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#### UNSPECIFIED AND UNMARKED VOWELS

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The theory of radical underspecification claims that if a particular vowel in a language behaves asymmetrically with respect to the other vowels, acting consistently as the unmarked vowel for processes such as epenthesis, this vowel will lack all features in underlying representation (Archangeli (1988), Abaglo and Archangeli (1989), Pulleyblank (1988)). In fact, the identification established between unmarked vowels and unspecified vowels is seen as an advantage of radical underspecification over other models. According to this view, when the prosodic requirements of the language force the insertion of a vowel, the rule inserts only an empty V slot, which is necessarily identified with the vowel that underlyingly lacks all features (Abaglo and Archangeli (1989)).

Here I show that, contrary to the predictions of radical underspecification, there are languages where a distinction must be made between vowels with no features (empty V slots) and the unmarked vowel. In the language examined here, the Basque dialect of Arbizu, spoken in Navarra, Spain, there are suffixes that contain empty V slots.<sup>1</sup> There is also one vowel, the vowel /e/, that consistently behaves as the unmarked vowel, being inserted in all instances of epenthesis. Crucially, it can be shown that a distinction must be made between suffixes that start with empty Vs and suffixes that start with /e/ (or any other vowel, for that matter). If we chose to represent all instances of [e] as empty Vs, as radical underspecification would force us to do, we could not capture this distinction.

This squib is organized as follows. First, I will show that Arbizu Basque has certain suffixes that trigger a rule of Total Vowel Assimilation, for which the most adequate representa-

For the Basque data, I want to thank Xabier Arbizu of the town of Arbizu.

<sup>1</sup> A treatment of vowel length in this Basque dialect, from both a historical and a synchronic point of view, can be found in Hualde (to appear). Other aspects of the phonology of this dialect are treated in Hualde (1988).

slot. Second, I will show that vowel, /e/. Finally, I will prove between /e/ and V (henceforth, therefore that /e/ cannot be re-features.

### Suffixes

apply to vowel sequences cre-lectional suffix to a vowel-final >-final vowel is low, it is deleted; and if it is high, a "hardened and suffix. Examples are given ch takes the ending /-a/, and for l, which takes the ending /-ok/. bases are also offered for com-

#### Abs. pl. prox.

alaβok	'daughter'
paatiok	'wall'
aštuok	'donkey'
mendijok	'mountain'
eškubok	'hand'
čakuřok	'dog'
gisonok	'man'

ler group of inflectional suffixes nder the examples in (2), which řix (other suffixes with the same definite and the superlative):

'daughter'
'wall'
'donkey'
'mountain'
'hand'
'dog'
'man'

e indefinite the final vowel of the t straightforward way to capture x with an empty vowel /-Vn/. This features by assimilation from the s; can be represented as Root node Sagey (1986):

#### lation

## 2. Unmarked Vowels versus Empty Vs

Notice that in (2) the suffix appears with a vowel [e] after consonant-final bases. This would follow without further stipulation from the postulates of radical underspecification if [e] is represented precisely as a completely unspecified vowel. In those cases where a more specific rule such as (3) cannot apply, an empty V would receive the feature values of [e]. In this analysis, the facts in (2) would be taken as evidence for the asymmetrical behavior of one of the vowels, the vowel /e/, with respect to the other vowels.

However, there is solid evidence that all instances of [e] cannot be represented as empty Vs. Crucially, there are /e/-initial affixes that behave exactly like affixes that start with any other vowel. In particular, the genitive plural suffix, which cannot be anything but /-en/, triggers the same rules as the examples in (1) that start with other vowels:

(4) Base	Gen. pl.	
alaβa	alaβen	'daughter'
paate	paatien	'wall'
ašto	aštuen	'donkey'
mendi	mendijen	'mountain'
ešku	eškuben	'hand'
čakuř	čakuřen	'dog'
gison	gisonen	'man'

Since there is a clear contrast between the genitive plural /-en/ and the genitive indefinite /-Vn/, /e/ cannot be simply V.

This is, however, compatible with the fact that /e/ is the unmarked vowel in the language. As shown in (2), in the case of consonant-final bases, where the rule of Total Vowel Assimilation cannot apply to provide V with features, the features of [e] are inserted.

The vowel /e/ is in fact singled out in all productive processes of epenthesis. In the ergative indefinite, whose suffix is /-k/, there is epenthesis of [e] with consonant-final bases:

(5) Base	Erg. indef.	
alaβa	alaβak	'daughter'
paate	paatek	'wall'
ašto	aštok	'donkey'
mendi	mendik	'mountain'
ešku	eškuk	'hand'
čakuř	čakuřek	'dog'
gison	gisonek	'man'

[e] is also the vowel that is productively epenthésized in all Basque dialects in borrowings from Spanish with initial [ř], which is disallowed in Basque. Thus, Spanish [řueđa] 'wheel' becomes Basque [eřueđa], [řosárřo] 'rosary' becomes [eřošaarijo], [řepúblika] becomes [eřepuβlika], and so on. As in

Spanish, initial preconsonantal /s/ is disallowed in Basque, and here too an epenthetic [e] is inserted, as in [e'statu] 'state'.

We certainly would be missing a generalization if we formulated these different epenthesis rules as insertion of [e]. I propose instead that the epenthesis rules simply insert a V slot. Then, Basque has a rule that gives the features of [e] to an empty V slot:

(6) *Default Vowel Features*

V → [e]

This is a default rule that applies when more specific rules, such as Total Vowel Assimilation, do not provide an empty V slot with features. It fills in the values of both underlying empty Vs (which are found in suffixes such as the genitive indefinite) and empty Vs that have been inserted by epenthesis:

(7) Underlying representation	/a'sto-Vn/	/gison-Vn/	/a'sto-k/	/gison-k/
Total Vowel Assimilation	a'stoon	_____	_____	_____
Epenthesis	_____	_____	_____	_____
Default Vowel Features	a'stoon	gisonen	_____	gisonVk
	'donkey,	'man,	a'stok	gisonenk
	gen. indef.'	gen. indef.'	'donkey,	gisonenk
			erg. indef.'	'man,
				erg. indef.'

A form such as the genitive plural /gison-en/ [gisonen], where the /e/ is underlying, will not undergo any of the rules in (7).

In Arbizu Basque there is an unmarked or default vowel, [e], and there are vowels bereft of features. But we need to establish a crucial underlying distinction between the unmarked vowel and the empty vowels. Against the claims of radical underspecification in Archangeli (1988) and in Abaglo and Archangeli (1989), the unmarked vowel cannot be represented simply by an empty V. In underlying representation these are two different entities. This is a distinction that is predicted not to exist in the radical underspecification model and that could be captured only by some ad hoc stipulation in this model.

To conclude, the radical underspecification model presents the theoretical advantage over other frameworks that it can straightforwardly capture the unmarked status of a given vowel in a given language. It does so by establishing an identity between the unmarked vowel and the vowel that lacks all features in underlying representation. I have shown, however, that Arbizu Basque requires a distinction between the unmarked vowel and vowels that are empty of features, thus disconfirming the predictions of radical underspecification. Radical underspecification is therefore not better equipped than other models to deal with the issues presented by unmarked vowels and empty

