DEVERBAL ADJECTIVES AND NEGATABILITY PATTERNS
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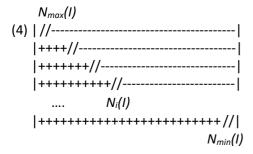
PHENOMENON AND GOAL Productivity and compositionality of **un**-affixation seems of an interesting nature in the case of **anfänglich** 'initial' and **unaufhörlich** 'incessant'. The negative affix **un**- is not allowed to be affixed to **anfänglich** and it may not be dropped from **unaufhörlich**: *__unanfänglich__ and *__aufhörlich__ are not attested in Standard German. However, the interpretation of **unaufhörlich** is still compositionally transparent and one wonders why **unanfänglich** is ungrammatical. The aim of this talk is to provide a pilot study for this pair of adjectives that explains the patterns observed as a (grammaticalized) PPI/NPI effect. That there are pairs of adjectives like **unaufhörlich** – **anfänglich** that show some kind of negatability pattern was not noticed, hitherto, as far as we know. We would like to suggest that the pattern derives from the meaning of the verbal roots as quantifiers over times (see also Löbner 1990).

HISTORY The literature notes that there are quite a few **un**-adjectives where the positive base is missing (we call them BNDAs – baseless negative derived adjectives), and it is suggested that these phenomena are lexical idiosyncrasies or cases – ill understood – of simultaneous or exceptional affixation or just do not exist anymore (Kiparksy 1982, Lenz 1994, see also Horn 1989). **Aufhörlich** is, in fact, attested once in the DWB, however in a quite redundant formulation: **Ich hab das ewig leben nit für aufhörlich, sondern für ewig gehalten** (Frank chron. 430[b]). But why is it lost? What is the role of negation? Adjectival *un*- derives from Indo-European *ni*- which served as the sentential negative particle and was lost as an overt marker in the development to New High German in the process of Jespersen's cycle in the verbal paradigm. Interestingly, the prefix *un*- is sometimes attested as a verbal negator even in Old High German and Middle High German (cf. Hartmann von Aue: **war umbe untroestet ir mich** 'why don't you comfort me', see Weiß 1998:174). The roots of BNDAs are often verbal and seem to fall in different classes from a semantic point of view (see also Dowty 1979). **Unaufhörlich/anfänglich** are related to aspectual verbs. Furthermore, there are de-attitudinal adjectives like **unglaublich** 'unbelievable' and **unzweifelig** 'undoubted', de-causative adjectives like **unerlässlich** 'essential'; de-deontic adjectives like legal **unpflichtig** (15th century) 'not owing sth to sb.' – all with a quantificational meaning component – and adjectives that relate to verbs of motion like **undurchdringlich** 'inpenetrable'. In **unvergesslich** 'unforgetable', negation changes the argument structure of the base adjective **vergesslich** 'forgetful'. Both items are related to the positive verbal root of **sich erinnern** 'remember' and the adjective **erinnerlich** 'remembered'. But *__unerinnerlich__ is not attested. Moreover, ergativity might be worth investigating (Horn 1989: 279). And, there are cases that do not readily fit the picture like **unbändig** 'unruly', for example. That is, the phenomenon of BNDAs might not be uniform. We have an account for adjectives related to aspectual verbs.

BACKGROUND/INGREDIENTS The basic idea for our analysis is that BNDAs and their duals are associated with "a contextually given structured individual" (see Piñango/Deo 2016), "a scale" in terms of Kennedy/McNally 2005 or "a lattice" in terms of Krifka 1992. In the case of **anfänglich/unaufhörlich**, this individual is a time interval *I*. It contains a change of state (see also Löbner 1990 on **anfangen** and **aufhören**), i.e., it is devided in a *P*-subpart and a ¬*P*-subpart. The two complementary subparts determine each other, as illustrated in (3).

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              N(I)
(3) |+++++++++++//-----------------------|              Interval I
    +++ = the times where a state P is holds            The P-subpart
    ----= the times where the state P does not hold anymore   The ¬P-subpart
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The slashes "//" in (3) position the transition from a P-subpart into a ¬P-subpart. It is similar to the neutral zone or gap on a scale associated with antonymous adjectives like **happy** and **unhappy**.
In addition, we assume that there are alternative intervals relevant for the interpretation. The alternative intervals differ wrt. where the change of state $N_i(I)$ is positioned, as illustrated in (4). The ¬*P*-subpart may be maximal $N_{max}(I)$ or minimal $N_{min}(I)$ or somewhere in between: $N_i(I)$. The different alternatives may be kept apart by just looking at the position of the neutral zone $N(I)$.

$$N_{max}(I)$$
(4) | //--| We may capture the subparts formally. The minus (-)
    |++++//---------------------------------| area is a set of times that are above the neutral zone,
    |+++++++//-----------------------------| The plus (+) area is a set of times below the neutral
    |++++++++++//--------------------------| zone, characterized by:
         .... $N_i(I)$

    |+++++++++++++++++++++++++ //| ------- $= \lambda t. t \subseteq I \,\&\, (\forall t' \in N(I)) \, [t > t']$
                $N_{min}(I)$ ++++ $= \lambda t. t \subseteq I \,\&\, (\forall t' \in N(I)) \, [t < t']$

ANALYSIS We may start with the analysis of **anfänglich** in an approximation to Löbner's account for **anfangen** 'start' and other phase quantifiers and we use von Stechow's (2009) degree semantics with a positive operator that is defined as a universal quantifier as part of the semantics of **anfänglich**. We would like to propose that **anfänglich** is an expression of comparison very much like degree adjectives in the positive: it introduces a meaning component that there is a contextually given time interval (or scale) I that is basically a $\neg P$ -phase (of the $N_{max}(I)$ kind, see 4), and it conveys P at the topic time. Alternative positions of the neutral zone would make the $\neg P$ -phase smaller and the sentence in (5) less informative. Therefore, it acts like positive polarity item.

(5)   **Es schneite anfänglich.**   Illustration:
       Presupposition: $PAST_5 \subseteq I \,\&\, (\forall t' \in N_{max}(I)) \, [PAST_5 \leq t']$ $N_{max}(I)$
       Assertion: $SNOW(PAST_5)$ $|/PAST_5/-----------------------------|$

The topic time of P must therefore be located in the neutral zone of the interval. Following Heim (2004), we would like to assume that **un-** realizes internal negation with respect to the universal quantifier. Negation would then require the topic time of P to be in the $\neg P$-subpart of the interval which is contradictory to the asserted part. With these assumptions the adjectives may be defined as follows. **Unanfänglich** is not interpretable, however.

(6)   a. $[[\textbf{anfänglich}]]^{I,N} = \lambda P. \, \lambda t: t \subseteq I \,\&\, (\forall t' \in N_{max}(I)) \, [t \leq t'].P(t)$
       b. $[[\textbf{unanfänglich}]]^{I,N} = \lambda P. \, \lambda t: t \subseteq I \,\&\, (\forall t' \in N_{max}(I)) \, \neg[t \leq t'].P(t)$

Unaufhörlich may be captured as some kind of dual of **anfänglich**. The ordering relation is reversed and the neutral zone is close to the end point of the interval. Alternative positions of the neutral zone would make the P-phase smaller and again the sentence in (7) becomes less informative.

(7)   **Es schneite unaufhörlich.**   Illustration:
       Presupposition: $PAST_5 \subseteq I \,\&\, (\forall t' \in N_{min}(I)) \, \neg[PAST_5 \geq t']$ $N_{min}(I)$
       Assertion: $SNOW(PAST_5)$ $|+++++++++PAST_5++++++++++//|$

Dropping the negation then amounts to a contradiction again. **Aufhörlich** is an NPI that requires internal negation.

(8)   a. $[[\textbf{unaufhörlich}]]^{I,N} = \lambda P. \, \lambda t: t \subseteq I \,\&\, (\forall t' \in N_{min}(I)) \, \neg[t \geq t'].P(t)$
       b. $[[\textbf{aufhörlich}]]^{I,N} = \lambda P. \, \lambda t: t \subseteq I \,\&\, (\forall t' \in N_{min}(I)) \, [t \geq t'].P(t)$

CONCLUSION Our proposal combines insights form NPI interpretation with insights from comparative semantics in order to predict the productivity and compositional meaning of aspectual adjectives. The unavailability of ***aufhörlich** and ***unanfänglich** is not accidental. It looks as if verbal negation at earlier stages of a language allows for negative elements that are scopally restricted in interaction with a universal operator. **Aufhörlich** is a minimizer and cases where **aufhörlich** appears without **un-** may be paralleled to other minimizers like **a drop** that can have a more literal meaning in addition to an NPI use. The below word level negation approach also explains why other NPI licensers cannot license **aufhörlich**. The universal operator intervenes in these cases.

SELECTED REFERENCES Heim, Irene. Remarks on Negation Theory and Antonymy. Ms (2004). Krifka, Manfred. "Some remarks on polarity items." *Semantic universals and universal semantics* (1992): 150-189. Krifka, Manfred. "Semantics and Pragmatics of Polarity Items." SALT (1994). Löbner, Sebastian. Wahr neben Falsch. (1990). Von Stechow, Arnim. "Times as degrees."(2009).