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The Foot is not an obligatory constituent of the Prosodic Hierarchy: “stress” in Turkish, French and child English

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Abstract: This paper proposes that the presence/absence of the Foot is parametric; that is, contra much previous research (see e. g. Selkirk, Elisabeth (1995). Sentence prosody: intonation, stress and phrasing. In J. Goldsmith (ed.) *The handbook of phonological theory*. Cambridge, MA: Blackwell. 550–569., Vogel, Irene (2009). Universals of prosodic structure. In S. Scalise, E. Magni, & A. Bisetto (eds.) *Universals of language today*. Dordrecht: Springer. 59–82.), it is argued here that the Foot is not a universal constituent of the Prosodic Hierarchy; rather, some languages, such as Turkish and French, as well as early child languages, are footless. Several types of evidence are presented in support of this proposal, from both Turkish and French, as well as child English. A comparison of regular (word-final) and exceptional stress in Turkish reveals, for example, that regular “stress” is intonational prominence falling on the last syllable of prosodic words in the absence of foot structure. Both acoustic and formal evidence are presented in support of this proposal, as well as evidence from syntax-prosody interface. The paper also presents evidence for the footless status of French, which, unlike Turkish, is proposed to be completely footless. Several arguments are presented in support of this position, such as the fact that, in French, the domain of obligatory prominence is the Phonological Phrase (PPh), not the Prosodic Word (PWd); in a PPh consisting of several PWds, therefore, nonfinal PWds can surface without any kind of stress or prominence, suggesting that, at least for non-final PWds, one cannot assume stress or foot structure. Finally, the proposal is extended to additional languages, such as those demonstrating Default-to-Opposite Edge stress.

Keywords: The Foot, Prosodic Hierarchy, stress, prominence, footless languages, prosody, Turkish, French, Default-to-Opposite Edge stress

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1 Introduction

Although “stress”, defined as the headmost syllable of a metrical structure (Hyman 2014), is not a universal property of words (Newman 1947, van der Hulst 2014), and although some researchers remain skeptical even against the universal status of “accent” (Hyman 2014), it is commonly assumed that the Foot, the domain of stress assignment, is a universal constituent of the universal Prosodic Hierarchy (see e. g. Selkirk 1995, McCarthy 2004, Vogel 2009). It has long been assumed that even languages without stress, such as pitch-accent languages like Japanese or tone languages like Mandarin have and require foot structure (see e. g. Poser 1990 for Japanese; Yip 1980 and Duanmu 1999 for Mandarin). To date, the status of the Foot as a universal remains unchallenged in linguistic theory.

In this paper, I propose, contra previous approaches, that the presence/absence of the Foot is parametric; whereas some languages, such as English, require every prosodic word (PWd) to have at least one foot, in other languages, such as Turkish and French, foot construction is not obligatory. As I will demonstrate later, whereas Turkish has some words that (exceptionally) contain feet, French is completely footless. In doing so, I also argue for the separation of stress, which is manifested through the Foot, and intonational prominence, which is not. Using a Principles & Parameters approach to stress assignment (Dresher and Kaye 1990, Hayes 1995), I present several types of evidence in the succeeding sections in support of the position that the Foot is not an obligatory constituent of the Prosodic Hierarchy, including the following: (i) some languages, such as Turkish and French, show no phonetic evidence of foot structure, (ii) the first utterances of children learning footed languages (like English) do not contain any evidence of the Foot and appear to be footless, and (iii) languages like Turkish, which has both regular and exceptional stress, provide formal evidence of lack of a grammatical process of assigning foot structure. Words in Turkish can have feet only if they come as part of the underlying specification of a given morpheme, i. e. cases with the so-called exceptional stress.

The purpose of this paper is not to recommend expunging the Foot altogether from the analysis of stress systems, or eliminating it completely from the Prosodic Hierarchy. There is ample evidence that it is an essential construct for many languages. Although most of the arguments for the Foot are based on the convenience it offers in accounting for various stress systems (see e. g. Halle and Vergnaud 1978, Kiparsky 1979, Hayes 1981, 1995, Selkirk 1980 for earlier derivational approaches and Kager 2001, 2007, McCarthy 2003 for OT accounts, among others), and eliminating the Foot and using a footless mechanism instead, such as a footless metrical grid (see Liberman and Prince 1977, Prince 1983, and Selkirk

1984 for earlier derivational accounts and Gordon 2002 for a constraint-based account), may adequately describe the same phenomena, describing stress systems would still require the “definition” of something that corresponds to the Foot to be built into the relevant generalization (Nespor and Vogel 1986, Hammond 2011), and would thus make typological research in word prosodies unnecessarily cumbersome. Further, certain asymmetries observed in stress systems, such as the fact that heads of iambs tend to be longer than dependents and that the same is not true for trochees (i. e. the Iambic/Trochaic Law, Hayes 1985, 1995, based on Bolton 1894) are difficult to explain without any recourse to the Foot; these would, in fact, constitute an “accident” in non-foot-based theories (Gordon 2011). For reasons like these, the Foot has been a very useful tool in offering sound empirical coverage of various stress systems and in capturing possible and impossible stress systems (see e. g. Hayes 1995 for a comprehensive illustration).

In addition, stress is not the only phonological phenomenon that acts on the Foot. There are various other phonological processes that have been found to make reference to the Foot, irrespective of whether the language is a “stress language” or not. For example, in English, a stress language, the domain of several rules such as diphthong shortening, devoicing of laterals and n-velarization has been found to be the Foot (Kiparsky 1979), presenting evidence that the Foot, as a constituent, exists, and is relevant beyond stress assignment. Similarly, for tone languages like Chinese, too, the Foot has been argued to play a crucial role. Yip (1980) demonstrates, for example, that in several dialects of Chinese, including Mandarin, the Foot is the domain of a number of phonological rules, such as gemination and stop devoicing. Further, in several Chinese languages, there can be only one fully toned syllable per foot. In fact, in cases where there are two syllables in a foot both bearing underlyingly specified tones, the second tone is deleted, once again presenting evidence that the Foot is a relevant constituent for tonal phenomena. Yip further argues that although referring to the Foot provides a unified analysis of the application and the non-application of all these rules, depending instead on surface stress patterns does not yield the same results. Similar evidence has been offered for the Foot by numerous other studies, where the Foot was taken as the domain of application for various phonological rules, including other autosegmental phenomena such as tonal or nasal spreading in various different languages (see e. g. van der Hulst and Smith 1982, Bickmore 1995, de Lacy 2002, Leben 1997, Zec 1999, Pearce 2006, Hannahs 2009, Bennett 2013, among others).

Foot-based theories of stress also face some challenges however, challenges that do not necessarily pose problems for non-foot-based theories. For example, as Gordon (2002, 2011) demonstrates, accounting for certain degenerate foot effects is highly problematic in foot-based theories, but not on grid-based theories. In foot-

based theories, a degenerate (non-binary) foot is expected to arise only in the condition where a stray syllable remains after all other syllables within the word have been parsed into binary feet, as with $[(\acute{o}.\sigma).(\grave{o}.\sigma).(\grave{o})]$ in a left-to-right trochaic system and $[(\grave{o}).(\acute{o}.\sigma).(\acute{o}.\sigma)]$ in a right-to-left trochaic system. Languages where both the initial and the final syllables are stressed, as in Armenian (Vaux 1998), Tauya (MacDonald 1990), or, as we will investigate in detail later, Canadian French, are, therefore, problematic for the foot-based theory: In bisyllabic words, this pattern would lead to words with two degenerate feet on both edges, as in $[(\acute{o}).(\acute{o})]$ and representations with both trochaic and iambic feet in words that are long enough, as in $[(\acute{o}.\sigma).(\sigma.\acute{o})]$, both problematic for the foot-based theory (Gordon 2011).

This discussion suggests two things which will both be covered in detail in this paper. One, at least certain kinds of prominence (including prominence at the word level) can best be handled without recourse to the Foot (e. g. intonational prominence), but that the foot-based theory still has its own strengths, and should not be discarded. In fact, I will argue for the separation of stress, which is amenable to an analysis in terms of the Foot, and intonational prominence, which is not. In doing so, I will demonstrate that foot-based and footless (intonational) prominence can both occur in the same language, or even in the same word within a language, as we will see in the case of Turkish, and that in some languages, as in French, prominence is wholly a result of intonation rather than stress. This, in turn, leads us to the second main issue to be covered in this paper, i. e. that some languages can be footless, or in the case of certain languages, some content words, as opposed to others, can emerge without foot structure. This means that the Foot is not a universal constituent of the Prosodic Hierarchy, and that there is no requirement that every (content) word must at least have one foot in every language, an assumption that is still held despite the challenges faced by the foot-based theory of stress assignment (Ito and Mester 2013).

The remainder of this paper is organized in the following way: Section 2 focuses on Turkish, and argues that it has no mechanisms for parsing syllables into feet; most words are thus footless in Turkish. Having both regular and exceptional stress, Turkish provides both acoustic and (for the first time) formal evidence for lack of footing, given facts at the word-level and beyond the word. Section 3, then, moves on to French, another language that is argued to not require words to have feet; in fact, French, I propose, is completely footless. One piece of evidence, among others, supporting this proposal is the fact that the domain of stress/prominence in French is the Phonological Phrase (PPh), and therefore, some PWds (those not in the head position of the PPh) surface without stress or foot structure. This section is followed by Section 4, where the proposal is extended to other languages, in particular, the so-called Default-to-Opposite Edge stress languages, languages that have already been alluded to be possibly

footless (van der Hulst 1999, Gordon 2000). Section 5, then, provides additional evidence for the current proposal, this time from L1 acquisition and bilingualism: children's first utterances are footless, even when learning footed languages like English, suggesting, once again, that the presence vs. the absence of the Foot is parametric, and that the Foot is added later, upon receiving input demonstrating that the target language is one that requires feet. Finally, Section 6 concludes the paper.

2 Turkish

As mentioned above, I argue, contra previous approaches, that the presence/absence of the Foot is parametric, with some languages, such as Turkish and French not having any grammatical mechanism to parse syllables into feet. I provide evidence that whereas French is uniformly footless, Turkish has foot structure when there is an exceptional stress attracting suffix available, cases I analyze as having a morpheme that is footed in the input. In both languages, the grammar does not assign foot structure.

We start with Turkish, the focus of this section. The presence of both regular (word-final) and exceptional (non-final) “stress” in Turkish provides, for the first time, formal evidence of footlessness. I propose a unified analysis of the two types of Turkish “stress.” I contend that the so-called regular (word-final) “stress” in Turkish is intonational prominence, falling on the last syllable of the PWD, and does not involve foot structure. Exceptional stress (mostly pre-stressing suffixes), on the other hand, does involve foot structure (trochaic). A single grammar is proposed to capture the two types of stress. It is argued that the Turkish grammar does not assign foot structure, but if certain syllables are already footed in the input/underlying representation (UR) (i. e. exceptional suffixes and syllables in roots with exceptional stress), they are footed in the output/surface representation (SR), too, because of faithfulness to this information, thereby resulting in the so-called exceptional stress. The entire Turkish grammar is trochaic under this approach, but trochaicity is satisfied vacuously for regularly stressed morphemes (even though they are finally prominent), for the grammar cannot assign foot structure and regularly stressed morphemes are underlyingly footless, and trochaicity targets feet. As a result, a unified analysis is possible of both regular and exceptional “stress” in Turkish, and exceptions are no longer exceptions.

The remainder of this section is organized in the following way: Section 2.1 introduces the Turkish data that usually appear in the literature. Section 2.2

presents the current account, and shows how it captures these data. Section 2.3 presents additional evidence for this account from higher-level prosodic structure, where it is made clear that regularly stressed words do not involve any feet at all, neither on the surface nor underlyingly.

2.1 “Stress” in Turkish

2.1.1 Regular (final) stress

It is commonly assumed that most Turkish words are stressed on their final syllable, leading to what is generally termed as “regular stress” (e. g. Lees 1961, Lewis 1967, Underhill 1976, Sezer 1983, van der Hulst and van de Weijer 1991, Inkelas 1999, Hayes 1995, Inkelas and Orgun 1995, 1998, Kabak and Vogel 2001). The prosodic word (PWd) is the domain of “stress” in Turkish, and is composed of a root plus all suffixes (Kabak and Vogel 2001, Özçelik 2014). The PWd is easy to determine in Turkish, because it is also the domain of vowel harmony, as is the case with most languages of the world (van der Hulst and van de Weijer 1995). Example (1) below illustrates that stress moves to the right each time an additional suffix is added to the PWd, suggesting that it is consistently word-final. Neither the rhyme profile of the syllables involved nor the morphological length of the PWd changes this.

- (1) a. eşék b. eşek-lér c. eşek-ler-ím d. eşek-ler-im-dé
 donkey donkey-Pl donkey-Pl-Poss donkey-Pl-Poss-Loc
 ‘donkey’ ‘donkeys’ ‘my donkeys’ ‘on my donkeys’
 e. eşek-ler-im-de-kí
 donkey-Pl-Poss-Loc-one
 ‘one on my donkeys’

2.1.2 Exceptional (non-final) stress

Not every word is, however, stressed on their final syllable in Turkish; some words are exceptionally stressed on non-final syllables, resulting in what is known as “exceptional stress” (see e. g. Kaisse 1985, 1986, van der Hulst and van de Weijer 1991, Inkelas and Orgun 1995, 1998, Kabak and Vogel 2001). As demonstrated below, both roots and affixes can be the source of such exceptions, although the focus of this paper is on affixal exceptional stress, as with most previous research on the issue (see e. g. Inkelas and Orgun 1998, Kabak and Vogel 2001, Özçelik 2014).

2.1.2.1 Exceptional affixal stress

Exceptional affixal stress can surface in two distinct but related ways in Turkish. The first involves the so-called *pre-stressing* suffixes, whereas the second involves *stressed* exceptional suffixes.

2.1.2.1.1 Pre-stressing suffixes

A pre-stressing suffix causes word-stress to fall on the immediately preceding syllable. As with regular stress, the rhymal profile of this syllable does not make a difference as concerns stress assignment. Exceptional stress of this type is the type of exceptional stress that has most commonly been studied in previous literature on Turkish stress, and examples are provided in (2). Note that exceptional stress driving suffixes are underlined in these examples, as well as throughout the rest of this paper:

- (2) a. bekle-dí b. bekle-dí-de c. beklé-me-di
 wait-PAST wait-PAST-TOO wait-NEG-PAST
 ‘He waited.’ ‘He waited, too.’ ‘He didn’t wait.’
 d. beklé-me-dì-de
 wait-NEG-PAST-also
 ‘He didn’t wait, either.’

Notice that (2a) only has a regularly stressed suffix, and as this suffix comprises the final syllable of the PWd, it gets stressed (regularly). In (2b) through (2d), however, there are exceptional stress attracting suffixes (all underlined), and as such, the syllables to the left of these suffixes are stressed, whether this syllable is the final syllable of the root or not, and irrespective of its rhymal profile. Further, when there are two such suffixes that have at least one regularly stressed syllable in between (as with (2d)), two stressed syllables emerge, out of which the leftmost one received primary stress (Özçelik 2014).

Almost all pre-stressing suffixes in Turkish are monosyllabic, but there are also a couple of bisyllabic pre-stressing suffixes, as indicated in (3):

- (3) a. aksâm-leyin b. görmék-sizin
 evening-during see(v)-without
 ‘in the evening’ ‘without seeing’

Crucially, however, when a monosyllabic suffix is exceptional in Turkish, it can only be pre-stressing, and cannot be stressed or post-stressing (more on this below, see (5)).

2.1.2.1.2 Stressed suffixes

In addition to a small set of exceptionally pre-stressing suffixes, Turkish also has an even smaller set of exceptionally *stressed* suffixes, exemplified below in (4).

The difference between these and pre-stressing suffixes is that these are always bisyllabic and are always stressed on their first syllable, irrespective of whether other syllables follow or not (see (4d)). Further, as with regular and pre-stressing suffixes, the rhyme shape of the stressed syllable does not matter; it does not have to be heavy (compare (4a) and (4b-c)).

- (4) a. bak-ınca b. bak-arak c. bak-ıyor
 look-when come-by come-PRES.CONT
 “when he/she looks” “by looking” “He/she is looking.”
 d. bak-ıyor-du-lar
 come-P.C-PAST-PL
 “They were looking.”

Crucially, no monosyllabic stressed exceptional suffix exists (see also Inkelas and Orgun 2003, Özçelik 2014), as well as no bisyllabic stressed exceptional suffix that is stressed on its second syllable, as is demonstrated below in (5).

- (5) a. *gel-mé-di b. *gel-iyór-du

In other words, there is (almost) complete complementarity between monosyllabic and bisyllabic exceptional suffixes in that the former are always pre-stressing and cannot ever be stressed, whereas the latter are (almost always) stressed, and when stressed, always stressed on their first syllable, never the second. This has important consequences for the proposal made in this paper, as will be explained later.

2.1.2.2 Exceptional root stress

Exceptional stress is not limited to affixes in Turkish; roots can also bear exceptional stress, as demonstrated in (6). These are mostly place names or borrowed nouns, but can also be native nouns:

- (6) a. án.ka.ra ‘Ankara’ e. bóm.ba ‘bomb’
 b. ka.ná.da ‘Canada’ f. án.ne ‘mother’
 c. in.gil.té.re ‘England’ g. la.há.na ‘cabbage’
 d. kun.dú.ra ‘(dress) shoes’ h. sa.lá.ta.lık ‘cucumber’

Crucially, there are no exceptionally stressed roots that bear stress on their final syllable, i. e. stressed despite regular suffixes being added. In other words, no such forms as (7.c) below exist:

- (7) a. a.na.do.lú b. a.na.do.lu-dá c. *a.na.do.lú-da
 Anatolia Anatolia-LOC Anatolia-LOC
 ‘Anatolia’ ‘in Anatolia’ ‘in Anatolia’

Earlier research attempted to capture root-based exceptional stress through the application of the “Sezer stress rule” (Sezer 1981, 1983): stress the antepenult if it is heavy and the penult is light, and otherwise stress the penult. Although the Sezer stress rule makes the correct prediction for many forms such as (6a) and (6b) above, it makes the incorrect prediction in many other forms such as (6c) and (6d) (where the penult is stressed despite the presence of a heavy antepenult) and (6h) (where the antepenult is stressed although it is light), and as such, it has been rejected by recent research, on both formal (e. g. Kabak and Vogel 2001 and Özçelik 2014) and empirical grounds (e. g. Çakır 1998). In fact, Çakır’s (2000) empirical study showed that even with respect to place names only, the Sezer stress rule did not correctly predict most stress patterns and worked at a chance level. All this suggests that these forms should be captured with some kind of exceptionality marking, such as pre-specification (more on this in Section 2.2.3.2).

2.2 A unified account of regular and exceptional stress in Turkish

2.2.1 Problems with Turkish stress

The facts illustrated above, especially those in (2), have captured the attention of much previous research (see e. g. van der Hulst and van de Weijer 1991, Inkelas and Orgun 1998, Inkelas 1999, Kabak and Vogel 2001, Özçelik 2014), leading to various different attempts at offering a unified analysis of regular and exceptional stress in Turkish. Most of these analyses have, however, not considered the fact that regular and exceptional stress in Turkish have completely different acoustic correlates, nor was the presence of secondary stress in cases involving more than one exceptional suffix always considered (see also Revithiadou et al. 2006 and Özçelik 2014). Further, certain gaps in the data, which were pointed out above, have typically been left unaccounted for, such as why there are no stressed monosyllabic exceptional suffixes (i. e. why monosyllabic suffixes are always pre-stressing, when exceptional), and why there are no bisyllabic exceptional suffixes that are stressed on their second syllable (i. e. why they are always stressed on their first syllable). Finally, interaction of lexical stresses at

the post-lexical/phrasal level, a canonical property of stress-accent languages (Hyman 2009), has not been considered. The account presented in this paper considers these issues, and offers a unified solution to all these problems, as well as accounting for the gaps in the data. In fact, the explanation of the gaps as well as the exceptions follows naturally from the grammar proposed here, and the exceptions are no longer exceptions.

2.2.2 Current account

The crux of the proposal made here is that Turkish is a language in which the grammar does not assign foot structure, and in the absence of feet, “intonational prominence” falls on the final syllables of prosodic words (PWds), giving the image of word-final “stress.” That is, final accent in Turkish is not “stress”, but is formally a boundary tone (see Pierrehumbert 1980, Pierrehumbert and Beckman 1988, Gussenhoven 2004, van der Hulst 2012; see also van der Hulst 2012, 2014 and Hyman 2014 for a definition of stress vs. accent). Although it has traditionally been assumed that intonational prominence of this type targets higher-level prosodic constituents, such as PPhs (Beckman 1986, Hayes 1995), recent research has raised the possibility that word-level stress in many languages of the world can also be reanalyzed as intonational prominence (especially for languages that have previously been analyzed to have “unbounded” feet), rather than “stress” (see van der Hulst 2014 for a review).

As opposed to regular/final “stress” (or rather “final prominence”), I suggest that exceptional stress in Turkish involves trochaic feet, as indicated by the fact that exceptional stress driving suffixes are mostly *pre*-stressing, and never *post*-stressing (see (2)), and when stressed, they are always bisyllabic and stressed on the first syllable, and never on the second (see (4)). Although it has already been argued in previous research that Turkish exceptional stress involves trochees (see e. g. Inkelas and Orgun 1998, Inkelas 1999), the current account differs in that the whole grammar is argued to be trochaic, instead of pre-specifying exceptional stress driving suffixes with an underlying trochaic foot (one which extends to the left to accommodate its head) and placing them in a cophonology different from the cophonology of regularly stressed suffixes. This, in turn, leads to a unified analysis of regular vs. exceptional stress/prominence in Turkish, one where the whole grammar is trochaic (as well as footless). That is, on this account, one single grammar is responsible for the two types of prominence in Turkish, and the only difference between regular vs. exceptional suffixes is that the latter come to the computation as already footed in the input, although this

foot need not be well-formed or even trochaic. It is the grammar which later assigns trochees, ensuring that binary well-formed trochaic feet surface in the output, given certain prosodic faithfulness constraints.

In other words, Turkish, in this proposal, is a trochaic but footless language, and in the absence of feet (i. e. cases with the so-called regular “stress”), trochaicity does not emerge, because the rule that ensures trochaicity targets only words with foot structure, as is assumed by much recent research on the subject. In an Optimality Theoretic framework, for example, this would be equal to vacuous satisfaction of the constraint TROCHAIC, again, because the constraint would only target feet, and would say nothing about unfooted constructions:

- (8) Trochaic: Align the left edge of a foot with the left edge of its head (based on Prince and Smolensky 1993; McCarthy and Prince 1995, 1999).

Although the grammar itself cannot assign feet, feet can be available underlyingly, as is the case with exceptional suffixes, which, when available, are footed in the output of the grammar, too, because of grammar being faithful to this underlying information. Crucially, neither trochaic feet nor stressed syllables are marked in the input/underlying representation; only edges of feet are marked. The grammar then ensures that these feet surface as trochaic and, crucially, obligatorily binary, i. e. giving a principled reason as to why monosyllabic exceptional suffixes are always pre-stressing and bisyllabic exceptional suffixes are always stressed on their first syllable.

In a system where trochaic feet are represented underlyingly for pre-stressing (see (2)) and stressed exceptional suffixes (see (4)) (e. g. Inkelas and Orgun 1998, 2003) or where stressed exceptional suffixes are argued to be prespecified to bear stress on their first syllable (Kabak and Vogel 2001), there is no reason why there should be no monosyllabic exceptional suffixes that are trochaic but stressed (i. e. the exceptional suffix occupying the head of an underlying foot instead of the dependent, as with Inkelas and Orgun’s 1998 account). Again, there is no reason on such an account why there should be no bisyllabic exceptional suffixes prespecified to have stress on their second syllable; if bisyllabic exceptional suffixes can be prespecified to have stress on their first syllable, there should at least be some bisyllabic exceptional suffixes in the grammar that exceptionally bear stress on their second syllable. Such gaps are unaccounted for unless it is the grammar that is trochaic and binary, and it is the grammar that assigns exceptional stress, as with the current account.

2.2.3 Formal analysis

2.2.3.1 Basic phenomena

To summarize so far, on the current account, though the Turkish exceptional stress system is argued to be trochaic, final prominence is not a result of (trochaic) stress; rather, it is because of the effect of intonational prominence falling on the final syllable of a PWd, and making that syllable the strongest in the absence of a foot regarding prominence:

- (9) Final Prominence: The final syllable of a PWd bears a boundary tone, H%.

This rule will, then, capture all cases of regular stress/prominence in Turkish.

Pre-stressing and stressed suffixes, on the other hand, differ from regular suffixes in that they come into the computation already footed in the input, as shown in (10):

- (10) a. Inputs (URs) for pre-stressing suffixes:
 i. (me)_{Ft} ii. (de)_{Ft} iii. (ken)_{Ft} iv. (mi)_{Ft}
 NEG too while question.particle
- b. Inputs (URs) for stressed suffixes:
 i. (ince)_{Ft} ii. (erek)_{Ft} iii. (iyor)_{Ft} iv. (iver)
 when by PRES-CONT encouraring.mood

Given these inputs, along with a rule like (11), these suffixes will be footed in the output as they are in the input. That the rule refers to the right rather than left edge of a foot is important here in capturing the pre-stressing behaviour of monosyllabic exceptional suffixes (more on this later).

- (11) Align the right edge of a foot in the UR with the right edge of a foot in the SR.

This rule ensures that a foot edge in the input will correspond to a foot edge in the output of the grammar. No additional machinery is needed. In the spirit of earlier accounts of exceptional stress that specify a stressed *syllable* in the input and require that this correspond to a stressed syllable in the output (e.g. Alderete 1997, 2001 on Cupeño), the current account specifies *foot edges* in the input (through (10)), and requires them to correspond to foot edges in the output (through (11)).

I believe (11) to be universal, with the directionality condition (Left vs. Right) being parametric, which can more generally capture exceptional stress crosslinguistically, but its application is revealed only in languages where underlying foot

edges are present in the input. That is, all cases of exceptional stress in the world's languages, whether stressed, pre-stressing, or post-stressing, can likely be accounted for in this way, i. e. without specifying the location of a stressed syllable in the UR, but instead, by specifying underlying foot edges and using a rule like (11) to ensure that this information is faithfully realized in surface forms.

Concerning the argument “foot” versus “(stressed) syllable” specification, it is not clear how earlier pre-specification accounts would be able to pre-specify a syllable in ways to make it stress the preceding syllable in Turkish (or the following syllable in languages with post-stressing suffixes such as Erkeč and Standard Bulgarian, see e. g. Avgustinova 1997, Halpern 1995, Baerman 2004), for stress cannot be prespecified on a non-existing syllable, or rather, on an adjacent syllable in a different morpheme. In addition, as mentioned above, such accounts would be unable to capture certain gaps in the data, even if it was possible to prespecify a non-existing syllable as stressed.

Let us return to the data in (2) and (4). As these data reveal, when an exceptional suffix is monosyllabic, as in (2), it is always *pre-stressing*, never stressed or post-stressing. When an exceptional suffix is stressed, on the other hand, it is always bisyllabic and is stressed on its first syllable, never on the second. As mentioned, these data are suggestive of an analysis where Turkish stress is trochaic. That is, the parameter determining foot shape in Turkish is set to *Trochaic* (left-headed) and not to *Iambic* (right-headed):

- (12) Foot shape: Trochaic | Iambic
(see also (8) above for a definition of Trochaic)

Given (11) and (12), we can now capture the behaviour of *bisyllabic* exceptional suffixes in (4). It follows from (11) that, despite the fact that the Turkish grammar does not assign foot structure, these suffixes will be footed, not through a parsing rule that applies across the board (such as PARSE- σ , which parses syllables into feet), but via faithfulness to the information specified in the UR. Further, given (12) (i. e. that the grammar is trochaic), the foot will be left-headed. This is exemplified in (13a) below (repeated from (4a)), through a comparison with a regularly stressed suffix in (13b) (repeated from (1b)):

- | | | | |
|------|-----------|-----------------------|---------------|
| (13) | a. UR: | /bak-(<u>in</u> ca)/ | b. /ešek-ler/ |
| | Trochaic: | bak(<u>in</u> ca) | ešekler |
| | SR: | [ba(<u>kín</u> ca)] | [ešekler] |

For *monosyllabic* exceptional suffixes, on the other hand (see (2)), given their underlying representations like in (10a), their pre-stressing behavior can be

accounted for by the proposal that feet must observe binarity in Turkish, as in the vast majority of languages. That is, Foot Binarity (Ft-Bin) is set to *Yes* in Turkish:

(14) Foot Binarity: Yes | No

If Ft-Bin were set to *No*, these suffixes would also surface as stressed. That Ft-Bin is set to *Yes*, together with the condition that states that the right edge of an input foot must correspond to the right edge of an output foot (i. e. (11)), captures their pre-stressing behaviour. Examine (15) (repeated from (2c)).

(15) UR: /bekle-(me)-di/
 Align-Right: bekle(me)di
 Ft-Bin: bek(l_eme)di
 Trochaic: bek(léme)di
 SR: [bek(léme)di]

Note that the mirror image of this, i. e. grammar dictating that feet are iambic and an input foot corresponding to the left edge of an output foot, would result in a language that has post-stressing suffixes, as with Erkeč and Standard Bulgarian (see above). Crucially, however, there should be no language on this account that has both pre-stressing and post-stressing suffixes, as this behaviour is determined by (a combination of various parameter settings of) the grammar, instead of being pre-specified as pre- or post-stressing for individual morphemes.

Moving back to the Turkish data, note finally that since when more than one exceptional suffix is available in a word, it is the stress of the leftmost one that surfaces as primary (Inkelas and Orgun 1998, Inkelas 1999, Kabak and Vogel 2001), End-Rule must be set to *Left* in Turkish:¹

(16) End-Rule: Left | Right

Given (16), we can now capture data like (2d), too, repeated here as (17a) (see also (17b)). When there is more than one foot available, the head of the leftmost foot bears primary stress:

¹ Most previous research does not deal with the issue of secondary stress in Turkish. The issue is not critical for the purpose of the current proposal. That main stress falls on the leftmost foot can be captured through Leftmost-Wins, too, as was done by Inkelas & Orgun (1998) instead of End-Rule-Left, if secondary stress is to be ignored. It should be noted, however, that secondary stress cannot be captured through certain accounts of Turkish stress such as that of Kabak & Vogel (2001) and Newell (2005).

(17) a. bek(léme)(dide) b. an(láma)d_ı(làrmı)

Finally, as the data in (18) (repeated from (4b) and (4c)) indicate, closed syllables, which are potentially heavy, can be in foot-dependent position. This constitutes probable evidence that Weight-Sensitivity is set to *No*, as indicated in (19), or, at least, that it plays no role in Turkish:²

(18) a. ge(lérek) b. ge(líyor)

(19) Weight-Sensitivity: Yes | No

To summarize thus far, Turkish has binary trochees with End-Rule set to *Left* and Weight-Sensitivity set to *No*.

On the other hand, as explained earlier and assuming the parametric status of the Foot, the Turkish grammar itself cannot assign any foot structure, as is evident from the behaviour of regular final “stress” (see Section 2.2.1). Therefore, in the absence of input feet, words are not footed on the surface. This suggests, on a parametric view of the Foot, that the relevant parameter, which I will call the Footed(ness) parameter here, is set to *No* in Turkish:

(20) Footed: Yes | No

In sum, then, Turkish is a trochaic but footless language; it is only when an input foot is available (as in (10)) that the Turkish grammar can assign binary weight-insensitive trochees, because the grammar itself cannot parse syllables into feet. Inputs are not specified for Trochaicity or Binariness, etc.; it is the grammar that assigns these, if an input foot is available. In the absence of input feet, Trochaicity and Binariness are not relevant, as these target feet (i. e. they are vacuously satisfied if we were to use OT terms).³

² If Turkish regular “stress” was analyzed as iambic, that, too, would have to be analyzed as weight-insensitive (more on this later).

³ As one reviewer has correctly suggested, one way of handling this in OT would be via having the constraints *Foot and Max(Foot), with the latter dominating the former. This will ensure that the grammar itself will assign no feet (through *Foot), but when an input foot is available, as Max(Foot) >> *Foot, these feet will appear in the output of the grammar. Another way of accounting for these generalizations on OT would be through a very low ranking of the constraint PARSE-σ; this constraint would basically be ranking below DEP-Foot; so the grammar is unable to parse syllables into feet. Through the application of (the constraint version of) (11), in addition, when input feet are available, the output of the grammar will be faithful to this information, ensuring that feet in this case will emerge on the surface.

2.2.3.2 Additional cases

Now that the general idea behind the proposal has been sketched out, in this section, I cover two different cases: bisyllabic exceptional suffixes that are *pre-stressing* (see (3)) and root exceptionality (see (6)).

As shown in (3), bisyllabic exceptional suffixes can also be prestressing (e. g. aksám-leyin). This, on the current account, follows from the fact that they can be footed *only* on their first syllable in the UR/input, as follows:

(21) a. /-(le)_{F1}yin b. /-(si)_{F1}zin/

In fact, I suggest that bisyllabic exceptional suffixes can either be fully footed as in the examples in (10b) (i. e. /(σ . σ)_{F1}/), footed on their first syllable only as in (21a) (i. e. /(σ)_{F1} σ /), or even footed on their second syllable only (i. e. / σ (σ)_{F1}/) (see below), whereas monosyllabic exceptional suffixes have only one option, to be footed on the single syllable available, as with the examples in (10a) above, i. e. /(σ)_{F1}/. That is, every option that should exist under the current account is actually attested, and all these are captured through the same grammar, as would be expected under the Richness of the Base (Prince and Smolensky 1993), i. e. the set of (possible) inputs to the grammar is universal, and inputs can thus take any shape; it is the grammar that gives the correct forms that are actually utterable by the speakers of a language.

The difference between bisyllabic exceptional suffixes that are fully footed vs. bisyllabic exceptional suffixes footed only on their second syllable is, of course, difficult to tell, since, under either option, the first syllable of a bisyllabic exceptional suffix will normally be stressed, given the parameter settings outlined in this paper. What is important to note is that the prosodic grammar of Turkish proposed here takes into account the set of *all* possible inputs, in terms of footing options, and gives, as output, only those that can actually be uttered in Turkish, and filters out those that cannot, such as monosyllabic exceptional suffixes that are stressed and bisyllabic exceptional suffixes that are stressed on their second syllable.

Finally, the current account is able to capture exceptional root stress, too (see (6a)) for *ánkara* “Ankara”. As is the case with suffixes, any syllable could come footed in its UR in roots, and the same grammar that results in exceptional stress (pre-stressing or stressed) in the case of affixes will give the correct forms in the case of roots, too, as is illustrated below in (22) (compare with (15)). Notice again here that as with bisyllabic suffixes, it is not possible to know whether only one syllable or two syllables are footed in the input, as both options would give the same result:

(22) UR:	/an-(ka)-ra/	OR	/(anka)-ra/
Align-Right:	an(ka)ra		(anka)ra
Ft-Bin:	(anka)ra		_____
Trochaic:	(ánka)ra		(ánka)ra
SR:	[(ánka)ra]		[(ánka)ra]

Crucially, as was the case with exceptional affixal stress, additional evidence exists for the analysis of exceptional root stress on the current account through certain gaps in the data, such as the complete lack of roots that are exceptionally stressed on their final syllable. For example, although, as exemplified above in (6), many place names bear non-final stress in Turkish, and although there are also place names that are stressed on their final syllable, as with (23a) below, there no cases such as (23b) (although (23c) is attested). That is, exceptional stress can never be on the final syllable of a root in Turkish, a fact that follows directly from the (trochaic and binary) grammar proposed here. This phenomenon would not receive any principled explanation under any other pre-specification account (e. g. Kabak and Vogel 2001), as there is no principled reason why final syllables cannot be pre-specified to bear stress if non-final syllables can.

- (23) a. Kazakistán b. *Kazakistán-da c. Kazakistan-dá
 ‘Kazakstan’ ‘in Kazakhstan’ ‘in Kazakhstan’

2.3 Acoustic evidence for the current account

The proposal raised here is also supported by a comparison of the acoustic correlates of regular vs. exceptional “stress” in Turkish. Whereas both a sharp F0 rise and greater intensity accompany exceptionally stressed syllables in Turkish (Konrot 1987, Levi 2005, Pycha 2006), syllables that bear regular final prominence only carry a slight F0 rise (Levi 2005, Pycha 2006), a rise that is not observed in the productions of certain speakers (Levi 2005). Further, some researchers have found no acoustic correlates whatsoever associated with final prominence, irrespective of people tested (see e. g. Konrot 1981, 1987). Given this picture, final prominence does not look like “stress”, as stress-accent languages, according to several researchers, use duration and/or intensity, in addition to F0/pitch rise or change (see e. g. Bolinger 1958, Hyman 1977, Beckman 1986, Ladd 1996, Hualde et al. 2002, van der Hulst 2012). Further, in stress-accent languages, metrical prominence is obligatory, whereas optionality of the type mentioned above is typical in pitch-accent languages (Hualde et al. 2002, Hyman 2006, 2009, 2014, Gordon 2000, 2014). In addition, as Gussenhoven (2004) has argued, although different languages can potentially display phonetic effects of stress or

foot structure in different ways, “it would be entirely unexpected to find a language that realized stressed syllables in phonetically conflicting ways” (p.15). Analyzing both regular and exceptional stress in Turkish as “stress” would, in other words, make Turkish a very strange language in Gussenhoven’s words. Given all these, final accent in Turkish looks formally like a boundary tone (see Pierrehumbert 1980, Pierrehumbert and Beckman 1988, Gussenhoven 2004; see also Özçelik 2013, 2014 for Turkish). If this is correct, one would expect final accent to still appear even when a word has exceptional non-final stress in a previous syllable (rather than being attracted to the stressed syllable, as would pitch accents). Recent research has found that this is in fact the case; Ipek and Jun (2013) report, for example, that in words like /fakülteler/ “faculties” and /lokántalarini/ “their restaurants,” there is a slight F0 rise on the word-final syllable *in addition to* the sharp rise on the stressed syllable, which corresponds to the peninitial syllable in both cases (although these authors still opt to refer to final accent in Turkish as a pitch-accent, but without taking a strong stance). For the purposes of this paper, the analysis of Turkish final prominence as a boundary tone vs. pitch-accent does not matter, as long as it is not stress, but if it is a boundary tone, like I argue here, the evidence against a stress-based analysis is even stronger, as pitch accents can theoretically be attracted to metrically stressed syllables, unlike boundary tones (Gussenhoven 2004).

Finally, final accent in Turkish does not look trochaic or iambic, either, both of which are analyses that would require a foot-based account. Analyzing it as trochaic, as certain researchers have done (Charette 2008) would necessitate several significant stipulations, such as requiring every vowel final word to be followed by empty onset + nucleus sequences, as well as every consonant final word being followed by an empty nucleus. Of course, another problem with such a trochaic analysis is that there would then be two types of trochaic stress in the same language with completely different acoustic correlates. An iambic analysis of Turkish final prominence is also problematic, as iambic languages are generally weight sensitive, and given finally prominent words in Turkish preceded by syllables with long vowels, such as *ha:la* “still” and *va:di* “valley”, one would have to posit weight-insensitive iambic parses as in (24) (i. e. [(HL)], parses in which heavy syllables are in the dependent position of the foot:

(24) a. [(ha:lá)] ‘still’ b. [(va:dí)] ‘valley’

This is an iamb that is considered by most researchers not to be permitted by the inventory of feet provided by UG (see e. g. Hayes 1985, 1987, 1995; McCarthy and Prince 1986, 1993, 1995; Prince 1991, among others; cf. Altshuler 2009). In fact, based on Bolton (1894) some researchers have gone one step further, and argued

that there are durational asymmetries between iambic and trochaic systems, and that iambs are typically uneven (e. g. reinforced by vowel lengthening), of the form $[\sigma_{\mu} \cdot \acute{\sigma}_{\mu\mu}]$, while trochees are typically even $[\acute{\sigma}_{\mu} \cdot \sigma_{\mu}]$ or $[\acute{\sigma}_{\mu\mu}]$ (see e. g. Hayes 1985, 1995). Though this has also been argued against (see e. g. Piggott 1995, 1998, Revithiadou and van de Vijver 1997 and van de Vijver 1998), this certainly seems to be a tendency, and given this tendency, even iambs where a final short vowel is preceded by another short vowel in Turkish would be untypical, let alone the type where a final short vowel is preceded by a long vowel.

Now that I have argued that final prominence in Turkish is not “stress” and that it is best analyzed as footless for both acoustic/formal and purely formal reasons, I present evidence below from higher-level prosody and phonology-syntax interface showing that the syllable bearing this prominence is *not* the prosodic head of the head of the head of a PPh, providing definitive evidence that final prominence in Turkish does not involve feet.

2.4 Evidence from higher-level prosody

I have argued above that regular “stress” in Turkish does not involve foot structure whereas exceptional stress is a result of the process whereby certain morphemes are footed in the input and that the input foot is preserved in the output. There is additional evidence supporting this proposal that comes from higher-level prosody in Turkish.

We start with some background on higher-level prosody. Prosodic constituents are typically assumed to be organized into a hierarchy. In the case of higher-level constituents, PWds are organized into phonological phrases (PPhs), and PPhs into intonational phrases (I-phrases). As with lower-level prosodic constituents, such as the Foot, each higher-level constituent has a head, either the rightmost constituent it dominates, or the leftmost, and the head is more prominent than the dependent. For example, the head of a PPh is either the rightmost or the leftmost PWd depending on the language, and the head bears the PPh-level stress, and is, thus, more prominent than the non-head.

In the case of Turkish, PPh-level stress/prominence falls on the leftmost PWd in a PPh (Kabak and Vogel 2001, Özçelik and Nagai 2011), indicated in boldface in (25). So when there are multiple PWds within a PPh, the leftmost PWd is the most prominent.

- (25) a. [**o** adam]_{PPh} b. [**sarhoş** dilbilimci]_{PPh} c. [**şişman** prenses]_{PPh}
 that man drunk linguist fat princess
 “that man” “drunk linguist” “fat princess”

At the I-level, however, greater prominence is placed on the rightmost PPh within the I. The head of an I-phrase in Turkish is, thus, the rightmost PPh (Özçelik and Nagai 2010, 2011), the head of which is underlined in the following examples:

- (26) a. [[o]_{PPh} [adam]_{PPh}]_I b. [[sarhoş dilbilimci]_{PPh} [kitap yaz-dı]_{PPh}]_I
 that man drunk linguist book write-PAST
 ‘‘That is a man.’’ ‘‘The drunk linguist wrote a book.’’

That is, sentential stress, in Turkish, falls on the leftmost PWD in the rightmost PPh within the I-phrase.

In sentences such as (27a), where the subject *adam* ‘‘a man’’ stays in SpecVP in syntax (i. e. under the *same* VP projection as the verb), there is only one PPh (shared by the subject and the verb), and *adam*, the first/leftmost PWD in the PPh, bears PPh-level prominence. Further, since this is the only PPh within the I (and thus the rightmost one), this PPh is the head of the I-phrase, and *adam* (the head of the PPh), therefore, also receives I-level prominence. In a sentence like (27b), on the other hand, there are two PPhs, since the definite subject, *adam* here, occupies the higher SpecTP position (and is thus in a different syntactic projection than the verb). Out of the two PPhs, the latter bears I-level prominence, for it is rightmost in the I-phrase (Özçelik and Nagai 2010, 2011).

- (27) a. [[Adám gel-dí]_{PPh}]_I b. [[Adám]_{PPh} [gel-dí]_{PPh}]_I
 man arrive-PAST man arrive-PAST
 ‘‘A man arrived.’’ ‘‘The man arrived.’’

Crucially, however, when an exceptional stress driving suffix is present in the second word, as in (28), the dichotomy observed between (27a) and (27b) is lost, and the only footed word available, i. e. (*gél.me*)*di*, gets stressed, irrespective of whether the subject is definite or indefinite. That is, when a foot is available, it attracts PPh- and I-level prominence (heading both the PPh and I), which is not crosslinguistically unusual (see e. g. Gussenhoven 2007).

- (28) a. Adám gél-me-di b. Adám gél-me-di
 man arrive-NEG-PAST man arrive-NEG-PAST
 ‘‘A man didn’t arrive.’’ ‘‘The man didn’t arrive.’’
 a’. *Adám gél-me-di

Note that if there *was* indeed foot structure on *adam* (responsible for final prominence), we would expect, under the indefinite reading of (28), this word

to get PPh- and I-level prominence, as in (28a'). Two additional examples are presented below, the first one with another pre-stressing suffix, *-mi*, and the second one with a stressed exceptional suffix, *-ince*:

- (29) a. Adám **gel-dí-mi** b. Adám **gel-dí-mi**
 man arrive-PAST-Q man arrive-PAST-Q
 “Did a man arrive?” “Did the man arrive?”
 a'. ***Adám** gel-dí-mi
- (30) a. Adám **gel-ince** b. Adám **gel-ince**
 man arrive-when man arrive-when
 “When a man arrives” “When the man arrives?”
 a'. ***Adám** gel-ince

In sum, these facts show, once again, that only exceptional stress involves foot structure in Turkish, whereas so-called regular stress is nothing more than (optional) intonational prominence, suggesting that content words in world languages can potentially be fully footless.

2.5 Discussion

In conclusion, the proposal made in this paper captures, within a single grammar, both regular and exceptional stress driving (pre-stressing and stressed) suffixes of Turkish. Whether regular or exceptional, all suffixes on this account are subject to the same parameter settings of the same grammar; exceptional suffixes are different only in that they are already footed (on one or two syllables) in their underlying representations. As such, although the grammar does not have any means of parsing syllables into feet (i. e. the Footedness parameter is set to *No* in Turkish), such considerations as trochaicity and binarity, both properties of the grammar, become important on the surface for exceptional suffixes only. For regular suffixes, which do not involve foot structure (both underlyingly and on the surface), these parameters are irrelevant (i. e. vacuously satisfied) as they act on the Foot, when one is available through the UR.

In addition to explaining what actually occurs in Turkish, whether at the word-level or beyond, whether acoustically or in terms of position of prominence, the current account also accounts for what is lacking in the data. For example, the fact that Turkish has no monosyllabic stressed exceptional suffixes (i. e. “stressed” despite regular suffixes being attached later), and that stressed exceptional suffixes are always bisyllabic, and are never stressed on their

second syllable (i. e. always stressed on the first syllable) follows directly from the current account: Syllables that are footed in the UR must surface within a foot in the SR, and, crucially, this foot must abide by the other parameter settings of the grammar; it needs to be binary and left-headed. In an approach where the exact location of a stressed syllable is prespecified in the UR or a binary trochaic foot comes as part of the UR (instead of foot edges only being prespecified), the lack of the two hypothetical exceptional stress patterns in Turkish would be left without an explanation (since any syllable could be pre-specified for stress in such a system), and such clear gaps cannot be related to chance.

If footless languages exist, as has been proposed here, it is natural, and expected, for there to be a system like Turkish, where the grammar assigns no feet, but when a foot is available as a result of the lexical specification of a morpheme, other parameters, which are independent of the grammar's ability to *assign* foot structure, ensure that this foot surfaces as a well-behaved binary trochaic foot. In other words, feet are exceptional in Turkish, i. e. that they must be lexically marked. Although Turkish may not, for this reason, be the most canonical example of a footless language as it is not completely footless, it may be the best language to illustrate a grammar's inability to assign feet, for the same reason that it does have feet in certain cases as a result of lexical specification. In the next section, I turn to French, and illustrate a completely footless language, which, then, complements the picture laid out above.

Before moving to French, however, note finally that this proposal has adopted an analysis where foot structure (or rather foot edges) is underlyingly present for certain morphemes (i. e. pre-specified). As one reviewer accurately points out though, there are logical alternatives to this approach. One such alternative, mentioned by the same reviewer, is the use of morpheme-specific constraints or rules (e. g. Pater 2000, 2006). Another alternative approach would be the use of cophonologies, or morpheme-specific rankings (e. g. Anttila 2002, Inkelas and Orgun 1998, Inkelas and Zoll 2007). I will not delve into detail here, as the correct analysis here does not matter much for the main conclusion of the paper, i. e. that languages with no footing requirement exist. It should be noted, nevertheless, that an analysis of the Turkish facts under either of the two alternative approaches is cumbersome at best, because both approaches account for exceptionality based on "morphemes", and not phonological entities such as "syllables" or "feet", and this, in the case of the Turkish data presented thus far, misses certain generalizations: For example, for the cophonologies account to work, one would have to argue that only monosyllabic suffixes are subject to a certain cophonology (i. e. those that are pre-stressing) while only bisyllabic suffixes are subject to another (those that are stressed on their first syllable).

Similarly, on the morpheme-specific rankings account, only monosyllabic suffixes will have to be indexed with certain constraints whereas only bisyllabic ones will have to be indexed with certain others. If monosyllabic suffixes are as equally “morphemes” as bisyllabic suffixes – and we know that they are – there is no reason for such a contrast to emerge under either account, no reason why they cannot get stressed the same way bisyllabic exceptional suffixes can, and vice versa. Such gaps do not arise on the current proposal, because there is a single grammar, and all morphemes, whether exceptional or not, are subject to this same grammar, which is trochaic, binary and left aligning, and as such, does not allow such outputs, which are otherwise inexplicable.

3 French

In Section 2, it was argued that the so-called regular final stress in Turkish is not foot-based, that is, that Turkish does not require words to have feet. If this proposal can be motivated more generally, this opens the way for analyzing languages like French and other fixed stress languages as footless. For Turkish, some of the best evidence in favour of a footless analysis came from a comparison of regular vs. exceptional stress. French, unlike Turkish, has no exceptional stress. On the face of it, for languages like French, which only has regular “stress,” positing a right-aligned foot or an unbounded foot versus having no foot structure at all will have similar predictions in terms of where main prominence falls. However, several issues suggest that French is footless, most notably the fact that the domain of obligatory stress assignment in the language is the PPh (not the PWd) (Delattre 1966, Dell 1984, Jun and Fougeron 2000, Hyman 2014).

In fact, French prominence has already been proposed to be intonational, as was argued for regular stress/prominence in Turkish in Section 2 (see e.g. Verluypen 1982, Mertens 1987, Jun and Fougeron 2000, Féry 2001), though the issue of whether or not this means that French has no foot structure has, to my knowledge, only explicitly been addressed, by comparing the two positions, by Goad and colleagues (Goad and Buckley 2006; Goad and Prévost 2008, 2011). The authors reach the conclusion that French does have foot structure; this conclusion is based on some evidence *for* the Foot in this language, along with some that is against it (more on this below), as well as partially on the assumption that analyzing French as a footless language would require a marked prosodic hierarchy different from other languages (see e.g. Selkirk 1996, McCarthy 2004, Vogel 2009 for essential constituents of Prosodic Hierarchy,

which includes the Foot), especially within the context of their interpretation of the data they examine from child French which is inconsistent with a footless analysis. If Turkish words can be footless, however, as argued in the previous section, French would not be alone in having a grammar that does not require syllables to be parsed into feet, and the status of French as a footless language would not be extraordinary.

The remainder of this section is organized as follows: Section 3.1 outlines the generally accepted facts of the French prominence system from different viewpoints without delving much into the issue of whether French has foot structure or not. Section 3.2, then, presents several facts, grouped under four categories, supporting the argument that French prominence is indeed footless. Section 3.3, then, illustrates the challenges for such an approach in French based on some evidence *for* the Foot in this language. It is, nevertheless, concluded that, when all evidence is considered, there is good reason to assume French to be a footless language like Turkish.

3.1 Overview of the facts

Researchers working on French prominence generally concur that there are two types of prominence in this language, final accent and emphatic accent (e. g. Grammont 1933, Delattre 1966, Malmberg 1969, Léon 1972, Martin 1975, 1980, Rossi 1980, Dell 1984, Mertens 1990 and Post 2000). Note that the usage of the term “emphatic” is traditional here, and though the term implies otherwise, emphatic stress is not limited to emphatic expressions (Jun and Fougeron 2000, Féry 2001; cf. Montreuil 2002):

- (31) a. Final accent: The last syllable of a phonological phrase (PPh) is stressed.
 b. Emphatic accent: The first syllable or the first onset-initial syllable of a PPh is stressed, including, according to Montreuil (2002) and Féry (2001), function words.⁴

The two types of prominence are illustrated below in (32) and (33) respectively. Stressed syllables are capitalized.

- (32) Le fils du direcTEUR a vu le présiDENT (Di Cristo 1998: 203)
 “The manager’s son has seen the president”

⁴ There is some disagreement on this; some researchers argue that function words typically do not receive an initial high accent (see e. g. Jun and Fougeron 2000).

- (33) a. *EX*traordinaire b. *exTRA*ordinaire c. **extraOR*dinaire (Féry 2001)
 ‘extraordinary’

In terms of its acoustic correlates, in unmarked intonation, syllables with final accent are accompanied by a slight F0 rise and much longer duration, as well as weaker intensity, than unaccented syllables (Wioland 1991, Montreuil 2002). Syllables with emphatic accent, on the other hand, have an abrupt F0 rise (Wioland 1991, Jun and Fougeron 2000, Féry 2001, Montreuil 2002), and also, according to some researchers, greater intensity and slightly longer duration than their unaccented counterparts (Wioland 1991, Montreuil 2002).

Most of the literature has focused on final accent, as it is usually agreed to be the only obligatory position of prominence in French. This prominence has been analyzed by some researchers as a pitch-accent associated with a PPh-final stressed syllable (without any recourse to the presence/absence of foot structure) (e. g. Dell 1984, Jun and Fougeron, 2000,⁵ Post 2000). Others have argued that it is a boundary tone, associated with the final syllable of a PPh (e. g. Rossi 1980, Vaissière 1983, Martin 1987, Féry 2001), the implication of which is that it involves neither stress nor foot structure. Among researchers maintaining that it refers to stress, it has been analyzed as the head of an iambic foot (Charette 1991, Scullen 1997, Armstrong 1999, Goad and Buckley 2006, Goad and Prévost 2011) or, less commonly, of a trochaic foot (Selkirk 1978, Montreuil 2002).

Other researchers have incorporated final and initial accent into a tonal pattern. Analyzing French accent as intonational prominence, Jun and Fougeron (2000) argue for an underlying tonal pattern of /LHiLH*/ for the PPh (or rather Accentual Phrase (AP), as they word it).⁶ On this proposal, the final H tone, denoted as H*, represents primary accent; it has a demarcative function, and is associated with the final full vowel in the PPh. The initial H tone, represented as Hi, is optional, and is usually associated with the first or second syllable of the first content word within the PPh, Jun & Fougeron report, based on an experiment they conducted with three speakers and on the findings of previous literature (e. g. Vaissière 1974, 1997, Fonagy 1980). They also note, based on

⁵ Jun & Fougeron have a prosodic hierarchy that does not involve the Foot above the Syllable. Given this, and given their statement that they assume that prosodic organization obeys the Strict Layer Hypothesis (p. 210), it follows that they assume French to be a footless language, though they do not explicitly state that French lacks foot structure.

⁶ Jun & Fougeron (2000) focus on European French, but given Thibault & Ouellet (1996), their proposal seems to apply to Québec French, too (Goad and Prévost 2011).

the same experiment, that the first H_i is not only optional and variable in terms of its location, but it sometimes surfaces as an H plateau on the first two or three syllables.

As for the L tones, the first one usually occurs on the syllable immediately before the H_i , and, therefore, typically falls on the first syllable of a PPh, unless the H_i is realized on that syllable, in which case the initial L is not always realized. The second L is realized on the syllable immediately before the H^* , thus falling on the penultimate syllable in the PPh. Finally, the initial H_i is sensitive to the presence of functional material (despite sometimes being realized on function words, too), and the initial L , thus, usually falls on function words, when such words are present.

The following example illustrates this LH_iLH^* pattern:

- (34) Le désagréable garçon ment à sa mère (Jun and Fougeron 2000: 215)
 [L H_i L H^*]_{PPh}
 “The unpleasant boy lies to his mother.”

According to Fonagy (1980) and Jun and Fougeron (2000), the realization of the initial H depends on a number of factors such as rhythm, style and speaker. Other authors disagree, arguing that any claims for secondary accent are “severely misguided,” and that initial accent is limited to emphatic situations (Montreuil 2002). According to Féry (2001), outside of emphatic situations, initial accent is mostly heard in the speech of public persons such as politicians and news reporters.

In conclusion, French accent seems to be PPh-final, with an optional, secondary H tone on the first or the second syllable of the first PWD of the PPh (although it can appear on function words, too), though the conditions under which it appears, aside from emphatic situations, are debated. Final prominence is less disputed, but its obligatory status has also been challenged, as will be explained below in more detail.

Given these facts, the following section will present four different types of evidence for a footless analysis of French. The first comes mostly from Féry (2001), who concludes that final prominence in French is a boundary tone, rather than stress, though she does not mention the implications of this with respect to the presence/absence of foot structure in the language, as with most other researchers working on French prominence. The latter three come directly from Goad and Prévost (2011), who compare evidence for and against the Foot in French and opt for a foot-based analysis.

3.2 Evidence for a footless analysis of French

3.2.1 Optionality and variability

One of the best types of evidence for a footless analysis of French comes from the fact that, as mentioned above, French accent shows some optional and variable behavior. The situation with the initial accent has already been detailed above; it is optional in that it can be present or absent and it is variable in that it can appear on either the first or second syllable of a PPh (though some of this variability is apparently due to the presence of function words). Some researchers have, in addition, shown that final accent is also optional and variable. Féry (2001), for example, experimentally demonstrates, based on recorded naturalistic data, that final accent is not obligatory and, when present, variably placed. She emphasizes, accordingly, that in a sentence like (35), an H tone can be placed on *à*, *son*, or on the first or second syllable of the last PWd *bébé*, and that sometimes just an L tone is placed on the final syllable.

- (35) Elle donne le biberon à son bébé. (Féry 2001)
 “She gives the bottle to her baby”

Given this optional and variable behavior, prominence in French does not look like stress or pitch-accent of the type that is associated with stressed syllables, where the location of stress is rule-governed, and variable behavior such as this is not expected, as Féry also notes. As mentioned above in Section 2, such optionality is not expected in stress languages (Hualde et al. 2002, Hyman 2006, 2009, 2014).

Féry illustrates, in addition, that sometimes a PPh can bear an initial high tone only, with no final tone, and, in such cases, the tone can even be associated with a function word, including one with a schwa, as illustrated below:

- (36) ... quel est le premier thème scientifique de votre premier livre [DE science fiction]
 “what is the first scientific theme that you have chosen in your first science-fiction book”

Given that even a schwa can bear this high tone, even though schwa is typically considered to be unstressable in French, together with the variability as to which syllable bears the high tone, Féry concludes that it must be a boundary tone, not a pitch-accent.

Let us now return to initial/emphatic accent. As mentioned in Section 3.1, the conditions under which initial accent appears are debatable. Two aspects of this accent, however, seem to be well-established, and illustrate situations not expected in stress languages: One, its presence depends on speaker style (e. g. Fonagy 1980, Jun and Fougeron 2000, Féry 2001). Two, whether the PPh starts with an onset or not influences the location of accent; usually the first onset-initial syllable of a PPh bears initial accent (Tranel 1987, Vassière 1997, Montreuil 2002), though initial onsetless syllables can also bear it (Féry 2001). Such behavior is exceptionally unusual in stress languages; it is accepted by almost all research on stress that onsets do not contribute to stress assignment in languages of the world (see e. g. Hayes 1981, 1995, and Halle and Vergnaud 1987 on the issue; cf. Davis 1988).

Finally, as is noted by Jun and Fougeron (2000), the initial H tone can sometimes appear on a sequence of adjacent syllables (see above), creating a plateau. This type of tonal interpolation is unusual in stress languages. In fact, when syllables are “stressed”, this means that they are more prominent than adjacent syllables. In other words, in stress languages, stressed syllables can bear high pitch, but adjacent syllables should be lower in pitch.

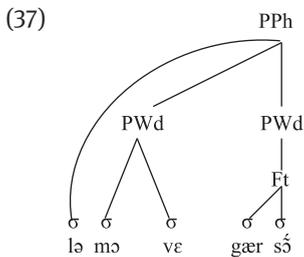
Given all this, French prominence looks like a sequence of boundary tones, with some optional and variable behavior (especially with respect to initial accent). Not surprisingly, then, researchers working on the typology of prominence systems, such as Beckman (1986) and Ladd (1996), have concluded that French does not have any stress at all, but only cues that demarcate the edges of prosodic constituents (see also Hyman 2014 where this is implied for French).

The seemingly obligatory final accent in French, therefore, seems to be the same phenomenon in nature as Turkish regular final “stress,” in that they are both boundary tones, except that the domain of this tone is the PPh in French as opposed to the PWD in Turkish. That the PPh is the domain of prominence in French is yet another reason for analyzing French as footless, which is the topic of the following section.

3.2.2 Domain of prominence

Perhaps the best evidence for a footless analysis of French comes from the fact that, as mentioned above, the domain of prominence is the PPh in French, although feet are normally assumed to respect word boundaries (see e. g. Hayes 1995). As Goad and Prévost (2011) note, this suggests that, even if this PPh-final prominence is considered to be “stress,” (and “obligatory,” contra e. g. Féry

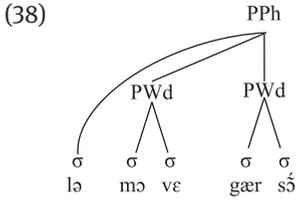
2001 for the sake of the argument for now), words that are not in PPh-final position can have no stress/prominence, and thus, no foot (though see below). That is, when the optional nonfinal Hi mentioned by Jun and Fougeron (2000) (see above) does not surface, only the final word in the PPh receives prominence. Even if final prominence were analyzed as stress, the fact that the rest of the words within the PPh can occur without any type of prominence is evidence, by itself, that French words do not have to have foot structure. That there is only one word with obligatory prominence within the PPh suggests a representation as follows, if one takes final prominence to be foot-based (Goad and Prévost 2011):



Goad and Prévost (2011) argue against this structure, because it violates Headedness, the principle that requires every constituent to dominate at least one constituent that is below it in the Prosodic Hierarchy.⁷ But if the presence/absence of the Foot is parametric, as we have argued in Section 2 above, and if the prosodic structure for French has no Foot, then a structure like (38) below will not violate Headedness. Headedness at the Foot level will be satisfied vacuously if there is no foot in the language. That is, if French prominence is indeed intonational (e. g. a boundary tone), the structure would be as in (38).⁸

⁷ Goad & Prévost propose, instead, that every PWd has a foot. Not every foot has phonetic correlates, because they impose Jun & Fougeron's (2000) LHILH* tonal pattern on top of foot structure, and only foot heads that align with a high tone are phonetically realized. They argue that the initial foot is trochaic, because Hi is typically aligned with the left edge of the first PWd in a PPh (see Section 3.1), thus often skipping functional material. The final foot, they argue, is iambic, because H* is typically aligned with the right edge of the final PWd in a PPh.

⁸ An alternative, argued for by Jun & Fougeron (2000), is a structure that does not have a PWd constituent, either.



This structure, which, given the evidence, is the most reasonable one, and would in addition not violate Headedness, if, as argued here, feet are not universal. In addition, French is not the only language where prominence is assigned at the PPh-level, instead of PWd: Hyman (2014) cites Yowlumne (Newman 1944, Archangeli 1984–1985) and Kuki-Thaadow (Hyman 2010) as such languages, where prominence is assigned at the phrasal level and not all words surface with an “accent” (let alone “stress”).

Note that although languages like these where the Foot constituent can be skipped have not previously been proposed, there have been recent claims that the PWd can be skipped. In fact, Schiering et al. (2010) argue that the PWd is not universal, but instead emergent. This, if true, of course, adds to the possibility that the Foot is not universal, either, as is argued here, since the Foot is then not the only constituent of the Prosodic Hierarchy that can be skipped.

3.2.3 Other (less compelling) evidence

There are certain additional facts about the French language which, although not as compelling as the above, adds to the possibility that French may best be analyzed as footless, as a footed analysis, given these facts, makes it a very unusual language. Of course, as one reviewer points out, these do not definitively demonstrate the absence of foot structure in French, since the rarity or absence of these patterns in world’s languages could potentially be explained independently.

3.2.3.1 Word minimality

Every lexical word is, in the unmarked case, a PWd (McCarthy et al. 1993a), and every PWd must contain at least one foot (McCarthy and Prince 1986) in order to satisfy Headedness (Selkirk 1996). Given that the well-formed foot is binary across languages (Hayes 1981, 1995), there is a minimum size requirement on lexical words in many languages; namely, every lexical word should minimally contain one binary foot, one that is either bisyllabic or bimoraic. Several languages where there is considerable evidence for foot structure, thus, have no

subminimal words, words composed of a single syllable or mora. For example, in Mohawk, a language with weight-insensitive trochees (Piggott 1995), content words must have at least two syllables (Michelson 1988). In English, a language with moraic trochees (see below), every word contains at least two moras. If a language has foot structure, then, it should *ideally* not have words smaller than two moras (though there are exceptions, e. g. Spanish).

Words composed of an open syllable with a short vowel are indisputably monomoraic, and monomoraic words are indisputably subminimal, irrespective of the other properties of a language. If French has many words of this type, this, as Goad and Prévost (2011) also point out, could be because French, unlike English, has no feet, and therefore, places no limits on the lower bound of word size.

This prediction is, in fact, borne out. French has many subminimal (lexical) words composed of a single short vowel (examples from Goad and Prévost 2011):⁹

- (39) a. [lɛ] *lait* b. [ʃa] *chat* c. [li] *lit* d. [ne] *nez* e. [ʒy] *jus*
 “milk” “cat” “bed” “nose” “juice

It seems, therefore, that foot binarity is not respected in French. This would not be unexpected if French has no feet.

Note, however, that this is not an empirical claim; footed languages that allow degenerate feet are, of course, expected to permit lexical words that are subminimal. That is, the fact that French has many subminimal words adds to the possibility that it is footless, but does not, by itself, constitute evidence that it is a footless language. In addition, as one reviewer has pointed out, there is research demonstrating that some languages have minimal word requirements that are different from minimal foot requirements (Piggott 1993 and Garrett 1999), meaning that different constraints may be responsible for foot and word minimality, making the relationship between minimality and foot structure unclear. Further, as another reviewer notes, there are languages in which minimality is a condition on derived words, as with Turkish (Itō and Hankamer 1989) and Japanese (Itō 1990).

⁹ What counts as a short vowel varies across researchers. However, oral vowels in word-final open syllables are generally viewed to be short, even when this violates word minimality, as with the examples in (39) (see e. g. Walker 1984, Montreuil 1995, Goad and Prévost 2011; cf. Scullen 1997).

3.2.3.2 Different from a typical lamb (or Trochee)

French final prominence, if it were to be foot-based, would have to be iambic, given that it is final. The alternative, positing trochees,¹⁰ would require final degenerate feet in words ending in CV syllables, which, as Goad and Prévost (2011) point out, would violate Hayes' (1995) Priority Clause: Degenerate feet would surface at the edge where foot construction begins (e. g. [mɔ̃(vé)]); satisfying the Priority Clause with trochees would, however, lead to incorrect stress location: *[(móvɛ)] (but see below).

Analyzing French as iambic, on the other hand, comes with its own problems, as discussed by Goad & Prévost: The typical iambic system is one where feet are (i) quantity-sensitive (and optimally uneven), as mentioned in Section 2 above, (ii) iterative, and (iii) constructed from left-to-right, out of which the first, quantity-sensitivity, is often regarded as a universal requirement for iambic systems; no quantity-insensitive iambic languages are permitted by the inventory of foot types made available by UG (see e. g. Hayes 1985, 1987, 1995; McCarthy and Prince 1986, 1993a, 1995, among others; cf. Altshuler 2009). Though non-iterative and right-to-left iambs are attested, these are highly marked (see e. g. Hayes 1995).

The following sections will show how French does not look like an iambic language with respect to any of these three dimensions.

3.2.3.2.1 *Weight (in)sensitivity*

If French were analyzed as an iambic language, it would have to be analyzed as weight-insensitive, as Goad and Prévost (2011) demonstrate. Relevant here are inherently long vowels that French is argued to have (Walker 1984, Thibault and Ouellet 1996). Some researchers have argued that these, as well as closed syllables, do attract stress (Paradis and Deshaies 1990, Scullen 1997), especially in Québec French. On the face of it, this suggests that French might be a weight-sensitive language and analyzing it as iambic might not be so problematic, as heavy syllables will, then, never be in foot-dependent position, as with typical iambic systems.

Such a conclusion does not, however, seem to be accurate for two reasons. First, syllables with a coda (which are potentially heavy) are reported to attract

10 Selkirk (1978) proposes a trochaic account of French stress where every syllable, except for ones that contain schwa, forms a foot of its own. That is, all feet are monosyllabic and are composed only of a head on her account, except when a schwa is available, in which case schwa occurs in the dependent position of a bisyllabic foot. This account has the advantage of capturing schwa deletion in French, which does not occur when there are two consecutive schwas (though see Scheer (2011) for an account of schwa deletion that does not require reference to a trochaic foot).

prominence only variably in French. If French prominence were foot-based, this behavior would be rule-governed, and as with other languages with weight-sensitivity, heavy syllables would always attract stress. Such is not the case for French. Second, and perhaps more importantly, as Goad and Prévost (2011) argue, weight-insensitive parses seem to be licit, at least in Québec French, when a long vowel immediately precedes the phrase-final open syllable. In such cases, iambic languages that are weight-sensitive would stress the syllable with the long vowel, as in (40a) whereas stressing the phrase-final syllable, as in (40b), is possibly the norm in (Québec) French, at least according to Thibault and Ouellet (1996); that is, despite the long vowel in the penultimate syllable, the final syllable typically receives prominence (examples from Goad and Prévost 2011).

(40) a.	mé:z̃	b.	mɛ:z̃	c.	mɛz̃	<i>maison</i>	“house”
	ʒó:ɖzi		ʒø:ɖzi		ʒøɖzi	<i>jeudi</i>	“Thursday”

It should be noted, however, that, as Goad and Prévost (2011) also discuss, some researchers (e. g. Walker 1984 and Scullen 1997) argue against the presence of parses like (40b), and suggest, instead, that only (40a) and (40c) are attested in French. If that is true, French is not necessarily weight-insensitive. However, that vowel length is variable (as is evident from the presence of parses like (40c), along with (40a)) is still problematic for a weight-sensitive analysis of French, for this variable behavior could be because phrasal prominence, which is characterized by greater duration, variably falls on the penult (see Thibault and Ouellet (1996) for a similar argument).

To summarize, then, even though some syllables with long vowels or codas do seem to attract stress in French, resulting in parses that are consistent with a weight-sensitive analysis of the language, as in (40a), if such patterns as (40b) exist, as argued by Thibault and Ouellet (1996), weight-insensitive parses are possible in French, casting doubt on an analysis of French as an iambic language. This is true whether patterns like (40b) are the norm (as Thibault & Ouellet argue) or not; even if (40b) is only variably attested, as suggested by the presence of contrasting opinions on the issue, this would, at best, mean that long vowels are variably weight-sensitive, which, in turn, suggests that weight-insensitive parses are (at least sometimes) permitted, unlike in the vast majority of iambic systems.

3.2.3.2.2 *Direction of foot construction*

Iambic languages prefer left-to-right footing (Hayes 1991, 1995). In fact, some researchers argue that there are no right-to-left iambic languages (Kager 1993a, 1993b; McCarthy et al. 1993b). French, however, cannot be analyzed as left-to-

right; in words longer than two syllables, the only way to place stress on the final syllable is through right-to-left parsing, as indicated in (41a); the alternative, left-to-right parsing, would result in the incorrect stress patterns given in (41b) or (41c), depending on whether codas contribute weight or not. Even if initial syllables were to be analyzed as extrametrical, as in (41d), which is hard to motivate for any language (Hayes 1982, 1995),¹¹ the closest that stress could fall to the right edge in a word of this length would be the antepenultimate syllable:

- (41) a. [tɛʁminɔ(ɫɔʒi)] b. *[(tɛʁmi)ɫɔʒi] c. *[(tɛʁ)minɔ(ɫɔʒi)] d. *[<tɛʁ>(minɔ)ɫɔʒi]
terminologie “terminology”

Since French “stress” would have to be analyzed as non-Iterative, obligatorily falling only on final syllables, foot construction would have to start from the right edge in order for stress to fall on the final syllable. This leads us to yet another area where French differs from typical iambic languages, which, as mentioned above, are normally iterative (Hayes 1995). The next section deals with this issue.

3.2.3.2.3 (Non)iterativity

Footing in French is non-iterative, and is analyzed as such even by researchers who consider French to be iambic (see e. g. Charette 1991, Goad and Prévost 2011). Charette (1991), for example, argues that French constructs a single iambic foot at the right edge, as in (41a) above.

That being said, there have been various claims in the literature that French does have secondary stress (e. g. Verluyten 1988, Scullen 1997). Montreuil (2002) calls these “severely misguided.” Perhaps not surprisingly, what look like cases of secondary stress can, in fact, be captured through what Fónagy (1979) refers to as “accentual arc;” the first and final syllables in a domain receive stress/prominence, out of which the first is optional. This is also compatible with Jun and Fougeron’s (2000) LH_iLH* tonal sequence for the PPh. The examples in (42), from Goad and Prévost (2011), illustrate, as these researchers also explain, that analyzing French

¹¹ One good piece of evidence against leftmost extrametricality is that, out of the set of logically possible fixed single stress systems, only five are attested: initial, peninitial, final, penultimate and antepenultimate stress, as indicated by Hyman’s (1977) and Gordon’s (2002) crosslinguistic surveys of stress systems. If leftmost extrametricality was possible, languages with postpeninitial stress (third from the left) would also be commonly attested through a left-to-right non-iterative iamb: e. g. [σ>(σó)σσσ]. Of course, there are also languages with a three-syllable window on the left edge of the word, as with Choguita Rarámuri (Caballero 2011), although this may be morphologically conditioned.

as a truly iterative language predicts the incorrect pattern in longer words in (42b), as opposed to the attested forms in (42a), where there is a maximum of two positions of prominence in the domain, irrespective of how long the word is:

- (42) a. Accentual arc: b. Iterative footing:
- | | | | |
|-----------------|------------------|------------------------|-------------------|
| [kòrdəlét] | [kòrdəlét] | <i>cordelette</i> | “rope” |
| [kòpresibilité] | *[kòprèsibilité] | <i>compressibilité</i> | “compressibility” |
| [àristotélisjé] | *[arìstotélisjé] | <i>aristotélicien</i> | “Aristotelian” |

Further, as noted again by Goad and Prévost (2011), if French had true Iterativity, instead of the accentual arc or LHiLH* intonational pattern, we would expect the words in (42a) to keep their secondary stress in phrases, which they do not, as (43) illustrates:

- (43) [kòrdəlet oráʒ]PPh *[kòrdəlét oráʒ]PPh *cordelette orange* “orange rope”

In sum, these patterns in French can best be accounted for by means of the accentual arc of Fónagy (1979) or the LHiLH* phrasal melody of Jun and Fougeron (2000), and cannot, by any means, be captured through iterative footing in the conventional sense.

One (non-iterative) foot-based account that could capture both final and initial accent in a unified manner is that of Goad and Buckley (2006) and Goad and Prévost (2011) (see note 7 in Section 3.2.2), where an iambic foot is built at the right edge of the rightmost PWd in a PPh and a trochaic foot at the left edge of the leftmost PWd:

- (44) a. [[(ò)(perá)]_{PWd}]_{PPh} *opéra* ‘opera’
 b. [[(ines)(peré)]_{PWd}]_{PPh} *inespérée* ‘unhoped for’
 c. [la [kòpre)sibi(lité)]_{PWd}]_{PPh} *la compressibilité* ‘the compressibility’
 d. [ɣn [(kòrdə)let]_{PWd}[(oráʒ)]_{PWd}]_{PPh} *une cordelette orange* ‘an orange rope’

This account has, however, certain formal implications that are unusual for stress languages. For example, though the proposal can effectively capture both final and initial stress in French, as well as the optional behaviour of the latter (see note 7), two different types of feet would be required in the same language. This, though theoretically possible (e. g. if one adopts OT), is highly marked; in the unmarked case, languages are either trochaic or iambic.¹²

¹² Of course, as one reviewer points out, left-edge prominence could be associated with a different level of the hierarchy, or be a boundary tone. There are a number of languages that

Second, and more importantly, under this proposal, iambic feet are built from the right edge and trochaic from the left edge. If such a system is possible, the implication is that there should also be systems with the inverse pattern, where iambic feet are built from the left edge and trochaic from the right, that is, systems in which the second syllable is consistently stressed from both the left and the right edge. To my knowledge, no such system exists. This is despite the fact that such a system, with left-to-right iambs, would be less marked.¹³

3.3 Evidence *for* the Foot in French?

As must have been clear from the discussion above, the evidence presented here in favour of a footless analysis of French owes much to work by Goad and Prévost (2011), although I depart from them in concluding that French is a footless language like Turkish. I have also presented arguments, where necessary, against their footed analysis of the examples they provide from French. A footless analysis of French is, however, not as straightforward as a footless analysis of Turkish is. In fact, after carefully weighing the evidence for a footed vs. footless analysis of French, Goad and Prévost (2011) opt for the former analysis, based on certain formal evidence *for* the Foot in French (see below), and also based partially on the widely held hypothesis that a footless language would be one with a highly marked Prosodic Hierarchy (given especially their interpretation of the data they examine from child French (see Section 3.2.2)). Given the Turkish facts illustrated in Section 2, the last concern is perhaps not at issue any more, as there is, then, at least one other language that does not parse syllables into feet, Turkish, opening the way for reanalyzing other languages as footless. Nevertheless, a complete account of French prosody should present evidence for the Foot, too, which is what this section aims to do. Most of the arguments and data in this section come directly from Goad and Prévost (2011), but alternative analyses and arguments are offered.

have different phenomena going on at both edges (see. e. g. Hyman 1977, Gordon 2002), some of which will be covered in the next section, Section 4.

¹³ One reviewer points out that the fact that such a language appears to be unattested could be due to the rarity of languages with left-aligned iambs, and presents Stoney Dakota (Shaw 1985) and Southern Paiute (Sapir 1930) as examples that come close to instantiate this pattern.

3.3.1 Clash resolution

Goad and Prévost (2011) present two main types of evidence for the Foot in French, one from clash resolution, the other from schwa realization in compounds. To begin with, drawing on earlier research (e. g. Mazzola 1992, 1993, Hoskins 1994, Post 2000, 2003), they illustrate a case of stress clash resolution observed in compounds and DPs with attributive adjectives. In an example like (45), for example, while final stress is possible in each constituent of the compound in (45a), it is not in (45b). The authors attribute the ungrammaticality of the second form to the observation that stress clash is resolved through leftward displacement of the final stress of the initial word (examples from Goad and Prévost 2011; adapted from Mazzola 1993).

- (45) a. [marikristín] *Marie-Christine*
 b. [màriróz] *[mariróz] *Marie-Rose*

The authors argue that since each constituent of a compound forms a PwD, and thus a domain for stress assignment, clash resolution motivates the presence of word-level stress in French since there could be no clash resolution without the Foot and the PwD.

Though this is certainly a possible analysis of the data, alternative analyses exist. Goad & Prévost's analysis is based on the assumption that each constituent in a compound has final accent precisely because it is in PwD-final position; when the second constituent is monosyllabic, then, final stress on the first PwD is illicit since that would create stress clash with the immediately following syllable:

- (46) [(marí)_{Ft}PwD + [(róz)_{Ft}PwD → [(mà)_{Ft} ri]_{PwD} [(róz)_{Ft}PwD]_{PwD}

An alternative, and perfectly possible, interpretation of these facts is to assume, as with the intonational approaches to French prominence, that the two constituents of the compound will together form a PPh, and given the discussion on French prominence above in Section 3.1, the final syllable of this PPh will bear a high (H) tone, along with another (secondary) H on the first or second syllable of the PPh. In other words, the LHiLH* tonal pattern proposed by Jun and Fougeron (2000) would also predict [marikristín] and [màriróz] correctly, while excluding *[mariróz]. The final (ungrammatical) form would require the tonal pattern LHH (or LHiH*), which can be excluded without any recourse to stress clash. In addition, as Goad & Prévost note, [màrikristín] and [marikristín] are

also possible, along with [mañkɾɨsɨn], which could be due to the variable and optional placement of initial accent mentioned above, i. e. that it can fall either on the first or the second syllable of a PPh, or on neither (another indication that it is not stress).

Of course, as one reviewer notes, it would be optimal to see compounds here in which the first word is longer in order to determine how far back the prominence on the first element can go. If the intonational account I argue for is correct, then, prominence would consistently fall on the first or second syllable, regardless of the length of the first element. If the stress clash account is the correct one, however, prominence would consistently retract to the penultimate syllable of the first word, again regardless of how long the word is. Definitive evidence here would come from compounds where the first word has at least four syllables, in which case prominence on the first or second syllables would provide evidence for intonation-based accounts, whereas prominence on the third/penultimate syllable would support the stress clash account. Unfortunately, neither Mazzola (1992, 1993) nor Goad and Prévost (2011) cover such data. In fact, I was unable to find even words with three syllables being documented in studies arguing for the stress clash account. Although it is theoretically possible to disentangle the predictions of the two accounts, on the basis of the available data, evidence for the stress clash account is then uncertain at best. Future experimental research will demonstrate which side of the debate is right.

In sum, then, though there may be some evidence for foot structure on the basis of the data discussed here, the evidence is inconclusive, as the relevant data are completely possible to explain on the basis of a footless, intonational, analysis, too.

3.3.2 The role of schwa in French

As one reviewer also points out, there is a tradition of analyzing French as a system in which stress falls on the final syllable in a phrase, but if that syllable contains a schwa, then stress shifts to the penultimate syllable (Dell 1984, also referenced in Ladd 1996) suggesting that it is a weight-sensitive language. The implication of this is that the higher pitch associated with the strong syllable may not then be an edge marking phenomenon, but rather a process that assigns stress to a heavy syllable within the metrical structure.

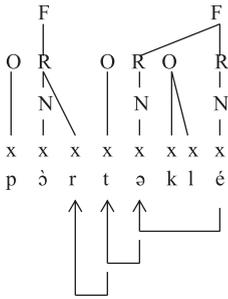
As noted by the same reviewer, the issue is complicated, however, by the fact that final schwa is often not realized phonetically in French. As such, it would be optimal for us to look at cases where final schwa is indeed realized, or is commonly accepted to be realized. According to several researchers (e. g. Charette 1991, Goad and Prévost 2011, Post 2003), such cases necessarily involve compounds, and compounds of a specific phonological and phonetic profile, which Goad and Prévost (2011) present as another type of evidence for the Foot in French. As Charette (1991) observes, in a compound, where the first constituent ends in an orthographic schwa (*e*), and the second is monosyllabic, if *e* is preceded by a cluster, as in (47a), then it surfaces as schwa. On the other hand, *e* is not realized as schwa (the position remains empty) if it is not preceded by a cluster (see (47b)) (despite being followed by a monosyllabic word), or if the second word is not monosyllabic (see (47c)) (despite being preceded by a cluster), or if it is neither preceded by a cluster nor followed by a monosyllabic word (see (47d)):

- (47) a. porte-clés [pø̀rtəklé] “key ring”
 b. coupe-feu [kùpfø] “firebreak”
 c. porte-manteau [pø̀rtmãtó] “coat rack”
 d. coupe-papier [kùppapjé] “paper knife” (Charette 1991)

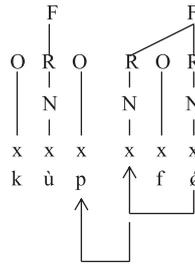
As discussed in Goad and Prévost (2011), according to the Government Phonology analysis of Charette (1991), the difference between the two patterns stems from the manner in which the empty position is properly governed. In (47c-d), *e* is domain-final; it is thus properly governed and the position can thereby remain empty (see further below). In (47a-b), *e* is incorporated into the dependent position of the foot in the second constituent of the compound, because the second constituent is monosyllabic (see (48a-b)) (structures modified from Goad and Prévost 2011). Even though *e* is no longer domain-final in these forms, it can be properly governed by the following overtly-realized vowel. However, in (47a) (unlike in (47b)), *e* must still be realized as schwa, because, even though properly governed, if *e* were to remain as a word-internal empty nucleus, it would not be able to govern the preceding onset consonant (i. e. [t]) since the onset consonant itself has to govern the preceding coda (i. e. [r]). In a form like (47b) (i. e. when *e* is not preceded by a cluster), on the other hand, the empty nucleus can govern the preceding onset (i. e. [p]), for the onset here does not itself govern any other consonant (see (48b)). Returning to (47c) and (47d) (i. e. cases where the second constituent is bisyllabic), since the empty position

is followed by two phonetically realized vowels, a binary foot can be created internal to the second constituent, and the empty position can remain in domain-final position.

(48) a. [pòrtaklé]



b. [kùpfó]



These patterns, Goad and Prévost (2011) argue, indicate that Foot Binarity (at the syllabic level) is satisfied whenever possible, presenting evidence that the Foot is relevant in French.

While this is certainly a possible analysis of the data, it is not clear why schwa in forms like (47c), and particularly (47d), cannot be incorporated into the dependent position of the first foot, since this foot, on Goad & Prévost's (2011) analysis, is trochaic, and schwa would, thus, be able to accommodate its dependent position. Charette (1991) does not posit initial trochees; so the issue is not necessarily problematic for her analysis. However, as mentioned above, a complete analysis of French prominence, such as that of Goad and Prévost (2011), would require the initial trochee. This leaves the question of what, then, if not foot structure, is responsible for this dichotomy, for which I do not have an answer, either.

All things considered, though evidence for a footless analysis of French might not be as strong as it is for Turkish, and though a footed analysis of French along the lines of Goad and Buckley (2006) and Goad and Prévost (2011) is indeed possible, as supported by some evidence, there seems to be good reason to conclude that French, as with Turkish, assigns no foot structure, as the evidence for a footless analysis of this language seems stronger than for the converse, a footed analysis.

Finally, the following table summarizes the arguments made in this paper for both Turkish and French regarding both the status of the foot (and foot construction) and stress/prominence in both languages:

(49)	Turkish	French
Does the grammar have a means of parsing syllables into feet?	NO	NO
Does the language <i>ever</i> have feet?	YES (when pre-specified)	NO
How is prominence assigned (stress or intonation)?	Intonational for regular cases; stress when a foot is available	Intonational
At what level does intonational prominence apply?	PWd	PPh

In sum, as the table (49) above illustrates, even though neither Turkish nor French has a means of parsing syllables into feet (i. e. neither grammar assigns feet), in Turkish, feet can occur on the surface as part of their specification in the UR/input. Further, the main type of prominence in both languages is intonational (phrase-level in French; word-level in Turkish), although some words, those which contain an underlying foot, can also receive stress in Turkish.

4 Other footless languages?

If footless languages are indeed possible, the best candidates for such languages would be “fixed stress” languages such as French (Turkish, too, is considered a fixed-stress language, despite its well-known “exceptional stress”). Speakers of such languages, specifically French, have already been claimed to demonstrate “stress-deafness” (e. g. Dupoux et al. 1997, Peperkamp and Dupoux 2002). These languages have, however, often been analyzed as having “unbounded feet” in the formal phonological literature, by researchers who believe in the necessity of every language having a Foot. If the argument made here about Turkish and French not constructing feet is indeed correct, this also opens up the possibility of reanalyzing other languages, and especially “fixed stress languages,” as footless.

In particular, the so-called “Default-to-Opposite Edge” stress languages present some evidence for lack of footing. In these languages, default stress falls on one edge of a word whereas some morphemes (or heavy syllables, depending on the language) have to be stressed, and when they are present in a word, the opposite edge attracts primary stress. It could be that these languages, like French, have no foot structure and instead have default

intonational prominence marking one edge (say the right edge of a PWd), but that they differ from French in that they have exceptional footing as well, as in Turkish, and given such a foot, intonational prominence (especially assuming that it is pitch accent) will be attracted to this foot, as this foot will be the strongest constituent within the PWd. This is possible particularly for languages where opposite-edge stress is attracted to morphemes, rather than heavy syllables. In fact, Gordon (2000, 2014) has already suggested that default “stress” in most default-to-opposite edge languages (including those where the opposite edge stress is attracted to heavy syllables) is subject to reanalysis as intonational prominence, rather than stress. This, in turn, has implications for typology, because, in words that only has default stress (i. e. without special morphemes), there will be no stress or foot, meaning that feet are not obligatory, and that PWDs do not have to be headed by a foot (i. e. OBLIG(Head) is violated, if we were to use OT terminology).

One piece of evidence for analyzing the default stress of Default-to-Opposite Edge languages as intonational prominence (with no foot structure) comes from the observation that in some of these languages, there are different acoustic cues for default vs. opposite edge stress (as is the case with Turkish regular vs. exceptional stress, as discussed above). For example, Chuvash, a Turkic language spoken in Central Russia (Chuvash Republic), puts stress on the leftmost light syllable in a word with only light syllables, but if a heavy syllable is available, then the rightmost heavy syllable bears stress (heavy, in this case, being a syllable with a non-central vowel) (Krueger 1961, Gordon 2000). Dobrovolsky (1999) found, however, that the default light-syllable “stress” in Chuvash is not accompanied by greater intensity, or duration, like true stress is in stress languages, but is instead accompanied only by an F₀ peak. Heavy-syllable stress, on the other hand, is accompanied by at least one of the two other cues to stress, greater intensity or duration. In other words, as Gordon (2000) also notes, it seems like the so-called default stress in this language is more like intonational prominence (as in Turkish), rather than real word-level “stress,” although Gordon is cautious, given the scarcity of experimental data on the language, particularly on its higher-level prosody. If both initial prominence and final heavy syllable prominence were to be analyzed as footed, there would be the problem of having two different types of feet/stress in the language, both with completely different acoustic correlates.

Another type of evidence for these languages being footless would be if some of them were to violate the Minimal Word requirement, which does seem to be the case: Huasteco, a Mayan language spoken in Mexico, for example, puts stress on the rightmost CVV if such a syllable is available, otherwise on the leftmost syllable, i. e. it is a typical Default-to-Opposite Edge stress language. In

this language, the minimal word is CVX (CVV or CVC). However, CVC does not function as heavy in the calculation of stress (Garrett 1999), and cannot, therefore, form a foot by itself. The fact that there are CVC words in this language even though CVC does not count as heavy (and cannot thus create a binary foot) seems to suggest, by itself, that the Minimal Word requirement is freely violated.

There are numerous other languages that may potentially be reanalyzed as footless or as languages not requiring foot structure. While Default-to-Opposite Edge stress languages mentioned here could be reanalyzed as systems more similar to Turkish, languages that always place prominence on one edge of a prosodic constituent (leftmost or rightmost) can be reanalyzed like French. A case in point is Korean, which is neither a tone nor a stress language, and may be another language that lacks foot structure in the same way as French, as suggested by a reviewer. As with French, prominence in Korean is assigned at a level beyond the PWD, and according to Jun (1993, 1995, 1998, 2005), at the level of the Accentual Phrase, which is the level at which Jun and Fougeron (2000, 2002) argue French prominence is assigned (see Section 3 above), and corresponds to the Phonological Phrase in the more standardly accepted theory (e. g. Selkirk 1984, Nespor and Vogel 1986). Referring to earlier analyses of Korean as a language bearing word-initial stress (initial heavy syllable; or else peninitial) (e. g. H.-B. Lee 1964, H.-Y. Lee 1990), Jun (1993, 1995, 1998, 2005) demonstrates, both formally and experimentally, “the so-called “stressed” syllables are always realized with the F0 peak when the word is uttered in isolation.” (p.201) (see also Lim 2001). When, however, the same word is uttered in utterance-medial position, the initial syllable has a high F0 value only when the word is in PPh-initial position, providing evidence that prominence in Korean falls on the first syllable of a PPh, which Jun demonstrates, is confirmed by perception data, too. Note that this is the mirror image of the situation in French, where prominence falls on the final syllable of a PPh, and is, thus, one where almost everything that has been stated above for a footless analysis of French holds for Korean, too, most notably the arguments laid out in Section 3.2.2. involving the domain of prominence.

5 Evidence from language acquisition

Having covered the prosodic grammars of Turkish and French, and argued that they are both footless, and offered insights into a possible extension of this analysis to other languages, we now present additional evidence for the proposal that the presence/absence of the Foot is parametric. Such evidence comes

from both L1 acquisition (Section 5.1) and bilingualism data (Section 5.2). We start with L1 acquisition facts. This section also serves to demonstrate that Footed-*No* is the default option for this parameter, assumed initially by *all* children, even when they are learning a footed language.

5.1 Evidence from L1 acquisition

In an approach that views the initial state of language acquisition as one that is as specific/narrow as possible – e. g. one that is targeted by the most features or parameters in the output (see e. g. Hale and Reiss 2003), or one where the learner starts with the unmarked setting of *all* parameters (as with e. g. Drescher and Kaye 1990) – it would be predicted that the child’s first assumption, with respect to prosodic parameters, would be something like “Make binary, left-headed, bounded feet with End-Rule-Left,” rather than e. g. “Make feet” or “Have prominence,” for the former would be the most narrow (and perhaps the most unmarked) hypothesis, and the one defined by the most specific type of foot (of course, this is assuming the universality of the foot).

This assumption does not, however, seem to hold, and children do not seem to make such narrow hypotheses in acquiring prosody; on the contrary, the L1 acquisition literature shows that children’s initial outputs are not even in the form of binary feet; they are, in fact, monosyllabic (Jakobson 1941/68), and critically monomoraic, utterances, and these have, thus, been considered to pose a problem for the Prosodic Hierarchy (see e. g. Fikkert 1994, Demuth 1995, Goad 1997). Demuth asks, for example, if a binary foot is the unmarked form of a word, why is it that children start with what look like monomoraic feet? Why would children *not* start immediately with a binary foot, the unmarked form of prosodic words? If the Foot comes as part of Universal Grammar (assuming, as with previous literature, that it is an essential constituent of the Prosodic Hierarchy and that the Prosodic Hierarchy comes as part of Universal Grammar), and if children receive input that contains binary feet, why does the binary Foot not emerge at the very beginning of the language acquisition process?¹⁴

14 One might argue that what have been transcribed as CV utterances by researchers are, instead, CVV, and are, thus, not in fact subminimal. Although this could certainly be true in some (or many) cases, Goad (to appear) shows, based on Holmes’ (1927) data, that this is not the correct analysis at least in this case, and rather, that Holmes’ transcriptions were sensitive to differences in length. In doing so, one type of evidence Goad uses is that Holmes provides alternative pronunciations for several words, and some of these reveal the difference between short, half-long and long segments, meaning that he was, in fact, sensitive to length differences

Demuth (1995) talks about the possibility that there might be a pre-foot stage where children are agnostic about the language-particular instantiations of foot structure. If so, this creates an even bigger problem, for the Foot is considered a universal constituent of the Prosodic Hierarchy, and every lexical word is assumed to have at least one foot (see e. g. McCarthy and Prince 1986, Selkirk 1995), the lack of which violates HEADEDNESS, a constraint thought to be universally undominated (Selkirk 1995), and predicts the existence of adult languages that violate this constraint across the board.

Goad (1997) circumvents this problem by arguing that the Foot “matures” (or rather emerges), i. e. that it is not initially available to the child but that it appears later on the basis of positive evidence, and thus, that any constraint which refers to it will be vacuously satisfied. I agree with Goad in that children’s early utterances do not contain feet, and that the Foot is projected based on positive evidence. I differ, on the other hand, in that I believe that this is not because the Foot is a universal constituent of UG that becomes available later, but because the presence/absence of the Foot is a parameter with its own *Yes* and *No* settings, *No* being the default setting. Support for this comes from the observation that some languages, like Turkish and French, are indeed footless, as was argued above.

There is, in fact, no evidence to suggest that the monosyllables (or moras) produced during the earliest CV (the Sub-minimal Word) stage by children are footed at all, crucially even in the most foot-centric languages; perhaps, children start with an unfooted monosyllable. In fact, Goad (to appear) presents both formal and empirical evidence that children’s monomoraic utterances do indeed lack foot structure. On an empirical level, citing Holmes’ (1927) study of Mollie, an English-learning child at age 18 months, Goad underlines that the bisyllabic utterances produced at the CV stage by Mollie had equal stress on both syllables. This, she argues, must be because Mollie had no foot structure. Though, by themselves, these data could alternatively be interpreted to indicate that Mollie had not yet set Foot-Shape to its correct value (i. e. Trochaic vs. Iambic), taken together with the observation that her monosyllabic utterances seemed to be genuinely monomoraic (see footnote 14), equal stress on both syllables in the bisyllabic words uttered must imply that the Foot had not yet been projected. Otherwise, one would expect augmentation of monosyllabic utterances to bisyllabic (e. g. *da* turning into *dada*) (Goad to appear).

in his transcriptions. That is, CV utterances seem to be genuine, at least in this particular case. Of course, as one reviewer has pointed out, this does not exclude the possibility of the issue being completely related to motor skills having not yet developed in child language; even so though, the reality is that children learning footed languages do make footless utterances.

On a formal level, Goad shows that if these monomoraic forms were to be treated as footed, they would violate FT-BIN, which would, in turn, mean that a pattern that is crosslinguistically marked characterizes early grammars, a conclusion that conflicts with much previous research, especially research conducted in the OT framework, where child grammars are argued to differ from adult grammars principally in that markedness constraints take precedence. If early grammars do not have foot structure, however, as considered by Goad (to appear), neither FT-BIN, nor PARSE- σ , the constraint that requires every syllable to be parsed into feet, would be violated; they would both be vacuously satisfied in the absence of feet.

In summary, given the facts of the Subminimal Word stage in L1 acquisition, the theoretical argument that HEADEDNESS violations are not possible should either be revised, or, given that some languages, like Turkish, will be, in the usual case, violating HEADEDNESS at the Foot level, the argument that the Foot is an essential constituent of the Prosodic Hierarchy should be reconsidered. If the Foot is not an essential constituent in the hierarchy, the position adopted here, lack of it will not, after all, cause any HEADEDNESS violations.

5.2 Evidence from bilingual language acquisition

If, as argued above, the Footed-No option is indeed children's first hypothesis, and if the Foot is added later based on positive evidence, it is no mystery why children learning footed languages make errors initially in the form of producing footless utterances. Errors are, after all, expected precisely in the condition where children have not yet set a parameter to its marked value (Fikkert 1994). What would be unexpected would be to find children that have the Foot in learning a footless language (though see Goad and Buckley 2006 and Goad and Prévost 2011, who argue that French children respect foot well-formedness constraints¹⁵).

Bilingual language acquisition seems to provide further evidence for the default status of the Footed-No value: What would happen when a child learns a footed and a footless language simultaneously? Though it has been argued that

¹⁵ I have no explanation for these facts; it could be that PPh-final lengthening in French is interpreted, by some children, as evidence for foot structure. Regardless, this remains a problem for the current account. In fact, from my understanding, this is the reason why Goad (to appear) does not take a side between interpreting the acquisition facts from the CV stage as evidence for the parametric status of the Foot vs. evidence for child grammars as being deviant from adult grammars.

bilingual children have two different grammars for the two languages they are learning (see e. g. Genesee 1989, Meisel 1989, Genesee et al. 1995, Paradis and Genesee 1996, Genesee 2001), one language influencing the other is a situation commonly observed by researchers working in the area (Paradis and Genesee 1996, Yip and Matthews 2000, Müller and Hulk 2001). When this happens, it is usually because one language is dominant over the other, though instances of cross-linguistic influence have also been observed in cases where neither language is dominant (see Genesee and Nicoladis 2006). I believe that, in the latter case, given the assumption that the child has separate grammars (and lexicons) for the two languages, what looks like transfer effects on the surface must, in fact, be an indication that the learner is employing the default value of a given parameter, and has not yet set the parameter to the marked value for the language that uses the marked value. The default value will, thus, be used for both the unmarked and the marked language, resulting in the surface effect that the value of the unmarked language is being transferred to the marked language (when in fact what is going on is perhaps a delay in the emergence of the marked value). Similar claims have been made before in the bilingual language acquisition literature with respect to the role of markedness (see e. g. Lleó 2002 and Lleó, Rakow and Kehoe 2004 for work on prosody; Lleó, Kuchenbrandt, Kehoe and Trujillo 2003 and Kehoe et al. 2004 for work on segmental phonology).

If this is correct, we would expect bilingual children learning footed and footless languages simultaneously to initially have footless outputs for both languages, perhaps even after the Subminimal Word stage. There seems to be some evidence in support of this prediction: Brulard and Carr (2003) observe, in the speech of their child, Tom, acquiring French and English simultaneously, that the French type of (final) “stress” exists for *all* bisyllabic words, with almost no exceptions, for both French and English from his first words (1;8.0) till 2;6.0.¹⁶ This is despite the fact that their data also demonstrate that the child, otherwise, had two different phonological systems for the two languages. For example, consonant harmony occurred exclusively in English words whereas reduplication occurred exclusively in French words.

When, however, Tom finally started to produce trochees in English, he produced them all accurately, with no exceptions, correcting previously misstressed

¹⁶ The authors classify French as iambic. Of course, in the absence of further data (such as phonetic measurements, data on iterativity, etc.), we will never know for certain whether the child’s outputs were iambic or footless (with final prominence). Nevertheless, given that the authors define “iambic” as “word-final prominence regardless of syllable weight,” it is highly likely that the child’s outputs were footless.

words as well as producing new words correctly. These findings seem to present evidence for the assumption made in this paper that that Footed-*No* has a default unmarked status (assuming that French is footless).

In conclusion, if footless languages are possible, as I have proposed here, this should, of course, be children's first hypothesis, for otherwise, the incorrect assumption that the target language is footed would require the loss of a constituent (when learning footless languages), which, given lack of negative evidence in L1 acquisition, should be impossible. And equally importantly, it might also require unsetting of other parameters that follow from having feet (such as Bounded-*Yes* vs. *No*, left-headed vs. right-headed, direction of parsing, etc.), for these settings would not necessarily match with the lack of settings required for the target grammar, and would, thus, have to be unlearned, too. And such a *non*-deterministic learner would undo correct, as well as incorrect structures in the process (Berwick 1985, Dresher and Kaye 1990), which would make the child's task impossibly harder. However, if children's initial hypothesis is *not* to have feet, they could easily learn a footed language (and the correct settings of other parameters following from having feet) on the basis of positive evidence. For example, a child who starts with the assumption that the target language is footless (CV word stage) will then realize, for a language like English, that the language does indeed have foot structure. He or she will then construct the foot appropriately, with a binary trochee (minimal word stage) for English, and an iamb for iambic languages. Once the child has longer utterances, he or she will have to make decisions about parameters such as Iterativity and End-Rule, and for these, too, the correct settings will be chosen based on positive evidence.

6 Conclusion

This paper has outlined the lower-level prosodies of Turkish and French. It was argued that the Turkish and French grammars, unlike English, do not parse syllables into feet. French, as a result, has no feet, whereas Turkish has some, since some Turkish morphemes are footed in the input, and are footed on the surface, too, through faithfulness to this information. In languages like English, on the other hand, every lexical word is assigned at least one foot by the grammar, as has been pointed out by almost all previous research on this language. It was also argued, based on the findings of the L1 acquisition literature, that the footless value (e. g. Turkish, French) is the default value of the Footed-*Yes/No* parameter proposed here; the Foot, in other words, emerges on the basis of positive evidence in learning a footed language (e. g. English, Spanish).

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