borrowing languages *à la* Jakobson and Lotz. He argues further that phonetic similarity is not sufficient to account for these patterns. Of the many cases he discusses, I will briefly review the adaptation of coronal fricatives into two Eastern Polynesian languages, Hawaiian and New Zealand Māori.

7.7.2.1 Hawaiian

Hawaiian has a famously small consonantal inventory (51).

(51) Hawaiian Consonantal Inventory

p		k	ʔ
			h
m	n		
w	l		

All English coronal obstruents are borrowed into Hawaiian as /k/, including [s], [z] and [ʃ] (52). Note that these segments are not adapted as /h/, which is also a plausible candidate from a phonetic point of view.

(52) Hawaiian adaptation of English coronal fricatives (Herd 2005)

a.	[s] → /k/	lettuce	→ /lekuke/	soap	→ /kope/
b.	[z] → /k/	dozen	→ /kaakini/		
c.	[ʃ] → /k/	brush	→ /palaki/	machine	→ /mikini/

7.7.2.2 NZ Māori

NZ Māori has both /k/ and /h/, as well as /t/, though it lacks a phonemic glottal stop (53). In this language, English [s], [z] and [ʃ] are borrowed as /h/, as shown in (54). This is surprising, given that /k/ is available, as in Hawaiian.

(53) NZ Māori Consonantal Inventory

p	t	k	
f			h
m	n	ŋ	
w	r		

(54) NZ Māori adaptation of English coronal fricatives (Herd 2005)

a.	[s] → /h/	glass	→ /karaahe/	sardine	→ /haarini/
b.	[z] → /h/	weasel	→ /wiihara/	rose	→ /roohi/
c.	[ʃ] → /h/	brush	→ /paraihe/	sheep	→ /hipi/

If substitutions are made on the basis of similarity, these facts are hard to explain. As Herd (2005) points out, if coronal fricatives are more similar to /k/ than to /h/ in Hawaiian, why are they more similar to /h/ than to /k/ in NZ Māori? The relevant notion of similarity must be somehow influenced

by the different inventories of these languages. Herd proposes that different contrastive specifications are operative in each language.

7.7.2.3 Contrastive specifications of Hawaiian and NZ Māori consonants

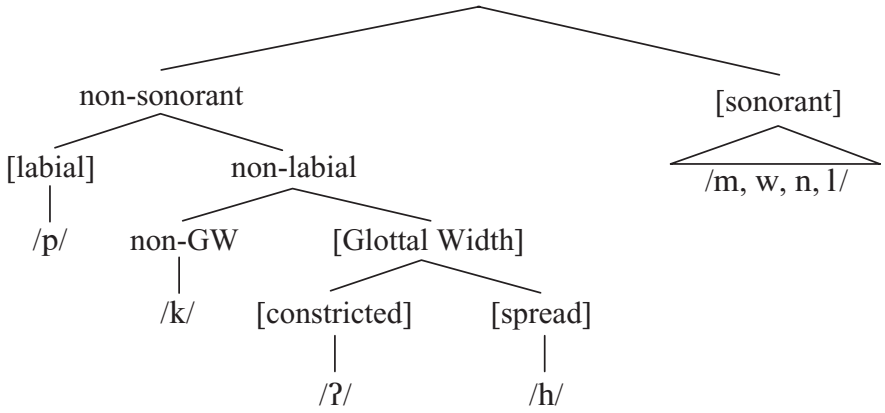
Herd (2005) proposes that the contrastive status of /h/ is different in the two languages. In Hawaiian, /h/ contrasts with /ʔ/. Following Avery and Idsardi (2001), the existence of this contrast activates a laryngeal dimension they call *Glottal Width*. Glottal Width has two values, [constricted] for /ʔ/, and [spread] for /h/.

Herd proposes the feature ordering for Hawaiian shown in (55) (only features relevant to the current discussion are mentioned).

(55) Contrastive hierarchy for Hawaiian (Herd 2005)
[sonorant] > [labial] > Glottal Width ([spread/constricted])

First, [sonorant] distinguishes /m, n, w, l/ from /p, k, ʔ, h/. Next, [labial] splits off /p, m, w/ from the rest. Then laryngeal Glottal Width applies to /ʔ, h/. The result is that /h/ is specified for [spread], /ʔ/ is specified [constricted] and /k/ is the default obstruent (56). Therefore, anything that is not sonorant or labial or laryngeal is adapted to /k/. In particular, [s, z, ʃ] → /k/.

(56) Hawaiian contrastive specifications (Herd 2005)

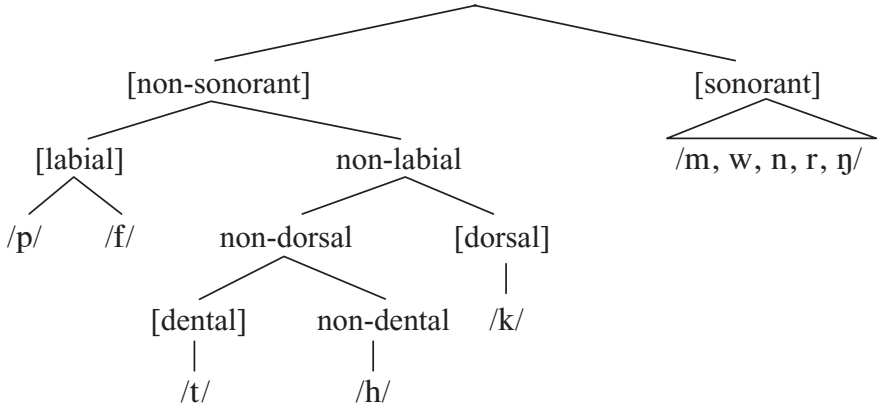


Unlike Hawaiian, NZ Māori has no /ʔ/, so there is no contrast within Glottal Width. Herd (2005) proposes that, lacking such a contrast, [spread] is not accessible as a contrastive feature. This, and the other differences in the inventories of the two languages, result in a different contrastive hierarchy for NZ Māori (57).

(57) Contrastive hierarchy for NZ Māori (Herd 2005)
[sonorant] > [labial] > [dorsal] > [dental]

As in Hawaiian, [sonorant] goes first, splitting off /m, n, ŋ, w, r/, and [labial] follows, applying to /p, f, m, w/. Unlike Hawaiian, [dorsal] is also required, to distinguish /k, ŋ/ from /t, n/. It remains to distinguish /t/ from /h/. Herd proposes to use the feature [dental] to characterize the contrastive property of /t/. This feature accounts for why the interdental fricatives [θ] and [ð] become /t/, not /h/. Thus, in NZ Māori /h/ plays the role of default obstruent, not /k/: /h/ is not sonorant, not labial, not dorsal, and not dental (58). Therefore, [s, z, ʃ] → /h/.

(58) NZ Māori contrastive specifications (Herd 2005)



The different contrastive roles played by /h/ in these languages suggests that they have different 'pattern alignments', in Sapir's terms, despite their very similar phonetic realizations. The differing status of /h/, as well as the presence of /t/ in NZ Māori but not in Hawaiian, also account for the very different contrastive status of /k/ in each language: general default obstruent in Hawaiian, and dorsal obstruent in NZ Māori.

7.7.3 Summary

As mentioned, loan phonology is a diverse phenomenon, and it is unlikely that a single approach can account for all patterns of loanword adaptations. But it suffices for our purposes to show that there exists a class of cases in which loan phonology is sensitive to the contrastive structure of a language; in particular, to the contrastive feature hierarchy. The Polynesian examples discussed above provide a compelling case of this type.

7.8 The acquisition of distinctive features and contrasts

Following the pioneering work of Jakobson (1941) and Jakobson and Halle (1956) discussed in chapter 4, section 3, the notion of a contrastive hierarchy has been fruitfully applied in acquisition studies, where it is a natural way of