information, and so on. An input like /church+s/ is not ineffable since epenthesis and voicing of obstruents are permissible operations turning /s/ into [iz], but an input consisting of a certain tone sequence, like H* L*+H H⁻ L% and segmental material allowing only one syllable would deliver an ineffable output, since the tone sequence is too long to be associated with just a single syllable.

We cannot specify a complete list of "legal" operations of GEN here (or even sketch it), but we endorse a fairly conservative attitude towards the power of GEN: only well-attested operations (such as inserting or deleting a complementizer or a phonological feature) should be allowed. The choice may be crucial at certain points for the

interpretation of specific constructions, but it arguably does not affect the overall existence of the types of ineffabilities we identify below.[6]

What counts as a case of ineffability is thus a matter of the limits of GEN. The same is true for the nature of inputs – after all, it is *inputs* that are ineffable. Inputs are important for the understanding of ineffability in a very deep conceptual sense, but there is an empirical question involved, too, which we will discuss first.

The role of input choice for the nature of ineffability is less evident in phonology than in syntax, because phonology has developed a stable view of what counts as an input. For syntax, the makeup of inputs is much less clear, and this has consequences for the potential scope of ineffability.

Consider (6a) in this respect. At first glance (6a) does not seem to constitute an instance of ineffability, because its meaning can apparently be expressed by (6b). (6b) seems to be just a different way of arranging the same words. Whether this is a correct assessment or not depends, however, on the kind of information that is specified by the input. If the input of (6a) is just a Predicate Argument Structure (see Grimshaw 1997) in which *who* is the subject of *order*, and *what* is the object, the inputs of (6a) and (6b) are identical. Then, (6b) has a chance of blocking (6a) because the former respects the superiority condition (see Chomsky 1973), while the latter does not.

(6)   a. *what did who order?
        B:who ordered what?

Notice, however, that the German counterpart (7a) of (6a) *is* grammatical, and that it differs from the counterpart of (6b) in a subtle way, viz., in terms of information structure. Unlike (7b), (7a) presupposes that the wh-words are *d-linked* (see Pesetsky 1987) in the sense that (7a) is felicitous only if uttered in a context in which we know the persons that have ordered something, and in which we know what was ordered, so that we are merely unaware of the pairings. And it differs from (7b) (which also *may* have a d-linked interpretation) in terms of the sorting key (Comorovsky 1996) for the answers.

(7)   a. was   hat   wer   bestellt?
           what.acc has   who.nom   ordered
        b. wer hat was bestellt?

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[6]   Note that the view held here is wrong if the candidate set is not *computed/generated* from an input (as in Prince & Smolensky's original containment theory which we assume in this paper), but if *all* structures possibly generatable from *any* input are assessed in terms of faithfulness to a specific input (as in so-called correspondence theory). In this model, *kleiner Monat* 'small month' *is* a candidate realization of {*Monat*, *chen*} (just like the sentence *Hans liebt Maria* 'John loves Mary') because *all* linguistic structures are, and it may in fact be the optimal candidate. In such a view, there can hardly be any interesting instances of ineffability – but the problem seems eliminated at a cost: the blurring of what meaningful grammatical operations amount to.

Thus, for German the following analysis seems to be called for: (7a) and (7b) do *not* block each other because there is an input difference related to information structure such that the inputs that map onto (7a) would not map onto (7b), and vice versa.

Since OT assumes that languages may differ relative to the ranking of the principles only, and not along the lines of what may be part of an input, it suddenly appears as if the input leading to German (7a) *is* ineffable in English, since (6a) is ungrammatical and (6b) does not invite the sorting key of (7a). In addition, English *does* make use of the pertinent distinctions, as (8) illustrates; see Pesetsky (1987), among others.

(8)   a.   which wine did which man order?
        b.   which man ordered which wine?

Whether (6a) involves ineffability or not is thus not really determined by the power of GEN, but by what can and must be part of an input in a multiple question. The absence of a generally accepted concept of inputs in OT syntax thus makes it hard to decide whether a structure instantiates the ineffability problem or not.

In many cases, however, decisions concerning individual constructions may not matter too much for the development of a typology of ineffability. Consider, for example, comparative formation in English. An input consisting of the phonetic strings *intelligent* and *-er* is ineffable (unless we make the unlikely assumption that GEN can transform this into *more intelligent*), but if the input is more abstract (say, *intelligent* plus an abstract comparative morpheme), it makes sense to assume that *intelligenter and *more intelligent* are candidates in the same competition. A decision between these two options is (presumably) of relevance for the grammar of English comparatives, but less so for the theory of ineffability, because there are other cases in which phonologically definable conditions block the combination of two morphemes that cannot be explained away by using abstract morphemes (e.g., the case in (1c-f)).

Several possible formal properties of inputs have been discussed in the OT literature. In syntax, it seems obvious that the (content) words making up a sentence S must have been part of the input of S, but whether other semantic aspects of S are represented in the input is an open issue. Suppose, for example, that the intended scope of operators (such as wh-words or quantifiers) is represented in the input. The fact that some scope relation cannot be expressed in some language would then be an instance of ineffability. Encoding scope relations in an input that is itself not a hierarchical structure is a non-trivial matter, however, but assuming that Logical Form or the like is (part of) syntactic inputs implies that there is a *grammar* for constructing well-formed LFs that is not part of the syntactic evaluation (see, e.g., Heck et al. 2000). But if one refrains from representing scope relations in the input, ineffability is *not* involved when we observe that a certain scope constellation is inexpressible in a given language. In a sense, then, the attempt to understand ineffability in terms of meanings that cannot be formulated is quite misguided. Ineffability is a *formal* problem of OT; its scope is a function of the nature of the input, the nature of GEN, and the correspondence-

containment issue. Like ungrammaticality (and unlike unacceptability), ineffability is thus a theoretical concept.

3.   Idiosyncratic Troublemakers

3.1   A Lexical Control Component
3.1.1. Morphemic-dependent vs. language-dependent defectiveness

It seems safe to begin a typology of ineffability with a domain for which it is easy to identify the factor to be blamed: lexical blocking. Obviously, the input *go+ed* cannot surface because it is blocked by *went*. It is the presence of a specific lexical entry that prevents the overt realization of an input. According to Aronoff (1976), who has documented blocking for English extensively, the formation of *gloriosity and *spaciosity is blocked in (9) by the existence of the non-derived synonyms *glory* and *space*. No well-formed output corresponds to the input *glorious+ity*. We assume that this first type of ineffability can be circumscribed in more general terms as in (10).

(9)   Data from Aronoff:
various	*	variety
curious	*	curiosity
glorious	glory	*gloriosity
spacious	space	*spaciosity

(10)   Lexical specifications may cause ineffability of inputs

Lexical blocking is not the only way in which lexical specifications affect the domain of application of word formation rules. When examining ineffability as a consequence of morphemic gaps, it is useful to distinguish between two separate sources: lexical gaps touching individual morphemes and language dependent restrictions on specific operations or configurations. Morphological defectivity is an example for the first kind**.** Certain Russian verbs lack a first person singular present form (brought to our attention by Martin Haspelmath), e.g., *pobezhu 'I defeat', *pobedish'* 'you defeat', *pobedit* 's/he defeats'. Hungarian morphology does not tolerate the subjunctive/ imperative form(s) of verbs of a certain morphonological constitution (11),, although the meanings should in principle be possible (Istvan Kenesei, Péter Rebrus, p.c.). Vowel epenthesis inside of the impossible consonant sequences is idiosyncratically forbidden in these verbs, as exemplified in (11a), though it is possible in other verbs; see (11b). The relevant restrictions must be stated as properties of individual lexical items. Both the Russian and the Hungarian cases are discussed in detail by Hetzron (1975), who argues convincingly that there is no general synchronic regularity behind these restrictions on expressivity.

(11)   a.   csukl-ik 'he hiccups', *(ne) csuk<u>ol</u>-j- 'don't hiccup-JUSSIVE.', *csuklhat/ *csuk<u>ol</u>hat 'he may hiccup'
b.   zajl-ik '(river) begin to freeze' zaj<u>ol</u>-j-on 'freeze-SUBJ-3SG' ugrik 'he jumps', ug<u>or</u>hat 'he may jump'

Another case in point is the defectiveness of some verbs' paradigms, like *frire* 'to fry' or *clore* 'to shut' in French. These verbs have no first and second person plural forms, though the other forms are regular. The non-existent **nous closons/vous closez* 'we/you shut' and **nous frions/vous friez* 'we/you fry' are phonologically well formed, as similar forms *nous cuisons/vous cuisez* 'we/you cook' and *nous rions/vous riez* 'we/you laugh' testify, but are nevertheless absent from the vocabulary of most French speakers.[7] The past participle of the English verb 'to dive' seems likewise to be avoided by many English speakers, especially those who have *dove* (and not *dived*) as the past inflected form.

These examples illustrate at least one point. They show that languages may have morpheme- or language particular ("parochial") constraints,[8] and that these may lead to ineffability.

Technically, the parochial constraints might simply be part of the overall evaluation component EVAL; they might be "declared" universal. Parochiality would then manifest itself in the formulation of a constraint, or in its rank. For instance, if the constraint banning *pobezhu is part of the grammar of German, we can guarantee that it will have no effect there - either by formulating it in a morpheme-specific way so that it could not possibly apply to any input of German, or by giving it a very low rank in this language (so that it will always be overriden by other principles). This treatment of parochial constraints is compatible with the formal makeup of OT, but is certainly not in its spirit: universal principles should not be universal just because their formulation guarantees that they apply to a specific Russian morpheme combination only! A license for adding language-specific constraints (aiming at blocking the formation of just one word) to the universal set of constraints would also render OT vulnerable to the criticism that it cannot be falsified at all, since it would always be possible to make up a construction-specific constraint for a certain language, which is ranked at the bottom of EVAL in all the others. So much expressive power should not be granted.

Therefore the postulation of a *separate* component of morpheme-specific and language particular constraints *in addition to EVAL* cannot be avoided. There is a lexical control component that may rule out the realization of certain inputs altogether. Candidates that are optimal from the perspective of EVAL may fail to survive this control component, because the lexicon already specifies a simplex competitor (lexical blocking), but the control component may also specify parochial constraints that rule out, e.g., the realization of certain combinations of features for some lexical items, as

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[7]   In all the cases of partial paradigmatic defectivity of finite verbs we are aware of it is the first and/or the second person which are concerned, never the third. We assume a correlation with the markedness of persons, but do not pursue this issue here.

[8]   Restrictions may be parochial even if their effect shows up in other languages, too. The important property is that they are linked to lexical elements (and that straightforward repairs may be possible in one language, but not in others).

has been suggested by Orgun & Sprouse (1999). Both the verb defectivity and the Finnish infinitive negation are of this kind.[9]

The control component idea competes with a proposal of Prince & Smolensky (1993), who account for the ineffability arising with Latinate suffixes by making a "null parse" the winner of EVAL. They assume that the set of outputs generated by the GEN component always includes the null parse, a phonetically empty candidate. In order to work, this analysis requires a family of constraints stating that morphemes, words and other elements of the input are phonetically realized (M-PARSE: 'Morphemes are phonetically realized.') ranked below constraints eliminating all other candidates (see Orgun & Sprouse 1999 for convincing argumentation against the null parse analysis).

Since *some* examples of ineffability are due to lexical control, it is natural to attempt to capture as much of ineffability as possible in terms of this extra component of the grammar. In the following sections, we therefore extend the scope of control, and argue that its effects are not limited to morphological facts, but can also be discovered in different parts of phonology, syntax, and, most of all, in interface domains. The division our survey is based on focuses on the contrast between morpheme-dependent ineffability on the one hand, and language-dependent restrictions on linguistic structures, on the other hand. In an attempt to generalize what can be observed from the facts, the first set of cases consists of lexical gaps and restrictions on word-formation which are special to some words and morphemes, while the second set of cases block some operations in a language-specific way. No repair is allowed. The latter cases all come from quantity restrictions or limits on the associations between "autosegmental" elements, where autosegmental is understood in a very general sense. Some operations would associate too much or too few of some kinds of linguistic elements, like segments, consonants or tones.

3.1.2 Restrictions on morphemic productivity

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9   The question may arise whether the morpheme combinations implying ineffability, like *obscene+ize and *who came why, could not rather be blocked at a very early derivational stage of grammar, namely by hard constraints of UG blocking their combination. We reject this possibility mainly because it is incompatible with the *Richness of the Base* (Prince & Smolensky 1993), one of the central assumptions of OT, which posits that inputs should be free and that all inputs should be allowed to enter the grammatical competition. According to Richness of the Base, it is the task of the constraint hierarchy, thus of the grammar, to eliminate bad outputs, which means that no input can be eliminated on the basis of its ill-formedness relative to its possible output. A second problem of letting the input solution eliminate these data is that, as shown below, some of the constraints involved in ineffability, like constraints on movement and constraints prohibiting stress clash (*obscene+ize) or multiple wh-questions (*who came why), are not universally respected. The status of certain inputs could be at best decided on a language-particular basis for these examples - clearly an undesirable step, since OT claims that linguistic variation is restricted to the ranking of constraints in EVAL.

We have seen that EVAL should not be loaded with language-specific constraints, and that a control component cannot be avoided. We would like to argue that quite a number of well-known and lesser-known cases of ineffability reduce to it. Our first example, suffixation of *-ize* to an adjectival stem, has been discussed several times in the OT literature, beginning with Raffelsiefen (1996, 1998). Whereas some adjectives can be derived with the suffix *-ize* to form a verb, others cannot.

(14)   Suffixation of *-ize*
       a. rándom –> rándomìze   b. corrúpt –> *corruptize
          fóreign –> fóreignìze   obscéne –> *obscenize
          vápor –> váporìze   secúre –> *securize

Raffelsiefen argues that the position of stress in the underived adjectives is responsible for the contrast between the grammatical words in (14a) and the ungrammatical ones in (14b). In the adjectives in (14a) stress is penultimate, thus non-final, whereas in the adjectives in (14b), stress is final. The generalization arising from these data is that the suffix *-ize* can only be adjoined to a nonfinally stressed adjectives, and not to a finally stressed one. One can account for this in terms of a constraint prohibiting stress clash, since *-ize* has secondary stress. However, the relevant constraint, *STRESSCLASH, is not unviolable in English, as is also visible from words like *Chìnése*, ´*gymnàst* and the like, with adjacent main and secondary stresses (see also Kager 1999). An obvious repair to compensate for the effect of *STRESSCLASH could be to shift the stress in *obscenize*, *securize*, etc. away from the final stem syllable. Stress shift is found in numerous other instances of suffixation in English, as, for example, in the well-known pairs *átom/atómic, ínstrument/instruméntal*. The optimal candidate **óbscenìze,* the winner of the evaluation, may then fail to pass a *morpheme-specific* constraint in the control component that requires that the first syllable of a (possibly polysyllabic) adjectival stem like *obscene* must not bear main stress. If correct, this analysis also shows that the lexical control must *follow* rather than precede the selection of the optimal candidate (because otherwise, it would only lead to the failure of stress shift to apply).

The constraints relevant for the blocking of some diminutives in German, like **Monätchen* (see (1), repeated here as (15)), are violable, too.

(15)   Suffixation of the German diminutive suffixes -chen and -lein
       a. Jahr –> Jährchen 'year, dim.'
          Woche –> Wöchlein 'week, dim.'
       b. Bruder –> Brüderchen 'brother, dim.'
          Mauer –> Mäuerchen 'wall, dim.'
       c. Mónat –>?Monätchen, ?Monatchen, *Mönatchen, *Mönätchen 'month, dim.'
       d. Európa –> ?Europächen, ?Europachen, *Eurôpächen 'Europe, dim.'
       e. Wérmuth –> ?Wermüthchen, ?Wermuthchen 'Vermouth, dim.'
       f. Wódka –> ?Wodkächen, ?Wodkachen, *Wödkachen, *Wödkächen 'vodka, dim.'

The first constraint, in (16a), is NOUNSTRESSED[ü/ö/ä], which prohibits unstressed umlauted vowels (compare, however, *möblíeren* 'to furnish' with an unstressed

umlauted vowel, showing that this constraint is violable). A second constraint, ALIGNR(front), formulated in (16b), requires the association of the feature [front] with a full vowel as far to the right as possible. And FAITH(front), formulated in (16c), requires that [front], a feature intrinsic of the diminutive morphemes, be realized. As a rule, attachment of *-chen* to a finally stressed stem triggers umlaut of the stressed vowel (15a), though words with a – metrically invisible – schwa syllable between the stressed umlauted vowel and the suffix triggering umlaut are also grammatical (15b). Violations are shown in (17).

(16)   a. NOUNSTRESSED[ü/ä/ö]: Umlauted vowels are stressed

        b. ALIGNR(front): The feature [front] is right aligned in the stem.

        c. FAITH(front): The feature [front] is realized.

(17)   *Mönatchen: violate ALIGNR(front)

        *Monätchen: violates NOUNSTRESSED[ü/ä/ö]

        *Monatchen: violates FAITH(front)

In the case of *-chen*, the control component specifies that the word resulting from the diminutive suffixation must fulfill the requirements that the full vowel immediately preceding *-chen* have main stress and be umlauted. If these conditions are not fulfilled, the optimal candidate, whatever exact form it has, does not survive and the result is ineffability. Besides being a general constraint against words with the wrong prosodic structure, it also has a filtering function in that it allows some expressions like *Wermüthchen*, which is occasionally realized from *Wérmuth+chen*.[10]

   The next case of morphological defectiveness due to idiosyncratic restrictions located in the control component concerns segmental well-formedness in a small part of language-specific morphologies. There is a well-known constraint in Swedish and Norwegian morphology on adjectives like *lat* 'lazy' and *rädd* 'scared'. These adjectives cannot be used attributively with neuter nouns, like Swedish *barn* 'child' (we owe this example to Anders Holmberg and Renate Raffelsiefen). Though some authors have proposed to explain the restriction in semantic terms, it looks as if it may be more fruitful to anchor the active constraints in the phonology.[11] All forms in (18) consist of a stem plus an inflectional suffix [t]. In (18a), the morphologically correct

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[10]   The grammar of diminutive formations involves variation among speakers and gradedness of judgments to a high extent. In this sense, it involves ineffability only for those speakers of German who do not accept *any* of the options for the diminutive of *Monat* in (17) (and related cases).

[11]   It has been claimed that the blocked adjectives denote mental states. However, there are some adjectives that do not denote mental states, like *flatt* 'flat', which are nevertheless subject to the restriction in question. Conversely, *glatt* 'happy', denotes a mental state but is free to appear before a neuter noun (Viktoria Dryselius, p.c.).

forms would be *latt* and *flatt* with a geminate final consonant, which are phonologically fine (compare *het-hett* 'hot'), but nevertheless totally unacceptable when used attributively.

(18) Gaps in the neuter adjectives in Swedish
　　　　　 a. *ett latt barn [lɑːt/lat]'a lazy child'　　 en lat pojke [lat] 'a lazy boy'
　　　　　　　 *ett flatt hus [flɑːt/flat] 'a flat house'　 en flat tallrik [flat]　'a flat plate'
　　　　　 b. ett glatt barn[glat] 'a happy child'　　　 en glad pojke [glɑːd] 'a happy boy'
　　　　　　　 ett platt hus　[plat] 'a flat house'　　　 en plat tallrik [plat] 'a flat plate'
　　　　　　　 ett solitt hus [solit] 'a solid house'　　 en solid byggnad [liːd]　'a solid building'
　　　　　 c. *ett rätt barn[r t] 'a scared child'　　　 en rädd pojke [r dː]　'a scared boy'

Raffelsiefen (2002) suggests that the reason for ineffability in (18a) is that the neuter formation would imply lengthening of the final consonant and a concomittant change in the quality of the low vowel ([a] –> [ɑː]). This change, being too drastic, is avoided, and no other repair is acceptable. The fact that the change is admissible in [glat]/[glɑːd] in (18b) has to do with the independent existence of [glɑːd] as the supine of the related verb *glädja* 'to make happy'. The phonological form [lat] without gemination violates a minimality condition active in complex formations in Swedish. The ineffability visible in (18c) requires a different explanation. Here, there is a conflict between the voiced (and geminate) ending in *rätt* (as in *en rädd pojke* [r dː] 'a scared boy') and the voiceless inflection *t* which cannot be resolved. Notice that such a conflict is usually repaired in Swedish, but not in this particular morphological configuration. The explanation for ineffability is to be sought in the forbidden mapping of a particular input onto a specific surface syllable structure. The role of the control component here is to compare a surface syllable structure with an underlying segmental structure and to filter out some configurations in specific morphosyntactic structures.[12]

A last example of morphemic ineffability comes from Finnish. As Anders Holmberg points out, non-finite sentences in this language cannot be negated by using the negation word *ei* (19a), because this word **must** carry subject agreement, but cannot do so in an infinitive. One has to use an infinitival form with a suffix meaning 'without' for expressing meanings like 'I promised not to go out.' (19b). Since, obviously, *ei* does not have an infinitive form, we are again confronted with a case of a defective paradigm with consequences for syntax.

(19)　　 a. *Lupasin ei mennä ulos
　　　　　　 promised.1SG not go out
　　　　　 b. Lupasin olla menemättä ulos.
　　　　　　 promised.1SG be go-INF-WITHOUT out
　　　　　　 'I promised to be without going out'

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[12] In fact, as Birgit Alber (p.c.) suggests, the control component analysis may be considered to be strengthened if it turns out that the set of lexemes obeying the restriction must simply be listed.

3.1.3 Language-dependent Quantity Mismatches

In this section we present a second kind of morphemic defectivity, viz., ineffability of structures arising as a result of prosodic properties rendering the expression too light, too heavy, or loaded with too many association lines. In case no repair happens, we assume that here, too, the control component is at play filtering out the non-conformists.

An important source of ineffability comes from prosodic minimality (McCarthy & Prince 1995). Syllables, feet and prosodic words can be too light for some morphological or other linguistic operations, or just too light to form the relevant constituent higher in the hierarchy. In many cases, languages confronted with too light constituents use augmentation strategies (see the cases described by McCarthy & Prince 1995, like Lardil and Axininca Campa). Mester (1994) explains iambic lengthening in Latin as an instance of adding weight to syllables in order to attain well-formed feet. Iambic lengthening in general also happens for reasons of minimal weight, or amelioration of foot form (see Hayes 1995). However, in some cases, nothing can be done to augment too light constituents, and the conflict between prosodic lightness and the requirement of a minimal weight leads to ineffability.

The first case illustrating subminimality is taken from Orgun & Sprouse (1999), see also Ito & Hankamer (1989). In Istanbul Turkish, a suffixed root must be at least disyllabic, as shown by the well-formed *sol^j-yim* 'my G (musical note)'. If the result of suffixation would be monosyllabic, it cannot apply and the intended meaning is ineffable. This is shown by **do-m* in (20b).

(20)   Root   Suffixed form (minimum)
        a. sol^j 'musical note G'   sol^j-yim   'my G'
        b. do   'C'   *do-m   'my C'
        c. it   'dog'   /it + m/ itim   'my dog'

Repair of subminimal roots by epenthesis is not possible in (20b), though epenthesis is an option in other formations, as for example in (20c). The difference between the ineffable and the licit cases is that the epenthetic vowel in *itim* does not trigger a hiatus, while it would do so in the case of *dom* (**doum*). Epenthesis at the edge of the word is also impossible because of unviolable alignment constraints, which means that forms like **idom* or **domi* are also excluded.

Another related case is the fact that some words escape augmenting altogether, though their phonological structure would allow augmenting, for instance by lengthening a short vowel. In many cases, there exist suppletive forms (simple clitics vs. special clitics). But in some cases no suppletion is available. As a case in point, consider the pronoun *es* 'it' in German, which avoids stressing and even positions requiring a certain amount of stressing as a consequence of being a phonological phrase, and thus a foot: **Es habe ich gesehen* 'It I have seen' with topicalized *es* is not grammatical. A demonstrative can be used instead, *Das* ('that') *habe ich gesehen*, but one can question whether pronouns and demonstratives are competitors in a single evaluation.

These two cases of subminimality belong to the realm of control, since the grammars of the languages under consideration in principle allow the required operations to obtain minimality. In German, pronouns usually have at least a strong and a weak form (*ihn* '3.sg.acc' is [iːn] or [ən] for instance), and the strong form is used for topicalization, since topics must be at least a foot (*Ihn habe ich gesehen* 'Him I saw' is perfect). The prohibition against topicalizing *es* is thus special to this pronoun, and is not a consequence of the grammar of German as a whole. Thus we attribute the task of rejecting an augmented form of *es* to the control component.

So-called templatic morphology provides further interesting cases that may be handled via lexical control. Consider the following fact mentioned to us by Rachel Walker and discussed in Rose (1999). In Chaha (Ethio-Semitic), frequentative verbs have the following shape with four consonants: CɨCVCəC. When the consonantal root has three consonants, the second one is copied to fill the extra C slot, as shown in (21a). In the case of diliteral root verbs, as in (21b), there is no grammatical output, because no tri-linking or no double copy of Cs is allowed.[13] As a result, one of the C slots cannot be filled, and there is a failure to form frequentative verbs. This is also true of quadriliterals, but for a different reason. Here, the frequentative is indistinguishable from the regular form. Again, no repair applies. Notice that the failure of diliterals to form frequentatives is not a universal restriction, since tri-linking of Cs is possible in related languages, like in Tigrinya, as shown in (22).

(21) Frequentatives in Chaha

	Root	Regular		Frequentative	
a.	sbr	sabərə	'break'	sɨbəbər	'break in pieces'
	mzr	mezərə-m	'count'	mɨzəzər	'count again'
b.	nd	nədəd	'burn'	*nɨdədəd	'burn again'
	t'm	t'əməm	'bend'	* t'ɨməməm	'bend again

(22) Frequentatives in Tigrinya

	ħt	ħatət	'ask'	ħatatət	'ask many people'
	k'd	k'ədəd	'tear'	k'ədadəd	'tear again'

In the case of Chaha, the control component must posit that even though outputs like [nɨdədəd] are optimal, they do not pass the language-specific filtering restriction against tri-linked consonants.

Wellformedness gaps in the paradigms of some morphemes can be language-specific or morpheme-specific. The metrical restrictions involving words derived with -

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[13] According to Sharon Rose (p.c.), this is a very general restriction in Chaha. For example, there are no quadriconsonantal verbs of the type 1333, but there are verbs of the type 1234, 1233 and 1212 (the numbers refer to root consonants).

ize or *-chen* are clearly morpheme-specific, since other affixes tolerate stress clash in English or the absence of a trochaic structure in German. In Chaha, as in the Turkish example involving subminimality, ineffability arises as a consequence of *global* restrictions holding in the language as a whole. The templatic and metrical conditions blocking the formations of *nɨdədəd and *do-m have consequences on the formation of the words which *should* violate them in order to be formed. Instead of being repaired, these words simply do not exist. The constraints in question do not have to be expressed as lexical properties on independent grounds – but they can be so (when one takes CV-templates as lexical elements). It is advantageous to do so because it allows us to capture the pertinent cases of ineffability in terms of lexical control as well.

   The domain of the control component can in this sense be extended to tonal morphemes. As Pierrehumbert & Hirschberg (1990) have shown for English, the melody of a sentence – its tune – is the result of the individual tones composing it. A tune is like a sentence, but the set of legal tunes is highly constrained and lexicalized. It has a meaning derived compositionally from the individual morphemes, the tones (Bolinger 1958). The tune and the tones are realized on words, syllables and segments. Given the intonational facts and the prosodic constituency, one can reasonably expect that all well-formed tonal sequences can be realized on all well-formed segmental strings, where "well-formed" means large enough to form a tonal domain – a bimoraic syllable, since this is the minimal foot, and by extension, the minimal Phonological Phrase and Intonation Phrase. This prediction is, however, not always borne out. A first case of tonal ineffability comes from Standard German, where a fall-rise pattern on a syllable with just one moraic sonorant is grammatical (23c) but a rise-fall is not, as shown in (24c) (Féry 1993). Fall-rise and rise-fall are complex tonal movements consisting of three tones, HLH and LHL. Both a fall-rise and a rise-fall pattern are perfect when realized on more than one syllable, as shown in (23a) and (24a). In fact, the pattern is perfect even when associated with a syllable consisting of two sonorant moras, like a long vowel, as shown in (23b) and (24b). In this case the meaning of the fall-rise in (23b) is slightly different from the one intended in (23a): it is mildly menacing, which it is not in (23a). Complex tones on short segmental strings tend to have idiosyncratic meanings – a fact which could be interpreted as ineffability, since the compositional meaning is then no longer expressible.

Conceivable repairs (truncation of one of the tones, lengthening of the vowel or syllable reduplication) are just unavailable. The fact that the fall-rise is possible on one mora shows that ineffability is at play in the case of the rise-fall. It is not the three tones which are not realizable, but the three tones in a certain combination.

(23) Fall-rise

	HL	H	HLH	HLH
	\∨	|	\∥/	\∥/
	a. Wo hast du den WAgen geparkt?		b. Du!	c. (Du bist) fit

(24) Rise-fall

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              LH        L         LHL              LHL
              \/        |         \|/              \|/
    a. Wo hast du den WAgen geparkt ?      b. Du!      c. (Bist du)*fit
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Even more intriguing are the cases described by Gussenhoven & van der Vliet (1999). In the Venlo dialect of Dutch, a configuration consisting of a fall-rise with four tones is well formed (25b), but one consisting of only three (25a) is not. In the examples, [] are Intonation Phrase boundaries, and {} are utterance boundaries. H* is the pitch accent associated with the accented syllable, L_i is a low boundary tone for an Intonation Phrase and H_u a high boundary tone for an utterance.

(25)   a. {[ɪs tɛt ənə be: ʀ]}   'Is it a bear?'   b. {[ɪs tɛt be: ʀ] }   'Is it beer?'
            | \| | | \ | |
            H*$L_i$$H_u$ H*LL$_i$$H_u$

Venlo Dutch is a language with two lexical tones, accent I and II. The sequences of tones H*$L_i$$H_u$ and H*LL$_i$$H_u$ are the expected ones for a plain question for accent I and accent II, respectively, given the compositionality of the tunes, but the former sequence is ineffable. The tone-bearing syllable [be:] with the tonal configuration given in (25a) for accent I would be undistinguishable from the one in (25b) for accent II, an intolerable situation. The speakers react by refusing to realize (25a), and replace the tone sequence with a different one, called the 'Surprised Question,' which is otherwise part of a different paradigm. We conclude from this that the tone sequence for a normal question including an accent I, though optimal, is rejected by the control component because it falls together with another well-formed tune with the same meaning. This effect can be compared to what was said for derived nouns like *gloriosity*, which were eliminated by control because their meaning would fall together with an existing simple noun; see the generalization in (10). In other words, it is not the meaning expressed by a certain sequence of tones which is ineffable, but the sequence of tones itself.

We stipulate that the control component not only verifies 'ordinary' morphemes and words, consisting of strings of segments, but also lexicalized tunes and tonal morphemes, consisting of strings of tones. When the tonal composition of a tune does not conform to the requirements of the language or when the tonal configuration is already occupied by a similar tune, the candidate is rejected and ineffability of the input is the result.

3.2   Preliminary Summary

It is a truism that the lexicon can specify a number of idiosyncratic properties for individual morphemic items, as well as the way they combine with each other. These constraints seem to be arranged as a lexical control component that is imposed on the optimal candidates computed by EVAL. In other words, the outputs of the standard OT grammar are not automatically grammatical. They have to be checked by the lexical control component, which can block the optimal candidate because of incompatibility with specific constraints. The result yields grammaticality or ineffability. Many examples of ineffability related to phonological properties reduce to lexical control.

If our survey of ineffabilities is representative, one can even claim that *all* instances of phonology-controlled ineffability stem from the lexical control component. When no lexical factors are involved, phonology does *not* seem to run into the ineffability problem – with the possible trivial exception of unpronounceable segment sequences. There are no cases of ineffability we are aware of that arise because a principle of *automatic* phonology (say, syllable formation) leads to ineffability because of a conflict with a further principle of the same component. For automatic phonology, the predictions of OT seem realized *in toto*: the principles are universal (because they relate to markedness considerations), and conflicts are always resolved in a way that yields a winning structure that can be spelt out. It is only parochiality that may lead to ineffability; phonology-related ineffability stems from the control component. It remains to be clarified how the control component is organized, an issue we will not take up here. In particular, we have made no effort to explain the difference between morphological defectiveness, as illustrated by the examples discussed briefly for Russian, Hungarian and French, and paradigmatic ineffability concerning classes of morphemes, on the one hand, and language-wide quantity mismatches, on the other hand. In a more elaborate proposal, the role of Control should be clarified, since it has the power to eliminate linguistic structures on the basis of a whole array of criteria. Different modules of grammar will participate, and in some cases work together, to eliminate the ineffable candidates. For syntactic and semantic restrictions that may be specified in the lexicon, the picture is even less clear, though it is a natural consequence of our approach that control might be expanded to cover some of these cases as well, as the next sections illustrate.

3.3   Combinatory Control Constraints?

The combinatorial aspects of morphology (or syntax) seem to provide some obvious examples of ineffability caused by lexical control. For instance, the well-formedness of combinations of stems with affixes depend on arbitrarily defined declensional classes. Illegal combinations seem hard to block in terms of GEN (after all, inputs should be freely selectable, and GEN should at least be able to conjoin two elements![14]), while selectional statements linked to individual morphemes according to class can filter out unwanted combinations easily.

In German, a handful of verbs like *uraufführen* 'to premiere' or *voranmelden* 'to pre-register' composed of a verbal stem and *two* particles cannot be used in a matrix clause

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[14]   Our conclusion would be incorrect if the combinatory power of GEN is sensitive to the subcategorization requirements of morphemes, such that A can be conjoined with B only of A selects B or vice versa (as proposed, e.g., by Stabler 1996, or as is true of HPSG). In such a model, GEN would *fail* to apply to certain inputs. There are no a priori reasons against this view, to the extent that these models of merging elements are motivated (rather than the more familiar ones). Interpreting core selection requirements as principles of EVAL is, however, unconvincing, since they are never violated in any language.

in the present and past tenses (26)[15]. This behavior is due to the fact that finite verbs must be placed into second position matrix clauses, and that verbal particles must be stranded in this process according to certain conditions involving stress. Stressed particles are stranded (compare *dass er heute an-fängt* 'that he today begins' with *er fängt heute an, *er anfängt heute*), while unstressed ones are pied-piped (compare *dass er heute ent-flieht* 'that he today escapes' with *er entflieht heute*, *er flieht heute ent*).

(26)   a.   dass wir das Stück ur-auf-führen
                      that we the play ptc-ptc-lead
                      'that we premiere the play'
     b.   *wir uraufführen das Stück
     c.   *wir aufführen das Stück ur
     d.   *wir führen das Stück urauf
     e.   *wir urführen das Stück auf

Although *ur* never actually appears in a stranded position, it can be argued that this particle would have to be stranded according to the general laws of German. *Ur* bears stress, to which strandability is linked. Furthermore, the placement of the infinitive morpheme *zu* in *uraufzuführen* and the placement of the *ge-* prefix of the participle in *uraufgeführt* implies that *urauf* involves strandable material. From these considerations, it follows that (26d) *is* the winner of the competition between (26b-e), but is blocked in a control component that requires that *ur* must be phonetically adjoined to a verbal category. There seems to be no alternative to this treatment, in particular because the rare examples of verbs that involve only *ur* (*urzeugen, urformen*) show exactly the same stranding difficulties. The principled case for the existence of lexical control effects in the syntax has thus been made.[16] While there are, thus, instances of lexical control effects that go beyond mere phonological consequences, it seems that not all lexicon-related instances of ineffability in syntax are control based. We show this for a particular aspect of lexical features here, and return to the general point in section 4.

One of the properties that must be specified with particular lexical entries is non-structural exceptional Case. German transitive verbs assign accusative case to their objects, but some are constructed with the dative (*helfen* 'help') or the genitive (*gedenken* 'commemorate'). Likewise, *gefallen* 'please' requires a dative object. It is a commonly held view that this lexical specification leads to ineffability problems in a

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[15]   For those speakers who allow *do*-periphrasis, the situation in (26) does not necessarily lead to ineffability.

[16]   Perhaps an account of this sort can be extended to verbs such as *voranmelden* ('pre-register', lit.: 'pre-at-report') or *vorauswählen* ('pre-select, pre-from-choose') as well. They share the problem exemplified in (26), although they involve two particles that actually occur in stranded positions (*wir buchen den Flug vor* 'we book the flight pre-, we pre-book the flight' and *wir melden ihn an* 'we report him at-, we register him'). If syntax offers only one slot for a stranded particle, the candidate picked by EVAL would strand *vor* and pied-pipe *an*, and this may be in conflict with a lexical requirement that forces the splitting of stressed particles.

number of circumstances. The examples in (27)-(29) contrast the grammatical potential of *unterstützen* 'support' (with a regular case marking frame) with that of *helfen* and *gefallen*.

(27) a. die Unterstützung der Inder
           the supporting of-the Indians (Indians can be understood as agents or patients)
     b. das Helfen der Inder
           the helping of-the Indians (agent interpretation only, no patient reading)
     c. das Gefallen der Mädchen
           the pleasing of-the girls (girls can be understood as theme only, no experiencer
           reading)

(28) a. die unterstützbaren Völker
           the support-able people
     b. *die helfbaren Völker
           the help-able people
     c. *die gefallbaren Männer
           the please-able men

(29) a. es ist wunderbar, unterstützt zu werden
           it is wonderful supported to be
     b. *es ist wunderbar, geholfen zu werden
           it is wonderful helped to be
     c. *es ist wunderbar, gefallen zu werden
           it is wonderful pleased to be

In a nominalization of *unterstützen*, the genitive may either correspond to the subject or the object of support. With *helfen* and *gefallen*, the genitive is related to the subject only, so that there is no nominalization option including the underlying object of the verb (27). *Unterstützen* can enter the *-bar* adjectivization process, while *helfen* and *gefallen* cannot (28). Finally, the passive of *unterstützen* may appear in a control infinitive, while this is not true for *helfen and* gefallen (29).

What do these examples have in common? In all the constructions, the object argument of a verb must appear in a Case context different from the one it would have in a VP. In German nominalizations, only genitive may be assigned to objects (unlike what holds in, e.g., Russian, Polish or Icelandic). In a control infinitive, the highest argument of a predicate must not be realized overtly at all; in particular, it cannot be realized with dative case (it realizes a "null case," if one wishes to follow Chomsky 1995). Finally, in a *-bar* construction, the object argument of the verb is the only argument of the adjective ("X is supportable" means "someone can support X"), and it is again not linked to an overt noun phrase at all (but perhaps to a silent noun phrase with nominative or null Case; see Fanselow 1986, among many others). The data in (27)-(29) illustrate a crucial assumption Chomsky (1981) makes for exceptional case: the argument place linked to it *must* be realized with that Case; if it cannot be, ungrammaticality (ineffability) arises.

Ineffability in (27)-(29) could then be captured by the control component as follows. For (27), GEN would generate several structures with different cases appearing on the object of the noun (*das Helfen die Inder, das Helfen der Inder, das Helfen den Indern* 'the help the.CASE Indians', with CASE being accusative, genitive, and dative, respectively) from which EVAL selects the genitive option, because in German nouns tolerate only genitive complements. The optimal syntactic representation *das Helfen der Inder* then fails to successfully pass the lexical control component, because *helf* bears a lexical case selection requirement. There is no option for interpreting an NP as an object of *helf* unless the NP bears dative Case. The winner of the syntactic competition does not meet this requirement, and is therefore ruled out. Similarly, we can argue that the object argument of *helf* is realized with nominative/null case in the best syntactic structure in (27)-(29), which therefore also violates the lexical control statement in question.

This control-based explanation is confronted with some problems, which are conceptual and empirical in nature. On the conceptual level, it seems true that *ineffability* arises because of a lexical specification of the relevant verb, but it is not clear whether the crucial factor is lexical pre-specification as such. Lexically specified genitives and PP-objects, on the one hand, and datives, on the other, show a different behavior in certain contexts (see, e.g., Fanselow 2000). While none of them can be promoted to subject position in a passive, and none of them may correspond to a genitive in a nominalization, genitives and PP-objects may give way to clausal complements if that makes sense semantically, while dative DPs can never do so:

(30)   a. er beschuldigt ihn des Mordes
                he accuses him.acc the.gen murder
           b. er beschuldigt ihn, dass er Maria getötet hat
                he accuses him that he Maria killed has
           c. das entspricht nicht der Wahrheit
                that corresponds not the.DAT truth
           d. *das entspricht nicht dass 2 + 2 vier ist
                that corresponds not that 2 + 2 four makes

It may not be too difficult to encode the difference between the dative and genitive, but the differences in acceptability among the constructions in which a lexically governed genitive fails to show up may be harder to express: if lexical control requires a genitive to be present, it is unclear how (30b) can pass this filter.[17] The unavailability of (30d) then suggests that a *further* factor blocks the replacement of datives, and indeed, *regularly* assigned datives (showing up on second, indirect objects) fail to pass the tests in (27)-(29), too. This fact is usually overlooked in discussions of the behavior of exceptional datives, because direct objects (always present when there is an indirect object) have privileged access to the relevant positions in (27) - (29). Consider (31), which involves the two-object verb *vorstellen* 'introduce': only the accusative, and not

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[17]   If the lexical requirement is: *noun phrase complements* must have genitive case, then a description for (30b) might be at hand.

the dative argument, may correspond to the unexpressed argument of a passive control infinitive

(31)   a. es ist wunderbar, dem Kind vorgestellt zu werden
               it is wonderful, the.DAT child introduced to be
         b. *es ist wunderbar, das Kind vorgestellt zu werden
               it is wonderful, the.ACC child introduced to be

The failure of indirect objects marked with regular dative case to alternate with null positions in an infinitive, with nominatives in the passives, or with genitives in nominalizations may be due to privileges of the direct object, but the perspective may also be changed: the direct object has its privileges because datives cannot alternate as such, irrespective of whether they are regularly governed or not. The pertinent principle that requires the overt realization of a dative feature has been proposed in a number of approaches, but it can hardly be linked to a lexical control component (see section 4 for more details). Furthermore, some datives alternate in Icelandic nominalizations, as Maling (2001) shows, and she stresses the fact that accusative noun phrases with a thematic role corresponding to that of an exceptional dative also often fail to alternate, so that a thematic component may be involved, too. Therefore, it seems fair to say that a lexical control account of (27) - (29) would fit commonly held beliefs concerning the role of idiosyncratic case assignment, but these may very well be wrong, rendering the impact of lexical control for the syntax of Case in these structures non-existent.

3.4   Lexical Effects related to Semantics

Let us now turn to the role played by semantic specifications. Word formation is often restricted along semantic dimensions. Productivity constraints on *-bar* '-able' suffixation are not confined to Case mismatches. Regular transitive verbs can be transformed into adjectives by adding *-bar* (28a), but such structures are blocked when the verb is intransitive, as in (32).

   (32) *existierbar, *telefonierbar
             exist-able, phone-able

(32) may easily be explained by assuming that *-bar* comes with a lexical sub-categorization that blocks structures in which it is not a sister of a transitive verb. Thus, the restriction on productivity may be expressed in terms of lexical control. The restriction in question is not a syntactic one, since, arguably, the words in (32) are semantically ill formed (but perfect from a grammatical point of view): *-bar* is, semantically, a function that maps two-place relations onto one-place-properties. In this sense, the lexical specification of *-bar* is predictable, but this does not exclude it from figuring in the control component. Mediated by subcategorization statements, semantic restrictions may exert an influence on grammaticality in the control component.

Consider, finally, a restriction on expressivity that arises in the dialects of some (but not all) speakers of German that is due to the non-existence of a sex-neutral gender for

human nouns (the example was suggested by Ede Zimmermann, p.c.). Since the masculine gender is the default in German, (33a) is ambiguous: under one reading, Hans is the best among all dancers, and under the other, he only excels among the male dancers. For many speakers of German, this ambiguity disappears in case of a female subject: (33b) means that none of the males and females has a better dancing record than Maria, while (33c) does not compare Maria to male dancers.

(33) a. Hans ist der beste Tänzer
         Hans is the.MASC best dancer
      b. Maria ist der beste Tänzer
         Maria is the.MASC. best dancer
      c. Maria ist die beste Tänzerin
         Maria is the.FEM best dancer+fem

Other speakers of German have no way of expressing the proposition that Mary is the best among *all* dancers. For them, (33b) is ungrammatical, while they share with the former speakers the intuition that (33c) compares Mary to female dancers only.

The grammatical difference between the two systems is obvious: in the restrictive dialect, subjects and predicate nouns *must* agree with respect to gender, while in the liberal dialect, they do not have to. In the liberal dialect, the gender feature of *Tänzer/in* is visible for agreement within the DP only; a sentence such as *Hans ist die beste Tänzerin* would thus be well formed but gibberish. In the restrictive dialect, the gender feature *is* visible for agreement in general, so that (33b) is ungrammatical while (33c) is well formed. In a simple account, the two forms *Tänzer* and *Tänzerin* take part in *one* competition (the input contains an abstract version of the two only), and (33c) *blocks* (33b). If the *-in* morpheme is inherently linked to a [+female] component in its semantic representation, ineffability of the more general predication results. Note that there is a lexical component involved in this set of data, but it does not involve lexical blocking in the strict sense.

In this subsection, we have considered various possible effects of a lexical control component in those aspects of morphology that do not relate to phonology, but to interpretation. Not unlike what we have seen for the syntax, there are quite a few domains in which effects related to individual lexical entries lead to ineffability, but as in syntax, in many of these cases an account invoking lexical control does not really appear convincing. Rather, many productivity restrictions seem to involve the following scenario: By formal optimization, a certain complex morphological structure arises, but this morphological structure finds no interpretation. The formally optimal arrangement of the morphemes is incompatible with the sortal requirements they come along with.

4.   Syntax, the Lexicon, and the Donkey

In a pre-theoretic sense, the identity of the violation profile of two otherwise optimal candidates might also result in ineffability. The grammatical system might be in a situation comparable to Buridan's donkey which could not choose between two equally

good options. This section presents a number of constructions that might be cases in point, and argues that here, too, the lexicon is involved.

4.1   The Data

4.1.1. Agreement Problems

As a first example, consider constructions involving the disjunction and conjunction of noun phrases. Here, insurmountable problems for linguistic expression may be created when *NP₁ conj NP₂* is required to agree with the verb, as the following examples from German (34a,b) illustrate.

(34)   a. ich oder du   *kann/*kannst/?können kommen
            I   or   you   can.1SG/can.2SG/can1.PL come
        b. ich und ihr   *irre/*irrt/*irren   *uns/*euch/*sich/*mich
            I   and you.PL err1SG/2PL/3PL   refl.1PL/2PL/3SG-PL/1SG
        c. Hans   und Maria   irren   sich
            Hans   and Maria   err.3PL refl.3PL
            'John and Mary are wrong'

Natural languages treat person and number agreement differently. In contexts where agreement is "impoverished," the two systems need not go hand in hand (see Samek-Lodovici, this volume). Unless there is an overriding exceptional specification in the lexicon (such as for *scissors* or *police*), number agreement is based on meaning. It is easy to see why *Hans und Maria* 'Hans and Maria' triggers plural agreement in (34c) although neither part of the conjunction has a plural feature. A simple "ontological" computation yields the result that "Hans and Maria" denotes a plural entity. The coordination of 3rd person noun phrases never seems to lead to ineffability (with respect to number).

    The situation is different for person or gender. There is no natural computation of what the result of combining a 1st and a 2nd person noun phrase is. Thus, the conjoined subjects in (34a) and (34b) do not have a person feature the verb could agree with. All 1st and 2nd person verb forms are equally good (or bad). No decision can be made, and ineffability arises. If a language has a gender agreement system (as Polish does), similar problems arise when masculine, feminine or neuter noun phrases are conjoined.

    One may wonder whether (34a,b) really exemplify ineffability. If (34a,b) and (35a,b) have the same input, one might, e.g., follow standard generative practice and assume a transformation of conjunction reduction that maps NP1 VP and NP2 VP onto NP1 and NP2 VP. If this transformation is optional, the following description seems plausible: since there is a grammatical path linking (35a,b) with (34a,b), the corresponding structures compete with each other. Clausal coordination would win over phrasal coordination whenever a serious agreement problem in the latter was possible. However, expressions of the type exemplified in (34a,b) cannot be linked to clausal coordination in general. It is well known that the conjunction of noun phrases

cannot always be explained in terms of reduced sentential coordination (see (36a,b)), and agreement conflicts arise in the latter type of conjunction, too (36c,d).

(35) a. ich   kann kommen,   oder du   kannst kommen
          I   can   come,   or   you can   come
      b. ich   irre   mich und ihr   irrt   euch
          I   err   refl and you.pl err   refl.
(36) a. Hans   und Maria   ähneln   sich
         Hans   and Mary   resemble   each other
      b. Hans   ähnelt   sich   und Maria   ähnelt   sich
         Hans   resembles himself and Mary   resembles herself
      c. ich und ihr   *ähnelt/*ähneln *uns [18]
         I   and you.pl resemble   refl
         'I and you, we resemble each other'
      d. ich ähnle   mir,   und ihr   ähnelt   euch
         I   resemble   myself   and you   resemble   yourselves

This type of agreement conflict leads to less drastic consequences when the competing forms happen to have the same phonological shape, as (37) shows. While no solution exists for the problem of identifying the proper abstract grammatical form of the verb in (37a), the conflict does not matter in (37b). Presumably, this is the case because whatever way the conflict would be resolved in, the phonetic form is the same: *werden* is appropriate for 1st *and* 3rd person plural subjects[19].

(37) a. wir oder ihr   *werden/*werdet   das Rennen   gewinnen
         we   or   you will.1pl/will2.pl   the race   win
      b. wir oder die   Hunnen   werden   das   Rennen gewinnen
         we   or   the   huns   will1pl/3.pl the   race   win

4.1.2. Case Problems

Problems similar to the ones discussed in the preceding subsection can be expected to arise for Case, as well. Indeed, it is easy to identify structures which are ungrammatical because multiple Case requirements cannot be met at the same time. Recall, for example, that control infinitives cannot be formed in German with verbs that have no

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[18]   If a sentence like (i) involving left dislocation of the subject and resumption by a simple 1st person pronoun is in the same candidate set as (36c), the latter construction also does not exemplify ineffability.
       (i)   ich und ihr, wir ähneln uns
             I and you, we resemble each other
       In general, as we have pointed out above, a liberal concept of what GEN can perform may render certain cases of ineffability non-existent.

[19]   We take (37b) here to be not only *acceptable*, but also *grammatical*. There is some experimental evidence, however, for the existence of "illusions of grammaticality"- some syntactic violations may fail to be detected, at least in speeded grammaticality judgment tasks, because the offending factor is not marked visibly. (37b) might, in principle, involve such an illusion of grammaticality, too.

nominative argument. This is due to the fact that infinitives **must** have a nominative null subject. Thus, PRO must be nominative in (38), which is incompatible with the fact that it also has to meet the lexical Case requirements (dative) imposed by *helfen*. We have discussed such data in the context of lexical control without presenting a final solution.

(38)   *es ist   wunderbar PRO geholfen   zu   werden
          it is   wonderful   helped   to   be

Case problems do not seem amenable to a treatment in terms of lexical control, at least not in general. Sometimes, ineffability arises even if no violation of lexical Case requirements is incurred. Free relative clauses (see also Vogel, this volume) are particularly prone to fall victim to the type of problem we are focusing on . Consider the dialect of German spoken by one of the authors (but consult Vogel for a detailed description of other dialects). Free relative clauses preceding the verb are fine as long as the Case requirements of the matrix clause and those of the relative clause are identical. Therefore, the examples in (39) are fine.

(39)   Free relatives
         a. Wer   ihn kennt, liebt   ihn
            who.nom him knows loves   him
         b. Wen   er   kennt, liebt   er
            who.acc he   knows loves   he

When the Case required by the matrix sentence and the case of the relative pronoun disagree, as illustrated in (40), ineffability[20] arises in this dialect because of the case conflict. The wh-pronoun in (40) has to bear accusative Case because it is the object in the free relative. Thus, the form *wen* is expected. But since the free relative is the subject of the matrix sentence, nominative *wer* is expected, too. Ineffability is the consequence of case incompatibility:

(40)   Case conflict in free relatives

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[20]   If simple topicalization and left dislocation are part of the same competition (as Ralf Vogel suggests), (40a) is not ineffable since it can be expressed as (i). Left dislocation could not help in all cases, however, for example, not when the free relative is part of a movement island (iii-iv). Here, one would have to shift over to headed relative clauses. A GEN component that may lead to either (iii) or (v) from the same input seems too powerful to us, a position not shared by Vogel.

(i)   Wen er kennt, der liebt ihn
        who.acc he knows this.nom loves him.acc
(ii)   es ist egal, wen damals nur wer Bücher kaufen wollte fragen musste
        it is equal who.acc then only who.nom books buy wanted ask must-ed
        'It does not matter who those who wanted to buy books had to ask then'
(iii)   *es ist egal, wen damals nur wem Bücher fehlten fragen musste
        it is equal who.acc then only who.dat books lacked ask must.ed
(iv)   *wem Bücher fehlten, es ist egal, wen damals nur der fragen musste
(v)   es ist egal, wen damals nur der fragen musste, dem Bücher fehlten

  a. *Wen   er   kennt   liebt   ihn/*Wer er kennt liebt ihn
      who   he   knows   loves   him
  b. *Wer ihn   kennt   liebt   er/*Wen ihn kennt liebt er
      who   him   knows   loves   he

Similar Case incompatibilities arise in parasitic gap constructions, and with across-the-board movement. They may imply ineffability[21] in some, but not all languages and dialects (as pointed out by Alec Marantz). German *lieben* 'love' and *unterstützen* 'support' govern accusative Case, while *helfen* 'help' assigns dative Case (see above, and the contrast between (41a,b)). In a parasitic gap construction as illustrated in (41c) a single phrase that has undergone movement (*wen*) corresponds to two argument positions: the object slots of the main and the adjunct clause verbs. In one dialect of German, the construction is well formed only if the Case requirements of the two verbs are identical. In this dialect, there is a sharp contrast in grammaticality between (41c) and (41d). When the two clauses in question are conjoined, the construction may involve so-called across-the-board movement (41e),[22] which is again bound by a same-case-requirement.

(41) a. wen   liebt   Maria
          who.acc   loves   Maria
          'Who does Maria love?'
      b. wem   hilft   Maria
          who.dat   helps   Maria
          'Who does Maria help?'
      c. wen   hat Maria   ohne e zu lieben t   unterstützt?
          who.acc has Maria   without to love   supported?
          'Who did Maria support without loving?'
      d. *wem hat   Maria   ohne e zu lieben t geholfen?
          *wen hat   Maria   ohne e zu lieben t geholfen?
      e. wen   hat Fritz t geliebt und Maria   t unterstützt
          who.acc has Fritz loved   and   Maria   supported
      f. *wen hat   Fritz t   geliebt und Maria t geholfen
          *wem hat   Fritz t   geliebt und Maria t geholfen

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[21]   All parasitic gap constructions have a counterpart in which the parasitic gap is replaced by a personal pronoun. If structures involving gaps compete with those involving no gap (as in Pesetsky 1998), the data discussed above fail to involve ineffability.

[22]   As in the case of agreement in reduced coordinate structures, it should be pointed out that full clausal conjunction and reduced structures do not always have the same meaning, e.g., when quantifiers are involved (compare (i) and (ii)). The ineffability problem exemplified by (41f) can thus not *always* be avoided by using unreduced sentential coordination
      (i)   wen hat keiner geliebt und geküsst
            who has nobody loved and kissed (request for identifying {x: nobody kissed and loved x}
      (ii) wen hat keiner geliebt und wen hat keiner geküsst (request for identifying {x: nobody kissed x} U {x: nobody loved x})

The Case problem with free relative clauses crucially involves phonetic shape again: When the Case *forms* of the two cases assigned to the relative pronoun are *phonetically* identical, the structure is grammatical, in spite of the *syntactic* Case conflict:

(42)   was   du   vorschlägst   überzeugt mich nicht
         what   you propose   convinces   me not
         'I am not convinced by what you are proposing'

Was receives accusative Case from *vorschlägst*, and is the nominative subject of *überzeugt* at the same time. The ensuing Case conflict in free relative clauses thus implies no *syntactic* problem – rather, we get ineffability whenever the lexicon does not provide a form for the apparent winner of EVAL, viz., a structure in which the relative pronoun bears *two* Cases.

Since it involves a free relative clause, too, the following example suggested to us by Fabian Heck may have the same structure. The construction of an ineffable structure goes as follows: There are contexts in which preposition stranding is impossible in English (Bresnan & Grimshaw 1978):

(43)   a. I'd like to know in what manner Dickens died
         b. *I'd like to know what manner Dickens died in

Free relative clauses such as the one in (44) disallow the pied-piping of a preposition, for example, because the selectional requirements of the matrix verb must be met.

(44)   a. I'll reread whatever paper John has worked on
         b. *I'll reread on whatever paper John has worked

When both constraints have to be met at the same time, ineffability arises:

(45)   a. *John will describe in whatever manner Dickens died
         b. *John will describe whatever manner Dickens died in

This is reminiscent of the problem exemplified in (41), and a lexical control solution suggests itself. Note that the optimal candidate should be one in which the selectional requirements of the matrix predicate *and* of the embedded predicate are met, and this is the case in a preposition stranding context. Thus, (45b) should be the winning candidate. What is wrong with this structure is that *die in* does **not** allow preposition stranding. One possible account of strandability involves the incorporation of the preposition into the verb (see, e.g., Baker 1988 and Müller 1995 for discussion), and the item *die in* may be blocked lexically. If this solution turns out to be untenable, the construction can be integrated into our account for (41).

4.2   A Lexicon Based Solution

The examples discussed in the preceding subsection have one property in common: It seems that certain elements (a verb, a relative pronoun) need to meet requirements concerning the same dimension which are imposed by two different elements, H_1 and H_2, in the structure. Whenever the requirements are incompatible, one seems confronted with a situation in which two candidates, C_1 and C_2, do not differ from each

other except along the dimension coming from the constraint P, which requires that any candidate should meet the requirements of H_1 and H_2. C_1 respects P relative to H_1 and violates it with respect to H_2, and the situation is the reverse with C_2. Thus, since the constraint P is the same in H_1 and H_2, the two candidates appear *prima facie* to have an *identical* constraint violation profile.

In a closer examination, however, it is highly unlikely that the candidates considered above really have an identical violation profile. Consider the free relative clauses in (47). (47a) respects a nominative requirement but fails to respect dative government by *hilfst*, while (47b) respects lexical Case marking by *hilfst* but fails to respect the agreement requirement and the nominative Case assigned to the subject.

(47)   a. *wer du hilfst mag mich
              who.nom you.NOM help likes me.acc
        b. *wem du hilfst mag mich
              who.dat you. NOM help likes me

In this sense, both candidates violate a requirement that Cases that are assigned must be realized to the same degree, but they *differ* at the same time along other dimensions related to Case: first, a markedness hierarchy among Cases that penalizes structures according to the degree of markedness of the Cases used (dative being more marked than accusative, which in turn is more marked than nominative); second, a principle that favors an agreement relation between a subject and a verb (as compared to impersonal constructions); third, a principle that requires that lexically governed Cases be realized; and finally a particular principle that penalizes structures in which a dative (irrespective of whether it is structural or lexical) does not appear overtly. For there to be a chance that (47a) and (47b) have the <u>same</u> constraint violation profile, one would need to assume that these (and many other) constraints are tied in German, which is not only unlikely but can be shown to be false: the need to overtly realize a lexical dative overrides the necessity for having an agreeing subject in, e.g., *dem Fritz wurde geholfen* 'the.DAT Fritz was helped, one helped Fritz'.

Likewise, the agreement difficulties discussed earlier will be resolved on the basis of markedness hierarchies ($3^{rd} > 2^{nd} > 1^{st}$) because these cannot but appear someplace in the ranking of constraints.

A more accurate description of the problem leading to ineffability is thus the following: Syntactic representations are *abstract* entities, and they have to be interpreted by concrete words (as in *distributive morphology*). This interpretation by concrete words takes place *independently* of the identification of the optimal candidate in the syntactic evaluation[23]. Ineffability arises in a Buridan's donkey-like situation: The syntax requires that a form with feature complexes F_i and F_j be inserted, but only lexical entries for *either* F_i *or* F_j are found. The two lexical choices are equally good (or

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[23]   Trommer (2002) shares this assumption, but differs from the view endorsed here by assuming that the choice of concrete forms filling abstract syntactic structures is subject to standard optimization as well. A discussion of his model is beyond the scope of the present paper.

equally bad). In the examples discussed above, no form is selected at all. How does this work in detail?

The grammaticality of the relative clause (43), repeated here as (48), suggests that control does not block candidates in which one element (*was*) bears two syntactically different Cases: nominative coming from the matrix clause, and accusative coming from the relative clause verb.

(48) was   du   vorschlägst   überzeugt   mich nicht
      what   you   propose   convinces   me   not
      'I am not convinced by what you are proposing'

Bejar & Massam (1999) present a variety of structures coming from different languages that constitute evidence for the idea that one noun phrase may bear more than one Case from the perspective of syntax. Thus, the candidate winning the syntax competition in (48) is one in which *was* bears nominative *and* accusative Case. Likewise, the syntactic winner for (47) is a structure in which the relative pronoun bears dative *and* nominative Case.

The abstract structures winning the syntactic competition must be filled by concrete lexical items, such that the features of the syntactic structure are properly interpreted morphologically. In the case of (48), this works well, because *was* interprets the nominative and the accusative feature; in the case of (47), we run into a problem: Each of the possible lexical fillings leaves the same number of features uninterpreted. Since there is no lexical item whose phonological form is ambiguous between dative and nominative, the two possible options are equally bad, and in such a constellation, no decision is made. Likewise, in the agreement examples from above, several person features will be present on the verb position in the winning candidate, and all lexical options are equally good or bad at interpreting these features.

It is not clear whether ineffability of the sort discussed in this section arises only when two rival lexical realizations for a certain abstract form exist. Ineffability may also be a consequence when the lexicon offers *no realization at all* for an abstract mor-pheme in a syntactic structure. Consider the fact (brought to our attention by Henk van Riemsdijk) that transparent attributive free relatives (as exemplified in (49b) for English) are impossible in German. Van Riemsdijk suggests that (49c) is ungram-matical because the adjective (though seemingly part of the relative clause) must be adjacent to the noun. The inverted version (49d) is impossible because predicative adjectives cannot be extraposed. (49b) is thus a perfect example of something which is ineffable in German.

(49) a. John is not what I would call intelligent
      b. a what I would call obscene thought
      c. *ein was ich obszön(er) nennen würde Gedanke
         a what I obscene call would thought
      d. *ein was ich nennen würde obszöner Gedanke

One may analyze (49) in terms of conflicting requirements concerning the position of the adjective *obszön,* but a different analysis suggests itself in the present context. Suppose that (49c) *is* the winner of the syntactic context (after all, one cannot extrapose adjectival complements). It will then also have to carry a specification that holds of prenominal categories in German NPs in general: the final word in the prenominal category **must** realize the Case and person/number features of the noun phrase. This is, however, impossible for the **verb** that appears in the rightmost position of the prenominal category in (49c). When we look into the lexicon, we simply find no verb that matches the Case requirements, and ineffability arises. Syntax sometimes simply expects too much.

If this take on the problem is correct, ineffability is again inherently linked to the lexicon, but what we are confronted with now is the impossibility of translating abstract syntactic representations into concrete morphemes. This implies that the syntactic competition is based on abstract elements rather than on concrete words. At the same time, the phonological and morphological components seek to fulfil the abstract elements with concrete morphemes, and if the search is unsuccessful, ineffability arises.

5. Going too far!

Up to now, we have concentrated on cases of ineffability that involve the interaction of EVAL with the lexicon. Some formal properties of lexical items coded in the lexicon are responsible for situations in which the winner of EVAL cannot surface. In the present section, we turn our attention to those aspects of ineffability that arise when the scope of quantifiers and other operators is taken into account.

5.1 The Empirical Facts

5.1.1. Scope
A further set of instances of ineffability is made up of structures in which two elements must meet incompatible requirements imposed by laws of syntactic or semantic scope. Thus, in the classical example of ineffability (50a), both *who* and *why* have to move to their scope position Spec,CP in overt syntax,[24] but English clauses possess just one such slot. (50b) seems to be out on exactly the same grounds.

(50) a. *who came why?
      b. *why did he behave how?

While *how* and *why* are *exceptional* in English in having to occupy Spec,C in (50b), we may assume that *all* wh-words have to be in Spec,C in general in Irish, Italian, or Finnish. Again, if Spec,CP may be filled by a single phrase only, multiple questions cannot be formed at all, as illustrated in (51b,c) for Irish.

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[24] The subject should be placed there because of superiority, and *how* cannot appear in any position but Spec,CP.

(51)   a. Cén rothar   aL ghoud an garda?
          which bike   C stole the cop
       b. *cé aL   rinne   ciadé?
          who   C did   what
       c. *cé ciadé aL rinne?

Istvan Kenesei and Aniko Liptak brought it to our attention that Hungarian allows no quantifier to take scope over a question word (or phrase), although the meaning would be entirely unproblematic; see (52). Note that semantic scope is mirrored directly by syntactic c-command relations in Hungarian. Therefore, the impossibility of having a wide scope quantifier in a wh-question implies that the linear order in (52) is completely ungrammatical, while (52b) conveys quite a different message.

(52)   a.   *Mindenki ki-t szeret?
               everyone who-acc loves
             'Who does everyone love?' =
             'for each person x, for which y, y a person, x loves y?'

       b.   Kit szeret mindenki?
             'Who does everyone love?' =
             'for which x, for every y, y loves x'

Diana Pili suggests that a further example in point is the impossibility of having contrastive focus in a matrix wh-question or in a yes-no question in Italian. Since (53a) is possible as a subordinate clause (53b), one can conclude that the meaning expressed by (53a) is not illegitimate.

(53)   a. *Che cosa hanno chiesto A MARIO (non A MARIA)?
             What did they ask to MARIO (not to MARIA)
       b. Mi chiedo A MARIA che cosa vogliano chiedere (non a MARIO)
             I wonder TO MARIA what they want (subj.) to ask (not to MARIO)

Pili's data are reminiscent of what has been observed by Huang (1981:377) for Chinese: question words cannot co-occur with a focus-marker on a *different* phrase in the same clause (but the question word may itself be marked for focus).

(54)   *shi Zhangsan da-le shei
         foc Zhangsan beat who
         '*Who is it Zhangsan that beat?'

Little can be added to the account offered by Huang for this state of affairs: apparently, focused phrases and wh-phrases compete for the same position in the abstract Logical Form of Chinese, but there is room for only one operator there (unless we have wh-absorption in the sense just mentioned).

5.1.2. Islands

All kinds of classical island violations in the context of movement (first discussed by Ross 1967) may lead to ineffability, as was observed by Pesetsky (1997). It is useful to distinguish between island violations that are universally respected, and those that are language particular. The Coordinate Structure Constraint (forbidding movement of an element out of one part of a conjunction), illustrated in (55), certainly belongs to the former type.

(55)   a. *who did you see Bill and _?
       b. *who did you see the brother of _ and the sister of Mary?

Presumably, adjunct islands (see (57)) are universally respected, too.

(57)   a.   *who do you think one should not speak after _?
       b.   *who did you speak after the sister of _?
       c.   *who do you weep although you managed to give a kiss _?

These islands do not create problems for overt movement only. Violations of the Coordinate Structure Constraint yield serious problems for wh-phrases *in situ* as well, a fact suggesting that questioning part of a conjunct is problematic from a content point of view (compare the contrast in (57)). In true adjunct islands, wh-phrases *in situ* are at least highly problematic (compare (58)).

 (57) a. es ist mir egal, wer wen liebt
          I do not care who whom loves
       b. *es ist mir egal wer den Fritz und wen liebt
          I do not care who loves Fritz and who
(58)   a. es ist mir egal, wer hofft, dass er wen einladen darf
          I do not care who hopes that he may invite who
       b. ?es ist mir egal, wer weint, obwohl er wem einen Kuss geben darf
          I do not care who weeps although he may give a kiss to whom

A further reflection favoring a meaning-related attack on the Coordinate Structure and Adjunct Island constraints can be found in Ross (1967): whenever a syntactically conjoined structure corresponds to complementation semantically, structure improves dramatically:

(59)   which book did you try and read _?

Likewise, problems with movement are mitigated in German adjunct clauses when the adjunct clause allows an interpretation which comes close to complementhood ("it" is nice if the boat goes to a further port vs. *that* the boat goes to a further port is nice).

(60)   wohin wäre es schön wenn das Schiff noch fahren würde?
       where-to would-be it nice if the ship still go would

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[25]   This is sometimes obscured by the availability of echo question interpretations for wh-phrases.

A related instance is the (apparently) universal absence of a question word asking for *nouns,* so that (61) is ineffable (an example suggested by Lyn Frazier).

(61)   *what do dogs breathe through their?

Other island constraints are not universally valid. Thus, extraction out of a relative clause is forbidden in English (62a) (but it is perfect in Basque). Likewise, one must not move out of a finite question clause in English (62b) (but one can do so in Swedish), and one should not extract out of clauses embedded in a noun phrase (62c).

(62)   a.   *what did you see the man that bought? (suggested by Itziar Laka)
        b.   *what did you wonder who bought?
        c.   *who did she criticize the claim that she has met _?

With argumental wh-words, such examples can (often) be saved by inserting resumptive pronouns. If structures with and without resumptive pronouns are candidates in the same competition (as Pesetsky 1998 suggests), (62) does not involve ineffability, as shown by (63a). However, the problem connected with these structures does not disappear: adjunct wh-words must not leave such islands either, although they cannot be replaced by resumptive pronouns. This is shown in (63c).

(63)   a.   what did you see the man that bought it?
        b. *how did you meet a man that behaved t?
        c. *how did she listen to your story that the man behind the curtain behaved t?

If the contrast between German and (most dialects of) Dutch with respect to the split construction (pointed out by Henk van Riemsdijk) is due to different degrees of island tolerance, (64a) is similar to (61) in the sense that in both cases, one part of a noun phrase is fronted while the other is kept *in situ*. However, the ban against (64a) is, obviously, not universal, while structures like (61) seem to be ungrammatical in all languages.

(64)   a. *boeken heeft hij geen gekocht
           books has he no bought
           'As for books, he has not bought any'
        b. Bücher hat er keine gekauft

In English noun phrases, wh-operators apparently must not be c-commanded by other operators. Thus, while *how big a car did he buy* is fine, constructions such as *the how-many-eth birthday is he celebrating* or *how big cars did he buy* are out, without there being alternative ways of expressing the meaning. While Dutch patterns with English *de hoeveelste verjaardag, *een hoe groote auto,* the constraint in question is not universal, as German *der wievielte Geburtstag, ein wie grosses Auto* or French *le quantième anniversaire* and *une voiture grande comment* show.

5.2   The Analysis
The cue for an analysis of the scope facts comes out most clearly when one compares Dutch and German with respect to the contrast in (64).

In a certain sense, no ineffability is involved in (64a): the words used here *can* be arranged in a grammatical way (*geen boeken heeft hij gekocht*), it is only that they must not appear in the order found in the German split construction. In terms of the message conveyed, the separation construction involves assignment of primary and secondary focus to the parts of the separated noun phrase (see, e.g., De Kuthy 2000), or it involves a topic and a focus. The decision one has to make for the grammatical analysis is clear: if the attribution of information structural elements like focus and topic to certain sub-constituents is already part of the input, what German (64b) expresses is *technically* ineffable in Dutch. If focus attribution is not part of the input for the computation of syntactic structures, that is, if the movement is effected by a *formal* feature sitting on *Bücher/boeken* (or whatever mechanism you consider movement to be triggered by, if you believe it needs a trigger at all), the overall grammar of German may imply that *Bücher* can be displaced individually, while a different arrangement of constraints leads to the obligatory pied-piping of the DP *geen boeken* in Dutch. Thus, while (64a) is ungrammatical, no ineffability would be involved, because *geen boeken heeft hij gekocht* arising from the same input is grammatical. If (optimal) interpretations are then *computed* for surface structure, it follows from the principles of interpreting surface structure that this sentence cannot have the complex focus structure (64b) possesses. This would mean that certain meanings cannot be expressed in Dutch, while no technical ineffability would be involved.

The restriction exemplified in (64) can hardly be expressed in terms of the two factors responsible for ineffability identified in the preceding section. On obvious grounds, no lexical component is involved. We would thus have to postulate non-lexical inviolable constraints if we wish to deal with (64a) in terms of technical ineffability – a solution that should be avoided if possible. Therefore, we are inclined to opt for the purely formal account of fronting.

The scope facts reported for Hungarian, Italian and Chinese are amenable to the same treatment. Again, the words used in the structure can be arranged in a grammatically meaningful way. The syntax just disallows a particular arrangement that would yield a certain scope relation when interpreted properly.

Our decision concerning the use of pragmatic-semantic features in inputs has far-reaching implications. Consider, first, language-particular island effects. If the indication of final scope for *what* in (63a), repeated here as (65a), is part of the input, (65a) is technically ineffable. Unless the input has a rich hierarchical organization (that would call for a complex theory of inputs one wants to avoid), it is unclear how this scope indication is to be formulated in a precise way (it is an issue that one must not always skip).

(65) a.   * what did you see the man that bought?
        b.   _ you see the man that bought what?

If, on the other hand, scope fails to be specified in the input, and formal features try to force the movement of *what*, the Complex Noun Phrase Cosntraint of Ross (1967)

(CNPC) interacts with the constraints that relate to movement features. In Basque, the movement triggering principles win over the CNPC; in English, it is just the other way around. The winner of the competition is thus (65b) (as suggested by Gereon Müller, p.c.). If we ignore a possible echo-interpretation, (65b) is then grammatical but gibberish: unless bound by a further wh-operator, wh-phrases must take scope over a proposition, that is, they must c-command a CP-node, which *what* does not in (65b).

The approach must also be able to capture wh-phrases *in situ* in languages like Chinese. In this context, the following seems called for: Movement is triggered by certain formal features, and it may either displace the full phonetic matrix of the phrase affected, or the set of formal features of the phrase only. The choice between these two options can be expressed in various ways (see Chomsky 1995, Nunes 2001, Fanselow & Cavar 2001), but a decision is involved which is not really crucial to our present discussion. When such an abstract movement chain is created, its highest element must c-command a propositional entity P. In other words, the formation of a movement chain (of which any element may be spelt out) must at least reach a position in which the highest element of the chain c-commands an IP node. The highest element H of the chain may be visible (as in English single questions) or invisible (as in Chinese). But if H does not c-command an IP or a higher projection, the resulting structure is uninterpretable, while (in principle) grammatical. In (65b) the wh-phrase *in situ* could undergo neither audible nor inaudible movement. (65b) is thus grammatical, but not interpretable.

This line of reasoning easily extends to the superiority case (50), and the other scope-related facts introduced in this context. In a *multiple* question, the two question operators must be "brought together" in one way or the other. One may describe this in terms of the "absorption" of an index in purely syntactic terms, or one may assume a semantic representation of (some) wh-words which contains a variable that may be bound by a different operator (see Hornstein 1995). We need not decide between these options in order to find an analysis for (50). Due to a minimal link effect, (50a) will be the winner of the abstract syntactic competition (rather than *why did who come*). In this winning candidate, the wh-features/indices of the element *in situ* (why) would have to be linked to the wh-word in Spec,CP to be interpretable at all, but if words such as *why* and *how* cannot be absorbed or bound, the resulting structure is uninterpretable (though grammatical). Similar analyses are possible for (50b) in an obvious way.

6. Conclusion

The typology emerging from a close study of many different ineffable cases is surprisingly simple. Three types of ineffable data have been identified with the following properties. The first category involves idiosyncratic gaps that are due to a control component of the kind proposed by Orgun & Sprouse (1999): it contains parochial constraints that are morpheme-specific and should thus not be part of EVAL for conceptual reasons. The account of ineffability proposed here constitutes empirical

evidence for placing them into a separate component: if they were part of EVAL, they could not possibly lead to ineffability.

The second kind of ineffability arises as a consequence of incompatible requirements for lexical insertion imposed by grammatical structures. Here, ineffability gives us insights into the organization of the syntactic component: it makes use of abstract rather than concrete lexical items.

Finally, we argued that semantic and pragmatic features play no role in syntactic inputs. Thus, the failure of expressing them does not imply an instance of the technical type of ineffability that is relevant for the assessment of OT.

By and large, the cases of ineffability we are aware of can thus be dealt with in a quite conservative extension of classical OT.

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