

The Openness of Grammar

Markus Meyer

Universität Wuppertal

In the present paper I will show that the concept of linguistic exceptions is dependent on a theory-specific concept of rule of grammar. Wittgenstein's concepts of language game and acting according to a rule will be used as a basis to put exceptions at the heart of grammar as an open system of regularities. From this Wittgensteinian point of view the process of identifying and building exceptions elicits main aspects of a grammatical practice that will be described in its founding elements in this paper: What is a rule of grammar and what does it mean to act according to such rules in practice? What does it mean to know how to identify resp. build wellformed or illformed expressions of a specific type? Is there a boundary of wellformedness and what kind of boundary is that? These aspects will be discussed on the background of examples taken from two grammars of the German Language. It will be demonstrated that so called exceptions indicate a boundary of sense concerning the grammatical practice of building expressions case by case. Finally I will discuss consequences for different types of grammar theories. To analyze exceptions as a basic part of grammars, differences between theories can be described on the basis of the two basic concepts of sameness and similarity. The relevance of the two concepts will be shown on the background of the concept of grammatical practice.

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1 Introduction

After a long period of limiting grammar theory to the description and explanation of so called clear cases (Chomsky 1957: 14) the issues of vagueness, gradience and exceptionality are back on the agenda (cf. Aarts et al. 2004). The idea of focusing on clear cases in grammar theory was based on a

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specific concept of categorization that helped to organise the heterogeneity and “fluctuance” (Stetter 2005) of linguistic phenomena in a clearly arranged way. The stance on categorization as an “unambiguous, clear-cut process” was then questioned by several authors pointing out that categorization is a “process of almost incredible complexity” (Aarts et al. 2004: 3). This approach was of course backed up by philosophical research into the nature of categorization, although it was mainly motivated by logical or cognitive objectives.

This is why the ideas of one of the ancestors of these cognitive approaches have never been fully taken into consideration: Ludwig Wittgenstein. His insights into the way we use language have indeed widely been considered by cognitive linguists (Aarts et al. 2004: 3). Also philosophers referred to him, investigating into the nature of meaning and the practice of language (cf. Oleksy 2002, Savigny 1993, Schatzki 1996, Stekeler-Weithofer 2002a). But until now nobody investigated fully into the idea of regarding science and theories themselves as a specific sort of practice (Meyer 2006, Stegmüller 1980). In what way could linguistics benefit from describing grammar itself as a specific practice, especially when reasoning about syntactic categorisation, wellformedness and exceptions?

I will explain in this paper how a practical perspective on grammar and its theory can be shaped and which insights can be gained from a practical analysis of exceptionality in grammar.¹ Chapter I will focus on the problems that are connected with the concept of exceptions in ordinary grammatical thinking. I will show why exceptions become the unexpected and how they can be described from a practical point of view. In chapter II I will describe how the usual concept of data can be re-analysed as part of the technique of giving examples. Chapter III gives an overview of the different elements of

¹ An overview about theories as practice in general is given in Meyer (2009b).

grammatical practice. In chapter IV I will re-analyse exceptions as deviating examples from a practical point of view and present some basic insights into the nature of grammatical practice. Chapter V summarises the findings by introducing the idea of the openness of grammar. It will be shown how the insights from a practical perspective can be captured by different grammar theories.

2 What Is an Exception?

Whenever we speak of an exception in grammar we refer to expressions that are in certain ways outstanding and conflicting. They are at the same time part of the game and not part of the game in the sense that they contradict to certain rules of grammar and do occur resp. are possible in a language though. Therefore the notion of exception hints at the fact that expressions with this feature are not fully outside of grammatical systematisation. They function as a boundary stone between language as a rule-based system and language as a set of possible sentences respectively observed acceptable utterances. This is why they could be regarded as the motor for further developing a grammar of a language. But the question is not only how to handle exceptions from a theoretical point of view but also how to describe exceptions from a practical point of view, when we work with them in the day-to-day practice as grammarians.

The ordinary concept of exception in grammar theory is based on a specific concept of rule of grammar. The systematic character of language is meant to be explainable by rules that allow supplying all wellformed expressions of a given language with a generalised structure (cf. Chomsky 1961). Whenever expressions appear – i. e. found in texts, produced by speakers, built by grammarians – which do not fit into the rule-based system,

revisions are necessary to make the unexpected expectable. So the reasons for exceptions to occur in grammar are mainly theory-internal: Once a rule is assumed it is inevitable that corresponding exceptions occur.

To avoid such a constellation there are at least two possibilities from a model-theoretical point of view. One could try to diminish the role of rules in grammar theory, so that rule-exceptions-constellations are avoided. One could also abandon the notion rule of grammar completely and replace it by other concepts, e. g. by the concept of pattern (cf. chapter V).

But before choosing one of these options one should further investigate into the problem itself. What is the reason for facing the described difficulties if working with rules? What do we mean by theory-internal reasons?

To further investigate into this problem one should differentiate between formalised grammars on the one hand and traditional, non-formalised grammars on the other hand, because the degree of formalisation is also responsible for the way the concept of rule is used. In formalised grammar rules are instructions for transforming one sequence of symbols into another sequence of symbols. Readability is the criterion in formalised grammars, i. e. a sequence is calculable only if the categorial indexes of the parts of the sequence are of the *same* type as in the rule (cf. Vogel in this volume). Here *sameness* is the basic concept which guides the correct application of rules and which comprises repeated computational activities. Still one has to distinguish between the general rule and concrete applications in the computational process, so the question is when it is allowed to apply a general rule to a given sequence (Stucky 1992: 120). It can be shown that this decision is not a pure formal one as wellformedness-judgments have to be taken into account as well when we are in the process of feeding the machine with rules and symbols. So it is a decision that is not only formally taken by automata but also practically taken by grammarians when they work with these rules in practice (Meyer 2006).

In non-formalised grammars rules function as descriptions of regularities concerning the building of linguistic expressions. Without full formalisation the very practical question is how to build expressions according to a rule correctly resp. how to build *similar* expressions. Understanding rules seems therefore to be the basic criterion in non-formalised grammars in view of the ability to find and build similar examples. This ability involves the power of judgment in the day-to-day work of a grammarian: To be able to build examples according to a rule that was formulated beforehand or vice versa to build a rule on the basis of the comparison of linguistic examples.²

By talking about grammarians' activities and skills we already see things from a practical point of view: Sciences become systems which are more characterised by relevant activities, techniques and methods which are in use and not only by axioms and theorems (Meyer 2006).³ Therefore any cognitive assumptions or objectives are not relevant here as we focus only on the use of expressions and activities.

From this practical perspective a fundamental feature of rules can be criticised according to Wittgenstein. A basic property of rules is that they ought to be general. Whenever we work with rules, they would not make any sense if they were not applicable in more than one case. This is called generalisation. But what does the term general mean from a practical perspective? Wittgenstein points out that the fact that rules are meant to be general is not a property of the notion rule itself but can only be understood by knowing in a very practical sense what it means that a given expression was built according to a rule and can therefore be understood as an example for this rule (WWK: 154). Therefore the

² From my point of view this is the basic assumption of Weber (2005: 446), when he analyses examples in their illustrative and in their stimulating force.

³ This is already a certain interpretation of Wittgenstein's late works that was envisaged by Stegmüller (1980). For further details see Meyer (2006).

meaning of the term general – concerning its aspect of use – can only be fulfilled example by example. This levels the difference between rule and exception as the fulfilment is dependent on examples in every case. Therefore exceptions should be regarded and described as a specific sort of examples and the question is now “What are the basic properties of ,examples” and not “What are exceptions?”.

Wittgenstein does not use the concept of example in the common way of being a certain instance of a general law. Examples can be linked to each other because of their *similarity* concerning so called “family resemblance” (PU §66: 278). Family resemblance is achieved only by a group of non-distinctive features concerning general termini (Wennerberg 1998: 44, Teuwsen 1988: 60). This is why the shared properties of examples cannot be described in a generalised, rule-based way. Each example opens up the possibility of linking it to other examples and understanding it as being built according to a certain rule. Nevertheless the practical process of linking examples does not have to end in stating a rule (Stekeler-Weithofer 2002a: 224). Thus it makes more sense to assume a more general function of examples instead of classifying them as “illustrating rules” only: They reorganise the field of regularities in a way that they build a “network of similarities” because of their “multifarious relationships” (PU §66 f.: 278 ff.).⁴ Therefore giving examples is a specific technique and must be learned as part of a specific grammatical practice in connection to what we call generalisation.

So in both cases of formalised and non-formalised grammars acting according to a rule means that we know in a practical sense what to do next in building or understanding linguistic expressions as grammarians. We give

⁴ Weber speaks of examples as having the force to „stimulate abduction“ (Weber 2005: 446). If abduction is not reduced to “best explanation” in the sense of “best general rule” Weber’s idea is very similar to the Wittgensteinian approach (cf. also Wirth 1995).

examples for expressions built correctly according to a rule. This implies that from a practical perspective the rule itself does not contain all steps that can be made. Therefore giving an example (like a step in a game) opens up the possibility of referring to rules – if asked for. Exceptions can now be regarded as examples that allow no positive reference to existing rules: At first glance we have the impression that they are not part of the game of grammar.

3 Data and Examples

In the previous chapter we looked at the relationship of rules and examples from a practical perspective. The focus shifts from rules to examples as the function of examples is assumed to be more than pure illustration of rules.

This perspective is more than unusual for linguistics.⁵ In times of empirical foundation of linguistic research the main challenge seems to be how to collect data and how to measure the relevant properties (cf. Schütze 1996). Cognitive approaches meanwhile focus on questions of learnability and compliance with general principles of cognitive architecture (cf. Jackendoff 2002). It is significant that a specific linguistic program of empirical research has been worked out in the past years (cf. Schütze 1996, Gries 2008), but the technique of giving examples has never been an issue of thorough investigation in linguistics.

From a practical point of view it is obvious that the basis of all the different ways of collecting data is exemplifying expressions. A datum is an example used in specific controlled discursive contexts that we usually call theories – there is nothing like raw data at all (Strübing 2008: 290). From an empirical perspective one can differentiate between numerically measured

⁵ In recent times, Weber presented an overview about the technique of working with examples (cf. Weber 2005).

values, quantitative data, and non-numeric verbalizations, qualitative data (Bortz & Döring 2002: 295).

It is important to keep in mind that examples are linguistic expressions that are not just taken from ordinary language use. Choosing an expression for exemplifying something means that a specific knowledge comes into play (cf. Stetter 1997, Schneider 1992). Examples – also functioning as data – are instead products of a specific grammatical practice that can be compared to expressions of ordinary language (cf. Meyer 2006). And therefore data cannot be raw, pure objects of experience becoming objects of linguistic research. The empirical challenge concerning this specific sort of example called data is to find out what should be measured and which methodology should be used (Bortz & Döring 2002: 295). But when it comes to theories operating with data the basic problem is that the relationship between data and theory does not clarify the way we practically – and not statistically – establish relations between examples. It is exactly the same problem we have when we try to clarify the relationship of rules and examples. What guides us in referring to certain rules when giving pairs or groups of examples? So the practical challenge is to find out how linguistic expressions become examples especially when we work with (formalised) rules of grammar. To understand this we have to investigate into the grammatical practice and its founding elements.

4 The concept of a grammatical practice

Since the beginnings of grammar in India and Greece several techniques have been developed to arrange objects called *logoi* or sentences in a structural and linear way. This reflects the assumption that the order of these entities – concerning hierarchy and precedence – is somehow restricted (cf. Thümmel 1993: 161). The different techniques that have been developed since then made

it possible to distinguish categories of linguistic expressions, simple and complex entities and classes of expressions (cf. Juilland & Lieb 1968, Thümmel 1993: 186 ff.).⁶

The task for grammarians is therefore twofold:

- a) to check whether a linguistic expression is part of a certain category or class,⁷
- b) to enumerate elements of a class or a category, i. e. indicate their extension.

The techniques which have been developed to meet these tasks should not be regarded as isolated ones. If grammatical practice is assumed to be a language game in the sense of Wittgenstein – a certain functional entity, in which verbal and nonverbal activities are interwoven (cf. Wuchterl 1969: 120 f., Lange 1998: 140) – grammatical practice can be regarded as „the mastery of many interrelated techniques.“ (Hacker & Baker 1985: 140). The mastery of a technique (PU §150: 315) is manifested „on a multiplicity of occasions“ (Hacker & Baker 1985: 140). That means it makes only sense to speak of a grammatical practice if it is a cooperative activity that is a habit within linguistics (PU §199: 344, cf. Stekeler-Weithofer 2002: 216).

Part of this family of interrelated techniques is also the technique of giving examples as it is needed to show in what way certain linguistic expressions meet the tasks mentioned above (cf. 3.1.4): To check whether a given expression is part of a certain category or class – (a) – is nothing else but taking an expression as being-an-example-for-something. To enumerate

⁶ In Chomsky's Generative Grammar a basic problem is establishing categories (cf. Stetter 2002, 2003).

⁷ For further reflexion on ‚classes in linguistics‘ cf. Stetter (2005) and Juilland & Lieb (1968).

elements of a certain category or class – (b) – is nothing else but being able to give examples.

Besides this, agreement in judgments is also a fundamental part of grammatical practice (cf. 3.1.1). Grammarians are concerned with finding out which expressions in a given language (cf. 3.1.2) are wellformed and which are not. The usefulness of this objective is unquestioned within linguistics as in every language game (PU §240: 355). Constructing and finding wellformed expressions is a grammarians' habit that can be described as an activity according to specific rules (cf. 3.1.3).

This makes very clear that from a practical perspective it is not of interest whether rules are exact or not. The point of interest is how we, as grammarians, construct and find examples according to rules. Here we assume that this requires more than just calculative abilities but also a specific kind of creativity (cf. Stetter 1997, Schneider 1999).

Grammatical practice as a family of interrelated techniques is of course part of the day-to-day use of any language:

Die durch eine solche Grammatikschreibung (gewissermaßen konstruktiv) erzeugten Sprachstrukturen bewähren sich als Ordnungen von Ausdrucks- und Gebrauchsformen an der kulturell tradierten und sich laufend entwickelnden Sprachpraxis. (Stekeler-Weithofer 2002:218).

At the same time this quotation shows that grammatical practice is not to be mixed up with the practice of a language: Speaking a language and analysing a language are of course two completely different activities and the concept of grammatical practice can elucidate that analysing a language as a grammarian is more than making one's knowledge of language explicit (cf. Meyer 2006).

Grammatical practice is also not to be confused with giving an overview about methods in linguistics as any written overview about methods is again a theoretical exercise that has to be implemented in a practice (cf. Bortz & Döring 2002: 1). Methods are only an advice to follow a specific route of research (cf. Stekeler-Weithofer 2002). But what is really happening in following this route and what guides us in following it is not part of linguistic research. It is the description of grammatical practice that indicates not only the boundary of grammar but also the boundary of wellformedness.

4.1 Elements of Grammatical Practice

If grammar can be regarded as a family of interrelated techniques these techniques have to be described further. This will be shown in the present section. One should be aware of the fact that this enumeration is not meant to be complete. It does only describe the most outstanding elements.⁸

4.1.1 Wellformedness and Basis of Judgment

For grammarians it is crucial which properties of linguistic expressions are assumed to be significant in distinguishing different kinds of types of expressions so that they can become objects of linguistic research. The possibility of grammar is dependent on distinguishing linguistic expressions according to their wellformedness, i. e. whether they are wellformed or deviating (Meyer 2009a). This is based on which restrictions are assumed for combining entities so that they are saturated. This way of systematising is dependent on a specific familiarity with a language, although the explication of what a language is comes later on (cf. 3.1.2). Wellformedness can therefore be

⁸ For further details cf. Meyer (2006) and a more general overview Meyer (2009b).

regarded as an element of grammatical practice before we eventually start to formally define what wellformedness is (cf. Chomsky 1975: 145). This basic understanding of what wellformedness is becomes visible in working with rules and in judging examples – whether or not it is defined explicitly (cf. Stekeler-Weithofer 2002: 224). A defined, explicit concept of wellformedness, that is potentially empirically operationalized (cf. Meyer 2009c) can therefore be regarded as an effect of grammatical practice.

If distinguishing different kinds of linguistic expressions a specific kind of measurement and specific basis of judgment is needed, the second element of grammatical practice. Language games are distinguished by their different basis of judgments. This basis is familiar also when starting to analyse linguistic expressions. It becomes visible when judging expressions according to their wellformedness. This basis includes a vocabulary of judgment that is at this point of time not to be mixed up with a scheme of values: A scheme of values bundles up the names of judgments that are already in use and is again a fundamental effect of grammatical practice.

4.1.2 Language and the Boundary of Grammar

It is a specific understanding of wellformedness that makes it possible to make explicit what is understood by language, the third element of grammatical practice. As an effect, a precise notion of language can then be established. Starting off with saying that a language is e. g. the class of all wellformed expressions one could go further by defining language as a set of wellformed sequences of a given language that can be generated by a certain procedure (cf. Chomsky 1957). This reminds us of the well-known problem that a scientific definition of language is always a far-reaching reduction of complexity in comparison to the vast variety within a spoken (and written) language. As an

effect of grammatical practice it is also a reduction in the sense that it is a theory-internal reconstruction based on specific assumptions about language.

On the basis of a certain understanding of wellformedness and language plus a basis of judgment a boundary of wellformedness can be drawn. This boundary can be sharp or not, again dependent on what specific understanding of wellformedness is assumed (cf. Aarts 2004).

4.1.3 Notation of Judgments, Rules and Examples

Wellformedness-judgments can be written down by using conventional symbols. It is crucial whether these symbols are used in a precise way or not, i. e. that the way of writing down judgments is methodologically controlled. It has been often stated before that this is not the case in linguistics. In lots of cases symbols are used but their use is not made explicit (cf. Bard et al. 1996, Meyer 2004, Schütze 1996).

From a practical perspective the problem is that it is often not clear which game the judgments belong to: Is it linguists' judgments concerning examples of linguists or is it linguists' judgments concerning the so called ordinary language practice? Last but not least it is often not clear what kind of boundary is really assumed if having a close look at how examples are used and judged (cf. Meyer 2006).

Bard et al. made use of the term "striking examples" (Bard et al. 1996). This is very useful because it makes clear that in most of the cases examples are given to show in an obvious way that a given rule makes sense.⁹

Grammatical practice can be described as a rule-based activity, not only in that it is itself regulated by rules but also in the sense that rules of grammar

⁹ This is exactly the reason why it is said that exceptions prove a rule: A striking exception also shows in a negative way what is observable in general.

are a crucial element of grammatical practice (cf. chapter 1). This brings us back to the question of the relationship of rules and examples.

4.1.4 Giving Examples as a Technique of Grammatical Practice

Giving an example does not mean to illustrate a general rule with an example that shows how to apply a rule (cf. Chapter 1). Instead of such an instrumentalist way of understanding rules I take a functional perspective: We do not only need the ability to calculate but also experiences in handling the analysis and the judgment of linguistic expressions (cf. Stekeler-Weithofer 2002: 216). The use of “striking examples” can be described as using examples to show what it means that a rule is a general one. An example is striking because it significantly hints at a boundary of wellformedness.

Rules do not always have to be made explicit (PU §68: 279). From a practical perspective expressions of rules can have different forms dependent only on their use.¹⁰ They can be understood as description of activities according to rules. They can be made explicit as definitions, as statements about conditions or as statements about validity. These differences are not to be understood as primarily logic differences. They are purely functional differences that hint at different aspects of grammatical practice. Expressions of rules are important because they make it possible to say something about the wellformedness of linguistic expressions, foremost about the following aspects:

- a) Permitted number of elements of a certain class or category,
- b) permitted linear order of elements,
- c) permitted form of elements (in morphological languages).

¹⁰ This is why also formal rules of grammar can be viewed from a practical perspective whenever they are part of grammarians’ activities (cf. Meyer 2006).

These aspects hint at what it means that a given example is wellformed resp. how the boundary of wellformedness is drawn in a given case.

As it was said earlier sameness and similarity are the main concepts that are of great importance for grammatical practice (cf. chapter 1): On the one hand one has to know what it means to do *the same* in building or finding examples according to a given (set of) rule(s). On the other hand it means to be able to build or find similar examples that can be understood as built according to a rule.

5 Exceptions As Deviating Examples

Examples make it possible to hint at a boundary of wellformedness without explicitly commenting it by stating a rule. Working with examples of course implies that grammarians not only use wellformed expressions but also deviating ones. Boundaries of a system can only be made visible if indicating what is resp. what is not part of the game.¹¹

If such a boundary is not made explicit – e. g. by ‚general rules – it is left to the reader of a grammar or the grammarian her-/himself to find out which other expressions can be built according to the rules of grammar. The crucial point is that a language is not fully to be systemised by rules so that it is very likely that in lots of cases it has to be found out what is exactly according to a rule and what is not. From a practical perspective the term possible expressions is not to be fulfilled by rules only (cf. Meyer 2006). Therefore the techniques of grammatical practice are searching-instructions to create linguistic objects in the sense of indicating to which class or category they belong to or not. Thereby we

find ways to be more precise about what we mean by saying that a group of examples belong to a specific language.

Drawing a boundary of wellformedness means to build examples, foremost deviating examples. These deviating examples allow a deeper insight into the nature of building examples according to rules. If defining deviating examples as being at some point in conflict with rules or principles exceptions can now be regarded as a special kind of deviating examples: They are deviating although they fulfil certain aspects of wellformedness, e. g. are built correctly according at least to some rules or are acceptable for at least some speakers.

If distinguishing different forms of deviating examples in the coming sections this is not meant as a typology of deviations (cf. Chomsky 1972: 194). Instead these forms are a description of how grammarians work in practice, thus the distinctions are purely functional.

In the previous chapter it became obvious that one cannot separate a rule from its application. The example itself is the rule in the sense that it shows how to built examples according to a rule from a practical perspective. Therefore a first sort of deviating examples shows how rules have to be understood (cf. 4.1). These examples show that expressions have not been built according to a rule. Secondly expressions of rules and examples are linked to each other by similarity, i. e. whenever I want to continue with building examples I have to ask myself: Are these examples similar to the ones before? This hints at the problem of predictability (cf. 4.2). A third sort of examples hints at the problem in what way the different examples should be compared concerning their wellformedness. This implies the questions whether the boundary of wellformedness is sharp or not. Do deviating examples lie beyond the boundary

¹¹ The boundary of grammaticality is at the same time a boundary of sense (of a ‘game’). Deviating examples show in which cases it makes no sense to regard an example as a part of a given language (cf. Hacker & Baker 1985: 34).

of wellformedness or do they indicate an area of transition beyond a dichotomy of wellformed–illformedness (cf. 4.3)?

5.1 Deviating Examples and Understanding Rules

A first sort of deviating examples helps to clarify how to built examples according to a rule. This cannot be defined in a general way but must be found out case by case. The deviating example shows how a rule is not to be understood. More specifically deviating examples of this sort indicate whether it is according to a rule that a certain expression is part of a certain class or category as it has specific properties or not.

The most outstanding observation about this sort of examples is that elements are used *as if* they were members of a certain class or category. Similarities are therefore not limited besides general discursive limitations concerning specific linguistic reasoning. Thus the challenge is to find out which similarities are of systematic interest. The whole process of continuing in building new examples is open, as it is not predictable which similarities will be assumed and stated as relevant or significant. This makes very clear that expressions are used in a grammar-internal way in contrast to the grammar-external use. The examples function as an indicator whether a certain element is a member of a class or category or not. Therefore these deviating examples can be used in a practical sense to prove membership of a class (testing) resp. to establish classes.

As deviating examples of this sort show how to understand rules they show at the same time what it means to master grammatical practice. Acting according to rules does not mean that we can predict in what way general rules are used in practice. For sure they do not only produce wellformed expressions and it cannot be predicted what kind of deviating examples they produce. This

does not mean that the rule itself is uncertain or not precise: It is the use of it that makes it difficult to make predictions.

The following examples illustrate the problem of understanding rules from a practical perspective. In one chapter of the “Grammatik der deutschen Sprache” possible extensions of predicates are discussed. Predicates can be extended by adverbials which function as „Qualitativsupplemente“:

„Das Denotat eines VG-Adverbials ist eine Modifikation, die Prädikate auf Prädikate abbildet, und zwar so, daß jeweils auf das „unmodifizierte“ Prädikat geschlossen werden kann. [...] Aber nicht alle Prädikate können auf diese Weise modifiziert werden ...“ (GDS: 1187).

With this statement that can be regarded as the explication of a rule certain elements are classified, i. e. verbs that can be modified by certain adverbials. The boundary is drawn by the following examples:

(1) Er kommt **schnell**.

(2) Die Blume riecht **gut**.

(3) * Zwei mal zwei ist **schnell** vier.

(4) * Rechts ist **gut** da, wo der Daumen links ist. (GDS: 1187)

Several things are striking in these examples. First of all the asterisk is not used in the way it is usually used in this grammar: It does not indicate illformedness but examples for which – according to the authors – one can not state truth conditions although they are semantically and syntactically correct (cf. GDS: 1187). The reason for this is, according to the authors, that only event predicates are modifiable by adverbials. The specific function of qualitative supplements

like „schnell“ or „gern“ is the modification of events. But ,events are not stated in examples (3) and (4) (cf. GDS: 1189).

A precise boundary of wellformedness is given with this expression of rules and the further comments. But to prove whether an example was built according to this rule also requires knowledge about formal semantics because otherwise it would not be possible to judge whether the following examples is grammatical or not:

(5) Die Erde ist gut rund.

A prerequisite is also to know how to find out what an event predicate is. In giving examples like this one therefore shows at the same time that the practice of grammar is mastered.

What it means to use certain expressions as if they would be part of a certain class/category is shown in the following example:

„Häufig, jedoch etwas restringierter als in den Adverbialkategorien, erscheinen PP in der N/N-Kategorie: Beispiele für PPs, die wohl als Adverbiale, nicht aber als N/N auftreten, finden sich in:

[6] **Allem Anschein nach** genießt Hans sein Leben.

[7] * Der Genuß **allem Anschein nach** enttäuscht Hans sehr.

[8] **Zu meinem größten Bedauern** muß der Termin verschoben werden.

[9] * Die Verschiebung des Termins **zu meinem größten Bedauern** rief beim Kanzler Verstimmung hervor.“ (GDS: 1000)

Here the expressions „allem Anschein nach“ and „zu meinem größten Bedauern“ are not used as adverbials (category Vn/Vn), but as elements of the category N/N. These examples show in a very clear way: Only by giving concrete examples it is possible to draw a boundary of wellformedness

explicitly. Although it is explicitly mentioned in which way expressions should be used in these examples, in principles there are no limitations to the grammarians' creativity on the one hand. But on the other hand a grammarian's creativity shows which techniques he masters and which practical knowledge he has.

5.2 Deviating Examples and Predictability

A second sort of deviating examples helps to clarify which expressions can be built according to a rule or not. As grammatical practice functions as the foundation of grammar and its theory, predictability as an objective of grammar theory must be re-analysed from a practical perspective. The last sections showed that examples are built case by case. Therefore it seems that the notion of predictability is problematic. The assumption of a transition from a rule to a so called application obscures the way in which one continues in giving examples. Indeed one has to know what it means to do *the same* (acting according to a rule) but at the same time the relationship between examples is based on *similarity*. This is why we cannot know for all possible cases what it means to act according to a general rule correctly.

In this section we will have a closer look at deviating examples that are given to show what is and what is not according to a rule and therefore hint at predictable steps in this game. In examples of this sort a boundary is indicated for elements of a certain class or category concerning

- (1) the properties of elements (they have these and not those),
- (2) the validity of rules (they are valid for these and not for those).

Therefore these examples indicate a boundary of wellformedness that is implied by a rule. But still it has to be found out which expressions can be built according to this rule. Examples of this sort hint at a boundary only in an exemplifying way that is not exhaustive. Deviating examples of this sort can always be understood according to different rules. So the challenge from a practical point of view is to make a decision on which rule to refer to. The rule alone does not imply predictions on possible properties or areas of validity. The boundary is again drawn case by case.

In Eisenberg's "Grundriss der deutschen Grammatik" it is argued for a concept of grammar that is based on the idea of predictability. Talking about different types of subordinate clauses he states the following: „Bestimmte Nebensatztypen können als Verbergänzungen auftreten, vor allem die mit **daß** eingeleiteten und die indirekten Fragesätze.“ (GDG: 63). This expression of a rule does not indicate which types of subordinate clauses are meant nor which verbs are meant exactly. This expression only functions as a general statement about characteristics of German without saying for which specific expressions it is valid. In the following passages he specifies his ideas:

„**Daß**-Sätze besetzen in der Regel Stellen, die auch von nominalen Ergänzungen besetzt werden können, insbesondere die Stelle des Subjekts und des direkten Objekts. Umgekehrt kann aber nicht überall dort, wo ein nominales Subjekt oder direktes Objekt stehen kann, auch ein **daß**-Satz stehen.“ (GDG: 63).

He is stating the impossibility of an implication: If A, then B, but: If B, not A in every case. This not in every case is dependent on the verbs that are used. The question is therefore: Which constraints are related to subjects and direct objects in relation to dass-complements? He illustrates that with the help of the following examples:

- (10) a. Wir verteilen *daß du im Lotto gewonnen hast
 b. Wir verteilen deinen Lottogewinn (GDG: 63)

He now builds classes: „Fassen wir die Verben, die **daß**-Sätze als Ergänzungen nehmen, unter dem Kategoriennamen DASS zusammen ...“. This helps to identify the verb *verteilen* as being a member of the class “NOM|ACC” and not of the class “NOM|DASS”. These “striking examples” show that it is plausible to classify verbs in the presented way. But nevertheless the prediction that verbs of the class “NOM|DASS” indeed have these properties can only be shown by finding new examples. And finding new examples implies the possibility of further or different relationships between members of the same class.

5.3 Deviating Examples and the Boundary of Wellformedness

A third sort of deviating examples helps to clarify what kind of boundary of wellformedness is drawn, i. e. whether it is sharp or not. If a boundary is to be drawn case by case it might be not that sharp as expected when comparing their wellformedness. A sharp boundary can only be stated for the so called clear cases. A gradient boundary of wellformedness means that more values are used than just two. In addition we assume that competing candidates are compared in their wellformedness and that values are assigned not because of inherent features but because of relations to other candidates. This is what relative wellformedness means – in addition to a gradient concept (Meyer 2009a).¹² The comparison is always done in relationship to certain rules or constraints, although relative wellformedness does not necessarily imply gradience (cf.

¹² Which properties are compared to each other can differ. Keller and Sorace distinguish a narrow concept of relative grammaticality from a wider one: In the first case only candidates of one set can be compared to each other. In the latter case candidates of different sets can be compared (cf. Keller & Sorace 2002: 18 ff.).

Müller 2000: 9, Meyer 2009a) – along the line that absolute wellformedness does not imply a dichotomous scale.

The problem of sharpness of a boundary of wellformedness can be showed by an example taken from the IDS-grammar. Concerning prepositional phrases the following is stated:

„Verben lassen die Belegung einer Komplementstelle entweder durch eine determinierte NP, einen determinativlosen Substanzausdruck oder einen *an*-Ausdruck zu. Hier ist der Gebrauch von *an* vor allem bei abstrakten Substanzen angezeigt.“ (GDS: 2120).

They are giving the following examples:

(11) Er verlor **seine Unabhängigkeit/seinen Mut/die Freiheit, die ihm geblieben war.**

(12) Er verlor **Geld/Blut.**

(13) Er verlor **an Einfluß/Unabhängigkeit/Bedeutung.**

(14) ? Er verlor **Einfluß/Unabhängigkeit/Bedeutung.** (GDS: 2120)

The wellformedness in examples (11)-(14) is dependent on each other. Especially example (14) is to be interpreted as less grammatical than (13) and not as is grammatically questionable. The expression „Hier ist der Gebrauch von *an* vor allem bei abstrakten Substanzen angezeigt“ could prima vista function as an absolute criterion, in which cases abstract substance nominals can be used as verbal complements. But the use of the symbol ‘?’ shows in opposition to the use of the symbol ‘*’ that these expressions are not ungrammatical but in

comparison to others are not the best examples for building according to the rules.

This shows that from a practical perspective reference to rules also implies a specific kind of reference to other examples and their wellformedness. Therefore building a network of similar expressions has also an impact on the concept of wellformedness we use.

6 The Openness of Grammar

The technique of giving examples is one of the core elements of grammatical practice as it is needed *to show* what kind of assumed systematic order is assigned to languages. According to Stetter languages can be regarded as virtual systems which are difficult to grasp in their fluctuance (cf. Stetter 2005). Examples show how this fluctuance can be organised from a practical point of view: Single examples *show* how to continue in building similar wellformed expressions and how to draw a boundary of wellformedness at the same time.

Building examples means to use given elements/expressions *as if* they had specific features or had been members of a certain class or category. This makes clear that similarity is the main concept that is of crucial importance here, although the ideal is to structure language on the basis of sameness, i. e. that elements of the *same* class or category can be substituted by each other (cf. chapter 1).¹³

Building examples also shows that grammarians are not only able to build expressions according to grammatical rules but also to built examples not according to grammatical rules to draw a boundary of wellformedness. In both

¹³ Cf. Stetter's "Grenzwerttheorie" (Stetter 2005).

cases mastery of grammatical practice is needed because it is always a systematic point of view from which examples are built and judged.

If looking at grammar from this point of view it seems not to be crucial that grammar is a closed system of rules that explains why certain expressions are part of a language and others are not. Instead grammar can be regarded as an open system that allows working with linguistic expressions insofar as they can be compared and analysed according to their wellformedness. This is exactly why it is not predictable *in what way* expressions are used (from a grammar-internal point of view) and *to which rules* to refer to. What a correctly built example is *in general*, can not be defined beforehand, but must be found out from case to case. So each example draws a new boundary of wellformedness. The boundary of wellformedness is drawn in the process of building examples *and is not* already drawn by rules. This is why one could speak of a floating boundary that reflects the assumption that language is a system with no fixed boundaries.

Exceptions can therefore be regarded as the touchstone for grammars from a practical perspective. They indicate the mastery of the technique of giving examples because a deviation is always a creative hint to a new boundary of wellformedness and the validity of the old one. To put exceptions at the heart of grammar means to reveal what grammar is about: Drawing a boundary in using a language as a grammarian. Exceptions do not have to be reintegrated in the system of rules, as rules cannot be separated from a so called application. Exceptions show what grammatical practice is about. And this is more than pure calculation.

Is it therefore possible to incorporate exceptions not only as indirect mechanisms to proof the stability of a system, i. e. the rule-based generation of structures, but as a direct method to show the floating character of the boundary of wellformedness? This would imply the possibility of saying goodbye to a

grammar that only sticks to clear cases or prototypes to maintain “separateness and clarity of actual continuous categories” (Rosch 2004: 98).

Grammar has to be prepared for the unexpected – but how to model that? How to use these insights into the grammatical practice for designing grammar theories? The main challenge is the middle character of grammars. On the one hand a grammar is not only focused on just everything that is *possible according to the rules of grammar* – as it should also focus on exceptions. On the other hand grammar is not only focused on *everything* that is possible according to the vast possibilities of producing utterances. This brings us back to the question of how the work of grammarians is organized in practice.

Creativity in grammar is therefore not purely chaotic but a highly complex ability that is based on the different elements of grammatical practice that have been described in this paper. This kind of creativity is not a Chomskyan-like of making use of a definite set of rules to produce an indefinite number of grammatical expressions (cf. Chomsky 1957). It is concerned with trying to build a “network of similarities” in building examples according to rules *and* in deviating. This means, objects are handled in a specific way and by establishing series of activities (Latour 2002), in which grammarians, specific techniques and pieces of language are related to each other we build linguistic objects as scientific objects. We do not just collect linguistic objects like flies in the air or flowers on the ground, but have to build them on the basis of specific efforts we have to make (cf. Saussure 2003: 82).

The last section of this paper will be dedicated to possible consequences for theory-design and modelling grammars. But before that we have to find an adequate tool for making a difference between the varieties of grammar theories and models.

6.1 A Tool for Making a Difference: Sameness and Similarity

Going back to the analysis of Wittgenstein we could try to distinguish theories on whether they are based on the concept of sameness or on the concept of similarity: Knowing what it means to do the same is basically acting according to a rule, and finding similarities basically means to search for certain patterns.

The basic principle of sameness is bound to classes, also in grammar (cf. Stekeler-Weithofer 1986: 260).¹⁴ Establishing classes means on the one hand to open up the possibility to connect elements to each other. The Leibniz-Principle states that elements of the same class can be substituted to each other (cf. Stekeler-Weithofer 1986: 260). On the other hand classifying elements in that way means that clear, sharp and stable boundaries are established between the classes as distinctive features are assumed.

So the first question is how to establish classes and therefore how to differentiate between them and justify these differences in their sharpness and stableness. Sameness as a concept is of course dependent on theory-internal decisions concerning classes and categories: All members of a class are of the same type. The only thing that is needed is a mechanism to decide whether a given element is a member of a certain class or not. This means basically to test whether an element is member of a certain class or not. And this is of course done by building examples.

The crucial question is whether this mechanism is a pure formal one or not. If categorizing is mainly done by giving examples, pragmatic factors come into play and grammatical practice becomes relevant (cf. Meyer 2006). But then we are back to the problem that from a practical perspective we are mainly working with establishing similarities in a first step. Sameness seems to be

¹⁴ The issue of sameness can be investigated into on different levels. The whole problem gets far more complicated if we e. g. differentiate between types and tokens (cf. Stetter 2005, where he points out that sameness is a linguistic artefact).

something that is dependent on the idea of the crystal-like purity of logic (cf. PU §107: 297). It is an objective of formal grammars even though in practice finding similarities is the more important factor. This is a first hint at the fact that the two concepts of similarity and sameness cannot be separated from each other completely.

The whole concept of rule-based-grammar is dependent on the idea that it is possible to represent classes of expressions by using symbols and logically connecting them. Sameness is of fundamental importance here as substitution is only possible by assuming that elements are of the same in a certain way. Exceptions form a problem as they do not fit because of classification: The general rule does not contain all the single possible members.

If focusing on similarities patterns become more important. Fitting into a pattern means to agree up to a certain degree of non-distinctive features. Establishing patterns is mostly done by experience and is use-oriented. Elements do not have to share exactly the same features. Therefore being of the same sort is of a different type than in rule-based models. The fundamental question in respect to patterns is in what way they can guide us in view of future activities.

6.2 Different Models of Grammar

After we have investigated into the mechanism that underlies establishing grammar theories and models we can come back to the question of how to model the above mentioned creativity.

From what has been said before grammar is not to be regarded as a computational exercise only (cf. Meyer 2006, Stetter 1997, 2002). This means, in a weak version, that a specific creativity in building expressions and explicitly referring to rules is a grammar-internal phenomenon. One could also assume a strong version, i. e. that creativity in building expressions and explicitly

referring to rules is a phenomenon also significant for the practice of language of ordinary speakers. But this would make the whole distinction between grammatical practice and language practice superfluous and the insights that have been presented here would disappear. In each case creativity should be reflected in the design of the theory as it is part of what we call language. In this paper we only investigate into the weak version of the hypothesis.

The next question is how to design theories. One could again state a strong hypothesis like “Grammar should abandon the notion rule of grammar”. One reason could be that not all games are completely guided by rules and reference to rules is not always possible or at least not useful (cf. Stekeler-Weithofer 2002: 224, Rosch 2004: 98). Grammar would then conceptualize language as a system without clear boundaries and the question would then be how to design that theoretically. One possibility would be working with patterns instead of rules (cf. Chomsky 1963: 328). Or we could just state a weaker hypothesis stating that grammar should at least partly reflect that a pure rule-basis is not useful in every case (cf. Stetter 1997, Jackendoff 2002). Exceptions could then be analyzed as conflicts¹⁵ and be solved for example by assuming constraint hierarchies like in harmony grammar and OT.

6.2.1 The Weak Version: Rules, but not Everywhere

A certain kind of openness has to be integrated into rule-based systems if they want to consider exceptions on a more basic level.

The theoretical sketch of a Minimalist Program has prima vista abolished rules, like the Principles and Parameters Theory before. A closer look allows a deeper insight into the nature of minimalism: Rules in form of rule schemes are

still there to form the basis of generating pairs of features, even if the mechanisms for generating only the wellformed structures is also equipped with constraints (cf. Grewendorf 2002: 126). Another architectural problem is that the basic idea of “generating only the wellformed ones” is still of great importance. Nevertheless issues of conflicts are for the first time incorporated into the Chomsky grammar. By assuming certain principles and later on constraints the derivational process is guided not only by rules. The main issue in the last years has been the question of the scope of constraints. The classic principles and constraints did not allow any competition between candidates. In the Minimalist Program constraints become translocal and therefore different derivations can be compared according to the relevant constraints and compete in their wellformedness. This set of competing syntactic objects is called reference set (cf. Müller & Sternefeld 2001: 6 ff.). The overarching principle of derivation meanwhile is economy as a general cognitive principle (cf. Chomsky 2001). All in all the Chomskyan Minimalist Program is still an outline of a generative procedure, even though evaluation of wellformedness becomes less rule-dependent because of the interactions of constraints.

Another possibility is to complement generative rules with constraints which are explicitly responsible for evaluating expressions and which do not intervene into the generative procedure. The whole focus of grammar theory shifts away “from the effort to construct an algorithm that assembles the correct structure piece-by-piece ...” (Prince & Smolensky 1993: 22). Exceptions can then be analysed as “conflicting matters“ and be “explained” by restructuring the hierarchy of assumed constraints. In a conception like this exceptions do not form an extraordinary event as conflicts are not extraordinary but normal:

¹⁵ Going back to ancient latin theory of law Agamben points out that exceptions can be understood as the manifestation of a conflict between different sort of laws (cf. Agamben 2002: 32 f.).

“Dadurch, daß die Anweisungen der Regulierungsmittel als verletzbar und zueinander geordnet betrachtet werden, können sie allgemeiner und ohne Ausnahmeklausel formuliert sein.“ (Müller 2000: 7). This is why the term exception is no more needed in a conception like this. While any rule-dependent evaluation procedure by definition produces exceptions an optimality or harmony approach is based on the principle: “A language-particular grammar is a means of resolving the conflicts among universal constraints.” (Prince & Smolensky 1993: 3). Constraints in OT are generally violable. Exceptions can therefore be analysed according to the so called PTC (Panini’s Theorem on Constraint-Ranking), which states that the more general a constraint is, the more it has to be situated down in the hierarchy that it can be activated whenever higher ranked specific constraints are not activated (cf. Prince & Smolensky 1993: 241).

Nevertheless a new problem arises: To be able to explain the reasons for the wellformedness/illformedness of expressions under consideration a possibly vast number of constraints and candidates to compare is needed which makes the whole theory rather complex (cf. Müller 2000: 74 ff.).

To close this section one could ask whether the principle of feature-basis changes anything concerning the focus on sameness. Indeed founding a grammar theory and especially the generation of structures on feature-sets allows considering very fine differences between expressions. And indeed a lot of grammar theories are based on mainly combining features (HPSG, Construction Grammar, Minimalism). But nevertheless this is not the crucial question. A feature-based model can also be combined with rules – and this is done in most of the cases. Then still the guiding principle is the sameness of objects although the decision on the degree of sameness is based on a feature-analysis.

This brings us to the question how the founding role of rules can be eliminated.

6.2.2 The Strong Version: No Rules in Grammar

Completely abolishing the notion rule of grammar means to find ways how to do the generation of structures without schemata which use rules, i. e. algorithms. In a rule-based grammar a class of wellformed sentences is established by assigning structural descriptions that are generated by algorithms. An algorithm is a means to convey one sequence of symbol into another sequence o symbols. This altogether forms “the central dogma of modern cognitive science, namely that intelligence is the result of processing symbolic expressions.” (Pinker & Prince 1988: 2).

Abolishing rules therefore means to break with this dogma. The question that is of interest here is: Do models like these help to eliminate the problematic aspects of focusing on sameness only? Do they help to integrate non-standard, conflicting events in grammar?

Models that do not work with rules can be based on the principle of self organisation (cf. e. g. Oudeyer 2005) and on the principle of association that guides the systematization of structures (cf. also Vogel in this volume).¹⁶ In that last case a number of processing units is combined to form a so called network. Afterwards patterns of activations are built, in which a connection between the different units is established by connection weights. These connections are basically local (cf. Pinker & Prince 1988, Marcus 1998). Exceptions then could disappear exactly on the threshold of what makes two things similar, i. e. if an object is processed according to a certain pattern. But the question is: How many

¹⁶ One has to differentiate between the ability of networks to represent and the ability to learn (cf. Marcus 1998: 247).

similarities do we need to say that two linguistic objects are similar (quantity)? How are the patterns characterized (quality)? The crucial point is that the similarities can differ and do not have to be stable: The degree of deviation from a pattern that is significant e. g. concerning wellformedness is not predetermined. From a Wittgensteinian point of view patterns are not to be mixed up with a mould to which objects fit. The way in which patterns are used is also not fixed (cf. PU §74: 282). So questions concerning quantity of similarities and quality of patterns are not easy to answer.

Besides these questions a severe problem arises: How to establish similarities that can be captured by patterns? Marcus has shown that abstract relationships between entities cannot be established if merely working with the principle of association. The basic problem is generalisations. To this end one has to use variables. But obviously networks based on the principle of association do not work with variables according to Marcus (1998). “Training spaces” are defined and then it is only possible to work with objects that are characterised by features that are already given (Marcus 1998: 259). But as we have seen also grammatical practice includes combining given objects in a completely new way and relate new objects according to given features. The idea of “using an object as if” that was described earlier means exactly this.

This brings us back to the beginning. Being able to consider similarities does not imply the claim of abolishing rules. Similarity and sameness are not opposites to each other, they are linked together under the heading of “categorical thinking” or “prototype thinking”. Jackendoff for example has shown that rules and patterns in morphology are interwoven as to what degree productivity is indicated (cf. Jackendoff 2002: 160 ff.).

7 Conclusions

Investigating into the nature of grammatical practice elucidates that the systematic character of grammar and its theory is dependent on a family of techniques that undermine their generalising force and their commonly assumed boundaries. This is why one could say that grammar is a manifestation of processes which produce less stability, less predictability and less systematisation than we search for.

To put these processes at the heart of grammar theory means to design it in a different way. Theories should therefore combine the two basic concepts of sameness and similarity in a way that a non-calculative creativity is built-in, as we have seen that they are not opposing concepts but concepts that are interwoven when describing grammar and its theory from a practical perspective: The concept of sameness guides us in automatising processes like categorising. The concept of similarity is of outstanding importance whenever we try to establish abstract relations between linguistic entities and especially try to elicit possibly neglected characteristics that sometimes seem to be rare, exceptional or irregular.

The clear boundary of wellformedness that is produced by a rule-based system that is mainly concerned with clear cases does not capture the vast possibilities of deviating and making exceptions. Exceptions, regarded as a specific kind of deviating examples, disappear if rules are not the basic instrument for describing and explaining the structure of a language.

From a radical point of view one could still say that singularities will still form exceptions, as rules nor patterns can fully cope with them. But a linguistic object that is radically different from all other linguistic objects is logically impossible: It would not be a linguistic object anymore. Also from a practical point of view this argument can be invalidated: The goal of linguistic theory is

to investigate into similarities between linguistic objects. This is exactly why objects are conceptualised in a specific way so that we can compare them to each other. The main challenge is therefore by which means and in what way we compare linguistic objects. In investigating into the grammatical practice we will be able to find the founding principles for answering to this challenge.

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