Rezensionsartikel / Review article

Csilla Rákosi

On current views on exceptions in linguistics[1]

1   Introduction

The book *Expecting the unexpected: Exceptions in grammar*, edited by Horst J. Simon and Heike Wiese[2] fits into a series of collections of papers published in the last 10 years about metatheoretical issues in linguistics.[3] These volumes have touched upon different methodological problems related to the usability and treatment of linguistic data and evidence: their reliability, acceptability, functions, typology, structure, combinability, etc. A typical characteristic of the current literature on linguistic methodology is that most authors go beyond the standard view which has been dominant in linguistics since the 1950s in several respects but remain within its boundaries in relation to other relevant issues. This is the case with the problem of inconsis-

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[2]   Horst J. Simon, Heike Wiese (Eds.): *Expecting the unexpected: Exceptions in grammar.* (Trends in linguistics. Studies and monographs, 216.) Berlin & New York: de Gruyter Mouton, 2011, 450.

[3]   Cf. Borsley (ed.)(2005), Featherston & Winkler (eds.) (2009), Kallmeyer & Zifonun (eds.)(2007), Kepser & Reis (2005), Kristiansen et al. (eds.)(2006), Penke & Rosenbach (2004/2007), Stefanowitsch & Gries (eds.)(2007), Sternefeld (ed.)(2007), Winkler & Featherston (eds.)(2009).

tency in general, and exceptions or counterexamples, in particular. The untenability of their standard treatment is realised and it is proposed that "strong falsificationism" (that is, the rejection of a theory/hypothesis which is in conflict with linguistic data) has to be replaced by "weak falsificationism" which allows for the temporary tolerance of counter-examples.[4] This proposal, however, raises several problems to which no fully-fledged and generally accepted solution has yet been found. One problem is the question of how to interpret the idea of "weak falsification" in quantitative terms. That is, for example, it is not clear how many counter-examples refute a hypothesised rule gained from the investigation of some corpus and how many exceptions can be tolerated. A second serious problem is that Chomsky's proposal for pursuing linguistics in a "Galilean style" (which is regarded by Penke and Rosenbach as a version of weak falsificationism) retains the view that exceptions (and in general, inconsistencies) are *failures*. Nevertheless, they are no longer regarded as fatal but only as hindrances or difficulties which have to be overcome in future. This means in most cases that exceptions are put aside in the hope that later developments of the theory will solve them:

> Apparent counterexamples and unexplained phenomena should be carefully noted, but it is often rational to put them aside pending further study when principles of a certain degree of explanatory power are at stake. How to make such judgements is not at all obvious: there are no clear criteria for doing so. […] But this contingency of rational inquiry should be no more disturbing in the study of language than it is in the natural sciences. (Chomsky 1980: 2)

As the quotation witnesses, counterexamples are deemed by Chomsky to be foreign bodies in the actual phase of theory formation and have to be practically ignored for a shorter or longer time. According to this view, this neglect is all the more justified as exceptions are *disturbing factors* which may divert the process of linguistic theorising from its right direction. Some authors, however, go beyond this stance and indicate that inconsistencies should not be evaluated negatively; it should instead be acknowledged that they *play a vital role in the development of theories*. In this vein, Kepser & Reis (2005: 3) emphasise that contradictions resulting from the diversity of data may be fruitful because striving for their resolution plays a central

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[4]   For a thorough comparison and evaluation of different views on contradictions in linguistics, see Kertész (2012). See also Penke & Rosenbach (2004: 484).

role in scientific progress.[5] Similarly, it is illuminating to compare Chomsky's formulation on the one hand and Penke and Rosenbach's interpretation of its essence on the other:

> According to Chomsky it is legitimate to ignore certain data to gain a deeper understanding of the principles governing the system under investigation. [...] In all these cases, *the apparent counter-evidence* was not taken to refute a theory, but *stimulated further research that resulted in the discovery of principles so far unknown, thus enhancing our understanding of the phenomena under study*. (Penke & Rosenbach 2004: 484; emphasis added)

Against this background, it is clear that the volume *Expecting the unexpected: Exceptions in grammar* makes a valuable contribution to the current methodological turn in linguistics. This is due to two circumstances. First, the reader finds an extraordinarily well-written essay about the concept and different methods of the treatment of exceptions in syntax; these insights can be easily generalised to linguistics in general. Second, most papers in the volume were produced by renowned theoretical linguists. This is in accord with a relatively new tendency in philosophy of science that metascientific-methodological issues should not be dealt by imposing on specific branches of science practice-alien tenets stemming from general, abstract philosophical considerations. Instead, philosophers of science "would have to work within science as actually practiced, and be able to discourse with practicing scientists about what was going on" (Machamer 2002: 9), or scientists have to be capable of reflecting on their scientific activities from a metatheoretical point of view. Therefore, this collection of papers is well equipped to fulfil a double task: first, to *describe and analyse the current practice* of the treatment of exceptions in linguistics; and sec, to *propose novel norms* on the basis of which the recent practice can be evaluated.

Nevertheless, the volume does not realise its full potential and does not live up to our expectations in some respects. This is mainly due to the circumstance that the contributions do not rely on the metatheoretical model provided in the second introductory essay but make use of their own, often unreflected concept of 'exception'. This leads to some perplexity at the conceptual level. Edith Moravcsik's

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[5]   "Evidence involving different domains of data will shed different, but altogether more, light on the issues under investigation, be it that the various findings support each other, help with correct interpretation, or by contradicting each other, lead to factors of influence so far overlooked." (Kepser & Reis 2005: 3)

definition and the conflict resolution techniques described by her could have been used as a starting point which would make it possible to systematize and compare the standpoints of the authors. As a second problem, most writers of the critical commentaries on the papers do not treat the contributions which they comment on as case studies about some aspect of the emergence and treatment of exceptions but react to them as they would to "regular" linguistic papers dealing with some object-scientific problem. A third problem is that the editors of the volume apply a structure whose parts are well-motivated in isolation but seem to be rather a mismatch together. In this way, highly relevant insights and perspectives remain unfocussed or at least, receive too little attention.

Despite this, enlisting the participation of these authors is an impressive accomplishment from the editors. Thus, the reader obtains a broad overview of the emergence and handling of exceptions in linguistics. The systematisation and the elaboration of new methodological rules relating to them, however, can be done in a do-it-yourself manner by the reader. Let us consider the "raw material" in some detail.

2   The contributions

Edith Moravcsik's introductory paper offers the following definition of exceptions: "Typical exceptions are a small subclass of a class where this subclass is not otherwise definable." According to Moravcsik, exceptions pose two kinds of problems. First, they are in conflict with a generalisation which was supposed to hold for the whole class. Second, they do not possess common characteristics which would make it possible to define them as a subclass. Moreover, a third problem can be added which is a consequence of the first two: exceptions do not allow us to define the regular subclass, either.[6] Therefore, it is not possible to simply narrow down the scope of the generalisation from the whole class to the regular subclass.

Treatments of exceptions are divided into three main groups. *Solutions belonging to the first group* "represent exceptional structures as both exceptional and non-exceptional" (Moravcsik 2011: 35). This

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[6]   Members of the regular subclass possess, of course, the property which was supposed to apply to the whole class; this is, however, only an "accidental" characteristic which cannot serve as a basis of categorisation.

means that exceptions are accommodated with the help of a representation which interprets the given exception in such a way that exceptional and non-exceptional features are captured

- as two faces of a single representation (double tree diagram);
- as two strata in a single representation (the two tree structures are separated as two stages of the derivation of the sentence);
- as separate representations in a single component (for example, underlying structure vs. surface structure), or
- as separate representations in separate components (for example, syntactic representation vs. semantic representation).

Solutions in the second group "regularise" the exceptions, that is, they re-analyse them in such a way that they become fully unexceptional. There are several methods of achieving this:

- restoring the homogeneity of the whole class by re-analysing the regular and the irregular subclasses in such a way that there is no difference between them, or by re-analysing the exceptions so that the irregular subclass does not belong to the superclass;
- strengthening the subclasses either quantitatively (that is, it is shown that there are no sporadic exceptions but a larger class of them which might allow for a principled explanation) or qualitatively (that is, further common properties are revealed which might make the exceptions predictable).

Solutions in the third group are based on the strategy that the exceptional character of the members of the irregular subgroup is acknowledged but one finds reasons which can explain them. Thus, one goes one step further than with solutions in the second group because besides revealing correlating properties, one provides an explanation for the exceptional behaviour of the members of the irregular subgroup.

Of course, on the basis of the analysis of further case studies, this typology can be refined and extended by other strategies. An arguable point seems to be, for example, the first strategy in the first group, because double tree diagrams do not require the separation of the contradictory descriptions of the same object. Therefore, this may lead to logical chaos, or, at least, it is not clear what could prevent the escalation of the application of such double representation in every case when a structure seems to be an exception to some syntactic

rule. Baltin (1987), for example, as Kertész & Rákosi (2009) have shown, flatly rejects the combination of two different structures into a single tree and seeks a solution which keeps both descriptions but separates them in a well-motivated way.

From this concise overview it is clear that this typology is intimately close to research practice in linguistics. There are no invented, only calculated possibilities which would follow solely from the systematicity of the model but all of them are illustrated by real-life examples. Moreover, it shows that research practice in linguistics has departed from the standard treatment of exceptions: giving up the rule against which exceptions have been found is only one of several possibilities. In certain situations, one wants to keep both the rule (generalisation) and the exceptions; thus, one may separate the "regular" and "exceptional" characteristics of the members of the irregular subclass from each other with the help of two distinct representations. The application of this strategy results in a paraconsistent solution, that is, in a permanent but controlled toleration of the inconsistency based on a well-motivated and systematic separation of the conflicting representations.

Treatments in the second group yield an important insight, too: it is not the linguistic examples themselves which should be regarded as data but their interpretation, analysis, or representation. From this it also follows that data are not sacrosanct, hard facts but revisable hypotheses which can be given up or modified.

It is also a break with the standard treatment that all surveyed strategies require the modification and development of the given theory at some point – that is, exceptions are not disturbing factors but the motors of the process of linguistic theorising.

Barış Kabak and *Irene Vogel* give an overview of types and treatment of exceptions in phonology. With the help of a case study on disharmonic roots and atypical stress-patterns in Turkish, they compare some of them and raise a further one. Lexical prespecification represents exceptional phenomena with the minimal features necessary; thus, it employs maximal underspecification. This proposal seems to belong to the third group in Moravcsik's typology, that is, it offers an explanation of the exceptionality of certain phonological phenomena. Nevertheless, it motivates the extension of Moravcsik's typology from two points of view. First, Kabak and Vogel claim that it is not possible to find common features in the exceptional items. Second, the explanation which they provide does not identify the causes of the irregularities. Rather, the authors tried to propose a solution which is

capable of capturing the individual properties of the irregular forms by raising the idea of "the inclusion of item-specific information in a lexical representation" (Kabak & Vogel 2011: 77). That is, they try to solve a situation where there seems to be no hope for the "regularisation" of the irregular subclass with the help of an explanation which could be labelled as "irregularising the superclass" or rather as "treating the irregular items to be the basis of the descriptive component of the linguistic model".

Nevertheless, it is questionable whether "prespecification is the only descriptively adequate and theoretically viable means of handling various kinds of phonological exceptions" (Kabak & Vogel 2011: 88). In order to avoid hasty generalisation, it would be interesting to scrutinise under what circumstances the proposed method is useable, better than its rivals, and what its limits or shortcomings are.

Greville G. Corbett's contribution is thought-provoking because he defines exceptions not as isolated or unsystematic violations of a hypothesised rule but as deviations from a maximally regular "canonical system". A canonical system means that all possible combinations of the relevant features are produced and it is examined whether all combinations are present in the given language and whether the combinations are maximally consistent, that is, there is a one-to-one relation between feature sets and linguistic forms. This method enables us to reveal and characterise several different types of morphological exceptionality (such as periphrasis, anti-periphrasis, defectiveness, overdifferentation, suppletion, syncretism, heteroclisis, deponency) and to detect cases when a linguistic form is exceptional from many points of view. Higher order exceptionality is especially interesting because various kinds of interactions of non-canonicity can be investigated. Moreover, reliance upon canonical systems makes it possible to measure the amount of deviance from the (supposed) ideal. Nevertheless, one should not forget that this is only a kind of symptomatology: diverse manifestations of exceptionality can be revealed but this is only a first step towards a linguistic theory which might explain them. Despite this, it seems to be a very useful methodological tool in morphology and typology:

> The canonical standard offers a point of reference, from which we can calibrate the real language examples we discover, and in particular those which are most relevant for morphological theory. Deviations from canonicity all demand an explanation, and instances of higher order exceptionality may well prove particularly significant. (Corbett 2011: 137)

Corbett's proposal is a particularly valuable contribution to the methodology of linguistics because it is a tool with the help of which one can seek exceptions actively instead of simply registering them. This is, clearly, a fundamental breach with the standard view.

Damaris Nübling's paper applies the third strategy, too, since she explains inflectional irregularities in Germanic languages in such a way that she tries to reveal the diachronic development of the verbs at issue. She identifies four different paths for the emergence of exceptions of this kind: accumulated sound shift, accelerated sound change, morphological change and lexical fusion, and remarks that exceptions can be often found under high token frequency. She reveals two factors which seem to exert influence on the position of irregularity: semantic relevance and token frequency. She proposes to replace the term 'irregularity' by 'brevity' and 'distinctiveness', because "suppletion as the most extreme form of irregularity allows for brevity of expression without the risk of information loss (syncretism). Thus, irregularity must be understood as a protection against syncretism" (Nübling 2011: 157). She also emphasises that exceptions may produce distinctions which were not present in the given paradigm. Therefore, Nübling does not deem inflectional irregularities to be simply exceptions to some rule or hypothesis but she thinks that they have a function within language.

Thomas Wasow, *T. Florian Jaeger* and *David M. Orr* discuss an issue that belongs to the unsolved problems in the current literature on linguistic data and evidence: namely, the question of how to define the concept of 'exception' in the case of non-categorical (statistical) generalisations. The authors introduce the notion of 'soft exceptions', which means "a lexical item whose frequency is dramatically different from that of other lexical items that are similar in relevant respects" (Wasow et al. 2011: 176). This interpretation is somewhat shaky. Nevertheless, we may try to explicate "dramatically different" as "significantly different", and clarify what "in relevant respects" means in the given case – the latter seems to require a context-sensitive decision.The three authors demonstrate the workability of these ideas with the help of a case study about the choice of relativisers (*that* vs. *wh*-words) in the initial position of non-subject extracted relative clauses (NSRCs). The starting point of their argumentation is three tables showing that there is considerable variation in the rate of *that* in NSRCs depending on the choice of the NP determiner, head noun and prenominal adjective, respectively. They raise the hypothesis that the correlation between relativiser frequency and lexical choices can

be explained as the result of two factors. First, semantic and pragmatic reasons seem to influence the occurrence of certain determiners, head nouns and adjectives with NSRCs. Second, there seems to be a link between the predictability of the NSRC and the absence of a relativiser because in the case of highly predictable NSRCs, a relativiser is less useful in the processing of the given utterance. To sum up, Wasow et al. provide a solution to these "soft exceptions" with the help of the third strategy of Moravcsik, that is, they provide an explanation for them.

Jóhannes Gísli Jónsson and *Thórhallur Eythórsson* differentiate between two types of exceptions in connection with case selection in Insular Scandinavian: "structured exceptions, which display partial productivity" and "arbitrary exceptions, which are totally unproductive". Verbs with accusative subjects in Insular Scandinavian are structured exceptions in this sense. They not only show some productivity but also share certain lexical semantic properties. Thus, they can be divided into semantic subclasses. This indicates that they are treated with the help of the second strategy by Moravcsik, namely, the strengthening of the exceptional subclass qualitatively: their common properties are revealed which can make their use predictable. In contrast, verbs with genitive objects are labelled as arbitrary exceptions and handled with the help of the third strategy: a diachronic explanation is provided for their behaviour. Here again, the explanation is related to exceptions as isolated irregular cases instead of a regularised ex-irregular subclass.

Frederick J. Newmeyer analyses three approaches in connection with exceptions to typological generalisations in syntax. First, he characterises the Government-Binding Theory as a "macroparametric approach" which means that "the principles of UG are associated with a small number of broad-scope macroparameters, each of which admits to a small number of settings" (Newmeyer 2011: 258). Each setting of the set of parameters corresponds to a language. Against this background, typological exceptions were interpreted either with reference to markedness relations, or they were banished from the core grammar to the periphery. Newmeyer supports with several arguments his claim that the attempt to grasp clusters of typological features with the help of abstract parameter settings failed. The second approach examined by Newmeyer is the Minimalist Program which he labels as "the microparametric approach" in which "parameter settings are not associated with principles of UG that hold for an entire language, but rather with particular functional projec-

tions present or not present in a particular language" (Newmeyer 2011: 265). This approach is judged to be unsuitable for the treatment of typological exceptionality by Newmeyer because it does not provide tools for formulating typological generalisations due to its focus on idiosyncratic properties of lexical items and their projections in single languages. To put it another way, Minimalism makes use of a high amount of language- and functional category-specific parameters; consequently, typologically relevant common features cannot be grasped. The third approach to typological generalisations and exceptions investigated by Newmeyer is extrasyntactic: "the burden for handling both is shifted from UG to performance principles that are sensitive to grammatical structure" (Newmeyer 2011: 270). In this way, performance-based explanations are provided for typological generalisations and their exceptions, an approach which resembles Moravcsik's third strategy. In this case, however, it is not only the exceptions that are explained with the help of reference to some other linguistic domain but the regular subclass, too. Newmeyer points to a fundamental difference between UG principles and performance principles: while the former does not allow counter-examples, with the latter exceptions can be expected and admitted – that is, individual violations do not refute them. Nevertheless, it is questionable whether "deviant" languages can be treated as exceptional individuals and left without explanation: single individuals may behave "anomalously" but it is not clear why whole language communities do this.

Sam Featherston surveys three types of exceptions: cases in which although phenomena appear to fulfil the conditions of the application of a rule, it seems the rule does not apply to them; languages which do not obey cross-linguistic generalisations; and corpus data containing a structure that is forbidden by some constraint.

In a case study on supposed counter-examples against Binding Condition in German, Featherston argues for the application of "improved data collection techniques" such as magnitude estimation methodology. He comes to the conclusion that

> Our experimentally obtained judgements demonstrate that the standard binding constraints apply here, but other irrelevant but nevertheless systematic constraints operating cumulatively […] are confusing the picture. There is in this data therefore no problem of generative grammar, no dilemma and no exception. The simple picture was being obscured by the large number of additional factors affecting these structures. (Featherston 2011: 299)

That is, in the case of exceptions of Type 1, Featherston proposes the application of Moravcsik's second strategy, namely, regularising exceptions with the help of restoring the superclass by showing that there is no difference between the supposed regular and irregular items. This is achieved through the radical revision of the data handling techniques of the theory. This proposal is, of course, in sharp contrast with the standard treatment of exceptions.

Type 2 is exemplified by the presentation of the results of two experiments. The first of them shows that generative linguistics misjudged German insofar as this language cannot be regarded as an exception to the Empty Category Principle. This experiment breaks with the assumption that well-formedness is dichotomous and is based on the hypothesis that it is of gradual character. Its results can be summarised as follows:

> The very close correspondence of the results on German and English leaves no doubt that the effect that we observed in German is of the same type as the superiority effect which we see in English. (Featherston 2011: 302)

This is the same strategy that was applied to exceptions of Type 1: the regular and irregular distinction is shown to be only apparent and the two subclasses are unified. The alleged difference between English and German disappears because the difference between judgement scores relating to the two compared structures is not large enough to be interpreted as "well-formed" vs. "ill-formed" but there is a continuum from "better-formed", through "well-formed", and "ill-formed" to "more ill-formed". This means that the re-interpretation of the regular and irregular subclasses relies not just on a richer and more refined data set but also on changes in the theoretical assumptions.

Type 3 of "ghost" exceptions consists of occurrences of structures which are excluded by the grammar – and, the opposite may occur, too, when there cannot be found instances with structures that are relatively well-formed. In order to provide a solution for such problems, Featherston proposes the modification of the theory which makes it possible to explain the exceptions. This can be interpreted as the application of Moravcsik's third strategy – although this case seems to be a further subtype because it is various fundamental assumptions about the structure of grammar which should be modified. Namely, the essence of Featherston's proposal is that

> […] an empirically adequate architecture of grammar requires us to distinguish two separate modules of the grammar: Constraint Application and Output Selection. The first is responsible for the determination of well-formedness, the second selects structures for output, operating competitively on the basis of well-formedness weightings. (Featherston 2011: 293)
> How does this account for exceptional occurrence? Well, to err is human and human linguistic behaviour is probabilistic. (Featherston 2011: 310)

In Section 4, Featherston gives a brief but very interesting comparison of the inner architecture and treatment of exceptions in Generative Grammar, Optimality Theory and his own Decathlon Model.

As Featherston himself emphasises, his proposals do not resolve all inconsistencies between data and hypotheses. Thus, it could be the task of further research to find out which exceptions cannot be solved in this way, and whether there are cases when there were no exceptions against a given rule according to generative grammar and the emergence of exceptions is a consequence of the use of the methods advanced by Featherston.

Ralf Vogel addresses the issue of exceptionality in linguistics in the framework of Optimality Theory. As is well-known, OT assumes constraints to be violable; thus, exceptions are not counter-examples but only "soft", i.e. tolerable exceptions. Vogel chooses a highly instructive example, namely, case conflicts in German free relative constructions. These are cases when it is apparent that there is a conflict between two constraints: the *wh*-pronoun receives different case requirements from the matrix verb and from the verb in the relative clause.

The first type of exceptions focused on by Vogel emerges from the circumstance that there are conflicts between linguistic forms and constraints which do not lead to ungrammaticality, while others do. OT introduces constraint hierarchies which enable us to grasp this difference: violations of lower ranked constraints can be tolerated in order to avoid the violation of higher ranked ones. This solution belongs to Type 1 according to Moravcsik: constraints and the optimal output form are separated. Nevertheless, this separation is context-sensitive, that is, the tolerability of a constraint violation depends on the relationship between the given output form and other output-candidates: only the optimal form is allowed to infringe the constraints.[7] It must also be noted that although OT provides means for the toleration of constraint violations, there are other types of inconsistencies which it cannot handle, or, at least, for which it has no

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[7]   For more on this, see Darai & Rákosi (2011), Rákosi (in preparation).

built-in solutions. For example, the presence of structures requiring conflicting ranking hierarchies poses in certain cases a serious problem for OT.[8]

The second type of exceptions dealt with by Vogel is variation among linguists. It is an everyday experience for all linguists that the acceptability judgements of native speakers and also linguists may differ from each other. OT grasps this phenomenon with the help of the concept 'variation':

> German might have three 'variants', German A, B, and C, respectively, which differ in their 'tolerance' of case conflicts. [...] it might be the case that German speakers agree in the *relative acceptability* of the structures. The 'variants' only differ from each other in the tolerance of markedness. (Vogel 2011: 344; emphasis as in the original)

Here there seems to be a strategy of regularising the exceptions by the qualitative strengthening of the irregular subclass at work. This solution does not provide an explanation of the existence of the three variants, since Vogel remarks that no dialectal or sociolectal factors can be found which could be deemed as the cause of these divergences. Despite this, it provides theoretical tools which allow for their separation within the superclass.

A third type of exceptions mentioned by Vogel (2011: 355ff.) is the situation when there is a conflict between the outcome of an experiment and the results of corpus research. He resolves this conflict by making use of the third strategy, that is, he gives an explanation of the "deviant" behaviour of certain frequency values insofar as he reveals a confusing factor which should not be ignored during the interpretation of the results of the corpus study.

Frederik Fouvry's contribution approaches the problem of exceptions in linguistics from a computational linguistics point of view. Systems which use grammar implementations unavoidably face the problem that the system is not exhaustive, that is, there are utterances which are acceptable to native speakers but cannot be grasped by the rules of the proposed grammar. Thus, it is of vital importance for the processing formalism that it can also give a minimal description or analysis of utterances to which its rules cannot be applied properly:

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8   See, for example, Kager (1999, Chapter 9).

> Instead of modifying the grammar every time an exception is discovered, it is preferable to have a system that can deal with all cases as well as possible. It is however only feasible to develop such devices when the mechanisms with which the grammar is processed, are very strictly defined. The solutions are extensions to the standard, non-tolerant formalism, and are often formulated in a way that the non-tolerant functioning of the grammar is a special case of the extension. (Fouvry 2011: 381)

Fouvry mentions four such methods: default rules, mal-rules, relaxation rules, and deeper modification of the formalism. Unfortunately, however, at this point this section seems to become incoherent: the reader cannot find the characterisation of the first and fourth method. Subsection 2.3.1 is followed by Sections 2.4-2.6, whose relationship to each other and to the previous subsections is not clarified. Section 3 presents "generalised unification" which is based on not only on relaxing the rules also on the assignment of "penalties" to every relaxation both operations rely on type hierarchy.

Michael Cysouw takes a highly thought-provoking perspective differing from that of the other contributors of the volume because his investigations do not aim at revealing how exceptions can be treated in linguistic theories but at finding out what exceptionality of languages means from a cross-linguistic perspective. He proposes to replace the concept of 'exceptionality' with 'rarity' which is then interpreted and compared against the background of the *World Atlas of Language Structures* by Haspelmath et al. The basis for the comparison of rarity is the "rarity index":

> The basic idea behind the rarity index is to compute the chance of occurrence for all characteristics of a particular language, and then take the mean over all these chances of occurrence. In essence, this results in an average rarity for a language. (Cysouw 2011: 414)

Rarity indices can be determined for single languages and for groups of languages as well, and their areal distribution can be surveyed, too. Cysouw provides some interesting examples for all of them, and shows that languages in north-western Europe cannot be regarded as "paradigmatic" or "normal" languages against which all deviations could be labelled to be exceptions. Instead, as his calculations clearly indicate, north-western Europe belongs to "the geographical areas with a high level of rarity": English, German, Dutch, Frisian and French are highly exceptional.

3 Summary

To sum up, this volume provides an excellent starting point for a comprehensive discussion about types and treatment of exceptions in linguistics. Nevertheless, there is room for further development of the ideas raised, for example, along the following lines:

– How comprehensive is the picture which the volume gives about the issue of exceptions in linguistics?
– Under what circumstances can the proposed methods be made use of and what are the limits of their application?
– How can the metascientific reflection on exceptions be further developed?

The last question seems to be especially important because there are several authors among the contributors who still heavily rely on the terminology and the elements of the standard view of linguistic data and evidence by speaking of "facts", "observation", "falsification" or "truth" in connection with data. Therefore, from this point of view, the book *Expecting the unexpected: Exceptions in grammar* is not exceptional. It is characterised by the same kind of double-facedness as all other current collections of papers related to metatheoretical issues in linguistics. Many (but not all) contributions mix up elements which clearly break with the standard view of the analytical philosophy of science and the standard view of linguistic data and evidence and develop new ideas and methods on the one hand and views which remain within the latter's boundaries and lead to more or less apparent inconsistencies with the former.

Despite this, it should be clear that the first steps towards a new methodology of the treatment of exceptions have been taken. It would be extremely useful to reveal, collect and systematise the strategies adopted to treat exceptions in linguistics. Such inventories would never, of course, be complete and never unanimously accepted. But they could provide methodological guidelines and tool kits for linguists and students of linguistics. Their richness and divergences could prevent researchers from making use always and as a matter of routine of one and the same method.

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Dr. Csilla Rákosi
Research Group for Theoretical Linguistics of the Hungarian Academy
of Sciences and the University of Debrecen
University of Debrecen
Pf. 47.
H–4010 Debrecen
rakosics@gmail.com