The problem of productivity.
Recent issues, challenges and approaches in the field of CxG

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The focus of this talk is on the empirical investigation of productivity differences of constructions, more precisely on the applicability of productivity measures across construction types and their concrete constructicographic application. In a general way, productivity can be understood as "the ease with which a linguistic process gives rise to new forms" (O'Donnell 2015: 3). Although gradation expressions like 'not productive', 'semi-productive' and 'highly productive' have been established within quantitative linguistic research, one can nevertheless observe wide discrepancies in the definition, the denomination and the theoretical treatment of this phenomenon. But above all, problems remain regarding an adequate and transparent recording of productivity in an empirical sense. If productivity is understood as a quantitative phenomenon, this implies, on the one hand, that productivity can be measured and empirically determined, and on the other hand that the productivity of different patterns can be compared on the basis of these measurable values (cf. Bauer et al. 2019: 45; Gaeta & Ricca 2015: 848). The main debate in productivity research over the last three decades has therefore revolved around the question of how to adequately measure and operationalize productivity on the basis of certain frequency values that can be determined on the basis of large text corpora (see Barðdal 2008: 25; Booij 2007: 69).

In this context, it is by no means trivial that the concept of productivity and corresponding measured values usually come from the field of morphology, where they have a long tradition, particularly in derivation research (cf. Plag 2006; Bauer 2011). One of the main tasks of today's productivity research is to find a way to adapt these productivity measures to the concerns of non-derivational, e.g. compositional (cf. Hein & Brunner 2020), inflectional (cf. Koefoed & van Marle 2000; Haspelmath 2002; Dressler 2003), syntactic (see e.g. Zeldes 2012; Geata & Ricca 2015; Perek 2016), but also phraseological productivity processes (cf. Itoh 1991; Stumpf 2016). For Construction Grammar, which is characterized by the idea to describe the language as a large variety of more or less productive constructions that extend to different linguistic levels, this question is of particular importance: In addition to the effort to explain productivity differences in terms of restrictions, the main issues addressed in this field are how one can a) capture, b) compare and c) map such differences with respect to different constructions as well as construction types.

This talk attempts to develop initial answers to these questions. More precisely, empirical case analyses based on data from the *German Reference Corpus* (DeReKo) are used to illustratively examine two different types of constructions, namely superlatives as grammatical constructions, cf. (1)–(2), and [*Einmal* X, *immer* X] 'Once X, always X' as well as [*Ich* X, *also bin ich*] 'I X, therefore I am' as so-called 'phraseo-templates' (Fleischer 1997), cf. (3)–(4), to discuss the benefits and limitations of different common productivity values. Subsequently, it is shown how productivity differences can be made more transparent and comparable with the help of so-called 'frequency groupings' carried out by the corpus-linguistic tool *Lexpan* (Steyer & Brunner 2014). Finally, the talk concludes by outlining how such findings could be taken into account in the lexicographic endeavor of documenting constructions in large repositories of form-meaning-pairs ("constructicography", see Lyngfelt et al. 2018). More specifically, we discuss how productivity information can be implemented within the technical infrastructure of the *German FrameNet Constructicon* (*FrameNet-Konstruktikon des Deutschen*), and how it can be used for modelling productivity differences between constructions.

(1) Doch die Rolle des Führungsspielers ist ihm nicht auf den Leib geschneidert. Im Kollektiv fühlt er sich **am wohlsten**. (BRZ, 11.09.2008)

*But the role of the leader is not tailor-made for him. He feels **most comfortable** in the collective.*

(2) „Silver Lining" ist seit Langem **das schönste Plädoyer** für die alltägliche Verrücktheit. (BRZ, 03.01.2013)

*"Silver Lining" is **the most beautiful plea** for everyday weirdness for a long time.*

(3) Fürs Leben gilt: **einmal Borusse immer Borusse**. Unabhängig vom Tabellenstand. (MM, 19.03.2014)

*For life, the following applies: **once a Borusse, always a Borusse**. Regardless of the position in the league.*

(4) **«Ich provoziere, also bin ich**.**»** In der Pubertät reizt das Dunkle, das Derbe stärker als in jeder anderen Lebensphase. (ZTA, 07.04.2006)

*«**I provoke, therefore I am**.» In adolescence, the dark and the crude are more appealing than in any other phase of life.*

References

Barðdal, Jóhanna. 2008. *Productivity. Evidence from case and argument structure in Icelandic.* Amsterdam & Philadelphia: Benjamins.

Bauer, Laurie, Natalia Beliaeva & Elizaveta Tarasova. 2019. Recalibrating Productivity: Factors Involved. *Zeitschrift für Wortbildung* 3(1). 44-80.

Booij, Geert E. 2007. *The Grammar of Words. An Introduction to Linguistic Morphology*. 2nd edn. Oxford: Oxford University Press.

Dressler, Wolfgang U. 2003. Degrees of grammatical productivity in inflectional morphology. *Rivista di Linguistica* 15. 31-62.

Fleischer, Wolfgang. 1997. *Phraseologie der deutschen Gegenwartssprache*. 2nd edn. Tübingen: Niemeyer.

Gaeta, Livio & Davide Ricca. 2015. Productivity. In Peter O. Müller, Ingeborg Ohnheiser, Susan Olsen, & Franz Rainer (eds.), *Wordformation. An International Handbook of the Languages of Europe*, vol. 2, 842-858. Berlin & Boston: De Gruyter Mouton.

Haspelmath, Martin. 2002. *Understanding Morphology*. London: Arnold.

Hein, Katrin & Annelen Brunner. 2020. Why do some lexemes combine more frequently than others? – An empirical approach to productivity in German compound formation. *Online Proceedings of the Mediterranean Morphology Meetings* 12. 28-41.

Itoh, Makoto. 1991. Produktivität in Wortbildung und Phraseologie. In Wolfgang Fleischer, Rudolf Große & Gotthard Lerchner (eds.), *Beiträge zur Erforschung der deutschen Sprache*, 226-235. Leipzig: VEB Bibliographisches Institut.

Koefoed, Geert & Jaap van Marle. 2000. Productivity. In Geert E. Booij, Christian Lehmann, Joachim Mugdan & Stavros Skopeteas (eds.), *Morphologie. Ein internationales Handbuch zur Flexion und Wortbildung, vol.1*, 303-311. Berlin & New York: De Gruyter Mouton.

Lyngfelt, Benjamin, Lars Borin, Kyoko Ohara & Tiago Timponi Torrent (eds.). 2018. *Constructicography: constructicon development across languages*. Amsterdam & Philadelphia: Benjamins.

O'Donnell, Timothy J. 2015. *Productivity and reuse in language. A theory of linguistic computation and storage*. Cambridge, Massachusetts: MIT Press.

Olsen, Susan. 1995. Produktive Wortbildung im Englischen und Deutschen. In Rüdiger Ahrens, Wolf-Dietrich Bald & Werner Hullen (eds.), *Handbuch Englisch als Fremdsprache*, 110-114. Berlin: Schmidt.

Perek, Florent. 2016. Using distributional semantics to study syntactic productivity in diachrony: A case study. *Linguistics* 54(1). 149-188.

Steyer, Kathrin & Annelen Brunner. 2014. Contexts, Patterns, Interrelations – New Ways of Presenting Multi-Word Expressions. In *EACL 2014: 14th Conference of the European Chapter of the Association for Computational Linguistics. Proceedings of the 10th Workshop on Multiword Expressions (MWE 2014), 26–27 April 2014*. 82-88.

Stumpf, Sören. 2016. Modifikation oder Modellbildung? Das ist hier die Frage – Abgrenzungsschwierigkeiten zwischen modifizierten und modellartigen Phrasemen am Beispiel formelhafter (Ir-)Regularitäten. *Linguistische Berichte* 247. 317-342.

Zeldes, Amir. 2012. *Productivity in Argument Selection: From Morphology to Syntax*. Berlin & New York: De Gruyter Mouton.