German glide formation and constraint conjunction

T. A. Hall
Indiana University

As in many languages, [i] and [j] stand in complementary distribution in German in such a way that [j] surfaces when adjacent to a vowel and [i] elsewhere (e.g. Moulton 1962). The assumption in the literature is that German requires a rule of glide formation (GF), whereby /i/ converts to [j] in the neighbourhood of vowels (e.g. Kloeke 1982, Hall 1992, Wiese 1996, Hamann 2003). In the present study I examine a context in which GF is blocked from occurring and argue that it can be accounted for most elegantly in an OT approach which requires a conjunction between two markedness constraints. This aspect of my treatment is therefore similar to the one proposed by Ito & Mester (2003), who also posit constraint conjunctions involving two markedness constraints in their treatment of coda-based processes in German. The present treatment will be argued to be superior to rule-based treatments of GF, e.g. Kloeke (1982), Hall (1992), Wiese (1996), in which the blocking environment is accounted for with ad hoc stipulations.

Examples of German words containing pre-vocalic [j] are presented in (1):

(1) Jacke [jaıkə] /iakə/ ‘jacket’
    Union [uɪnˈdʒɔn] /uɪnˈdʒɔn/ ‘union’
    Familie [famiˈliə] /famiˈliə/ ‘family’

These words are analyzed below with an underlying (moraic) /i/. GF requires the ranking ONSET > MAX-µ (see Rosenthall 1994 for other languages).

The following words contain /VOOiV/ (in 2) and /VSOiV/ (in 3). O = obstruent and S = sonorant consonant. Note that GF applies. By contrast, GF is blocked in /VOSiV/ in (4):

(2) GF applies in /VOOiV/:
    Aktion [aktʃjoʊn] ‘action, campaign’
    Bestie [bɛstjə] ‘beast’

(3) GF applies in /VSOiV/:
    Skorpion [skɔrpjɔn] ‘scorpion’
    Celsius [tseɪltsjuːs] ‘celsius’
    Indien [ɪndjən] ‘India’

(4) GF blocked in /VOSiV/:
    Natrium [nɑtRIʊm] ‘sodium’
    Bibliothek [bɪlɪətɛk] ‘library’
    Hafnium [hɑfnjʊm] ‘hafnium’
    Bosnien [bɔsnjən] ‘Bosnia’
    Kadmium [kɑtmjʊm] ‘cadmium’

Thus, GF is blocked in (4) to avoid OSj. The blockage of GF cannot be attributed to the fact that /i/ is preceded by a sonorant consonant alone because GF will apply in this context (see 1). What is more, GF is not blocked in /VSSiV/ (see 5). In (5a) the first S is more sonorous than the second one. In (5b) the two sonorants are equally sonorous. (Apparently there are no words with /VSSiV/ in which the second S is more sonorous than the first, e.g. a hypothetical word like Omlium).
(5) GF applies in /VSSiV/:
   a. Kalifornien [kalifɔrnjøn] ‘California’
   Vilnius [vilnjuːs] ‘Vilnius’
   Fermium [fɛrmjʊm] ‘fermium’
   b. Omnium [ɔmnjʊm] ‘omnium’

My analysis relies on the markedness constraints in (6a-c) and the conjunction in (6d):

(6) a. *σ[CCC]: Three consonants in the onset are disallowed.
   b. *σ[CC]: Two consonants in the onset are disallowed.
   c. Syllable Contact Law (SCL): In \( \alpha . \beta \) the sonority of \( \alpha \) is greater than the sonority of \( \beta \).
   d. SCL & *σ[CC]

Given the ranking *σ[CCC, SCL & *σ[CC] > ONSET > MAX-\( \mu \) the blockage of GF in (4) is correct, whereas its application in (1-3, 5) is optimal. (7) is representative of all /VOSiV/ words:

(7) /bibliote:k/
   a. [bi.bljo.te:k] *!
   b. [bib.lj.o.te:k] *!
   c. \( \rightarrow \) [bi.bli.o.te:k] *

GF applies in (2-3, 5) because ONSET guarantees that the candidate with [i] loses out to the one with [j], e.g. [tsel.zjus] wins out over *[tsel.zi.us]. The analysis also makes the correct prediction concerning hypothetical forms like Omlium (see above), in which native speakers prefer the [i] pronunciation, because the candidate with [j] (in contrast to the one with [i]) violates the conjunction SCL & *σ[CC, i.e. [m.lj] violates both SCL and *σ[CC.

References