Exceptions in stress assignment: Feet in input

Exceptions in phonology have traditionally been dealt with in a number of different ways. While some researchers used pre-specification (e.g. Ito & Mester, 1999, 2001), others resorted to morpheme-specific constraints (e.g. Pater, 2000), and yet others used morpheme-specific rankings (cophonologies) (e.g. Anttila, 2002; Inkelas & Zoll, 2003). In most cases though, the choice among the three was constrained by the theoretical premises of the framework employed, with little independent support, meaning that other alternatives would work just as well. This has been more of an issue in the area of “stress.” In fact, there is little consensus, if any, among phonologists with respect to the formal treatment of exceptional stress.

In this paper, I argue, based on exceptional stress in Turkish, that, among the three general approaches to exceptionality mentioned above, the pre-specification approach is both theoretically and empirically superior to its alternatives. That is, exceptional information should be encoded in the input. I also show, however, based on novel data, that the influence of this pre-specified information should be captured not by strict faithfulness to this information (i.e. not via undifferentiated prosodic faithfulness constraints (McCarthy & Prince, 1995, 1999). Crucially, I argue that what is pre-specified in input is not stress or a stressed syllable per se, but (the edges of) a foot, though this foot does not have to be a perfect foot, nor need it be the foot that actually surfaces.

I start with some facts about Turkish stress: Regular stress in Turkish falls on the final syllable of words. This is illustrated in (1), where stress moves to the right each time a new suffix is added. There are, though, several exceptions to this. The most well-known cases involve words with (a) pre-stressing suffixes (see (2)), and (b) stressed suffixes (see (3)). Several researchers attempted to account for these facts, mostly focusing on pre-stressing suffixes (see e.g. Inkelas & Orgun, 1998; Inkelas, 1999; Kabak & Vogel, 2001; van der Hulst et al., 1991). None of these studies accounted for secondary stress (which arises when there is more than one exceptional stress attracting suffix, see (2c), see also Revithiadou et al., 2006), exceptions to exceptional stress (more on this below), and the fact that different phonetic cues are associated with regular vs. exceptional stress. (Whereas exceptional stress can be cued by both a sharp F0 rise and greater intensity, final prominence is, at best, only a slight rise in F0 (Levi, 2005; Pycha, 2006), and, for some speakers, there is not even a rise at all, and there is instead only a plateau (Konrot, 1981, 1987; Levi, 2005)). Furthermore, interesting questions such as why monosyllabic exceptional suffixes are always pre-stressing (i.e. never stressed like those in (3)), and why stressed exceptional suffixes are always bisyllabic and are always stressed on their initial syllable (i.e. never on the second syllable) (see (3)) have been left unanswered.

One single grammar is offered, in this paper, for the two types of exceptional stress, as well as the regular final stress. I propose that Turkish is a trochaic language in which PARSE-σ ranks low, and thus, in the absence of feet, TROCHAIC does not apply (i.e. vacuously satisfied). This means, given a high ranking constraint FINAL-PROMINENCE, that, more often than not, stress (or rather intonational prominence) will fall on the final syllable of prosodic words, resulting in the so-called “regular stress.” On the other hand, certain syllables (i.e. exceptional suffixes) come into the computation as footed in the input, as in (4) (only foot edges are specified), and have to be parsed in the output, too because of high ranking prosodic faithfulness constraints, and thus TROCHAIC will take effect, resulting in exceptional stress.

More specifically, given inputs like (4), there will be two faithfulness constraints in the grammar, ANCHOR-RIGHT and ANCHOR-LEFT, working to ensure that these suffixes are footed in the output the way they are in the input. The high ranking of these constraints means, for bisyllabic exceptional suffixes such as –ince, that ANCHOR-RIGHT and ANCHOR-LEFT will both be satisfied, and, given TROCHAIC, stress will fall on their first syllable. For monosyllabic exceptional suffixes, however, given an undominated FT-BIN, one of the FAITH constraints will have to be violated (i.e. ANCHOR-LEFT), causing these suffixes to be pre-stressing. It is, thus, not chance that all stressed suffixes in Turkish are bisyllabic and stressed on their first syllable (see (3)), and that all monosyllabic exceptional suffixes are pre-stressing, never stressed (see (2)), which doesn’t find a satisfactory explanation under previous accounts of Turkish stress, but follows directly from our constraint ranking (see (5)), as well as feet edges’ being specified in the input.

This proposal also captures certain exceptions to exceptional stress (not mentioned in previous literature) whose analysis is, at best, burdensome under other approaches to exceptionality (and under previous accounts of Turkish stress). Examine, for example, the case when two pre-stressing suffixes are immediately adjacent (see (6)). In these cases, the first pre-stressing suffix gets stressed (i.e. it is not any
more pre-stressing, compare with (2d)), which follows straightforwardly from our constraint ranking (see tableau (7)). To make things even more complicated, when a stressed exceptional suffix is immediately followed by a pre-stressing suffix, sometimes the stress of the stressed exceptional suffix, and sometimes that of the pre-stressing suffix wins (see (8a) vs. (8b)). This, on the current account, is because while certain bisyllabic suffixes are footed on both syllables in the input (e.g. /in.ce)Ft/ for (8a)) (see (9a) and (9b)), some are actually footed only on their second syllable (e.g. /i.(ver)Ft/ for (8b)) (see (9c) vs. (9d)), a situation already expected on an account that doesn’t put any restrictions on input shape. No matter what inputs look like (e.g. footless, footed on a single syllable (first or second, or the only one available), footed on both syllables, etc.), our grammar will give the correct surface forms (see also (9e) and (9f)).

It follows, then, that an adequate account of Turkish stress should be able to capture the behavior of at least three types of exceptional suffixes: (a) –me type (pre-stressing), (b) –ince type (stressed, and stress doesn’t shift), and (c) –iver type (stressed, but stress might shift). An analysis of these facts on other approaches to exceptionality would be quite burdensome: A morpheme-specific constraints approach, for example, would have to index these groups of suffixes with different constraints: Exceptional suffixes of –ince type would be indexed with the highest ranking constraints (to make sure these win over pre-stressing suffixes, see (8a)), and exceptional suffixes of –iver type with the lowest ranking constraints (to make sure these lose against pre-stressing suffixes, see (8b)), and pre-stressing suffixes in the middle. The question that would be left then though is why only bisyllabic exceptional suffixes could be indexed with the highest and lowest ranking constraints. Or why are there no monosyllabic suffixes indexed with the highest or lowest ranking constraints? On an approach using morpheme-specific constraints, there is no reason for such an asymmetry to arise if monosyllabic suffixes are as equally morphemes as bisyllabic suffixes.

Similarly, an account that doesn’t pre-specify foot edges in the input, yet pre-specifies a syllable as stressed would have difficulty explaining the full array of data presented here: On such an approach, one would have to refer to clash resolution to capture the data in (6) and (8), but then, clash would have to be resolved in favor of the rightmost in (6) and (8b), but the leftmost in (8a), an impossible situation.

In conclusion, the present account seems to capture, with one grammar (see (5)), both regular and exceptional (pre-stressing and stressed) suffixes of Turkish, as well as exceptions to these exceptions (see (5) and (8)). It also accounts for the difference in phonetic cues to regular vs. exceptional stress.

Examples:

(1) a. tabák b. tabak-lár c. tabak-lar-im d. tabak-lar-im-dá e. tabak-lar-im-da-ki
   ‘plate’ ‘plates’ ‘my plates’ ‘in my plates’ ‘one in my plates’

(2) Pre-stressing suffixes are underlined:
    a. dinle-di       b. dinlé-me-di       c. dinlé-di-ki     d. dinlé-me-dí -de
       listen-PAST    listen-NEG-PAST    listen-PAST-CONN    listen-NEG-PAST-too/also
    ‘He listened.’   ‘He didn’t listen.’ ‘He listened so that…’ ‘He did not listen, either.’

(3) Stressed suffixes are underlined and italicized:
    a. gel-ince       d. gel-ivér-du-lar
        come-when      come-P.C-PAST-Pl
    ‘when he/she/it comes’ ‘They were coming.’

(4) a. Inputs for pre-stressing: i. (me)Ft ii. (de)Ft
       NEG too when by
    b. Inputs for stressed:
       NEG too when by

(5) END-RULE-LEFT, TROCHAIC, FT-BIN >> ANCHOR-RIGHT >> ANCHOR-LEFT, FINAL-PROMINENCE >> PARSE-σ

(6) a. [gel-mé-ki]       b. [gel-mé-de]
    come-NEG-COMP     come-NEG-CONN
    “Don’t come so that…” “If you don’t come, then…”

(7) | [gel-(me)-(de)]/ | TROC | FT-BIN | ANC-R | ANCH-L |
    a. [gel(me)(de)]       *d| *me, *de |
    b. [gel-ine](de)        *de       *me, *pd |
    c. [gel-ive(mer)]        *me       *de |
    d. [gel-ive](me)        *me, *pd |
    e. [gel-(me)-(ince)]    *d|     *me, *de |
    f. [gel-(me)-(iver)]    *d|     *me, *de |

(8) a. gel-ince-de       b. gel-ivér-me
    come-when-too     come-just-NEG
    “when he/she comes, too” “just don’t come”

(9) a. /gel-(ince)-(de)/  [gel(ince)de]   c. /gel-i(ver)-(me)/  [gel-i(véme)]
    b. /gel-(ince)/  [gel(ince)]   d. /gel-i(ver)/  [gel-(iver)]
    e. /gel-i(ve)(ince)/  [gel(iver)(ince)]
    f. /gel-(me)-(ince)/  [(gelme)(ince)]